

Cabarrus County, North Carolina Disaster Debris Management Plan

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ACRONYMS AND GLOSSARY

44 CFR	Code of Federal Regulations – Title 44 Emergency Management and Assistance
C&D Debris	Construction and Demolition Debris
County	Cabarrus County
CY	Cubic Yards
DDMP	Disaster Debris Management Plan
DMS	Debris Management Site
DSG	Disaster Specific Guidance
EF Scale	Enhanced Fujita Scale
EPA	U.S. Environmental Protection Agency
EOC	Emergency Operations Center
ER Program	Emergency Relief Program
EWP Program	Emergency Watershed Protection Program
FCO	Federal Coordinating Officer
FEMA	Federal Emergency Management Agency
FEMA 325	Debris Management Guide – FEMA Publication 325
FHWA	Federal Highway Administration
GIS	Geographic Information Systems
GPS	Global Positioning System
Handbook	Applicant Handbook
HHA	Hold Harmless Agreement
HHW	Household Hazardous Waste
IAM	Infrastructure & Asset Management
MOA	Memorandum of Agreement
NCEM	North Carolina Emergency Management
NCDEQ	North Carolina Department of Environmental Quality
NCDOT	North Carolina Department of Transportation
NCDHHS	North Carolina Department of Health and Human Services
NCNHP	North Carolina Natural Heritage Program
NCHPO	North Carolina State Historic Preservation Office
NRCS	Natural Resource Conservation Service
NOAA	National Oceanic and Atmospheric Administration

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OSHA	Occupational Safety and Health Administration
PA	Public Assistance
PAO	Public Assistance Officer
PPE	Personal Protective Equipment
PIO	Public Information Officer
PO	Purchase Orders
PW	Project Worksheets
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RFB	Request for Bids
RFP	Request for Proposals
ROE	Right-of-Entry
ROW	Right-of-Way
Stafford Act	Robert T. Stafford Disaster Relief and Emergency Assistance Act
State	The State of North Carolina
USACE	US Army Corps of Engineers
VCM	Vegetative Cover Multiplier

Applicant – State agency, local government, or eligible private nonprofit organization that intends to apply for Federal Emergency Management Agency (FEMA) Public Assistance (PA) Program grants.

Code of Federal Regulations: Title 44 – Emergency Management and Assistance (44 CFR) – Provides procedural requirements for PA Program operations. These regulations are designed to implement a statute based upon FEMA’s interpretation of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act). They govern the PA Program and outline program procedures, eligibility, and funding

Construction and Demolition Debris – FEMA Publication 325 defines construction and demolition (C&D) debris as damaged components of buildings and structures such as lumber and wood; gypsum wallboard; glass; metal; roofing material; tile; carpeting and floor coverings; window coverings; plastic pipe; concrete; fully cured asphalt; heating, ventilation, and air conditioning systems and their components; light fixtures; small consumer appliances; equipment; furnishings; and fixtures. Current eligibility criteria include the following:

- Debris must be located within a designated disaster area and be removed from an eligible applicant’s improved property or right-of-way (ROW).
- Debris removal must be the legal responsibility of the applicant.
- Debris must be a result of a major disaster.

Debris Removal Contractor – The debris removal contractor is contracted by Cabarrus County (County) to remove and dispose of debris that is a result of a severe debris-generating event.

Disaster Specific Guidance – Disaster-specific guidance (DSG) is a policy statement issued in response to a specific post-event situation or need in a state or region. Each DSG is issued a number and is generally referred to along with its numerical identification.

FEMA Publication 322 – Public Assistance Guide – The Public Assistance Guide provides a general overview of the FEMA PA Program protocol immediately following a disaster. The PA Program provides the basis for the federal/local cost-sharing program. This document specifically describes the entities eligible for reimbursement under the PA Program, the documentation necessary to ensure reimbursement, and any special considerations local governments should be aware of to maximize eligible activities.

FEMA Publication 323 – Applicant Handbook – The Applicant Handbook (Handbook) is the official “how to” for local governments that are considering applying for reimbursement following a disaster through the PA Program. The Handbook provides the rules, procedures, and sample documents local governments need as an applicant to FEMA. The publication is formatted so that the applicant has a step-by-step guide for each phase of the reimbursement process, including what information is critical to ensure reimbursement.

FEMA Publication 325 – Debris Management Guide – This publication is specifically dedicated to the rules, regulations, and policies associated with the debris cleanup process. Familiarity with this publication and any revisions can help a local government limit non-reimbursable expenses. The Debris Management Guide provides the framework for the debris removal process authorized by the Stafford Act, including the following:

- Eliminating immediate threats to lives, public health, and safety
- Eliminating immediate threats of significant damage to improved public or private property
- Ensuring the economic recovery of the affected community to the benefit of the community at large

FEMA Publication 327 – Public Assistance Debris Monitoring Guide – A FEMA guidance document that describes how to accurately document debris removal, disposal operations, and associated costs. All reimbursable work must comply with Public Assistance guidelines and all applicable federal, state, and local regulations. Failure to properly monitor debris removal operations may cause a rejection of reimbursement.

FEMA Publication 329 – Debris Estimating Field Guide – A FEMA guidance document that describes how to estimate—accurately, consistently, and in a timely manner—debris quantities and types. .

Hanger – A hanger is a hazardous limb that poses a significant threat to the public. The current eligibility requirements for leaning trees according to FEMA Publication 325 are as follows:

- The limb is greater than two inches in diameter.
- The limb is still hanging in a tree and threatening a public use area.
- The limb is located on improved public property.

Hazardous Stump – A stump is defined as hazardous and eligible for reimbursement if all of the following criteria are met:

- The stump has 50 percent or more of the root ball exposed.

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- The stump is greater than 24 inches in diameter when measured 24 inches from the ground.
- The stump is located on a public ROW.
- The stump poses an immediate threat to public health and safety.

Household Hazardous Waste – The Resource Conservation and Recovery Act defines hazardous wastes as materials that are ignitable, reactive, toxic, or corrosive. Examples of household hazardous waste (HHW) include items such as paints, cleaners, pesticides, etc. Due to the nature of hazardous waste, certified technicians must be used to handle, capture, recycle, reuse, and dispose of hazardous waste. The eligibility criteria for HHW are as follows:

- HHW must be located within a designated disaster area and be removed from an eligible applicant's improved property or ROW.
- HHW removal must be the legal responsibility of the applicant.
- HHW must be a result of a major disaster.

Leaner – A tree is considered hazardous and defined as a “leaner” when its present state is caused by a disaster, the tree poses a significant threat to the public, and the tree is six inches in diameter or greater when measured two feet from the ground or at chest height. The current eligibility requirements for leaning trees according to FEMA Publication 325 are as follows:

- The tree has more than 50 percent of the crown damaged or destroyed (requires written documentation from an arborist).
- The tree has a split trunk or broken branches that expose the heartwood.
- The tree has fallen or been uprooted within a public use area.
- The tree is leaning at an angle greater than 30 degrees.

Monitoring Firm – The monitoring firm is an organization under contract with the county to monitor debris removal operations. The monitoring firm ensures the debris removal contractor is working within the scope of work contracted by the county and documents debris removal operations.

Robert T. Stafford Disaster Relief and Emergency Assistance Act – The Stafford Act provides the authorization of the PA Program. The fundamental provisions of this act are as follows:

- Assigns FEMA the authority to administer federal disaster assistance
- Defines the extent of coverage and eligibility criteria of the major disaster assistance programs
- Authorizes grants to the states
- Defines the minimum federal cost-sharing levels

Vegetative Debris – As outlined in FEMA Publication 325, vegetative debris consists of whole trees, tree stumps, tree branches, tree trunks, and other leafy material. Vegetative debris will largely consist of mounds of tree limbs and branches piled along the public ROW by residents and volunteers. Current eligibility criteria include the following:

- Debris must be located within a designated disaster area and be removed from an eligible applicant's improved property or ROW.
- Debris removal must be the legal responsibility of the applicant.
- Debris must be a result of a major disaster.

White Goods – As outlined in FEMA Publication 325, white goods are defined as discarded household appliances such as refrigerators, freezers, air conditioners, heat pumps, ovens, ranges, washing machines, clothes dryers, and water heaters. White goods can contain ozone-depleting refrigerants, mercury, or compressor oils that the federal Clean Air Act prohibits from being released into the atmosphere. The Clean Air Act specifies that only certified technicians can extract refrigerants from white goods before they can be recycled. The eligibility criteria for white goods are as follows:

- White goods must be located within a designated disaster area and be removed from an eligible applicant's improved property or ROW.
- White goods removal must be the legal responsibility of the applicant.
- White goods must be a result of a major disaster.

Section 1

INTRODUCTION

Background

Cabarrus County (County) is located in the southern Piedmont region of North Carolina. It is bordered to the west by Mecklenburg County, to the southeast by Union County, to the north by Rowan County, to the northwest by Iredell County, and to the east by Stanly County. The County is just north of the state line with South Carolina and the City of Charlotte. There are five municipal areas in the County: Concord, Kannapolis, Mt. Pleasant, Harrisburg, and Midland. Cabarrus County is located in Area 11 of the Western Branch, North Carolina Emergency Management and in FEMA Region IV. The County encompasses approximately 365 square miles, most of which is land and a small portion of which is water. Major traffic arteries and thoroughfares include Interstate 85; U.S. Highways 52, 29, and 601; and State Highways 73, 24, 27, 200, 49, and 3. The County is also home to the Concord Regional Airport, Charlotte Motor Speedway, and Concord Mills, which is the biggest tourist attraction in the state. In 2010, the U.S. Census Bureau estimated Cabarrus County's population was approximately 178,011. The County seat is the City of Concord.

The geographic location of the County makes it extremely vulnerable to tornadoes and high wind events as well as winter ice storms. In the past, the County has experienced a variety of debris-generating events, including ice storms, tornadoes, and flooding. There are a number of municipalities located within the County that have historically handled storm-related debris without assistance from the County. It is assumed that this will continue for future events as well. However, the County will be available to assist individual municipalities upon request. Cabarrus County municipalities, with the exception of the City of Concord and the City of Kannapolis, have signed on to the Cabarrus County Emergency Operations Plan and other emergency planning documents. For these cities, the County maintains responsibility for disaster debris operations and activities. Over the last 10 years, disasters including flooding, severe weather (thunderstorms, winter storms), and wildfires have resulted in disaster declarations. Presidential disaster declarations have included Winter Storm 2000 (DR 1312), Severe Ice Storm 2002 (DR 1448), and Tropical Storm Frances 2004 (DR 1546). Other recent incidents and disasters include annual small-scale wind and storm events. With this in mind, the County has established a plan to quickly and effectively respond to future debris-generating events.

Purpose

The County approved the preparation of this disaster debris management plan (DDMP) to better respond to future emergency debris removal situations. The purpose of this DDMP is to outline the components critical to the success of a debris removal operation in the County. This DDMP provides key information that will help the County coordinate and effectively manage a turnkey debris removal effort if the County were affected by a major, debris-generating event. Central to the success of debris removal operations is the County's understanding of the following elements prior to a debris-generating event:

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Parties involved and their roles and responsibilities regarding the debris removal operation

Rules, regulations, and guidelines enacted by the Federal Emergency Management Agency (FEMA) and other agencies governing debris removal

Process of collecting debris

Disposal of debris, including where the debris will be staged for reduction and/or hauled for final disposal

Authority

The Cabarrus County DDMP is developed, promulgated, and maintained under the following county, state, and federal statutes and regulations:

- Emergency Management Act of 1977, NC General Statutes 166-A.
- Code of Ordinances, Cabarrus County, Chapter 22, Article II, Emergency Management
- Code of Ordinances, Cabarrus County, Chapter 22, Article III, State of Emergency
- Code of Ordinances, Cabarrus County, Chapter 26, Emergency Services
- Code of Ordinances, Cabarrus County, Chapter 38, Article I, Flooding
- Local Mutual Aid Agreements and Understandings
- NC Executive Order 39, Implementation of the Emergency Operations Plan, Current Approved/Adopted Revision.
- NC Executive Order 43 Establishment Of Statewide Citizen Corps Council
- Robert T. Stafford Disaster Relief and Emergency Assistance Act, PL 100-707, signed into law November 23, 1988; amended the Disaster Relief Act of 1974, PL 93-288.
- National Response Framework, Department of Homeland Security, Current Approved/Adopted Revision.
- National Incident Management System, Department of Homeland Security, Current Approved/Adopted Revision.
- Guide for All-Hazard Emergency Operations Planning (SLG 101), Department of Homeland Security, Current Approved/Adopted Revision.
- US Code, Title 42, Chapter 103, Comprehensive Environmental Response, Compensation, and Liability (CERCLA) and Title III of Superfund Amendments and Reauthorization Act of 1986 (SARA).
- Homeland Security Presidential Directive 8, “National Preparedness”, Current Approved/Adopted Revision.
- National Incident Management System (NIMS) Guide for County Officials, National Association of Counties, Current Approved/Adopted Revision.
- NC Emergency Operations Plan, NC Division of Emergency Management, Current Approved/Adopted Revision.

- Cabarrus County municipalities with the exception of the City of Concord and the City of Kannapolis have signed on to the Cabarrus County Emergency Operations Plan and other emergency planning documents. For these cities, the County coordinates responsibility for disaster debris operations and activities.

Regulatory and Technical Assistance

State Agencies

North Carolina Department of Environmental Quality (NCDEQ)

- Issues emergency permits for debris incineration and advice and assistance for debris disposal
- Provides assistance on potential environmental impacts of debris removal and disposal operations
- Reviews post-disaster debris management site (DMS) plan applications

North Carolina Emergency Management (NCEM)

- Coordinates statewide disaster response activities
- Interfaces with FEMA in efforts to obtain federal disaster declarations and to ensure compliance with the FEMA Public Assistance (PA) Program

North Carolina Department of Health and Human Services (NCDHHS)

- Oversees health and safety issues pertaining to debris removal and disposal operations

North Carolina Department of Transportation (NCDOT)

- Designs, constructs, and maintains the state highway system
- Acts as the lead agency for emergency roadway debris clearance, removal, and disposal efforts along state and federal highways

North Carolina State Historic Preservation Office (NCHPO)

- Reviews any historical issues pursuant to Title 36 of the Code of Federal Regulations (36 CFR) Part 800.12

North Carolina Natural Heritage Program (NCNHP)

- The program inventories, catalogues, and supports conservation of the rarest and the most outstanding elements of the natural diversity of the state.
- During a debris-generating event, the Natural Heritage Program will be responsible for assisting in protecting and preserving the natural communities impacted by the disaster.

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- The Natural Heritage Program will also assist other state departments in the review and approval of debris management sites.

North Carolina Department of Agriculture

- Provides assistance regarding the disposition of dead animals

North Carolina Department of Agriculture - Forestry Service

- Assists with initial debris clearance and 70 hour push activities, upon request
- Assists with debris forecasting and aerial flyovers
- Consultation on tree removal, surgery and other issues

Federal Agencies

Federal Emergency Management Agency (FEMA)

- Provides guidance relative to debris eligibility and the reimbursement process
- Assists the County in FEMA Project Worksheet (PW) development

Federal Highway Administration (FHWA)

- Funds debris clearance on federal highways through the FEMA Emergency Relief (ER) Program

Natural Resources Conservation Service (NRCS)

- Administers the Emergency Watershed Protection (EWP) Program, which provides for debris cleanup related to runoff retardation and soil erosion prevention
- Guidance on soil types most conducive for disposal of animal carcasses

General Approach and Assumptions

This DDMP provides a coordinated response blueprint for the County, the County's monitoring firm (TBD), and the County's debris removal contractor (TBD). To help the County quickly recover from a debris-generating event, the approach of this plan will be to outline the following:

- Pre-event preparations during normal operations
- Operations immediately prior to a known threat
- Operations following a disaster
- Demobilization and closeout following completion of debris removal efforts

Concerning debris removal efforts, this plan assumes the following:

- The County's greatest threat of a debris-generating event is in the form of a severe weather system such as a tornado or ice storm.

- The response and recovery activities outlined in this DDMP are designed to address two types of debris-generating scenarios:
 - **Scenario 1:** Medium-Probability – High-volume
 - **Scenario 2:** Medium-Probability – Low-volume
- If the managing debris caused by a debris-generating event exceeds the County’s capability to address with internal resources, the County may activate one or more debris removal contractors.
- Following a debris-generating event, the County may activate a monitoring firm.
- If warranted, the County will request federal assistance from FEMA through the state.
- The County will operate under the current FEMA PA Program guidelines for reimbursement as described in the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act). Changes to the FEMA PA Program or published program-specific guidance may result in revision of this DDMP or its implementation.

Situation

Event Description

For the purposes of the DDMP, two scenarios have been developed based on maximum impact, ability to respond, and event frequency.

Scenario 1: Medium-Probability – High-Volume

This scenario focuses on a debris-generating event that may significantly affect a large portion of the North Carolina Piedmont region. In this case, resources are severely strained throughout the entire region and a presidential disaster declaration for Category A is immediate or imminent due to the following:

- Long-term impacts to roads, bridges, and rail lines
- Composition of debris is primarily vegetative with limited amounts of construction and demolition (C&D) debris

Post-event debris estimates have the potential to exceed 1,000,000 cubic yards (CY); likely that this type of event would exceed the County’s capacity to conduct debris removal and management with internal resources.

This scenario is a severe ice storm event with ice accumulations nearing or exceeding an inch. The period for debris removal and demobilization may last from three months to one year and beyond.

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Scenario 2: Medium-Probability – Low-Volume

This scenario focuses on a medium-probability debris-generating event that may affect portions of the County or large areas of the County. This event may be characterized as one that does not immediately receive a presidential disaster declaration for Category A due to the following:

- Short-term impacts to roads, bridges, and rail lines
- Composition of debris includes vegetative and C&D debris as well as hazardous household waste (HHW) and white goods

The project planning team determined that the most likely event causing a low to moderate amount of debris in the County would be a tornado. In the majority of tornado events, debris estimates do not have the potential to exceed 100,000 CY. During more powerful storm events, there is a likelihood of 100,000 CY or more of storm debris. The period for cleanup can last from weeks to months, and in some cases, years. Depending on the severity of the event, debris management site locations may or may not be operational. Larger tornado events will likely exceed the County's capacity to pick up and haul the debris internally.

The National Oceanic and Atmospheric Administration (NOAA) National Weather Service uses the Enhanced Fujita (EF) Scale to rate the severity of tornadoes. Table 1-1 describes the EF Scale and associated wind speed categories.

Table 1-1¹
Enhanced Fujita (EF) Scale²

Fujita Scale			Derived EF Scale		Operational EF Scale	
F Number	Fastest ¼ Mile (mph)	3 Second Gust (mph)	EF Number	3 Second Gust (mph)	EF Number	3 Second Gust (mph)
0	40-72	45-78	0	65-85	0	65-85
1	73-112	79-117	1	86-109	1	86-110
2	113-157	118-161	2	110-137	2	111-135
3	158-207	162-209	3	138-167	3	136-165
4	208-260	210-261	4	168-199	4	166-200
5	261-318	262-317	5	200-234	5	Over 200

¹ Source: National Weather Service, <http://www.nws.noaa.gov/>

² The Enhanced Fujita Scale still is a set of wind estimates (not measurements) based on damage. It uses 3-second gusts estimated at the point of damage based on a judgment of levels of damage to various indicators. These estimates vary with height and exposure. The 3-second gust is not the same wind as in standard surface observations. Standard measurements are taken by weather stations in open exposures, using a directly measured "1-minute mile" speed.

Debris Volume Estimate

The debris volume generated by an event will depend on the type of event. Table 1-2 describes the disasters that may affect the County. The table also illustrates the probability of the disaster occurring, the nature of the debris generated, the debris generation potential, and the widespread impact throughout the County.

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**Table 1-2
Potential Disasters**

Type of Event	Probability ³	Nature of Debris	Debris Generation Potential ⁴	Widespread Impact
Ice Storm	Medium	Vegetative Limited C&D Limited HHW	Medium to High	High
Tornado	Medium	C&D Vegetative HHW White goods	Low to Medium	Medium
Flood	Medium	C&D Vegetative HHW White goods	Low	Low to Medium

Debris Estimate – Scenario 1 (Ice Storm)

To generate debris estimates for scenario 1, the high-volume debris event is assumed to be a major ice storm affecting the County and region. A storm of this magnitude has the greatest potential to generate debris across a majority of the County.

**Table 1-3
Cabarrus County Historical Ice Storm Events**

Location or County	Date	Type	Injuries	Property Damage (in dollars)
Countywide	02/10/1994	Ice Storm	0	0 K
Countywide	02/02/1996	Ice Storm	0	10 M
Countywide	12/24/1998	Ice Storm	0	0 K
Countywide	01/29/2000	Ice Storm	0	0 K
Countywide	12/04/2002	Ice Storm	0	2 M

³ Likelihood of an event to occur over a period of time. A low probability event describes an event that may occur every 100–500 years, a medium-probability event describes an event that may occur every 50 years, and a high probability event describes an event that may occur every 10–20 years.

⁴ The ability of an event to produce debris based upon historical data on each event. High debris generation potential describes an event that generates more than 1 million CY of debris, medium debris generation potential describes an event that generates more than 100,000–1 million CY of debris, and low debris generation potential describes an event that generates approximately 50,000–100,000 CY of debris.

Debris Forecast Formula

Table 1-3 compares historical data from ice storms that have affected areas most similar to Cabarrus County. The formula below was used to forecast the amount of debris that could be generated by a high-volume debris event.

Exhibit 1-1

Scenario 1 – Debris Forecast Formula

Average CY per Household = Total Amount of Debris Collected (CY) / Estimated Number of Households

Historical Total Average = Sum of Average CY per Household / Number of Event/Locations

High-Volume Debris Estimate = Estimated Number of Households in Cabarrus County x Historical Total Average

Table 1-4

Scenario 1 – Historical Debris Data Analysis

Event/Location	Estimated Number of Households	Total Amount of Collected Debris (CY)	Average CY Per Household
Norman, Oklahoma	38,834	536,000	13.8
Greene County, Missouri (unincorporated)	33,168	553,486	16.7
Springfield, Missouri	64,691	1,408,133	21.8
Raleigh, North Carolina	112,608	637,000	5.6
Tulsa, Oklahoma	165,743	2,670,030	16.1
Historical Total Average CY per Household			14.8

Table 1-5

Scenario 1 – Debris Forecast Analysis

Estimated Number of Households	Historical Total Average CY per Household	Debris Estimate (CY)
71,937	14.8	1,064,668

The estimated impact of a severe ice storm on the County is approximately 1,064,668 CY of debris.

Debris Estimate – Scenario 2 (Moderate Tornado)

To generate debris estimates for scenario 2, the medium-probability, low-volume debris-generating event is assumed to be moderate tornado. Selection of a moderate tornado as a medium-probability, low-volume debris-generating event was based on historical data of tornado

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activity within the County. Table 1-5 details all tornado events since 1950, according to the National Climatic Data Center.

Table 1-6
Cabarrus County Historical Tornado Activity

Location or County	Date	Magnitude	Injuries	Property Damage (in dollars)
Cabarrus County	07/27/1950	F1	0	3 K
Cabarrus County	11/28/1954	F1	0	25 K
Cabarrus County	07/25/1965	F1	0	25 K
Cabarrus County	05/28/1973	F0	0	25 K
Cabarrus County	05/28/1973	F0	0	25 K
Cabarrus County	06/06/1975	F0	0	3 K
Cabarrus County	08/23/1983	F1	0	2.5 M
Cabarrus County	03/10/1992	F1	0	25 K
Georgeville	09/29/1999	Funnel Cloud	0	0 K
Georgeville	09/29/1999	Funnel Cloud	0	0 K
Rimer	05/14/2006	F1	3	5 K
West Concord	05/11/2008	F0	0	0 K
Watts Crossroads - Kluttz Road	12/11/2008	F1	0	0 K
Harrisburg	03/03/2012	EF2	0	4.6 M

Debris Forecast Formula

The forecasted amount of residential debris in the County is based on the following formula for a totally destroyed household as described in section 6 of FEMA 325.⁵ An estimate of a one-story, single-family home in Cabarrus County that is approximately 1,500 square feet (30 feet by 50 feet) is used for this calculation.

⁵ July 2007 version

Exhibit 1-2
Totally Destroyed Household Formula
 $L \times W \times S \times 20\% \times VCM = \text{CY of debris}$
 $30' \times 50' \times 1 \times 0.20 \times 1.3 = 390 \text{ CY of debris}$

L = Length of building in feet

W = Width of the building in feet

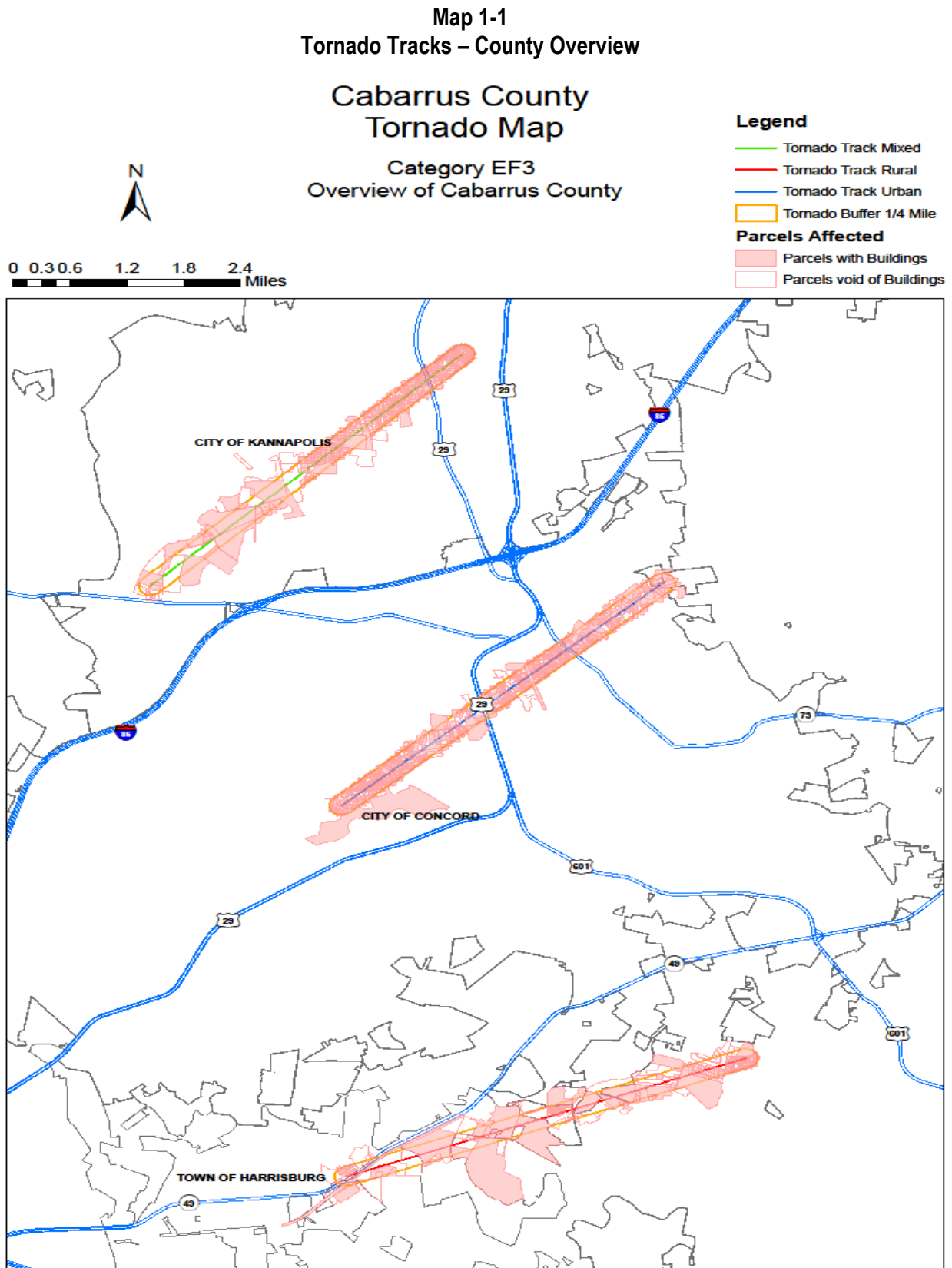
S = Height of building expressed in stories

20% = Reduction factor due to airspace in a single-family home

VCM = Vegetative cover multiplier⁶

Cabarrus County selected three geographic areas with varying characteristics (rural, mixed use, and urban) to conduct debris forecast models. For each of the three tornado debris forecast models, the same strength, time on ground and width of tornado was overlaid onto a county parcel map. The number of impacted parcels (with buildings) was multiplied by the average amount of cubic yards of debris generated from a totally destroyed household based on the formula in Exhibit 1-2. Percentages have been calculated to account for totally destroyed, heavily damaged, and partially damaged buildings for each of the three debris forecast models. The debris forecast for each of the three models is presented below.

⁶ Medium vegetative cover multiplier is assumed.



Debris Forecast Model 1 – Rural Area

Map 1-2
Tornado Track – Rural Area

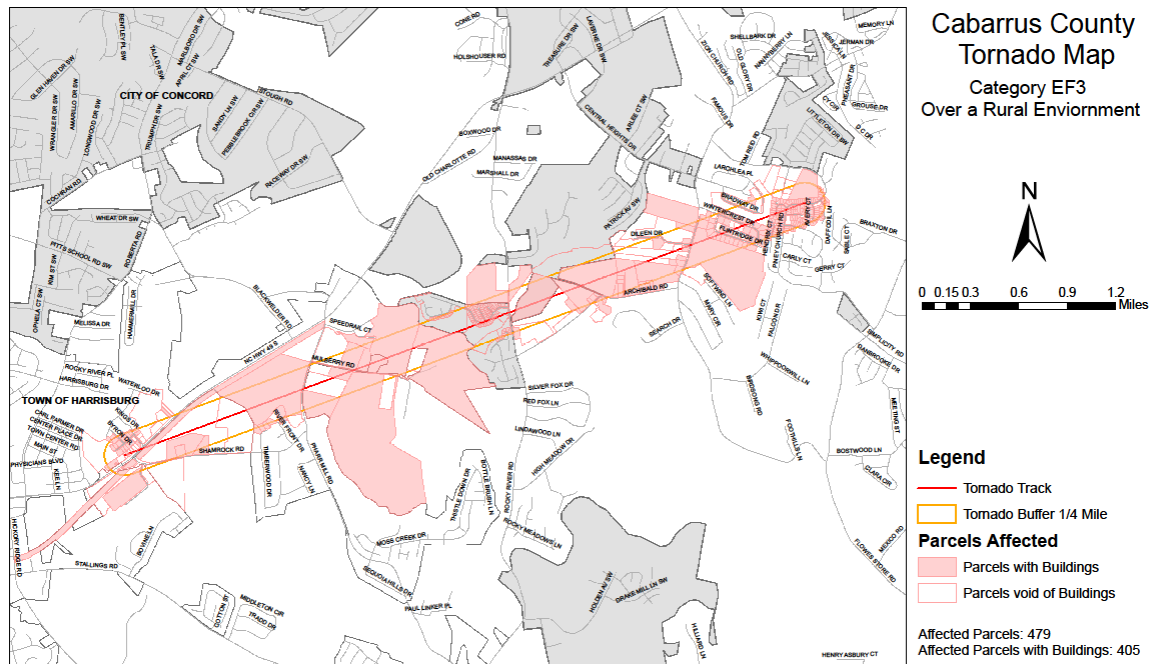


Table 1-7
Model – 1 Debris Forecast

Total Buildings Impacted – 405				
Amount of Damage	% of Buildings Impacted	# of Impacted Buildings	Avg. CY Per Parcel	Total CY
Partially Damaged	70%	283	130 CY	36,790 CY
Heavily Damaged	15%	61	260 CY	15,860 CY
Totally Destroyed	15%	61	390 CY	23,790 CY
Total	100%	405		76,440 CY

Section 1

Debris Forecast Model 2 – Mixed Use Area

Map 1-3
Tornado Track – Mixed Use Area

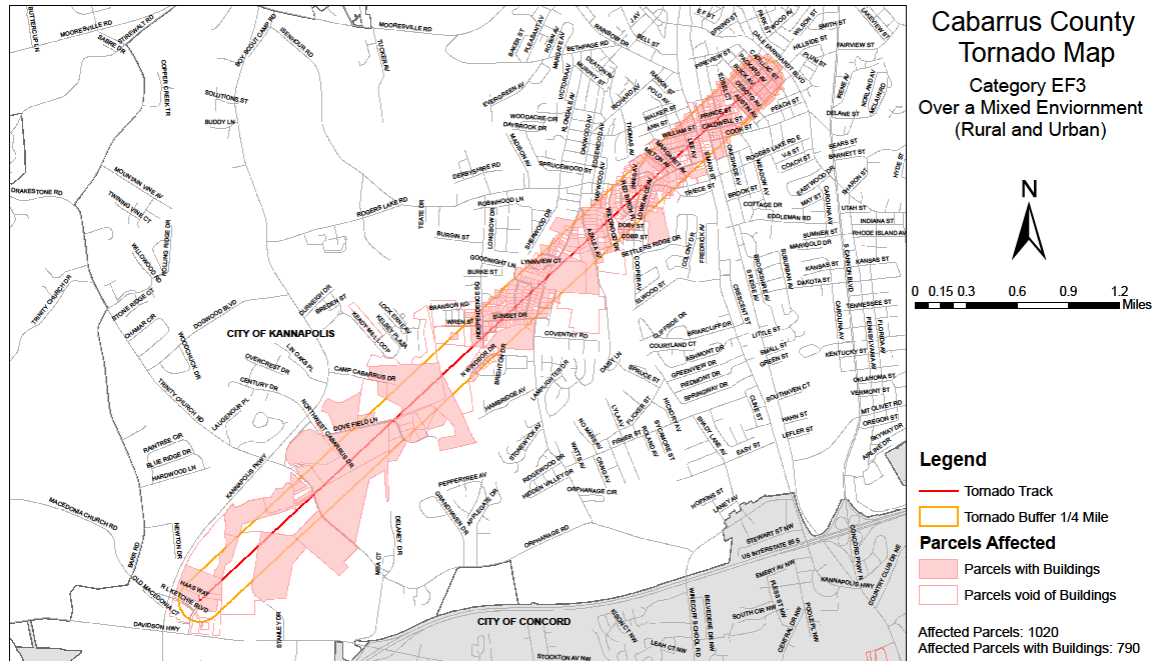


Table 1-8
Model – 2 Debris Forecast

Total Buildings Impacted – 790				
Amount of Damage	% of Buildings Impacted	# of Impacted Buildings	Avg. CY Per Parcel	Total CY
Partially Damaged	50%	395	130 CY	51,350 CY
Heavily Damaged	30%	237	260 CY	61,620 CY
Totally Destroyed	20%	158	390 CY	61,620 CY
Total	100%	790		174,590 CY

Debris Forecast Model 3 – Tornado Track – Urban Area

Map 1-4
Tornado Track – Urban Area



Table 1-9
Model – 3 Debris Forecast

Total Buildings Impacted – 1,156				
Amount of Damage	% of Buildings Impacted	# of Impacted Buildings	Avg. CY Per Parcel	Total CY
Partially Damaged	20	231	130 CY	30,030 CY
Heavily Damaged	60	694	260 CY	180,440 CY
Totally Destroyed	20	231	390 CY	90,090 CY
Total	100%	1,156		300,560 CY

Flooding Disaster Debris Potential

Cabarrus County has also experienced disaster debris impacts from flooding events. Estimating the disaster debris potential for flooding events is difficult because there are a variety of factors that cannot be predicted. Flooding typically occurs on an annual basis across the County with minimal impacts. During more widespread flooding events, storm-related debris will likely not exceed the estimated debris from the rural tornado debris forecast model above 76,570 CY.

Dead Animal Disposal

During Hurricane Floyd in 1999, many coastal North Carolina communities were forced to determine a course of action for dead animal disposal. The sheer volume of dead swine, poultry and cattle did not allow individual farm owners to dispose of animal carcasses on their own. Disposal efforts were coordinated by the North Carolina Department of Agriculture and the North Carolina State Veterinarian. As a result, the state developed the North Carolina Animal Burial Guidelines in 2000. This guidance was developed to assist local communities in disposing of large quantities of dead animals.

County Debris Removal Capacity

During smaller, localized debris-generating events, the County will likely handle debris internally by staging and reducing at the County landfill. In past events, debris operations lasted from weeks to a few months. During events with disaster debris approaching 100,000 CY, The County will utilize internal resources for debris removal until the amount of debris generated exceeds its capabilities. At that point, the County will rely on assistance from surrounding jurisdictions as well as contract haulers and monitors. These events can require months to years of varying levels of debris operations. A list of resources that may be available for debris removal purposes is located in appendix M. The contingency factors identified below should also be considered when determining the County's ability to handle disaster debris internally.

Contingency Factors

The following factors may have a significant impact on the length of time debris removal operations continue and the County's decision to activate pre-positioned debris removal contractors, mutual aid agreements, and a debris monitor:

- Localized or widespread event
- Severity of the event (effects on life and property, etc.)
- Estimated amount of debris
- County's loading capacity (ability to load debris into trucks and trailers)
- County's hauling capacity (the ability to move debris to DMS locations)
- Composition of debris
- Damage to roadways and rail lines
- Citizen perception and opinion

- Staff time and availability
- Financial constraints
- Political pressure and implications
- Equipment repairs
- DMS mobilization and demobilization

Section 2

ROLES AND RESPONSIBILITIES

National Incident Management System Compliance

The National Incident Management System (NIMS) provides a systematic, proactive approach to guide departments and agencies at all government levels, in nongovernmental organizations, and in the private sector to work seamlessly to prevent, protect against, respond to, recover from, and mitigate the effects of incidents—regardless of cause, size, location, or complexity—in order to reduce the loss of life and property and harm to the environment. FEMA requires debris and Emergency Management personnel to possess a baseline understanding of NIMS concepts and principles.

For events that exceed the County’s capacity for debris removal and management operations, the County can elect to supplement its resources by requesting external assistance through the Emergency Management Assistance Compact (EMAC).

Administration and Logistics

All county departments and agencies will maintain records of personnel, equipment, and material resources used to comply with this disaster debris management plan (DDMP). Such documentation will be used to support reimbursement from any state or federal assistance that may be requested or required.

All county departments and agencies supporting debris operations should ensure 12-hour staffing capability during implementation of this plan if the emergency or disaster requires or as directed by the Debris Manager.

The Emergency Management Coordinator will be responsible for the annual review of this plan. It will be the responsibility of each tasked department and agency to update its respective portion of the plan, ensure any limitations and shortfalls are identified and documented, and develop work-around procedures if necessary.

The review will consider such items as:

- Changes in mission
- Changes in concept of operations
- Changes in organization
- Changes in responsibility
- Changes in desired contracts
- Changes in pre-positioned contracts
- Changes in priorities

Lead Departments

In order to prevent the duplication of effort following a disaster, the roles and responsibilities of county departments as related to debris removal and management must be clearly defined prior to a disaster. The purpose of this section is to outline the roles and responsibilities various county departments will undertake prior to, during, and following a debris removal operation. Additional roles and responsibilities related to a disaster may also be identified in the Cabarrus County Emergency Operations Plan (EOP). The organization structure for debris management is described in Figure 2-1. The purpose of the organizational chart is to further clarify roles and facilitate communication following a disaster.

Emergency Management

The Emergency Management Coordinator serves as the Debris Manager for all debris-generating events. Emergency Management is responsible for operating the emergency operations center (EOC) as necessary to coordinate and maintain essential county services. Depending on the severity of the event, it is likely that the EOC will remain activated for a large portion of the debris removal operation. The Emergency Management Coordinator serves as the primary point of contact for federal and state agencies throughout recovery operations. Additionally, the Emergency Management Coordinator will work together with the County Manager and Public Information Officer (PIO), as appropriate to meet the public information needs of the community. The Emergency Management Coordinator also collaborates with Infrastructure & Asset Management (IAM), Fire Departments, and private contractors to coordinate and manage roadway clearance, debris removal, and reduction operations. In addition to the Emergency Management Coordinator, the department is also staffed with an Emergency Management Planner and Executive Specialist.

Responsibilities of Emergency Management include but are not limited to the following:

- Coordinating with designated Cabarrus County departments prior to and after an event
- Coordinating damage assessments and debris volume forecasting
- Operating the EOC
- Acting as the County's representative in discussions and meetings with external agencies (utility companies, municipalities, etc.)
- Maintaining responsibility of contractor work and payments
- Leading the development of FEMA Project Worksheets (PW) following a disaster with assistance from Finance, individual municipalities, and other participating departments
- Communicating and meeting with various state and federal agencies and representatives
- Coordinating with the hauling and monitoring firm with regard to contractor invoice reconciliation
- Managing data for debris related activities
- Providing the County Manager and elected officials with information regarding the progress of the debris removal effort

Emergency Management also leads logistical operations prior to and following a disaster. Emergency Management responsibilities are to facilitate debris removal, reduction, and disposal activities. These activities include, but are not limited to the following:

- Activating monitoring firm and debris removal contractors
- Overseeing all private contractors, including hauling and monitoring firms, throughout the duration of the cleanup process

Fire Marshal

General roles and responsibilities of the Fire Marshal's Office include fire prevention, fire inspections (condemnation), code enforcement, building code review, fire investigations and fire education. Additionally, as a division of Emergency Management, the Fire Marshal's Office is also responsible for assisting with Emergency Management activities to include, hazardous materials spills, flooding and other incidents and disasters. The Fire Marshal's Office includes the Fire Marshal and (3) Assistant Fire Marshal's. The Fire Marshal serves as the primary backup for the Emergency Management Coordinator.

During debris-generating events, the Fire Marshal's Office assists with the following:

- Coordinating local fire departments and their response activities; this includes the coordination and direction of initial roadway clearance and 70-hour push activities
- Directing damage assessment teams for the County
- Directing and coordinating open burning and air curtain incineration operations at identified debris management sites
- Assisting with the coordination of county resources, resource requests, and general assistance of Emergency Management

Finance Department

The Finance Department is responsible for the fiscal operations of the County. This includes budgeting, contracting, and purchasing for the County. Additional roles include collecting cash and making deposits, paying invoices, and handling payroll. The Finance Director and Purchasing Agent serve as representatives in the EOC, when activated. The Finance Department also oversees the County's Pcard system. Department directors and some additional county employees (dependent on job function) are issued Pcards with a \$1,000 limit. The Finance Department has the ability to increase individual Pcard limits remotely following a debris-generating event.

Following a debris-generating event, the Finance Department assists the County as follows:

- Tracking finances and financial documents
- Procuring services
- Aiding in reporting and data collection
- Coordinating FEMA reimbursement and event documentation activities. This includes the following:

Section 2

- Collecting data from county departments
- Requesting certain information needed by the state and/or FEMA
- Coordinating with and providing information to the state and/or FEMA

Infrastructure & Asset Management (IAM)

Cabarrus County IAM consists of the following divisions: Building Maintenance, Sign Maintenance, Facility Services, Fleet Maintenance, and Grounds Maintenance. This department is responsible for planning, directing, and providing maintenance and repair to county-leased and owned facilities, grounds, and vehicles.

- Building Maintenance is responsible for all county maintained facilities, the Cabarrus Arena & Events Center, communications towers and the local community college facilities. This division is also responsible for facility generators used throughout the County.
- Grounds Maintenance is responsible for maintaining trees, irrigation systems, athletic fields, and weed control within county parks.
- Facility Services provides janitorial services for all county-owned and leased properties.
- Fleet Maintenance maintains over 500 pieces of equipment for the following departments:
 - Sheriff's Office
 - EMS
 - Department of Health & Human Services
 - Emergency Management
 - IAM
 - Active Living & Parks Department
- Solid Waste owns and operates a construction and demolition landfill for the County that has been identified as the main debris management site and final disposal area for storm-related debris.

During a debris-generating event, the IAM director serves in the County EOC and directs departmental resources and operations.

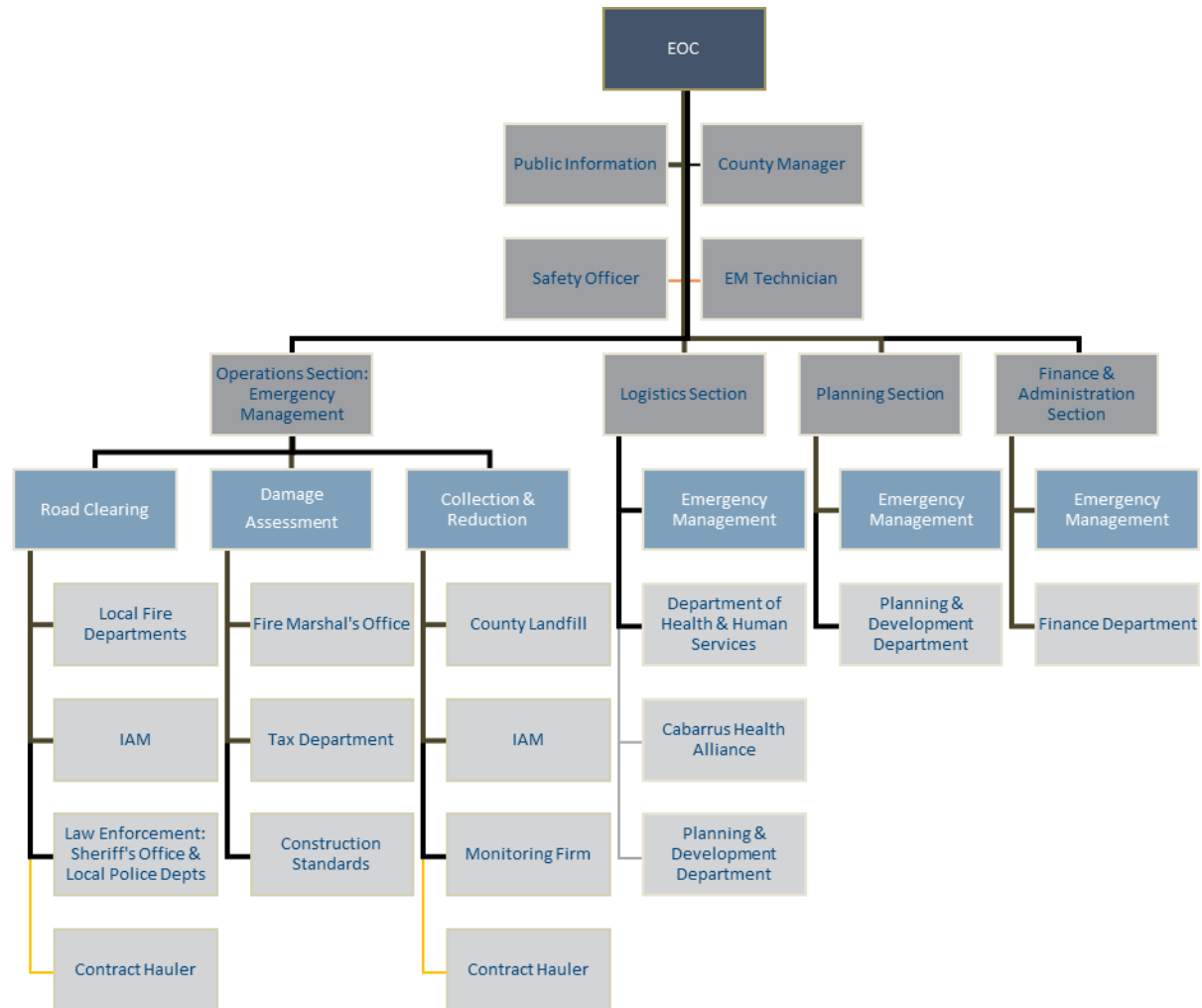
Active Living & Parks Department

The Cabarrus County Active Living & Parks Department focuses on the development and operation of approximately 604 acres of land that is either owned, leased or operated by the County. During a debris-generating event, the Active Living & Parks Department has a limited role; however, county parks locations are identified as potential citizen drop-off locations. Additionally, the Active Living & Parks Department personnel/staff could be called upon to assist IAM and other departments in debris operations and initial clearance activities. Department personnel may also be called upon to assist with some initial damage assessment activities as well.

Planning & Development Department

The Planning and Development Department is made up of the Community Development, Construction Standards, Planning, Soil and Water Conservation, and Zoning Divisions. During a debris-generating event the Planning and Development Department assists with damage assessment and initial debris forecasting activities by utilizing debris forecasting and damage assessment software as well as geographic information system (GIS) and mapping capabilities. The department may also assist in the coordination and approval of debris operations sites through the North Carolina Department of Environmental Quality (NCDEQ). Additionally, personnel from the Construction and Standards Division can assist with initial debris clearance activities and debris forecasting. Personnel from the Construction Standards Division serve on the County damage assessment teams.

**Figure 2-1
County Debris Management Organizational Chart**



Interdepartmental Coordination

Along with Emergency Management and the other lead departments identified above, additional county departments will have specific duties that will assist in the recovery effort. An account of roles and responsibilities for support departments are identified in the following section.

Municipalities

With the exception of the City of Concord and the City of Kannapolis, municipalities are included in the Cabarrus County Emergency Operations Plan. The County will be responsible for disaster debris-related operations in those municipalities. Depending on the event, Concord and/or Kannapolis may request assistance in debris operations from the County and vice-versa. Other municipalities also have Public Works Departments, which have assisted with storm debris within town limits in the past. Roles and responsibilities for municipal Public Works Departments are identified below.

Local Fire Departments

Local fire departments located within Cabarrus County will have several areas of responsibility, including fire suppression, emergency medical services, building inspections, public fire safety, and hazard mitigation. Local fire departments may also be called up to assist with initial damage assessment activities and reporting damage to buildings and infrastructure back to the Emergency Operations Center (EOC) or Emergency Management. During past events, fire departments have removed debris from roadways and assists property owners in removal of hazardous conditions. During wildfires, our members routinely remove vegetation as needed in the suppression of the fire or protection of private property.

Cabarrus Health Alliance

The Cabarrus Health Alliance will have several responsibilities during a debris-generating event. Some of those responsibilities include checking the status of disposal and transfer sites and issuing instructions on how refuse must be prepared for disposal. This also includes the separation of garbage and rubbish. Other responsibilities include coordinating with county and state for the safe removal and disposal of debris. The Cabarrus Health Alliance will also be responsible for arranging safe temporary storage if necessary, monitoring for vectors, and providing guidance for hazardous and medical waste storage and disposal.

Information Technology/GIS

Information technology will be responsible for providing base response data for CAD software and creating new datasets as required. This department will also provide analysis as requested including pictometry. Information Technology will also be responsible for utilizing the permitting software Accela Wireless, which may be employed to perform field reporting damage assessment. Information Technology can also assist by coordinating with the Addressing Coordinator to maintain Address Repository database and accurate address and street centerline information.

Law Enforcement (Sheriff's Office and Local Police Departments)

Cabarrus County Law Enforcement entities will be responsible for preserving peace and order, preventing and detecting crime, apprehending offenders, and enforcing the law within Cabarrus County limits. Throughout the debris removal operation, Law Enforcement may support the security operations at the DMS as well as provide traffic control across the County and municipalities.

Public Information Officer

The Public Information Officer (PIO) will be responsible for developing and disseminating disaster debris information to the public, news media, county departments and agencies, and external partners. These activities should be in direct coordination with the County Manager, elected officials and the EOC (Emergency Management). Information releases may include but are not limited to debris volume estimates, impacted areas, debris clearance activities, hauling operations, citizen drop-off sites, and removal time line(s). The Public Information Officer will work with the EOC and departments represented in the EOC on developing and disseminating departmental specific information.

Risk Management

Risk Management will be responsible and instrumental in obtaining information relating to the safety of employees and the County's assets. Risk Management will be required to assist in obtaining the appropriate documentation for reporting claim(s) to the appropriate sources and addressing employee injuries if any. Risk Management may be required to address any legal issues that may arise from a debris-generating event and use intangible services such as risk assessments, insurance and other risk management mitigation/measures.

Municipal Public Works – Town of Harrisburg

On a daily basis, the department maintains the following responsibilities:

- Water system operations and maintenance
- Wastewater system operations and maintenance
- Transportation system operations and maintenance
- Residential yard waste and bulk item collection
- Fleet maintenance
- Storm water system operations and maintenance
- Engineering

During past debris events, the department has cleared and removed debris from street right-of-ways and assisted with the removal of other types of debris post-event. The department maintains the following debris-related equipment: mini-excavator, two backhoes, skid-steer loader, three dump trucks, and a light tower.

Municipal Public Works – Town of Midland

The Town of Midland Public Works coordinates debris management responsibilities with the Midland Volunteer Fire and Rescue, Inc. (the Town of Midland Contract with MVFD for Emergency Management). If the Town of Midland needs to manage isolated debris-clearing instances, it will be responsible for either utilizing a contractor or seeking assistance from fellow government entities (i.e. City of Locust, Cabarrus County, and City of Concord).

Municipal Public Works – Town of Mt. Pleasant

On a daily basis, the department maintains existing infrastructure, sewer lines, water lines, and storm water system from blockage in catch basins to outlet structures. Staff runs daily work orders for water cut-ons, cut-offs to meter reads, etc. The department also maintains equipment on an ongoing basis. The department maintains two chain saws, one tandem dump truck, one three-quarter ton dump truck, two backhoes, and four on call personnel.

During debris-generating events, the town picks up trees limbs and any debris in public streets within the town limits. Following removal of debris from public streets, the department assists residents with debris removal from the right-of-way. The department also assists in damage assessment activities. The department coordinates with NCDOT and the Town of Mt. Pleasant Fire Department with downed power lines and blocked roads (part of standard operating procedures).

Cooperative Extension

The Cooperative Extension will be responsible for developing and implementing educational measures to relay to the public during a debris-generating event. The department will also assist agricultural producers with concerns that have the potential to impact the community if not met.

Tax Administration

Tax Administration during a debris-generating event will be responsible for monitoring all activities related to the disaster and maintaining all maps and documents that relate to land and properties.

North Carolina Department of Agriculture - Forestry Service

The local North Carolina Forestry Service office has identified that they would assist the county with initial debris clearance activities (70-hour push). The division has access to heavy equipment that could be utilized to push debris off from the roadways. Division representatives will coordinate with emergency management (and/or the EOC) to determine priorities and tasks. Additionally, the division has also identified that they can assist the county with some of the initial debris forecasting estimates. The division has access to aircraft that can be used for aerial flyovers (fixed wing or helicopter) by request through the state office. The division has maps and information relevant to the county that would help identify heavily wooded areas and other possible high volume debris sites. Finally, the division can assist with consultation on tree removal, surgery and other issues.

Section 2

Table 2-1
County Departments' Roles and Responsibilities

Department/Division	Primary Roles/Responsibilities
Lead Departments	
County Manager	<ul style="list-style-type: none">▪ Provide the commissioners, elected officials, and the public with information regarding the progress of the debris removal effort.▪ Carry out the County's policies.
Emergency Management	<ul style="list-style-type: none">▪ Serve as Emergency Management Coordinator and Debris Manager.▪ Monitor potential threats that could affect the County.▪ Manage the EOC during incidents.▪ Designate PIO as appropriate.▪ Collaborate with county departments in the scheduling of any training activities and meetings regarding the issue of debris management.▪ Serve as primary contact for FEMA with regard to PW development.▪ Coordinate project worksheet development, supported by participating departments.▪ Coordinate with designated County departments prior to and following a disaster.▪ Act as the County's representative in discussions and meetings with external agencies including various state and federal agencies.▪ Serve as primary contact for debris monitoring firm with regard to contractor invoice reconciliation.▪ Emergency management coordinator to provide the County Manager, County Commissioners, and other elected officials with information regarding the progress of the debris removal effort.▪ Activate monitoring firm and debris removal contractors.▪ Oversee all private contractors through the duration of the cleanup process.▪ Maintain responsibility of contractor work and payments.▪ Manage data for debris related activities.
Fire Marshal's Office	<ul style="list-style-type: none">▪ Initiate emergency roadway clearing activities in the County following an event through local fire departments.▪ Assist Emergency Management with conducting damage assessments after an event.▪ Identify, document and secure road closures, flooding, low water crossing, etc.▪ Provide guidance relative to road maintenance authority▪ Tracking labor and equipment hours accrued during debris removal operations.

ROLES AND RESPONSIBILITIES

Department/Division	Primary Roles/Responsibilities
Finance Department	<ul style="list-style-type: none"> Track finances and financial documents. Provide procurement services. Assist in reporting and data collection. Coordinate with FEMA for reimbursement and event documentation activities to include: <ul style="list-style-type: none"> Collection of data from county departments Requesting certain information needed by the state and/or FEMA Coordinating with and providing information to the state and/or FEMA
Infrastructure & Asset Management (IAM)	<ul style="list-style-type: none"> The IAM Director will assist in the County EOC as a representative of the department. The IAM Director will direct departmental resources and operations.
Active Living & Parks Department	<ul style="list-style-type: none"> Active Living & Parks Department personnel/staff could be potentially called upon to assist the IAM and other departments in debris operations and initial clearing activities. Active Living & Parks Department personnel/staff could be potentially called upon to assist with initial damage assessment activities.
Planning & Development Department	<ul style="list-style-type: none"> Constructions Standards Personnel Serve on Damage Assessment Teams.
Interdepartmental Coordination	
Municipalities	<ul style="list-style-type: none"> Concord and Kannapolis will handle debris operations within city limits internally. They may request assistance from the County when internal capacity is exceeded. The Towns of Harrisburg, Midland, and Mt. Pleasant have historically handled small debris events internally. Other municipalities are included in the County's EOP; the County will be responsible for debris related activities.
Local Fire Departments	<ul style="list-style-type: none"> Suppresses fire at DMS. Provides emergency medical services.
Cabarrus Health Alliance	<ul style="list-style-type: none"> Check the status of disposal and transfer sites. Issue instructions on how refuse must be prepared for disposal to include the separation of garbage and rubbish. Coordinate with county and state for the safe removal and disposal of debris. Arrange safe temporary storage if necessary. Monitor for vectors. Provide guidance for hazardous and medical waste storage and disposal.
Information Technology/GIS	<ul style="list-style-type: none"> Provide base response data for CAD software.

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Department/Division	Primary Roles/Responsibilities
Information Technology/GIS	<ul style="list-style-type: none">▪ Create new datasets as required.▪ Provide analysis as requested in case a public disaster is declared through pictometry.▪ Perform field reporting damage assessment.
Law Enforcement	<ul style="list-style-type: none">▪ Assists in security at the DMS.
Public Information Officer	<ul style="list-style-type: none">▪ Develop and disseminate disaster debris information to the public, news media, Cabarrus County departments and agencies as well as external partners.▪ Develop and disseminate departmental specific information.
Risk Management	<ul style="list-style-type: none">▪ Obtain information relating to the safety of employees and the County's assets.▪ Address any legal issues.▪ Obtain the appropriate documentation for reporting claims to the appropriate sources.
Municipal Public Works – Town of Harrisburg	<ul style="list-style-type: none">▪ Clear and remove debris from street right of ways.▪ Remove construction and demolition waste post-event.
Municipal Public Works – Town of Midland	<ul style="list-style-type: none">▪ Coordinate debris management responsibilities with the Midland Volunteer Fire and Rescue.
Municipal Public Works – Town of Mt. Pleasant	<ul style="list-style-type: none">▪ Remove debris in public streets within the town limits.▪ Assist residents with debris removal from the right-of-way.▪ Assist in damage assessment activities.▪ Coordinate with NCDOT and Town Fire Department with downed power lines and blocked roads (part of standard operating procedures).
Cooperative Extension	<ul style="list-style-type: none">▪ Develop and implement educational measures to relay to the public.▪ Assist agricultural producers with concerns that have the potential to impact the community.

External Agencies

Following a disaster, federal, state, and other external agencies will be involved in the County's debris removal and management efforts. Table 2-2 summarizes the roles and responsibilities of outside agencies during the debris removal process.

Table 2-2
External Agencies Roles and Responsibilities

Department/Division	Primary Roles/Responsibilities	Point of Contact
State Agencies		
North Carolina Department of Agriculture	<ul style="list-style-type: none"> Provides assistance regarding the disposition of dead animals 	(919) 807-4300
North Carolina Forestry Service	<ul style="list-style-type: none"> Assist the county in initial debris clearance (70 hour push activities) Provide resources, personnel and equipment for initial debris clearance Provide assistance in initial debris volume forecasting 	
North Carolina Department of Environmental Quality (NCDEQ)	<ul style="list-style-type: none"> Issues emergency permits for debris incineration and advice and assistance for debris disposal Provides assistance on potential environmental impacts of debris removal and disposal operations 	(704) 663-1699
North Carolina Department of Health and Human Services (DHHS)	<ul style="list-style-type: none"> Oversees health and safety issues pertaining to debris removal and disposal operations 	(919) 707-5000
North Carolina Department of Transportation (NCDOT)	<ul style="list-style-type: none"> Designs, constructs, and maintains the state highway system Acts as the lead agency for emergency roadway debris clearance, removal, and disposal efforts along state and federal highways 	Division 10 (704) 983-4400 Local County Maintenance (704) 436-9316
North Carolina Emergency Management (NCEM)	<ul style="list-style-type: none"> Coordinates disaster response activities statewide Interfaces with FEMA in efforts to obtain federal disaster declarations and ensure compliance with the FEMA Public Assistance (PA) Program 	State EOC (919) 733-3300
North Carolina State Historic Preservation Office (NCHPO)	<ul style="list-style-type: none"> Reviews any historical issues pursuant to Title 36 of the Code of Federal Regulations (36 CFR) Part 800.12 Reviews post-disaster debris management site (DMS) plan applications 	Western Region Office (828) 296-7230

Section 2

Department/Division	Primary Roles/Responsibilities	Point of Contact
North Carolina Natural Heritage Program (NCNHP)	<ul style="list-style-type: none"> The program inventories, catalogues, and supports conservation of the rarest and the most outstanding elements of the natural diversity of the state. During a debris-generating event, the Natural Heritage Program will be responsible for assisting in protecting and preserving the natural communities impacted by the disaster. The Natural Heritage Program will also assist other state departments in the review and approval of debris management sites. 	(919) 707-8107
Federal Agencies		
Federal Emergency Management Agency (FEMA)	<ul style="list-style-type: none"> Provides guidance relative to debris eligibility and the reimbursement process Assists the County in FEMA Project Worksheet (PW) development 	FEMA Region IV Office (770) 220-5200
Federal Highway Administration (FHWA)	<ul style="list-style-type: none"> Funds debris clearance on federal highways through the FEMA Emergency Relief (ER) Program 	NC Division Office (919) 747-7033
Natural Resources Conservation Service (NRCS)	<ul style="list-style-type: none"> Administers the Emergency Watershed Protection (EWP) Program, which provides for debris cleanup related to runoff retardation and soil erosion prevention Provides guidance on soil types most conducive for disposal of animal carcasses 	NC State Office (919) 873-2100 Local Service Center (704) 788-2107 x 2
United States Army Corps of Engineers (USACE)	<ul style="list-style-type: none"> Supports local emergency response, including debris removal, following catastrophic incidents Assesses and restores critical infrastructure 	Emergency Management (202) 761-4603
Private Sector		
Debris Hauler(s)	<ul style="list-style-type: none"> TBD 	TBD
Monitoring Firm	<ul style="list-style-type: none"> Deploys staff to support truck certification, collection, and disposal monitoring functions Orients employees with operational procedures and familiarize staff with the field-training program on current debris removal eligibility, FEMA requirements, county debris removal contract requirements, and safety procedures. Documents debris collection information to demonstrate eligibility and ensure proper 	TBD

ROLES AND RESPONSIBILITIES

Department/Division	Primary Roles/Responsibilities	Point of Contact
Monitoring Firm	<p>debris removal contractor payments and FEMA reimbursement, including:</p> <ul style="list-style-type: none">▪ Applicant name▪ Location of debris, including full address and zone▪ Time and date of collection▪ Name of contractor▪ Name and unique employee number of monitor▪ Truck certification number▪ Truck capacity (disposal site monitor will fill out load call [percentage] information)▪ Debris classification▪ Disaster declaration number	TBD

Section 3

ACTION PLAN

This section provides guidance required for all phases of a debris-generating event. For the purposes of this disaster debris management plan (DDMP), four phases are discussed: normal operations, pre-event preparation, post-event response, and post-event recovery.

Normal Operations

Normal operations refer to the period of time when the County is not in any serious threat of a disaster. Severe weather can occur at any time, leaving the County constantly susceptible to debris-generating events. Therefore, it is imperative to maintain a constant state of preparedness throughout normal operations by reviewing and updating the plan annually.

The normal operations phase is the ideal time for the County to establish or review pre-positioned contracts with its monitoring firm and debris removal contractor(s), identify and secure pre-approval from the North Carolina Department of Environmental Quality (NCDEQ) for locations to serve as debris management site (DMS) locations, and review current local ordinances and their historical impact on debris removal operations. The normal operations phase is also the ideal time for Emergency Management, the County Manager, other lead and supporting departments and agencies to re-evaluate the roles and responsibilities of each entity involved. The purpose of this evaluation is to ensure that all impacted departments, municipalities, and external agencies maintain the capacity to fulfill their obligations in a timely and effective manner should a disaster strike the County. Once roles and responsibilities have been re-evaluated, a review and update of the plan should be conducted annually. Meetings should also be held annually with the County and its pre-positioned monitoring firm and debris removal contractors, either in person or via conference call, to ensure appropriate preparedness levels and operational consistency. The normal operations checklist is also provided in appendix P.

Normal Operations Checklist

- Update contact lists
- Evaluate DMS locations
- Review road list and road maps
- Establish and maintain pre-positioned contracts
- Review FEMA guidance

Update Contact Lists

The contact list provided in appendix B should be updated monthly to reflect changes in personnel or contact information.

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Evaluate DMS Locations

The County has identified six sites for DMS use. Additional details regarding these sites are located in appendix C. Locations identified to serve as a DMS following a debris-generating event should be re-evaluated annually to ensure they remain viable candidates for DMS operations. Likewise, additional DMS locations may be identified as the development and landscape of the County progress over time. As additional potential sites are identified, the Investigation of Property Suitability Form in appendix T should be used to evaluate the viability of the site.

The NCDEQ typically evaluates and approves sites for DMS use immediately following a debris-generating event. Upon activation, approved sites can remain opened for 6 months. Following 6 months, additional activation time can be requested through NCDEQ. Prior to an event, the county can register sites with NCDEQ by requesting a site visit and providing site information. NCDEQ representatives visit the site and gather information. Completed forms are sent to the state office in Raleigh where coordination and approval from other state agencies occurs. Once approved, the sites remain on standby until activation is needed. The local NCDEQ office is located in Mooresville at (704) 663-1699.

In the event that the County needs to obtain privately owned land for DMS use, it is in the County's best interest to execute a memorandum of agreement (MOA) with the owner. A sample MOA is provided in appendix F. It is important to note that the County attorney should review and approve any MOAs on behalf of the County prior to their execution.

Review Road List and Road Maps

Changes or updates relating to road segments and applicable maintenance responsibility among local, state, and federal agencies are critical for reimbursement through the Federal Emergency Management Agency (FEMA) Public Assistance (PA) Grant Program and the Federal Highway Administration (FHWA) Emergency Relief (ER) Program. It is critical that the County review and update road lists and maps annually. Updated and accurate road lists and maps will assist in documenting debris removal operations and thereby assist the County during the reimbursement process. Existing municipal road maintenance agreements are provided in appendix L.

Establish and Maintain Pre-Positioned Contracts

During times of normalcy, the County should establish and maintain pre-positioned contracts for debris monitoring and debris removal services. The procurement of such services should be compliant with County procurement practices (see appendix N for the County's procurement procedures) and the procurement competition requirements specified in the Code of Federal Regulations – Title 44 Emergency Management and Assistance (44 CFR) Part 13.36. For additional guidelines regarding procurement, see appendix D for the FEMA RP9580.201, Fact Sheet: Debris Contracting Guidance.

The County is currently examining the possibility of soliciting proposals from hauling contractors in the interest of executing pre-positioned contracts for debris removal. Once a contract is executed, this information will be inserted appropriately in this plan as it becomes available. Appendix A will be updated at that time with the appropriate contact information of the selected vendor. Appendix N will include additional details regarding the evaluation and

selection of the debris removal contractors and the subsequent executed contract will be inserted into appendix O.

Review FEMA Guidance

Rules and regulations dictating operational procedures change periodically; the information in the DDMP should be updated annually to reflect such changes.

Pre-Event Preparation

The County should begin pre-event preparations when a debris-generating event is moving toward the North Carolina Piedmont Area. However, because of the relatively short notice that most events that could affect the County have, the opportunity to make pre-event preparations is limited. If it is feasible to employ pre-event preparations, key County personnel and representatives of involved outside agencies (see appendix B), as well as their staffs, should be put on alert and maintain awareness that they may be required to work extended hours in adverse conditions. All relevant parties will be briefed on their specific duties as outlined in Table 2-1.

The availability of pre-selected/pre-approved DMS locations will be evaluated by Emergency Management, County Management, IAM, and the Active Living & Parks Department. A list of potential DMS locations can be found in appendix C, Debris Management Site Report. Alternate locations will be considered by prioritizing potential alternate sites if one or more pre-approved sites are not available. County representatives should place the pre-positioned monitoring firm and debris removal contractors on stand-by.

Pre-Event Checklist

- Download most recent road list and relevant documents to a CD
- Alert key personnel and place monitoring firm and debris removal contractors on stand-by
- Review plan with key personnel
- Issue pre-event media press releases

The checklist performed during pre-event preparation is critical to assembling a coordinated response. The checklist is a valuable tool to ensure that proper steps are taken in a time of extreme duress. The pre-event checklist is also provided in appendix P.

Archive Most Recent Road List and Relevant Documents to CD (USB drive, external hard drive, etc.)

Following each update to this plan, Emergency Management will archive the plan, the most recent street list, and maps of the County to CD, USB drive, and/or external hard drive. Many of the computers and servers that store this information may be unavailable immediately following an event. Having this information on-hand ensures that debris collection operates properly and commences in a timely manner. If the County elects to solicit a monitoring firm, it would be critical at this point for the County to provide updates of the road list to its monitoring firm as updates become available.

Alert Key Personnel and Place Potential Monitoring Firm and Debris Removal Contractors on Stand-By

Prior to a debris-generating event, County debris management staff listed in appendix B should be put on alert. Additionally, Emergency Management should contact key County personnel via verbal and electronic communication, informing them of information needed to begin the response and recovery process.

The County's potential monitoring firm and debris removal contractors should be put on alert by the County that their contracts may be activated (see appendix A for contact information). Discussions with the potential monitoring firm and debris removal contractors should address the following key issues:

- Availability and amount of assets that will be dedicated to debris removal operations
- Estimated time of mobilization
- Exchange of mobile contact information
- Identification of staging area(s) for truck certification

Review Plan with Key Personnel

Once an initial meeting is scheduled with all of the County's key contacts, Emergency Management, potential monitoring firm, and debris removal contractors should review the DDMP. Once roles are reviewed and agreed upon, the initial meeting should focus on key activities that need to occur immediately following the debris-generating event, including damage assessments and emergency road clearing activities. During the initial meeting, the Cabarrus County Safety Plan (if available), and the Health and Safety Strategy, located in appendix K, should be reviewed by the County and modified/appended as necessary.

Pre-Event Media Press Release

Emergency Management and the public information officer (PIO) will provide the County Manager with a pre-event media press release preparing residents for the potential debris removal operation. The press release should assure the public that the County is prepared and has a plan in place to immediately respond to an event. The press release should also include information on County office closure times and dates (this should include information regarding garbage collection and County facilities). In addition, the County should provide information on proper setout procedures and estimates on when the cleanup process will begin. A draft press release for this scenario is included in appendix E, Sample Press Releases.

Post-Event Response (70-Hour Push; Immediate to Two Days)

The 70-hour push encompasses the period of time that roadways are cleared of scattered debris, leaning trees, and other obstructions for emergency response vehicles. This operation is reimbursable by FEMA on a time and materials basis. It is critical that all types of equipment and the amount of time the equipment is used are documented with detail and accuracy. Please note

that the reimbursement criteria and duration for time and materials work is subject to change following a disaster.

During this phase, Emergency Management, IAM, Fire Departments, and municipal Public Works Departments, depending on the severity of the event, should initiate emergency roadway clearing operations. A list of available County resources is provided in appendix M. If necessary, the County may request additional resources for emergency road clearance operations from its debris removal contractor. Road clearance priorities are pre-established to allow access to critical public facilities such as fire stations, police stations, hospitals, shelters, and emergency supply centers. Concurrent to emergency push operations, the County's debris removal contractor should perform necessary preparation work to open DMS locations.

Emergency Road Clearance Priorities

A list of road segments that will require priority for emergency road clearance operations has been prepared by the County and provided in appendix I. This list was compiled based on many considerations, including size, proximity to adjacent citizen populations, police and fire department locations, and ingress/egress capabilities for the community.

Post-Event Response Checklist

The following response checklist is critical in assembling a coordinated response. The checklist is a valuable tool to ensure that proper steps are taken in a time of extreme duress. The response checklist is also provided in appendix P.

- Conduct damage assessment.
- Activate potential monitoring firm and debris removal contractors.
- Begin emergency roadway debris clearance.
- Begin truck certification.
- Prepare DMS based on concentration of debris.
- Conduct meetings/briefings with key personnel.
- Review debris volume and collection cost assessment.
- Request contact information and meeting with FEMA Public Assistance Officer.
- Issue media press release.

Conduct Damage Assessment

Damage assessments are necessary to determine the extent and the location of the debris. Windshield surveys of the County should be taken and used to communicate critically damaged areas to Emergency Management and assist in prioritizing road clearance efforts. If possible, additional surveys should be conducted by helicopter in order to obtain an aerial view of damaged areas within the County. In case of a declared public disaster the county has a contract in place for aerial pictometry. The contracted company, will re-fly area to provide after oblique imagery to compare to current county imagery. The Cabarrus County Fire Marshal manages

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damage assessment teams for the county. The damage assessment teams are made up of representatives from the Fire Marshal's Office, the Tax Office and Construction Standards. Damage assessment teams are coordinated and directed by the Fire Marshal from the EOC.

Activate Monitoring Firm and Debris Removal Contractors

Emergency Management will use the damage assessments to determine whether to activate the potential monitoring firm and debris removal contractors. Emergency Management should immediately meet with the County Manager to make this determination. Once the potential monitoring firm and debris removal contractors are activated, each contractor should review an updated street list, debris collection zone maps (appendix H), the Cabarrus County Safety Plan (if available) and the Health and Safety Strategy (appendix K). The potential monitoring firm and debris removal contractors should begin logistical coordination and equipment ramp-up immediately upon receiving a Notice to Proceed.

Monitoring Function

Upon activation, the potential monitoring firm will deploy staff to support truck certification, collection, and disposal monitoring functions. The potential monitoring firm will orient employees with operational procedures and familiarize staff with the field-training program on current debris removal eligibility, FEMA requirements, County debris removal contract requirements, and safety procedures. Collection monitors must carefully document debris collection information to demonstrate eligibility and ensure proper debris removal contractor payments and FEMA reimbursement. The documentation should include:

- Applicant name
- Location of debris, including full address and zone
- Time and date of collection
- Name of contractor
- Name and unique employee number of monitor
- Truck certification number
- Truck capacity (disposal site monitor will fill out load call [percentage] information)
- Debris classification
- Disaster declaration number

Debris Removal Contractor Function

Upon activation, the debris removal contractor will mobilize staff and equipment to the event location. Equipment will be certified as required by the potential monitoring firm. With regard to DMS locations, site preparation, including logistical setup and tower construction, will begin. The contractor will orient subcontractors with operational procedures and familiarize staff with current debris removal eligibility, FEMA requirements, County debris removal contract requirements, and safety procedures.

Begin Emergency Roadway Debris Clearance

The County should then commence road clearance or “cut and toss” activities. These operations should first focus on major arteries leading to emergency shelters, hospitals, fire stations, police stations, supply points, and other critical locations throughout the County. A list of identified emergency road clearance priorities is provided in appendix I.

Begin Truck Certification

Truck certification is the most important function in initiating a debris removal operation. Accuracy and documentation of all measurements is critical. All debris removal trucks hauling debris under a volumetric contract with the County must have their capacity and dimensions measured, sketched, photographed, and documented on a truck certification form (see appendix G, Field Documents). Each debris removal truck will be assigned a unique number for debris tracking and invoice reconciliation purposes. Truck certifications should contain:

- Unique truck number
- Driver name
- Driver phone number
- License number, state issued, and expiration date
- Tag number, state issued, and expiration date
- Vehicle measurements
- Sketch of the vehicle

Prepare Debris Management Sites Based on Concentration of Debris

Emergency Management, IAM, Active Living & Parks Department, the potential monitoring firm, and debris removal contractors will meet to discuss the opening and operation of pre-identified DMS locations. Before DMS preparation begins, the lead departments (Emergency Management, IAM, and Active Living & Parks Department) will need to register and obtain DMS approval from NCDEQ. Registration and approval procedures include the following:

- Contact the local NCDEQ office to notify them of the County’s intentions to establish DMS sites. The local NCDEQ office may be reached at (704) 663-1699.
- Complete the proper form(s) (see appendix Q) and submit to the local NCDEQ office for approval.
- It is important to note that the County maintains updated and current information about possible DMS locations. NCDEQ forms will be modified slightly to address the circumstances of the event. The County will need to obtain the new properly modified form from NCDEQ immediately following a debris-generating event.
- Upon site approval from NCDEQ and HPO, the County will activate the DMS location for operations.
- The County will maintain all DMS registration and approval documentation for project worksheet development.

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- Additional information regarding this process is provided in appendix Q.

The following items should be taken into consideration when opening and operating a DMS:

Qualification criteria

- Current availability
- Duration of availability
- Ingress/egress
- Concentration of debris relative to each site
- Geographic location within the County

Reduction Method

Chipping and Grinding – Using this method, vegetative debris is chipped or ground and typically results in a reduction ratio of 4:1. The leftover mulch is either hauled to a final disposal facility or recycled.

Incineration – The burning of vegetative debris typically results in a reduction ratio of 20:1. The leftover ash may be hauled to a final disposal facility or be incorporated in a land application.

Crushing – The crushing of vegetative debris is the least effective reduction method and results in a reduction ratio of 2:1. Crushing is an appropriate reduction method for construction and demolition (C&D) debris that cannot be recycled.

Recycling of Debris

Common recyclable materials that are a result of a debris-generating event include wood waste, metals, and concrete. The following are potential uses for each of these materials:

Wood Waste – Vegetative debris that is reduced through chipping or grinding results in leftover mulch. The remaining mulch can be used for agricultural purposes or fuel for industrial heating. For the mulch to be viable in agricultural purposes, the end user typically has a size requirement and requests that the mulch be as clean as possible of plastics and dirt.

Metals – Metal debris such as white goods, aluminum screened porches, etc., that may result from a debris-generating event can be recycled. Certain metals, such as aluminum and copper, are highly valuable to scrap metal dealers.

Concrete – Concrete, asphalt, and other masonry products that may become debris as a result of a debris-generating event can be crushed and potentially used for road construction projects or as trench backfill.

There is a multitude of information available regarding the recycling and selling of solid waste debris. One such resource is the Southern Waste Information eXchange, Inc. website (<http://www.wastexchange.org>), which is a nonprofit clearinghouse with information regarding the recycling of solid waste. Table 3-1 includes a list of possible end users for recyclable debris.

**Table 3-1
Recyclable Materials and End Users**

Recyclable Material	Name	Contact
Metal	Foils Recycling, Inc.	2285 Highway 49 S Harrisburg, NC 28075 (704) 455-5134
Household Hazardous Waste	County HHW Program	Household Hazardous Waste Facility 246 General Services Drive Concord, NC 28025 (704) 920-3278
Concrete	Republic Services of Concord	5105 Morehead Rd Concord, NC 28027 (704) 782-2004
Concrete and Recyclables	Greenway Waste of Harrisburg (Hwy 49 C & D Reclamation)	2105 Speedrail Court Harrisburg, NC 28025 (704) 455-1561

DMS Preparation

After a review of the availability and suitability of DMS, the debris removal contractor can begin site preparation. As part of the preparation, baseline data should be gathered from the site to document the state of the land before debris is deposited. The following action items are recommended to compile baseline information:

- **Photograph the site** – Digital photos should be taken to capture the state of the site before debris reduction activities begin. Photos should be updated periodically throughout the project to document the progression of the site.
- **Record physical features** – Records should be kept detailing the physical layout and features of the site. Items such as existing structures, fences, landscaping, etc., should be documented in detail.
- **Historical evaluation** – The past use of the site area should be researched and documented. Issues relating to historical or archeological significance of the site should be cleared with the state historical preservation agency.
- **Sample soil and water** – If possible and deemed necessary, soil and groundwater samples will be taken before debris reduction activities commence. Samples will help ensure the site is returned to its original state. Typically, soil and groundwater samples should be analyzed for total Resource Conservation and Recovery Act (RCRA) metals, volatile organic compounds, and semi-volatile organic compounds using approved U.S. Environmental Protection Agency (EPA) methods.

Emergency Management and the potential monitoring firm will oversee the debris removal contractors' activities to ensure that they are in compliance with their contractual obligations and with environmental standards, and acting in the best interest of the County and its residents.

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Disposal Monitoring

The primary function of the monitoring firm with regard to disposal monitoring is to document the disposal of disaster debris at approved DMS and final disposal locations. Monitors perform quality assurance/quality control (QA/QC) checks on all load tickets and haul-out tickets to ensure that information captured by collection monitors is complete. This QA/QC includes but is not limited to the following:

- Inspection of truck placards for authenticity and signs of tampering
- Verification that placard information is documented properly
- Verification that all required fields on the load ticket have been completed

Afterwards, the disposal monitor will document the amount of debris collected by making a judgment call on vehicle fullness (typically on a percentage basis). The percentage documented for each debris removal vehicle is later applied to the calculated cubic yard (CY) capacity of the vehicle to determine the amount of debris collected. The disposal monitor's responsibilities include, but are not limited to the following:

- Completing and physically controlling load tickets
- Ensuring debris removal trucks are accurately credited for their loads
- Ensuring trucks are not artificially loaded
- Ensuring hazardous waste is not mixed in with loads
- Ensuring all debris is removed from the debris removal trucks before exiting the DMS or final disposal site
- Ensuring only debris specified within the County's scope of work is collected
- In addition to the responsibilities listed above, final disposal site monitors are also tasked with the following:
 - Ensuring all debris is disposed at a properly permitted landfill
 - Matching landfill receipts and/or scale house records to haul-out tickets

Conduct Meetings/Briefings with Key Personnel

Coordination meetings and briefings with key personnel should be conducted to update the status of the road clearance efforts, DMS openings, contractor asset ramp-up, and pertinent public information for press releases.

Daily meetings should be held each morning at a location determined by the County and should include key personnel from the County, the potential monitoring firm, and debris removal contractors. The purpose of the daily meeting is to focus on daily objectives and discuss operational progress and best practices moving forward. During the meeting, the County will also review real-time statistics and completion maps that reflect operations through the end of the previous day.

Review Debris Volume and Collection Cost Assessment

Emergency Management, the potential monitoring firm, and debris removal contractors will meet to review the debris volume and collection cost assessment. The topics of discussion in this meeting may include, but are not limited to the following:

- Amount of debris generated (total CY)
- Type of debris generated (vegetative, C&D, or other miscellaneous debris)
- Number and estimated date of arrival for assets (trucks, loaders, monitoring personnel)
- Estimated number of DMS locations necessary
- Preliminary scope of debris removal efforts
- Estimated cost of the debris removal efforts
- Following this meeting, the County will begin to collect required documentation for the development of FEMA Project Worksheets (PW).

Request Contact Information and Meeting with FEMA Public Assistance Officer

This request should be made through the North Carolina Emergency Management (NCEM).

Emergency Management should immediately request the contact information of the designated FEMA public assistance officer (PAO) for the disaster. Upon receiving the information, the County should request a meeting with the FEMA PAO. During this meeting, the County will complete the following actions:

- Summarize the County's debris removal operations to date.
- Review debris and cost estimates for the County.
- Review any Disaster Specific Guidance (DSG) documents issued by FEMA.
- Examine the County's debris removal plan.
- Provide contact information for all County potential monitoring firm and debris removal contractors and key personnel.

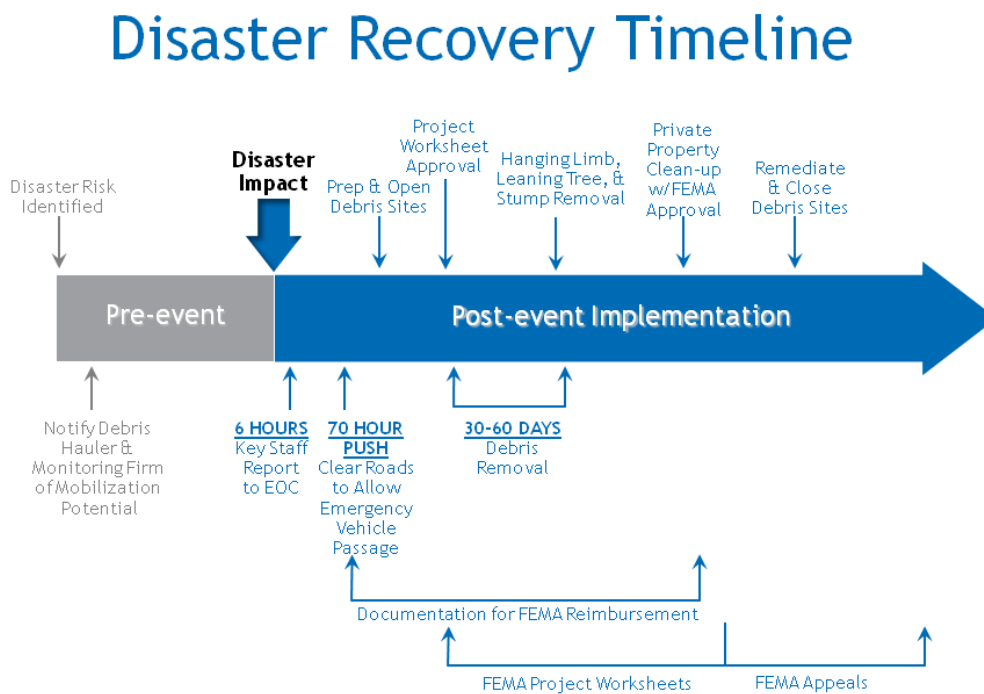
Determine additional information the PAO will need to generate PWs for the County. In order for FEMA to generate a Category A debris removal and debris monitoring PW, it will require the following information:

- Copy of the debris removal contractor contract(s)
- Copy of the debris monitoring firm contract(s)
- Information on the procurement process of the debris removal and monitoring contracts
- Address (if available) and GPS coordinates for all DMS
- Debris volume and costs estimates (using damage assessment reports)
- Monitoring cost estimate (based on budgeted labor hours)
- Brief debris removal plan overview

Issue Media Press Release

A press release provided by the Emergency Management Coordinator and the public information officer that has been approved by the County Manager should be issued to various media sources or be broadcast over the radio within the first three days following the debris-generating event. The content of the press release will be to reassure and comfort the public that the County is responding to the event and has activated its monitoring firm and debris removal contractors to begin debris removal activities. Sample press releases are located in appendix E.

Figure 3-1
Disaster Recovery Timeline



Post-Event Recovery

For the purpose of debris management, the post-event recovery phase is marked by the debris removal contractor collecting and reducing debris from the public right-of-way (ROW).

Concurrent to the commencement of ROW debris removal operations, the County should evaluate the need for contract debris removal on private property, parks, and waterways. See appendix M for a list of County resources available for this purpose. As noted in the Disaster Recovery Timeline (Figure 3-1), these specialized debris removal operations typically do not begin until roughly 30 to 60 days following a debris-generating event. Specialized debris removal operations are often governed by DSGs and require some level of FEMA pre-validation.

However, if the County determines that there is an immediate and imminent threat to public health and safety, these programs can be expedited.

The following recovery checklists are critical in expediting and ensuring proper steps are taken during the debris removal process. The post-event recovery checklists are also included in appendix P. The post-event recovery checklists are subdivided into the following time periods:

- 2 Days – 2 Weeks
- 2 Weeks – 1 Month
- 1 Month – 3 Months
- 3 Months – Project Completion

Post-Event Recovery Checklist: 2 Days – 2 Weeks

- Open DMS.
- Prioritize roads/areas.
- Issue press release regarding segregation of debris.
- Begin ROW debris removal.
- Begin environmental monitoring program of DMS.
- Coordinate with external agencies.
- Initiate discussions with FEMA.
- Obtain FEMA guidance for gated community and private property debris removal.

Open Debris Management Sites

DMS will be opened, beginning with sites closest to the most heavily impacted areas of the County. Monitoring towers will be located at the ingress and egress of the DMS. Monitoring towers will be high enough so that tower monitors can verify the contents of the debris removal trucks. See appendix C for DMS locations.

Prioritize Roads/Areas

After reviewing damage assessments and the concentration of debris within the County, areas that sustained more extensive damage may need to be prioritized, sub-divided into smaller work zones and recorded on the County's GIS data. See appendix H for zone maps.

Issue Press Release Regarding Segregation of Debris

The County should issue a second press release regarding segregation of vegetative, C&D, and household hazardous waste (HHW).

Begin ROW Debris Removal

The County should allow the debris removal contractors to proceed with curbside collection. Curbside collection entails residents piling their disaster-related debris along the ROW. It is

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critical that residents segregate their debris in categories such as vegetative, C&D, HHW, and white goods. This will help prevent the contamination of debris loads and expedite the cleanup process. To assist the County in an “all-hazards approach” to debris removal efforts, the processes for HHW and white goods debris removal are outlined below.

Household Hazardous Waste Debris Removal

HHW includes gasoline cans, aerosol spray cans, paint, lawn chemicals, batteries, fire extinguishers, fluorescent lamps, household electronics, etc.

HHW removal is eligible for FEMA reimbursement if the debris is a result of the debris-generating event and removed from publicly maintained property and roadways whose maintenance is the responsibility of the County. HHW should be collected separately and disposed of or recycled at a properly permitted facility. Collection of HHW can be conducted internally or contracted out on a unit rate basis. The following action items are recommended to the County with regard to HHW removal:

- Communicate to County residents the eligibility of HHW following an event. It is important that residents separate HHW from other debris, such as vegetative, C&D, etc., to ensure that HHW does not enter the debris stream at DMS locations.
- Decide whether to contract with an established HHW collection firm to augment or replace HHW drop-off sites. This helps ensure that HHW is properly disposed. Measures should still be taken by the debris removal contractor and the monitoring firm to identify, segregate, and dispose of intermingled HHW at DMS locations.
- Interface with the NCDEQ. Describe the HHW collection program and permitted facilities to be used for disposal or recycling.

White Goods Debris Removal

White goods include refrigerators, freezers, air conditioners, heat pumps, ovens, ranges, washing machines, clothes dryers, etc.

White goods debris removal is eligible for FEMA reimbursement if the debris is a result of the debris-generating event and removed from publicly maintained property and roadways whose maintenance is the responsibility of the County. White goods debris that contains ozone-depleting refrigerants, mercury, or compressor oils need to have such materials removed by a certified technician before recycling. All state and federal laws should be followed regarding the final disposal of removed refrigerants, mercury, or compressor oils. Collection of white goods can be conducted internally or contracted out on a unit rate basis. The following action items are recommended to the County with regard to white goods removal:

- Communicate the eligibility of white goods to County residents following an event. It is important that residents separate white goods from other debris to ensure that white goods are not mixed with C&D or vegetative debris during collection.
- Interface with NCDEQ
- Describe the white goods collection program and permitted facilities to be used for disposal of recovered refrigerants, mercury, or compressor oils.

Load Tickets

For the debris categories outlined above, pre-printed load tickets will be used as reimbursement documentation for the County. An example of a load ticket is located in appendix G, Field Documents. The top portion of the ticket will be filled out by the collection monitor at the beginning of each load. The address field will be completed when the debris removal contractor has completed work. The collection monitor will also ensure the debris removal contractor is working within the scope of the contract with the County. The load ticket will then be given to the debris removal vehicle driver to turn in to the disposal monitor upon arrival at the DMS or final disposal site. The disposal monitor will complete the remaining portion of the load ticket. The disposal monitor documents the amount of debris collected by making a judgment call reflecting the vehicle's fullness (typically on a percentage basis). The percentage documented for each debris removal vehicle is later applied to the calculated cubic yard capacity of the vehicle to determine the amount of debris collected.

Begin Environmental Monitoring Program of DMS

Throughout the duration of the project, data should be collected for use in the remediation and closeout of the DMS. Collected data should be compared to previous data to establish any remediation actions necessary to return the site to its original state. The following items should be included in an environmental monitoring program:

- **Sketches of Site Operations** – During the course of the project, operations at the DMS may expand, condense, or shift. Changes to the site should be documented along with the locations of debris reduction activity. The sketches and documentation will assist in determining areas of concern that may need additional sampling and testing during site closure.
- **Documentation of Issues at the Site** – Meticulous records should be kept documenting issues such as petroleum spills, hydraulic spills, or the discovery of HHW within debris at the site. This documentation will assist in the remediation of the site.

Coordinate with External Agencies

The County should coordinate with the North Carolina Department of Transportation (NCDOT) and other relevant agencies to ensure all County road segments are moving forward with debris removal operations. Coordination with NCDOT is imperative with regard to Interstate 85, U.S. Highways, State Highways and other NCDOT roads. NCDOT is responsible for emergency road clearing activities and first pass debris removal on all state and federal roads within the County.

Initiate Discussions with FEMA

It will be critical that the Public Services Department and monitoring firm clearly communicate debris removal plans and operations with FEMA. Clear communication fosters a coordinated effort that enhances the transparency of the operation for auditors and ensures maximum FEMA reimbursement.

Obtain FEMA Guidance for Gated Community and Private Property Debris Removal

It is important to note that at this time the County does not intend to pursue a right-of-entry (ROE) program for private property debris removal. The information provided in this section serves as guidance for conducting private property debris removal operations should the County elect to do so in the future.

Eligibility of gated community and private property debris removal will be determined by FEMA on a case-by-case basis following an event. Typically, the debris and devastation must be so widespread that debris removal from private property is a “public interest.” Under current FEMA 325 guidelines, debris removal from private property is defined as a public interest when operations:

- Remove threats to the health and safety of the community at large
- Prevent significant damage to public or private property
- Assist in the economic recovery and thereby benefit the community-at-large

In order for private property debris removal to be eligible for reimbursement, the County must submit a written request to the FEMA federal coordinating officer (FCO) before private property debris removal operations begin. The request will include the following information:

- **Immediate threat determination** – The County must provide documentation from the North Carolina Department of Health and Human Services (NCDHHS), Cabarrus Health Alliance, that debris on private property is a threat to public health and safety.
- **Documentation of legal responsibility** – The County must demonstrate that it has the legal authority to enter private property and gated communities and accepts the responsibility to abate all hazards, regardless of whether or not a federal disaster declaration is made. Public health nuisance abatement is not addressed in a specific county ordinance, but will likely be addressed through public health if issues arise.

In the event that private property debris removal is authorized and considered for the County, the following documentation will be required by FEMA:

- **Right-of-Entry and Hold Harmless Agreements** – The County should execute signed ROE and Hold Harmless Agreements (HHA) documents with private property owners holding the federal government harmless from any damages caused to private property. The County may execute ROE and HHA forms prior to a disaster under the condition that the ROE and HHA form do not reference a particular event or disaster number.
- **Photos** – It is in the best interest of the County to photograph conditions of private property before and after debris removal is completed. The photos will assist in the verification of address and scope of work on the property.
- **Private property debris removal assessment** – The assessment will be a property-specific form to establish the scope of eligible work on the property. The assessment can be in the form of a map or work order as long as the scope of work can be clearly identified.
- **Documentation of environmental and historic review** – Debris removal efforts on private property must comply with all review requirements under 44 CFR (specifically parts 9, Floodplain Management and Protection of Wetlands, and 10, Environmental Considerations).

Post-Event Recovery Checklist: 2 Weeks – 1 Month

- Maintain and evaluate ROW cleanup.
- Begin ROW stump removal as necessary.
- Open additional DMS as necessary.
- Continue daily meetings with FEMA.
- Begin debris removal from private property and gated communities.
- Communicate project closeout to residents via press release.

Maintain and Evaluate ROW Cleanup

Information on debris collection (vegetative, C&D, white goods, HHW, etc.) and completion progress will be documented by the monitoring firm and provided to the County on a daily basis. To ensure proper record keeping and reimbursement from all appropriate agencies, it will be important for the County to announce the completion of first pass.

Begin ROW Stump Removal as Necessary

Following initial ROW debris removal efforts, the County and potential monitoring firm may determine a significant threat remains to the County public in the form of hazardous stumps along the ROW. Before ROW stump removal operations commence, all applicable DSG criteria or FEMA Publication 325 guidelines for eligibility should be reviewed. FEMA's Recovery Policy for Hazardous Stump Extraction and Removal Eligibility is available at <http://www.fema.gov>. In addition, as of the publication of this plan, FEMA Publication 325 defines a stump as hazardous if all of the following criteria are met:

- The stump has 50 percent or more of the root ball exposed
- The stump is greater than 24 inches in diameter when measured 24 inches from the ground
- The stump is located on a public ROW
- The stump poses an immediate threat to public health and safety

Open Additional Debris Management Sites as Necessary

If the initial DMS are approaching maximum capacity, additional DMS may need to be prepared. The same procedures taken to open and monitor the initial DMS should be applied to any additional DMS the County may utilize.

Continue Daily Meetings with FEMA

It will be critical to maintain strong communication with the County's assigned FEMA representatives. The daily meetings will help to ensure maximum coordination and assist to expedite resolving any operational problems that may occur.

Begin Debris Removal from Private Property and Gated Communities

If approved, debris removal from private property and gated communities should begin.

Communicate Project Closeout to Residents via Press Release

The project closeout press release should focus on clarifying any ineligible debris confusion and communicating a debris setout deadline to minimize illegal dumping. Protocol for leaners/hangers and private property/gated community debris removal programs, if applicable, should be communicated at this time. Depending on the severity of the debris-generating event, project closeout may be further away.

Post-Event Recovery Checklist: 1 Month – 3 Months

- Maintain and evaluate ROW cleanup (vegetative and C&D)
- Begin ROW leaners/hangers program
- Initiate haul-out
- Progress to weekly meetings with the FEMA

Maintain and Evaluate ROW Cleanup – Vegetative and C&D

Information on debris collection and completion progress will be documented by the potential monitoring firm and provided to the County on a daily basis. During this period, the County should announce the completion of the second pass and establish a deadline for residents to set out debris on the ROW as well as a deadline for the County's debris removal contractor to complete third pass. In a smaller debris-generating event, the second pass could be announced earlier.

Begin ROW Leaners/Hangers Program

A ROW leaners/hangers program should be initiated if it is determined that a significant threat remains to the County public in the form of leaning trees and hanging limbs along the ROW. To ensure maximum reimbursement, all threats must be identified and verified against DSG criteria for eligibility prior to the commencement of cut-work. It is important to note the County's debris removal contractor may require lead-time to transport specialty vehicles, equipment, and labor force to commence leaner/hanger work. Currently FEMA Publication 325 provides the following guidance on eligibility requirements for leaners and hangers.

Leaner – A tree is considered hazardous and defined as a “leaner” when the tree's present state is caused by a disaster, the tree poses a significant threat to the public, and the tree is at least six inches in diameter measured at chest height. In addition, one or more of the following FEMA Publication 325 criteria must be met:

- The tree has more than 50 percent of the crown damaged or destroyed (requires written documentation from an arborist)
- The tree has a split trunk or broken branches that expose the heartwood
- The tree has fallen or been uprooted within a public use area
- The tree is leaning at an angle greater than 30 degrees

Hanger – A hanger is a hazardous limb that poses a significant threat to the public. The current eligibility requirements for hangers according to FEMA Publication 325 are as follows:

- The limb must be greater than 2 inches in diameter
- The limb is still hanging in a tree and threatening a public-use area
- The limb is located on improved public property

Unit Rate Tickets

Unit rate tickets will be used as reimbursement documentation for the County’s leaners/hangers program. An example of a unit rate ticket is located in appendix G, Field Documents. To ensure maximum reimbursement, debris monitors will use GPS devices to document the GPS coordinates of tree or hanger removals and take digital photos of the work done.

Initiate Haul-Out

At this point in the post-event recovery process, reduced debris from DMS will be hauled to a final disposal site or recycled through one of the markets listed in Table 3-1. Generally, for final disposal purposes, the most environmentally responsible and cost-effective method will be for the County to recycle reduced debris. Any remaining reduced debris that cannot be recycled should be disposed of at permitted landfills with consideration to the cost structure of associated tipping fees. See Table 3-2 for potential final disposal sites.

Table 3-2
Potential Final Disposal Landfills

Name	Location
Anson County Landfill & Convenience Center Site	<p>Anson County Landfill 375 Dozer Drive Polkton, NC 28135 Office Phone: (704) 694-6900 E-mail: cust6115@wcnx.org</p> <p>Ansonville Convenience Center 2244 Plank Road Ansonville, NC 28007 (704) 826-6353</p>
Union County Landfill & Convenience Center Sites	<p>Solid Waste Management Facility 2125 Austin Chaney Road Wingate, NC 28174 (704) 233-5334</p>

Section 3

Name	Location
Union County Landfill & Convenience Center Sites	Armfield Mill Convenience Site 5109 Armfield Mill Rd Monroe, NC 28112 New Salem Convenience Site 7910 East Highway 218 Marshville, NC 28103 Parkwood Convenience Site 3214 Parkwood School Rd Monroe, NC 28112 Piedmont Convenience Site 3005 Love Mill Rd Monroe, NC 28112 Sun Valley Convenience Site 1407 Wesley Chapel Rd Indian Trail, NC 28079 White Store Convenience Site 4517 White Store Rd Wingate, NC 28174
Richmond County Landfill – Transfer Station	191 Walter Kelly Dr. Rockingham NC, 28379 (910) 997-8338

It will be important that the County and potential monitoring firm ensure the debris removal contractor attains proper disposal tipping fee information. Appendix G contains a sample haul-out ticket that will be used by the potential monitoring firm as reimbursement documentation for the County.

Progress to Weekly Meetings with the FEMA

Although strong communication with the County's assigned FEMA representatives remains important, at this point in the debris removal operation, meetings can move to a weekly timeframe. The weekly meetings will help ensure maximum coordination.

Recovery Checklist: 3 Months – Project Completion

- Complete all debris recovery activities
- Identify ineligible debris on ROW
- Complete the disposal of reduced debris

- Closeout and remediate DMS
- Conduct project closeout meetings with FEMA and external agencies

Complete all Debris Recovery Activities

The County's debris removal contractor will identify and remove all remaining eligible debris piles.

Identify Ineligible Debris on ROW

Once ineligible debris on the ROW is identified, the County should proceed in one of two ways:

- Hold individual homeowners responsible for the disposal of ineligible debris
- Use internal equipment for disposal of the ineligible debris
- Task the County debris removal contractor with the removal of ineligible debris and incur the associated cost; this debris should be hauled directly to a final disposal landfill or transfer station to reduce associated handling costs

Complete the Disposal of Reduced Debris

Before project closure, remaining reduced debris at DMS should be recycled through one of the markets listed in Table 3-1 or hauled to a local landfill for final disposal landfill (see Table 3-2).

Closeout and Remediate Debris Management Sites

NCDEQ must be contacted before final closure of the DMS to ensure all required actions are taken. Generally, DMS locations must be returned to their original environmental state. Restoration of the DMS includes removing all remnants of operations and the remediation of any contamination that may have occurred during operations. A final sample of environmental data should be collected to ensure the site is returned to its original state. Final closure of the DMS will require written notice to NCDEQ. The results of any required environmental samples should be included with the written notice.

Conduct Project Closeout Meetings with FEMA and External Agencies

Prior to the project closeout meeting, the County will receive detailed data from the potential monitoring firm regarding the debris removal operations within the County. The County, in conjunction with the potential monitoring firm, should compile all contractor invoices, contracts, and other documentation supporting debris removal operations in preparation of the project closeout meeting.

Section 4

OVERVIEW OF RULES AND REGULATIONS

The documents described in this section establish the legal authority for local governments to engage in debris cleanup operations and seek reimbursement from the federal government. The County should review these documents annually to familiarize themselves with the governing statutes and to identify any changes to the rules and regulations.

FEMA Guidelines

The Federal Emergency Management Agency (FEMA) coordinates the response and recovery efforts for all presidentially declared disasters. FEMA provides disaster planning and response guidance documents to local governments. The guidance documents that are generally associated with debris recovery are summarized below.

FEMA Publication 322 – Public Assistance Guide

The Public Assistance (PA) Guide provides a general overview of FEMA PA Program protocols immediately following a disaster. The PA Program provides the basis for the federal/local cost-sharing program. This document specifically describes the entities eligible for reimbursement under the PA Program, the documentation necessary to ensure reimbursement, and special considerations local governments should be aware of to maximize eligible activities.

An electronic version of FEMA Publication 322 is available at:

<http://www.fema.gov/government/grant/pa/padocs.shtm>

FEMA Publication 323 – Applicant Handbook

The Applicant Handbook (Handbook) is the official “how to” for local governments that are considering applying for reimbursement following a disaster through the PA Program. This Handbook should be used in conjunction with the Cabarrus County Disaster Debris Management Plan immediately following a debris-generating event.

The Handbook provides the rules, procedures, and sample documents that local governments need as the “applicant” to FEMA. The publication is formatted so that the applicant has a step-by-step guide for each phase of the reimbursement process, including what information is critical to ensure reimbursement.

An electronic version of FEMA Publication 323 is available at:

<http://www.fema.gov/government/grant/pa/padocs.shtm>

FEMA Publication 325 – Debris Management Guide

The Debris Management Guide is specifically dedicated to the rules, regulations, and policies associated with the debris cleanup process. Familiarity with this publication and any revisions can help a local government limit non-reimbursable expenses. The Debris Management Guide

Section 4

provides the framework for the debris removal process authorized by the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), including the following:

- Eliminating immediate threats to lives, public health, and safety
- Eliminating immediate threats of significant damage to improved public or private property
- Ensuring the economic recovery of the affected community to the benefit of the community at large

An electronic version of FEMA Publication 325 is available at:

<http://www.fema.gov/government/grant/pa/dmgtoc.shtm>

Federal Emergency Management Agency Publication 327 – Public Assistance Debris Monitoring Guide

The PA Debris Monitoring Guide describes how to accurately document debris removal, disposal operations, and associated costs. All reimbursable work must comply with PA guidelines and all applicable federal, state, and local regulations. Failure to properly monitor debris removal operations may cause a rejection of reimbursement.

Federal Emergency Management Agency Publication 329 – Debris Estimating Field Guide

FEMA guidance to estimate—accurately, consistently, and in a timely manner—the debris quantities and types in the aspect of a FEMA operation.

Disaster-Specific Guidance

DSG is a policy statement issued in response to a specific post-event situation or need in a state or region. Each DSG is issued a number and is generally referred to along with its numerical identification.

DSG typically relate to the authorization of private property cleanup, cleanup and payment of stumps, or notification of large projects. County staff should be aware of any new DSG that is issued by FEMA following an event.

Other Relevant Documents

The two primary directives developed by the federal government that provide for the authorization and use of federal funds to reimburse local governments for disaster-related expenses are the Stafford Act and the Code of Federal Regulations – Title 44 Emergency Management and Assistance (44 CFR). A brief summary of these laws is provided below.

Robert T. Stafford Disaster Relief and Emergency Assistance Act

The Stafford Act authorizes the PA Program. The fundamental provisions of this act are as follows:

OVERVIEW OF RULES AND REGULATIONS

- Authorizes FEMA to administer federal disaster assistance
- Defines the extent of coverage and eligibility criteria of the major disaster assistance programs
- Authorizes grants to the states
- Defines the minimum federal cost-sharing levels

An electronic version of the Stafford Act is available at:

<http://www.fema.gov/about/stafact.shtm>

Code of Federal Regulations: Title 44 – Emergency Management and Assistance

Procedural requirements for PA Program operations are provided by 44 CFR. These regulations are designed to implement a statute based upon FEMA's interpretation of the Stafford Act. They govern the PA Program and outline program procedures, eligibility, and funding.

An electronic version of 44 CFR is available at:

http://www.access.gpo.gov/nara/cfr/waisidx_03/44cfrv1_03.html

Appendix A

MONITORING FIRM AND DEBRIS REMOVAL CONTRACTORS

Primary Monitoring Firm

Table A-1
Primary Monitoring Firm

Company	Contact Information
TBD	TBD

Debris Removal Contractors

Table A-2
Pre-Positioned Debris Removal Contractors

Company	Contact Information
TBD	TBD

Additional information will be inserted as it becomes available.

Appendix B

COUNTY DEBRIS MANAGEMENT CONTACT LIST

Table B-1
County Debris Management Staff Contact List

Title	Telephone Number
Active Living & Parks Director	(704) 920-3354
Area Manager of Operations	(704) 920-3201
County Manager	(704) 920-2139
Emergency Management Director	(704) 920-2562
Emergency Management Planner	(704) 920-2417
Fire Marshal	(704) 920-2561
Planning and Zoning Manager	(704) 920-2858
Senior Deputy County Manager	(704) 920-2107
Sustainability Manager	(704) 920-2955

Appendix C

DEBRIS MANAGEMENT SITE REPORT SYNOPSIS

See Table 1 for a quick reference guide of the sites evaluated listed by their recommended priority rank.


**Table C-1
DMS Suitability Matrix**

Site Name	Site Preparation	Total Acreage	Acreage Available for Debris	Debris Capacity*	Method of Reduction	Type of Debris
County Landfill (Irish Potato Road)	Low	100+ acres	N/A	N/A	Open burning, air curtain incineration, grinding	C&D, vegetative, white goods, HHW
Morehead Farms Campground	Low	30 acres	12 acres	194,124CY	Open burning, air curtain incineration, grinding	C&D, vegetative
Frank Liske Park – Staging Area	Medium	5 acres	N/A – Citizen Drop-off site	N/A – Citizen Drop-off site	Citizen drop-off site	C&D, vegetative
North Cabarrus Park	High	5 acres	N/A – Citizen Drop-off site	N/A – Citizen Drop-off site	Citizen drop-off site	C&D, vegetative
Concord Motorsports Park (Off 601)	Low	10 acres	N/A – Citizen Drop-off site	N/A – Citizen Drop-off site	Citizen drop-off site	Vegetative, HHW, white goods
Midland Fire Station	Medium	10 acres	N/A – Citizen Drop-off site	N/A – Citizen Drop-off site	Citizen drop-off site	Vegetative

*Debris capacity for each site was determined using U.S. Army Corps of Engineers formula. The formula assumes debris piled 10 feet high which allows for up to 16,177 cubic yards of debris per acre. The model estimates that 40% of any given property will be available for actually debris operations, while 60% will be needed for roadways, safety buffers, and other activities. The debris capacity identified for each site is the total amount of debris that could be managed on site at any given time. In most cases, a debris management site should go through one cycle during the recovery process. In other words, during a 1,000,000 cubic yard event, only 500,000 cubic yards of debris would be on the site at a time.

Appendix D

DEBRIS CONTRACTING GUIDANCE

 **FEMA**

RECOVERY

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Debris Contracting Guidance

Overview

Debris removal and monitoring contracts must meet rules for Federal grants, as provided for in Title 44 Code of Federal Regulations (CFR) §13.36, **Procurement** in order to be eligible for reimbursement under the Public Assistance Program. This fact sheet assists Public Assistance applicants with meeting procurement requirements established in 44 CFR Part 13, as well as other Public Assistance Program eligibility requirements, when procuring debris removal and monitoring contracts. Public Assistance applicants should comply with their own procurement procedures in accordance with applicable State and local laws and regulations, provided that they conform to applicable Federal laws and standards identified in Part 13.

Contract Procurement

To be eligible for Federal funding, applicants must comply with federal procurement standards as outlined in 44 CFR, §13.36, **Procurement**. Essential elements of the procurement process for debris removal and monitoring contracts include: competition; a clear and definitive scope of work; qualified bidders (documented by licenses, financial records, proof of insurance, and bonding, as applicable); a cost analysis to demonstrate cost reasonableness; compliance with all relevant local, State, and Federal requirements, laws and policies; and, clear documentation of the process/rationale followed in making procurement decisions. Federal regulations require applicants for Public Assistance grants to take the necessary steps to ensure there are opportunities to award contracts to minority, women-owned, and Labor Surplus Area businesses and firms whenever possible. This includes contracts with local organizations, firms, and individuals that support response and recovery activities in a declared major disaster or emergency area. Applicants' legal representatives should review their procurement process and any contract to be awarded to ensure they are in compliance with all Federal, State, and local requirements. Procurement policies must include procedures to handle protests and disputes related to contracts awarded. *FEMA will, when requested by applicants, assist in the review of debris removal contracts. However, such a review does not constitute approval.*

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DEBRIS CONTRACTING GUIDANCE

In order to ensure that debris removal and monitoring contracting costs are eligible, applicants should:

- ☐ Use competitive bidding procedures to meet procurement requirements for Federal grants, as established in 44 CFR § 13.36, *Procurement*.
- ☐ Only use abbreviated emergency procurement procedures that include an expedited competitive bid process if time does not allow for more stringent procedures and if they are allowed under State or local laws, codes, or ordinances.
- ☐ Provide a clear and definitive scope of work in the request for proposals/bids.
- ☐ Require bidders to provide copies of references, licenses, financial records, and proof of insurance and bonding.
- ☐ Ensure that debris removal or monitoring contract costs are reasonable and necessary as defined and required by OMB Circular A-87 and 44 CFR Part 13. *Competitively bid contracts that comply with Federal, State, and local procurement regulations and procedures will establish reasonable costs for the work.*
- ☐ Complete and document a cost analysis to demonstrate price reasonableness on any contract or contract modification where adequate price competition is lacking, as detailed in 44 CFR § 13.36(f). See Attachment 1, *Debris Removal Contract Cost Analysis*, for guidance on completing a cost analysis.

Cost Analysis

Pursuant to 44 CFR § 13.36, **Procurement**, Public Assistance applicants must complete a cost analysis for *any contract or contract modification where price competition is lacking*. Failure to complete a cost analysis may jeopardize FEMA Public Assistance grant funding. Applicants are encouraged to complete a cost analysis using the attached *Debris Removal Contract Cost Analysis*. Applicants are also encouraged to file documentation supporting the cost analysis with all associated contract documents.

Upon request, FEMA will provide guidance as necessary in the cost analysis process. Such a review does not constitute approval when determining the eligibility of costs for reimbursement under FEMA's Public Assistance Program.

Pre-Disaster and Standby Contracts

Applicants are encouraged to pre-qualify debris removal contractors prior to an event and solicit bid prices from this list of contractors once an event has occurred to ensure competitive bidding and obtain reasonable market prices at the time of work performed. The solicitation for pre-qualifying contractors

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should adequately define in the proposed scope of work all potential debris types, anticipated haul distances, and size of events for which a contract may be activated.

Debris Removal Contract Provisions

All debris removal contracts must contain the following provisions:

- ☐ All payment provisions must be based on unit prices (volume or weight).
- ☐ Payments based on time and material costs are limited to work performed during the first 70 hours of actual work following a disaster event.

Note: FEMA will typically only reimburse applicants for a time and materials contract for eligible debris clearance during the first 70 hours following a declared disaster. After 70 hours of work, the applicant should have sufficient information on the scope of work necessary to complete debris collection and disposal, and a basis for estimating a reasonable cost for the contract work to effectively solicit a lump sum or unit price contract. For some types of debris work time and materials contracts may be the most cost-effective and best suited to the type of work. Applicants should work closely with the State and FEMA when awarding such contracts to ensure eligibility requirements are met.

- ☐ Payment will be made only for debris that FEMA determines eligible. (This is an optional provision to protect the applicant.)
- ☐ Contractors must submit invoices regularly and for no more than 30-day periods.
- ☐ A "Termination for Convenience" clause allowing contract termination at any time for any reason.
- ☐ A time limit on the period of performance for the work to be done.
- ☐ A subcontract plan including a clear description of the percentage of the work the contractor may subcontract out and a list of subcontractors the contractor plans to use.
- ☐ A requirement that the contractor use mechanical equipment to load and reasonably compact debris into the trucks and trailers.
- ☐ A requirement that the contractor provide a safe working environment.
- ☐ A requirement that all contract amendments and modifications will be in writing.

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- ☐ A requirement that contractors must obtain adequate payment and performance bonds and insurance coverage.

Debris Monitoring Contracts

Applicants must monitor all debris removal operations. Applicants must document all eligible debris removal expenses as a condition of receiving Public Assistance funding. Applicants may use contractors to monitor their debris removal operations. In addition to the guidance provided above, applicants should consider the following when procuring debris monitoring contracts:

- ☐ Debris monitoring contracts must be competitively procured as required by 44 CFR § 13.36, **Procurement**.
- ☐ Debris monitors should not be employed by or affiliated with the debris removal contractor.
- ☐ Debris monitoring contracts are typically time and materials contracts and must contain a not-to-exceed clause, pursuant to 44 CFR § 13.36, **Procurement**.
- ☐ The contract should include a requirement that the contractor provide a safe working environment, including properly constructed monitoring towers.
- ☐ Use of a load ticket system to record with specificity (e.g., street address, GPS coordinates) where debris is collected and the amount picked up, hauled, reduced, and disposed of.
- ☐ Debris monitors should be trained and possess skills adequate to fulfill the duties of the job. Labor rates should be commensurate with the skill level required by the job function. **Professional engineers and qualifications are not required to perform monitoring duties.**
- ☐ The contractor should demonstrate that its staff is familiar with FEMA debris removal eligibility criteria.

Avoidance Checklist

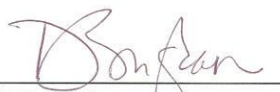
- ☐ **DO NOT:** Award a debris removal or debris monitoring contract on a sole-source basis.
- ☐ **DO NOT:** Sign a contract (including one provided by a contractor) until your legal representative has thoroughly reviewed it.
- ☐ **DO NOT:** Allow any contractor to make eligibility determinations; only FEMA has authority to make final eligibility determinations.

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DEBRIS CONTRACTING GUIDANCE

- ☐ **DO NOT:** Accept any contractor's claim that it is "FEMA certified." FEMA does not certify, credential, or recommend debris contractors.
- ☐ **DO NOT:** Award a contract to develop and manage debris management sites, unless the debris sites are part of your approved debris management plan or you contact the State or FEMA for technical assistance concerning the need for such an operation. Temporary Debris Storage and Reduction sites are not always necessary.
- ☐ **DO NOT:** Allow separate line item payment for stumps 24 inches and smaller in diameter; you should treat these stumps as normal debris.
- ☐ **DO NOT:** "Piggyback" or utilize a contract awarded by another entity. "Piggybacking" may be legal under applicable state law; however, the use of such a contract may jeopardize FEMA funding because these contracts do not meet requirements for competition established in 44 CFR § 13.36. If an applicant requests reimbursement for costs it incurred from a piggyback contract, FEMA will determine the reasonable cost for the performance of eligible work.
- ☐ **DO NOT:** Award pre-disaster/stand-by contracts with mobilization costs or unit costs that are significantly higher than what they would be if the contract were awarded post-disaster. Such contracts should have variable mobilization costs depending upon the size of the debris work that may be encountered.
- ☐ **DO NOT:** Allow for markups due to errors in volume calculations.
- ☐ **DO NOT:** Allow for miscellaneous items, or for contract contingencies of any kind, including "unknowns."


See Attachment 2, *Debris Operations Contract Bid Sheet*, for additional guidance on debris contracts.



Deborah Ingram
Acting Assistant Administrator
Recovery Directorate

9/27/10
Date

Attachments (2)

	FEMA	RECOVERY
FACT SHEET		9580.201
ATTACHMENT 1:		
Debris Removal Contract Cost Analysis		
<p>This guidance is intended to assist Public Assistance applicants in complying with the requirements of 44 CFR Part 13.36, Procurement, for debris operation contracts or contract modifications where adequate price competition is lacking.</p>		
When to Conduct a Cost Analysis		
<p>Applicants should complete a cost analysis when one of the following conditions applies:</p>		
<ul style="list-style-type: none">• The applicant has not received two or more priced bids from responsible bidders after soliciting a number of sources;• Services can only be provided by a single source;• The awarding agency authorizes noncompetitive proposals;• The public exigency or emergency for the requirement will not permit a delay resulting from competitive solicitation; or• The procurement is a contract modification or change order.		
General Contract Review		
<p>In order to conduct a cost analysis, applicants should request cost documentation from their debris contractors. This documentation should contain a detailed breakdown of costs for each item of work activity and information on how the contractor arrived at its costs, including, but not limited to:</p>		
<ul style="list-style-type: none">• Number of labor hours,• Labor rates,• Materials (types, quantities, and costs),• Equipment hours,• Equipment rates, or• Unit costs		
<p>Applicants are encouraged to verify the mathematical accuracy of the cost documentation by recalculating the contractor's cost figures. Applicants should also review the proposed contract's scope</p>		
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ATTACHMENT 1: Debris Removal Contract Cost Analysis

of work for cost reasonableness to ensure that the proposed scope does not fall under an existing contract.

Applicants should ensure that the contract does not use prohibitive contracting methods per 44 CFR § 13.36(f)(4), including:

1. Cost plus a percentage of cost – this is a contract that provides a specified percentage profit over and above the actual costs of construction; and
2. Percentage of construction cost.

Labor Rate Analysis

Applicants may determine the reasonableness of labor rates by:

1. Comparing the proposed labor category rates with the labor rates in another contract that was competitively bid;
2. Matching rates for each labor category to an acceptable source (e.g. RS Means);
3. Verifying that the classification of each worker and skill level proposed in the contract are reasonable and necessary for the scope of work. For example, a contractor should not propose using an experienced supervisor rate or worker with professional qualifications for work that can be done by a low skilled laborer (e.g., using a professional engineer for debris monitoring). In this case, the supervisor labor classification is unreasonable and should be adjusted to the appropriate labor classification that is more commensurate with the type of work being performed; and
4. Verifying that the proposed number of labor hours are reasonable for the scope of work.

Equipment Rate Analysis

Applicants may determine the reasonableness of equipment rates by:

1. Comparing the proposed equipment rates with the equipment rates in another contract that was competitively bid (if a change order, compared rates to the original contract);
2. Comparing the proposed equipment rates to FEMA's Schedule of Equipment Rates, available at www.fema.gov;
3. Matching equipment rates for each piece of equipment to an acceptable source (e.g., EquipmentWatch);
4. Verifying that the type of equipment proposed is reasonable and necessary for the scope of work;
5. Verifying that the number of units (normally hours) of equipment usage necessary to complete the work is reasonable considering the specific scope of work; and
6. Verifying that there are no contract provisions for the following items with regard to the

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ATTACHMENT 1: Debris Removal Contract Cost Analysis

proposed equipment costs:

- Mobilization costs
- Standby costs

Unit Rate Analysis

Applicants may determine the reasonableness of unit rates by:

1. Verifying that the unit of measurement (i.e. cubic yard, weight, each, etc.) is appropriate for the scope of work (if the contractor quoted a unit rate price); and
2. Comparing the proposed unit rates with similar rates in another contract that was competitively bid (if a change order, comparing rates to the original contract).

Materials and Supplies Analysis

Applicants should review the materials and supplies included in the contract proposal and ensure that all costs are reasonable.

(Scope of Work) Volume Estimates

In some circumstances, a contractor will include debris volume estimates in support of its proposed costs. Contractors develop these estimates using aerial and ground assessments, forecasting and estimating models (e.g., USACE hurricane debris models and photographs), side scan sonar and other methodologies.

Applicants should request hard copies of volume estimates and all supporting documentation in order to determine if the methodology that the contractor used to estimate debris was an acceptable and reasonable methodology. Applicants should also verify that the volume estimates are reasonable and accurate.

Price Analysis for Competitively Bid Contracts

Applicants are required by 44 CFR Part 13.36(f)(1) to perform a price analysis in all other instances (i.e., for competitively bid contracts when price competition is adequate), to determine the reasonableness of the proposed contract price. Price analyses may incorporate an evaluation of: historic documentation for similar work; average costs for similar work in the area; published unit costs from the national cost estimating databases; and FEMA cost codes, equipment rates, and engineering and design service curves. Upon request, FEMA will assist applicants in the review of these contracts and provide guidance as necessary.



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ATTACHMENT 2: Debris Operations Contract Bid Sheet

Overview

Public Assistance applicants may use the following debris operations bid sheet as a template when issuing requests for proposals and soliciting contract bids for debris removal work. Use of a standard bid sheet will help Public Assistance applicants to compare and analyze bids, resulting in a more effective procurement process. The bid sheet serves only as a guide for soliciting requests for debris removal services; use of the bid sheet is not a requirement for Public Assistance funding. Please refer to the *Debris Operations Contracting and Cost Analysis* (Attachment 1) for guidance on complying with procurement requirements established in 44 CFR Part 13, **Procurement**.

Debris Operations Bid Sheet

The debris operations bid sheet is presented on the next three pages. The remainder of this section is intentionally left blank.



FEMA

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ATTACHMENT 2: Debris Operations Contract Bid Sheet

SAMPLE Debris Bid Sheet					
SAMPLE Category	SAMPLE Field Name and Description	SAMPLE Unit	Cost per Unit	Estimated Total Units	Total
Vegetative Collect and Haul	0-15 Miles Veg from Right of Way (ROW) to Debris Management Site (DMS) <i>Vegetative collect and removal for a haul distance up to 15 miles</i>	CY	999999	999999	99,999,999.00
	16-30 Miles Veg from ROW to DMS <i>Vegetative collect and removal for a haul distance between 16 and 30 miles</i>	CY	999999	999999	99,999,999.00
	31-60 Miles Veg from ROW to DMS <i>Vegetative collect and removal for a haul distance between 31 and 60 miles</i>	CY	999999	999999	99,999,999.00
	60+ Miles Veg from ROW to DMS <i>Vegetative collect and removal for a haul distance greater than 60 miles</i>	CY	999999	999999	99,999,999.00
	Single Price Veg from ROW to DMS <i>A single price vegetative collect and removal for any haul distance</i>	CY	999999	999999	99,999,999.00
Management and Reduction	Grinding <i>Grinding/chipping vegetative debris</i>	CY	999999	999999	99,999,999.00
	Air Curtain Burning <i>Air Curtain Burning vegetative debris</i>	CY	999999	999999	99,999,999.00
	Open Burning <i>Open Burning vegetative debris</i>	CY	999999	999999	99,999,999.00
	Compacting <i>Compacting vegetative debris</i>	CY	999999	999999	99,999,999.00
	Debris Management Site Management <i>Preparation, management, and segregating at debris management site</i>	CY	999999	999999	99,999,999.00
C & D Collect and Haul	0-15 Miles C&D from ROW to DMS <i>C&D collect and removal for a haul distance up to 15 miles</i>	CY	999999	999999	99,999,999.00
	16-30 Miles C&D from ROW to DMS <i>C&D collect and removal for a haul distance between 16 and 30 miles</i>	CY	999999	999999	99,999,999.00
	31-60 Miles C&D from ROW to DMS <i>C&D collect and removal for a haul distance between 31 and 60 miles</i>	CY	999999	999999	99,999,999.00
	60+ Miles C&D from ROW to DMS <i>C&D collect and removal for a haul distance greater than 60 miles</i>	CY	999999	999999	99,999,999.00
	Single Price C&D from ROW to DMS <i>A single price C&D collect and removal for any haul distance</i>	CY	999999	999999	99,999,999.00

THIS SAMPLE BID SHEET IS INTENDED FOR INFORMATIONAL PURPOSES ONLY. IT SHOULD NOT BE SUBMITTED TO FEMA.

RECOVERY FACT SHEET DAP9580.201

ATTACHMENT 2: DEBRIS OPERATIONS CONTRACT BID SHEET

Final Disposal	0-15 Miles from DMS to Final Disposal <i>Transport processed debris from DMS to final disposal 0-15 Miles</i>	CY	999999	999999	99,999,999.00
	16-30 Miles from DMS to Final Disposal <i>Transport processed debris from DMS to final disposal 16-30 Miles</i>	CY	999999	999999	99,999,999.00
	31-60 Miles from DMS to Final Disposal <i>Transport processed debris from DMS to final disposal 31-60 Miles</i>	CY	999999	999999	99,999,999.00
	60+ Miles from DMS to Final Disposal <i>Transport processed debris from DMS to final disposal 60+ Miles</i>	CY	999999	999999	99,999,999.00
	Single Price from DMS to Final Disposal <i>A single price transport of processed debris from DMS to final disposal</i>	CY	999999	999999	99,999,999.00
	Tipping Fees (Vegetative) <i>Fee includes negotiated contract price or pass through amount for vegetative</i>	CY	999999	999999	99,999,999.00
	Tipping Fees (Mix) <i>Fee includes negotiated contract price or pass through amount for Mix</i>	CY	999999	999999	99,999,999.00
	Tipping Fees (C&D) <i>Fee includes negotiated contract price or pass through amount for C&D</i>	CY	999999	999999	99,999,999.00
Tree Operations	Hazardous Trees 6"-12" <i>Hazardous tree removal for a 6-12 inch trunk diameter</i>	Tree	999999	999999	99,999,999.00
	Hazardous Trees 13"-24" <i>Hazardous tree removal for a 13-24 inch trunk diameter</i>	Tree	999999	999999	99,999,999.00
	Hazardous Trees 25"-36" <i>Hazardous tree removal for a 25-36 inch trunk diameter</i>	Tree	999999	999999	99,999,999.00
	Hazardous Trees 37"-48" <i>Hazardous tree removal for a 37-48 inch trunk diameter</i>	Tree	999999	999999	99,999,999.00
	Hazardous Trees 49"+ <i>Hazardous tree removal for a 49+ inch trunk diameter</i>	Tree	999999	999999	99,999,999.00
	Trees with Hazardous Limbs >2" <i>Hazardous hanging limb removal</i>	Tree	999999	999999	99,999,999.00
	Hazardous Sumps >24"-36" <i>Hazardous stump removal for a 24-36 inch stump diameter</i>	Stump	999999	999999	99,999,999.00
	Hazardous Sumps >37"-48" <i>Hazardous stump removal 37-48 inch stump diameter</i>	Stump	999999	999999	99,999,999.00
	Hazardous Sumps >49"+ <i>Hazardous stump removal 49+ inch stump diameter</i>	Stump	999999	999999	99,999,999.00
	Stump Fill Dirt <i>Fill dirt for stump holes after removal</i>	CY	999999	999999	99,999,999.00

THIS SAMPLE BID SHEET IS INTENDED FOR INFORMATIONAL PURPOSES ONLY. IT SHOULD NOT BE SUBMITTED TO FEMA.

RECOVERY FACT SHEET DAP9580.201

ATTACHMENT 2: DEBRIS OPERATIONS CONTRACT BID SHEET

Specialty Removal	Waterway Debris Removal <i>Debris Removal from canals, rivers, creeks, streams, and ditches</i>	CY	999999	999999	99,999,999.00
	Sand Collection and Screening <i>Pick up, screen, and return debris laden sand/mud/dirt/rock</i>	CY	999999	999999	99,999,999.00
	Vehicle Removal <i>Removal of eligible vehicle</i>	Unit	999999	999999	99,999,999.00
	Vessel Removal (Land) <i>Removal of eligible vessel</i>	LF	999999	999999	99,999,999.00
	Vessel Removal (Marine) <i>Removal of eligible vessel from waterway</i>	LF	999999	999999	99,999,999.00
	Carcass Removal <i>Removal of debris that will decompose (animals and organic fleshy matter)</i>	Pound	999999	999999	99,999,999.00
	ROW White Goods Removal <i>Pick up and haul of white goods to disposal site</i>	Unit	999999	999999	99,999,999.00
	Freon Management <i>Freon management and recycling</i>	Unit	999999	999999	99,999,999.00
	Demolition of Private Structure	CY	999999	999999	99,999,999.00
	Electronic Waste <i>Removal of electronic debris that contain hazardous materials, such as cathode ray tubes. Includes computers monitors and televisions.</i>	Unit	999999	999999	99,999,999.00
	Silt Removal		999999	999999	99,999,999.00
	Putrescent Removal <i>Removal of debris that will decompose or rot (animals and organic fleshy matter)</i>		999999	999999	99,999,999.00
	Biowaste <i>Removal of waste capable of causing infection to humans (animal waste, human blood, pathological waste)</i>	Pound	999999	999999	99,999,999.00
	Household Hazardous Waste (HHW) <i>HHW removal and disposal</i>	Pound	999999	999999	99,999,999.00
Restoration	Beach/Lake Restoration <i>Berm/Beach Construction</i>	CY	999999	999999	99,999,999.00
	Canal Shoreline Restoration	LF	999999	999999	99,999,999.00
Monitoring	Debris Management Site Debris Monitors	Hour	999999	999999	99,999,999.00
	Debris Collection Site Debris Monitors (Field Monitors)	Hour	999999	999999	99,999,999.00
	Sr. Technician/Field Supervisor	Hour	999999	999999	99,999,999.00
	Clerical Staff	Hour	999999	999999	99,999,999.00
	Clerical Supervisor	Hour	999999	999999	99,999,999.00
Total					9,999,999.00

THIS SAMPLE BID SHEET IS INTENDED FOR INFORMATIONAL PURPOSES ONLY. IT SHOULD NOT BE SUBMITTED TO FEMA.

Appendix E

SAMPLE PRESS RELEASES

For Immediate Release (Approximately 48-72 Hours Prior to Event)

Cabarrus County, North Carolina – The potential for dangerous ice storm conditions is eminent for Cabarrus County and its residents. In anticipation of a likely large debris-generating storm, residents are asked to secure or store all yard items that may become damaging projectiles. The County is prepared and has a plan in place to immediately respond following the event. Once dangerous conditions subside and roads have been cleared of obstructions, residents should bring any debris to the public right-of-way for removal.

The public right-of-way is the area of residential property that extends from the street to the sidewalk, ditch, utility pole, or easement. Residents should separate clean, vegetative debris (woody burnable debris such as limbs and shrubbery) from construction and demolition debris. Do not mix hazardous material, such as paint cans, aerosol sprays, batteries, or appliances, with construction and demolition debris. Household garbage, tires, or roof shingles cannot be combined with any storm debris.

Do not place debris near water meter vault, fire hydrant or any other aboveground utility. Only debris placed on the public right-of-way will be eligible for collection until further notice.

If all debris is not picked up during the initial pass, residents should continue to push remaining debris to the public right-of-way for collection on subsequent passes. Residential debris drop-off locations may be available within Cabarrus County. Check the Cabarrus County website **INSERT WEBSITE** for the location of these sites and the hours of operation or call **INSERT NUMBER**. The Cabarrus County website will also provide County office closure times/date (including garbage collection and County facilities). All reconstruction debris (debris resulting from rebuilding) is the responsibility of the homeowner. Those items must be dropped off at the **INSERT LOCATION**.

Cabarrus County residents are encouraged to stay indoors until dangerous conditions have passed. Please tune in to local news channels for updated weather information.

#####

For Immediate Release (Approximately 0-72 Hours Following Event)

Cabarrus County, North Carolina – Cabarrus County is beginning its recovery process in the wake of **INSERT EVENT**. Cabarrus County residents are asked to place any storm-generated debris on the public right-of-way.

The public right-of-way is the area of residential property that extends from the street to the sidewalk, ditch, utility pole, or easement. Keep vegetative debris (woody burnable debris such as limbs and shrubbery) separated from construction and demolition debris, as they will be collected separately. Bagged debris should not be placed on the public right-of-way; only loose debris will be collected. Any household hazardous waste, roof shingles or tires resulting from **INSERT EVENT**, may be eligible for removal and should be separated at the curb.

Appendix E

Do not place near water meter vault, fire hydrant or any other aboveground utility. Only debris placed on the public right-of-way will be eligible for collection until further notice.

If not all debris is picked up during the initial pass, please continue to push remaining debris to the right-of-way for collection on subsequent passes. Household garbage collection will resume to its normal schedule on **INSERT DATE AND TIME**. Please check the Cabarrus County website **INSERT WEBSITE** for additional information and updates on the debris removal process.

For more information, please call the County's debris hotline at **INSERT NUMBER**.

####

For Immediate Release (72 Hours Prior to Final Pass of Debris Removal)

Cabarrus County, North Carolina – Final preparations are being made for the third and potentially final pass for debris removal in the wake of **INSERT EVENT**.

Cabarrus County residents should have all storm-generated debris in front of their homes on the public right-of-way (the area of residential property that extends from the street to the sidewalk, ditch, utility pole, or easement) no later than **INSERT DATE** to be eligible for pick-up.

Cabarrus County will not be able to guarantee that debris placed on the public right-of-way after the specified deadline will be removed.

Residents should continue to separate vegetative debris (woody burnable debris such as limbs and shrubbery) and construction and demolition debris. Do not place debris near water meter vault, fire hydrant or any other aboveground utility. Hazardous household chemicals such as paint cans and batteries may be deposited at the **INSERT LOCATION**.

You can follow the debris removal efforts in your neighborhood and the rest of the County by going to the Cabarrus County website **INSERT WEBSITE**, or by calling **INSERT NUMBER**.

####

Appendix F

SAMPLE MEMORANDUM OF AGREEMENT

This Memorandum of Agreement, made and entered into this _____ day of _____ 20____, by and between (hereinafter “OWNER”), and Cabarrus County (hereinafter “COUNTY”) (collectively referred to hereinafter as “the Parties”).

WHEREAS, the COUNTY has a debris management plan for the removal, reduction, and disposal of large volumes of debris from public property following large scale disasters; and

WHEREAS, pursuant to the COUNTY debris management plan, the COUNTY may or may not enter into an agreement with one or more contractor(s) to manage and operate the removal, reduction, and disposal of disaster generated debris depending on the severity of the incident; and

WHEREAS, OWNER is the owner of a tract of land in Cabarrus County, North Carolina (hereinafter “the Property”), more particularly described in Exhibit A attached hereto; and

WHEREAS, the COUNTY has identified the Property owned by OWNER as a suitable location for a Debris Management Site (“DMS”), to be used by the COUNTY in the event of a disaster necessitating debris removal, reduction, and disposal; and

WHEREAS, the COUNTY and the OWNER have agreed to cooperate toward establishment of a DMS to be used by the COUNTY, or its designees, in the event of emergency assistance efforts requiring debris removal, reduction, and disposal in Cabarrus County.

Now therefore, the Parties agree as follows:

I. PROPERTY

The Property, as shown and identified as DMS on Exhibit A, constitutes approximately _____ acres available for DMS operations. The physical location of the site is: _____ and is a portion of property owned by OWNER identified as: _____ County Real Estate ID#: _____.

II. TERM

Subject to early termination as permitted by Section V herein below, this Agreement shall be for a term of _____ from the date of the Agreement without regard to the Commencement Date (as hereinafter defined).

III. AGREEMENT

OWNER, subject to the terms and conditions set forth herein, hereby agrees to the use of the Property by the COUNTY for purposes of staging, storing, reducing, and properly disposing of disaster generated debris following a natural or man-made event.

IV. COUNTY OBLIGATIONS

- a. Obtain, or cause to be obtained, all required local, state, and federal permits for the operation of a DMS;
- b. Install, or caused to be installed, if necessary, a temporary access road (of gravel, graded dirt, or other temporary material) for access of debris hauling vehicles to the Property;
- c. Manage, or cause to be managed, the DMS during the entire period of COUNTY use;

Appendix F

- d. Remove, or cause to be removed, all debris, vehicles, equipment, and temporary structures located on the property which were placed thereon by the COUNTY, its employees, agents, contractors, subcontractors, and representatives;
- e. Restore, or cause to be restored, the property to the property's pre-use condition prior to the return of use of property to the OWNER;
- f. Perform, or cause to be performed, soil testing and abatement of any hazards created on the property as a direct result of COUNTY use as required under local, state, and federal law prior to the closing of the debris site and return of use of the property to the OWNER;
- g. Repair, or cause to be repaired, any damage to the property, including buildings and structures located on the property, caused as a direct result of COUNTY use of the property; in lieu of making or causing to make repair, the COUNTY may compensate OWNER for the cost of said repair upon agreement of both parties.

V. OWNER OBLIGATIONS

- a. Take no action that renders the Property unusable as a temporary disaster debris disposal site as determined by the COUNTY;
- b. Upon notification (either verbal or in writing) by the COUNTY of the COUNTY'S intent to make use of some or all of the Property as a DMS under the terms and conditions of this Agreement, to make as much of the Property as deemed necessary by the COUNTY immediately available to the COUNTY, and to immediately remove all personal property (including, but not limited to vehicles and equipment) from those portions of the Property identified by the COUNTY for use;
- c. Not interfere in any manner with COUNTY -controlled debris management operations during the period of the COUNTY'S use of the Property under the terms and conditions of this Agreement.

VI. COMMENCEMENT DATE

The COUNTY will initiate DMS operations immediately preceding an event anticipated to generate debris within the County, or immediately following an event that generated debris within the County. The COUNTY will activate this Agreement through verbal notification to the OWNER, followed by written notification transmitted by United States mail as certified or registered mail, return receipt requested, postage paid, and addressed to OWNER. The "Commencement Date" shall be the date upon which notification is verbally provided by the COUNTY to OWNER.

VII. ASSIGNMENT

OWNER shall not sell or in any way assign, transfer, or encumber his control of the Property without prior written notification to the COUNTY.

VIII. COMPENSATION

The parties agree that no compensation will be rendered for the use of the Property by the COUNTY. The COUNTY, or its designee(s), shall be responsible for restoring the Property to its original state.

IX. DMS OPERATIONS

The COUNTY, or its designee(s), will establish, operate, and monitor Debris Management Site ("DMS") operations from the time of activation of this agreement through site restoration.

X. WORKING HOURS

Working hours for the DMS are only during daylight hours, seven days a week. Working hours may need to be adjusted to accommodate 24-hour operations depending on the severity of the incident.

XI. DEBRIS DISPOSAL

The COUNTY, or its designee(s), will properly, promptly and lawfully dispose of all waste, ash, and debris brought to or generated on the DMS.

SAMPLE MEMORANDUM OF AGREEMENT

XII. DEBRIS SOURCES

The debris stream entering the DMS may include debris generated in the unincorporated areas of _____ the COUNTY, areas within neighboring municipalities, areas within County jurisdiction, and from road right-of-ways maintained by the North Carolina Department of Transportation (TXDOT). The COUNTY will coordinate with the TXDOT, the County and neighboring municipalities with regard to debris disposal at the COUNTY -operated DMS. The intention of this Agreement is to create an arrangement where TXDOT, the County, and municipalities can deliver their debris to the DMS upon approval by the COUNTY, and does not necessitate individual agreements between the OWNER and each entity.

XIII. NOTICES

Any notice or demand which by any provision of this agreement is required or allowed to be given by either party to the other shall be deemed to have been sufficiently given for all purposes when made in writing and sent in the United States mail as certified or registered mail, return receipt requested, postage paid, and addressed to the following respective addresses:

XIV. INDEMNIFICATION

The COUNTY agrees to indemnify and hold harmless OWNER from any claims, causes of action, administrative proceedings, and any and all other legal claims directly arising out of or relating to any damage, injury, loss, or other actions or omissions taken by COUNTY, its employees, agents, contractors, subcontractors, and representatives as a direct result of the COUNTY'S use of the Property under the terms and conditions of the Agreement. The COUNTY shall not be liable for any damage, injury, loss, or other actions or omissions not taken by COUNTY, its employees, agents, contractors, subcontractors and representatives, including acts of third parties not operating at the direction of or under the control of COUNTY. Further, COUNTY shall not be liable for any injury, damage, or loss sustained by OWNER as a result of OWNER'S breach of the terms and conditions of this Agreement.

XV. TERMINATION

This Agreement shall be in effect from the last date written below until _____. This Agreement may be terminated by either party upon submission of a thirty-day advance written notice of termination. It is the intention of the Parties to discuss the renewal of this Agreement on an annual basis. Such renewals, if mutually agreed upon, shall be evidenced by an executed Supplemental Memorandum of Agreement. The Parties may choose to negotiate new or changed terms at the time of renewal.

OWNER: _____

COUNTY: _____

XVI. ENTIRE AGREEMENT

The OWNER and the COUNTY agree that this document constitutes the entire agreement between the two parties and may only be modified by a written mutual agreement signed by the parties. Modifications may be evidenced by facsimile signatures. Unless and until further modified, this agreement shall consist of this document and the following attachments or addenda: Exhibit A

XVII. GOVERNING LAW

Both parties agree that this Agreement shall be governed by the laws of the State of North Carolina.

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This Agreement shall be effective on the date of the last signature below. Jurisdiction in witness whereof, the Parties have each executed this Agreement, this the ____ day of _____, 20____.

OWNER

BY: _____
(Signature)

(Print Name)

(Title)

DATE: _____

CABARRUS COUNTY

BY: _____
(Signature)

(Print Name)

(Title)

DATE: _____

WITNESS

BY: _____
(Signature)

(Print Name)

(Title)

DATE: _____

Appendix G

FIELD DOCUMENTS

This appendix contains several field documents that are typically used during debris management operations. A short description of the purpose and use of each document is provided below.

Force Account Labor Summary Record: This form is used to document force account, or community personnel expenses for eligible projects. Keep the following points in mind when compiling force account labor information:

- Record regular and overtime hours separately.
- Record the benefits separately for regular and overtime hours. Most overtime hours include fewer benefits than regular hours.
- Attach the Applicant's Benefit Calculation Worksheet giving a breakdown of what is included in your benefits, by percentages, e.g., social security - 15.2%, worker's compensation - 4.3%, insurance - 18.5%, etc. You can use an average rate if you have different benefit rates for different employees.

Materials Summary Record: This form is used to document the work performed and cost associated with the work.

Load Ticket: Load tickets are used to track the debris from the original collection point to the debris management site or landfill. The assigned monitor will complete this form at the point of origin, enabling the impacted community to document each individual load from collection through final disposal.

Haulout Ticket: This form is used to document the transportation of reduced debris from the debris management site to its final disposal location.

Unit Rate Ticket: This form documents specialized debris programs that require a per unit collection and disposal rate, such as parks debris removal, right of entry programs, and leaning trees and hanging limbs.

DEPARTMENT OF HOMELAND SECURITY FEDERAL EMERGENCY MANAGEMENT AGENCY FORCE ACCOUNT LABOR SUMMARY RECORD										PAGE _____ OF _____	O.M.B. No. 1660-0017 Expires October 31, 2008
APPLICANT		PAID NO.		PROJECT NO.		DISASTER					
LOCATION/SITE				CATEGORY		PERIOD COVERING					
DESCRIPTION OF WORK PERFORMED											

NAME	DATES AND HOURS WORKED EACH WEEK							COSTS				
	DATE							TOTAL HOURS	HOURLY RATE	BENEFIT RATE/HR	TOTAL HOURLY RATE	TOTAL COSTS
NAME	REG.											
JOB TITLE	O.T.											
NAME	REG.											
JOB TITLE	O.T.											
NAME	REG.											
JOB TITLE	O.T.											
NAME	REG.											
JOB TITLE	O.T.											
NAME	REG.											
JOB TITLE	O.T.											
TOTAL COSTS FOR FORCE ACCOUNT LABOR REGULAR TIME											\$	
TOTAL COST FOR FORCE ACCOUNT LABOR OVERTIME											\$	

I CERTIFY THAT THE INFORMATION ABOVE WAS OBTAINED FROM PAYROLL RECORDS, INVOICES, OR OTHER DOCUMENTS THAT ARE AVAILABLE FOR AUDIT.	
CERTIFIED	DATE

Appendix G

		LOAD TICKET	
		#	
Applicant:		Disaster #	
Program:		Contractor:	
Truck # :		Truck Capacity:	
House # :	Street / Load Origin:	Zone #:	
Debris Classification: <input type="checkbox"/> Vegetative/Woody <input type="checkbox"/> Mixed <input type="checkbox"/> Construction & Demolition <input type="checkbox"/> White Goods <input type="checkbox"/> Household Hazardous Waste <input type="checkbox"/> Animal Carcasses <input type="checkbox"/> Hazardous Materials / Toxic <input type="checkbox"/> Other: _____			
Driver's Name:		Odometer:	
Loading Time:		Loading Date:	
Monitor Name (print):		I.D. #	
=====		=====	
TDSRS / Disposal Site Location:		Odometer:	
Load Call (%):		Weight (tons):	
Disposal Time:		Disposal Date:	
Monitor Name (print):		I.D. #	
Contractor Name (print):		I.D. #	
Notes:			
<i>White - Applicant Green and Yellow - Contractor Pink - Driver Gold - Site Copy</i>			
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		HAULOUT TICKET
		#
Applicant:	Disaster #	
Program:	Contractor:	
Truck # :	Truck Capacity:	
TDSR Site:		
Haulout Debris Classification:		
<input type="checkbox"/> Vegetative Mulch	<input type="checkbox"/> White Goods	
<input type="checkbox"/> Ash	<input type="checkbox"/> Hazardous Materials / Toxic	
<input type="checkbox"/> C & D Mulch	<input type="checkbox"/> Household Hazardous Waste	
<input type="checkbox"/> C & D Compacted	<input type="checkbox"/> Other: _____	
Driver's Name:	Loading Odometer:	
Loading Time:	Loading Date:	
Monitor Signature:	I.D. #	
=====		
Disposal Site Location:	Disposal Odometer:	
Load Call (%):	Weight (tons / lbs.)	
Disposal Time:	Disposal Date:	
Monitor Name (print):	I.D. #	
Contractor Name (print):	I.D. #	
Notes:		
<i>White - Applicant Green and Yellow - Contractor Pink - Driver Gold - Site Copy</i>		
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Appendix G

		UNIT RATE TICKET	
		#	
Applicant:		Disaster #	
Program:			
<input type="checkbox"/> Parks	<input type="checkbox"/> Right-of-Entry	<input type="checkbox"/> Time & Materials	
<input type="checkbox"/> ROW Lean/Hanger	<input type="checkbox"/> Stumps	<input type="checkbox"/> _____	
Contractor:		Crew # :	
Survey Item # :		GPS:	
		N:	W:
House # :	Street Name:	Zone #:	
Parcel # :		ROE # :	
Contract Rate Code:			
1	3	5	7
2	4	6	8
9 Other: _____			
Contract Rate Sub-Code			
A	C	E	G
B	D	F	H
I Other: _____			
Unit Count:		Measurement:	
Start Time:	A P	End Time:	A P
		Date:	
Monitor Name (print):		I.D. #	
Contractor Name (print):		I.D. #	
Notes:			
<i>White - Applicant Green and Yellow - Contractor Pink - Driver Gold - Site Copy</i>			
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Appendix I

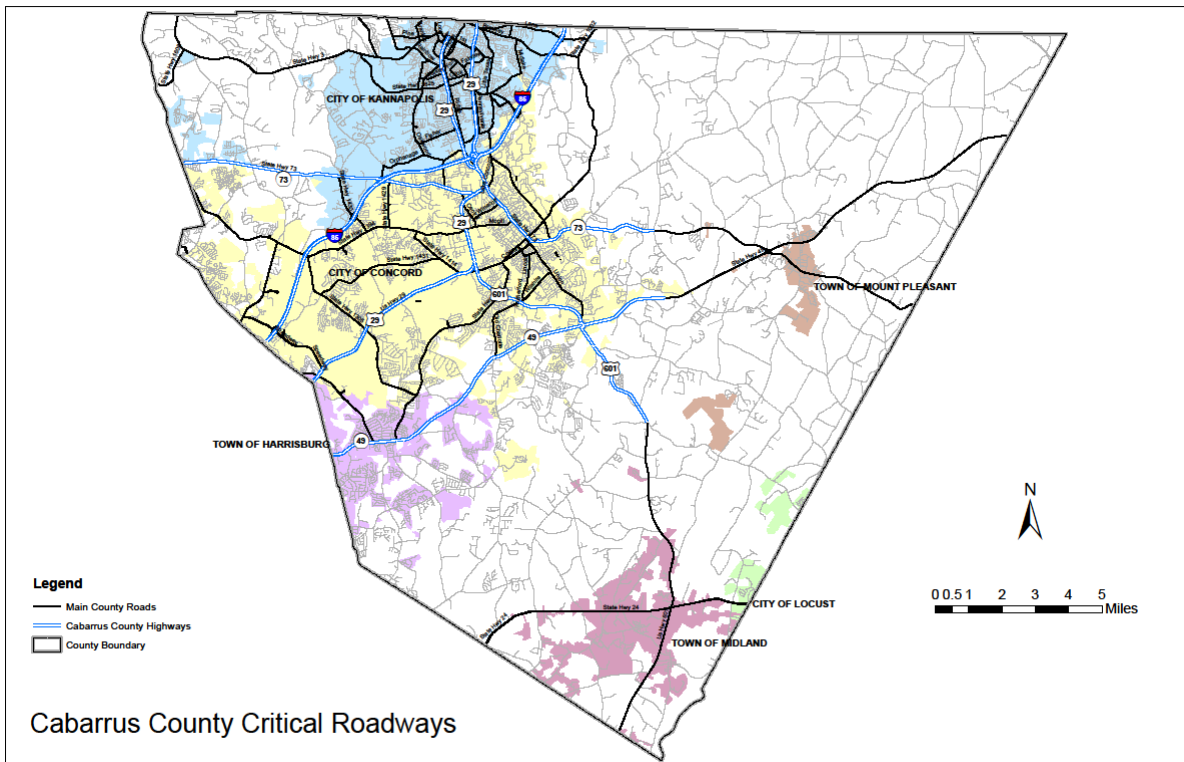
EMERGENCY ROAD CLEARANCE PRIORITIES

Roads leading to police departments, fire departments, emergency medical services facilities, hospitals, and other critical infrastructure will receive priority for emergency road clearance. The county would assist with debris clearance activities on municipality and/or state maintained roads if requested.

The major traffic arteries in the County include:

- a) Interstate Highway I-85: runs northeast-southwest through northwest section of the County.
- b) US Highway 29: runs north-southwest through the central section of the County.
- c) US Highway 601: runs north-south through the central section of the County. NC Highway 200 branches off US 601 through the southeastern corner of the County.
- d) NC Highway 73: runs east-west through the central part of the County.
- e) NC Highway 49: runs northeast-southwest through the eastern half of the County.
- f) NC Highway 24/27: runs east-west through the southern side of the County.
- g) NC Highway 52: runs northwest-southeast through the northeastern corner of the County.
- h) Kannapolis Parkway: passes Kannapolis to the west and links up with George Lyles Parkway in Concord at I-85; plans exist to extend the road to NC Highway 49 through the western section of the County.
- i) NC Highway 3. Begins in Concord, runs north to Kannapolis, then west-northwest out of the County towards Mooresville.

Map I-1
Critical County Roadways



Appendix J

ADDITIONAL DEBRIS FORECAST MODELS

Debris Forecast Formula

The forecasted amount of residential debris in the County is based on the following formula for a totally destroyed household as described in section 6 of FEMA 325.⁷ An estimate of a one-story, single-family home in Cabarrus County that is approximately 1,500 square feet (30 feet by 50 feet) is used for this calculation.

Exhibit J-1
Totally Destroyed Household Formula
$$L \times W \times S \times 20\% \times VCM = \text{CY of debris}$$
$$30' \times 50' \times 1 \times 0.20 \times 1.3 = 390 \text{ CY of debris}$$

L = Length of building in feet

W = Width of the building in feet

S = Height of building expressed in stories

20% = Reduction factor due to airspace in a single-family home

VCM = Vegetative cover multiplier⁸

Factors are applied to the totally destroyed household formula to account for partial and significant damage sustained.

Exhibit J-2
Scenario 2 - Potential Debris Generated from Partially and Totally Destroyed Households

Debris Generated from a Partially Damaged Household	=	Totally Destroyed Household x 10%
Debris Generated from a Significantly Damaged Household	=	Totally Destroyed Household x 25%

Based on the information presented above, the debris forecast formula presented in exhibit 1-4 calculates the number of households that will be affected. Table 1-6 illustrates the estimated amount of debris that could be generated by a moderate tornado.

⁷ July 2007 version

⁸ Medium vegetative cover multiplier is assumed.

Exhibit J-3
Scenario 2 – Debris Forecast Formula (rural area)

Households with Partial Damage	=	Number of Impacted Households x 15%
Households with Significant Damage	=	Number of Impacted Households x 10%

Table J-1
Scenario 2 – Debris Forecast Analysis (rural area)

	Number of Single Family Homes	CY/Home	Debris Quantities (CY)
Partial Damage	180	39	7,020
Significant Damage	120	98	11,760
Total CY			18,780

The amount of debris forecast for a moderate tornado or low-volume debris event in a rural area of the County is approximately 18,780 CY.

Exhibit J-4
Scenario 2 – Debris Forecast Formula (urban area)

Households with Partial Damage	=	Number of Impacted Households x 10%
Households with Significant Damage	=	Number of Impacted Households x 5%

Table J-2
Scenario 2 – Debris Forecast Analysis (urban area)

	Number of Single Family Homes	CY/Home	Debris Quantities (CY)
Partial Damage	3,213	39	125,307
Significant Damage	1,607	98	157,486
Total CY			282,793

The amount of debris forecast for a moderate tornado or low-volume debris event in an urban area of the County is approximately 282,793 CY.

Appendix K

HEALTH AND SAFETY STRATEGY

Health and Safety Strategy

Purpose

The purpose of this health and safety strategy is to supplement existing Cabarrus County safety guidelines with regard to debris removal activities. These are recommended baseline safety provisions. Ultimately, health and safety is the responsibility of the contracted parties involved in debris removal activities. This document will outline some of the general steps necessary to provide a safe work environment for monitoring firm and debris removal contractors' employees. In addition, this document will identify some representative work hazards and the appropriate measures to reduce risk of injury.

1.0 Dissemination of Information

The potential monitoring firm and debris removal contractors' project managers will be provided with this document and will be expected to disseminate the information and guidelines to their respective personnel. A copy of the document should be available for consultation. In addition, elements of the document will be reviewed from periodically during the project to increase worker awareness.

2.0 Compliance

The potential monitoring firm and debris removal contractors' project managers are responsible for health and safety compliance of their respective personnel and subcontractors. Any crews or individuals that are not compliant shall be suspended from debris removal activities until the situation is remedied. Frequent offenders of safety policies and procedures will be dismissed from the project entirely.

3.0 Job Hazard Assessment

Though debris removal activities are fairly similar among events, assessing the particular hazards of each disaster is an important part of maintaining health and safety for the debris removal workers. At a minimum, the following areas of focus should be considered as part of job hazard assessment:

- **Disaster Debris** – Disasters that result in property damage typically generate large quantities of debris, which must be collected and transported for disposal. The type of debris varies depending on the characteristics of the region (e.g., terrain, climate, dwelling and building types, population, etc.) and the debris-generating event (e.g. type, event strength, duration, etc.). In addition, the disaster debris produces a host of uneven surfaces, which must be negotiated.

- **Debris Removal** – Often the removal of disaster debris involves working with splintered, sharp edges of vegetative or construction material debris. Many disasters involve heavy rains or flooding. Consequently, disaster debris is damp and heavier than usual. As weights increase, so does the risk of injury.
- **Removal Equipment** – In most disasters, debris must be removed from the public right-of-way (ROW) to provide access for emergency vehicles and subsequent recovery efforts. Debris collection and removal requires the use of heavy equipment and power tools to trim, separate and clear disaster debris.
- **Traffic Safety** – The ROW is located primarily on publicly maintained roads. As a result, much of the debris removal process takes place in traffic of varying levels of congestion. In addition, disasters often damage road signs, challenging safety on the road.
- **Wildlife Awareness** – Disasters are traumatic events for people as well as wildlife. Displaced animals, reptiles and insects pose a hazard to debris removal workers.
- **Debris Disposal** – After disaster debris is collected, it is often transported to a Debris Management Site (DMS). Upon entry to a DMS, the monitoring firm will assess the volume of disaster debris being transported. The collection vehicle will then dispose of the disaster debris and the debris will be reduced either through a grinding operation or incineration. The DMS is a common area for injury. Response and recovery workers in this environment are more likely to be exposed to falling debris, heavy construction traffic, noise levels, dust and airborne particles from the reduction process.
- **Climate** – Debris-generating disasters often occur in areas or seasons with extreme weather conditions. The effects of temperature and humidity on physical labor must be monitored, and proper work-rest intervals must be assessed.

4.0 Administrative and Engineering Controls

The use of administrative and engineering controls can greatly reduce the threats to public health and safety in debris removal activities. Some common administrative and engineering controls used in the debris removal process are:

Collection Operations

- Conduct debris removal operations during daylight hours only.
- Limit cleanup operations to one side of the road at a time.
- Limit collection work under overhead lines.
- Inspect piles before using heavy equipment to remove them to ensure that there are no hazardous obstructions.
- Make sure that all collection vehicles have properly functioning lights, horns, and backup alarms.
- Load collection vehicles properly (not overloaded or unbalanced).

- Cover and secure loads, if necessary.
- When monitoring the collection process, stay alert in traffic and use safe driving techniques.

Power Tools

- Inspect all power tools before use.
- Do not use damaged or defective equipment.
- Use power tools for their intended purpose.
- Avoid using power tools in wet areas.

Debris Reducing Machinery (Grinders/Wood Chippers)

- Do not wear loose-fitting clothing.
- Follow the manufacturer's guidelines and safety instructions.
- Guard the feed and discharge ports.
- Do not open access doors while equipment is running.
- Always chock the trailer wheels to restrict rolling.
- Maintain safe distances.
- Never reach into operating equipment.
- Use lock out/tag out protocol when maintaining equipment.

DMS/Disposal Operations

- Use jersey barriers and cones to properly mark traffic patterns.
- Use proper flagging techniques for directing traffic.
- Monitor towers must not exit into traffic and should have hand and guard rails to reduce trips and falls.
- Monitor towers must have properly constructed access stairways with proper treads and risers and proper ascent angle (4:1 height/width ratio).
- Monitor towers must be surrounded by jersey barriers that protect the tower and monitors from being struck by inbound or outbound collection vehicles.
- Monitor towers should be located upwind from dust- and particulate generating activities.
- A water truck should spray the site daily to control airborne dust and debris.

5.0 Personal Protective Equipment

Personal Protective Equipment (PPE) is the last resort to providing a safe working environment for workers. PPE does not eliminate or even reduce hazards as administrative and engineering controls do. PPE works to reduce the risk of injury by creating a protective barrier between the individuals and work place hazards.

Proper use of PPE includes using PPE for its intended purpose. For example, using the wrong type of respirator might expose the worker to carcinogenic particulates. Properly fitting the equipment to the user may require examination by a medical professional. PPE that does not fit well will not provide maximum protection and will decrease the likelihood of the individual continuing to use the equipment. In addition, improper use may result in serious injury or death. The proper use of the equipment is outlined in detail in the manufacturer's instructions.

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The following PPE may be applicable in standard ROW, Right-of-Entry (ROE), and vegetative and construction & demolition debris removal activities:

- **Head Protection** – Equipment designed to provide protection for an individual’s head against hazards such as falling objects or the possibility of striking one’s head against low hanging objects. PPE used to protect the head must comply with ANSI Z89.1-1986, “American National Standard for Personnel Protection – Protective Headwear for Industrial Workers – Requirements.”
- **Foot Protection** – Equipment designed to provide protection for an individual’s feet and toes against hazards such as falling or rolling objects, objects that may pierce the sole or upper section of the foot, etc. PPE used to protect the feet and toes must comply with ANSI Z-41-1991, “American National Standard for Personal Protection – Protective Footwear.”
- **Hand Protection** – Equipment designed to provide protection for an individual’s hands against hazards such as sharp or abrasive surfaces. The proper hand protection necessary depends on the situation and characteristics of the gloves. For instance, specific gloves would be used for protection against electrical hazards while the same gloves may not be appropriate in dealing with sharp or abrasive surfaces.
- **Vision/Face Protection** – Equipment designed to provide protection for an individual’s eyes or face against hazards such as flying objects. PPE used to protect eyes and face must comply with ANSI Z87.1-1989, “American National Standard Practice for Occupational and Educational Eye and Face Protection.” Again, the proper eye/face protection necessary depends on the situation and characteristics of the equipment. For instance, eye and face protection used by individuals who are welding may not be appropriate for individuals operating a wood chipper.
- **Hearing Protection** – Equipment designed to provide protection for an individual’s hearing against prolonged exposure to high noise levels. According to OSHA, the permissible level of sound is an average of 90 decibels over the course of an eight (8) hour workday. Above the sound exposure level, hearing protection is required. PPE used to protect hearing must comply with ANSI S3.19-1974, “American National Standard Practice for Personal Protection – Hearing Protection.”
- **Respiratory Protection** – Equipment designed to provide protection for an individual’s respiratory system against breathing air contaminated with hazardous gases, vapors, airborne particles, etc. PPE used to protect the respiratory system must comply with ANSI Z88.2-1992. In addition, the use of respiratory protection requires a qualitative fit test and in some cases a pulmonary fit test by a licensed medical professional.

6.0 PPE Debris Removal Activity

PPE requirements are made based upon the results of the job hazards assessment. The following list of PPE is organized by debris removal activity and is meant to be a representative list.

Specific PPE requirements vary from location to location. In general, individuals involved in the debris removal process should personally monitor water consumption to avoid dehydration and use appropriate skin protection (breathable clothes, light colors, sunscreen, etc.). Ultimately, the selection of PPE is the responsibility of the monitoring firm and debris removal contractors' project managers.

Debris Collection Monitoring

The hazards of disaster debris collection monitoring include, but are not limited to: struck by vehicles, falls or trips on uneven surfaces, cuts, abrasions or punctures from vegetative or C&D sharps. PPE requirements include:

- Reflective vest;
- Foot protection (rugged shoes or boots, steel toe and shank if required); and
- Long pants.

Debris Disposal Monitoring

The hazards of disaster debris disposal monitoring include, but are not limited to: struck by or caught in/between vehicles, falls or trips on stairs or uneven surfaces, cuts, abrasions or punctures from vegetative or C&D sharps and struck by falling disaster debris. Monitor towers must be equipped with a first aid kit. PPE requirements include:

- Reflective vest;
- Foot protection (rugged shoes or boots, steel toe if required);
- Long pants; and
- Hard Hat.

Debris Removal

The hazards of disaster debris removal include, but are not limited to: struck by vehicles, falls or trips on uneven surfaces, cuts, abrasions or punctures from vegetative or C&D sharps and airborne debris. In addition, PPE requirements include:

- Reflective vest
- Vision and hearing protection
- Foot protection (rugged shoes or boots, steel toe and shank if required)
- Long pants

Debris Disposal and Reduction

The hazards of disaster debris disposal and reduction include, but are not limited to: struck by or caught in/between vehicles, falls or trips on uneven surfaces, cuts, abrasions or punctures from vegetative or C&D sharps, struck by falling disaster debris and airborne particles. PPE requirements include:

- Reflective Vest

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- Foot protection (rugged shoes or boots, steel toe if required)
- Vision and hearing protection
- Long pants
- Hard hat

Debris Cutting and Trim Work

The hazards of disaster debris cutting and trimming work include, but are not limited to: struck by or caught in/between vehicles, falls or trips on uneven surfaces, cuts, abrasions or punctures from power tools, vegetative or C&D sharps, struck by falling disaster debris and airborne particles. PPE requirements include:

- Reflective vest
- Hand and foot protection (rugged shoes or boots, steel toe if required)
- Vision and hearing protection
- Long pants;
- Gloves
- Hard hat

For additional information regarding health and safety requirements, please contact OSHA:

Health and Safety Contact Information

Occupational Safety & Health Administration

1-800-321-6742

Appendix L

ROAD MAINTENANCE AGREEMENTS

A standard template for road maintenance agreements between Cabarrus County and its municipalities is provided in this appendix. It is imperative that legal counsel for both parties review and approve any agreement that is developed from this template prior to execution.

Appendix M

COUNTY RESOURCES

Equipment Description	Capacity	Quantity	FEMA Rate
Landfill/Recycling			
Bobcat Skid-Steer Loader		2	
CAT D6 Track Dozer		1	
Chevy Truck 2500		1	
Ford F-150 Truck		1	
Ford F-350 Fuel Truck		1	
Ford Pickup Truck		2	
International Cab/Chassis Rear Loader Recycling Truck		1	
Komatsu Backhoe		1	
Komatsu Track Dozer		1	
Kubota Track Loader		1	
Kubota Tractor		1	
Leonard Trailer		1	
Volvo Articulating Dump Truck		1	
Volvo Roll Off Dumpster Truck		2	
Grounds			
Bobcat Mini Excavator		1	
Bobcat Skid Steer Loader		1	
Chevy 3500 HD Dump Truck		1	
Ford F-550 Dump Truck		1	
Ford Trucks (F-150, F-250, F-350, F-700)		9	
Hudson Trailer		7	
John Deere Tractor		2	
John Deere Tractor (Arena)		1	
Kubota Tractor		3	

Appendix M

Equipment Description	Capacity	Quantity	FEMA Rate
Large Dump Truck		2	
Leaf Vac		1	
New Holland Tractor		2	
Salt Spreaders for Pickup Trucks		4	
Salt Spreaders for RTV Cart		1	
Snow Plow for Pickup Trucks		3	
Snow Plow for RTV Cart		1	
Tractor Attachment – 07 Loader/Bucket		1	
Tractor Attachment – 94 Chipper/Shedder		1	
Tractor Attachment – Kubota Loader/Bucket		1	
Tractor Attachment – Kubota Pallet Fork		1	
Building Maintenance			
94 CSL Trailer		1	
Ford F-550 Bucket Truck		1	
Ford Trucks (Variety)		13	
Haul UL Trailer		1	
Pace American Trailer		1	
Fleet Maintenance			
Allis Chalmers 5030 Tractor		1	
Ford F-150 Truck		1	
Ford F-250 Truck		2	

* The FEMA rate for these items depends on capacity or horsepower rating. This information, along with the correlating FEMA rate, will be inserted as it becomes available.

Appendix N

DEBRIS REMOVAL CONTRACTOR SOLICITATION

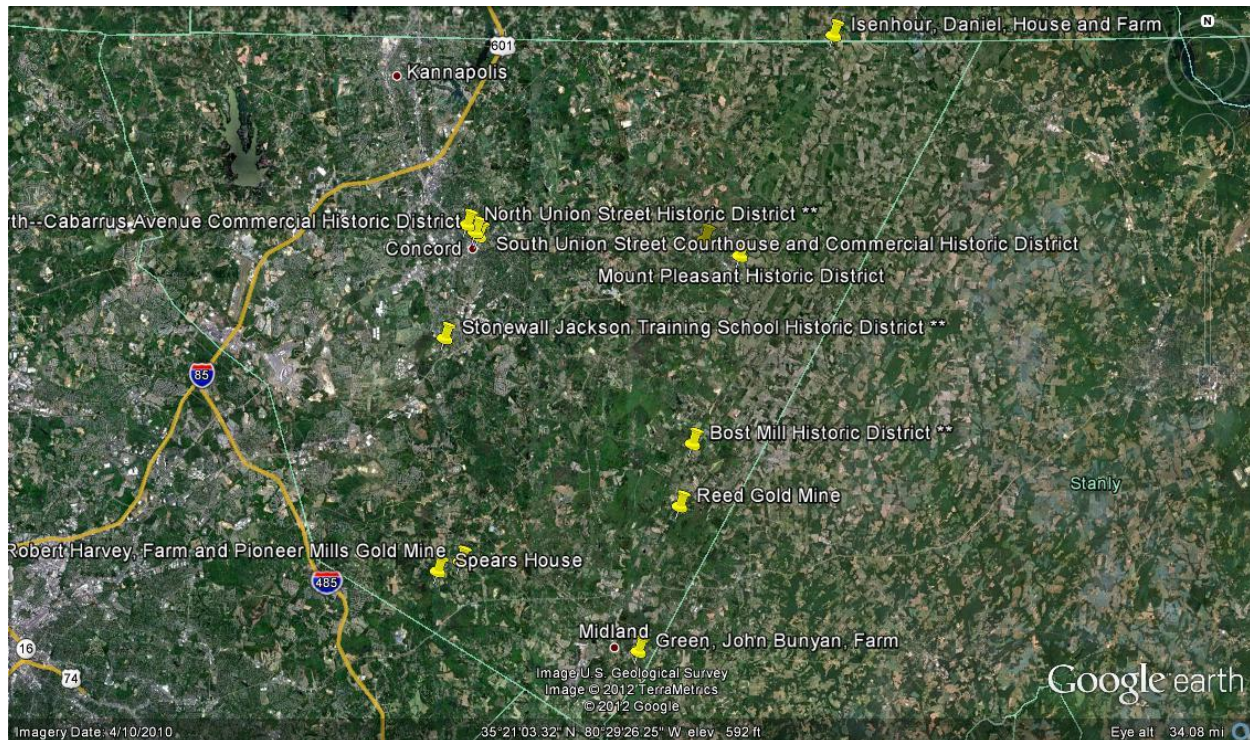
The County's debris removal contractor solicitation will be provided as it becomes available.

Appendix O

COUNTY HISTORICAL DISTRICTS AND PLACE MARKERS

The map below identifies historical districts and place markers throughout the county. These locations should be considered when identifying possible debris management sites.

Map O-1
Cabarrus County Historical Districts and Place Markers



Cabarrus County Historic District and Place Marker Information:

Bost Mill Historic District **

(added 1986 - **Cabarrus County** - #86000076)
N and S sides of NC 200 off US 601, Georgeville
(2650 acres, 10 buildings)

Green, John Bunyan, Farm

(added 1988 - **Cabarrus County** - #88000651)
SR 1114 .5 mi. E of SR 1178 , Midland
(3713 acres, 12 buildings, 1 structure)

Isenhour, Daniel, House and Farm

(added 2000 - **Cabarrus County** - #00000392)
11970 Mt. Olive Rd. , Gold Hill
(730 acres, 3 buildings)

Morrison, Robert Harvey, Farm and Pioneer Mills Gold Mine

(added 1990 - **Cabarrus County** - #90001952)

Also known as **Cedarvale**

730 Morrison Rd. , Midland

(277 acres, 5 buildings)

Mount Pleasant Collegiate Institute Historic District **

(added 1979 - **Cabarrus County** - #79001686)

Also known as **Western Carolina Male Academy, North Carolina College**

Jct. of NC 49 and NC 73 , Mount Pleasant

(102 acres, 6 buildings)

Mount Pleasant Historic District

(added 1986 - **Cabarrus County** - #86001050)

Roughly W. and E. Franklin between N. Halifax and C and N and N. and S. Main Sts. between

Boston and Broad Sts. , Mount Pleasant

(420 acres, 98 buildings, 3 structures)

North Union Street Historic District **

(added 1986 - **Cabarrus County** - #86000789)

Also known as **See Also:Odell--Locke--Randolph Cotton Mill**

Roughly bounded by Peachtree Ave. NW, Church St. N, Cobran Ave. SW, and Georgia St. NW

and Spring St. N , Concord

(1314 acres, 150 buildings)

Reed Gold Mine ***

(added 1966 - **Cabarrus County** - #66000587)

Also known as **Reed Gold Mine Site**

11 mi. SE of Concord , Concord

(8100 acres, 2 buildings, 1 structure)

South Union Street Courthouse and Commercial Historic District

(added 1997 - **Cabarrus County** - #97001196)

Along Union St., bounded by Corban and Cabarrus Aves. , Concord

(32 acres, 11 buildings)

South Union Street Historic District

(added 1986 - **Cabarrus County** - #86000736)

Roughly bounded by Corban Ave. SW, S. Union St., Blume Ave. SE, and Spring St. SW ,

Concord

(135 acres, 69 buildings)

Spears House

(added 1989 - **Cabarrus County** - #89001046)

Also known as **Caldwell Creek Farm; Eudy Farm**

1615 Morrison Rd. , Concord

(385 acres, 1 building)

Stonewall Jackson Training School Historic District **

(added 1984 - **Cabarrus County** - #84001966)

SR 1157 , Concord

(763 acres, 50 buildings)

Union Street North--Cabarrus Avenue Commercial Historic District

(added 2003 - **Cabarrus County** - #03001272)

Roughly Union St. N, Cabarrus Ave. E, Cabarrus Ave. W, and Church St. S , Concord

(35 acres, 14 buildings)

Appendix P

DEBRIS MANAGEMENT CHECKLIST

Task	Task Assigned To	Date/Time Completed
Normal Operations		
All departments update contact lists.		
Emergency Management evaluates Debris Management Sites (DMS) locations.		
Emergency Management reviews road list and road maps.		
Emergency Management reviews FEMA guidance.		
Pre-Event Operations		
Emergency Management downloads most recent road list and relevant documents to a CD.		
Emergency Management alerts key personnel and place monitoring firm and debris removal contractors on stand-by.		
Emergency Management reviews debris management plan with key personnel via conference call or at the Emergency Management facility.		
The Public Information Officer issues pre-event media press releases.		
The Finance Department and the County attorney review contracts for accuracy.		
Emergency Management issues the Notice to Proceed.		
Emergency Management reviews pre-identified DMS locations for capacity and permits.		
Emergency Management, County Management and County Commission determines if citizen drop-off sites will be available and operated by the County.		
Emergency Management facilitates a pre-event coordination meeting with contractors.		
Emergency Management stages debris monitoring and removal contractors.		
Response Operations		
Emergency Management confirms emergency priority roads.		

Appendix P

Task	Task Assigned To	Date/Time Completed
Emergency Management coordinates with the potential monitoring firm to conduct an impact assessment.		
Emergency Management coordinates with Fire/Hazardous Materials Teams to assess hazardous materials debris.		
Emergency Management coordinates with Finance to activate potential monitoring firm and debris removal contractors by issuing a Purchase Order and a Notice to Proceed.		
Emergency Management notifies debris haulers to begin emergency roadway debris clearance.		
Emergency Management conducts meetings/briefing with key personnel.		
Emergency Management reviews debris volume and collection cost assessment.		
Emergency Management and the debris removal contractors coordinate to prepare DMS based on concentration of debris.		
Emergency Management and the potential monitoring firm begin truck certification.		
The Public Information Officer issues media press release regarding the initiation of debris removal operations.		
Emergency Management conducts daily coordination meeting with contractors.		
Emergency Management determines force account requirements and staffing needs (debris, Public Assistance, etc.) with Finance and individual county departments.		
Recovery Operations: 2 Day – 2 Weeks		
Emergency Management coordinates with the debris removal contractors and NCDEQ to open DMS.		
Emergency Management coordinates with IAM and the County Manager to prioritize roads/areas and disseminate that information to the debris removal and monitoring contractors.		
Emergency Management requests contact information and meeting with FEMA Public Assistance Officer. Attendees should include: <ul style="list-style-type: none"> Emergency Management 		

DEBRIS MANAGEMENT CHECKLIST

Task	Task Assigned To	Date/Time Completed
<ul style="list-style-type: none"> ▪ County Management ▪ County Commissioners ▪ Public Information Officer ▪ Finance ▪ FEMA Public Assistance Coordinator ▪ State of North Carolina Public Assistance Coordinator ▪ Potential debris monitoring firm 		
The Public Information Officer issues the second press release regarding segregation of debris.		
Emergency Management coordinates with the debris removal and potential monitoring contractors to begin ROW debris removal.		
Emergency Management coordinates with FEMA and NCDEQ to begin environmental monitoring program of DMS locations.		
Emergency Management coordinates with external agencies.		
Emergency Management initiates discussions with FEMA.		
Recovery Operations: 2 Weeks – 1 Month		
Emergency Management maintains and evaluates ROW cleanup.		
Emergency Management coordinates with debris removal contractors to open additional DMS as necessary.		
Emergency Management continues daily meetings with FEMA.		
Emergency Management coordinates with the PIO to communicate project close-out to residents via press release.		
Recovery Operations: 1 Month – 3 Months		
Emergency Management maintains and evaluates ROW cleanup – vegetative and C&D.		
Emergency Management coordinates with debris removal contractors to begin ROW leaners/hangers program.		
Emergency Management coordinates with debris removal contractors to initiate haul out.		
Emergency Management progresses to weekly meetings with the FEMA.		

Appendix P

Task	Task Assigned To	Date/Time Completed
Recovery Operations: 3 Months – Project Completion		
Emergency Management completes all debris recovery activities.		
Emergency Management identifies ineligible debris on ROW.		
Emergency Management coordinates with debris removal contractors to complete the disposal of reduced debris.		
Emergency Management coordinates with debris removal contractors to close out and remediate DMS locations.		
Emergency Management conducts project close-out meetings with FEMA and external agencies.		

Appendix Q

DEBRIS MANAGEMENT SITE APPROVAL

Requesting Approval

Before a property can be used as a debris management site (DMS), it must be approved by the North Carolina Department of Environmental Quality (NCDEQ) in conjunction with the North Carolina State Historic Preservation Office (NCHPO) and Natural Heritage Program (NHP). This appendix identifies disaster debris preparation guidance, DMS approval and activation forms and guidance, debris storage and reduction guidance as well as site closure guidance.

PREPARED?

Planning for a natural disaster

*North Carolina Department of Environment and Natural Resources
Division of Waste Management
Solid Waste Section*

Disasters strike anywhere, anytime. Is your community prepared? The Solid Waste Section of the North Carolina Division of Waste Management has developed this brochure to help you plan a disaster debris management program.

Being prepared helps divert significant amounts of valuable materials that can be recycled or reused and preserve landfill capacity.



Several first steps should be taken when establishing a debris management plan:

- STEP 1: Designate department liaisons, form a debris team and name a manager. Debris teams staffed by decision makers are more efficient.
STEP 2: Evaluate the potential for specific disaster events. Have the debris team develop disaster specific checklists.
STEP 3: Study existing emergency plans and procedures to see how they impact your plan.
STEP 4: Create a contact list of local, state, and federal agencies involved in disaster debris management.



DEBRIS TEAM TASKS

Establishing the debris team with public and private upper management staff is critical to an efficient, coordinated relationship in times of crisis. This team needs to establish guidelines for these tasks:

- | | | |
|--|-------------------------------------|---------------------------|
| ♦ rebuilding using recycled-content products | ♦ building demolition program | ♦ mutual aid |
| ♦ pre-disaster assessment | ♦ public information program | ♦ reimbursement |
| ♦ debris management programs | ♦ curbside collection program | ♦ government coordination |
| ♦ emergency and disaster declaration process | ♦ household hazardous waste program | ♦ temporary storage sites |
| ♦ contracts (short and/or long term) | ♦ Federal Public Assistance Program | |



Advance planning is the key to a successful disaster debris management program. When public health and safety are priorities, debris disposal and diversion programs are critical. Managing debris properly helps restore and maintain public health and safety.



STEP 1: All Temporary Debris Staging Sites Must Be Pre-Approved By The DWM, SWS (sites are approved for a six month period only)

- STEP 2: Make diversion programs a priority.
STEP 3: Learn federal debris removal criteria and guidelines.
STEP 4: Develop a debris removal strategy.
STEP 5: Identify project scope.
STEP 6: Select debris management program(s).
STEP 7: Set program goals.
STEP 8: Identify labor needs.
STEP 9: Identify equipment needs.
STEP 10: Determine operation methods.



- STEP 11: Adapt program length.
STEP 12: Review funding options.
STEP 13: Create public information program.
STEP 14: Develop monitoring and enforcement program.
STEP 15: Identify program barriers.
STEP 16: Develop a contingency plan.
STEP 17: Pursue regional coordination.
STEP 18: Develop diversion incentives.
STEP 19: Create program accounting/tracking system.
STEP 20: Develop a training program.
STEP 21: Create records retention system and archives.
STEP 22: Prepare summary of activities and results.
STEP 23: SWS must conduct a final closure inspection.

Planning is only effective if written guidelines are in place. This allows a systematic, comprehensive strategy. A central notebook with detailed information should be developed and updated annually. Here are some checklists to consider including in a notebook:

- ✓ Contact lists of executive and emergency management staff with home and office numbers. Update frequently and keep confidential.

DEBRIS MANAGEMENT SITE APPROVAL

- ✓ Equipment and supply listings. Include a brief description of type of equipment, amount of available supplies, and locations of both.
- ✓ Field and regional office/facility locations. Include maps, personnel, contact data and a list of available equipment and supplies for each location.
- ✓ Lists of private sector supplies and equipment that can supplement or substitute for agency resources.
- ✓ Media lists with fill-in-the-blank press releases and background materials for a variety of crises. Include television, radio, print, media, and wire services.
- ✓ Maps, charts, and diagrams of major transportation corridors and alternative routes. Emergency vehicles and debris removal teams need fast access during emergencies.



CONTRACTS

Evaluating and awarding contracts to remove and process debris takes time you don't have in a crisis. Create sample contracts that invite bids and request services now, to reduce response time in the future. The contracts vary per emergency. Here are several options:

CONTRACT TYPE	USE WHEN
Time and Material	Short-term Contractor paid by time spent Services for first 70 hours Used immediately after a disaster for emergency life saving activities and debris clearance
Unit Price	Long-term Payment based on construction units Prices and scope of work can be increased/decreased Use beyond initial 70 hours of recovery Use when scope of work is undefined and can be quantified by actual field measures (e.g. recycle 10 tons concrete, 7 trees, etc.)
Lump Sum	Long-term Total contract price by one-item bid Use beyond initial 100 hours of recovery Use when scope of work is clearly defined and areas of work specifically quantified (e.g. demolish and recycle 1 structure for \$10,000)

SAMPLE CONTRACT LANGUAGE



Example 1: City of XYZ cleanup contract.

Notice Inviting Bids

◆ In response to the tornado of September 16, 1999, the City of XYZ has stockpiled disaster related debris at two designated sites. The North Carolina Solid Waste Management Act (G.S. 130A-309.04(c)) requires that the City of XYZ take steps to reduce the amount of waste going to landfills. Consequently, the stockpiled materials shall be diverted from landfills to the greatest extent possible.

Contractor Service Requirements

- ◆ Contractor should transport recovered material to a permitted resource recovery facility within a 40-mile radius from sites.
- ◆ Contractor shall provide all necessary equipment, materials and labor necessary to remove and recover, to the extent possible, all stockpiled disaster related debris at the sites.
- ◆ Contractor shall haul all material that is non-recoverable to a state-permitted sanitary landfill for disposal.
- ◆ Contractor shall provide the City of XYZ with documentation of the amount and type of material removed from the sites.
- ◆ 'Recover' means to utilize materials which can be used as raw materials in the manufacture of new products, or as values which can be converted into a fuel or energy source. 'Recover' may include reuse, recycling, waste-to-energy, composting, and/or other components.



Example 2: City of ABC, master contract, 1999 Hurricane Sam.

The City let a master contract for the removal, disposal, and recycling of debris. Bid specifications for the contractors to remove the debris stated that the contractor is responsible for removal and transportation of cut trees to proper recycling or recovery facilities and that the contractor must segregate metals, concrete, and other recyclables from non-recyclable debris at the site of generation.

◆ Additionally, the City provided contractors with the names of Triangle area construction and demolition waste recyclers, and required contractors to provide weekly load verification reports to prove that the materials were entering a recycling facility.



Example 3: City of LMN, building demolition, spring 1998 flood

Project Requirements

- ◆ Recycle demolition materials to the greatest extent possible without delaying the project.
- ◆ Summarize and document the amounts and types of materials directly recycled and material removed from the site on the recycling log attached to this Contract. Documentation includes receipts of materials sold, etc.
- ◆ Demolition debris not directly recycled from the site must be hauled to the recycling facility (not landfill) located at (site). The recycling facility located at (address) charges \$ xx/ton for inert material and \$ xx/ton for mixed loads.
- ◆ Identify loads to (site) as "City Demolition Debris," state the demolition site address, and pay all allocated fees. A representative from the City Solid Waste Management Office will collect copies of weight tickets from the previous day's work at the demolition site on a regular basis. Copies of weight tickets must also be turned in to the Engineer at the completion of the project.
- ◆ Note: Contractor will be assessed a non-compliance fee of \$ XXX per load for any documented mixed debris that is not delivered to the recycling center at (address). The non-compliance fee will be deducted from final payment.



Appendix Q

REFERENCES

- ❖ California Integrated Waste Management Board- Disaster Plan, January 1997 (<http://www.ciwmb.ca.gov>)
- ❖ Public Assistance Debris Management Guide, FEMA, (FEMA 325) April 1999

For Federal Regulations refer to:

- ◆ The Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93-288 Amended. This act summarizes the process and procedures for declaration, response, and recovery during federally declared disasters.
- ◆ Code of Federal Regulations Title 44 Part 13 - Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments. These regulations describe the administrative procedures and requirements for subgrantees receiving federal funding and awarding contracts for disaster-related repairs.

Available at <http://www.fema.gov/library/stafact.htm>

- ◆ Code of Federal Regulations Title 44 Part 206-Federal Disaster Assistance for Disasters Declared on or after November 23, 1988. This regulation describes rules and requirements for Public Assistance Project Administration, applicant and work eligibility, and hazard mitigation.

- ◆ FEMA State and Local Guide (SLG) 101: Guide for All-Hazard Emergency Operations Planning (September 1996).

Available at <http://www.fema.gov/pte.gaheop.htm>

❖ ❖ ❖ ❖ ❖ ❖

For technical assistance or information on North Carolina guidelines contact:

N.C. Department of Environment and Natural Resources

1601 Mail Service Center
Raleigh, NC 27699-1601
(919) 733-4984

<http://www.enr.state.nc.us>

Division of Waste Management

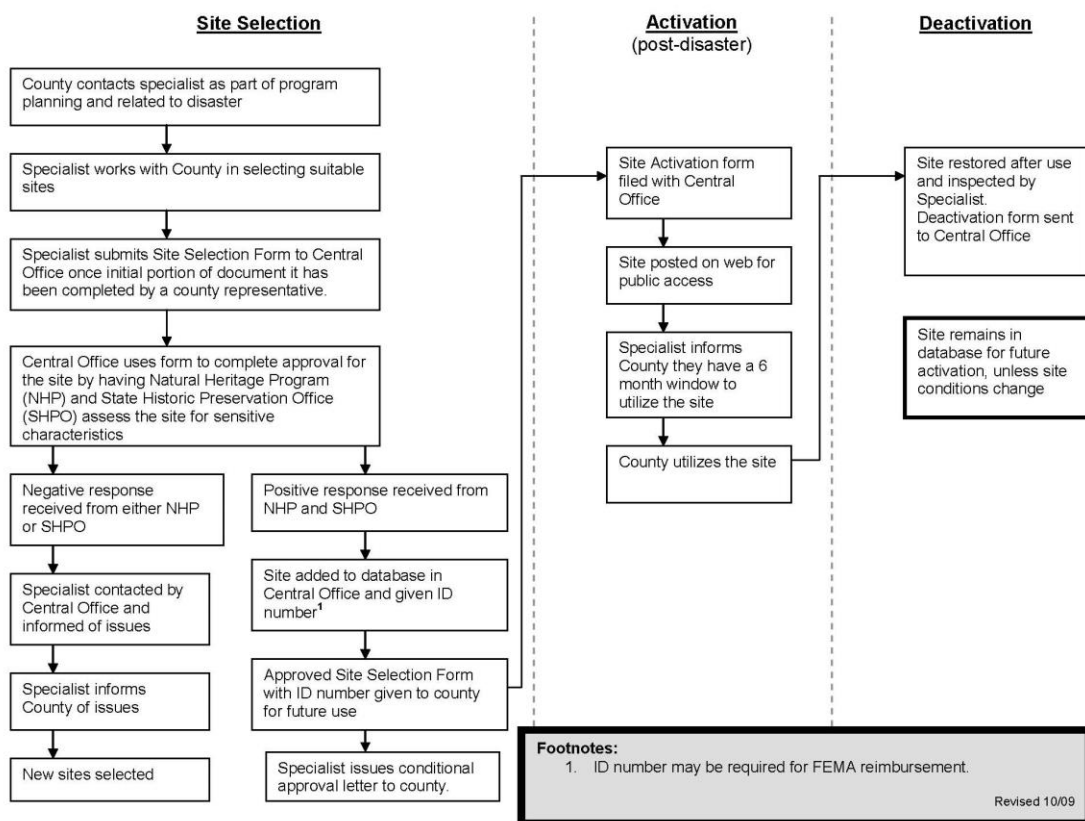
Solid Waste Section
1646 Mail Service Center
Raleigh, NC 27699-1646
(919) 508-8400 (919) 733-4810 fax
<http://wastenotnc.org>

**Department of Pollution Prevention
And Environmental Assistance**

1639 Mail Service Center
Raleigh, NC 27699-1639
(919) 715-6500 (919) 715-6794 fax
<http://www.p2pays.org>

August 2006

Emergency/Disaster Debris Site Process Flow





Division of Waste Management - Solid Waste Section
Emergency Site Selection Evaluation Sheet
Disaster Debris

Site Name: _____ Site Location: _____

Physical Address
or Directions: _____

City: _____ County: _____

Primary Contact: _____ Telephone #: _____

Additional Contact: _____ Telephone #: _____

Approx. Size of Area to be
used for Disaster Debris: _____ Acres GPS Coordinates
(decimal degrees): _____ N _____ W

Intended Use of Site:

☐ Staging/Storage for **Removal** ☐ Staging/Storage for **Chipping** ☐ Staging/Storage for **Burning**

Please provide a brief description of planned operations:

Type of Waste:

☐ **Vegetative** Debris ☐ **Demolition** Debris

Comments: _____

Buffers Required (*the following must be clearly delineated with flagging, survey stakes, etc.*):

- ☐ 100 feet from property boundaries and on-site structures
- ☐ 100 feet from residences, private wells (vegetative debris only), and septic tank systems
- ☐ 100 feet from surface waters
- ☐ 250 feet from potable wells (demolition debris)
- ☐ 300 feet from grinding operations to residence and business properties, publicly owned roads or properties

Please attach a site plan and/or aerial photograph showing the boundaries and location of the proposed site.

Additional information can be found at <http://www.wastenotnc.org/swhome/planning.asp>

Revised 09/09

DEBRIS MANAGEMENT SITE APPROVAL

DWM Use Only:	
Buffers have met DWM Requirements	<input type="checkbox"/> YES / <input type="checkbox"/> NO
Flood Plain or Flood Prone Areas	_____
Wetlands	_____
Erosion Control	_____
Access, Site Security	_____
Safety Issues - Power Lines, Traffic, etc.	_____
Coordination with the Division of Air Quality	<input type="checkbox"/> YES / <input type="checkbox"/> NO / <input type="checkbox"/> NA
Buffers have met DAQ Requirements	<input type="checkbox"/> YES / <input type="checkbox"/> NO
Coordination with Land Quality Section	<input type="checkbox"/> YES / <input type="checkbox"/> NO / <input type="checkbox"/> NA
Coordination with State Historic Preservation Office (SHPO)/Office of State Archaeology	<input type="checkbox"/> YES / <input type="checkbox"/> NO
Coordination with Natural Heritage Program (endangered species)	<input type="checkbox"/> YES / <input type="checkbox"/> NO
General Comments	_____
	Coordinates Verified <input type="checkbox"/> YES / <input type="checkbox"/> NO
Solid Waste Section Representative	Date of Inspection

Revised 09/09

Emergency/Disaster Vegetative and Land Clearing Debris Guidance

The Solid Waste Regional staff shall be contacted to approve selected temporary sites for debris storage, staging and processing.

These guidelines apply only to sites for staging or burning vegetative storm debris (yard waste, trees, limbs, stumps, branches, and untreated or unpainted wood). Arrangements should be made to screen out unsuitable materials. The two methods of managing vegetative and land clearing storm debris is "chipping/grinding" for use in landscape mulch, compost preparation, and industrial boiler fuel or using an air curtain burner (ACB)", with the resulting ash being land applied as a liming agent or incorporated into a finished compost product, as needed.

Environmental assessments of the temporary debris staging site should be conducted prior to beginning and after completion of the waste staging and processing operations. The assessments should include the collection of soil and water samples for chemical analysis. Contact the Solid Waste Section Environmental Senior Specialist in your area for a sample parameter list. Any contaminant spills or releases should be reported immediately to the Solid Waste Section Environmental Senior Specialist in your area.

Chipping/Grinding Sites

Grinding wood debris for use as mulch, compost bulking agent, or industrial boiler fuel is encouraged if feasible as a method of management. To produce a wood chip that is suitable for mulch or fuel, chip size and absence of contaminants are critical. Debris must be separated prior to grinding, and only tree waste and untreated and unpainted lumber shall be included in the chipping.

Locating sites for chipping/grinding of vegetative and land clearing debris can be accomplished by contacting the Regional Solid Waste Section staff for evaluating potential sites and to revisit sites at future dates to see if site conditions have changed or if the surrounding areas have changed significantly to alter the use of the site. The following guidelines are presented in locating a site for "chipping/grinding" and are considered "minimum standards" for selecting a site for use.

1. Sites should be located outside of identifiable or known floodplain and flood prone areas; consult the Flood Insurance Rate Map for the location in your county to verify these areas. Due to heavy rains associated with hurricanes and saturated conditions that result, flooding may occur more frequently than normally expected.
2. Storage areas for incoming debris and processed material should be at a minimum 100 feet from all surface waters of the state. "Waters of the state" includes but is not limited to small creeks, streams, watercourses, ditches that maintain seasonal groundwater levels, ponds, wetlands, etc.
3. Storage areas for incoming debris and processed material shall be at least 100 feet from the site property boundaries and on-site buildings/structures. Management of processed material shall be in accordance with "[GUIDELINES FOR REDUCING THE POTENTIAL FOR SPONTANEOUS COMBUSTION IN COMPOST/MULCH PILES](#)".

4. Storage areas for incoming debris shall be located at least 100 feet from residential dwellings, commercial or public structures, potable water supply wells, and septic tanks with leach fields.
5. Sites that have identified wetlands should be avoided, if possible. If wetlands exist or wetland features appear at a potential site, verification by the local Corps of Engineers office or Division of Water Quality Regional Office will be necessary to delineate areas of concern. Once areas are delineated, the areas shall be flagged and a 100-foot buffer shall be maintained for all activities on-going at the site.
6. The Division of Land Resources, Land Quality Section should be contacted for assistance on good erosion control measures and permitting guidance.
7. Dust control measures shall be implemented when necessary to prevent dust from moving off-site or causing visibility problems.
8. Sites bisected by overhead power transmission lines need careful consideration due to large dump body trucks/trailers used to haul debris. All underground utilities need to be identified due to the potential for site disturbance by truck/equipment traffic and possible site grading.
9. Sites shall have an attendant(s) during operating hours to minimize the acceptance of unapproved materials and to provide directions to haulers and private citizens bringing in debris.
10. The operator shall manage the temporary debris management site to minimize the risk of fire. Any occurrence of fire, excluding authorized controlled burning, shall be reported within 24 hours to the Solid Waste Section Environmental Senior Specialist in your area.
11. Sites should be secure after operating hours to prevent unauthorized access to the site. Temporary measures to limit access to the site could be the use of trucks or equipment to block entry. Gates, cables, or swing pipes should be installed as soon as possible for permanent access control, if a site is to be used longer than two weeks. Sites should have adequate access that prohibits traffic from backing onto public right-of-ways or blocking primary and/or secondary roads to the site.
12. When possible, signs should be installed to inform haulers and the general public on types of waste accepted, hours of operation, and who to contact in case of an after hours emergency.
13. Grinding of clean wood waste such as pallets and segregated non-painted/non-treated dimensional lumber is allowed.
14. Final written approval is required from the Solid Waste Section to consider any debris management site to be closed. Closure of staging and processing sites shall be within six (6) months of receiving waste. If site operations will be necessary beyond this time frame, permitting of the site by the Solid Waste Section may be required. If conditions at the site become injurious to public health and the environment, then the site shall be closed until conditions are corrected or permanently closed. Closure of sites shall be in accordance with ["DISASTER DEBRIS CLEAN UP GUIDELINES, CLOSURE AND RESTORATION OF TEMPORARY DEBRIS MANAGEMENT SITES"](#).
15. Contact the Department of Pollution Prevention and Environmental Assistance, at 919-715-6500, for a list of contractors/suppliers of tub grinders and for a list of outlets for mulch/wood chips to be used as a boiler fuel.

Air Curtain Burner Sites

Locating sites that are intended for air curtain burning (ACB) operations is a coordinated effort between the Solid Waste Section and Division of Air Quality regional office staff for evaluating the surrounding areas and to reevaluate potential sites used in the past. The following guidelines are presented for selecting an ACB site and operational requirements once a site is in use:

1. Contact the local fire marshall or fire department for input into site selection in order to minimize the potential for fire hazards, other potential problems related to fire fighting that could be presented by the location of the site, and to ensure that adequate fire protection resources are available in the event of an emergency.
2. The requirements for ACB device(s), in accordance with Air Quality rules, 15A NCAC 2D .1900 to .1904, require the following buffers: a minimum of 300 feet from the ACB device to homes, dwellings and other structures and 250 feet from roadways. Contact the Regional office of Air Quality for updates or changes to their requirements.
3. Sites should be located outside of identifiable or known floodplain and flood prone areas; consult the Flood Insurance Rate Map for the location in your county to verify these areas. Due to heavy rains associated with natural disasters and saturated conditions that result, flooding may occur more frequently than normally expected. If ACB pit devices are utilized, a minimum two-foot separation to the seasonal high water table is recommended. A larger buffer to the seasonal high water table may be necessary due to on-site soil conditions and topography.
4. Storage areas for incoming debris should be at a minimum 100 feet from all surface waters of the state. "Waters of the state" includes but is not limited to small creeks, streams, watercourses, ditches that maintain seasonal groundwater levels, ponds, wetlands, etc.
5. Storage areas for incoming debris shall be located at least 100 feet from property boundaries and on-site buildings/structures.
6. Air Curtain Burners in use should be located at least 200 feet from on-site storage areas for incoming debris, on-site dwellings and other structures, potable water supply wells, and septic tanks and leaching fields.
7. Only untreated and unpainted lumber and tree debris may be burned
8. Wood ash stored on-site shall be located at least 200 feet from storage areas for incoming debris, processed mulch or tub grinders (if a grinding site and ACB site are located on the same property). Wood ash shall be wetted prior to removal from the ACB device or earth pit and placed in storage. If the wood ash is to be stored prior to removal from the site, then rewetting may be necessary to minimize airborne emissions.
9. Wood ash to be land applied on site or off site shall be managed in accordance with ["GUIDELINES FOR THE LAND APPLICATION OF WOOD ASH FROM STORM DEBRIS BURN SITES"](#) and it shall be incorporated into the soil by the end of the operational day or sooner if the wood ash becomes dry and airborne.
10. Sites that have identified wetlands should be avoided, if possible. If wetlands exist or wetland features appear at a potential site, verification by the local Corps of Engineers office or Division of Water Quality Regional Office will be necessary to delineate areas of concern. Once areas are

delineated, the areas shall be flagged, and a 100-foot buffer shall be maintained for all activities on-going at the site.

11. The Division of Land Resources, Land Quality Section should be contacted for assistance on good erosion control measures and permitting guidance.

12. Sites bisected by overhead power transmission lines need; careful consideration due to large dump body trucks/trailers used to haul debris and the intense heat generated by the ACB device. Underground utilities need to be identified prior to digging pits for using the ACB device.

13. Provisions should be made to prevent unauthorized access to facilities when not open for use. As a temporary measure, access can be secured by blocking drives or entrances with trucks or other equipment when the facilities are closed. Gates, cables, or other more standard types of access control should be installed as soon as possible.

14. When possible, post signs with operating hours and information about what types of clean up waste may be accepted. Also include information as to whether only commercial haulers or the general public may deposit waste.

15. Closure of air curtain burner sites shall be within six (6) months of receiving waste. If site operations will be necessary beyond this time frame, permitting of the site by the Solid Waste Section may be required. If conditions at the site become injurious to public health and the environment, then the site shall be closed until conditions are corrected or permanently closed. Closure of sites shall be in accordance with "[DISASTER DEBRIS CLEAN UP GUIDELINES, CLOSURE AND RESTORATION OF TEMPORARY DEBRIS MANAGEMENT SITES](#)".

Sites shall be managed and monitored in accordance with the Solid Waste Management Rules and to prevent threats to the environment or public health.

Emergency/Disaster Construction and Demolition Debris Guidance

When local governments are preparing temporary facilities for handling debris resulting from the cleanup efforts due to hurricane damage, the guidelines below should be considered when establishing staging/transfer sites for Construction & Demolition (C&D) and C&D recycling treatment and processing facilities. The Solid Waste Section Regional staff should be contacted to assist in selecting an appropriate site(s) for staging/transfer areas.

These guidelines apply only to sites for staging/transferring C&D storm debris (roof shingles/roofing materials, carpet, insulation, wallboard, treated and painted lumber, etc.). Arrangements should be made to screen out unsuitable materials, such as household garbage, white goods, asbestos containing materials (ACM's), and household hazardous waste.

Environmental assessments of the temporary debris staging site should be conducted prior to beginning and after completion of the waste staging and processing operations. The assessments should include the collection of soil and water samples for chemical analysis. Contact the Solid Waste Section Environmental Senior Specialist in your area for a sample parameter list. Any contaminant spills or releases should be reported immediately to the [Solid Waste Section Environmental Senior Specialist](#) in your area.

Staging/Transferring Sites

Locating sites for staging/transferring C&D waste can be accomplished by contacting the Regional Solid Waste Section staff for evaluating potential sites and to revisit sites used in the past to see if site conditions have changed or if the surrounding areas have changed significantly to alter the use of the site. The following guidelines are presented in locating a site for "staging/transferring" and are considered "minimum standards" for selecting a site for use:

1. Sites should be located outside of identifiable or known floodplain and flood prone areas; consult the Flood Insurance Rate Map for the location in your county to verify these areas. Due to heavy rains associated with hurricanes and saturated conditions that result, flooding may occur more frequently than normally expected.
2. Hauler unloading areas for incoming C&D debris material should be at a minimum 100 feet from all surface waters of the state. "Waters of the state" includes but is not limited to small creeks, streams, watercourses, ditches that maintain seasonal groundwater levels, ponds, wetlands, etc.
3. Storage areas for incoming C&D debris shall be at least 100 feet from the site property boundaries, on-site buildings/structures, and septic tanks with leach fields or at least 250 feet from off-site residential dwellings, commercial or public structures, and potable water supply wells, whichever is greater.
4. Materials separated from incoming C&D debris (white goods, scrap metal, etc.) shall be at least 100 feet from site property lines. Other non-transferable C&D wastes (household garbage, larger containers of liquid, household hazardous waste shall be placed in containers and transported to the appropriate facilities as soon as possible.
5. Sites that have identified wetlands should be avoided, if possible. If wetlands exist or wetland features appear at a potential site; verification by the local Corps of Engineers office or Division of Water Quality Regional Office will be necessary to delineate areas of concern. Once areas are delineated, the areas shall be flagged and a 100-foot buffer shall be maintained for all activities on-going at the site.
6. The Division of Land Resources, Land Quality Section, should be contacted for assistance on good erosion control measures and permitting guidance.
7. Dust control measures shall be implemented when necessary to prevent dust from moving off-site or causing visibility problems.
8. Sites bisected by overhead power transmission lines need careful consideration due to large dump body trucks/trailers used to haul debris, and underground utilities need to be identified due to the potential for site disturbance by truck/equipment traffic and possible site grading.
9. Sites shall have an attendant(s) during operating hours to minimize the acceptance of unapproved materials and to provide directions to haulers and private citizens bringing in debris.
10. The operator shall manage the temporary debris management site to minimize the risk of fire. Any occurrence of fire, excluding authorized controlled burning, shall be reported within 24 hours to the Solid Waste Section Environmental Senior Specialist in your area.

11. Sites should be secure after operating hours to prevent unauthorized access to the site. Temporary measures to limit access to the site could be the use of trucks or equipment to block entry. Gates, cables, or swing pipes should be installed as soon as possible for permanent access control, if a site is to be used longer than two weeks.

12. When possible, signs should be installed to inform haulers and the general public on types of waste accepted, hours of operation, and who to contact in case of after hours emergency.

13. Final written approval is required from the Solid Waste Section to consider any debris management site to be closed. Closure of processing/recycling sites shall be within six (6) months of receiving waste. If site operations will be necessary beyond this time frame, permitting of the site by the Solid Waste Section may be required. If conditions at the site become injurious to public health and the environment, then the site shall be closed until conditions are corrected or permanently closed. Closure of sites shall be in accordance with ["DISASTER DEBRIS CLEAN UP GUIDELINES, CLOSURE AND RESTORATION OF TEMPORARY DEBRIS MANAGEMENT SITES"](#).

Processing/Recycling Sites

Management of C&D debris and source separated materials to be recycled shall be in accordance with permit conditions and operational requirements of permitted C&D Processing/Recycling Facilities and the following additional conditions:

1. Contact the Health Hazards Control Branch for information on managing asbestos containing materials (ACM's) or materials that are considered regulated asbestos containing materials.

2. Contact the Division of Pollution Prevention and Environmental Assistance at (919) 715-6500 for an up to date copy of "DIRECTORY OF MARKETS FOR RECYCLABLE MATERIALS" and a listing of suppliers/contractors with tub grinders, maulers, and other processing equipment for the recycling of C&D waste.

3. Sites should be located outside of identifiable or known floodplain and flood prone areas; consult the Flood Insurance Rate Map for the location in your county to verify these areas. Due to heavy rains associated with natural disasters and saturated conditions that result, flooding may occur more frequently than normally expected.

4. Storage areas for incoming debris should be at a minimum 100 feet from all surface waters of the state. "Waters of the state" includes but is not limited to small creeks, streams, watercourses, ditches that maintain seasonal groundwater levels, ponds, wetlands, etc..

5. Storage areas for incoming debris shall be located at least 100 feet from property boundaries and on-site buildings/structures.

6. Sites that have identified wetlands should be avoided, if possible. If wetlands exist or wetland features appear at a potential site, verification by the local Corps of Engineers office or Division of Water Quality Regional Office will be necessary to delineate areas of concern. Once areas are delineated, the areas shall be flagged and a 100-foot buffer shall be maintained for all activities on-going at the site.

7. Storage areas for incoming C&D debris shall be at least 100 feet from the site property boundaries, on-site buildings/structures, and septic tanks with leach fields or at least 250 feet

Appendix Q

from off-site residential dwellings, commercial or public structures, and potable water supply wells, whichever is greater.

8. The Division of Land Resources, Land Quality Section should be contacted for assistance on good erosion control measures and permitting guidance.

9. Sites bisected by overhead power transmission lines need careful consideration due to large dump body trucks/trailers used to haul debris and the intense heat generated by the ACB device. Underground utilities need to be identified prior to digging pits for using the ACB device.

10. Provisions should be made to prevent unauthorized access to facilities when not open for use. As a temporary measure, access can be secured by blocking drives or entrances with trucks or other equipment when the facilities are closed. Gates, cables, or other more standard types of access control should be installed as soon as possible.

11. When possible, post signs with operating hours and information about what types of clean up waste may be accepted. Also include information as to whether only commercial haulers or the general public may deposit waste.

Final written approval is required from the Solid Waste Section to consider any debris management site to be closed. Closure of processing/recycling sites shall be within one (1) year of receiving waste. If site operations will be necessary beyond this time frame, permitting of the site by the Solid Waste Section may be required. If conditions at the site become injurious to public health and the environment, then the site shall be closed until conditions are corrected or permanently closed. Closure of sites shall be in accordance with "[DISASTER DEBRIS CLEANUP GUIDELINES, CLOSURE AND RESTORATION OF TEMPORARY DEBRIS MANAGEMENT SITES](#)".

Sites shall be managed and monitored in accordance with the Solid Waste Management Rules and to prevent threats to the environment or public health.

Emergency/Disaster Household Hazardous Waste Guidance

When local governments are preparing temporary facilities for handling household hazardous waste (HHW) resulting from cleanup efforts due to disaster damage, the following guidelines should be considered.

The local government should choose an HHW contractor to set up a collection event. The contractor should be able to assist in selecting a site that is easily accessible, accommodates the contractor's equipment, and accommodates traffic. Centrally located events are usually set up at a park, fairgrounds, or local government facility parking lot. The local government may choose a milk-run type collection at sites across the county. In this case the HHW contractor collects HHW for a certain time period at one site and then moves on to the next. The Section will work with local government in every way possible to establish the type of collection that fits the particular situation.

In order to hold a collection event, the local government should contact the Solid Waste Section to obtain a temporary identification number. This number is required at all hazardous waste disposal and recycling facilities as a condition of waste acceptance. A form for requesting the

identification number is attached. Keep in mind that contractors normally keep these forms on hand and, if requested, will obtain the number for the client.

Please contact the Division of Waste Management at (919) 707-8200 for a list of household hazardous waste collection contractors.

N. C. Department of the Environment and Natural Resources
Division of Waste Management
Solid Waste Section

**Suggested Procedures for Large Scale Removal of White Goods from
Disaster Affected Areas**
February 2008

Description

This paper briefly discusses recommended procedures for the collection and management of large numbers of disposed appliances which would occur in the event of a hurricane, flood, tornado, or other large scale natural disaster in North Carolina.

Please note that the statutes regulating the management of white goods can be found in G.S. 130A-309.80 – 87.

Types of Appliances

On average each home will have four or five appliances for disposal. Some will have more. The most common will be refrigerators, washers, dryers, stoves and dish washing machines. Multiply this by the number of homes in a given area and one can estimate the numbers of appliances that may be involved. Many homes may have one or more room air conditioners. Other types include: hot water heaters, freezers, dehumidifiers.

Commercial facilities may seek to repair damaged restaurant equipment rather than dispose of them since these appliances tend to be more valuable than most than domestic appliances. That being said, it is likely that personnel may encounter commercial equipment. These may consist of refrigerators, stoves, ovens, table warmers, chillers, etc. A more comprehensive list is below.

Any metallic debris has recyclable potential and would decrease the amount of material needing to be landfilled.

Defined as white goods in North Carolina

1. Vending machines (refrigerated, heated, nonrefrigerated and nonheated types - does not include gumball and similar small dispensers).
2. Large floor-model oil, gas and wood-fired heaters and fireplace inserts (not small portable space heaters).
3. Trash compactors

4. Large floor-model humidifiers and dehumidifiers (not small plastic vaporizers).
5. Water treatment equipment (not small faucet-mounted or under-sink filtering devices).
6. Dish sanitizers.
7. Commercial fry cookers.
8. Drinking water coolers;
9. Freestanding ice makers;
10. Built-in stove surface units;
11. Built-in ovens;
12. Floor-model popcorn machines;
13. Hot food bar used to keep food hot;
14. Refrigerated soft ice cream dispensers;
15. Commercial refrigeration equipment manufactured and sold as a self-contained unit; and
16. Steam tables used to keep food hot.

The major distinction comes to whether the appliance has chloroflourocarbon refrigerants (CFC's) present as heat transfer material. The rest of this paper will primarily discuss procedures for removing CFCs from appliances.

Types of Hazards in Disposed Appliances

Physical and Chemical

- Chlorofluorocarbon (CFCs) and hydrochlorofluorocarbon (HCFCs) refrigerants; various types, 5 most common.- inhalation and eye hazard.
- Highly chlorinated compressor oil; -inhalation, ingestion, and eye hazard
- Capacitors and ballasts containing Polychlorinated Biphenyls (PCBs); phased out but on older models.-ingestion, inhalation, and eye hazard.
- Mercury switches; also phased out but on older modals. - ingestion and inhalation hazard
- Sulfur dioxide gas; phased out but on some older units. Inhalation hazard and eye hazard
- Ammonia gas; used in cold storage applications, boats, motor homes, and propane refrigerators. Inhalation and eye hazard
- Desiccant filter dryers. -ingestion hazard

- Sharp or damaged metal edges that may cause punctures or lacerations. Possible tetanus exposure.

Biological

- Poisonous snakes and spiders.
- Stinging/biting insects- wasps, hornets, bees, ants, mosquitoes, centipedes.
- Rodents and other disease vectors.
- Disease potential from putrefied food stuffs.

There are 5 commonly used refrigerants in domestic refrigeration equipment; R-12, most commonly used in refrigerators; R-22, found in freezers and air conditioners; R-114, originally used in refrigerators, but now mostly found in marine air conditioning; ammonia (NH₃), commonly used in cold storage applications, boats, motor homes, and propane refrigerators; and sulfur dioxide (SO₂), found in older refrigeration units. Of these, R-12 and R-114 are CFCs, R-22 is an HCFC, and NH₃ and SO₂ are exotic refrigerants, not regulated by the Clean Air Act.

In addition, HFC replacement refrigerants such as R-124, R-125, and 134a are now commonly used in new refrigerators, freezers, and air conditioners.¹

Personnel Protective Equipment Recommended and Training of Personnel

In November 14, 1994, the EPA began requiring certification of technicians involved in: maintaining or repairing appliances containing less than 5 pounds of refrigerant (Type I Certification); maintaining, repairing, or disposing of appliances containing greater than 5 pounds of refrigerant (Type II Certification); and maintaining, repairing, or disposing of low pressure appliances (Type III Certification). Although certification of technicians involved in maintaining or repairing automotive air conditioners has been required since August 13, 1992, the EPA does not require certification of individuals involved in the disposal of automotive air conditioners or small refrigerated appliances.

- * **Please note, it is strongly recommended that personnel performing the recovery of refrigerants and disposal of refrigeration equipment complete an EPA approved certification program. The cost of training is small compared to the cost to public health, environmental damage and potential fines incurred.**

- * It is also recommended that personnel employ the highest level of personal protective equipment necessary to guard against the various hazards mentioned above. Typically this would consist of full body and face protection and may even involve some level of respiratory protection.

SUGGESTED PROCEDURES

Please note that enforcement action can be taken for the mismanagement of white goods and for not collecting CFC refrigerants. See **130A-309.84. (Civil penalties for improper disposal)** for more details.

More than likely, residents returning to emergency affected areas will have brought their damaged appliances to the curb for pick-up and disposal. It is not recommended that technicians depend on the advice of homeowners as to the presence of CFCs in appliances. In most cases, homeowners lack the expertise to determine if a damaged or disposed appliance contains CFCs.

Non-CFC bearing appliances may be initially collected, as these, in most cases, do not require additional special handling. The following procedures refer to CFC bearing appliances.

- Before collection is to begin, personnel certified in refrigerant collection should patrol neighborhoods and areas scheduled for pick-up looking for refrigerators, freezers, and similar CFC bearing appliances. The use of a **gas identifier** is highly recommended as the placard installed by the manufacturer may be damaged or removed, or a previous technician may have added additional dissimilar refrigerant gas.
- It is important to remember that for refrigerant gasses to be recyclable they must be kept as pure as possible. Typically, less than 90% purity will render the gas non-marketable. *If possible, several different cylinders and machines dedicated for each gas type (R-12, R-122, R-134a) plus a trash cylinder should be available.* If this is not possible then, keep in mind, that collected CFC's will need to be disposed of at a hazardous waste incinerator which may be more expensive than paying additional personnel for collection activities.
- After the appliance has been cleared of CFCs, it should be clearly marked as such. Individual extraction machines are preferred over one machine that can be used to extract several types of gasses. If one machine is inoperable it can be easily replaced whereas the single multi-gas machine may be

completely out of service. Also, several machines each dedicated to a gas can be used simultaneously.

- Collection of CFCs before pick-up is to begin will allow pick-up personnel to quickly collect these appliances with less regard to care. If refrigerant gasses are not removed prior to pick-up then personnel risk damaging these appliances in a number of ways such as: using exposed refrigerant lines to move or lift an appliance; dropping or dragging appliances on the ground; appliances shifting in a transport truck; catching the blade of a two wheel hand truck on refrigerant lines; an unsecured compressor motor tearing loose refrigerant lines during rough handling, stacking of refrigeration units in a collection container; loading units in a compactor truck; “defrosting” the-freezer with a knife or screwdriver; a technician assuming a refrigeration unit is already vented and cutting refrigerant lines; use of a knuckleboom loader truck which could damage refrigerant lines.
- Many refrigerators and freezers will still have food stuffs remaining. It is advisable that personnel request that residents remove food stuffs before collection. If this is not possible then refrigerators with foodstuffs remaining in them will need to be cleaned at the collection site or central facility. Have personnel or residents clearly mark the unit with a large “F” to indicate that foods stuffs remain in the unit and duct tape the unit closed to prevent fluids and decayed material from accidentally escaping the unit.
- After the appliances are collected they may be brought to a central facility or site. Bare in mind, those appliances with compressors can still have compressor oils and other potentially harmful substances still in them. If further processing is planned then these types of appliances should be separated from other types.
- Many appliances will have putrefied food stuffs remaining, these should be cleaned out using a hoe or similar implement and dumped into a bin, bucket or similar receptacle. Decayed material should then be landfilled. The unit should then be clearly marked in some fashion, identifying it as being cleaned and vented.
- Appliances may be stockpiled and loaded en-masse with the use of heavy equipment into an open top semi-trailer and taken to a recycler. Pre-crushing is an option that will maximize transport vehicle space. Remember that appliances with compressors may still have oils and other fluids still present if

they have not been previously removed. Crushing of these appliances with either a pre-crusher or use of heavy equipment will allow these fluids to possibly contaminate the area or endanger personnel.

- Finally, authorities should be resourceful and innovative in developing strategies and methods that adapt to the availability of resources and financial and time restraints. White goods have a positive value and it is quite probable that white goods collection activities may pay for themselves. The focus should be on protecting personnel from the hazards of white goods management, protecting the public health and the environment.

The Solid Waste Section's White Goods Program

The NC Division of Waste Management's Solid Waste Section has a state wide white goods program. This program was initiated by the NC State legislature to fund and support individual county's in the collection and management of white goods. The primary purpose is to prevent the unlawful disposal of white goods and the illegal venting of refrigerant gasses. To this effect, the legislature set up the white goods fund to make grants to North Carolina counties to buy equipment and infrastructure and to reimburse counties for operational expenses directly related to white goods management.

Counties stricken by disaster and in need of funds to collect and dispose of white goods may apply to the Solid Waste Section for clean-up grants or for grants to help pay for operational expenses incurred during clean-up activities. As mentioned, white goods have a net positive value as scrap metal and requests made to the Solid Waste Section for additional funds will take into account the present market value of scrap metal. Grant amounts made to individual counties for collection and transport costs for clean-up activities will be based upon the percentage of white goods collected as determined by visual inspection and/or weight tickets. Photos of white goods collection sites and invoices for equipment and services and the input by Regional Waste Management Specialists will also be required.

For more details, visit our website at:

www.wastenotnc.org and look for the white goods links or call Bill Patrakis at 336-771-5091.

References

1. Small-Scale Technologies to Remove and Manage Refrigerants and Compressors from Discarded Appliances, Washington State Department of Ecology, Publication # 94-171
2. North Carolina Department of Revenue, Sales and Use Technical Bulletin, Section 29

Emergency/Disaster Debris Site Closure Guidance

Closure should be accomplished within six (6) months of initial site approval.

Once a site is no longer needed, it should be closed in accordance with the following guidelines.

Closure is not considered complete until the following occurs:

Material Removal

1. All processed and unprocessed vegetative material and inert debris shall be removed to a properly approved solid waste management site.
2. Tires must be disposed of at a scrap tire collection/processing facility; white goods and other metal scrap should be separated for recycling.
3. Ash from approved air curtain burning operations shall be removed and disposed (completely cooled) at a properly permitted municipal solid waste landfill or land applied in accordance with the Division guidelines (see Page 21).
4. All other materials (e.g. unrecoverable metals, insulation, wall board, plastics, roofing material, painted wood, and other material from demolished buildings) that is not inert debris (see #1 above) as well as inert debris that is mixed with such materials shall be removed to a properly permitted C&D recycling facility, C&D landfill, or municipal solid waste landfill.

Stabilization

Site shall be stabilized with erosion control measures, including establishment of vegetative cover, in accordance with regulations of the Division of Land Quality.

Agency Approval

The Division of Waste Management shall review any temporary site to determine if the closure provisions outlined herein have been adequately addressed.

Site Re-approval

Sites that were approved as temporary staging or processing sites will require time extension approval from the Division of Waste Management for continuing reduction processing after six months.

Sites shall be managed and monitored in accordance with the Solid Waste Management Rules and to prevent threats to the environment or public health.

Appendix R

INVESTIGATION OF PROPERTY SUITABILITY FORM

Investigation of Property Suitability DEBRIS MANAGEMENT SITE (DMS)

DATE OF SITE INVESTIGATION: _____

OWNERSHIP OF PROPERTY (CHECK ONE): Municipal Property ☐ County Property ☐ Private Property ☐

Other Ownership (describe) ☐ _____

PROPERTY NAME: _____

PROPERTY OWNER'S NAME: _____

PROPERTY OWNER'S ADDRESS: _____

PROPERTY OWNER'S PHONE NUMBER: _____

ESTIMATED PROPERTY SIZE: _____ ACRES

SITE GPS COORDINATES: N _____ W _____

PHYSICAL ADDRESS: _____

CHARACTERIZATION OF NEIGHBORING PROPERTIES	
EVALUATION FACTOR	COMMENTS
Property Current Land Use	
Any proposed future land uses	
Environmental issues	
Proximity to Schools, Churches, Community Centers	
Property topography	
Open water sources	
Ground water wells	
Access to electricity/sewer/water	
Soil integrity	
Surface water drainage	
Prevailing wind direction	
Ingress/Egress	
Lighted area	
Site security	
Buffer Distance for Noise Control	
Property Developed	
Property Adjacent to Airport/Airfield	
Site able to handle large volume of trucks	

Appendix R

SITE PREPARATION: High _____ Medium _____ Low _____

SUITABILITY TO WET WEATHER: High _____ Medium _____ Low _____

ABILITY TO SERVE A SPATIAL AREA: High _____ Medium _____ Low _____

SITE ACCEPTABILITY FOR WHAT TYPE OF REDUCTION METHOD (CHECK APPLICABLE METHOD(S)):

Open Burning _____

Air Curtain Incineration _____

Grinding _____

WILL THIS SITE BE RECOMMENDED FOR USE (YES/NO) AND EXPLAIN:

_____ C&D

_____ Vegetative

_____ Both C&D and Vegetative

_____ White Goods

_____ Other (Describe _____)

LIST NUMBERS OF EACH PHOTOGRAPH TAKEN OF THE PROPERTY:

LIST THE CLOSEST LANDFILL AND APPROXIMATE DISTANCE FROM SITE:

Thomas Nunn

From: Thomas Nunn
Sent: Sunday, July 14, 2019 4:44 PM
To: Greg Gathers
Subject: RE: RFP Disaster Debris Clearance and Removal Services Price Sheet Question

Dawn,

See answers to your questions below in **red**.

Tom Nunn, CLGPO

Contract and Risk Coordinator

County Manager's Office

Cabarrus County

65 Church St. S., Concord, NC 28025
P.O. Box 707 Concord, NC 28026-0707
O: 704-920-2888
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From: Greg Gathers <ggathers@customtreecare.com>
Sent: Thursday, July 11, 2019 3:43 PM
To: Thomas Nunn <tcnunn@cabarruscounty.us>
Subject: RFP Disaster Debris Clearance and Removal Services Price Sheet Question

CAUTION: This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe!

Tom,

Question regarding the price sheet (pg. 26) for disaster debris clearance and removal services, for example item 1 wants a price for vegetative but then 1a., 1b., & 1c. etc. want a price added on, can you clarify what is needed here? Is 1a added to 1, 1a. added to 1b. and so on? The language is confusing. **It's the increase in the distance traveled. If there's an increased cost then put the increased cost. i.e. 20 miles = \$\$\$, 30 miles = \$\$\$, etc.**

Also, the distances over 100 miles seem excessive with our experience, would the City consider removing these additional line items? **This is pertaining to disposal sites; should your company need to travel that distance. We're Cabarrus County not the City of Concord.**

Please advise.

Thomas Nunn

From: Thomas Nunn
Sent: Tuesday, August 06, 2019 7:05 AM
To: Kerrie Noll (knoll@crowdergulf.com)
Cc: Melinda Edwards (medwards@crowdergulf.com); Reid Loper (rloper@crowdergulf.com)
Subject: RE: Cabarrus Co, NC / RFP for Disaster Debris Clearance

Kerrie,

I assume you're referring to the attachment A for description of service. If there's an increase in cost related to an increased distance traveled.

Tom Nunn, CLGPO

Contract and Risk Coordinator

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From: Kerrie Noll (knoll@crowdergulf.com) <knoll@crowdergulf.com>
Sent: Monday, August 05, 2019 5:22 PM
To: Thomas Nunn <tcnunn@cabarruscounty.us>
Cc: Melinda Edwards (medwards@crowdergulf.com) <medwards@crowdergulf.com>; Reid Loper (rloper@crowdergulf.com) <rloper@crowdergulf.com>
Subject: Cabarrus Co, NC / RFP for Disaster Debris Clearance

CAUTION: This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe!

Good Afternoon,

We are finalizing our proposal for the County and had a question regarding the Fee Schedule. Can you please confirm that for line items 1-4 that the rates will be compounding:

(ie. Line item 1 - \$1.00, line item 2 would include original line item \$1.00 rate + line item 2 rate)

Thank you in advance for the clarification. We look forward to submitting our proposal for consideration.

Thomas Nunn

To: Taylor Oakley
Subject: RE: Cabarrus County, NC. Disaster Debris Clearance & Removal Services
Attachments: Cabarrus County DDMP 2018 Update (Basic Plan and Appendix) - Revised February 2018.pdf

Taylor,

See answers to your questions below in red.

Tom Nunn, CLGPO

Contract and Risk Coordinator

County Manager's Office

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From: Taylor Oakley <TOakley@drcusa.com>
Sent: Thursday, August 08, 2019 6:48 PM
To: Thomas Nunn <tcnunn@cabarruscounty.us>; Olivia Marino <omarino@drcusa.com>
Cc: Cecelia Morise <cmorise@drcusa.com>; Marc Watkins <mwatkins@drcusa.com>; Rae Sharp <rsharp@drcusa.com>
Subject: RE: Cabarrus County, NC. Disaster Debris Clearance & Removal Services

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Good evening,

I have additional questions below:

1. On pages 5 & 7, can you describe the differences between a "mobilization and demobilization plan" under Section 3 versus a "debris management and response plan (mobilization and operational plan)" under Section 8?
 - a. If there is no difference, does it need to be submitted twice? **The work consists of mobilization and demobilization of a contractor's forces and equipment necessary for performing the work required under the contract.**
2. A listing of personnel is required in Section 2 (pg. 5) and Section 10 (pg. 7). Section two of page five is asking for resumes. Section ten of page seven is asking for a contact list of personnel with phone numbers and email addresses assigned to us.

- a. Does it need to be submitted twice? **Yes.** Section two of page five is asking for resumes. Section ten of page seven is asking for a contact list of personnel with phone numbers and email addresses assigned to us.
3. What is the location of the DMS the County is working on getting permitted? **Cabarrus County landfill & Morehead Farms Camp Ground landfill (located near the Charlotte Motor Speedway).**
4. Does the County have a Debris Management Plan? **Yes**
 - a. If so, where can we obtain it? **It's attached.**

Thank you,



Taylor Oakley

Proposal Writer | DRC Emergency Services

A: 110 Veterans Memorial Blvd, STE 515 | Metairie, Louisiana 70005

P: [504.482.2848](tel:504.482.2848) M: [985.302.1813](tel:985.302.1813) F: [504.482.2852](tel:504.482.2852)

E: toakley@drcusa.com W: www.drcusa.com

From: Thomas Nunn <tcnunn@cabarruscounty.us>

Sent: Wednesday, August 7, 2019 2:35 PM

To: Olivia Marino <omarino@drcusa.com>

Cc: Cecelia Morise <cmorise@drcusa.com>; Marc Watkins <mwatkins@drcusa.com>; Taylor Oakley <TOakley@drcusa.com>; Rae Sharp <rsharp@drcusa.com>

Subject: RE: Cabarrus County, NC. Disaster Debris Clearance & Removal Services

Answers in red.

Tom Nunn, CLGPO

Contract and Risk Coordinator

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From: Olivia Marino <omarino@drcusa.com>

Sent: Wednesday, August 07, 2019 3:24 PM

To: Thomas Nunn <tcnunn@cabarruscounty.us>

Cc: Cecelia Morise <cmorise@drcusa.com>; Marc Watkins <mwatkins@drcusa.com>; Taylor Oakley <TOakley@drcusa.com>; Rae Sharp <rsharp@drcusa.com>

Subject: Cabarrus County, NC. Disaster Debris Clearance & Removal Services

CAUTION: This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe!

Good Afternoon,

I have read the above mentioned RFP and have the following questions:

1. We plan to send our proposal via FedEx. A P.O. Box was given, but FedEx doesn't deliver to P.O. Boxes.
 - a. What is the physical address that we can send our proposal to? **65 Church Street S. Concord, NC 28025**
2. P.3 asks for the RFP number to be labeled on the bid, but I do not see an RFP number.
 - a. What is the RFP number for this bid? **Label it as Debris Removal Bid Proposal.**
3. P.8 says to submit a completed and signed Attachment G Conflict of Interest. There is not a signature line on this form.
 - a. Are we to make our own? **You can sign it as is or make your own.**
 - b. Does it not require a signature? **Yes**

Thanks,



Olivia Marino

Proposal Writer | **DRC Emergency Services**

A: 110 Veterans Memorial Blvd, STE 515 | Metairie, Louisiana 70005

P: 504.482.2848 M: 504.909.6659 F: 504.482.2852

E: omarino@drcusa.com W: www.drcusa.com

E-mail correspondence to and from this address may be subject to the North Carolina Public Records Law and may be disclosed to third parties.

Thomas Nunn

From: Thomas Nunn
Sent: Monday, August 12, 2019 8:13 AM
To: Margarita Gusakovskaya
Cc: Kyle Bilafer
Subject: RE: RFP for Debris Removal – Questions

What is the weight/importance of each evaluation criterion? **There is no assigned weight to each individual criteria.**

Please explain specifically how the pricing of one proposal will be evaluated against the pricing from another proposal, including the answer to these questions: **We follow NC General Statutes. We award to the lowest responsive, responsible bidder.**

1. Will each pricing proposal be analyzed and refined to become one total number which can then be compared to the other proposals? **Overall lowest responsive, responsible bidder.**
2. Will extended totals (unit price multiplied by estimated quantity) be used to evaluate pricing, and if so, what estimated quantities and what line items will be used to derive the extended totals that will be evaluated? **Due to unforeseen circumstances of any kind of natural disaster, there's no way to answer this question. For example - Different landfills may or may not be available.**
3. Will all pricing line items be evaluated equally or will some line items receive more importance in the evaluation? **Overall lowest responsive, responsible bidder.**
4. Will attachment B, Hourly Fee Schedule be evaluated? **Overall lowest responsive, responsible bidder.**

Is there an existing contract similar to this in place or previously in place? Are the bid tabulations available? **No.**

Tom Nunn, CLGPO
Contract and Risk Coordinator

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From: Margarita Gusakovskaya <Margarita.Gusakovskaya@ceresenv.com>
Sent: Monday, August 12, 2019 7:02 AM
To: Thomas Nunn <tcnunn@cabarruscounty.us>
Cc: Dawn Brown <dawn.brown@ceresenv.com>
Subject: RFP for Debris Removal – Questions

Good Morning,

I would like to ask the following questions regarding the Debris Removal RFP for Cabarrus County:

RFP Section, Page Number	Vendor question ... ?
Proposal Scoring/Evaluation Criteria, pg. 8-9	What is the weight/importance of each evaluation criterion?
Proposal Scoring/Evaluation Criteria, pg. 8-9 Attachment A, Fee Schedule, pg. 26-28 Attachment B, Hourly Fee Schedule, pg. 30-31	Please explain specifically how the pricing of one proposal will be evaluated against the pricing from another proposal, including the answer to these questions: <ol style="list-style-type: none">1. Will each pricing proposal be analyzed and refined to become one total number which can then be compared to the other proposals?2. Will extended totals (unit price multiplied by estimated quantity) be used to evaluate pricing, and if so, what estimated quantities and what line items will be used to derive the extended totals that will be evaluated?3. Will all pricing line items be evaluated equally or will some line items receive more importance in the evaluation?4. Will attachment B, Hourly Fee Schedule be evaluated?
General Question	Is there an existing contract similar to this in place or previously in place? Are the bid tabulations available?

Thank you,

Margarita Gusakovskaya
Ceres Environmental Services, Inc.
3825 85th Avenue North
Brooklyn Park, MN 55445
Office: (763) 488 56-56
Cell: (612) 384 48-86