DEBRIS MANAGEMENT
Iredell County Emergency Operations Plan

Updated:

Coordinating Agencies: Solid Waste Administration

Cooperating Agencies: Municipal Public Works/Maintenance Facility Services Emergency Management Others as required or requested

INDEX

- Air Curtain Burner Sites
- Chipping and Grinding Debris Management Sites
- Construction & Demolition Debris Management Site Oper. Guidelines
- Contractor Debris Removal and Disposal Operations
- Debris Management Phases
- Debris Management Site Baseline Data Checklist
- Debris Management Site Closeout Coordination
- Debris Management Site Closeout Inspection
- Debris Management Site Closeout Planning
- Debris Management Site Closeout Steps
- Debris Management Site Operations
- Debris Management Site Remediation
- Debris Management Site Setup and Closeout Procedures
- Debris Management Sites
- Debris Removal and Disposal Operations
- Environmental Checklist for Air Curtain Pit Burners
- Establishing Debris Management Sites for Burning and Grinding
- Field Inspection Team
- Guidelines for Closure and Restoration of Debris Management Sites
- Guidelines for Land Application of Wood Ash from Storm Debris Burn Sites
- Guidelines for Reducing the Potential for Spontaneous Combustion
- Loading Site and Disposal Site Monitors / Pricing
- Pre-Storm Activation Actions
- Pre-Storm Administrative Actions
- Private Property Debris Removal
- Responsibilities
- Right of Entry Agreement

Attachments

- Attachment 1 - Agenda Action
- Attachment 2 - Debris Management Contact List
- Attachment 3 - Web Resource Address List
- Attachment 4 - TDSRS Report and Site Maps
- Attachment 6 - Debris Hauling Contractor Contact List
- Attachment 7 - Sample Truck Certification Form
- Attachment 8 - Sample Load Ticket
I. PURPOSE
To provide organizational structure, guidance and standardized procedures for the clearance, removal and disposal of debris caused by a major debris-generating event.
To establish the most efficient and cost effective methods to resolve disaster debris removal and disposal issues.
To expedite debris removal and disposal efforts that provide visible signs of recovery designed to mitigate the threat to the health, safety and welfare of Iredell County residents.
To coordinate partnering relationships through communications and pre-planning with local, State and Federal agencies involved with debris management responsibilities.
To implement and coordinate private sector Debris Removal and Disposal contracts to maximize cleanup efficiencies.

II. SITUATION AND ASSUMPTIONS
A. Situation
1. Natural disasters such as hurricanes, tornadoes and flooding precipitate a variety of debris that include, but are not limited to, such things as trees and other vegetative organic matter, building / construction material, appliances, personal property, mud and sediment.
2. The quantity and type of debris generated from any particular disaster will be a function of the location and kind of event experienced, as well as its magnitude, duration and intensity. This plan is based on the debris generating capacity of a Category 3 Hurricane with wind speeds in excess of 131 miles per hour and heavy rainfall.
3. A Category 3 Hurricane will cause extensive damage to large trees and shrubs in addition to substantial structural damage to homes and commercial property. Mobile homes will be destroyed.
4. The quantity and type of debris generated, its location, and the size of the area over which it is dispersed will have a direct impact on the type of removal and disposal methods utilized to address the debris problem, associated costs incurred and how quickly the problem can be addressed.

B. Assumptions
1. A major natural disaster that requires the removal of debris from public or private lands and waters could occur at any time.
2. The amount of debris resulting from a major natural disaster probably will exceed Iredell County removal and disposal capabilities.
3. Iredell County will contract for additional resources to assist in the debris removal, reduction and disposal process.
4. The Governor will declare a State of Emergency that will authorize state resources to assist in removal and disposal of debris.
5. The Governor will request a Presidential Disaster Declaration, if the disaster exceeds both local and state resources.

III. CONCEPT OF OPERATIONS
A. General
   Organization
   1. The county will be divided into Debris Management Sites.
   2. The Solid Waste Director will have the primary responsibility for identifying these sites, obtaining agreements to use these sites and ensuring their continued availability. The Solid Waste Director will be the designated Debris Manager.

B. Specific
   1. Responsibilities
      a. Disaster responsibilities for municipalities will be determined by the respective jurisdictions according to their capabilities. However, all cleanup and restoration efforts should be coordinated with adjoining jurisdictions, including Iredell County. All Iredell County municipalities are encouraged to participate in the existing agreement for sharing resources among themselves as a first priority.
      b. The Emergency Management Coordinator is responsible for daily operational control and overall management of the Emergency Operations Center and its' staff. The Emergency Management Coordinator will receive current information on the severity of the disaster from many sources. All
requests for debris removal or disposal will be directed to the Debris Manager. Requests for debris clearing from public facilities and roadways will be coordinated with the EOC.

c. The Debris Manager will be designated as the County Debris Manager. In addition they will be responsible for, but not limited to, the following with respect to any and all debris management issues:

- Keep the Iredell County Administration and Emergency Management Coordinator briefed on the status of the debris clearing, removal and disposal operations.
- Assure that Iredell County is represented at all meetings with other government and private agencies involved with the debris cleanup operation.
- Coordinate with affected municipalities within Iredell County on all debris clearance, removal and disposal issues through conference calls.
- Convene emergency debris coordinating meetings at the EOC or other location as appropriate.
- Ensure the debris management effort is provided with all available administrative staff and field support personnel.
- During EOC activation, the Debris Manager will coordinate debris management issues from the EOC. The Debris Manager will be responsible for coordinating all debris clearance and cleanup actions with the EOC. Actions will focus on keeping track of field site assignments and progress of the initial debris clearance from public roadways and critical facilities.
- The Debris Manager will inform the Emergency Management Coordinator of cleanup progress and any problems encountered or expected.
- The Debris Manager will coordinate debris issues with municipalities, other government and private agencies involved with the debris cleanup operation. The Debris Manager may appoint a field operations coordinator who will be responsible for daily operational control of the debris sites.
- The Debris Manager will supervise the monitoring of Debris Contractors, load inspections at debris sites and other off site areas and the preparation of Load Sheets at debris sites or other impacted areas.
- The Debris Manager will coordinate the dissemination of public information with the EOC Public Information Officer (PIO).

d. Public Information Officer (PIO)

The IO will develop a proactive information management plan. Emphasis will be placed on actions that the public can perform to expedite the cleanup process. Flyers, newspapers, radio and TV public service announcements should be used to obtain the public's cooperation by separating burnable and nonburnable debris, segregating household hazardous waste, placing disaster debris at the curbside, keeping debris piles away from fire hydrants and valves, reporting locations of illegal dump sites or incidents of illegal dumping and segregating recyclable materials. Pickup schedules will be disseminated in the local news media and the County Emergency Information hotline.

e. County Finance Officer

The Iredell County Finance Officer, or his/her designee, shall serve as reimbursement coordinator and will provide for the collection and compilation of all labor, equipment hours, materials / supplies and expenditures related to disaster response and recovery. The reimbursement coordinator will also manage the receipt and submission of all debris contractor payables through consultation with the Debris Management Consultant and Debris Manager. Under the direction of the County Finance Officer, the County Debris Manager will assure that debris management contractors establish and maintain insurance coverage as required by the contract. In addition, the County Finance Officer, in cooperation with the Debris Management Consultant, will ensure that the identified contractors meet the contract requirements.

f. County Damage Assessment Officer

The County Damage Assessment Officer will be responsible for compiling all damage reports for county facilities using FEMA's Project Worksheet forms and coordinate the submission of these forms with the reimbursement coordinator and Debris Manager.

g. Environmental Programs

The Debris Manager shall work with the appropriate state and federal environmental regulatory
agencies to ensure debris sites comply with established guidelines. Site monitoring will include environmental sampling (well drilling & monitoring sites) and lab services, as required.

h. Solid Waste Director
   - The County Solid Waste Director shall be responsible for the coordination with franchise waste haulers to reestablish garbage collection in the unincorporated areas of the county. The Solid Waste Director shall coordinate with the Debris Manager in matters regarding storm debris collection, transportation and disposal.
   - The County Solid Waste Director shall be responsible for storm debris cleanup at solid waste facilities. The County Solid Waste Director and the Debris Manager will coordinate any on site open burning of vegetative debris. The Solid Waste Director will provide a status report on the availability of disposal capacity and the types and quantities of storm debris being delivered to the landfill facilities for processing or storage. The Emergency Management Coordinator will be provided with regular status reports.

i. Hazardous Waste Services
   The contractor(s) in accordance with established state and federal disposal regulations should separate Household Hazardous Waste (HHW). The contractor(s) shall provide to the Debris Manager recommendations for dealing with HHW materials in a timely manner and with proper containment. The contractor(s) shall ensure the coordination of inspections, notifications, and if necessary, cleanup or mitigation of any hazardous waste releases at identified facilities.

j. Debris Management Consultant(s)
   Iredell County may hire a prime contractor to coordinate debris removal and other related activities. The contract will be handled as other service contracts are handled within the scope of county government. The Finance Officer, in cooperation with the Debris Manager, will make recommendations regarding selection of the vendor, scope of work, costs and other related issues. The identified prime contractor will hire and supervise subcontractors within the scope of the contract.

2. Pre-Storm Administrative Actions

The County Emergency Management Coordinator will conduct a Debris Management Workshop with the contractors, Debris Manager, identified county staff and municipal representatives to review the Debris Management Plan procedures and to ensure that the debris management operation works smoothly. Items of discussion will include:

- Contractor responsibility
- Debris Management Site
- Logistical support
- Procedures for call up of contractor personnel and equipment
- Haul routing
- Contractor vehicle identification and registration
- Debris hauling load ticket administration
- Mobilization and operation of the Debris Management Sites
- Contractor payment request submission, review, and verification
- Special procedures for HHW
- Debris Management site open and closure requirements
3. *Pre-Storm Activation Actions*

   a. The Emergency Management Coordinator will notify the Solid Waste Director, who will in turn notify the contractor, in order to place them on alert status. They are to be prepared to move into the Iredell County area within 12 hours after receipt of a Notice to Proceed from the county.

   b. The County Debris Management Consultant will be notified by the Solid Waste Director upon notice of a Category 1 or above hurricane, an F1 tornado or above, or other situation that could generate large volumes of debris. The Debris Management Consultant will establish presence and coordinate with the county should the situation dictate the activation of the emergency contract.
4. Debris Management Phases

a. Phase I: Debris Clearance Operations

The Solid Waste Director, in cooperation with the County Damage Assessment Officer, is the lead person responsible for coordinating impact assessment for all public structures, equipment and debris clearance immediately following a large scale disaster in order to prioritize the impacted areas and resource needs. Debris clearance from roadways and public property will be accomplished using volunteer crews and equipment, NCDOT, mutual aid providers and private contractor resources. The NCDOT has the primary mission to clear debris from at least one lane on all primary and secondary roads to expedite the movement of emergency service vehicles such as fire, police and medical responders. Available volunteers from National Guard, Fire Departments and the NC Forest Service may supplement these services.

Iredell County Damage Assessment Teams will conduct initial zone-by-zone windshield surveys to identify the type of debris and to estimate amounts of debris on the roadways. The results of the windshield surveys will also be provided to the Debris Manager located at the EOC.

Priority for debris clearance will be based upon the following criteria:

- Extricate people
- Major flood drainage arteries
- Egress for fire, police and Emergency Operations Center
- Fire, Police and Municipal Buildings
- Ingress to hospitals, jail, and special care unit
- Major traffic routes
- Egress for fleet, traffic, road and bridge, and designated remote locations
- Supply distribution points and mutual aid assembly areas
- Government facilities
- Public Safety communications towers
- Iredell Red Cross shelters
- Secondary roads to neighbor collection points
- Access for utility restoration
- Neighborhood streets
- Private property adversely affecting public welfare

b. Phase II:

Contractor operations will require county and identified municipalities to provide Field Monitoring Teams as well as Load Site and Disposal Site Monitors to oversee contractor operations for quality control purposes.

Debris Removal and Disposal Operations

The Debris Manager will coordinate debris removal and disposal operations for all unincorporated portions of Iredell County.

Identified contractors will collect and haul mixed debris from their assigned Debris Management Sites to designated C&D Debris Management sites or to designated private landfill sites. Clean woody debris will be hauled to the nearest designated vegetative Debris Management site for eventual burning or grinding.

Municipality contractors will take all storm debris to the County Landfill or an approved municipal Debris Management Site. Clean woody debris will be hauled to the nearest municipal Debris Management Site or approved county vegetative Debris Management Site.

Mixed debris from unincorporated areas will be hauled to designated C&D Debris Management
Sites or to designated landfill sites. Clean woody debris will be hauled to the nearest designated vegetative Debris Management Site for eventual burning or grinding.

All vehicles hauling debris and contractor debris haulers will obtain a certified scale ticket and / or load ticket for each load of debris deposited at a private landfill. The contractors’ scale ticket / load tickets will be turned into their supervisors at the end of each day. The supervisors will forward the scale tickets daily to the Debris Manager. The scale tickets / load tickets will be the verification documentation for landfill invoices.

Private haulers will pickup garbage according to current procedures, routes and removal schedules.

**Contractor Debris Removal and Disposal Operations**

The Solid Waste Director or his / her authorized representative will be in contact with the firm(s) holding Debris Removal and Disposal Contract(s) and advise them of impending conditions. The contract is designed to have a qualified contractor(s) remove and lawfully dispose of all natural disaster generated debris, industrial or commercial hazardous waste. Debris removal may be limited to unincorporated streets, roads and other public rights-of-way based on the extent of the disaster by N. C. Department of Transportation. Debris contract haulers may be limited to disaster related material placed at, or to debris immediately adjacent to, the edge of the rights-of-way by residents within designated Debris Management Sites. Also see contracts in Attachment 1, as well as a listing of possible contractors.

The contractor, upon Notice to Proceed, will mobilize such personnel and equipment as necessary to conduct all debris removal and disposal operations as were previously detailed in the Debris Removal and Disposal Contract. All contractor operations will be subject to review by Iredell County Officials.

Iredell County recognizes the economy of disaster debris disposal through the use of local vegetative Debris Management Sites designated for volume reduction of clean woody debris. The county has pre-designated vegetative Debris Management Sites for the sole purpose of temporarily storing and reducing clean woody debris through either burning or grinding. The contractor will operate the Debris Management Sites made available by the county. The contractor will be responsible for all site setup, site operations, rodent control, closeout and remediation costs. The contractor is also responsible for the lawful disposal of all debris reduction by products as his / her operations may generate at a Debris Management Site. A listing of all approved County Debris Management Sites will be provided.

Debris Management Sites will be established for mixed debris. These sites will be centrally located to handle construction and demolition (C&D) material. These C&D Debris Management Sites will be used to expedite the removal of mixed and C&D material from rights–of-way within the unincorporated portions of Iredell County. Municipalities will be allowed to use these sites upon approval of the Iredell County Debris Manager. A valid load ticket must accompany all material delivered to a county C&D Debris Management Site by county contractors. All material deposited at C&D Debris Management Sites will eventually be taken to a properly permitted landfill for final disposal.

The County Debris Manager may direct contractors to bypass C&D Debris Management Sites and approve the hauling of mixed C&D debris directly to a properly permitted landfill for disposal.

The Debris Manager, or their designee, will monitor the contractor's performance for debris removal and disposal operations in each Debris Zone. The Debris Manager will supervise the Field Inspection Teams consisting of county personnel. The Field Inspection Teams will monitor all
contractor operations. The contractor will keep the Field Inspection Teams informed of cleanup progress and any problems encountered or expected.

The contractor will restore the Debris Management Sites as close to the original condition as is practical so that it does not impair future land uses. All sites are to be restored to the satisfaction of the county with the intent of maintaining the utility of each site.

**Pricing**

Local municipalities will have the responsibility of paying the Iredell County Solid Waste Enterprise Fund for all disposal costs. The total cost will include any contractual obligations imposed on the Solid Waste Department (ex: HHW removal fees, grinding, etc.).

It will become the responsibility of the municipalities to file for reimbursement from federal/state aid or possible Iredell County budget funds.

**Loading Site and Disposal Site Monitors**

All contracted loads will be taken directly to an approved landfill for final disposal. The contractor should avoid multiple hauling of debris. The contractor shall comply with all terms of the contract.

Disposal Site Monitors will be provided by either the county or from identified sources. The Loading Site Inspectors will be assigned to each contractor loading site within designated Debris Management Sites. The Loading Site Monitor will initiate the load tickets that verify that the debris being picked up is eligible under the terms of the contract. Disposal Site Monitors will be stationed at all Debris Management Sites and landfill disposal sites for the purpose of verifying the quantity of material being hauled by the contractor through the use of load tickets.

A Disposal Site Monitor will be located at each inspection station to verify the load and estimate the volume in cubic yards. The Disposal Site Monitors will estimate the cubic yards of debris in each truck entering the contractor's selected Debris Management Sites or landfill disposal site and will record the estimated quantity on pre-numbered debris load tickets.

The contractor will only be paid based on the number of cubic yards of material deposited at the disposal site as recorded on the debris load tickets.

The contractor will be paid based on the number of cubic yards of eligible debris hauled per truckload. One part of the debris load ticket will be given to the truck driver and the other retained by the Disposal Site Monitor. The truck driver's portion of the load ticket will be turned in daily to their supervisor. The Disposal Site Monitor's copy will be turned in daily to the Debris Manager. Payment for hauling debris will only be approved upon presentation of the duplicate debris load ticket with the contractor's invoice. The county will process contractor invoices within ten working days of receipt.

All of the material when delivered to the Sanitary Landfill for proper disposal will be weighed and converted to tons as required by NC State. Waste that never reaches the Sanitary Landfill will be calculated and paid for by means of conversion from cubic yards to tons. This conversion will be done by the Solid Waste Department.

**Field Inspection Team**

The Debris Manager will appoint Field Inspection Team personnel responsible for monitoring all contractor debris removal and disposal operations. The Field Inspection Teams will periodically
inspect each Debris Management Site to ensure that operations are being followed as specified in the Debris Removal and Disposal Contract with respect to local, state and federal regulations and the Debris Management Site Baseline Checklist. Each Field Inspection Team will submit a daily written report to the Debris Manager outlining their observations with respect to the following:

- Is the contractor using the site properly with respect to layout and environmental considerations?
- Has the contractor established lined temporary storage areas for ash, household hazardous wastes and other materials that can contaminate soils and groundwater?
- Has the contractor established environmental controls in equipment staging areas, fueling and equipment repair areas to prevent and mitigate spills of petroleum products and hydraulic fluids?
- Are plastic liners in place under stationary equipment such as generators and mobile lighting plants?
- Has the contractor established appropriate rodent control measures?
- Are burn sites constructed and operating according to the Environmental Checklist for Air Curtain Pit Burners?
- Has the contractor established procedures to mitigate:
  - Smoke: Are the incineration pits constructed properly and being operated according to the contract statement of work?
  - Dust: Are water trucks employed to keep the dust down?
  - Noise: Have berms or other noise abatement procedures been employed?
  - Traffic: Does the Debris Management Site have a suitable layout for ingress and egress to help traffic flow?

Field Inspection reports will also include observations at loading sites and the locations of any illegal dumping sites.

Debris Management Site Setup and Closeout Procedures

The contractor will be responsible for preparing and closing out a Debris Management Site according to specification in the contract.

Private Property Debris Removal

Dangerous structures should be the responsibility of the owner to demolish in order to protect the health and safety of adjacent residents. However, experience has shown that unsafe structures will remain because of the lack of insurance or absentee landlords. Care must be exercised to ensure that the Iredell County Building Code Enforcement Department properly identifies structures.

The Debris Manager will coordinate with the Building Code Enforcement Department regarding:

- Demolition of private structures.
- Removing debris from private property.
- Local law and / or code enforcement agencies.
- Historic and archaeological sites.
- Qualified environmental contractors to remove hazardous waste such as asbestos and lead based paint.
- Abandoned vehicles.
- Receipt of Right of Entry Agreements with landowners.

The topography and soil / substrate conditions should be evaluated to determine best site layout. When planning site preparation, think of ways to make restoration easier. For example, if the local
soils are very thin, the topsoil can be scraped to bedrock and stockpiled in perimeter berms. Upon site closeout, the uncontaminated soil can be spread to preserve the integrity of the tillable soils.

The following site baseline data checklist should be used to evaluate a site before a contractor begins operations and used during and after to ensure that site conditions are properly documented.

Debris Management Site Operations

Lined temporary storage areas should be established for ash, household hazardous waste, fuels and other materials that may contaminate soils and groundwater. Plastic liners should be placed under stationary equipment such as generators and mobile lighting plants. These actions should be included as a requirement in the contract scope of work. If the site is also an equipment storage area, fueling and equipment repair should be monitored to prevent and mitigate spills of petroleum products and hydraulic fluids. Also see Attachment 4 about site specific TDSRS (Temporary Debris Staging and Reduction Sites) recommendations.

Be aware of and lessen the effects of operations that might irritate occupants of neighboring areas. Establishment of a buffer zone can abate concerns over smoke, dust, noise and traffic.

Consider on site traffic patterns and segregate materials based on planned volume reduction methods.

Operations that modify the landscape, such as substrate compaction and over excavation of soils when loading debris for final disposal, will adversely affect landscape restoration.

Debris removal / disposal should be viewed as a multi-staged operation with continuous volume reduction. There should be no significant accumulation of debris at temporary storage sites. Instead, debris should be constantly flowing to burners and grinders, or recycled with the residue and mixed construction and demolition materials going to a landfill.

Debris Management Site Closeout Inspection

Each Debris Management Site will eventually be emptied of all material and be restored to its previous condition and use. The contractor is required to remove and dispose of all mixed debris, construction and demolition debris, and debris residue to approved landfills. Appropriate Iredell County inspectors will monitor all closeout activities to ensure that the contractor complies with the Debris Removal and Disposal Contract. Additional measures may be necessary to meet local, state and federal environmental requirements because of the nature of the Debris Management Sites operation.

Debris Management Site Closeout Planning

The contractor must assure the County that all Debris Management Sites are properly remedied. There will be significant costs associated with this operation as well as close scrutiny by the local press and environmental groups. Site redemption will go smoothly if baseline data collection and site's operation procedures are followed.

c. **Debris Management Site Closeout Steps:**
   - Contractor is responsible for removing all debris from the site.
   - Contractor conducts an environmental assessment with county and landowner.
   - Contractor develops a remediation plan.
   - Remediation plan reviewed by county, landowner and appropriate environmental agency.
Remediation plan approved by the appropriate environmental agency.
Contractor executes the plan.
Contractor obtains acceptance from county, appropriate environmental agency and the landowner.

Debris Management Site Remediation

During the debris removal process and after the material has been removed from each of the Debris Management Sites, environmental monitoring will be needed to close each of the sites. This is to ensure that no long-term environmental contamination is left on the site. The monitoring should be done on three different media: ash, soil and groundwater.

- **Ash**
  The monitoring of the ash should consist of chemical testing to determine the suitability of the material for either agricultural use or as a landfill cover material.

- **Soil**
  Monitoring of the soils should be by portable inspection methods to determine if any of the soils are contaminated by volatile hydrocarbons. The contractors may do this if it is determined that hazardous material, such as oil or diesel fuel was spilled on the site. This phase of the monitoring should be done after the stockpiles are removed from the site.

- **Ground Water**
  The monitoring of the groundwater should be done to determine the probable effects of rainfall leaching through either the ash areas or the stockpile areas.

Debris Management Site Closeout Coordination

The contractor will coordinate the following closeout requirements through the County Damage Assessment staff:

- Coordinate with local and state officials responsible for construction, real estate, contracting, project management, and legal counsel regarding requirements and support for implementation of a site remediation plan.
- Establish an independent testing and monitoring program. The contractor is responsible for environmental restoration of both public and leased sites. The contractor will also remove all debris from sites for final disposal at landfills prior to closure.
- Reference appropriate and applicable environmental regulations.
- Prioritize site closures.
- Schedule closeout activities.

Debris Management Site Baseline Data Checklist

<table>
<thead>
<tr>
<th>Before activities begin:</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Take ground or aerial video / photographs.</td>
</tr>
<tr>
<td>☐ Note important features, such as structures, fences, culverts and landscaping.</td>
</tr>
<tr>
<td>☐ Take random soil samples.</td>
</tr>
<tr>
<td>☐ Take random groundwater samples.</td>
</tr>
<tr>
<td>☐ Take water samples from existing wells.</td>
</tr>
<tr>
<td>☐ Check the site for volatile organic compounds.</td>
</tr>
</tbody>
</table>

<p>| After activities begin: |</p>
<table>
<thead>
<tr>
<th>Task</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish groundwater monitoring wells.</td>
<td></td>
</tr>
<tr>
<td>Take groundwater samples.</td>
<td></td>
</tr>
<tr>
<td>Take spot soil samples at household hazardous waste, ash and fuel storage areas.</td>
<td></td>
</tr>
</tbody>
</table>

**Progressive updates:**

- Update videos / photographs.
- Update maps / sketches of site layout.
- Update quality assurance reports, fuel spill reports, etc.

**Site number and location:**

- Date closure complete.
- Household hazardous waste removed.
- Contractor equipment and temporary structures removed.
- Contractor petroleum spills remediated.
- Ash piles removed.
- Comparison of baseline information to conditions after the contractor has vacated the temporary site.

**Documentation:**

- Closure documents.
- Contracting status reports.
- Contract.
- Testing results.
- Correspondence.
- Narrative responses.

**Additionally:**

- Determine separate protocols for ash, soil and water testing.
- Develop decision criteria for certifying satisfactory closure based on limited baseline information.
- Develop administrative procedures and contractual arrangements for closure phase.
- Inform local and state environmental agencies regarding acceptability of program and established requirements.
- Designate approving authority to review and evaluate contractor closure activities and progress.
- Retain staff during closure phase to develop site specific remediation for sites, as needed.
ENVIRONMENTAL CHECKLIST FOR AIR CURTAIN PIT BURNERS

Incineration site inspections will also include an assessment of the environmental controls being used by the contractor. Environmental controls are essential for all incineration methods, and the following will be monitored.

A setback of at least 1,000 feet should be maintained between the debris piles and the incineration area. Keep at least 1,000 feet between the incineration area and the nearest building. Contractor should use fencing and warning signs to keep the public away from the incineration area.

The fire should be tested for proper cooling temperatures (minimum 30 days for disposal in Sanitary Landfill) extinguished approximately two hours before anticipated removal of the ash mound. The ash mound should be removed when it reaches 2 feet below the lip of the incineration pit.

The incineration area should be placed in an aboveground or below ground pit that is no wider than 8 feet and between 9 and 14 feet deep. Above ground incineration pits should be constructed with limestone and reinforced with earth anchors or wire mesh to support the weight of the loaders. There should be a 1 foot impervious layer of clay or limestone on the bottom of the pit to seal the ash from the aquifer.

The ends of the pits should be sealed with dirt or ash to a height of 4 feet. A 12 inch dirt seal should be placed on the lip of the incineration pit area to seal the blower nozzle. The nozzle should be 3 to 6 inches from the end of the pit.

There should be 1 foot high, unburnable warning stops along the edge of the pit's length to prevent the loader from damaging the lip of the incineration pit.

Hazardous or contaminated ignitable material should not be placed in the pit. This is to prevent contained explosions.

The airflow should hit the wall of the pit about 2 feet below the top edge of the pit, and the debris should not break the path of the airflow except during dumping. The pit should be no longer than the length of the blower system and the pit should be loaded uniformly along its length.

(Click here for a MS Word copy of the form below, click here for a PDF version of the form below)

IREDELL COUNTY
Right of Entry Agreement

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

____________________________________________ State of __________________________

(Street) ______________________________________________________________

(City/Town) (County)

____________________________________________

do hereby grant and give freely and without coercion, the right of access and entry to said property in the County of _____________________, its agencies, contractors, and subcontractors thereof, for the purpose of removing and clearing any or all storm-generated debris of whatever nature from the above described property. It is fully understood that this permit is not an obligation to perform debris clearance. The undersigned agrees and warrants to hold harmless the County of _____________________, State of _____________________, its agencies, contractors, and subcontractors, for damage of any type, whatsoever, either to the above described property or persons situated thereon and hereby release, discharge, and waive any action, either legal or equitable that might arise out of any activities on the above described property. The property owner(s) will mark any storm damaged sewer lines, water lines and other utility lines located on the described property.
I / We (have, have not) (will, will not) received any compensation for debris removal from any other source including SBA, ASCS, private insurance, individual and family grant program or any other public assistance program. I will report for this property any insurance settlements to me or my family for debris removal that has been performed at government expense.

For the considerations and purposes set forth herein, I set my hand this __________ day of ________________, 20__.  

Witness ________________________________

Owner / Telephone Number / Address

________________________________________________________________________________________

Signature of Owner _______________________________________________________

Construction and Demolition Debris Management Site Operational Guidelines

When local governments are preparing temporary facilities for handling debris resulting from the cleanup efforts due to storm damage, the following guidelines should be considered when establishing Debris Management Sites for Construction & Demolition (C&D) debris.

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.

Debris Management Sites

Locating Debris Management Sites for staging / transferring C&D waste can be accomplished by evaluating potential sites and by revisiting 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 the 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 50 feet from site property lines. Other nontransferable C&D wastes (household garbage) 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 the areas should be flagged and a 100-foot buffer shall be maintained for all activities on going at the site.

6. 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.

7. Sites shall have an attendant during operating hours to minimize the acceptance of unapproved materials and to provide directions to haulers and private citizens bringing in debris.

8. 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.

9. 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.

10. Final written approval is required from the County Emergency Management Coordinator 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 the closure and restoration of temporary debris management sites guidelines.

Establishing Debris Management Sites for Burning and Grinding Operations

General
When preparing temporary facilities for handling debris resulting from the cleanup efforts due to storm damage, the following guidelines should be considered when establishing Debris Management Sites for Burning and Grinding Operations. These guidelines apply only to sites for grinding 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 method(s) of managing vegetative and land clearing storm debris are “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, upon completion of the proper cooling process.

Chipping and Grinding Debris Management Sites

Locating Debris Management Sites for chipping / grinding of vegetative and land clearing debris will require a detailed evaluation of potential sites and possible revisits 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 the 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 the 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, the areas shall be flagged and a 100 foot buffer shall be maintained for all activities on going at the site.
6. 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.
7. 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.
8. 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 rights-of-way or blocking primary and / or secondary roads to the site.
9. 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.
10. Grinding of clean wood waste such as pallets and segregated unpainted / untreated dimensional lumber is allowed.
11. Final written approval is required from the County Emergency Management Coordinator 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 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 the closure and restoration guidelines for Debris Management Sites.

**Air Curtain Burner Sites**

Locating sites that are intended for air curtain burning (ACB) operations is a coordinated effort between the Solid Waste Authority and local air quality officials 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 marshal 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 area available in the event of an emergency.
2. The requirements for ACB device(s), in accordance with local air quality rules require the following buffers: a minimum of 500 feet from the AC13 device to homes, dwellings and other structures and 250 feet from roadways. Contact the local 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 the 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. 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. 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 and ACB site is 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.
8. Wood ash to be land applied on site or off site shall be managed in accordance with the guidelines for the land application of wood ash from storm debris burn sites. The ash shall be incorporated into the soil by the end of the operational day or sooner if the wood ash becomes dry and airborne.
9. Sites that have identified wetlands should be avoided, if possible. If wetlands exist or wetland features appear at a potential site it 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 ongoing at the site.
10. 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.
11. 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.
12. When possible, post signs with operating hours and information about what types of cleanup waste may be accepted. Also include information as to whether only commercial haulers or the general public may deposit waste.
13. 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 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 the guidelines for closure and restoration of Debris Management Sites.

*Guidelines for the Land Application of Wood Ash from Storm Debris Burn Sites*
1. Whenever possible, soil test data and waste analysis of the ash should be available to determine appropriate application rate.

2. In the absence of test data to indicate agronomic rates, application should be limited to 2 to 4 tons per acre / one time event. If additional applications are necessary, due to the volume of ash generated and time frame in which the ash is generated, then an ash management plan will be needed.

3. Ash should be land applied in a similar manner as agricultural limestone.

4. Ash should not be land applied during periods of high wind to avoid the ash blowing off the application sites.

5. Ash should not be land applied within 25 feet of surface waters or within 5 feet of drainage ways or ditches on sites that are stabilized with vegetation. These distances should be doubled on sites that are not vegetated and the ash should be promptly incorporated into the soil.

6. Records should be maintained to indicate where ash is applied and the approximate quantities of ash applied.

7. As an option to land application, ash may be managed at a permitted municipal solid waste landfill after cooled to prevent possible fire.

8. Assistance in obtaining soil test data and waste analysis of ash should be available through county offices of the Extension Service.

---

**Guidelines for Reducing the Potential for Spontaneous Combustion in Compost or Mulch Piles**

1. When ground organic debris is put into piles, microorganisms can very quickly begin to decompose the organic materials. The microorganisms generate heat and volatile gases as a result of the decomposition process. Temperatures in these piles can easily rise to more than 160 degrees Fahrenheit. Spontaneous combustion can occur in these situations.

2. Spontaneous combustion is more likely to occur in larger piles of debris because of a greater possibility of volatile gases building up in the piles and being ignited by the high temperatures. If wind rows can be maintained 5 feet to 6 feet high and 8 feet to 10 feet wide, volatile gases have a better chance of escaping the piles and the possibility of spontaneous combustion will be reduced.

3. Turning piles when temperatures reach 160 degrees can also reduce the potential for spontaneous combustion. Pile turning provides an opportunity for gases to escape and for the contents of the pile to cool. Adding moisture during turning will increase cooling. Controlling the amount of nitrogen bearing (green) wastes in piles will also help to reduce the risk of fire. The less nitrogen in the piles the slower the decomposition process and consequently the less heat generated and gases released.

4. Large piles should be kept away from wooded areas and structures and should be accessible to fire fighting equipment, if a fire were to occur. Efforts should be made to avoid driving or operating heavy equipment on large piles because the compaction will increase the amount of heat buildup, which could increase the possibility of spontaneous combustion.

---

**Guidelines for Closure and Restoration of Debris Management Sites**

Closure or reapproval of a Debris Management Site should be accomplished within 30 days of receiving the last load of debris.

**Site Closure**

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. Burn residues shall be removed to a properly approved solid waste management site or land applied in accordance with guidelines.

4. All other materials (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 Department of Environmental Protection.
Agency Approval
The Department of Environmental Protection reserves the right to review any temporary site to determine if the provisions outlined herein have been adequately addressed.

Site Re-approval
Sites that were approved as temporary staging or processing sites will require re-approval for long term storage, continuing reduction processing, permanent disposal if site is not closed out in accordance with guidelines stated here. Sites shall be managed and monitored in accordance with the Department of Environmental Protection and to prevent threats to the environment or public health.

Attachment 1
AGENDA ACTION

Normal Operations

The optimal pre-event planning required during Normal Operations should be accomplished between December 1st and May 31st. This minimizes the County’s risk of having to perform planning functions during a hurricane emergency situation. The following pages describe the Normal Operations Checklist.

Establish Preposition Contracts

In order to ensure rapid mobilization and debris clearance and removal response following an event, it is important for the County to secure debris removal pre-positioned contracts. Costs associated with establishing pre-positioned debris hauling contracts are minimal. As of the publication of this document, FEMA has reimbursed communities for debris removal operations under competitively let, pre-positioned, debris removal contracts. In order to assure FEMA reimbursement for debris removal operations, the Purchasing Department must follow its standard procurement procedure when issuing a debris removal solicitation and awarding pre-positioned contract(s). Table 1 illustrates the estimated costs of collection, disposal and monitoring for a Category 3 Hurricane based on the County’s current rates.

<table>
<thead>
<tr>
<th>Cost</th>
<th>Estimated Volume (Cy)</th>
<th>Estimated Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean Woody Debris Collection, Reduction and Disposal</td>
<td>1,449,000</td>
<td>21,662,550</td>
</tr>
<tr>
<td>Mixed C&amp;D Debris Collection, Reduction and Disposal Debris Monitoring [1]</td>
<td>3,381,000</td>
<td>50,545,950</td>
</tr>
<tr>
<td>Total</td>
<td>4,830,000</td>
<td>91,525,110</td>
</tr>
</tbody>
</table>

[1] Debris Monitoring refers to the ongoing monitoring required after debris disposal to ensure compliance with environmental regulations and public health standards.
Debris Hauling

In the event pre-positioned debris removal contracts are not established, the County may use an emergency procurement procedure to award contracts following a hurricane. Post event procurement will delay the inception of debris removal operations for several days. The County’s debris hauling contract should be written to encompass all potential debris removal activities that may be necessary to implement. Iredell County encompasses areas with a dense vegetative canopy, making it particularly vulnerable to a vast array of damage. This makes it extremely critical for the County to enter into a debris removal contract with a comprehensive scope of services [2].

The scope of services should include:

- Right-of-Way Vegetative Debris Removal—and associated Processing and Haul-Out
- Right-of-Way Construction and Demolition Debris Removal;
- Right-of-Way Removal, TDSRS (Temporary Debris Staging and Reduction Sites) segregation, and Class I disposal of Household Hazardous Waste
- Right-of-Way Leaning Tree and Hanging Limb Cut Work;
- Right-of-Way Partially Uprooted Stump Removal
- Right-of-Way Sand Removal and Screening;
- Private Property Leaner and Hanger Cut Work and Removal;
- Private Property Demolition and Debris Removal; and
- White Good Freon Removal.[3]
- Hazardous Debris separation, documentation and disposal

The County should use cubic yards as the unit of measurement for payment. Cubic yard pricing is easier to monitor and document, and favored by FEMA for reimbursement purposes. Further, the contractor must clearly define expectations of the County and limitations on the Contractor. These should include, but not limited to:

- Limit time and materials work to the first 70 working hours following an event.
- Utilize a retainage or liquidated damages clause to ensure that Contractors repair all damage for which they are responsible prior to receiving full payment.
- Verify that vegetative cut work is consistent with most recent FEMA Guidance’s for Reimbursement

Included in Appendix Package is a list of potential debris contractors with adequate experience and asset levels to serve in a Prime Contractor capacity for the County.

Monitoring Services

Debris monitors are responsible for ensuring that contracted debris haulers are in compliance with their contract. The monitoring firm is responsible for, but not limited to the following activities:

- Developing load tickets;
- Verifying the estimated amount of debris hauled to the Temporary Debris Staging and Reduction Site (TDSRS);
- Identifying HHW on the ROW and at TDSRS locations and ensuring that it is properly collected, segregated, and disposed of at a Class I facility,
- Providing comprehensive program management for the debris removal and cleanup process;
- Communicating with key County personnel on a regular basis;
- Managing an extensive database for reimbursement, invoice reconciliation and auditing purposes;
- Reviewing and reconciling contractor invoices prior to recommending payments to the County;
- Assisting the Office of Management and Budget with the development of Project Worksheets.
Optional Task: Immediate Response Activities

The NCDOT is responsible for initial emergency road clearance activities following a storm. The County may supplement the NCDOT resources and response ability by entering into a pre-positioned emergency road clearance contract. FEMA has historically reimbursed communities 100 percent for work performed in the first 70 working hours. Contracts for emergency road clearance should be competitively solicited on a time and materials contract limited to 70 working hours immediately following a hurricane or disaster declaration.

Review and Update Road List

A comprehensive, updated list of all roads in Iredell County should be stored electronically by the Solid Waste Director. A comprehensive road list helps ensure that the clean-up process is properly documented for the purposes of:

- FEMA reimbursement;
- Payment responsibility;
- Contractor invoice reconciliation; and
- Debris removal operations cover all eligible roads.

Review and Update Contact List

The County’s Emergency Management Office, in conjunction with the county Solid Waste Director, will be responsible for maintaining and annually updating a “Disaster Debris Management Contact List”. A preliminary Disaster Management Contact List is included in this Appendix Package. As indicated by its name, this is a comprehensive list of County Staff, County Departments, and Private Contractors involved in the debris management process. The Disaster Management Contact List can be used to ensure that all key staff and departments are:

- Informed of any training or meetings held in the non-hurricane season
- Called to any coordination meetings immediately following the storm and in the weeks thereafter; and
- Ready with any information or deliverables that Emergency Services and The Solid Waste Department needs for coordinating the debris removal operation.

Review and Update TDSRS Locations

Prior to September 1st of each year, the County Solid Waste Director should identify a number of Temporary Debris Staging and Reduction Sites (TDSRS) and seek pre-approval by NCDENR.
- **TDSRS Review**
  - Included as a separate section of this Appendix Package is Letter Report identifying potential TDSRS locations throughout the county.

- **Future TDSRS Locations Selection**
  - Potential sites were evaluated based on the following selection criteria:
    - **Public Property** - Preference was given to public land rather than private, due to potential rental costs commonly associated with private property sites.
    - **Size** - The larger and more open the property is the better suited it will be for debris removal operations.
    - **Environmental Feasibility** - Properties must be outside watershed range and environmentally sensitive areas (such as, wetlands, areas with endangered species, critical habitats, etc.).
    - **Proximity to Densely Populated Areas** - Areas as removed as possible from private residential housing developments. Dust, smoke, noise and heavy vehicle traffic could pose health and safety hazards and public complaints. However, if possible, TDSRS locations should be within 15 miles of densely populated areas to ensure quick truck turnaround and facilitate debris removal progress. Proximity to the City of Statesville and the Town of Mooresville should also be considered.
    - **Access** - Properties that allow for easy ingress and egress.
    - **Legal** - Some local ordinances that could preclude TDSRS activities in an area.

- **Permanent Disposal Staging and Reduction Site Locations**
  - Some counties are now considering the value of identifying permanent areas that will be available on a continuous basis to serve as a TDSRS. In Iredell, a good example of such an area would be the site proposed at the landfill. This area would be left undeveloped and periodically cleared to be available, on an as needed basis, in the event of a natural disaster.

**Review and Update Relevant Ordinances**

FEMA requires that a community follow its local ordinances should it engage in a special demolition or other private property debris removal program. Ordinances may need to be evaluated and updated, and a condemnation ordinance added. This is the ideal time period to review all local and county ordinances related to nuisance abatement to ensure cleanup proceeds follow legal requirements. Once all ordinances are updated, the Emergency Management Coordinator and The Solid Waste Director should retain copies of these ordinances and keep with the Debris Management Plan.

**Review and Update Memorandums of Understanding**

Memorandums of Understanding (MOUs) or Mutual Aid Agreements are documents developed between governmental entities that formally document the responsibilities of each entity in the event of a hurricane. This document should also outline the reimbursement procedures, if applicable. Relative to the debris management process, a MOU should be developed between Iredell County and all the incorporated municipalities for delegation of cleanup responsibilities if each municipality is deferring that responsibility to the County. The Emergency Management Coordinator and the Solid Waste Director should work with the County Manager or his designee to develop and enact these documents.

**Monitor and Evaluate Disposal Capacity at Landfills**

If the County cannot find viable final disposal locations for reduced debris, a future hurricane could seriously impact its landfill. For example, Table 2 shows the impact on landfills in and around Escambia County, Florida after Hurricane Ivan. A similar storm could seriously deplete the County's available landfill capacity. Measures should be taken at this point to identify alternatives and reduce the impact on the County Landfill operation.
<table>
<thead>
<tr>
<th>Landfill</th>
<th>Loads</th>
<th>Volume (CY)</th>
<th>Percentage of Total Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coyote Landfill</td>
<td>3,500</td>
<td>94,000</td>
<td>17.53%</td>
</tr>
<tr>
<td>Joiner</td>
<td>2</td>
<td>100</td>
<td>.02%</td>
</tr>
<tr>
<td>Perdido Landfill</td>
<td>13,600</td>
<td>442,200</td>
<td>82.45%</td>
</tr>
<tr>
<td>Total</td>
<td>17,102</td>
<td>536,300</td>
<td>100%</td>
</tr>
</tbody>
</table>

Capacity at regional municipal and C&D landfills outside the County should be monitored and evaluated to ensure that the material generated by a storm does not hamper the expected future availability of facilities.

**Review and Update Debris Management Plan**

The Debris Management Plan is a “working document”. The document should be reviewed and updated bi-annually by the Emergency Coordinator and the Solid Waste Director to ensure that all information presented in this plan is updated.

**Annual Media Press Releases**

Providing citizens with information regarding the debris management process during the “off season” is an effective way to continually educate the public about the debris management process. Since the radio and television may not be readily available to the general public in the days or weeks immediately following the storm, providing this information in print prior to an emergency situation will give many citizens an initial “how-to” regarding the debris management process.

Examples of this information would be:

- Proper set-out techniques for vegetative and C&D debris;
- Proper set-out and/or drop-off locations for HHW;
- Debris hotline information;
- Estimated timelines for collection; and
- Explanation of first, second and third passes.

**Increased Readiness**

The checklist performed during a period of Increased Readiness 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 stress.
Download Most Recent Road List and Relevant Documents to a CD

The Solid Waste Department should coordinate with the GIS Division to acquire the most recent road list and maps of the County prior to the hurricane. Some computers and servers that store this information may be unavailable immediately after the event. Having this information on-hand ensures that debris collection operate properly and commence in a timely manner. The most recent road list will be downloaded and affixed it to the Debris Management Plan at a minimum of biannually. Copies of the CD should be stored in the EOC and in a safe location outside the projected path of the hurricane.

Alert Key Personnel

Key personnel from the Debris Management Contact List should be put on alert by the Solid Waste Director. The Solid Waste Director should contact these primary points of contact via verbal and electronic communication informing them of information needed to begin the response and recovery process. In addition, the Solid Waste Director in conjunction with the Emergency Management Coordinator should schedule a meeting with primary points of contact at the EOC to discuss emergency road clearing activities and response activities.

Review plan with Key Personnel

Once a meeting is scheduled with all primary points of contact at each of the relevant County Departments, the Solid Waste Director and any retained Contractors should review the Debris Management Action Plan. This meeting should focus on key activities that need to occur immediately following the storm including damage assessments and emergency road clearing activities. The Solid Waste Director should then report the Action Plan to the Emergency Management Coordinator and the Emergency Operations Center staff. The Action Plan is to be documented utilizing the proper ICS forms.

Pre-event Media Press Release

Emergency Management Coordinator and through the County Public Information Officer will issue a press release to the public that assures them that the County is prepared and has a plan in place to immediately respond to the event. In addition, the County Solid Waste Director should provide information to the EOC on proper set-out procedures and estimates on when the cleanup will begin.

Alert Debris Contactors and Place on Standby

All debris contractors should be put on alert by the Solid Waste Director that their contracts may be activated. Discussions with the Contractors should address the following key issues:

- Availability and amount of assets that will be dedicated to debris removal operations;
- Estimating time of mobilization;
- Identifying primary points of contact;
- Exchanging mobile contact information; and
- Determining if Contractor presence is needed at the EOC during the event.

Response (First 70 Hours)

This response phase is generally defined as the first 70 contractor working hours following a storm.[4] The County should activate this plan immediately following an event.
Conduct Damage Assessment

Damage assessments are necessary to determine the extent and the location of the debris. Windshield surveys of the County are taken and used to communicate critical damage areas to NCDOT staff to 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. Often times helicopter surveys are available through debris removal contractors independently surveying the County to determine asset levels and configuration. The Solid Waste Director, in conjunction with the Emergency Management Coordinator and the County Tax Administrator, shall be responsible for coordinating preliminary windshield damage assessment efforts supported by appraisal personnel. All activity is to documented utilizing the appropriate ICS forms.

Assessment Responsibility

- Roads and Bridges Division (NCDOT)
- Debris Removal Contractor
- Debris Monitoring and Management Firm

Mapping Responsibility

- Mapping Department

Begin Emergency Roadway Debris Clearance

The NCDOT and the municipalities commences with road clearance or “cut and toss” activities and determines necessity of activating Emergency Road Clearance Contractor. These operations first focus on major arteries leading to storm shelters, hospitals, supply points, and other critical locations throughout the County. NCDOT maintains road clearance responsibility for all State and Federal Roads and the municipalities maintains road clearance responsibilities within their jurisdictional limits.

Emergency Road Clearance Contractor Activation

- The Solid Waste Department
- NCDOT

Emergency Road Clearance Priorities and Operations

- NCDOT and the municipalities

Activate Debris Removal Contractors

The Solid Waste Director will utilize the damage assessments conducted by the NCDOT, municipalities and county appraisal personnel to determine whether to activate debris removal contractors. The Solid Waste Director should immediately meet with the Emergency Management Coordinator and the Assistant County Manager or his designee to make this determination. Debris hauling and monitoring contractors are generally required if the tropical disturbance makes landfall as a Category 1 or greater. Once the contractors are activated, each contractor should review an updated road list and the debris collection zone map. The full list of debris collection zones has been provided in Appendix E. Contractors should begin logistical coordination and equipment ramp-up immediately upon receiving a Notice-to-Proceed.

- The Solid Waste Department
County Manager (or Assistant County Manager)

Prepare **TDSRS** Locations Based on Concentration of Debris

The Solid Waste Department staff, debris contractors will meet to discuss the opening and operation of pre-identified TDSRS locations.[5]

Qualification criteria should be reviewed at this time:

- Current availability;
- Duration of availability;
- Ingress/Egress;
- Concentration of debris relative to each site; and
- Geographic location within the County.

Upon a review of availability and suitability, the debris contractors begin site preparation. The Solid Waste Director and monitoring firm will oversee the contractor’s activities to ensure that they are in compliance with their contractual obligations, environmental standards, and acting in the best interest of the County and its residents. NCDENR will be contacted to provide final approval under an emergency declaration for the TDSRS locations.

Review **TDSRS availability and suitability:**

- The Solid Waste Department

**TDSRS Site Preparation**

- Debris Removal Contractor

**NCDENR** Emergency Approval and Permitting

- The Solid Waste Department
- Debris Monitoring and Management Firm

Conduct Meetings/Briefings with Key Personnel

Coordination meetings and briefings with key personnel at the Office of the County Manager, NCDOT, Emergency Management Coordinator and the Solid Waste Director are conducted to update the status of the road clearance efforts, TDSRS openings, contractor asset ramp-up, and pertinent public information for press releases. These meetings will be conducted at the County Emergency Management Operations Center and lead by the Solid Waste Director. All activities will be documented utilizing the proper ICS forms.

The topics included in this meeting may include, but are not limited to:

- Estimated amount of debris generated - millions of cubic yards
- Type of debris generated - vegetative, C&D
- Number and estimated date of arrival for assets – Trucks, loaders, monitoring personnel
- Estimated number of TDSRS locations necessary
- Preliminary scope of debris removal efforts
• Estimated cost of the debris removal efforts

Following this meeting, the County or monitoring firm will begin to collect required documentation for the development of FEMA Project Worksheets and contact the FEMA Public Assistance Officer responsible for the County. A debris cost estimating model has been provided in this attachment. [6]

Debris Volume Estimate

• The Solid Waste Department
• Monitoring and Management Firm

☐ Review Debris Volume and Collection Cost Assessment

The Solid Waste Director, the debris monitoring and management firm and debris hauling contractors will meet to review the debris assessment. Table 3 describes the debris removal cost estimates using the County’s debris hauling and monitoring rates and debris estimates for each category of hurricane.

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Hurricane Debris Cost Estimates: Categories 1-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>Estimate Cost</td>
</tr>
<tr>
<td>1</td>
<td>6,637,800</td>
</tr>
<tr>
<td>2</td>
<td>26,730,600</td>
</tr>
<tr>
<td>3</td>
<td>86,650,200</td>
</tr>
<tr>
<td>4</td>
<td>166,662,600</td>
</tr>
<tr>
<td>5</td>
<td>266,767,800</td>
</tr>
</tbody>
</table>

☐ Request Contact Information and Meeting with FEMA Public Assistance Officer

The Solid Waste Director, Emergency Management Coordinator and Assistant County Manager will immediately request the contact information of the designated Public Assistance Officer for the disaster. Upon receiving the information, the County will request a meeting with FEMA. During this meeting the County will discuss the following issues:

• Summarize the County’s debris removal operations to date;
• Review debris and cost estimates for the County;
• Description of the County’s debris removal plan;
• Contact information for all County contractors and primary points of contact; and
• Determine what additional information the FEMA PAO will need to generate Project Worksheets for the County.
• All documentation is to be completed by utilizing the proper ICS forms.

☐ Issue Media Press Release

A press release from the Solid Waste Director and the County Public Information Officer, with approval of the Emergency Management Coordinator and County Manager, will be issued to various media sources within the first 24 hours following the storm. The subject matter of the press release will be to reassure and comfort the public that the County is responding and has activated contractors to begin debris removal activities.
Recovery

Once emergency road clearance operations are complete, the County will commence with the Recovery phase and debris collection. Trucks used to collect and haul recovered debris to TDSRS locations are certified for capacity (Certification Form is included in the Appendix Package) and issued a placard. This placard designates them as a County Contracted Hauler and displays their unique truck number and the truck’s volumetric capacity. Contractor(s) crews are then assigned to specific zones and streets to initiate the recovery process. Trained monitors observe and document debris removal operations in order to validate the County contract and generate documentation to support FEMA reimbursement. Load tickets (a sample ticket is included below) are issued at the point of collection to include loading time, location, date, and specific truck and contractor information. At the TDSRS location or final disposal site, debris loads are graded and assigned a volumetric percentage. Based on the strength and severity of the storm, the County may implement additional debris removal programs during the recovery phase, including, but not limited to private property, public parks, and inland waterways debris removal. For the purposes of developing project milestones, the Recovery Phase has been subdivided into the following periods:

- **Milestone 1: 5 Days to 2 Weeks**
- **Milestone 2: 2 Weeks to 1 Month**
- **Milestone 3: 1 Month to 3 Months**
- **Milestone 4: 3 Months to Project Completion**

Deadlines for resident placement of debris on the ROW as well as contractor deadlines for debris removal should clearly be communicated within these time periods. These project milestones should be used as a “guide” and each event must be evaluated on a case-by-case basis.

**Milestone 1: 5 Days to 2 weeks**
The initial milestone during the Recovery Phase is the period immediately following the emergency road clearing activities end through the following two weeks. This period is typically characterized as the “ramping up” period, where contractors begin to mobilize the majority of their assets and debris collection begins. Ramp up activities will go on seven days per week during daylight hours.

**Monitoring Function**

Upon activation, the Debris Monitoring firm deploys staff to truck certification, collection, and disposal monitoring functions. The monitoring firm will orient employees with all disaster specific guidance and operational procedures and refresh staff with the field training program on current debris removal eligibility, FEMA requirements, County 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.[7]

- Location of debris
- Time of collection
- Name of contractor
- Name and unique employee number of monitor
- Truck certification number
- Disaster declaration number

All monitoring staff in the field should be equipped with the following to assist in the documentation process:

- Contractor Damage Assessment Form;
- Ineligible road lists (including private or NCDOT roads) [8]
- Collection zone map;
- Disaster specific guidance memorandums (if applicable);
- Contact lists (assigned Sub-Contractor, applicable personnel, etc.);
- Ticketing procedures; and
- Incident Reports.

Collection tickets are issued to truck drivers in the field, at the loading location, after a thorough inspection of the loading operation. Collection monitors perform a series of ticket quality assurance and quality control checks to ensure ticket accuracy and completion. A sample load ticket has been provided in these attachments. The monitoring firm is expected to interface and communicate constantly with the Solid Waste Department during this phase to ensure rapid mobilization.
Truck Certification

In order to properly document operations under a volume based contract and satisfy FEMA PA guidelines, all trucks must receive volumetric measurement and certification prior to debris collection operations. The monitoring and management firm will be responsible for all certification activities in the field. Truck certification occurs at staging areas determined by the contractor and the Solid Waste Director. A sample truck certification form has been included in these attachments.

Truck certification documentation should include:

- Vehicle make, model, and plate numbers
- Contractor, sub-contractor, and driver responsible for truck operation
- Sketches and diagrams of the loading box
- Sketches and diagrams of additions (sideboards, bed extensions) and deductions (dog box, missing tailgate) to loading box
- Volumetric capacity of the measured unit
- A uniquely assigned truck number
- Photographs of the truck that capture the driver, the loading box, license plate, and all additions and deductions
- Placards clearly labeling, at a minimum, the unique truck number and truck capacity. It is helpful to also include the prime and sub-contractor names.

Initiation of TDSRS Operations

Upon completion of all TDSRS preparation activities, debris contractors will begin to dispose of debris at the TDSRS locations. Debris contractors are required under contract to maintain and manage the TDSRS locations. This includes:

- Maintain flag-men at all ingress and egress of the property;
- Keep all tipping and reduction operations at a safe distance from the public;
- Ensure that all personnel wear proper safety attire;
- Provide portable toilets (male and female) for all staff to use;
- Supply water trucks on-site to minimize dust; and
- Properly operate all debris reduction equipment (chipping/grinding/burning).
TDSRS Management Oversight

The Solid Waste Director and monitoring firm will offer guidance to ensure that all debris is properly accounted for and that the site is not a safety hazard. All documentation is to include the proper NIMS documentation.

Debris Segregation

It is the responsibility of the debris removal contractor to segregate incoming C&D and vegetative debris loads, and place the debris types in separate areas at the TDSRS. Intermingled HHW will be identified and removed from the debris and hauled to a Class I disposal facility. Debris from other jurisdictions (incorporated municipalities doing their own collection) or other operations will be clearly segregated so that it can be identified during reduction and haul-out operations.

Disposal Monitoring

The primary function of the monitoring firm is to document the disposal of disaster debris at permitted TDSRS locations. Monitors perform Quality Assurance/ Quality Control (QA/QC) checks on all load tickets to ensure that information captured by collection monitors is complete, perform volumetric load assignment to all debris loads on a percentage full basis, and file tickets numerically for the Load Ticket Database. Placards are inspected for authenticity and signs of tampering, and load tickets are verified to ensure that placard information is properly documented.

Right-of-Way (ROW) Cleanup – Vegetative

Based on the geographic characteristics of Iredell County it should be the County’s first priority to begin vegetative debris removal from the Right-of-Way. Once the roads and areas have been prioritized, the County’s debris haulers will dedicate assets to begin vegetative debris cleanup from the Right-of-Way (ROW).

Collection Monitoring and Eligibility

Collection monitors verify and record the address or closest street location of the debris collected. Unless FEMA issues a disaster specific guidance making debris removed from private property eligible for reimbursement, reimbursement is limited to debris removal operations on publicly maintained property and roadways whose maintenance is the responsibility of the County. Debris removal efforts should focus on these areas during the initial phases of debris removal. Truck drivers in violation of public property debris removal policies and standards are reported to their Prime Contractor. The Prime Contractor is encouraged to remove truck drivers and assets in violation from contracted operations. For FEMA reimbursement and contract documentation purposes, it is critical that the County debris removal contractor, key County staff, and the monitoring agency are equipped with copies of the updated road list and zone maps to ensure that debris is not removed from NCDOT or private road segments under the County debris removal contract.

Right-of-Way (ROW) Cleanup – C&D

Approximately seven to ten days following the mobilization of vegetative debris removal efforts, the Solid Waste Director will coordinate with their debris contractors to ensure:

- Assets are directed to C&D debris removal;
- TDSRS locations for C&D debris are located and permitted by NCDENR;
- All Freon from white goods have either been removed, or the debris removal contractor has a plan in place to segregate white goods and remove Freon units at the TDSRS; [9]
- Every effort should be made to limit the amount of clean woody debris in C&D loads. Effective segregation of debris is reliant on the PIO’s ability to reach residents with an effective message during the Response Phase with effective follow-up media releases throughout the Recovery Period. The same monitoring and eligibility policies and procedures described for vegetative ROW debris removal apply to C&D ROW debris removal.
Household Hazardous Waste

Household Hazardous Waste (HHW) includes:

- Gasoline cans
- Aerosol spray cans
- Paint
- Lawn chemicals
- Cleaning agents
- Batteries
- Fire Extinguishers
- Fluorescent lamps
- Household electronic devices

HHW removal is eligible for FEMA reimbursement if it was washed from a structure during a flood event, or if the damage caused by the storm is so catastrophic that disaster specific guidance expands debris eligibility to include all HHW. Household hazardous waste should be collected separately and disposed of at a Class 1 facility.

Collection of HHW can be conducted internally, or contracted out on a unit rate basis.

- Communicate to County residents HHW eligibility following an event. It is important that residents separate HHW from other storm debris to ensure that HHW does not enter the debris stream at TDSRS locations.
- Decide whether to establish HHW drop-off sites to augment or replace HHW curbside collection. This helps ensure that HHW is properly disposed of. Measures should still be taken jointly by the debris removal contractor and the monitoring firm to, identify, segregate, and dispose of intermingled HHW at TDSRS locations.
- Interface with the North Carolina Department of Environmental and Natural Resources. Describe the HHW collection program and Class 1 facilities to be used for disposal.

Coordinate with External Agencies

The Solid Waste Director and debris contractors will hold an initial meeting at the EOC inviting representatives from all external agencies in Iredell County. The focus of this meeting will be to re-establish lines of communication between all debris removal efforts and identify any opportunities for collaboration.
Discussions with FEMA Debris Team

The Federal Emergency Management Agency will assign a debris assistance team to Iredell County immediately following the disaster. These individuals are available to answer questions and will provide a degree of oversight of the debris operations. A meeting between the Solid Waste Director, Office of the County Manager, Emergency Management Coordinator and the County’s monitoring firm will be scheduled during this period to establish lines of communication between entities. The focus of this meeting will center on debris and cost estimates, debris removal activities and any additional guidance FEMA may be able to provide. This meeting will be conducted at the County Emergency Operations Center. In addition, the County will provide an initial cost estimate folder to the FEMA Project Officer. This cost estimate will include:

- Debris removal volume estimates;
- TDSRS Site Locations and GPS coordinates;
- Monitoring estimates;
- Cost estimate based on contracted rates;
- Road lists; and
- Copies of all debris removal and disaster recovery contracts.

Once FEMA receives this information, they will begin their review process and begin to write a Project Worksheet for debris removal. Timely delivery of this information to FEMA is critical.

Media Press Release

The Solid Waste Director and Emergency Management Coordinator through the County Public Information Officer will work with, local radio and television stations to provide information to citizens about the debris removal process. This information will be focused on educating citizens on the proper method of debris set-outs including information on debris segregation, distances to the curb, and what materials are prohibited.

In addition, the County may also issue information on debris set-out deadlines for ROW collection. Typically, this would be applicable after storms where mandatory evacuations were not issued in the case of a Category 1 or 2 Hurricane. Providing this information to the public in a timely manner will ensure the rapid placement of debris along the right-of-way.

Milestone 2: First 2 weeks – 1 month

During this period, the debris removal contractor is expected to be fully mobilized with asset configurations and sub-contractor placement dispersed to adequately and simultaneously service the entire County. Hours of operation should continue to go on seven days per week during daylight hours.
Evaluate ROW Cleanup – Vegetative

After evaluating the level of damage incurred by the County and the amount of debris generated, The County Solid Waste Director determines whether current asset configurations and contractor equipment levels are adequate, or need to be increased.

Many factors may influence this decision including:

- **Time of hurricane season:** If the hurricane affects the community early in the hurricane season, the County should consider requesting that contractors increase assets to the recovery operation. Future storms will likely draw away from the County’s current asset levels and it is critical to increase equipment levels and expedite debris removal deadlines.
- **Debris removal operations in other parts of the U.S.**: During an above normal hurricane season, such as 2004 and 2005 where a multitude of debris removal operations are ongoing, assets may be difficult to acquire. It is imperative, in this case, for the County to set strict asset requirements and debris removal deadlines. If a debris removal contractor is unable to perform under these requirements, their zones will be re-assigned to another contractor.
- **Return of evacuees**: If a massive evacuation was ordered, and those evacuees are slow to return back to their homes, the County may consider postponing adding additional resources until the residents have more time to set out debris.

Open additional TDSRS Locations as necessary

Throughout Milestone 2, the County Solid Waste Director should continually reevaluate the need to open additional TDSRS locations. The following factors impact this decision:

- Capacity of existing open sites;
- Drive time from remote portions of the County;
- Wait time at the disposal sites; and
- Average loads collected per truck/per day.

Open Citizen Drop-off stations

In addition to ROW debris removal operations, it may be necessary to open citizen drop-off stations (Stations) for vegetative, C&D debris, and HHW. These Stations can be opened throughout the County based on concentration of damage. The County Solid Waste Director will coordinate with the debris contractors and monitoring firm to provide personnel at these sites to ensure that only residential debris is deposited. The County should require that all residents that use these Stations provide a copy of their last water bill or alternate identification providing proof of residency. The contractors will also be required to dedicate at least one piece of heavy equipment and operator at each site to manage the debris pile. Temporary fencing and proper signage should be set up to limit access and inform the public of operating hours. The hours of operations should be limited during weekdays and expanded during weekends.

**Conduct daily meetings with FEMA Debris Team**

Daily meetings with the FEMA Debris Team staff may be necessary as the scope of operation increases. These meetings will be scheduled at a regular time and place to ensure attendance. Representatives from the County and monitoring firm will be present to provide FEMA with a report on the progress of the debris removal process and identify any potential problems with the debris removal operation.
Continue Media Press Releases

The Solid Waste Director, Emergency Management Coordinator and Public Information Office will work with the various media outlets to release a press release on the debris removal process. This press release should focus on the progress of the debris removal operation, proper procedures for setting out and segregating debris, debris hotlines, and information on citizen drop-off stations.

Milestone 3: 1 month – 3 months

This period is characterized with the return of residents, restoration of basic services and infrastructure, and the re-opening of most businesses. The County should expect the Contractor to complete a first pass of debris collection on all streets by the beginning of the third milestone. Operational hours may be reduced during this period to accommodate reduced debris density on roadways and shorter daylight hours.

Maintain ROW Cleanup – Vegetative and C&D

Based on the progress of the debris contractors, the Solid Waste Department determines the end of the second pass period. At the end of the second pass, the contractor is generally given two to three days off in order to allow residents time to set out more material at the curbside. The Solid Waste Director will schedule all meeting(s) with the contractors and FEMA to discuss:

- ROW Deadlines for Third Pass
- Potential ROE Programs
- Potential Leaners/Hangers Program
- Deadlines for FEMA Reimbursement

Begin ROW Leaners/Hangers Program

Solid Waste Director, in conjunction with NCDOT, Emergency Management Coordinator and the County Manager shall determine the necessity of a right-of-way leaner and hanger debris removal program. Upon authorization by the County, a damage assessment to identify all leaners and hangers in the right-of-way along County roads will begin.

The debris contractor, based on the rates specified in their contract. Prior to commencement of the operation, the County must review the contract to ensure:

- Scope is consistent with disaster specific FEMA eligibility
- Scope of work adequately covers work needed to be performed

All surveys and operations associated with the removal of leaning trees and hanging limbs must be documented and monitored closely. The County should confer with FEMA prior to beginning the operation.

Begin ROW Vegetative and C&D Recovery Process

In the wake of Hurricane Ivan, the hurricane generated a significant amount of vegetative hazards on private property that some residents were not able to abate and place on the right-of-way. FEMA considered this situation an immediate threat to public health and safety and authorized private property vegetative debris removal. The Solid Waste Director, County Administration, Emergency Management Coordinator, the County monitoring agency, debris contractors and FEMA will evaluate whether the County has the legal authority to enter private property and hazards considered to be a threat to public health and welfare.
Haul-out of Reduced Material from TDSRS to Final Disposal Site (as necessary)

The debris removal contractor should be expected to begin incineration or grinding reduction operations soon after TDSRS open. This helps ensure that an overabundance of un-reduced debris doesn’t negatively impact access and progress. The reduction rate is approximately 20:1 for burning vegetative debris and 3.5:1 for chipping/grinding vegetative debris. Reduced and un-reduced materials should be stored separately at the TDSRS.

Reduction operations reduce the amount of usable space at the TDSRS locations, impacting the ability of the contractor to safely dispose of additional incoming debris collected on the ROW and rendering it necessary to haul reduced material to a final disposal site. Prior to the haul-out of reduced debris, the Solid Waste Director, Debris Removal Contractors, FEMA and NCDENR will schedule a meeting to review previously identified final disposal site and discuss additional options for the disposal of reduced debris. During this meeting, parties will focus on viable alternatives for landfill disposal of all vegetative debris. Minimizing the impact of County contracted debris on the waste stream is extremely important since private debris associated with construction and roofing projects make a significant impact on landfill capacity.

Possible alternatives for the reduced vegetative debris include:

- Biomass facilities in surrounding areas
- Paper Mills
- Overseas energy facilities
- Farm and/or ranch in area

Once a solution has been agreed upon and all State environmental issues have been properly addressed, the debris hauler will begin to haul-out debris. All debris haul-out trucks will be certified for capacity by the monitoring firm and placards are issued. The monitoring firm tickets all out-going loads to provide documentation for FEMA reimbursement and invoicing.

Maintain coordination with external agencies

Additional coordination meetings may be needed throughout the debris removal process between the County and other external agencies. These meetings can provide a forum for all agencies to give an update on their debris removal activities, problems with the County contractors, and estimated timelines for project completion. These meetings shall be coordinated by the County Solid Waste Director.

Continue to hold bi-weekly meetings with FEMA Debris Team

Regular meetings with the FEMA Debris Team staff will continue as the scope of operations expands. These meetings will be scheduled at a regular time and place to ensure attendance. Representatives from the County and monitoring firm will be present to provide FEMA with a report on the progress of the debris removal process and identify any potential problems with the debris removal operation. In addition, the Solid Waste Director, County Administration, Emergency Management Coordinator and monitoring firm will discuss the submission of contractor invoices to FEMA for reimbursement. The County will describe to FEMA representatives the documentation procedures of all contractor activities, provide a copy of the database of all tickets developed and filed for audits, and FEMA documentation requests. This database will provide information for FEMA Project Worksheet generation and Iredell County Financial Status Reports regarding invoice status, project status, and overall liquidity regarding reimbursement.
Continue Media Press Release

The Solid Waste Director, Emergency Management Coordinator and Public Information Office will work with the local newspaper and various media outlets to release a press release on the debris removal process. This press release will focus on the progress of the debris removal operation, and again stress to citizens the proper procedures for setting out and segregating debris. Information will also be provided on any debris hotlines and citizen drop-off stations.

Should the County initiate a ROE program; the County will issue a separate press release via the local newspaper and various media outlets to make citizens aware of the ROE program for vegetative debris. The press release will detail eligibility for the program, such as:

- You must meet the residency requirement;
- Citations of Notices of Hazard; and
- Telephone numbers to call if you are in need of assistance.

Milestone 4: 3 months – Completion

This is the period where all basic services have been restored and many residents and businesses are returning to their pre-storm state of affairs. While special projects may remain active for periods of several months, the bulk of the debris removal from public property is complete.

Complete all Debris Recovery Activities

The County, debris contractors, and FEMA will schedule a meeting to discuss the completion of all tasks associated with the debris removal process. This meeting should focus on the deadlines and timing for the finalization of all activities in the field.

ROW Cleanup Activities – Vegetative and C&D

The County, with guidance from the FEMA debris team, will issue a deadline for all material to be out on the Right-of-Way. Material set out after this deadline will be deemed ineligible for County contractors to remove. In addition, monitoring staff along with contractors will conduct windshield surveys along all County roads to identify areas that have received the final pass by contractors. Contractors will also be required to settle with homeowners any damages to their property as a result of mechanized equipment used in the cleanup process.

Complete ROE Vegetative and C&D

Monitoring staff and contractors will conduct site surveys to ensure that each property where vegetative and C&D debris removal activities occurred is completed to a satisfactory level. Photos will be taken of the property and documentation noting the completion of the property will be maintained. This level of documentation is necessary to ensure FEMA reimbursement.

Identification of Ineligible Debris on ROW

In order to minimize funding deobligations from FEMA, the County through its debris monitoring contractor should proactively seek to develop a PW (Project Worksheet for FEMA) to fund the removal of ineligible debris piles in which the responsible party was not identified. This process will include:

- Assemble a team of debris eligibility specialists to identify ineligible debris on the ROW;
- Work with the Code Enforcement Division to identify and fine the responsible party;
- Complete due diligence in the identification of the responsible party; and
- Develop a PW to fund the removal of ineligible debris piles in which the responsible party was not identified.
Finalization Haul out of Debris

The contractors will continue with all haul-out activities until the debris at each TDSRS location is completely removed. Monitoring staff will coordinate the continuation and finalization of these activities until the County is satisfied that the haul-out activity has been completed. Once the haul-out is complete, the contractor will begin with TDSRS site remediation.

Begin and Complete Abandoned Vehicles/Vessel Recovery

- After a hurricane, abandoned vehicles and vessels are often overlooked and may be left on the County’s roadways and property causing a threat to the public health and safety. To mitigate these hazards through the County, the Solid Waste Director should work with the debris removal monitoring firm and the NCSHP for removal these abandoned vehicles and vessels. County Attorney will make a determination of legal responsibility for the removal of vehicles and vessels, and provide the monitoring firm with a process for executing the program through the County’s ordinances.
- Assess the quantity of vehicles and vessels requiring removal as a result of the disaster event;
- Upon identifying quantity of vehicles and vessels to be removed, the debris removal monitoring firm will assist the Division of Code Enforcement with providing due notice as outlined in County Ordinance;

Begin and Complete Waterways Cleanup

Waterway debris removal is technically challenging in that the reimbursement arm is often times the National Resource Conservation Service. FEMA will engage an applicant with inland waterways debris removal support only after an NRCS application is rejected. Also, access to inland waterways is limited because the majority of land surrounding them is private. The following steps should be taken to mitigate hazards in the waterways:

Complete a damage assessment for waterways within Iredell County;

- Coordinate with the debris removal monitoring firm and the entities legally responsible for removing the debris to determine who will assume responsibility for removing the debris;
- Enter into MOU’s with those entities to assume responsibility for removing debris from waterways; and
- Coordinate with the Purchasing Department to issue a RFP to perform the work based on the damage assessment of waterways.
- Upon awarding a contractor, the debris removal monitoring firm should monitor the removal in accordance with the contract and coordinate with the OMB to seek reimbursement through FEMA and/or the Natural Resource Conservation Service (NRCS) for each waterway.

Closeout and Remediate TDSRS

Upon finalization of all haul-out activities, the debris contract will work to bring the TDSRS back to its pre-storm condition. The contractor will use any pre-site photos taken of each facility that have been kept on file by the County.
Conduct project closeout meetings with FEMA Debris Team

As the debris recovery project draws to a close, the County will coordinate with the FEMA Debris Team to conduct a final inspection for Iredell County. This will include, but not be limited to:

- Information on any outstanding Project Worksheets
- Certified vehicle list that includes
  - Length, height, and width of each vehicle;
  - Vehicle ID number, tag and name of hauling firm; and
- Deductions
- Daily recap worksheet by date of the PW being final inspection
- Load tickets number (Numeric order)
- Vehicle ID
- Cubic Yards Claimed/Verified
- Road the debris was picked up
- Copies of that days load tickets in numeric order
- Labor invoices per day by PW claimed for all force account labor activities
- Contract invoices to include:
  - Labor
  - Site fees (dump sites)
  - Management fees
- Consolidated list of roads that debris was picked up from for this PW.
- All invoices and supporting documentation sorted by PW/Date to include any force account labor.
- Copy of all contracts, including rate schedules describing:
  - Cost of hauling
  - Temporary storage or site management
  - Cost of reduction (i.e. grinding, open burning, air-curtain incineration)
  - Haul out;
  - Disposal (if applicable); and
  - Site restoration.

Continue Media Press Release

The Solid Waste Director, Emergency Management Coordinator and Public Information Office will work with the local newspaper and various media outlets to release a press release on the debris removal process. This press release will focus on the finalization of the debris removal operation. Information will be provided on the deadlines for debris removal, what to do regarding ineligible debris, and the progress of the Right-of-Entry program.
[1] Monitoring costs (including the administration of an extensive ROE program) estimated at 20% of total debris collection cost.

[2] Iredell County also has the option of adopting a contract (including the scope of services and rates) from another community in the State of North Carolina. The industry term for this practice is “piggy backing a contract”.

[3] Based on a per-unit rate.

[4] This time frame is subject to change due to severity of the event and other disaster specific circumstances.

[5] These sites are identified in the TDSRS Letter Report.

[6] The debris estimations developed for Iredell County were done so by using the U.S. Army Corps of Engineers Debris Estimating Model (Model). This Model is widely accepted by the industry, however may not accurately reflect historical data collected by BDR following Hurricanes Ivan and Dennis. This Model should be used as a guide by Iredell County for planning in the future.

[7] A copy of a sample load ticket has been included in Appendix Package.

[8] To ensure that no debris is collected and ticketed on private roads.

[9] Refrigerated units contain Freon gas in the compressors that is harmful to the environment if released during handling. To avoid unwanted release of this gas, the Freon is removed by certified handlers prior to collection and processing of these units. Cost of gas removal is typically based on a per unit basis. Units evacuated of the gas are marked to notify collection contractors that the unit is safe for handling.

### Attachment 2

**DEBRIS MANAGEMENT CONTACT LIST**

(Authorized persons may see Personnel / Contact database for telephone numbers or other contact information)

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Office</th>
<th>Cell</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joel Mashburn</td>
<td>County Manager</td>
<td>(704) 878-3050</td>
<td>(704) 838-6250</td>
</tr>
<tr>
<td>Tracy Jackson</td>
<td>Assistant County Manager</td>
<td>(704) 878-5037</td>
<td>(704) 437-1800</td>
</tr>
<tr>
<td>Susan Blumenstein</td>
<td>Deputy County Manager</td>
<td>(704) 878-5328</td>
<td>(704) 682-2985</td>
</tr>
<tr>
<td>David Lambert</td>
<td>Director of Solid Waste</td>
<td>(704) 878-5430</td>
<td>(704) 902-1866</td>
</tr>
<tr>
<td>David Martin</td>
<td>Emergency Management Coordinator</td>
<td>(704) 878-3047</td>
<td>(704) 902-2272</td>
</tr>
<tr>
<td>Marvin Norman</td>
<td>Board of Commissioners</td>
<td>(704) 896-0715</td>
<td></td>
</tr>
<tr>
<td>G. Paul Webster</td>
<td>Deputy Emergency Management Coordinator</td>
<td>(704) 878-5097</td>
<td>(704) 437-2489</td>
</tr>
</tbody>
</table>

**Monitoring Contractor Contacts**

To be determined  Principal in Charge

To be determined  Project Manager

**Debris Recovery Contractor Contacts**

To be determined  Principal Contact person

### Attachment 3

**WEB RESOURCE ADDRESS LIST**

(Also see Links)
Attachment 4
TDSRS REPORT AND SITE MAPS
September 8, 2006

Mr. W. Tracy Jackson  
Assistant County Manager  
Iredell County Government Center  
200 South Center Street  
Statesville, NC 28687  

Subject: Temporary Debris Storage and Reduction Site Letter Report  

Dear Mr. Jackson:

Pursuant to the request of Iredell County, North Carolina ("the County"), Beck Disaster Recovery, Inc. ("BDR") has prepared this report on potential Temporary Debris Storage and Reduction Sites ("TDSRS"). The purpose of this report is to identify logistically effective locations throughout the County to serve as TDSRS in the event of a major debris producing event.

Based on BDR’s Debris Estimation Model, a Category 3 Hurricane with heavy precipitation would yield approximately 4.8 million cubic yards of debris. Assuming that the debris is stacked 15 feet high at the TDSRS sites, the County will require 332 acres throughout the County to allow for adequate ingress and egress, site traffic control, debris segregation, and reduction operations.

Sites included were first identified by the Solid Waste Director with the goal of having TDSRS locations geographically distributed throughout the County. First, a set of initial screening criteria was developed to identify potential sites throughout the county. The criteria used in screening the sites are described in further detail below. Secondly, the Solid Waste Director visited each site with a representative from Crowder-Gulf, a nationally recognized debris recovery contractor. The Crowder-Gulf representative critiqued each site based on ability to easily convert the areas for staging and reduction operations in the event of a natural disaster. The third step consisted of BDR site visits to each property on June 21st and 22nd to further investigate the appropriateness of each site and obtain information not available in County records that would potentially preclude the use of the sites as TDSRS, including pre-existing structures, wooded lots, lack of ingress/egress, etc. The final step consisted of the recommendation of a short list of sites for use as TDSRS.

Of the properties identified, BDR recommends the initial use of four (4) properties that meet the selection criteria as TSDRS. These properties consist of roughly 210 acres of land — with
sufficient cleared acreage at each site to accommodate debris storage and reduction operations. It should be noted that a little less than half of this acreage (90 acres) are accounted for at the Iredell County Landfill. This location has already been deemed favorable by a representative of NCDENR. The four sites provide less than the total amount required for a class three hurricane event however, they are evident geographically distributed and provide logistical coverage for disposal operations across the County. The County, however, is optimistic that additional area will be available with the Town of Mooresville’s participation in the County system.

Criteria

The following criteria are used to evaluate locations as potential TDSRS:

County or Municipally Owned Property

In order to eliminate potential costs associated with acquiring, leasing, or operating on private property, County or municipally owned properties were considered first with private properties being a second choice where public property was limited or nonexistent.

30 Acre Minimum

Potential County properties were required to be a minimum of 30 acres in size to be considered. Sites less than 30 acres are generally too small to properly route debris dumping and reduction operations. There are however, two properties that fall below this 30 acre minimum criteria, the site at the airport (8 to 10 acres) and the northern property located at Tomlin Mill and Fairmont Roads (25 acres).

Proximity to High Population Density

The proximity of the surveyed location to neighborhoods, schools, businesses, high traffic thoroughfares and other areas of high population density were carefully evaluated. A TDSRS located near high population densities increase traffic congestion and create logistical and safety hazards for the community, especially immediately following an event. TDSRS placement near neighborhoods, schools, businesses, and high traffic thoroughfares should only be opened as a last resort when all other disposal location options have been exhausted.

Accessibility to Municipalities within Iredell County

Accessibility to the large municipalities within the County was considered. Because many of the municipalities within the County may utilize the County’s contracts for debris removal and comprehensive program management, BDR focused on sites positioned to concurrently handle County and municipal debris. Accessibility around Mooresville will improve with the identification of additional areas the Town is considering for staging and reduction of debris recovered.
Ingress/Egress
Safe and adequate ingress and egress in and out of the sites along with efficient road access to routes leading to and from the sites are critical to ensure efficient turnaround of debris collection vehicles.

Reduction Method
On each location, BDR evaluated whether incineration and grinding would be safe reduction methods and what impact the reduction operations would have on the community and the environment.

Adherence to All Local, State, and Federal Rules, Regulations, and Ordinances
Local, State and Federal Ordinances and Regulations, including those pertaining to environmental quality and noise control. Though some disposal regulations are lifted following a State of Emergency, it is critical that all TDSRS operation meet OSHA Safety requirements.

North Carolina Department of Environment and Natural Resources (NCDENR)
Before a TDSRS can be permitted for use, The North Carolina Department of Environment and Natural Resources (NCDENR) must evaluate the site. NCDENR uses an evaluation sheet (See attached Form) for use in screening each site. The sites considered by the Solid Waste Department, BDR evaluated using as many of the NCDENR criteria using available County data and information obtained as part of the visual site evaluation of each property. Upon final selection of TDSRS, a representative with the NCDENR will need to be notified to perform a site evaluation of each proposed site in order to obtain a NCDENR TDSRS permit. Once the site has been approved by NCDENR, the site will be permitted for a period of up to 2 years. As mentioned previously, the landfill site has already been received a favorable assessment from NCDENR.

Recommendations
Based on the evaluation criteria, BDR recommends the properties identified and reviewed by Crowder-Gulf and BDR for use as TDSRS (see attached Countywide Map):

TDSRS 1 – Iredell County Landfill
The Iredell County Landfill located east of Statesville off Twin Oaks and Fanjoy Roads requires minimal site preparation due to the fact that it is on old farm property near a the County’s operational landfill. The location makes it easily accessible for debris removal vehicles in the eastern and central parts of the County, including the City of Statesville. The location consists of two parcels that are collectively over 85 acres, virtually eliminating the concern for noise complaints. BDR recommends extending the hours of operation for the areas designated as a TDSRS at the landfill during the recovery period to capitalize on daylight hours and expedite the
recovery of debris hauled off of the public Right-of-Way ("ROW"). See attached map for Site One.

**TDSRS 2 – City of Statesville Airport Property**

The approximately 8 to 10 acre property located on Airport Road just east of US-40 and route 70 or Hickory Highway is a recommended site that could potentially serve the southwestern part of Statesville and all areas west of Statesville. This site would be accessible from both Old Mountain Road and Buffalo Shoals Road. The property is not located near any large residential neighborhoods or schools and is not on a major thoroughfare. Given the smaller size than what is generally acceptable it would be limited in the amount of material accepted and should be limited to accepting materials from the western region of Statesville. Site preparation would be required as it is a cleared, grassed property. See attached map for Site Two.

**TDSRS 3 – Private Property North End of County**

This property is recommended because it could potentially serve the whole northern part of the county to include the Harmony area. The property is in the north central part of the County at the corner of the intersection of Tomlin Mill and Fairmont Roads. The property is less than 30 acres in size, which would appropriately service the sparsely populated north central portion of the County. Ingress and egress onto the site would be best from Tomlin Mill Road. The property is not in close proximity to any schools or densely populated residential areas. An air curtain pit burning operation could be set up at the site, if required. See attached map for Site Three.

**TDSRS 4 – Private Property South End of County**

The property located on Triplett and Winthrow Creek Roads is made up a two plots, one section at 29 acres and the other about 56 acres is recommended for the southern part of the county. While well situated to receive material from the southern region, debris collected from locations in the southern reaches of Mooresville will have to travel at greater distance on indirect routes. See attached map for Site Four.

**TDSRS 5 – Harmony Site**

This site provides additional capacity for staging debris material in the northern region of the county, while reducing travel distances for loads of recovered debris from Harmony and all areas west to the County’s border. This property is privately owned and is principally cleared agricultural fields that are largely used for growing grass hay. The efforts required to prepare and close out this location would be minimal. In the event the damage done to the Northern region of the county is significant, it would provide an additional 42 acres of land to stage and reduce recovered materials. The remoteness of the location is also conducive to an air curtain operation for vegetative material reduction. It also provides a location for staging any C&D debris recovered from the Northern region, an option not available with the site discussed above. This site would be accessed from Countryside Road. See attached map for Site Five.
TDSRS 6 – North Iredell Site

This property located off of Dussell Road is a County owned property in northern Iredell that is expected to eventually be developed into a park. Until such development takes place, this property which is currently used for feed corn production, offers approximately 80 acres of space to serve as a TDSRS in the event of a natural disaster. Like the Harmony site (Site 5), it could also be used to stage vegetative and C&D debris and is remote enough to make air curtain burning a viable processing option for vegetative waste. This site, collectively with the other two identified northern sites, ensures that sufficient space is available in this region to handle expected quantities of debris that may be generated by a natural disaster. See attached map for Site Six.

TDSRS 7 – Mooresville Site – Mazeppa Road

This property located off Mazeppa Road south west of Triplett Road is owned by Mooresville and is slated to be developed for relocating municipal operations, such as the Town’s Maintenance Garage. Until such development takes place, this property which is currently old farm land and undeveloped could provide up to 200 acres of land for staging both vegetative and C&D debris. The remoteness and potential for large buffer zones from public roads and adjacent properties allows for the potential of using air curtain incineration for processing vegetative debris.

While located very close to Site 4, it offers the potential of being a site for staging both vegetative and C&D debris. Some clearing would be required to ensure the site had sufficient open space for a TDSRS operation, since a good deal of the property is wooded area. See attached map for Site Seven.

TDSRS 8 – Mooresville Site - Bandit Lane

This property located at the end of Bandit Lane is currently owned and used by Mooresville as a yard waste storage and processing area. The location is easily accessible from several major routes including State Route 77. It is located in the western central part of Mooresville and could service that portion of Mooresville as well and the county’s surrounding area. Though it is smaller and would require additional land clearly to maximize the use of the entire property, it is ideal from the prospective that it is already being used for a process similar to staging and processing storm debris. Due to size (approximately 23 acres) it would likely be limited to just accepting vegetative debris. See attached map for Site Eight.

TDSRS 9 – Mooresville Site – Timber Road

This property located off of Mecklenburg Highway on Timber Road is privately owned, though was previously used as a TDSRS in a prior disaster event. Since that time, however, the owner has utilized additional area on the property for storage of equipment and materials, thereby reducing the area available to use as a TDSRS to approximately 5 to 10 acres. Given the small size of the property and the fact that set backs from public roads further reduces storage area, this property should be used only as a last resort.

Additionally, because equipment is stored on areas likely to be used for staging debris the potential for soil contamination exists and may subject the County to liability issues in the future. See attached map for Site Nine.
Summary
Examining the Iredell County Debris Sites map, it is clear that the sites are geographically distributed to reduce transportation related costs. The more densely populated area around Statesville has locations to serve both the east and west sides of the city and the out lying county areas in the center of the County. The northern and southern private property sites add strategic locations for the delivery of materials collected in these regions. With three potential sites identified in Mooresville, service the southern portion of Mooresville and the County’s non-incorporated areas would be covered and enhance overall collection efficiencies.

Once the County has reviewed the TDSRS document and approved the BDR recommended sites there are two additional steps that need to be taken. Given that four of the recommended sites are not owned by the County, communication between the private landowners should take place to arrange allowance of use. Once this is approved, NCDENR should be notified to perform site evaluations in order to obtain a NCDENR TDSRS permit. All sites were preliminarily review by a NCDENR representative, however a more formal written approval will expedite use of each site after a natural disaster.

Beck Disaster Recovery is pleased to have the opportunity to continue our working relationship with Iredell County. Should you have any questions or need additional information, please contact Rick Schlauder at (407) 803-2548.

Sincerely,
BECK DISASTER RECOVERY, INC.

Jonathan Burgiel
Chief Executive Officer

Rick Schlauder
Project Manager

Recommended Potential TDSRS
<table>
<thead>
<tr>
<th>Location</th>
<th>Owner</th>
<th>Acreage</th>
<th>GPS</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TDSRS 1:</strong></td>
<td>Iredell County</td>
<td>87</td>
<td>N35.77236 W080.81729</td>
<td>• Potential site for eastern central part of County. Could be used for</td>
</tr>
<tr>
<td>Iredell County</td>
<td></td>
<td></td>
<td></td>
<td>City of Statesville and surrounding areas.</td>
</tr>
<tr>
<td>Landfill off Twin</td>
<td></td>
<td></td>
<td></td>
<td>• Staging of vegetative waste and C&amp;D debris.</td>
</tr>
<tr>
<td>Oaks and Fanjoy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roads</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TDSRS 2:</strong></td>
<td>City of Statesville</td>
<td>8-10</td>
<td>N35.75430 W080.95468</td>
<td>• Potential site for western and central part of County.</td>
</tr>
<tr>
<td>City of Statesville</td>
<td></td>
<td></td>
<td></td>
<td>• Staging of vegetative waste and C&amp;D debris.</td>
</tr>
<tr>
<td>Airport property,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>east of I-40 and</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US 70</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TDSRS 3:</strong></td>
<td>Private</td>
<td>25</td>
<td>N35.91408 W080.83942</td>
<td>• Potential site for northern part of County. Could be used for</td>
</tr>
<tr>
<td>Property North</td>
<td></td>
<td></td>
<td></td>
<td>City of Statesville and surrounding areas.</td>
</tr>
<tr>
<td>end of County,</td>
<td></td>
<td></td>
<td></td>
<td>• Staging of vegetative waste only.</td>
</tr>
<tr>
<td>intersection of</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tomlin Mill and</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fairmont Roads</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TDSRS 4:</strong></td>
<td>Private</td>
<td>Approx. 30</td>
<td>N35.64772 W080.78745</td>
<td>• Potential site for southeastern part of County and eastern Mooresville</td>
</tr>
<tr>
<td>Private property</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South end of</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>County, located</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>on Triplett and</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winthrow Creek</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roads</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| TDSRS 5: Harmony site, private property, corner of Country Side Road and Harmony Highway (US-21) | Private | 42 | N35.98380 W080.76393 | • Staging of vegetative waste only.  
• Potential site for Harmony and surrounding areas.  
• Staging of vegetative waste and C&D debris. |
|---|---|---|---|---|
| TDSRS 6: North Iredell site, future county park, off Friendship Road and Bussell Road. | Iredell County | Approx. 80 | N35.93384 W080.87587 | • Potential site for northern part of County, until developed as a park.  
• Staging of vegetative waste and C&D debris. |
| TDSRS 7: Mooresville site, Mazeppa Road, future development site for municipal operations. | Town of Mooresville | 200 | N35.63967 W080.79145 | • Potential site for north eastern region of Mooresville and surrounding county areas.  
• Staging of vegetative waste and C&D debris. |
| TDSRS 8: Mooresville site, Bandit Lane, current site for municipal yard waste debris management. | Town of Mooresville | 23 | N35.59192 W080.83446 | • Potential site for western region of Mooresville and surrounding |
| TDSRS 9: Mooresville site, Timber Road off Mecklenburg Highway. | Private | 5 to 10 | N35.56131 W080.82757 | county areas.  
- Staging of vegetative waste only.  
- Potential site for southern region of Mooresville and surrounding county areas.  
- Staging of vegetative waste only. |
NCDENR Emergency Site Selection Evaluation
(click here to print the form or click on the image above for a larger view)

TDSRS SITE MAPS

(click on the images above for a larger view)
### Attachment 5

**DEBRIS VOLUME ESTIMATE MODEL**
(Also see [FEMA Debris Forecasting Model](####) - Requires MS Excel)

Click on any image below for a larger view

<table>
<thead>
<tr>
<th>Category 1</th>
<th>Category 2</th>
<th>Category 3</th>
<th>Category 4</th>
<th>Category 5</th>
</tr>
</thead>
</table>

### Attachment 6

**DEBRIS HAULING CONTRACTOR CONTACT LIST**

The following list contains several major debris hauling firms that may be contacted during the issuance of a Request for Proposals for debris hauling services. Contacts, websites and email for the contacts below, last updated and verified on September 29, 2006.

<table>
<thead>
<tr>
<th>Company</th>
<th>AshBritt Environmental, Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Contact</td>
<td>Terry Jackson</td>
</tr>
<tr>
<td>Title</td>
<td>Vice President</td>
</tr>
<tr>
<td>Phone</td>
<td>(954) 545-3535</td>
</tr>
<tr>
<td>Fax</td>
<td>(954) 545-3585</td>
</tr>
<tr>
<td>Address</td>
<td>480 South Andres Avenue, Suite 103, Pompano Beach, FL 33069</td>
</tr>
<tr>
<td>Website</td>
<td><a href="http://www.ashbritt.com">www.ashbritt.com</a></td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:terry@ashbritt.com">terry@ashbritt.com</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Company</th>
<th>Crowder-Gulf</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Contact</td>
<td>John Ramsay</td>
</tr>
<tr>
<td>Title</td>
<td>President</td>
</tr>
<tr>
<td>Phone</td>
<td>(800) 992-9207 or (251) 406-3677</td>
</tr>
<tr>
<td>Fax</td>
<td>(251) 654-0470</td>
</tr>
<tr>
<td>Address</td>
<td>5535 Business Parkway</td>
</tr>
<tr>
<td></td>
<td>Theodore, AL 36582</td>
</tr>
<tr>
<td>Website</td>
<td><a href="http://www.crowdergulf.com">www.crowdergulf.com</a></td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:ramsay@crowdergulf.com">ramsay@crowdergulf.com</a></td>
</tr>
<tr>
<td>Company</td>
<td>Phone</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Phillips and Jordan, Inc.</td>
<td>(828) 479-3371</td>
</tr>
<tr>
<td>Grubbs Emergency Services, LLC</td>
<td>(352) 796-7127 or (888) 478-2271</td>
</tr>
<tr>
<td>DRC Emergency Services, LLC</td>
<td>(888) 721-4372 or (251) 343-3581</td>
</tr>
<tr>
<td>Storm Reconstruction Services, Inc.</td>
<td>(866) 556-0049</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Title</th>
<th>Fax</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.E.</td>
<td>(828) 479-3372</td>
</tr>
<tr>
<td>Assistant Vice President</td>
<td>(352) 797-7598</td>
</tr>
<tr>
<td>Administrative Manager</td>
<td>(251) 343-5554</td>
</tr>
<tr>
<td>President</td>
<td>(205) 469-2038</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Address</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.O. Drawer 604</td>
<td><a href="http://disaster.pandj.com/">http://disaster.pandj.com/</a></td>
</tr>
<tr>
<td>Robbinsville, NC 28771</td>
<td><a href="http://www.grubbses.com">www.grubbses.com</a></td>
</tr>
<tr>
<td>740 Museum Drive</td>
<td><a href="http://www.drcusa.com">www.drcusa.com</a></td>
</tr>
<tr>
<td>Mobile, AL 26608</td>
<td><a href="mailto:mobile@drcusa.com">mobile@drcusa.com</a></td>
</tr>
<tr>
<td>1609 Veterans Memorial Parkway</td>
<td><a href="mailto:carolpcrump@aol.com">carolpcrump@aol.com</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Email</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="mailto:tberkhimer@pandj.com">tberkhimer@pandj.com</a></td>
<td></td>
</tr>
<tr>
<td><a href="mailto:bthomason@grubbses.com">bthomason@grubbses.com</a></td>
<td></td>
</tr>
<tr>
<td><a href="mailto:mobile@drcusa.com">mobile@drcusa.com</a></td>
<td></td>
</tr>
<tr>
<td><a href="mailto:carolpcrump@aol.com">carolpcrump@aol.com</a></td>
<td></td>
</tr>
</tbody>
</table>
Company: Omni-Pinnacle, LLC  
Primary Contact: Brian Reine  
Title: Manager  
Phone: (985) 645-0306  
Fax: (985) 643-4334  
Address: 130 West Howze Beach Road  
Slidell, LA 70458  
Website: www.omnipinnacle.com  
Email: omnip@omnipinnacle.com

Company: D & J Enterprises, Inc.  
Primary Contact: Richard D. Starr  
Title: President  
Phone: (334) 821-1249  
Fax: (334) 821-5227  
Address: 3495 Lee Road  
Auburn, AL 36832  
Website: www.dandjenterprises.net  
Email: info@dandjenterprises.net

Attachment 7  
SAMPLE TRUCK CERTIFICATION FORM  
((click here to print the form or click on the image above for a larger view))

Attachment 8  
SAMPLE LOAD TICKET  
((click here to print the form or click on the image above for a larger view))

Attachment 9  
GLOSSARY OF TERMS