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Chapter

INTRODUCTION

This manual was originally prepared in April 2000 (revised 2005) at the direction of Chief Engineer J. D. Goins to provide guidelines for field operations managers and supervisors in responding to emergencies affecting state roads and requiring significant mobilization and expenditure of resources. This could range from a slide closing a single road to a blizzard or hurricane causing widespread damage. It is intended that all field units involved in emergency response utilize the manual, including Road Maintenance, Bridge Maintenance, Roadside Environmental, Traffic Services, Road Oil and Equipment. The manual is not meant to replace other manuals, guidelines or policies but is intended to give field personnel practical guidance in planning and responding to these events.

Three major sections of the manual include Hurricanes, Snow and Ice, and Floods and other Events. There are also sections on Records and Documentation, Equipment Department Functions, and Procurement of Materials, Supplies and other Needed Resources. Although the details of fiscal procedures are beyond the scope of this manual, the Appendix brings together a great deal of information which will assist managers and supervisors, not only in preparation for these events, but in acquiring needed resources and in properly handling the necessary documentation to enable maximum reimbursement from federal agencies for costs incurred. Each of the sections on major events (Hurricanes, Snow and Ice, Floods and other Events) discusses pre-event planning, response during event and post-event activities.

A tabbed section has been provided for use by local units. This section should be used by the responsible local manager for the unit's own emergency plan. Individual managers responsible for developing a local plan should include District Engineers, County Maintenance Engineers, Division Bridge Maintenance Engineers, Bridge Maintenance Supervisors, Division Roadside Environmental Engineers, Division Bituminous Supervisors, Traffic Engineers and Division Equipment Superintendents. The local plan should include information needed in responding to these emergency situations such as crew assignments, emergency contacts list, list of contractors with equipment, which may be available to help in an emergency and any other helpful information. Since it is intended that the manual be continuously updated, it is strongly suggested that the Division Engineer or his designee audit each unit's manual periodically, especially local plans, to assure it is kept current.

In putting together the information in the manual an effort has been made to keep it simple but informative and helpful to managers and supervisors. Input came from NCDOT Managers and Supervisors as well as from the FHWA and FEMA. It offers practical advice and instruction from many individuals across the state that have hands-on experience in dealing with disasters affecting state roads and bridges.

EMERGENCY RESPONSE & PROCEDURES
SAFETY

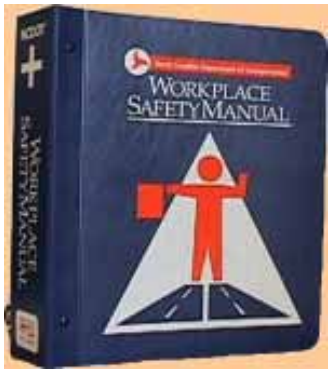
The Department of Transportation is strongly committed to employee and workplace safety. The commitment to safety becomes especially important during pre-event planning, preparation and when responding to the disaster/emergency events noted in this manual. As such, safety concerns and considerations will be fully evaluated and implemented during each planning stage. Consult with your Safety Engineer and Safety Officer as you develop your plan.

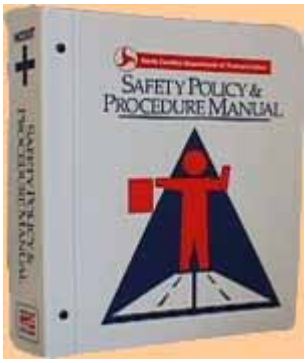
During disaster/emergency responses DOT employees are exposed to conditions that increase the likelihood of equipment and fleet damage, and of greater concern, personal injury, including potentially serious and fatal injuries.

To be fully prepared for the safety concerns during these events, each working unit shall review all applicable safe operating procedures and risk assessment processes with employees prior to the event's occurrence. Review the attached list of supplies that you might need and the list of best personal safety practices. Supervisors are responsible for ensuring that employees designated to operate equipment during emergency events have been properly and adequately trained in the use of the equipment they are to operate. Some examples of “just in time” training are refresher training for using throw ropes and safe use of chain saws.

The need to respond as quickly as possible to emergency events is recognized as a necessity. **However, the need to respond will never supercede the safety of employees or the safe operation of equipment.** During emergency events, managers and supervisors should take measures to avoid extreme fatigue among employees.

The **WORKPLACE SAFETY MANUAL** and the **SAFETY POLICY AND PROCEDURE MANUAL** are two of the resources available to assist managers and supervisors in preparing for these events. Included in this section is a list of some of the more common SOP's associated with the tasks to be performed in such disaster/emergency events.





The SOP and SPP numbers listed in this document are subject to change as new information and numbering systems are introduced. Supervisors and managers should cross-reference the SOP name with the current SOP/SPP manual to insure the correct SOP/SPP is being provided to employees. The most recent versions can be found at:

Employee info/Safety & Workers Comp

The following Safe Operating Procedures (SOP's) are the basic ones to cover with employees and are task related only. Additional SOP's may need to be reviewed with employees as circumstances arise. Note that at the bottom of most SOP's in the Workplace Safety Manual there are Related SOP's listed. Supervisors should also review any Safety Policy and Procedures (SPP) related to the listed SOP's as noted. Supervisors shall ensure that SOP's related to the **equipment being used** are covered (Chapters 12A and 12 B). *[1]

SOP LIST FOR EMERGENCY RESPONSE

EVENT	SOP	Related SPP
H,S,F	Accident and Injury Response 10-1	Unsafe Conditions 1910.002
H,S,F	Bloodborne Pathogens 10-6	Bloodborne Pathogens 1910.1030
S	Cold Weather Safety 10-2	First Aid 1910.151
H,S,F	Domestic and Wild Animals 10-4	
F	Dredging Operations 11B-21and 11B-22	
H, F	Drift Removal 11B-23	
H,S,F	Electrical Installation Repairs 11A-4	
H,S,F	Equipment Mounting and Dismounting 10-5	
H,S,F	Field Emergency Response 11D-1	
H,S,F	Fire Safety 10-7	Fire Protection 1910.157, Flammable and Combustible Liquids 1910.106
H,S,F	First Aid 10-8	First Aid 1910.151
H,S,F	Flagging Traffic 10-9	
H	Hand Removal of Vegetation 11B-42	Personal Protective Equipment-1910.132
H,S,F	Hazardous Materials 10-10	Hazard Communication 1910.1200, Exposure to Hazardous Chemicals 1910.1450, Bloodborne Pathogens 1910.1030
H, F	Hot Weather Safety 10-11	
H,S,F	Housekeeping and Sanitation 10-12	Sanitation 1910.141
H,S,F	Inmate Labor 11B-44	
H,S,F	Lifting 10-13	Back Protection 1910.001
H,S,F	Litter Pickup 11B-49	Personal Protective Equipment-1910.132
H, F	Maintenance Stabilization of Unpaved Roads 11B-50	
H, F	Minor Shoulder Maintenance 11B-52	
H,S,F	Overhead and Cantilever Sign Maintenance 11B-55	
H,S,F	Personal Protective Equipment-DMV 10-15	Personal Protective Equipment 1910.132
H,S,F	Personal Protective Equipment-DOH 10-16	Personal Protective Equipment-1910.132
H,S,F	Pipe/Culvert Maintenance 11B-59	
H, F	Poisonous Snakes, Insects and Plants 10-17	
H,S,F		
H,S,F	Sign Installation/Maintenance 11B-73	
H,S,F	Sun Exposure 10-18	
H,S,F	Towing Disabled Equipment 11B-81	
H,S,F	Traffic Signal Installation/Maintenance 11B-82	Electrical Protective Devices 1910.137, Electrical Related Safety Practices 1910.301
H,S,F	Tree Felling 11B-84 and Chain Saw 12B-4	
H,S,F	Vehicle Operation 10-19	
H,S,F	Work Zone Safety/Traffic Control 10-21	
H,S,F	Working Near Overhead High Voltage Lines 10-22	

Event

H = Hurricane/Tornado Response S = Snow and Ice Removal F = Floods Response

[1] The SOP and SPP numbers listed in this document are subject to change as new information and numbering systems are introduced. Supervisors and managers should cross-reference the SOP name with the current SOP/SPP manual to ensure the correct SOP/SPP is being provided to employees.

NC DOT Maintenance
Emergency Response for Flood Conditions

Required Items

- Personal Flotation Devices (PFD), US Coast Guard approved
- Life Rings with 90 feet of rope or Rescue throw bag
- 3 gallon sprayer
- Chlorine (bleach)
- Waterless Antibacterial cleaner/soap
- Antibacterial soap
- Black rubber work gloves
- Rubber boots
- Appropriate eye protection (safety glasses or goggles)
- Disposable respirator (3M-9913), DOT # 35-06320
- Coated protective coverall (yellow Tyvek)
- Insect repellent
- First Aid Kits
- Sting Kill Swabs
- Sun Screen
- Poison Ivy Barrier Cream
- Tecnu Poison Ivy Wash (after exposure)
- Alcohol wipes
- Triple antibiotic ointment (Neosporin, Mycitracin, Bacitracin)

NC DOT Maintenance
Emergency Response for Flood Conditions

Best Personal Safety Practices

1. While working near water, always wear a protective flotation device (life jacket).
2. Be aware of natural and propane gas tanks. Consider all tanks full and dangerous. Do not attempt to move. Contact the local Hazardous Material Team. If an odor of gas can be detected, evacuate immediately.
3. Be aware of potential chemical spills. Follow NC DOT's Hazardous Material Spill Response Policy.
4. Do not attempt to drive, wade or walk through water.
5. Rescue should only be attempted with a life ring and rope.
6. Employees should wear the following personal protective equipment to minimize contamination of waterborne disease:
   - ❖ Coated protective Coverall
   - ❖ Safety Glasses or Goggles
   - ❖ Rubber gloves
   - ❖ Rubber boots
   - ❖ Disposable face mask (organic vapor)
7. While moving animal carcasses, avoid direct contact and wear the above mentioned personal protective equipment.
8. All tools, equipment and non-disposable clothing should be decontaminated with a solution of at least 10% chlorine bleach or other disinfectant as per the manufacturer's instructions.
9. Be aware of snakes, bees and other insects. Animals and insects will be aggressive due to extreme conditions.
10. Employees should wash hands with Antibacterial soaps before eating, drinking, placing fingers in the mouth or smoking. Any item that may touch the skin or be placed in the mouth should be wiped with alcohol.
11. Shower with warm water using soap and shampoo immediately following your work assignment. It is recommended that a scrub brush be used on skin areas that have come into contact with contaminated water.
12. Employees should clean any fresh breaks of the skin (cuts) with soap, water and antiseptic solution (such as Betadine), use a triple antibiotic on the cut and then place a clean dry dressing on the wound. If you receive a cut and have not had a tetanus shot within the last 10 years, obtain a tetanus shot at one of the following locations:
13. The closest open Health Care Facility or;
14. The nearest Special Operations Response Team (SORT) Medical Station located at:
    - Lenoir County/Kinston LSA-Airport/National Guard Armory
    - Jones County/Jones Town Community Center, Hwy 58, 1 mile SW of Trenton
    - Tarboro High School/Western Blvd. and Howard Ave.

EMERGENCY RESPONSE & PROCEDURES
ENVIRONMENTAL CONSIDERATIONS

The primary mission of the North Carolina Department of Transportation (NCDOT) during emergency operations is the safe and timely restoration of transportation services which have been disrupted by an emergency event, such as hurricanes, snow storms, rock slides, etc. However, NCDOT must ensure that the repair, restoration, rehabilitation, or replacement activities following emergency events are conducted in ways that minimize impacts to the environment and comply with current regulations.

The Federal Emergency Management Agency (FEMA), the Federal Highway Administration (FHWA), the U.S. Department of the Interior's Fish and Wildlife Service (USFWS), the U.S. Army Corps of Engineers (USACE), the North Carolina Department of Environment and Natural Resources (NCDENR) (Division of Land Resources (DLR), Division of Water Quality (DWQ), Division of Coastal Management (DCM), the North Carolina Wildlife Resources Commission (NCWRC) and other agencies are required by law to regulate environmental impacts, particularly in streams, rivers and wetlands, but also with regards to historic structures and other protected areas. The NCDOT must provide adequate notification and coordination with the responsible agencies even during emergency response actions.

A. Lessons Learned in the Past

In recent years, reimbursements by FEMA AND FHWA have required that environmental field evaluations be conducted at each repair site damaged during an emergency event. When replacement of a structure is needed due to an emergency event, expansion of the pre-existing footprint (particularly an increase in length, diameter or location) or upgrading of the crossing structure may require notification and coordination with the appropriate agencies if wetland or streams will be impacted. If this coordination and approval by resource agencies does not occur, FEMA and FHWA will not make reimbursement for work performed on emergency repairs.

In the past, NCDOT has inadvertently performed repair activities within environmentally sensitive areas without regulatory authorization. Two examples of such activities included the relocation or "cleaning out" of a heavily silted stream and/or channel or the placement of excessive amounts of riprap to armor stream banks and streambeds. Although this type of work is practical from an engineering viewpoint, the impact to the immediate environment may be significantly adverse. Relocations, re-channelizations, or clean-outs of streams can result in severe impacts to aquatic communities. Furthermore, the use of quarried riprap in streambeds can eliminate suitable spawning areas for certain fish and can severely effect freshwater mussel populations. In the case of rare species or federally protected mussels, the results could potentially be serious. The mobilization of work crews from different parts of the state where environmental concerns may be different could also inadvertently cause unnecessary environmental impacts. Coordination with the Division Environmental Officer (DEO) should be the first step in effecting emergency repairs.

Problems and/or concerns expressed by the environmental community in the aftermath of past emergency events that must be noted are:

- The magnitude or footprint of some of the repairs exceeded FEMA's "emergency" definition.
- The resource agencies required assurances that their emergency authorizations fit the scope of work for repair efforts in regulated resources such as waters and wetlands (USACE, DWQ) and Areas of Environmental Concern (DCM).

In summary, major storms can have devastating impacts on the environment. NCDOT employees and contractors must make emergency repairs without further degrading the environment. Everyone must understand that streams and wetlands are extremely important natural resources. When working in environmentally sensitive areas, NCDOT must perform emergency repair work in a manner that minimizes delay and environmental impacts. Also, following the required environmental rules and regulations will ensure FHWA and FEMA reimbursement for emergency repair work.

B. Environmental Guidelines

- Coordinate closely with your DEO prior to starting repair work in any stream channel or wetland. Do not assume you know whether a stream or wetland is regulated or not.
- Environmental review prior to the starting work is the best way to avoid permit violations. Wetlands should be delineated prior to starting work.
- All repairs should follow the latest version of the Best Management Practices for Construction and Maintenance Activities (BMPs) as published by NCDOT. The BMP Manual contains contact information and typical permit requirements for work in or around waters of the state or waters of the US and in wetlands or other sensitive areas (See http://www.doh.dot.state.nc.us/operations/BMP_manual/ Appendices C, D, E)
- Delineate the limits of construction before starting the repair work.
- Minimize impacts from staging areas, access roads or for equipment storage.
- Identify spoil disposal areas prior to starting work. Do not stockpile excavated material or spoil in wetland areas.
- Document the pre-existing footprint of the damaged structure and the proposed replacement footprint. Document hydraulic calculations and engineering design standards used to expand the replacement structure.
- Avoid entering streams and/or wetlands with heavy equipment unless it is absolutely necessary. Stay within the replacement footprint or document the reasons why this could not be accomplished. Coordinate with the DEO prior to commencing work.

- Culvert inverts (54" or greater) should be set approximately 12" below streambed elevation. Culverts less than 54" in diameter should be buried 20% of their diameter. (For example, a 36" pipe invert would be placed 7.2" below streambed elevation.)
- Do not attempt to recover sediment that has been deposited into adjacent wetlands unless authorized by the DEO. Do not stockpile excavated material or spoil in wetland areas
- Removal of roadway debris from the pipe or road failure should be conducted in a way that minimizes impacts to wetlands or streams. Consult the DEO for guidance on authorized cleanup methods. Do not use roadway debris for stabilization in or around streams or wetlands.
- Riprap placement along shorelines or stream banks should be minimized to the greatest extent practicable. Excessive use of riprap in or around streams is prohibited.
- Riprap should never be placed in a streambed as a permanent measure without regulatory authorization.
- Do not allow uncured concrete to come into contact with waters in streams, creeks, rivers or wetlands. The use of sand/cement bag headwalls is prohibited.
- Minimize mechanical clearing within fifty feet of a stream subject to the Riparian Buffer Rules.

C. Additional Information

- NCDOT Best Management Practices for Construction and Maintenance Activities, August 2003.
- Disaster Response and Procedures Manual, by DCM (updated April 2002); see Public Infrastructure concerning information on replacement of culverts and bridges.
- The "Emergency Management Plan for the Protection of NC 12 from Whalebone Junction to Ocracoke" developed by the Outer Banks Task Force provides short-term or interim actions to handle emergencies at this location.

EMERGENCY RESPONSE & PROCEDURES
HURRICANES

Safety: As with all Department activities, safety must be at the forefront of our pre-event planning and preparation activities. Please refer to SOP's pertaining to Hurricanes on page I-2 of this manual.

A. PRE-EVENT PLANNING:

1. General

Managers at all levels in hurricane prone areas should always make basic preparations before the beginning of hurricane season. Some of these preparations, such as training and equipment maintenance, should be a continuous year-round process. Early planning and preparation will go a long way toward avoiding confusion and helping to assure an effective response whenever a hurricane strikes.

2. Personnel

A well trained, well-prepared workforce is the key to an effective hurricane response. The Division Engineer or his designee(s) should insure that job assignments and responsibilities have been clearly defined for all supervisors and employees within the Division at the beginning of each Hurricane season. Each Division should develop a plan and protocols for utilizing division-wide departments (Road Oil, Traffic Services, Bridge Maintenance, Roadside Environmental) and Construction employees during hurricane events.

Training personnel is another key component of hurricane preparedness. Each unit should insure that adequate primary and relief personnel have been properly trained to operate equipment safely and effectively before hurricane season begins since there will be little time for training after a hurricane strike occurs. Each unit should also ensure that a minimum of two (2) personnel per shift in each office are trained to enter Traveler Information Management System (TIMS) weather events. Equipment that is frequently used during storm recovery efforts include generators, chippers, chainsaws, tandem & small dump trucks, track & rubber-tired excavators w/ thumbs, front end loaders, backhoes, boom truck cranes, motorgraders, and bulldozers. Proper training through the Department's skill base pay program should assist managers and supervisors in keeping a sufficient number of employees trained in the use of equipment needed for debris removal and road repairs.

Some thought should be given to where personnel from other divisions may be housed if called upon for assistance. Often, hotel space is limited or non-existent after a storm due to

power outages and damages. Also, consideration should be given to the possibility of sending crews to other divisions needing help. These crews will need to be fully equipped to do the job with adequate supervision and expense advances so as not to place an added burden on receiving division.

Equipment

Equipment required for major storm events may be in short supply when needed. The Division Engineer or his designee(s) should develop protocols within the Division for sharing equipment between departments. The protocols should establish and assign the designated person(s) to contact to request equipment from another department within the Division. If the recovery efforts require equipment to be requested from other Divisions, the Division Engineer or his designee should coordinate their request through the Chief Engineer's Office.

In order to prevent unnecessary delays in hurricane recovery efforts, all DOT equipment should be maintained in good condition throughout the year so that it will perform properly when needed. When a hurricane is identified as a potential threat, the Division Equipment Superintendent and supervisors should check on the status of all equipment that may be utilized in a storm recovery. This equipment should be given repair priority at each equipment shop.

3. Communication

It is also important to have an adequate number of radios and cellular telephones for emergency situations. This is especially important when there are power outages during and following hurricanes. The Division Engineer or his designee should develop plans to reassign cellular phones and mobile radios from other departments within the division during hurricane events. Additionally, cellular telephone companies will often agree to provide extra phones to the Department in emergency situations. These companies should be contacted by the Division Engineer or his designee to see if this service can be provided.

Communication to the public is also crucial during a major weather event. Both the TIMS program and the 511 system are tools used to help deliver this information. Employees should be trained in how to enter events into the Traveler Information Management System (TIMS). Road conditions during an event should be updated as conditions change. At a minimum, information should be updated at 7:00 AM and 4:00 PM. If employees have problems entering information or accessing TIMS, they should call the State ITS Operations unit for assistance. Contact information can be obtained at 919-233-9331, extension 243. This number will provide you with the pager, cell, and home phone numbers for the ITS person on call. They are available 24x7 to assist the field offices.

Facilities

All facilities that are to be used for emergency operations should be readied for such use. These facilities should not be prone to flooding and the buildings should be able to withstand high winds and heavy rains with minimal damage. Also, a generator should be provided for emergency power and communications at each emergency operations facility.

The capacity of generator to be used should be adequate to run all electrical equipment that will be needed. At a minimum, the generator should operate the fuel station, the radio, the telephone, lights, etc. Although possible, it is not recommended that computers be operated from generators. Preferably all emergency operation facilities (county maintenance yard, bridge offices, equipment shops, district office, and division office) should be equipped with an adequate, well maintained, and permanently mounted generator. As a part of emergency preparedness, the Division Equipment Superintendent should have these generators checked on a monthly basis to insure that they will be operational when needed.

Consideration should be given by local managers to identify alternate facility locations in case primary facilities are heavily damaged and unworkable following a hurricane event. Those facilities prone to flooding should have designated alternative facilities identified to maintain operations and to minimize employee hazards.

4. Materials and Supplies

Although it may not be practical or desirable to maintain a constant stock of food and water for emergency use, some thought should be given to where food and water will be obtained for emergency workers. A major hurricane will almost always cause closures of grocery stores and restaurants due to damages and/or power outages. Water supplies can also be disrupted for the same reasons. Emergency workers coming from other divisions should expect shortages and bring initial supply of food and water in addition to cash. Additional supplies, which may not be readily available in the final hours before an expected hurricane landfall, should be kept in supply. These include but may not be limited to signs, signal equipment, sign posts and hardware, barricades, variable message signs, fuel, equipment service and repair parts, flashlights, batteries, first aid supplies, safety supplies, small hand tools, sanitation supplies, culvert pipe, and aggregates.

5. Plan for Recovery

An up to date emergency contact list with home, mobile and office telephone numbers and radio call signs should be maintained for all employees at each facility and included in the local plan. These lists should be distributed to all those within DOT and other agencies who may need to contact them in an emergency.

The County Maintenance Engineer should develop a procedure or "plan of attack" for opening and repairing roads for each county. The plan should detail supervisory responsibilities, damage assessment responsibilities, personnel assignments (by shift), clean-up areas, equipment assignments, reporting procedures, assessment procedures, etc. This should include marked maps showing route assignments for crews and personnel and equipment crew assignments keyed to the maps. This plan should indicate the priority order for opening roads with major routes being first in priority followed by minor thoroughfare, collectors, etc. It should also take into consideration how forces from other areas will be utilized should they be assigned to work in the county. The plan should be reviewed and updated each year prior to the hurricane season by the County Maintenance Engineer. A "test" run of the plan should also be done each year. This county plan should be inserted at the end of this section which has been reserved for this purpose.

A list of potential contractors, that can assist in debris removal and repairs should be developed and maintained by each District Engineer, Division Traffic Engineer, and Division Bridge Engineer and included in the local plan. Lists should show equipment and personnel contractors can provide, contact persons, addresses, phone numbers and counties where the contractor is willing to work. This list of contractors should be part of the local plan. See form ERPM-3.

The County Maintenance Engineers should work with local officials to determine waste sites for debris disposal or stockpile before a hurricane strikes. Counties will often provide these or allow disposal at landfills. A good understanding of how this is to be handled up front will eliminate the need for last minute rushing to provide for disposal.

6. Other Considerations

In hurricane prone areas, the Division Engineer or his designee(s) should work to establish an on going relationship with local and state emergency management and emergency response personnel (highway patrol, sheriff's department, fire and rescue personnel, etc.). The Division Engineer should schedule a meeting each year before the onset of hurricane season with these officials. At this meeting, plans should be developed as to each organization's role in hurricane responses. These plans should include but are not limited to discussions on evacuation routes, a review of evacuation signs, use and deployment of changeable message signs for evacuations and re-entry after the storm, debris removal priorities, etc. A goal of the meeting should be to clearly articulate the extent of DOT responsibilities, capabilities and limitations.

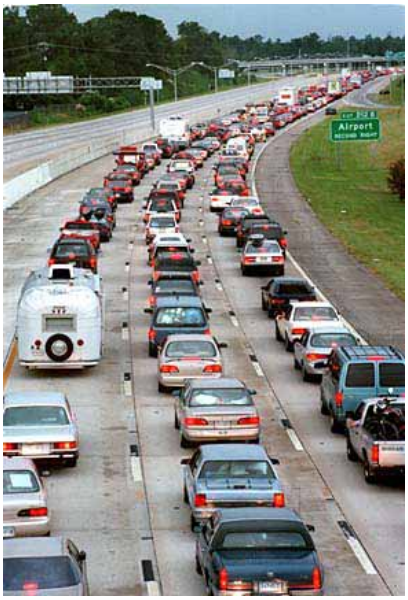
At the beginning of each hurricane season in divisions prone to experience hurricanes, contact should be made with local hotels and other lodging facilities that honor the state approved per diem for lodging. In anticipation of the possibility of having units from other divisions deployed to assist in the recovery efforts, prearranged agreements with these facilities to provide lodging would be beneficial. Efforts should be made with these facilities to submit a single bill for cost of the lodging to be charged to the appropriate WBS Element for the disaster.

B. PREPARATION FOR IMMINENT STORMS

Several things need to be done prior to an imminent hurricane strike. These include:

- **Each work unit should review their emergency response plans for hurricanes. These plans should clearly communicate protocols and responsibilities to be followed across the division in the aftermath of a hurricane strike. The Division Engineer or his designee(s) should insure that assignment of responsibilities at all levels of supervision and management has been made.**
- **Make sure equipment and facilities are secured so as to receive minimal damage from winds, fallen trees, flying debris and flooding. Remove all loose debris and materials, which may become missiles in high winds from around facilities and equipment.**

- **Service and fuel equipment and "top off" fuel storage tanks.**
- **Service, fuel and make an operational check of emergency generators.**
- **Check inventory of materials and supplies for adequacy including flashlights, batteries, rainsuits, signs, barricades, etc.**
- **Conduct safety meeting to discuss preparations, clean up, etc. Also, based on anticipated landfall and projected path of storm, make and schedule crew assignments (who to keep at facility during storm, who to send home, when to report, etc.). Keep in mind that telephones may not be working during and after the storm. Managers and supervisors need to take necessary steps to insure that employees will be able to return after the storm (i. e., provide transportation, chainsaws, etc.)**
- **Give employees opportunity to make adequate provisions to protect personal property and provide for safety of family members.**
- **Make preparation for evacuation of residents. Be sure evacuation route and other special signs are in place. Also, provide for placement of variable message signs. Make plans to have VMS removed to safe area when evacuation is complete.**
- **A partial or complete evacuation of employees should be considered when local government officials make the decision to evacuate the area due to the anticipated magnitude of the storm. To the extent possible in this event, determine where the employees can be reached following the storm and provide them with instructions for returning to help with clean-up and repairs.**



- **Ensure personnel are properly trained on entering events into TIMS for all shifts of operations during an event.**

C. RESPONSE DURING EVENT

Responsible supervisors are to make sure employees are in a secure area when winds are strong enough to be a threat to safety. In most cases employees should remain in a safe, secure place for the duration of high winds. The decision of when to begin surveying damages and clearing roadways should be made with the safety of the employees in mind. Night work should be avoided as much as possible in areas where trees and power lines are down.

Management and responsible supervisors should stay abreast of events, monitor weather conditions, and communicate to higher level management, to the extent possible, changing conditions in their area of responsibility.

D. POST-EVENT ACTIVITIES

All recovery activities should be performed in a safe manner. All plans and resultant activities should consider the safety and well being of employees and members of the public in keeping with the Department's top priority. All managers, supervisors, and employees should follow all established safety policies and procedures in clean-up and repair operations. In the aftermath of hurricanes, employees should take special note of downed trees, down powerlines, rising or receding flood waters, poisonous plants, snakes, road hazards (washouts of pavement, pipes, bridges), etc. Employees should be warned of the potential for a vehicle being washed downstream when attempting to drive through the flowing water. They should also be advised of the health hazards

As soon as it is safe and practical following a storm event, each unit should implement and follow their "emergency response plans" for hurricanes. These plans should detail supervisory responsibilities, personnel assignments (by shift), clean-up areas, equipment assignments, reporting procedures, assessment procedures, etc. (See Local Plan)

Assessment of damages should begin simultaneously with debris removal activities. Assessments should include but not be limited to:

- A review of all state system roadways in each county.
- The time needed to open all roads, by system, to vehicular traffic.
- Enter road closing information into the Travel Information Management System (TIMS). TIMS is located on the web at www.ncsmartlink.org. (If web access is not available, call the ITS Operations Unit at 919-233-9331 for assistance.)
- The amount of debris estimated to clear the right of way of primary roads, secondary roads, etc.
- An inventory of the damage by system to roads, bridges, signs, traffic signals, etc.

After analyzing assessment information, each unit can determine the appropriate amount of personnel and equipment that is needed to complete clean-up efforts. Also, cost estimates should be determined as early as possible to assist in obtaining emergency declarations. These estimates should be updated as better information is gathered. Request for additional personnel from within a division, but outside a particular district should be handled through pre-established division protocols. If a division needs resources from other divisions, these requests should be coordinated with the Chief Engineer's Office.

Divisions that are unaffected by the hurricane should make plans to provide equipment and personnel to affected divisions.

Before mobilizing employees to other areas, be sure to allow a sufficient amount of time to go home and prepare. Employees should have a destination map, telephone number of a contact person, and should travel during daylight hours if possible. The supervisor should have a list of all employees with social security numbers and home telephone numbers in case of an emergency (Form ERPM-1). Crews will need to be fully equipped to do the job with adequate supervision, paperwork and expense advances so an added burden is not placed on the receiving division. Each receiving division should also plan to receive personnel from other divisions. Some of the logistical considerations include:

- Housing accommodations for employees
- Parking for equipment
- Food services
- Fuel for equipment

A local employee familiar with the area should be deployed with the crews to aid in locating job sites, hospitals, eating establishments, etc. All crews should have radio communication and/or cellular phones to use.

Should the transfer of equipment from another division become necessary, the sending division will prepare a complete list (Form ERPM-2) of all equipment sent and forward to the receiving division.

Requests from local emergency management officials and other agencies for any work outside the normal scope of DOT operations should be directed through the state emergency operations center.

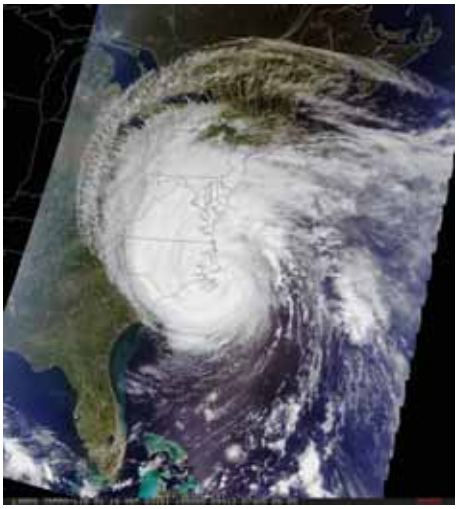
In the event that a state of disaster or imminent threat of a disaster is declared, the Department of Crime Control and Public Safety, Division of Emergency Management has the authority (Chapter 166A, NC Emergency Management Act of 1977) to task the North Carolina Department of Transportation (NCDOT) to perform emergency work on non-system roadways. The NCDOT should receive the request for any non-system roadway work from the Division of Emergency Management. The NCDOT has the authority to perform this type of work, with the coordination and approval through the Chief Engineer's Office.

Employees should be aware of and should follow proper requirements for documenting and recording work accomplished in the aftermath of storms. This normally includes site codes, job orders, estimates, time keeping, job reports, damage assessments, Emergency Response Daily Status Report (ERPM-4) etc. (Refer to Chapter VIII on Documentation & Record Keeping)

Each unit should cooperate fully with FEMA and FHWA in efforts to assess damages and obtain required information for possible cost reimbursement.

Saffir-Simpson Hurricane Scale

- **Tropical Storm**
  Winds 39-73 mph
- **Category 1 Hurricane** — winds 74-95 mph (64-82 kt)
  No real damage to buildings. Damage to unanchored mobile homes. Some damage to poorly constructed signs. Also, some coastal flooding and minor pier damage.
  - Examples: Irene 1999 and Allison 1995
- **Category 2 Hurricane** — winds 96-110 mph (83-95 kt)
  Some damage to building roofs, doors and windows. Considerable damage to mobile homes. Flooding damages piers and small craft in unprotected moorings may break their moorings. Some trees blown down.
  - Examples: Bonnie 1998, Georges (FL & LA) 1998 and Gloria 1985
- **Category 3 Hurricane** — winds 111-130 mph (96-113 kt)
  Some structural damage to small residences and utility buildings. Large trees blown down. Mobile homes and poorly built signs destroyed. Flooding near the coast destroys smaller structures with larger structures damaged by floating debris. Terrain may be flooded well inland.
  - Examples: Keith 2000, Fran 1996, Opal 1995, Alicia 1983 and Betsy 1965
- **Category 4 Hurricane** — winds 131-155 mph (114-135 kt)
  More extensive curtainwall failures with some complete roof structure failure on small residences. Major erosion of beach areas. Terrain may be flooded well inland.
  - Examples: Hugo 1989 and Donna 1960
- **Category 5 Hurricane** — winds 156 mph and up (135+ kt)
  Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. Flooding causes major damage to lower floors of all structures near the shoreline. Massive evacuation of residential areas may be required.
  - Examples: Andrew (FL) 1992, Camille 1969 and Labor Day 1935

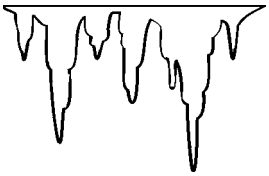


Additional Information (Local Plan, Memos, etc.)

EMERGENCY RESPONSE & PROCEDURES
SNOW & ICE

Safety: As with all Department activities, safety must be at the forefront of our pre-event planning and preparation activities. Please refer to SOP's pertaining to Snow & Ice on page I-2 of this manual.

A. PRE-EVENT PLANNING:



1. General

Managers and supervisors of all levels should make preparations on an annual basis during October or November for the snow and ice events that are likely to occur during the coming winter months. An early and continuous response throughout each storm is the most effective method of keeping our roadways as safe and passable as possible. Proper planning and scheduling in the fall gives each supervisor, responsible for snow and ice removal, a big advantage reacting to the first winter storm.

2. Personnel

A well trained, well-prepared workforce is the key to an effective snow and ice response. The Division Engineer or his designee(s) should insure that job assignments and responsibilities have been clearly defined for all supervisors and employees within the Division at the beginning of each winter season. Each Division should develop a plan and protocols for utilizing division-wide departments (Road Oil, Traffic Services, Bridge Maintenance, Roadside Environmental) and construction employees during snow and ice events.

Training personnel is another key component of snow and ice removal preparedness. Each unit should insure that adequate primary and relief personnel have been properly trained to operate equipment safely and effectively before the winter season begins since there will be little time for training after a snow and ice event occurs. Each unit should also ensure a minimum of two (2) personnel per shift in each office are trained to enter Traveler Information Management System (TIMS) weather events.

Equipment that is frequently used during storm recovery efforts include tandem & small dump trucks, snow plows, spreaders, snow blowers, motordgraders, front end loaders, backhoes, dozers, brush chippers, and chainsaws. Proper training through the Department's skill base pay program should assist managers and supervisors in keeping a sufficient number of employees trained in the use of equipment needed for snow and ice removal.

Some thought should be given to where personnel from other divisions may be housed if called upon for assistance. Often hotel space is limited or non-existent after a storm due to power outages and damages. Also, consideration should be given to the possibility of sending crews to other divisions needing help. Should the transfer of personnel from another division become necessary, the sending division will prepare a complete list (Form ERPM-1) of all personnel sent and forward to the receiving division. These crews will need to be fully equipped to do the job with adequate supervision and expense advances so an added burden is not placed on the receiving division.

3. Equipment

Equipment required for major storm events may be in short supply when needed. The Division Engineer or his designee(s) should develop protocols within the Division for sharing equipment between departments. The protocols should establish and assign the designated person(s) to contact to request equipment from another department within the Division. If the recovery efforts require equipment to be requested from other Divisions, the Division Engineers or his designee should coordinate their request through the Chief Engineer's Office. Should the transfer of equipment from another division become necessary, the sending division will prepare a complete list (Form ERPM-2) of all equipment sent and forward to the receiving division.

In order to prevent unnecessary delays in snow and ice removal recovery efforts, all DOT equipment should be maintained in good condition throughout the year so that it will perform properly when needed. When a snow and ice storm is predicted, the Division Equipment Superintendent and supervisors should check on the status of all equipment that may be utilized in a storm recovery. This equipment should be given repair priority at each equipment shop.

4. Communication

It is vital for the supervisors to be in contact with the employees removing the snow and ice from the roadways. All radios, portable and permanent mount, should be checked and repairs made prior to the winter season. Existing Division cellular phones should be made available for use during snow and ice removal activities and a list of available phones should be complied for quick access during emergencies. Cellular telephone companies will often make additional cell phones available to the Department during extreme emergencies. These companies should be contacted by the Division Engineer or his designee to see if this service can be provided.

Communication to the public is also crucial during a major weather event. Both the TIMS program and the 511 system are tools used to help deliver this information. Employees should be trained in how to enter events into the Traveler Information Management System (TIMS). Road conditions during an event should be updated as conditions change. At a minimum, information should be updated at 7:00 AM and 4:00 PM. If employees have problems entering information or accessing TIMS, they should call the State ITS Operations unit for assistance. Contact information can be obtained at 919-233-9331, extension 243.

This number will provide you with the pager, cell, and home phone numbers for the ITS person on call. They are available 24x7 to assist the field offices.

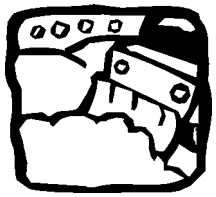
5. Facilities

All facilities that are to be used for emergency operations should be readied for such use. These facilities should not be prone to flooding and the buildings should be able to withstand high winds and heavy rains with minimal damage. Also, a generator should be provided for emergency power and communications at each emergency operations facility. The capacity of generator to be used should be adequate to run all electrical equipment that will be needed. At a minimum, the generator should operate the fuel station, the radio, the telephone, lights, etc. Although possible, it is not recommended that computers be operated from generators. Preferably all emergency operation facilities (county maintenance yard, bridge offices, equipment shops, district office, and division office) should be equipped with an adequate, well maintained, and permanently mounted generator. As a part of emergency preparedness, the Division Equipment Superintendent should have these generators checked on a monthly basis to insure that they will be operational when needed.

6. Debris Removal and Disposal

Often tree and vegetation removal becomes a large part of snow and ice removal. **Never attempt to remove or cleanup fallen trees and vegetation while downed power lines are in the immediate area.** Wait until the power company gives you clearance to proceed with the work. Keep all chain saws in running condition and inventory should be checked for spare chain bars, chains, chain oil, gasoline containers, and personal protective equipment required for chain saw use.

The District Engineer should develop and maintain a list of potential contractors that can assist with vegetation and tree removal during extreme conditions. Once this list is compiled, it should be included in the local plan. (See ERPM-3)



For more information see Chapter VI on Debris Removal and Disposal.

7. Materials and Supplies

Prior to the beginning of the winter season, salt and sand storage facilities should be filled to capacity. Calcium chloride storage tanks should be filled and the material circulated to prevent the settlement of the solids in the tank. Calcium chloride pumps, valves, and hoses should be checked for deterioration due to the corrosive nature of this liquid.

In the event that a state of disaster or imminent threat of a disaster is declared, the Department of Crime Control and Public Safety, Division of Emergency Management has the authority (Chapter 166A, NC Emergency Management Act of 1977) to task the North Carolina Department of Transportation (NCDOT) to perform emergency work on non-system roadways. The NCDOT should receive the request for any non-system roadway

work from the Division of Emergency Management. The NCDOT has the authority to perform this type of work, with the coordination and approval through the Chief Engineer's Office.

8. Other Considerations

Contacts with local law enforcement agencies, emergency management, and emergency response personnel should be established. The purpose of these contacts is to coordinate and explain NCDOT snow and ice removal policies, procedures, responsibilities, and limitations. Annually update the names and contact numbers of NCDOT personnel who are

on call for after hours. Request from local emergency management officials and other

agencies should be directed through the state emergency operations centers for any work outside the normal scope of DOT operation.

B. PREPARATIONS FOR IMMINENT STORM

Several things need to be done prior to a snow and ice storm. These include:

- **Each County Maintenance Engineer should conduct a meeting with employees to review snow and ice removal plans and safe operating procedures.**
- **Mount all snow and ice removal equipment and test mechanically.**
- **Fuel all equipment and fill lube trucks to capacity.**
- **Install communication equipment in all appropriate vehicles. Check hand-held radios and cellular phones to ensure they are charged and operational.**
- **Consideration should be given to splitting the work force into two or more shifts to avoid excessive fatigue. Send the off-duty-shift home to report back at the designated time. This will need to be coordinated with all the departments furnishing personnel. It is incumbent upon each supervisor to allow enough time off from work for each employee to rest between shifts.**
- **Pre-mix additional sand and salt mixture and load the trucks with sand/salt and calcium chloride.**
- **Preparation should be made for installation, repair and rebuilding of tire chains.**
- **If the storm is forecast to arrive during off-hours, schedule the appropriate shift to report to work far enough in advance of the impending storm to make all preparations as noted above.**
- **Frequent monitoring of weather conditions and forecast is a critical step toward being prepared in advance of a snowfall.**
- **Ensure personnel are properly trained on entering events into TIMS for all shifts of operations during an event.**

C. RESPONSE DURING EVENT

Starting the snow and ice removal activities at the beginning of the winter storm is the key to effective and timely snow and ice removal.

Each employee removing snow and ice will work their assigned sections until all the pre-determined "bare" pavement routes are clear. It is the policy of the Department to perform snow and ice removal in the following order of priority:

1. Routes included in the Bare Pavement System
2. The remaining US and NC routes not included in the bare pavement system
3. Paved Secondary Routes not included in the bare pavement system
4. Unpaved Secondary Routes

Functional Area 3100 Snow and Ice Control

If the snowfall is significant, but not Division-wide, the District Engineer may request assistance from unaffected counties through the Division Engineer or his designee to supplement existing crews. Should the snowfall develop into blizzard conditions, assistance can be obtained from other Divisions; however, the request will be made through the Division Engineer who will make the request to the Chief Engineer of Operations.

The District Engineer, or designee, will submit a road conditions report through the Travel Information System (TIMS) for the duration of the storm and cleanup efforts. TIMS Ice and Snow reporting should be updated whenever road conditions change (i.e. when a system of roads changes from "Barely Passable" to "Covered with Ice and Snow" or vice versa). Entries should be made as soon as possible once DOT begins responding to a snow and ice event. At a minimum, TIMS snow and ice updates must be made at 7:00 a.m. and 4:00 p.m. on days when ice and snow exist on the roadways (i.e. on any day where all of the fields are not listed as "Clear"). TIMS is located on the web at www.ncsmartlink.org. If web access is not available, call the ITS Operations Unit at 919-233-9331 ext. 243 for assistance.

Equipment repairs should be coordinated to assure that snow removal equipment assigned to interstate, bare pavement, or other critical routes are given priority. Repair parts should be made available throughout the duration of the winter storm cleanup. The equipment personnel are normally divided into shifts corresponding with the maintenance forces.

Regardless of implied or perceived urgency, pre-trip inspections of equipment shall be performed and the operators shall obey the traffic laws. Safe equipment operation during emergency events is just as important as during normal working conditions.

Snow and ice removal shall continue until all the system roads are cleared and safe for motorists. See Functional Area 3745 for chemical application rates and plowing methods under Snow and Ice Control.

Damage assessment should begin during the snow and ice removal activities. The District Engineer should be furnished estimates by system, of time needed to open roads.

Employees responsible for record keeping should follow established procedures for documenting and recording work accomplished including site codes, job orders, estimates of damages, time sheets, daily status reports (if required), and material issues. See Chapter VIII on Documentation and Record Keeping.

D. POST-EVENT ACTIVITIES

Once the system has been cleared and traffic restored to its normal patterns, the following items should be addressed:

- Shoulders should be winged back to get the snow as far from the travelway as possible.
- Shoulders in front of mailboxes should be plowed.
- Drainage structures should be cleared of obstructions so that melting snow will not be trapped on or near the travelway.
- Windrows of snow on bridges should be removed.
- Traffic medians and barriers should be cleared of snow and ice as required to avoid melting and refreezing on the pavement.
- Tree limbs and other debris should be removed from the right of way as soon as possible.

All equipment should be checked for damages and repairs scheduled with the Equipment Department. Surfaces vulnerable to sodium and calcium chloride should be thoroughly cleaned and sprayed with an appropriate protective coating if necessary prior to storage.

Check parts and material inventories and restore the quantities to pre-storm levels.

The period of time required to remove and dispose of fallen trees, limbs, and debris will vary from a few days to several weeks depending upon the type and severity of the storm. The cleanup of snow and ice related debris is included in Functional Area 3745 and should be charged this way to insure accurate cost records. For additional guidance on debris removal, refer to the Chapter VI on Debris Removal and Disposal.

FA 3746 ANTI-ICING

Definition

Application of a chemical freeze-point depressant onto the highway pavement at the start of a winter storm, or even prior to the beginning of precipitation, that inhibits the development of a bond between the snow or ice and the pavement surface.

Explanatory Text

Includes pre-winter preparations, production and transportation of anti-icing chemicals prior to a winter ice/snow storm, application of chemicals to the roadway surface either by truck distributor or a permanent, bridge-mounted system. Also includes the cost of equipment calibration, clean up of equipment after the winter storm and winter season.

Unit of Measure

Gallons

Objectives

Insofar as possible and practical, it is the objective of all anti-icing operations to:

1. prevent the bonding of snow or ice to the pavement surface
2. keep traffic moving;
3. reduce the possibility of accidents, injuries, and deaths; and
4. provide near normal movement of emergency vehicles such as ambulances, fire trucks, etc.

FA 3100 FA 3745 SNOW & ICE CONTROL

Definition

Mobilization; removal of ice or snow from a roadway or bridge, drainage inlet or channel; placement and/or removal of anti-icing/de-icing chemicals or abrasives. Installation, maintenance or removal of snow fences. Includes all preseason and pre-event preparations and brine production. Also includes post event equipment clean up.

Explanatory Text

The removal of ice or snow from the highway. Includes pre-winter preparations, mobilization prior to a winter ice storm, work during and after the winter ice storm to eliminate the hazards and clean up of roadway and equipment after the winter storm or winter season.

Unit of Measure

Man hours

Objectives

Insofar as possible and practical, it is the objective of all snow and ice removal activities to:

1. keep traffic moving;
2. keep commerce and industry going at a near normal pace;
3. reduce the possibility of accidents, injuries, and deaths; and
4. provide near normal movement of emergency vehicles such as ambulances, fire trucks, etc.

RELATED POLICIES AND/OR STATUES AFFECTING THE ACTIVITY

(1) G.S. 20-116(g) - Loaded trucks shall be covered, or the load against the walls shall not extend above a horizontal line six inches below the sides, and the truck shall not exceed the legal weight limits.

(2) Policy for Maintenance of System Streets with Municipalities, section 5B - It is the policy of the Division of Highways not to remove snow and ice from sidewalks, nor is it the policy to clear driveways and/or driveway entrances of snow and ice.

(3) It is the policy of the Division of Highways to provide for the removal of snow and ice in the following order of priority:

a. Those routes included in the Bare Pavement System (See page 430-6).
b. Other US & NC Routes not included in the Bare Pavement System.
c. Other paved Secondary Routes not included in the Bare Pavement System.
d. Unpaved Secondary Routes

(4) The Bare Pavement Policy provides for the direct application of deicing chemicals to those routes included in the Bare Pavement System. This policy also requires that these routes will be the first cleared of snow and ice following a storm. Insofar as is possible and practical, traffic will be kept moving on these routes during a storm; however, it is not the policy to maintain a "bare pavement" throughout the course of all storms. Those routes not on the Bare Pavement System will be cleared by plowing operations and without direct application of deicing chemicals except in cases of extreme emergency. These emergencies will normally be limited to specific locations (shaded areas on hills, superelevated curves, etc.) where extremely hazardous conditions exist.

(5) It is the policy of the Division of Highways that all sites used for the storage of deicing chemicals will be located so as to avoid contamination of local wells and to minimize the possibility of damage to the environment. At all storage locations, precautions will be taken to see that they are properly covered and that drainage in and around these facilities prevents runoff into adjacent streams and properties. (See Appendix I.)

(6) It is the policy of the Division of Highways that the application of chlorides to the travelways of the system shall be consistent with our objectives to protect the environment. The recommended application rates (see page 430-9) are considered to be correct and proper for the various weather and highway conditions indicated and heavier applications are discouraged. Highway Maintenance Engineer should identify environmentally sensitive areas within their individual areas of responsibility that may require alternative application rates and devise special instructions for snow and ice removal techniques for roads adjacent to these locations.

CONDITIONS WHICH WARRANT SCHEDULING THE ACTIVITY

Anytime the prevailing weather conditions or forecasts indicate highways and/or bridges may become slippery and/or obstructed by snow and ice, maintenance forces will be mobilized in accordance with prescribed plans and policies.

SAFETY PROCEDURES

The purpose of snow and ice removal is to provide for the safe travel of motorists. In doing this, maintenance forces should endeavor to protect themselves as well as the traveling public by following proper safety procedures.

(1) The North Carolina Sign Supplement to the MUTCD should be periodically reviewed for proper implementation.

(2) All equipment should be checked before and after each storm to insure the operational status of lights, brakes, windshield wipers, exhaust systems, tires, chains, steering, and other preventive maintenance items.

(3) Operators should resist the urge to “get the job done in a hurry”.

(4) Operators should obey all traffic laws while performing snow and ice removal duties.

(5) Operators should provide assistance to stranded motorists when at all possible, especially in situations where stranded vehicles pose a traffic hazard to other moving vehicles. Operators should use their best judgment when aiding stranded motorists, always being careful to prevent damage to other vehicles. The maintenance vehicle should be kept clear of the travelway whenever possible.

(6) During extended storm periods, Highway Maintenance Engineers should take measures to avoid extreme fatigue among operators. When it becomes obvious that storms will continue for long periods of time, steps should be taken to divide maintenance forces into shifts for 24-hour surveillance of the roadways. If necessary, all available personnel resources within the Division may be utilized by the Division Engineer in order to provide sufficient manpower for shifts.

PRE-WINTER PLANNING

In preparation for each winter season, the Division Engineer, District Engineers, and the Highway Maintenance Engineers should review, develop, coordinate, and/or conduct the following activities and operations:

(1) A complete inventory of deicing chemicals and abrasives should be completed in order to assure an adequate supply of materials will be available at the beginning of the season.

(2) A thorough inspection should be made of all salt storage facilities to determine their adequacy for storage of materials and protection of the surrounding environment from runoff. Guidelines for the design and location of storage facilities are contained in Appendix I.

(3) A review of those routes included in the Bare Pavement System should be conducted. Additions or deletions to the Bare Pavement System should be coordinated from county-to-county and district-to-district in order to insure the continuity of the bare pavement routes. These bare pavement routes constitute Phase I of the total snow and ice control plan. Those paved routes not included in the Bare Pavement System should constitute Phase II and the unpaved routes should constitute Phase III. All equipment that is not allotted to the Bare Pavement System will be assigned to operators and areas of responsibility for snow and ice control on Phase II and III routes. Once the Bare Pavement System is clear, personnel and equipment can be transferred to Phase II and III routes to assist in plowing operations.

(4) Snow and ice removal shall be performed on State System roads only, with the exception of public school drives, drives to hospital emergency rooms, and public cemetery drives when necessary. Snow and ice removal within municipalities should be reviewed with municipal officials.

(5) Appropriately sized segments of bare pavement routes should be assigned to specific individuals and pieces of equipment. Each segment should be sized to the capacity of its assigned truck based on a maximum chemical application rate plus contingency allowances (See FA 3745-3746). Assignments should be designed to allow the driver to be as near a stockpile as possible after completion of their route. All segments, with individual assignments and vehicle equipment numbers, should be marked on county maps, then posted at the maintenance yard and the District Office. Periodic reviews of assignments should be conducted to make needed corrections for personnel turnover and truck transfers.

(6) Consistent with the overall personnel resources available, assignments should include someone riding “shotgun” in a single-vehicle operation, and one “shotgun” rider in a multi vehicle operation.

(7) Plans for the erection and location of snow fences are an important part of the pre-winter planning operation. Proper placement of snow fences can eliminate or reduce drifting in problem areas, thereby saving time and effort when storms occur. When it is necessary to erect snow fences off the right of way, the permission of property owners must be obtained.

(8) Plans should be developed to effect the efficient flow of information to and from maintenance forces during storm periods. These plans should include dissemination of weather report information as it is received from local radio stations, independent weather forecasters, the National Weather Service, and the Maintenance Unit - Central Administration. Steps should be taken to insure a smooth flow of information from the individual operator by assigning individuals with radio-equipped vehicles to pre-established sections of the Bare Pavement System. These persons will be responsible for making periodic contact with each operator in their assigned area to provide assistance, and to report road and traffic conditions.

(9) Each District Engineer should develop a list of fully-operated privately-owned equipment that is available for rent during periods of extreme weather.

(10) Accurate calibration of all chemical spreaders should be completed each fall in accordance with the guidelines and instructions shown in Appendix II. This effort will conserve materials, protect the environment, and provide the operator with the information required to comply with the application recommendations. Spreaders should be checked to be sure they are equipped with side shields or baffles in order to retain the spread within approximately 12 feet.

(11) Training sessions for all employees should be conducted to insure that they understand:

(a) the operation and maintenance of snow removal equipment.

(b) each individual’s assigned area of responsibility with respect to Phase I, II, and III operations.

(c) the use and application of deicing chemicals and abrasives.

(d) when and under what conditions the roads should be plowed.

(e) the safety procedures related to snow and ice removal.

(12) All employees and the equipment should be mobilized and participate in a "dry run" to insure that plans are understood and complete. This should be done immediately after completion of training activities.

BARE PAVEMENT SYSTEM

The Bare Pavement System should consist of all Interstate and four-lane divided Primary routes and other primary and secondary routes considered to be essential to the fulfillment of the overall objectives of snow and ice removal - the movement of intrastate traffic. The routes included in the Bare Pavement System should be reviewed annually by the Division Engineer. He will include new routes and delete old routes as deemed necessary. He will assure continuity of the bare pavement routes from county to county and district to district within the division. Once the Bare Pavement System is finalized, it will be submitted to the State Road Maintenance Unit. The Maintenance Unit will assure the continuity of bare pavement routes from division to division.

BARE PAVEMENT SYSTEM EQUIPMENT REQUIREMENTS

Equipment support for the Bare Pavement System is extremely important. Effective chemical application must be done as soon as there is enough accumulation to hold the chemicals on the road, preferably before the accumulation of 1/8 inch, and always before the accumulation of 1/2 inch. To assist in planning equipment requirements, the following criteria is offered:

1. Maximum Salt Application Rate/Lane Mile. The maximum recommended application rate for salt is 250#/Lane Mile. If timely applications are made, it is estimated that two applications per storm will be required; therefore, 500# of salt per lane mile per storm represents an adequate planning base.

2. Estimated Chemical Capacity of Equipment. It is estimated that the average salt payload for the following combinations of equipment will be:

    a) 24,000 GVW Dump with Tailgate Spreader - 4.5 tons/load

    b) 24,000 GVW Dump with 5 cu. yd. Drop-in Spreader - 5 tons/load

    c) 50,000 GVW Dump with 8-10 cu. yd. Drop-in Spreader - 8 tons/load

3. Bare Pavement - Segment Lengths. Based on the preceding data, the assigned segment lengths for the various combinations of equipment used on the Bare Pavement System should be:

    a) 24.000 GVW Dump with Tailgate spreader

$$\frac{4.5 \text{ tons}}{250\#/\text{Lane Mile}} = 36 \text{ Lane Miles}$$

b) 24.000 GVW Dump with 5 cu. yd. Drop-in Spreader

$$\frac{5 \text{ tons}}{250\#/\text{Lane Mile}} = 40 \text{ Lane Miles}$$

c) 50,000 GVW Dump with 8-10 cu. yd. Drop-in Spreader

$$\frac{8 \text{ tons}}{250\#/\text{Lane Mile}} = 64 \text{ Lane Miles}$$

By using the preceding data to determine the required equipment for the Bare Pavement System, the District Engineers will be assured that sufficient spreader capacity is available to cover the entire Bare Pavement System at the maximum application rate without interruption for reloading.

There is another major concern for the District Engineer and that relates to the available storage capacity for salt. It is recommended that each county have a minimum salt storage capacity equaling one-half its anticipated annual requirement. The illustration on page 430-8 depicts the average number of snow storms for each county in the state. This information, together with the previously discussed assumptions and recommendations, can be used to estimate the required storage requirements. It is also recommended that salt storage capacity planning include a 25% contingency to cover multiple applications that might be necessary on bridges, hills, intersections, etc. For example, a county with a Bare Pavement System of 265 lane miles with an annual storm frequency of 6 would require 248 tons of salt storage capacity. (265 lane miles of bare pavement x 250# salt/lane mile x 1.25 x 2 applications/storm x 3 storms = 248 tons of salt storage capacity.)

APPLICATION OF DEICING CHEMICALS

The chart on page 430-9 represents the recommended application rates for the various weather conditions that might be encountered. Applied as recommended, deicing chemicals will enhance the safe movement of traffic during adverse winter weather. In order that full advantage may be taken of chemical applications, the following actions should be taken:

(1) Spreader trucks and operators should be mobilized prior to the commencement of frozen precipitation. Motor grader and plow operators may be mobilized after precipitation has begun.

(2) Bridges should be treated early. Normally, bridges will freeze before the roadway and prompt treatment of bridge decks will avoid many accidents.

Chemical Application and Plowing Methods

Temp.	*Pavement Condition*	*Type of Precipitation*	*Per Two-Lane Mile of Bare Pavement System*	*Instructions*
30ºF. (-1ºC.) & Above	Wet	Snow	300 lbs. of Salt	Do not plow as long as the salt is working. When the slush begins to stiffen, plow and re-apply at 200# salt as required.
30ºF. (-1ºC.) & Above	Wet	Sleet or Freezing Rain	200 lbs. of Salt	Re-apply salt at 200# as required.
25º to 30º F. (-4º to -1ºC.)	Wet	Snow or Sleet	500 lbs. of Salt	Do not plow until slush begins to stiffen. After plowing, re-apply salt at 200#/two-lane mile.
25º to 30º F. (-4º to -1ºC.)	Wet	Freezing Rain	300 lbs. of Salt	If subsequent applications are required, re-apply at 200# per two-lane mile.
20º to 25º F. (-7º to -4ºC.)	Wet	Snow or Sleet	500 lbs. of Salt	Plow only when the slush begins to stiffen. Re-apply salt as required at a rate of 250# per two-lane mile.
15º to 20º F. (-9º to -7ºC.)	Dry	Dry Snow	PLOW ONLY!!!	Do not apply chemicals. Treat hazardous areas with 1200 lbs. of 20:1 sand/salt or calcium chloride.
15º to 20º F. (-9º to -7ºC.)	Wet	Wet Snow or Sleet	500 lbs. of 3:1 salt/calcium chloride mixture or salt moistened with calcium chloride	Do not plow until slush begins to stiffen. If roads become packed, treat hazardous areas with 1200# of 20:1 sand/salt or calcium chloride.
Below 15ºF. (-9ºC.)	Dry	Dry Snow or Sleet	PLOW ONLY!!!	Do not apply chemicals. Treat hazardous areas with 1200# of 20:1 sand/salt or calcium chloride.

CHEMICAL APPLICATION METHODS	*PLOWING METHODS*
Two-Lane Facility - Spread salt from the center of the road with offset tailgate spreader. Superelevated Curves - Apply salt on the high side to allow brine solution to flow across the roadway. Four-Lane Divided Facility with Roof-Type Crown - Spread salt from the center of the road. Four-Lane Divided Facility with Slope from Median - Spread salt from a point slightly left of center-line except where superelvated curves dictate otherwise. Multi-Lane Facilities - Spread salt on the high side and work down the slope by making sufficient passes to cover all travel lanes. Operators should "play the wind" when applying chemicals during strong winds in order to put salt where it will do the most good.	1. Two-Lane Facility - Plow all two-lane facilities with a right-hand plow. 2. Multi-Lane Divided Facility with Roof-Type Crown - Plow left lane with a left-hand plow or a motor grader followed by a truck with a right-hand plow and a spreader. 3. Multi-Lane Divided Facility with Slope from Median - Same as roof-type crown, with an additional pass with the left-hand plow on the median shoulder.

Early treatment of busy intersections and interchanges will help to keep traffic moving and avoid accidents.

(3) Once chemicals have been applied, always allow sufficient time before plowing (See following section "Plowing Snow and Ice").

(4) Stay aware of anticipated changes in weather conditions. Operators should be informed as soon as information on "new" weather is received. Often times, materials can be saved if weather conditions are improving or a needed "jump" on additional snow can be gained if the weather is worsening.

Chemical Application Methods are:

(1) Two-Lane Facility - Spread salt from the center of the road with an offset tailgate spreader.

(2) Superelevated Curves - Spread salt on the high side to allow brine to flow across the roadway.

(3) Four-Lane Divided Facility (Roof-type Crown) - Spread salt from the center of the road.

(4) Four-Lane Divided Facility (Slope from Median) - Spread salt from the left-hand lane except where superelevated curves dictate otherwise.

(5) Multi-Lane Facilities - Spread salt on the high side and work down the slope by making sufficient passes to cover all travel lanes.

(6) Operators should "play the wind" when applying chemicals during strong winds in order to put salt where it will do the most good.

Each Highway Maintenance Engineer should report road conditions and chloride usage to their respective District Engineer each morning after a storm. It is imperative that these reports be made promptly so that chemical replacement orders can be issued for the proper amounts.

PLOWING SNOW AND ICE

Snow occurs when water vapor in an air mass is cooled below freezing. The density of snow varies. Some storms produce "wet" snow, others "dry" snow. Wet or heavy snow seals to the pavement quickly under traffic and, normally, requires chemical treatment before plowing. Dry or powdery snow can usually be plowed away if the plowing operations begin soon enough. Dry snow occurs during very cold weather conditions

(below 25ºF. or -4ºC.) and as long as the pavement remains dry, plowing operations can keep the surface of the road clear.

The secret is knowing when to plow and once chemicals have been applied, the operator can tell when to plow by watching the passing traffic. As long as the slush is soft and fans out behind the tires of passing vehicles, the salt is working, but when the slush begins to stiffen and is thrown directly to the rear of the tires, it is time to plow and spread more chemicals. *Never apply chemicals followed immediately by a plowing operation. Salt is of no benefit on the shoulder of the road.*

Recommended methods for the various types of roadways are:

(1) Two-Lane Facility - Plow all two-lane facilities with a right-hand plow.

(2) Multi-Lane Divided Facility (Roof-type Crown) - Plow left lane with a left-hand plow or motor grader followed by truck with a right-hand plow. The following truck (R.H. plow) is the vehicle equipped with the spreader.

(3) Multi-Lane Divided Facility (Slope from Median) - Same as roof-type crown, with an additional pass with the left-hand plow on the median shoulder in order to move the windrow over far enough so that it does not drain back across the roadway.

It is important that plowing patterns in and around interchanges conform to the needs and physical characteristics of the individual location. Pavement obstructions such as curbs, raised button delineators, rumble strips, and the like must be considered when establishing the plowing patterns on interchanges. The most prevalent problem on interchanges is the lack of adequate area for storing snow. For this reason, specific plowing patterns for each interchange should be developed and the assigned operators thoroughly indoctrinated in the plowing sequence.

Other considerations and special attention should be given:

(1) Drainage of melting snow.

(2) Removal of windrows from ramps, entrances and exits.

(3) Loss of plow path width on sharp curves.

(4) Sight distance when using gore areas for snow storage.

USE OF ABRASIVES

The most prevalent and effective use of abrasives takes place when the temperature is 20ºF. (-7ºC.) or below and falling. This is due to the fact that direct chemical applications lose most of their effectiveness under these conditions and can sometimes

create a hazard by virtue of the fact that the weak brine solution created by the limited melting action will refreeze.

The purpose of abrasive application is to provide traction, and is not intended primarily to remove snow and ice. Abrasives are to be applied only to ice and/or packed snow and are not to be applied routinely during the course of a storm.

In order to provide for adhesion of the abrasives to the hazardous areas, they shall always be mixed with either calcium or sodium chloride. Preferably they should be premixed in order that the abrasives will have developed a moist coating prior to being applied. The recommended mix ratio is 20 parts abrasives to 1 part chloride. An application of 1200 pounds per two-lane mile is generally sufficient. Once the abrasives have been applied, the treated areas should not be plowed until they become slushy.

Sufficient mixing can take place by constructing the stockpile of alternate layers of abrasives and chemicals in the appropriate quantities, with the first layer always consisting of abrasives. The subsequent loading, hauling, and spreading of the components will provide a reasonably uniform mixture.

Chemically-treated abrasive stockpiles should always be kept covered, and the same precautions taken as with chemical stockpiles.

CLEAN-UP AFTER A STORM

Immediately after a snow or ice storm and the pavement is bare, there still remains very much for maintenance forces to do:

(1) Shoulders should be winged back to get the snow as far from the travelway as possible.

(2) Shoulders in front of mailboxes should be plowed.

(3) Drainage structures should be cleared of obstructions so that melting snow will not be trapped on or near the travelway.

(4) Windrows of snow on bridges should be removed.

(5) Traffic medians and barriers should be cleared of snow and ice as required to avoid melting and refreezing on the pavement.

(6) Tree limbs and other debris should be removed from the right of way as soon as possible.

Immediately after each storm, all equipment should be inspected and scheduled for repairs as required. These preventive measures should include:

(1) Inspection of all spreader pumps, hosing, fittings, spinners, augers, engines, controls, and attachments.

(2) Inspection of plows for blade wear.

(3) Inspection of all flashers, lights, lenses, lamps, wiper blades, and other safety equipment.

(4) Replacement of needed flashlight batteries, flags, flares, and other consumable safety equipment.

(5) Removal of salt from all vulnerable surfaces of equipment and the application of appropriate lubricants to these surfaces for protective coating.

SUPERVISOR'S CHECKLIST

Prior to the beginning of each winter season, the Highway Maintenance Engineer should be able to answer each of the following questions in the affirmative:

(1) Have all employees received training in snow and ice removal procedures?

(2) Has all snow removal equipment been inspected and spreaders calibrated?

(3) Has a "dry run" been conducted?

(4) Has a schedule of assignments been developed?

(5) Are all highway segments sized to the equipment assigned?

After a storm and all routes are open, the Highway Maintenance Engineer should be able to answer all of the following questions in the affirmative:

(1) Has the chloride usage been reported to the District office?

(2) Have shoulders been winged back?

(3) Have shoulders in front of mailboxes been cleared?

(4) Are all drainage structures clear?

(5) Have windrows on bridges been removed?

(6) Has all snow removal equipment been inspected and needed repairs scheduled?

(7) Have all vulnerable surfaces on equipment been washed and treated with a protective coating?

APPENDIX I
SALT STORAGE

Storages should protect chemicals from direct precipitation at all times, and keep the material within prescribed bounds.

Storages should be large enough to hold 50-100% of seasonal requirements without overflowing, not require special handling procedures for rapid loading, allow enough vertical clearance for delivery trucks and raised loader buckets, allow maneuvering room for loaders, and be reinforced or protected at key points.

Caution should be exercised in locating storage sites. They should not be built near wells or water sources since chlorides will seep into the ground and contaminate water supplies. Storage sites should be located higher than the surrounding area to prevent water run-in. In areas with particularly vulnerable water supplies, all brine runoff must be contained in a lined collection basin from which brine is pumped out for removal to a nonsensitive area.

Storage facilities should meet all requirements in the most economic manner, and be kept in satisfactory condition. The facilities can be one of several types: domes, cribs with covers, sliding-roof cribs, buildings, sheds, or a covered stockpile on a pad.

Crib floors should be paved with bituminous materials with at least 8 inches of slope from the center to each end. There should be a full apron extending ten feet beyond the end of the walls. The pavement should be a minimum of 2 1/2 inches of bituminous concrete over 6 inches of compacted ABC material. Covers should be of vinyl-coated nylon or reinforced polyethylene with grommets or eyelets for lash-down, or should be of a sliding-roof type construction.

Storage areas should be adequately lighted for night operation. They should also be adequately ventilated, particularly for indoor loading and unloading operations.

Arrangements should be made for chlorides to be delivered for storage by early October. A premixed supply of calcium chloride/salt and abrasives should be kept in stock under shelters or protected from moisture, and ready at all times for immediate use during the winter season. Mixing should be done well in advance of the winter season.

When the temperature is 20ºF. (-7ºC.) or below, a mixture of calcium chloride and salt may be necessary. Adequate mixing of calcium chloride with the sodium chloride can be obtained by using a force-feed loader fitted with a hopper positioned over the belt in

APPENDIX I
SALT STORAGE

the loading operation. Another method is to apply calcium chloride in solution to the top of the load of salt in each truck.

Sodium chloride shall meet AASHTO M-134 specifications with the following exceptions:

1. Moisture content - 3% maximum. A 1% penalty will be charged for each percent of moisture above 3%.

2. Sodium chloride content - 97% minimum based on dry weight.

3. Supplier must furnish three (3) copies of a certification with the delivery ticket on each load, which will reflect (A) gradation, (B) purity and (C) moisture content.

4. Gradation requirements:

Sieve	% Passing
1/2”	100
#30	not more than 10%

5. Non-caking additive - when shipped in bulk, sodium chloride shall contain an anti-caking additive.

NOTE: A minimum of 25 PPM of non-caking additive is required to assure proper handling conditions for the salt.

Trucks and spreaders should be loaded, if possible, inside the storage shed in order to reduce spillage and clean-up problems. Before the spreader truck leaves the shed or loading area, all parts of the truck body should be cleaned off, including catwalks, top edges, tanks, roof, and fenders. The loading area should be kept clean by immediately cleaning up any salt lying on the loading pad, and then getting it back under cover. The salt should be kept dry by keeping it under cover as long as possible before loading it onto trucks. The area surrounding a stockpile should always remain clean, with no foreign materials allowed to be disposed of in the area.

Salt should be handled as little as possible. Excessive handling causes segregation of the different particle sizes, as well as causing the large particles to break down into finer particles which reduces their effectiveness for clearing snow.

APPENDIX II

CALIBRATION OF SALT SPREADERS

Calibration of all chemical spreaders is the most important action the Division of Highways can take to control and reduce the amount of deicing chemicals that enter the environment. Calibration of spreaders not only controls and reduces the amount of material used by it also saves money by providing the desired level of service with less deicing chemicals. The objectives of a thorough calibration program are very accurate knowledge of the amount of chemicals delivered by all units at each spreader setting, and identification and repair of all spreader units that cannot be controlled within the range of prescribed spreading.

Spreaders should be calibrated annually before the winter season begins, and no later than October 15. The calibration should be rechecked during the winter if any of the major parts of the hydraulic system are replaced, if the moving mechanical parts of the spreader are damaged or replaced, or if for any reason the spreading rate becomes questionable.

The calibration technique described in this section is applicable to both drop-in body spreaders and tailgate spreaders, both of which rely upon the rotation of a mechanical element (an auger shaft or flite-chain sprocket shaft) for feeding chemicals to the spreader mechanism.

EQUIPMENT REQUIRED

(a) A scale for weighing the amount of salt up to 100 lbs.

(b) A means for collecting the salt to be weighed, either by using a canvas, sack, or a large bucket.

(c) A stopwatch or watch with a second hand for timing shaft revolutions.

(d) A shaft tachometer (if unable to count the shaft revolutions).

(e) A marking pen, paint brush, or other means for marking the end of the auger or shaft.

(f) Calibration worksheets and a clipboard. (See page 20 for the worksheet.)

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CALIBRATION PROCEDURE

The following procedure is recommended for the calibration of spreaders that do not have ground-speed controllers:

- Clean the shaft end of the auger or flite-chain sprocket shaft. Place an index mark on the end of the shaft so that the number of revolutions per minute can be counted at each dial setting. If the shaft end is not exposed, mark the auger flite sprocket.

- Remove the spinner disc, or by pass the spinner motor with a hydraulic line. If the spinner cannot be removed, and a bypass is not feasible, use extreme caution with the rotating spinners.

- With the spreader system running and empty, let the truck idle long enough to warm the hydraulic oil to normal working temperature.

- Place a half load of salt in the truck body to put a load on the spreader. The partial load will simulate actual working conditions.

- Open the throttle so the engine is running constantly at approximately the working speed. If the truck is equipped with a tachometer, set the throttle at the engine speed normally used during salting.

- For hopper-type spreaders, open the gate to approximately 1 1/4 inches. (Note: Trial and error adjustments may have to be made in the gate opening in order to get the desired spread rate. Once this rate is achieved, the procedures may continue.)

- Fill the spreader auger or conveyor with salt by rotating it a few turns.

- Set the spinner motor control to its usual level.

- When the auger is full, place the canvas, the bucket or the bag under the discharge opening so that all of the salt discharged is caught. Allow the auger or the sprocket to make five full turns at a low setting and collect the salt that is discharged.

- Weight the salt, deducting the weight of the canvas square, bag, or other collector. Accuracy is important because this factor is used repeatedly in the calculations. Then determine the average weight per revolution by dividing the net weight by five, and enter in Column 3 of the worksheet. Once the weight per revolution has been established, that weight will remain constant throughout the calculating procedure.

APPENDIX II

- To determine the number of revolutions per minute (RPM), use a stopwatch or a watch with a second hand; count the number of RPM's of the auger or flite-chain sprocket shaft at each control setting. If necessary, use a hand tachometer. Record these in Column 2 of the worksheet.

CALCULATIONS

The worksheet now contains two pieces of data needed for calculation of the amount of salt that will be discharged in one minute. Multiply Column 2 by Column 3 and enter the results (discharge rate in lb/min) in Column 4.

To complete the calculation, you need to know the number of minutes required for the truck to travel one mile at various road speeds. These are tabulated in Table 1 and shown in Columns 6-9 of the worksheet. To calculate the amount spread per mile when the truck is traveling at 15 mph, multiply Column 4 by the constant shown at the head of Column 5 and enter the result in the proper place. Likewise, to determine the amount spread at 20, 25, 30, and 35 mph multiply Column 4 by the constants at the top of Columns 6-9, respectively, and enter the results in the proper spaces. Perform these calculations for every control setting.

As an illustration of how the table is used, assume, for example, that the auger or flite-chain sprocket discharges 8 lb. of salt (Column 3) each time it makes one full revolution at control setting number 3 and that the auger turned 10 times per minute (Column 2). Obviously, the spreader will put out 80 lb. per minute at that setting (Column 2 times Column 3 and the result entered in Column 4).

At a speed of 15 mph as shown in Table 1 the truck moves one mile every 4 minutes. Therefore, 80 lb./min. multiplied by 4 minutes equals 320 lb./mi. This value is entered in Column 5 for control setting number 3. This procedure should be repeated for each control setting and at the various speeds at which the material is spread. Record all data on the worksheet.

The next set of calculations determines the distance that the spreader truck will travel for various control settings and vehicle speeds before the complete load is exhausted. These values are useful for checking the calibration and overall performance of the

APPENDIX II

spreader. In Column 11 of the calibration worksheet, enter the size of the load in pounds for the material (salt and sand or mixtures thereof). This should be the weight of the material when it is loaded level with the top of the screens or the top of the spreader hopper (provided this does not exceed the vehicle's legal gross weight). This value can be obtained either from the spreader manufacturer or by weighing a truck full of material and entering the amount in the line provided in Column 11. To calculate the time required to empty the spreader for various control settings divide Column 11 by Column 4, and enter the results in Column 12. The miles that a truck will travel at 15 mph before the load is exhausted is determined by the division of Column 12 by the constant given at the top of Column 13. Likewise the miles a truck will travel before its loads are exhausted at 20-35 mph are calculated in Column 14 through 17, respectively, on the calibration worksheet. Results should be entered in these columns to the nearest 0.1 mile.

Table 1 VEHICLE SPEED CONVERSION FOR SPREADER CALIBRATION

Vehicle Speed (mph)	Time to Travel One Mile (min)
10	6.00
15	4.00
20	3.00
25	2.40
30	2.00
35	1.71
40	1.50
45	1.33
50	1.20
55	1.09
60	1.00

APPENDIX II

TRUCK CALIBRATION CARD

The last step in the calibration of spreaders is to transfer the results of the calculation onto a calibration card, which will be carried in the cab of the truck.

The calibration worksheet should be placed on file either in the maintenance record for the truck or in the district office. The truck calibration card should be placed in a convenient location in the truck so that it is available for quick reference during a storm.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
SALT SPREADER - CALIBRATION WORKSHEET

DIVISION _____ COUNTY _____ DATE _____ BY: _____

TRUCK EQUIPMENT # _____ SPREADER EQUIPMENT # _____

(1) Control Setting	(2) Loaded RPM	(3) Dischg. Rate (Lb/Rev)	(4) Dischg. Rate (Lb/Min)	(5) 15MPH X 4.00	(6) 20 MPH X 3.00	(7) 25 MPH X 2.40	(8) 30 MPH X 2.00	(9) 35 MPH X 1.71
				-------AMOUNT SPREAD PER MILE TRAVELED ----------				
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

(10) Control Setting	(11) Size of Load (Lb)	(12) Min. Required to Empty	(13) 15MPH ÷ 4.00	(14) 20 MPH ÷ 3.00	(15) 25 MPH ÷ 2.40	(16) 30 MPH ÷ 2.00	(17) 35 MPH ÷ 1.71
			----------MILES TRAVELED PER LOAD ----------				
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							

EMERGENCY RESPONSE & PROCEDURES
FLOODS & OTHER EMERGENCIES

Safety: As with all Department activities, safety must be at the forefront of our pre-event planning and preparation activities. Please refer to SOP's pertaining to floods on page I-2 of this manual.

A. PRE-EVENT PLANNING

1. General

The Department of Transportation responds to a variety of emergencies and disasters. These could range from the wide spread disaster of a Category 5 hurricane, to a small chemical spill on a rural secondary road. The impact of these situations to the traveling public could traverse the spectrum from rerouting the traffic from an Interstate or Primary route that carries in excess of 40,000 ADT through a major municipality, to that of closing one lane of traffic of a rural road that carries less than 60 ADT. Even though the response, personnel and action required from these two disasters would be completely different, there are some things that can be performed beforehand that would make our involvement not only timely and efficient, but also provide an immediate response to protect life and property.

Pre-planning is essential not only for effective traffic management during any emergency or disaster, but also to insure the timely completion of all debris removal and repairs of State System roads.

2. Personnel

Every department is required to respond to any disaster when requested. Typically, however, most incidences require the involvement of the Maintenance Department, Bridge Maintenance Department, Traffic Services Department, Incident Management Department and the Equipment Department. There should always be a current and updated list of all supervisory personnel with their home phone numbers, cellular phone numbers, pager numbers and radio call numbers available to the supervisory staff. It would also be advantageous to have a list of personnel from other departments in the Division, that have experience driving a dump truck, operating radios, operating a chain saw, monitoring fully operated equipment, etc. This list should be placed in the local plan at the end of this chapter.

The Department's response to an emergency or disaster depends on the incident. It is very important that all employees are properly trained in the hazards of performing duties in less than ideal working conditions. The Skill Based Pay program is an excellent tool for developing a safe and efficient work force.

3. Equipment

In addition to making sure that its own equipment complement is adequate and in good working order, each department should have a list of available contractors, fully-operated equipment, and rental equipment that could be used in any emergency. This may include, but is not limited to, chain saws, dump trucks, backhoes and loaders with 4 in 1 buckets, excavators, small cranes, tower lights, pumps and generators. This list (Form ERPM-3) should be kept current and placed in the local plan at the end of this chapter.

4. Communication

It is also important to have an adequate number of radios and cellular telephones for emergency situations. This is especially important when there are power outages during and following events. The Division Engineer or his designee should develop plans to reassign cellular phones and mobile radios from other departments within the division during events. Additionally, cellular telephone companies will often agree to provide extra phones to the Department in emergency situations. These companies should be contacted by the Division Engineer or his designee to see if this service can be provided.

Communication to the public is also crucial during a major weather event. Both the TIMS program and the 511 system are tools used to help deliver this information. Employees should be trained in how to enter events into the Traveler Information Management System (TIMS). Road conditions during an event should be updated as conditions change. At a minimum, information should be updated at 7:00 AM and 4:00 PM. If employees have problems entering information or accessing TIMS, they should call the State ITS Operations unit for assistance. Contact information can be obtained at 919-233-9331, extension 243. This number will provide you with the pager, cell, and home phone numbers for the ITS person on call. They are available 24x7 to assist the field offices.

5. Facilities

All facilities that are to be used for emergency operations should be readied for such use. These facilities should not be prone to flooding and the buildings should be able to withstand high winds and heavy rains with minimal damage. Also, a generator should be provided for emergency power and communications at each emergency operations facility. The capacity of generator to be used should be adequate to run all electrical equipment that will be needed. At a minimum, the generator should operate the fuel station, the radio, the telephone, lights, etc. Although possible, it is not recommended that computers be operated from generators. Preferably all emergency operation facilities (county maintenance yard, bridge offices, equipment shops, district office, and division office) should be equipped with an adequate, well maintained, and permanently mounted generator. As a part of emergency preparedness, the Division Equipment Superintendent should have these generators checked on a monthly basis to insure that they will be operational when needed.

Consideration should be given by local managers to identify alternate facility locations in case primary facilities are heavily damaged and unworkable following an event. Those

facilities prone to flooding should have designated alternative facilities identified to maintain operations and to minimize employee hazards.

6. Materials and Supplies

Although it is not practical to maintain a constant inventory of materials to handle every emergency situation, every department should have a sufficient number of barricades, detour signs, road-closed signs, etc. to be able to adequately close and detour traffic on several roads at one time. It is also recommended to have on hand, and easily accessible, an adequate supply of cones, barrels, signs, etc. to close one to two lanes of an Interstate or Primary route in a timely manner and in accordance with the Manual on Uniform Traffic Control Devices (MUTCD). Also, every department should have an adequate supply of emergency response items such as sand, water truck with sprayer, spill response kits, etc. to handle certain emergencies.

7. Detour Routes

Detour routes may become necessary during a response to an emergency. Some events that may require detouring traffic include wildfires along the shoulder, downed trees across the road, traffic accidents, chemical spills, culvert failures, etc. These events are almost always unforeseen, therefore, detour routes for all major roads and structures should be pre-established by each division. All detour plans should include coordination between adjacent counties and districts, neighboring divisions and, when necessary, other states.

When a detour becomes necessary, the Division protocol should be followed to implement detour routes. This protocol should include Traffic Services as well as local officials and law enforcement agencies. In some instances, Incident Management Plans have been established for major route detours including VMS locations. These plans should be followed as appropriate.

8. Debris Removal and Disposal

The County Maintenance Engineers should work with local officials to determine waste sites for debris disposal or stockpile before an event occurs. Counties will often provide these or allow disposal at landfills. A good pre-event planning will eliminate the need for last minute rushing to provide for disposal. Refer to Chapter VI on Debris Removal and Disposal for more information.

B. RESPONSE DURING AN EVENT

Typically a response is initiated when the supervisor receives a call from a local law enforcement agency, private citizen or the emergency management office. A stand-by crew may be needed when severe weather warnings or watches have been issued.

Depending on the particular event, the Department could be closing roads and detouring traffic, removing debris from the roadway or inspecting the system roads and bridges for damage. Inspections may require the involvement of supervisory personnel and the creation of several teams consisting of personnel from other departments.

The District Engineer or designee will submit a road conditions report as required. The report will be web based and will keep DOT management updated. This information will also be posted to the DOT web page to keep the public informed of the most recent travel conditions.

C. POST EVENT ACTIVITIES

After an event occurs, it is the goal of the Department of Transportation to provide an immediate response to protect life, property, and the environment. It is the responsibility of the Department to perform all operations in a safe manner.

It is important to inspect the roadways, guardrail, structures, signs and facilities for damages. This could be performed by either a supervisor or a team of employees other governmental agencies of any additional detour routes.

Debris removal and disposal should be performed in a safe and timely manner and in accordance with the guidelines and procedures outlined in Chapter VI of this manual.

All updated roadway conditions should be entered into the Travel Information Management System (TIMS). This information should include roads that are flooded, roads that are damaged, and the anticipated time (date) these roads will be reopened. The information should be updated as often as needed to reflect any changes. TIMS is located on the web at www.ncsmartlink.org. If web access is not available, please call the ITS Operations Unit at 919-233-9331 for assistance. It may be necessary to provide this information to the local media in accordance with Public Information and The News Media.

Requests from local emergency management officials and other agencies for any work outside the normal scope of DOT operations should be directed through the state emergency operations center.

In the event that a state of disaster or imminent threat of a disaster is declared, the Department of Crime Control and Public Safety, Division of Emergency Management has the authority (Chapter 166A, NC Emergency Management Act of 1977) to task the North Carolina Department of Transportation (NCDOT) to perform emergency work on non-

system roadways. The NCDOT should receive the request for any non-system roadway work from the Division of Emergency Management. The NCDOT has the authority to perform this type of work, with the coordination and approval through the Chief Engineer's Office.

Employees should be aware of and should follow proper requirements for documenting and recording work accomplished in the aftermath of storms. This would normally include charging to the proper WBS storm configuration, estimates, time keeping, job reports, damage assessments, Emergency Response Daily Status Report (Form ERPM-4) etc. (Refer to Chapter VIII on Documentation & Record Keeping)

Each unit should cooperate fully with FEMA and FHWA in efforts to assess damages and obtain required information for possible cost reimbursement.

Timely and accurate documentation is a very important part of any emergency situation to insure that all of our costs are correctly captured. When an area is declared a disaster area, the department may be eligible to be reimbursed for some of the costs associated with the repair of the system roads due to this event. (Refer to Chapter VIII on Documentation and Record Keeping).

Flood Safety Actions

- Be aware of streams, drainage channels and areas known to flood.
- Avoid driving into water of unknown depth. Moving water can quickly sweep your vehicle away.
- Stay away from downed power lines.

Additional Information (Local Plan, Memos, etc.)

Media Contacts During Emergencies

In an emergency situation you can expect media coverage. To avoid misinformation and confusion, there should be a regular free flow of accurate information to the media. Providing good information to the news media can make operations safer for NCDOT employees as well as the traveling public.

A. Pre-event Planning

Prior to any event you should make a list of who to contact in the case of an emergency with phone numbers. This list should include the appropriate Division and District Office staff, Emergency Management and the local news media.

B. During An Event

The District and Division Offices should be notified immediately in the case of road closings and should be provided with regular updates as the event progresses. The Division Office will notify the Chief Engineer's Office of all road conditions as requested.

The local media and the local emergency response offices should be notified of all road closings and associated detours to provide timely notification to the traveling public. Any information sent to the medial should also be copied to the DOT Public Information Office.

Where be necessary, variable message signs should be utilized on major routes to assist in the notification of detours.

C. How to Talk to the Media

When you talk with the media, the information you provide should be accurate, factual and based on firsthand knowledge of the subject. If ;you do not know the answer to a question, offer to get the information or direct the reporter to the proper source.

When a reporter wants an interview, make an assessment of the situation and be prepared to answer Who?, What?, When?, Where?, Why?, How?, and What is next? If your division prefers to handle the media through the NCDOT Public Information Office, refer them to (919) 715-2391.

Public Information and The News Media Guide

Do not avoid the media

Do not speculate on causes of the incident or how it could have been prevented

Do not offer your opinions

Do not go “off the record”

Do not be distracted by small talk

Do give information that reassures the public you are taking steps to do the right thing

Do stick to the facts in the situation

Do ask the reporter what the interview is about before you go on camera

Do assume every word you say will be recorded and quoted

Do be judicious in what you say to a reporter and remember the vast audience

Do answer only the question they ask

Do practice your remarks before talking with a reporter

Do tell the truth!

EMERGENCY RESPONSE & PROCEDURES
DEBRIS REMOVAL & DISPOSAL

A. NATURAL DISASTERS

1. Hurricanes

The damaging forces of hurricanes and tropical storms include high-velocity winds (up to 150 miles per hour or higher in gusts), storm surge and wave action. The most severe damage frequently occurs in the shorelands adjacent to the ocean. The resultant debris consists primarily of trees, construction materials from damaged or destroyed structures, personal property and sediment. Although the greatest concentration of debris may occur in coastal areas, flooding and tornadoes spawned by hurricanes can cause damage and leave extensive amounts of natural and manmade debris far inland.

Experience has proven that hurricanes and/or tropical storms that move along the mountains tend to result in heavy damage to infrastructure. The volume of rain associated with these storms when diverted down steep terrain can have a devastating effect on bridges, pipes, and roadway. In addition, excessive moisture can create slope instability resulting in mud and rockslides.

2. Tornadoes

Damage from tornadoes is caused by high-velocity rotating winds. The severity of the damage depends on the velocity of the tornado funnel and the length of time the funnel is on the ground. Tornado debris consists primarily of trees, construction materials from damaged or destroyed structures and personal property. Damage is generally confined to a narrow path, which can be up to ½ mile wide and from 100 yards to several miles long.

3. Floods

Damage to structures from flooding is caused either by inundation or high velocity water flow. Structural damage is usually limited to the floodway and the floodplain area immediately adjacent to the river. Heavy structural damage may result from high velocity waters in mountainous areas, or failure of a flood control project, such as a dam or levee. Flood debris consists of sediment, wreckage, personal belongings and sometimes hazardous materials

deposited on public and private property. Additionally, heavy rains and floods may produce landslides; in such cases, debris consists primarily of soil, gravel, rock and some construction materials

3. Wildfires

Debris from wildfires consists of burned out structures, cars and/or other metal objects, ash and charred wood waste. Large-scale loss of ground cover may lead to mudslides, resulting in clogged drainage structures and possible damage to homes and bridges.

4. Ice Storms or Snowstorms

Debris from ice storms or snowstorms may consist of significant amounts of woody debris from broken tree limbs and branches.

B. PRE-DISASTER PLANNING

Major natural and manmade disasters can generate enormous volumes of debris in short periods of time. Debris clearance, removal and disposal operations must be implemented quickly to expedite recovery operations and to protect public health and safety of the local population.

The type of debris that can be expected following a disaster may include such things as trees, sand, gravel, building construction material, vehicles, personal property, and hazardous materials. The quantity and type of debris generated from any particular disaster will vary by location and kind of event experienced, as well as its magnitude, duration, and intensity. In addition, the location and size of the area over which it is dispersed may have a direct impact on the type of collection and disposal methods utilized to address the debris problem, associated costs incurred, and how quickly the problem can be addressed. In a major or catastrophic disaster, many state agencies and local governments may have difficulty in locating staff, equipment and other resources to devote to debris removal. If the disaster requires, the Governor would declare a state of emergency that authorizes the use of state resources to assist in the removal and disposal of debris. In the event Federal resources are required, the Governor would request through FEMA a Presidential Disaster Declaration. In these cases, private contractors may play a significant role in the debris removal, collection, reduction and disposal process. The debris management program should be based on the waste management approach of reduction, reuse, reclamation, resource recovery, incineration and landfilling.

1. Mission

It is the mission of the North Carolina Department of Transportation to pick up, reduce and dispose of all type of debris caused by a hurricane, snow & ice storm, flood, tornado, wildfire, or other disaster. The department will be responsible for the removal of debris from the state system road right of way.

Requests for the removal of debris from non-state system road right of way by local emergency management officials or other agencies should be directed to the State Emergency Operations Center.

In the event that a state of disaster or imminent threat of a disaster is declared, the Department of Crime Control and Public Safety, Division of Emergency Management has the authority (Chapter 166A, NC Emergency Management Act of 1977) to task the North Carolina Department of Transportation (NCDOT) to perform emergency work on non-system roadways. The NCDOT should receive the request for any non-system roadway work from the Division of Emergency Management. The NCDOT has the authority to perform this type of work, with the coordination and approval through the Chief Engineer's Office.

2. Debris Disposal

All activities associated with massive debris clearance, removal and ultimate disposal operations depend upon the availability of suitable permanent debris disposal sites, and temporary debris storage and reduction sites. Identifying these potential disposal sites before a major natural disaster will expedite debris removal and subsequent volume reduction and disposal actions. The County Maintenance Engineer should work closely with other local, county and State officials to develop and maintain a current list of permanent debris disposal sites, and potential temporary debris storage and reduction sites in their areas and included in the local plan. No debris should be hauled to a temporary debris storage and reduction site without prior approval of the Division Engineer.

The North Carolina Department of Environmental and Natural Resources (NCDENR) maintains a list of approved disposal sites, which are posted on their web site at *http://www.wastenotnc.org/sw/emdb.asp*. NCDENR classifies the disposal sites into different categories based on the type of debris the site will accept. These categories are as follows:

Construction & Demolition Landfill (CDLF). Commonly referred to as C&D Landfills. Disposal of debris generated from construction and demolition projects. Non-putrescible waste only. Includes waste from cleanup operations including trees, limbs, poles, building and housing materials and similar debris.

Land Clearing and Inert Debris Landfill (LCID). Sometimes referred to as Demolition Landfills. These facilities may dispose of land clearing and cleanup waste such as trees, yard waste, and similar debris. Unpainted or untreated wood waste may be accepted at LCID landfills. LCID landfills also handle concrete, brick, concrete block, uncontaminated soil, rock, and gravel such as that from around underground storage tanks should not be taken an LCID landfill. Also, used pavement asphalt may be disposed of at LCID landfills.

Municipal Solid Waste Landfill (MSWLF). These facilities may accept solid waste except for waste classified as hazardous. Trees and yard waste are not disposed of in these types of landfills, i.e.: filled and buried. However, these facilities typically have provisions for storage and stockpiling of trees, limbs, and similar debris until such time as the debris can be chipped up for mulch, composted, or disposed of using other methods. Individual counties

or facilities should be contacted for instructions regarding where and when to bring waste to these facilities.

Mixed Waste Processing-Construction and Demolition (MWP-CD). These facilities accept segregated and mixed construction and demolition waste, which can include clean up debris. Typically these facilities separate waste for recycling and reuse. Contact the individual facility to determine the types of waste they can handle and the process.

Yard Waste Facilities (YW). These facilities accept yard waste and land clearing debris. These facilities usually grind or chip wood for producing mulch or compost. Due to anticipated heavy demand, contact these facilities to determine if waste should be taken directly to the facility or to some other preliminary staging area.

Failure to address debris disposal requirements early may lead to complex problems later.

3. Debris Assessment

One of the first activities that must take place following a major disaster is an assessment of the type and amount of debris to be removed. If the damage is widespread, the County Maintenance Engineer will be focused on organizing the recovery effort and may need additional assistance to conduct a thorough damage assessment. The Division Engineer should identify additional personnel, such as construction technicians, to assist in the assessment. The staff must be able to assess debris based on quantities and types by system. This identification of supplemental personnel should be done as a part of each year's review.

The Division Engineer and his staff should be prepared to take the following actions:

- Develop a reliable initial assessment of the disaster's magnitude. This will enable decision-makers to assess labor and material requirements for responding to the debris disposal situation.
- Employ local contractors to expeditiously remove debris from the roadway.
- Coordinate with local, state, and law enforcement authorities to ensure that traffic control measures expedite debris removal activities.

4. Public Information

One of the most important activities that needs to be addressed immediately following a disaster is the dissemination of information to the general public. The department's Public

Information Office (PIO) in conjunction with other agencies will develop and distribute press releases on the recovery effort. The County Maintenance Engineer should maintain communication with the local emergency operations center to help with the dissemination of information at the local level.

These public notices typically include actions that the public can perform to expedite the cleanup process, such as the following:

- Separating flammable and nonflammable debris.
- Segregating household hazardous waste. (solvents, pesticides, etc.)
- Placing debris at the curbside.
- Keeping debris piles away from fire hydrants and valves, power, telephone and cable overhead lines and other utilities.
- Reporting locations of illegal dump sites or incidents of illegal dumping.
- Segregating recyclable materials.
- Debris pick-up schedules.

C. DEBRIS CLEARANCE, REMOVAL AND DISPOSAL

A major storm can produce a tremendous amount of debris. This type of storm will require the development of a large-scale debris clearance, removal management strategy by dividing the operation into two phases. Phase I consists of clearing debris from roadways that pose an immediate threat to public health and safety. Phase II consists of removing and disposing of debris.

1. Phase I: Emergency Roadway Debris Clearance

In Phase I, roadway debris is quickly moved to the side of the road to provide access into devastated areas. At least one lane should be cleared on each arterial, major and secondary road as soon as possible. No attempt is made to remove or dispose of the debris, only to provide clear access routes to allow for:

- Movement of emergency vehicles.
- Law enforcement.
- Resumption of critical services.
- Damage assessment of critical public facilities and utilities.

Following a disaster, the top priority is to clear major arterial roads, including roads leading to hospitals and health care facilities. The County Maintenance Engineer should assign each available crew responsibility for certain roadways according to the local plan.

Immediate debris clearing actions should be supervised by the County Maintenance Engineer and should include all available personnel and equipment resources available. Request for additional personnel should be channeled through the appropriate District Engineer and to the responsible Division Engineer. Phase I crews should be equipped with

chain saws to cut downed trees. This activity is hazardous and the applicable SOP's should be consulted before this work begins. All personnel should wear protective safety equipment, such as gloves, goggles, safety toe shoes, chaps, hearing protection, hard hats (where applicable), etc. **Never attempt to remove or cleanup fallen trees and vegetation**
while downed power lines are in the immediate area. Wait until the power company gives you clearance to proceed with the work.

2. Phase II: Debris Removal and Disposal Responsibilities

The general concept of disaster debris removal operations should include multiple scheduled passes of each area affected by the disaster. The manner of debris removal allows citizens the opportunity to return to their properties and subsequently bring all debris to the edge of the right-of-way for removal.

a. Curbside Separation

Good curbside separation is critical in the early stages of cleanup. However, even when the homeowner takes time to separate flammable, nonflammable and other hazardous debris, care should be taken by removal crews to keep the debris separated. This effort will pay dividends in the long run because good sorting will make the final disposal much faster and cheaper.

b. Crew and Equipment

For planning and work load calculations, the county maintenance engineer should establish as many debris removal crews as possible using available privately owned fully–operated rental equipment and contract resources to supplement DOH personnel. A Typical crew should consist of a supervisor, flagmen, chainsaw operators, backhoe/loader operator and dump truck drivers. Some consideration should be given to the number of dump trucks required for each crew based on length to haul to disposal site. Use of private dump trucks to supplement DOH forces can help stretch limited personnel and equipment to cover more of the affected area.

Should it become necessary to transfer personnel and equipment from other Divisions into the affected area, it is anticipated that additional support personnel will be sent along with the work crews such as County Maintenance Engineers, and if needed, Low Boy with operator, Processing Assistant, Transportation Technician and Fuel Truck with operator.

c. Debris Removal Utilizing State Forces and Fully Operated Rental Equipment

Once a truck is loaded with debris at the work site, the supervisor should fill out a load ticket, which usually consists of one white original copy and one carbon copy. The load tickets issued by the supervisor are the department's verification of the amount of debris removed. Load ticket books are available in inventory; there are two types, system and non-system.

Original
The debris pickup supervisor should fill in the date, truck number, estimated volume in cubic yards, and departure time and sign the ticket. The supervisor should keep the original in the book and give the copy to the driver.

Copy
Upon arrival at the disposal facility, the driver should give the ticket to the disposal site monitor. The disposal site monitor should fill out the arrival time, estimate the amount of material on the truck in cubic yards if different from the debris pickup supervisor's estimate, sign the ticket, and return to the truck driver.

At the end of each day, the copies should be submitted to Maintenance Office personnel, who should match and compare the tickets. The procedures can be modified to meet local requirements.

The Federal Emergency Management Agency (FEMA) will reimburse only reasonable costs. Therefore, it is essential that those responsible for monitoring debris clearance, removal and disposal activity be prepared to certify the accuracy of the amounts of debris hauled.

D. CONTRACTING PROCEDURES

Contracting for labor and equipment may be necessary if the magnitude of the emergency debris clearance, removal and disposal operation is beyond the capabilities of local DOH resources. The Division Engineer and staff should be familiar with contracting procedures, as they will be required to define specific debris removal tasks and recommend specific contract types based on the magnitude of the debris clearance, removal and disposal operation and the site clearance and restoration requirements.

The primary factors influencing Phase II recovery operations are the composition and volume of debris, the size of the area of debris concentration, the location of temporary storage and volume reduction sites, the location of public or private landfill disposal sites, and requirement for site closure and restoration.

Key personnel should be available to develop, process and administer debris clearance, removal and disposal contracts. The responsibilities entail the following actions:

- Determine the type and method of contracting needed to satisfy specific debris clearance, removal and disposal requirements.
- Supervise the contracting process to ensure conformance of regulatory requirements.

A list of debris contractors should be developed and maintained by each District Engineer and Division Bridge Engineer and included in the local plan. Lists should show equipment and personnel that contractors can provide, contact persons, addresses, phone numbers and counties where the contractor is willing to work (Form ERPM-3).

In addition, there are a number of other issues involved with contracting procedures, including licensing, bonding, insurance, Departmental liability, supervision and certification of work done. Another very important issue, with regard to Federal reimbursement, is a contractor's eligibility for work on Federal Contracts. A list of contractors debarred from Federal Contract participation can be found on the Office of Federal Procurement Policies web site at www.epls.gov/epls/servlet/EPLSReportMain/1. Please refer to Chapter XI on Procurement Procedures for additional information on preparing contracts.

1. Unit Price Contract

The unit price contract uses specific units and prices to develop line item costs and total contract cost, such as hours, tons, or cubic yards.

The units used in the unit price contracts should be as accurately estimated as possible; otherwise, the final amount of the contract could be significantly different from the contract bid received at the bid opening. A sample contract is included in Chapter X, "Procurement Procedures".

2. Unit Price Contract Verification

Proper and efficient verification of quantities at temporary storage reduction or landfill disposal site is essential with unit price contracts because the site becomes the focal point for quantity verification for payment.

When the contract unit of measurement is based on weight, provisions should be made for weighing trucks as they enter the site if not provided by the facility. If the contract unit of measurement is cubic yards, consideration should be given for the installation of inspection stands for the purpose of inspecting loaded trucks.

To expedite filling out the load tickets, all contract trucks should have the contractor's name or initials, the truck number and the measured capacity of the truck. This information should be clearly visibly on both sides of the vehicle.

The contractor's work site supervisor should complete all information on the load ticket, retain one copy (which is returned to the Maintenance Office) and give two copies to the truck driver after completing the initial information.

The disposal site monitors (DOH, County, etc.) should estimate the volume of debris and note arrival time and volume in cubic yards on the load ticket. The disposal site monitor's copy should be returned to the Maintenance Office to be matched against the contractor's work site supervisor's copy for pay verification.

Work site supervisors and disposal site monitors and should read and become familiar with the technical provisions of the contract and should conscientiously estimate each load hauled by the contractor. Improper estimates can lead to large and unnecessary expenditures. If trucks are not fully loaded, monitors should reduce the rated volume of the

truck accordingly. Monitors should always be fair and consistent in dealing with contractor personnel.

3. Special Monitoring Issues

The issues described below highlight the need for local DOH officials to closely monitor large contracted debris clearance, removal and disposal activities.

a. Site Delays

To avoid delays truck tare weights should be established, if possible, before debris hauling begins.

b. Overweight or Unsafe Trucks

DMV Enforcement Officers should be available to issue fines for overweight vehicles and/or obvious safety hazards.

c. Tipping Fees

Vehicles other than those under contract to the department should not be allowed to dump for free or be reimbursed by the department if they have included the tipping fee as part of their overall costs.

d. Excessively Wet Debris

Local site monitors should monitor temporary storage area loading sites to ensure that contractors do not add excessive amounts of water to debris prior to loading. This practice will add unnecessary weight to the load, resulting in overpayment based on weight. Minimal amounts of water may be necessary to keep down dust.

e. Excessive Dirt and Sand

Local site monitors should monitor storage area loading sites to ensure that contractors do not add excessive amounts of non-debris-related dirt and sand. Excavating dirt and sand from a site will add unnecessary weight to the load, resulting in overpayment based on weight and will add to the cost of site restoration. Some minimal dirt pickup is unavoidable.

Additional Information (Local Plan, Memos, etc.)

EMERGENCY RESPONSE & PROCEDURES
EQUIPMENT AND INVENTORY

Safety: As with all Department activities, safety must be at the forefront of our pre-event planning and preparation activities. Please refer to SOP's on page I-2 of this manual.

A. PRE-EVENT PLANNING

1. General

Preparations before the emergency should include reviewing the status of training for personnel and assisting field equipment personnel in ensuring equipment maintenance has been performed to support an effective response to the anticipated emergency.

2. Personnel

The Director of Equipment and Inventory Control Unit and the Division Equipment Superintendent shall ensure that work assignments and responsibilities have been clearly defined for all assigned personnel. If operations are anticipated to extend beyond normal working hours managers shall develop a schedule that fairly distributes overtime required to accommodate the situation.

3. Equipment

Equipment located at the Central Equipment Depot and Division Equipment Shop for support of field units and equipment used for normal operations should be properly maintained to prevent unnecessary delay upon mobilization. Before equipment transfers occur, responsible individuals should ensure that pre-trip inspections and briefings of conditions anticipated are provided. They should ensure appropriate escorts, fuel availability enroute and whether accompanying support technicians will be needed at the site of the emergency. Provision of financial assistance for employees in travel status should be anticipated.

The Division Equipment Superintendent should review any inoperative equipment, that may be essential, in an effort to make this equipment available for the emergency. The Central Equipment Unit will provide assistance with this repair effort. Documentation of expenditures for labor and materials during the event should be kept.

4. Facilities

Facilities used for emergency operations should be maintained in a ready condition. They should be protected against flooding and be able to withstand high winds and heavy rains with minimal damage. A generator should be provided for emergency power and communication at each facility. The generator capacity should be adequate to run all electrical equipment that will be needed. At a minimum, the generator should operate the fuel station, the radio, the telephone, lights, etc. Although possible, it is not

recommended that computers be operated from generators. Preferably all emergency operation facilities

(county maintenance yard, bridge offices, equipment shops, district office, and division office) should be equipped with an adequate, well maintained, and permanently mounted generator. As a part of emergency preparedness, the Division Equipment Superintendent should have these generators inspected, under load, on a monthly basis to insure that they will be operational when needed.

The Unit's Fleet Support Section will provide a list of DOT equipment appropriate and available for any emergency. This list will include equipment located throughout the State by class code and location and will be provided to the DOT representative assigned to the emergency operations center. A list of suppliers for rental of equipment will be maintained at the Equipment and Inventory Control Unit and/or Purchasing Unit. All of this information is available for Division Equipment Superintendent upon request.

Operations at equipment facilities across the State will be monitored to identify any adverse impact on the environment. Environmental concerns will be evaluated and appropriate measures taken.

5. Inventories

The statewide fuel system will be monitored centrally to ensure all fuel sites are operational or that alternative sources of fuel are identified where the normal infrastructure is incapacitated. Central Inventory in Raleigh will maintain a regular inventory plus a seasonal inventory that is subject to augmentation through emergency procurements if required. Division Equipment Superintendent will be responsible to assure that all fuel sites are at maximum capacity in anticipation of emergency events.

All emergency support items should be checked routinely and in a timely manner in anticipation of emergency events. If needed, special orders will be issued to assure sufficient depth of stock. Extra effort should be made to expedite restocking of inventory prior to emergency conditions. See "Emergency Personnel Contacts" on Page VII-4 and VII-5 for support in the inventory area.

B. RESPONSE DURING EVENT

When necessary, managers and/or supervisors are responsible for making sure all employees are in a secure area. They should stay abreast of events, monitor weather conditions and communicate to upper level management.

C. POST EVENT ACTIVITIES

The Director and/or the Equipment Superintendents shall ensure that job assignments and responsibilities are clearly defined for operation beyond normal working hours during the recovery phase. Please see "Emergency Personnel Contacts".

Inventory Supervisors should anticipate a large volume of requests for repair parts and supplies and prepare accordingly.

The Unit's Fleet Support Section will assist the Division Equipment Superintendents in problem areas where equipment required for the recovery phase is down due to labor, parts and warranty repairs. Fuel Administrators will go on-line to determine if fuel sites are operational. For locations experiencing problems, appropriate fuel system employees will be contacted to determine if assistance is required for repairs. Unit Environmental Representatives will stay abreast of environmental concerns.

Equipment Unit will respond to requests from field units for repair of equipment, repair or rebuilding of components and relocation of equipment throughout the State in support of recovery operations.

Please see "Emergency Personnel Contacts" for after hours Equipment Unit assistance.

EMERGENCY PERSONNEL CONTACTS

Equipment Headquarters

Drew Harbinson, Director
Office 919-733-2220
Home 919-553-6280
Cell 919-218-6476

Mark Walker, Fleet Support Manager
Office 919-835-8003
Home 336-421-6851
Cell 336-260-9392

Bruce Thompson, Fleet Procurement
Office 919-835-8005
Home 919-848-4578
Cell 919-810-3248

Quince Watson
Office 252-296-3614
Home 919-284-2827

Alan Bidix
Office 828-682-4616
Home 828-765-4054

Eric Motzno, Environmental Engineer
Office 919-835-8007
Home 919-831-2820

Billy Capps, Maintenance Mechanic V
Office 919-835-8031
Home 919-553-1812
Cell 919-791-3513

Inventory Control Unit

David Vanpelt, Materials Manager
Office 919-835-8002
Home: 910-488-2500

Chris Lyon, Administrative Officer, III
Office 919-835-8006
Home: 919-859-0640

William Stone, Warehouse Manager II
Office 919-835-8042
Home 919-772-7069
Pager 919-737-3659

Vacant, Administrative Officer II
Office 919-835-8041
Home
Cell

Equipment Depot

Jerry Bagwell – Equipment Depot Superintendent
Office 919-835-8057

Charles Jones – Production Planning & Quality Control Manager
Office 919-835-8061

Ricky Ennis - Depot Planning & Scheduling Specialist
Office 919-835-8070

Additional Information (Local Plan, Memos, etc.)

EMERGENCY RESPONSE & PROCEDURES
DOCUMENTATION & RECORD KEEPING

When an emergency situation occurs, hurricane, snowstorm, flood, slide or any other natural occurrence, it is extremely important that we begin documenting all our activities. The documentation must be thorough and accurate. It should include pictures, videos if possible, and estimates of funds and manpower needed to make necessary damage repairs to restore to pre-disaster condition.

The purpose of this section is to assist and train employees on the correct procedures of documentation to capture all related cost. It is the responsibility of the Division Engineer to designate appropriate personnel to make sure thorough and accurate records are kept. All departments and units should use the following information in reference to documentation and record keeping. When instructions in this part of the manual (Documentation and Record Keeping) refer to the County Maintenance Office, all departments should adhere to the same instructions.

All documentation should be kept in separate disaster files at the point of origin.

General: Unique configurations of disaster WBS Elements are used in the SAP Accounting System at NCDOT to accumulate cost in the event of an emergency, catastrophe, or major disaster. This could include the repair, restoration, reconstruction, or replacement of infrastructure or facilities that are damaged or destroyed by a disaster.

There are two Federal programs from which the State may receive funds in the event of an emergency, catastrophe, or major disaster. One is Public Law 93-288, "Disaster Relief Act of 1974," which is administered by the Federal Emergency Management Administration (FEMA), and the other is Title 23, United States Code, which is administered by the Federal Highway Administration (FHWA).

The expenditures incurred by the State on non-Federal Aid system roads are eligible for reimbursement by FEMA, which ranges from 75% to 90% of eligible charges. Costs incurred on the Federal Aid system are eligible for FHWA reimbursement, which ranges from 80% to 100% of eligible charges. All non-reimbursed expenditures are covered with State funds.

The establishment of Disaster WBS Elements will accomplish the following:

A) Allow Division of Highways (DOH) forces to begin charging immediately to repair major damage without the cost being charged against standing maintenance work

orders.

B) Give a true and accurate record of repair costs to the State maintained non-Federal Aid and Federal Aid Systems.

C) Provide specific cost data to the Chief Engineer and the Highway Administrator to determine whether emergency assistance will be requested.

D) Establish a cost accounting system that can be utilized if Federal disaster assistance is requested and eliminate field personnel from having to prepare dual sets of records.

E) Expedite the billing, reimbursement and auditing process between NCDOT and the Federal Emergency Management Administration (FEMA) and the Federal Highway Administration (FHWA).

1. **Disaster Related WBS Elements:** As soon as possible, in the event of an emergency, catastrophe or major disaster, the Chief Engineer or designated representative will request the Fiscal Section to release the preset emergency WBS configuration. A unique set of WBS Elements is established for FEMA and FHWA participation. The Chief Engineer will notify the Division Engineers when the WBS Elements have been released

   WBS Element Coding Configurations for FEMA Declared Disasters: For non-Federal Aid Routes, a unique WBS Element configuration will be released to capture costs incurred and deemed to be eligible for FEMA reimbursement. Primary routes eligible for FEMA reimbursements can be identified by accessing Functional Classification System Maps. WBS element configurations for FEMA declared emergencies are as follows:

FEMA Participation Routes	**DFmmmnn.opppqqq**
DF	FEMA Designation
mmm	Disaster Number
nn	Division
o	System
ppp	County
qqq	Function/Site Code

Notes:

DF represents the FEMA configuration

mmm represents the disaster number

nn represents the 2-digit division number

o represents the road system.

2 – FEMA Route

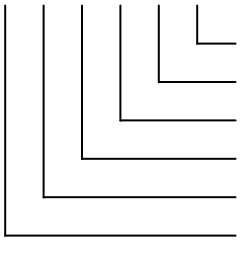
ppp represents the 3-digit county code

qqq represents the function performed or the individual site code.

001 – County Wide Debris Removal
002 – County Wide Emergency Protective Measures
003 – County Wide Signs/Signal
004 – County Wide Stabilization
005 – Snow Removal
006 – Vessel Relocation+
007 – Equipment Relocation+
008 – Dredging Operations+
010 – First Site Specific*

\+ For Ferry Division operation only
* Additional site specific WBS elements may be added

Example: DF11303.2010001



001 - County Wide Debris Removal
010 - Brunswick County
2 - FEMA Route
03 - Division 03
113 - Storm Number 113
DF - FEMA Routes

These WBS Elements will be established for selective counties affected by the declared disaster.

This unique WBS element configuration will be used for the event. Charges will be reported by county utilizing the assigned disaster WBS Element that includes the county number. The Chief Engineer will notify the Division Engineers as soon as the FEMA Disaster WBS Elements are released.

If the disaster is not declared by the President of the United States or the Governor, the cost will be transferred to the appropriate cost centers.

FHWA PARTICIPATION

WBS Element Coding Configuration for FHWA Declared Disaster: For Federal Aid routes, a unique WBS Element configuration will be established to accumulate costs for all Federal Aid Participation Routes (all Interstate, US and NC routes, and Secondary Routes as

outlined in the back of the Emergency Response and Procedures Manual eligible for FHWA Emergency Relief Funds) as follows:

FHWA Participation Routes **mmmnn.opppqqq**

mmm	Disaster Number
nn	Division
o	System
ppp	County
qqq	Function/Site Code

Notes:

mmm represents the disaster number

nn represents the 2-digit division number

o represents the road system.

1 – FHWA Route

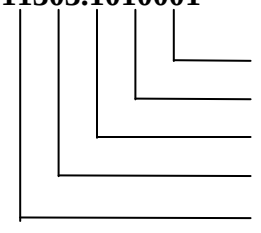
ppp represents the 3-digit county code

qqq represents the function performed or the individual site code.

001 – County Wide Debris Removal
002 – County Wide Emergency Protective Measures
003 – County Wide Signs/Signal
004 – County Wide Stabilization
006 – Vessel Relocation+
007 – Equipment Relocation+
008 – Dredging Operations+
010 – First Site Specific*

+ For Ferry Division operation only
* Additional site specific WBS elements may be added

Example: **11303.1010001**



001 - County Wide Debris Removal
010 - Brunswick County
1 - FHWA Route
03 - Division 03
113 - Storm Number 113

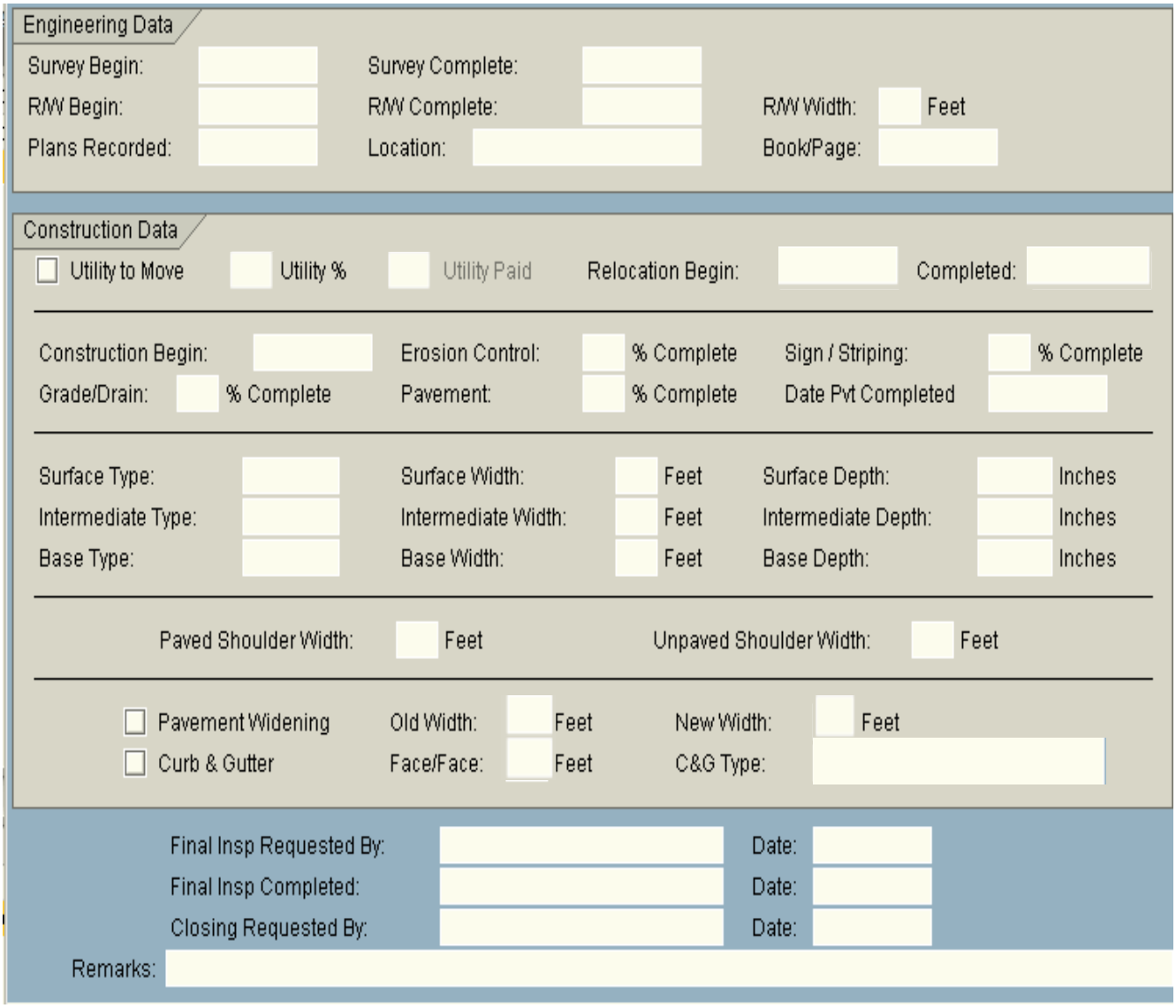
(Note: For FHWA configurations, there is no DF prefix to the WBS Element. DF signifies a FEMA configuration.)

The Chief Engineer will notify the Division Engineers as soon as the Federal Aid Disaster WBS Elements are released.

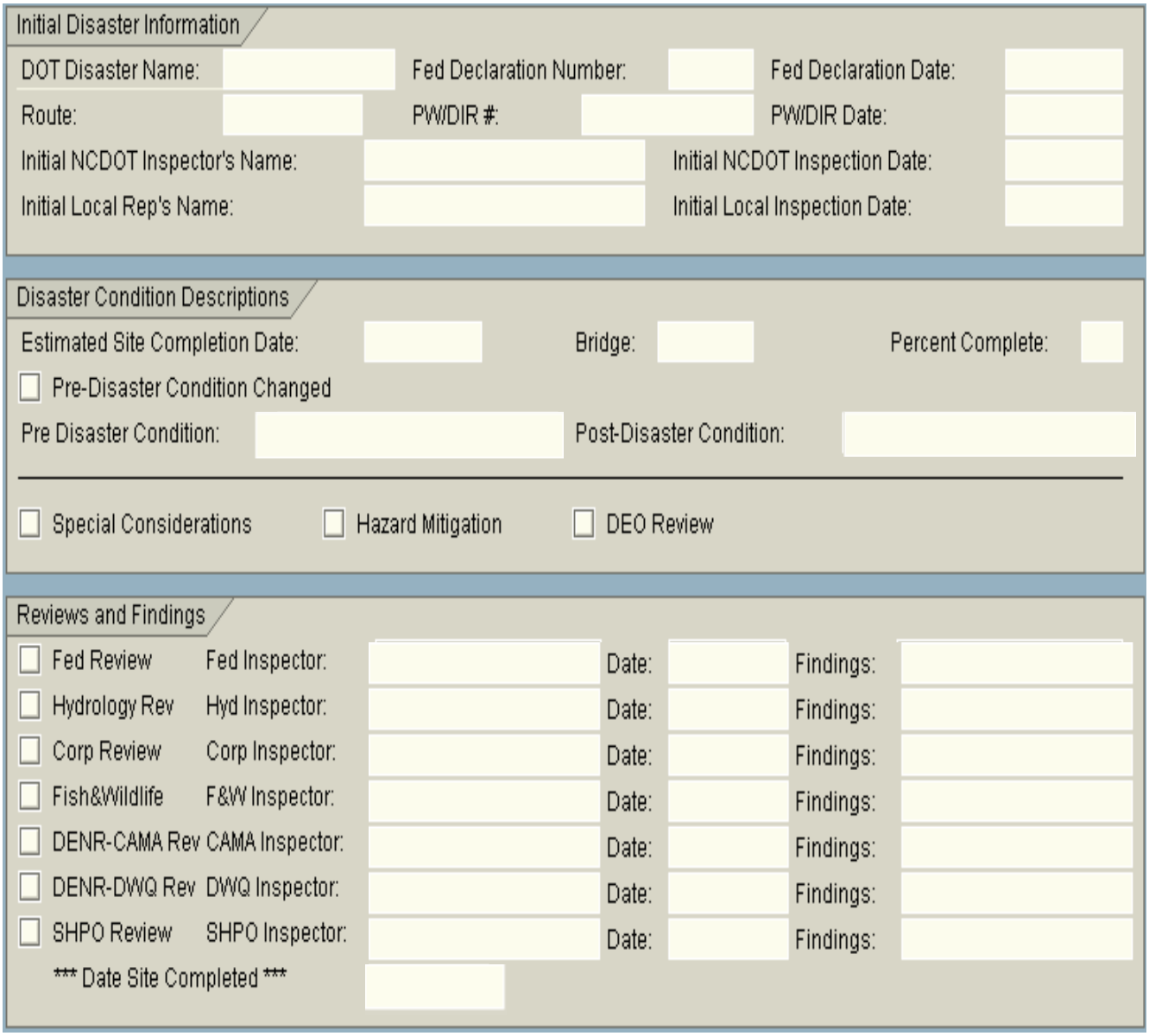
If FHWA does not participate, the appropriate cost distribution will be determined and transferred to the appropriate cost centers.

WBS Elements are assigned for each site on each route where disaster damage has occurred and has to be repaired. The Division Business Officer sets up the site-specific WBS elements. It is recommended that in the event of a major disaster involving a large volume of WBS elements to be opened, that this function be delegated to the District Engineer or his designee. It is important that emergency WBS elements be opened as soon as possible since charges will begin occurring as soon as crews begin the recovery efforts. WBS Elements are set up in SAP R/3 using report CJ20. The Engineering Data and Disaster Engineering Data screens must be completed.

Engineering Data Screen



Disaster Engineering Data Screen



The data contained in these two screens is critical to the management of the disaster. All units, excluding Traffic Services, will contact the District Office for any site code number.

Emergency Site Code Definitions

001 **County Wide Debris Removal on Primary and FHWA Routes (see list of eligible Secondary Routes in Appendix)**

002 **County Wide Emergency Protective Measures**

003 **County Wide Signs/Signal**

004 **County Wide Stabilization**

005 **Snow Removal**

006 **Vessel Relocation (Ferry Division only)**

007 **Equipment Relocation (Ferry Division only)**

008 **Dredging Operations (Ferry Division only)**

009 **Reserved**

010 **First Site Specific through 799 (washouts, slope failure, pipe replacement, bridge approach, etc.)**

Site codes 001 through 005 are preset. Site codes 006 through 009 are reserved for future use. Site code 010 is the first site specific WBS element and can be replicated through 999 for any additional site specific permanent repair sites**. WBS elements commencing with 800 are reserved for bridge sites**. Site-specific WBS elements, including 010, should be identified by:

Nature of repair:	washout, slide, bridge damage, pipe damage, shoulder repair
Route number:	SR 1312, NC 90, US 64, I-40
Location of repair:	.17 mile from SR 1161
Description:	24" pipe replacement

Example: DF11313.2100078 Slide, SR 1142, .2 mile from lower George's Fork, 150' slide

2. **Data Entry Errors:** Attention to accuracy when entering data into the financial accounting system must always be emphasized. It is understandable that during a disaster recovery, data entry errors may occur due to the shear volume of entries being entered into the system. Care must be exercised in correcting any data entry error. The SAP Financial Accounting System has many levels of detail. If the proper steps in correcting a data entry error are not followed, the detail associated with the transaction may be lost. The federal agencies providing financial reimbursements for the recovery effort may disallow project expenditures if the detail is missing.

   Daily reports should be reviewed on a regular basis to assure proper data entry. The sooner an error is detected, the easier it is to correct. The following steps should be followed when a data error is detected.

   Step 1 Verify that an error has occurred. Check supporting documentation for irregularities.

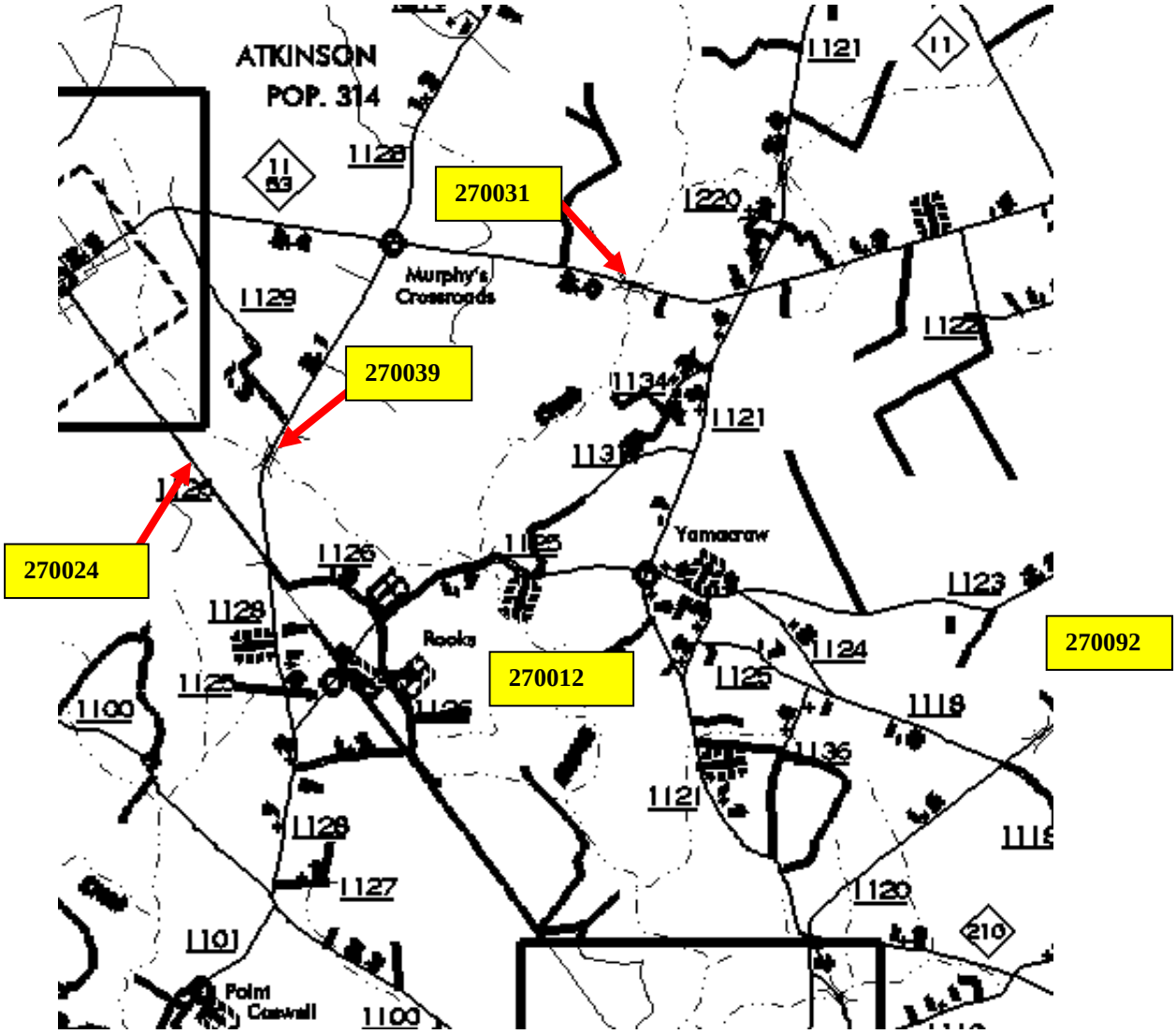
   Step 2 If an error occurs, complete Form ERPM-8 and submit this form plus attached copies of supporting documentation to the division business officer immediately.

Step 3 Data entry errors involving Time Entry can not be corrected at the division level. Time Entry errors must be forwarded to the Fiscal Section in Raleigh.

Step 4 Data entry errors involving equipment, material, and contracts may be corrected in the division business office. Use transaction code FV 50. It is imperative that the correction be made using the original general ledger account number. **DO NOT use general ledger 55640009 Transfer Expenses Between WBS.** This GL will not transfer the detail necessary to get federal reimbursements.

Step 5 After the correction is made, run report ZPSR04a to verify the corrected entries.

3. **Maps:** During the recovery period, Site Codes should be marked on County Maps indicating the location of damages to the Highway System.



4. **Pictures**: Digital pictures should be made of all sites before any clean up or repairs are made if possible. The pictures should include site code numbers. Pictures should also be made when all work is complete.

SITE CODE PICTURE

5. **Requisitions and Invoices:** Requisitions are completed following the standard procedures. Activities during a disaster recovery period do not require any modified procedures. In the event of a system failure, contact the Purchasing Department in Raleigh and request a "tracking" number. The "tracking" number can be provided to the vendor so as to minimize any delay in services rendered. Once the system is restored, the requisition number can replace the "tracking" number.

6. **Time entry**: FR1101 job reports must be filled out for all disaster-related work using the emergency WBS elements. Adequate comments are essential on ALL job reports. These comments should be printed legibly under the "remarks" section at the end of the document. All routes worked on should be listed in the "remarks" section.

7. **Deployed personnel**: When personnel are sent from other Divisions to help in the disaster recovery, the FR-1101s for those personnel must be entered into the SAP system at their home division. Forward the original to the sending Division for entry.

8. **Load Tickets:** DOT may be eligible for reimbursement for the removal of debris as a result of a disaster. The engineering staff should have a clear understanding of FEMA debris eligibility criteria and be aware that FEMA will only reimburse "reasonable costs" associated with debris clearance, removal and disposal. If the debris portion of the disaster is contracted, the debris management plan must include a means to monitor the contractor's activities and certify the accuracy of the amount of debris handled.

The information requested on the load ticket must be completed in its entirety. All fields on the load ticket must be completed especially the "Capacity (CY) and "% Full" if cubic yardage in the method of measurement.

A load ticket database is downloadable by accessing the Disaster Recovery website located on the DOT Intranet. This database allows for the entry of two types of load tickets: debris and stone. Load tickets should be entered into the database on a daily basis. A standard set of reports is available to run daily summary reports or cumulative summary reports. FEMA will require a copy of the debris summary report to determine reasonable costs per unit. The unit

	VEGETATIVE		WHITE GOODS
	CONST. & DEMOLITION		OTHER
LOCATION			
COUNTY/TOWN	ROUTE/STREET		FEMA
			FHWA
DUMPSITE/LANDFILL	TIME	CONTRACT MONITOR	
LOADING			
DUMPING			
RETURN TO JOB SITE			

cost for debris removal may vary greatly due to many circumstances such as distribution of debris, location of landfill, drive times, etc. Document any unusual circumstances that may effect the cost per unit of debris and provide this information to the FEMA Public Assistance Coordinator. This information is crucial in establishing a "reasonable cost" for purposes of reimbursement.

9. **I-40 Lane Reversal:** Charges associated with the I-40 lane reversal and lane clearance may be eligible for federal reimbursement from FEMA and FHWA. Two disaster WBS elements will be released when the plan is activated: DFXXXXX.2XXX002 and XXXXX.1XXX002. Both WBS elements are designated as Emergency Protective Measures. The WBS element prefaced with the **DF** designation will accept charges associated with the activation of personnel and movement/positioning of equipment. These charges may be eligible for FEMA reimbursement. The second WBS element will accept charges associated with the clearance of any vehicle requiring towing. The towing charges should be charged to this WBS element. These charges may be eligible for FHWA reimbursement. It is imperative that the charges be applied to the appropriate WBS element. Failure to properly apply these charges to the appropriate WBS element may jeopardize the reimbursement of these expenses.

   All activity being performed by the personnel and equipment during the lane reversal and lane clearance must be documented on the FR-1101. Charges associated with this lane reversal and lane clearance activity will result in close scrutiny by both federal agencies. Failure to properly document this activity on the FR-1101 may jeopardize the reimbursement of these expenses.

10. **Federal Aid Route Debris Policy**: NCDOT will be responsible for the removal of all vegetative and sand debris from Federal-Aid routes. **Expenses incurred as a result of debris operations on federal aid routes should be charged to the Federal Aid disaster configuration.** FEMA will not reimburse the department for debris picked up and removed from federal aid routes. Reimbursement for vegetative debris operations will be requested from Federal Highway Administration. For accounting purposes consistent with the Department's two-phase debris policy, all of the expenditures should be charged to the FHWA disaster configuration - 001 Debris WBS element.

    Documentation of expenditures should be as follows:

First debris pass on a Federal-Aid route	XXXXX.1XXX001
Second (or subsequent) debris pass on a Federal-Aid route	XXXXX.1XXX001

    Debris delivered to an approved landfill or staging area must be segregated by road system. Debris collected from Federal-Aid routes must be kept separate from debris collected from FEMA routes.

    The Counties and Municipalities have the responsibility of removing C&D, white goods, household wastes, garbage, etc. on the Federal-Aid routes and must file for reimbursement with FEMA. FHWA only recognizes and reimburses state departments of transportation for

vegetative debris operations conducted on federal aid right of ways. Local governments that pick up and remove vegetative debris from federal aid routes can not be reimbursed for their expenses.

11. **Documentation of Emergency Protective Measures:** FHWA does not recognize certain activities conducted prior to the event as eligible reimbursable expenses. Examples of ineligible activities include efforts to protect facilities, prepositioning of barricades and signage, lowering retention ponds, opening up construction sites for evacuation routes, etc. As long as no other agency or organization provides reimbursement for these activities, the department can apply to FEMA and request reimbursement. FEMA considers these types of activities as Emergency Protective Measures and may deem these activities as eligible for reimbursement. Therefore, all activity associated with preparing for the event, regardless if performed on a federal aid route or a secondary route, should be processed and charged to the FEMA disaster configuration Emergency Protective Measures – 002.

Rev 08/01/04

PROCEDURES FOR REIMBURSEMENT OF EMPLOYEES DURING EMERGENCY SITUATIONS COMMERCIAL ACCOUNTS

EMERGENCY SITUATIONS AND POLICIS

Emergency Situations And Events

The Department of Transportation has been given the authority to reimburse employees during emergency situations and events. The following guideline outlines the procedure to following in order to provide reimbursement for travel, meals and lodging during emergency situations. The guideline is categorized in two different cases: 1) Non-Declared Emergency and 2) Declared Emergency.

Non-Declared Emergency

The Department of Transportation has the authority to reimburse employees for meals (other than lunch) during certain non-declared emergency conditions. Emergency Meal Reimbursement is available for employees that have been on duty for twelve hours or more continuously due to emergency situations involving hurricanes, severe snowstorms, or other acts of God. The Emergency Meal Reimbursement may also be used in the case of a Declared Emergency.

Declared Emergency

The Department of Transportation has approval from the Office of State Budget and Management giving the Secretary of DOT authority to approve exceptions to the normal procedures for travel, meals and lodging during emergency situations. *A **Declaration of Emergency** by the Secretary of Transportation or the State Highway Administrator will be required for granting this authority.*

Required Documentation for Fiscal

- Memorandum from the DOT Secretary or the State Highway Administrator declaring the emergency situation.
- Memorandum to the Chief Financial Officer from the DOT Secretary authorizing exceptions to normal regulations concerning travel, meals and lodging for those employees working extra hours or unusual shifts due to the emergency situation. The memorandum will identify any staff members to whom the Secretary delegates the authority to approve the exceptions.

INMATE REIMBURSEMENT

There are situations in the field where work release inmates from the Department of Correction will be utilized to perform the same work as DOT employees during an emergency, either declared or non-declared. DOT will reimburse these inmates in the same manner as DOT employees. The reimbursement check will be paid to the DOC Sergeant in charge of the inmates. The Sergeant will then deposit the reimbursement to the inmates' account with the Department of Correction.

1. Emergency Meal Reimbursement

Definition

Emergency Meal Reimbursement is available in the case of non-declared as well as declared emergencies such as hurricanes, severe snowstorms, and other acts of God. Reimbursement is only available for employees not in overnight pay status, i.e. only for employees working in regular workstation where they may return home every day. It is available to all salary grades. The amount available is:

$10.00 for each 12 hours of continuous work (i.e. $20 for 24 hours, $30 for 36 hours, etc.)

Providing snacks during emergencies does not preclude employees from also receiving the emergency meal reimbursement. Emergency meal reimbursement is meant to provide some compensation for meals, not snacks. However, if a crew is provided lunch, they may not receive the emergency meal reimbursement.

Reimbursement

- The District Offices where the employees are working will print a worksheet for an *Emergency Meal Reimbursement, Employee Receipt* form ERPM-5. The worksheet will list all employees in the district along with their cost center, but it will also allow for handwritten entries to be added. The form will be delivered to the Supervising Engineer.
- The Supervising Engineer will use the form to add any other employees who worked. These may be employees from other Divisions or from other departments within the Division who worked under their supervision.
- The Supervising Engineer will fill in the dates (month and day) and the number of shifts worked by each employee. Each date is assumed to represent 12 hours unless (24) or (36) is written beside a date to indicate that number of hours. The total number of 12-hour shifts is written on the line labeled **No. of 12 hr. Shifts**.
- The new data relative to employees and dates worked will be input to the database so that a final list (ERPM-5) may be printed which will contain only those employees who are due reimbursement. Inputting this data to the program will make it available for future statistical and reporting use. A separate ERPM-5 must be printed for each change in charge code. The

charge code consists of cost center/**general ledger 52724000**/internal order/WBS element/functional area/route. The program will total each page and total each department.

- The Supervising Engineer completes a *Request for Warrant for Emergency Meal Reimbursement* form ERPM-6 for each warrant requested. Each page of the form ERPM-5 may charge only one cost center/general ledger code/WBS element/internal order/functional area/route, but cost centers may be combined on one warrant.
- The Supervising Engineer signs each page of the ERPM-5 and the ERPM-6 and sends them to the Division Office where they are separated by Division. ERPM-5's and ERPM-6's for employees from other Divisions should be forwarded to those Divisions for payment. The Division Engineer in the employee's Division approves the forms and the warrant or warrants are prepared.
- The Division Office prepares the payment document as follows:
  - Use transaction FB60 to create the payment transaction. Select document type EM. This designation of the document type is important as it identifies the document for special handling. Once saved, the document will be in the general inbox awaiting approval.
  - An extra copy of the ERPM-5 is printed and attached to the check once printed.
  - Forms ERPM-6 and ERPM-5 are scanned and attached to the FB60 document as documentation for the payments.
  - Once the document has been approved by Commercial Accounts, the division should request the check to print in their office. Fiscal will not send the command to print the check unless the Division requests this.
- The payee cashes the check and uses the copy of the ERPM-5 to obtain the signature of each employee as they receive their payment in cash. The payee is the individual to whom the check was written. In most cases this will be the Supervising Engineer.
- As soon as all cash has been distributed or all qualified employees have been reimbursed, the ERPM-5 is returned to the Division office where it is reconciled with the amount of the warrant.
- Once reconciled, the Division office scans the completed ERPM-5 to the FB60 document. If all cash was not disbursed, attach a personal check or money order for the remaining balance to a copy of the ERPM-5 and send to Commercial Accounts. Also include the names of the employees covered by the check.

2. Meals

Definition

When DOT is operating under a **Declaration of Emergency**, the DOT Secretary or his designee may grant exceptions to the normal rules for meal reimbursement. The types of meals typically covered are for employees working long hours, working unusual shifts, or without access to restaurants. In all reimbursement situations, the amount of reimbursement for these meals is limited to the in-state subsistence rate. Each reimbursement will need approval from the Secretary or his designee. This may be verbal provided it is followed up by written approval.

Reimbursement

Restaurants/Caterers

- Obtain an invoice from the vendor. The invoice must contain the following items:
  - Name and address of vendor
  - Date of service
  - Itemized list of food provided including unit cost and number of units
  - No sales tax
- Obtain a W-9 from the vendor
- Prepare an *Employee Roster for Emergency Meals and Lodging* form ERPM-7 of employees who will be receiving the food. Include the charge code for each employee or each group of employees. This includes cost center, WBS or Internal Order, functional area, route number, etc. as required. General ledger code **52724001** will be used for meals and **52727000** will be used for snacks for all employees.
- The last page of the ERPM-7 should show the total number of employees for that cost assignment multiplied by the subsistence rate. The amount of the invoice should never exceed this computation.
- Use transaction FB60 to create a document for payment to the vendor charging the appropriate cost assignment(s) as shown on the ERPM-7(s).
- Scan the invoice and the ERPM-7 and attach to the FB60 transaction.
- These checks will be printed in Commercial Accounts and mailed to the vendors unless otherwise instructed.

Grocery Stores

Since grocery stores usually require payment at the time of service, an alternate procedure is required. Two options are available. In each option, the following items will still be required:

- Obtain an invoice from the vendor. The invoice must contain the following items:

- Name and address of vendor
- Date of service
- Itemized list of food provided including unit cost and number of units
- No sales tax

- Obtain a W-9 from the vendor
- Prepare an *Employee Roster for Emergency Meals and Lodging* form ERPM-7 of employees who will be receiving the food. Include the cost assignment for each employee or group of employees. This includes cost center, WBS or Internal Order, functional area, route number, etc. as required. General ledger code **52724001** will be used for meals and **52727000** will be used for snacks for all employees.
- Scan the invoice and the ERPM-7 and attach to the FB60 transaction.

Check issued locally Option

- Estimate the amount needed and request a travel advance to the employee making the purchase. The existing *Travel Advance Request* form GA-26 should be used and flow through normal channels. If necessary the advance check can be printed in the field, but you must request this from Commercial Accounts.
- The employee cashes the check and uses cash for the purchase. The employee will be required to cover any shortage or reduce the total charge.
- After the purchase, the employee updates his trip in R/3 scanning the receipt to the trip. The employee will show the balance due to him if the expenses exceeded the advance, or he will attach a personal check for the excess.

Reimbursement Option

- Have the employee pay for the groceries with his personal check or credit card and then file for reimbursement. This reimbursement will be a normal expense voucher and thus will be paid by Commercial Accounts. The employee should be reminded to tell the grocery store that DOT is exempt from sales tax.
- Attach copy of the grocery receipt to the roster and keep in the Division Office.

3. Lodging

Definition

When DOT is operating under a **Declaration of Emergency**, the DOT Secretary or his designee may grant exceptions to the normal rules for lodging. Typical situations will be where an employee lives far away enough from his duty station that it would be more advantageous and safer for him to stay overnight rather than returning home or when the road conditions prevent employees from returning home.

Reimbursement

Reimbursement may occur in one of three ways:

- Employee may pay out of pocket and file for reimbursement through normal procedures. Payment will be made by Commercial Accounts.
- A purchase order may be used to purchase large blocks of rooms within a motel. Normal rules of payment of purchase orders will apply in those situations.
- Motels may be paid directly using the local printing of checks.

In all reimbursement situations, the amount of reimbursement for these rooms is limited to the in-state subsistence rate. Authorization for excess lodging must be attached if the rate exceeds the State rate.

Local Print Reimbursement

- Obtain an invoice from the vendor. The invoice must contain the following items:
  - Name and address of vendor
  - Dates of service
  - List of number of rooms and rates
  - No sales tax (other types of tax are allowed)
- Obtain a W-9 from the vendor
- Prepare an *Employee Roster for Emergency Meals and Lodging* form ERPM-7 of employees who will be staying in the rooms. Include the cost assignment for each employee. This includes cost center, WBS or Internal Order, functional area, route number, etc. as required. General ledger account **52721000** will be used for all employees.
- The last page of the ERPM-7 should show the total number of employees for that charge code multiplied by the subsistence rate. The amount of the invoice should never exceed this computation.
- Use transaction FB60 to create a document for payment to the vendor charging the appropriate cost assignment(s) as shown on the ERPM-7(s).
- Scan the invoice and the ERPM-7 and attach to the FB60 transaction.

- **FORMS**

W-9

Sales tax exemption letter

Emergency Meal Reimbursement-Employee Receipt Form ERPM-5

Request for Imprest Check for Emergency Meal Reimbursement for Multiple Departments Form ERPM-6

Employee Roster for Emergency Meals and Lodging Form ERPM-7

PROCUREMENT PROCEDURES
(DURING EMERGENCIES)

The procurement system is designed with the flexibility to provide for emergency situations where seeking competition is not practical or in the best interest of the State. Decisive action is often necessary to avoid further accidents, injuries, loss of property, and/or loss of life. Access to adequate equipment, materials, supplies, and specialized services to handle the emergency become a priority. The procurement laws under which we operate provide mechanisms for accomplishing such tasks.

The definition of an emergency, we operate under is taken from the NC Purchasing Manual and states:

> "…. emergencies are defined as situations which endanger lives, property or the continuation of vital programs, and which can be rectified only by immediate on-the-spot purchases or rental of equipment, supplies, materials, printing or services."

There are basically two types of emergency situations, as it relates to procurement. An example of the first type is where a truck has hit a bridge and closed a major artery, creating a situation that places the traveling public at risk. This type of emergency is typically confined to a small geographic area, and yet may create an imminently, dangerous situation. Generally, this type does not involve a formal declaration from the Governor or the Highway Administrator and is referred to as a **"NON-DECLARED"** emergency.

An example of the second type is where a hurricane has hit the State, devastating a large geographic area, rendering normal transportation, communication, and emergency systems nonfunctional. Generally, this type does involve a formal declaration by the Governor and/or the State Highway Administrator and is referred to as a **"DECLARED"** emergency.

Regardless of which type of emergency occurs, preparedness and foreknowledge of where and how to obtain the necessary items needed may reduce the period of time required to complete the recovery process.

A. PRE-EVENT PLANNING:

1. General

Forecasting when an emergency might occur is still next to impossible; however, there are some general steps that one can take to prepare for such events. Developing positive relationships with local vendors who are willing to go beyond the normal level of expectation for delivering equipment, materials, and services to assist in an emergency is critical. Having pager numbers, home phone numbers and cell numbers of critical suppliers can provide twenty-four hour access in time of emergencies. A list of suppliers should be developed, maintained and included in the local plan. (See form ERPM-3).

2. Personnel

A well-trained administrative staff can be an invaluable resource, especially during emergencies. Due to increased pressures for states to detail every action in order to qualify for federal reimbursements, a well-organized and detailed record of purchases made is important. Each field office should designate an individual to maintain the paper trail of events. This can reduce the time it takes to receive materials, insure that payments are made to vendors in a timely manner (making them more apt to help in future events), and, when the event is over, insure that reimbursement will not be a problem. All responsible employees should be aware of and should follow proper requirements for documenting and record keeping in accordance with Chapter VIII "Documentation and Record Keeping".

B. DURING THE EVENT

1. Methods of Purchasing Goods, Materials, Equipment and Supplies

a. Imprest Cash

During emergencies, some local vendors may demand payment at the time the products are picked up. Each division has an imprest cash fund which can be used for emergency purchases up to $1,000.00 per purchase. The amount spent on the emergency using this method should be recorded, in order to aid in the reimbursement effort later. The event should be identified on the check or associated documentation. Approval to exceed this limit should be obtained from the Chief Engineer's Office. (Refer to the Field Fiscal Procedures Manual, Volume 1, Chapter VI, Section 5).

b. SAP Function FB-60

Many local vendors are willing to bill the department during emergencies. When the product is picked up, an invoice should be picked up with the product and given to the designated person within the division to enter into the SAP System for payment. Purchases made using this process are limited to $1,000.00 per purchase. The event should be identified on the invoice. Approval to exceed this limit should be obtained from the Chief Engineer's Office. (Refer to the Field Fiscal Procedures Manual, Volume 1, Chapter 6, Section 3).

c. Confirming Purchase Orders

Other local vendors may demand a purchase order number to release large quantities of goods, materials, equipment and supplies. A "confirming" purchase order can be easily obtained by calling Purchasing. (See the list of designated emergency purchasing personnel on Page X-6). Division protocol should be followed in confirming purchase orders for emergency purchases. A requisition number should be entered into the SAP System when possible and a purchase order can be assigned within minutes. If it is not feasible based on the emergency circumstances to create a requisition, contact the Purchasing Section and a confirming purchase order number beginning with 991XXXXXXX will be assigned. The confirming purchase order umber is to be indicated in the "Tracking Number" field of the requisition and will appear as the emergency purchase order when issued. When the requisition is created, the confirming purchase order number should also appear in the item text stating "Confirming Purchase Order # 991XXXXXXX" and indicating that the purchase should be charged to the emergency event. In addition, applicable WBS element numbers should be included.

2. METHODS OF CONTRACTING FOR SERVICES & RENTAL OF EQUIPMENT

a. Purchase Order Contracts

During an emergency event, the competitive bidding requirement may be waived by the State Highway Administrator. However, in some cases, the type of work may be best contracted under the competitive bid process. A standard purchase order contract document can be used for a various types of work such as guardrail replacement, replacement of traffic signal equipment, debris removal, etc. Bonding requirements may be waived for emergency purchase order contracts. While purchase order contracts are limited to a maximum amount of $1,200,000, during an emergency event, this limit may be increased. The increased limit gives the field office greater flexibility to facilitate the recovery effort. The Division Office should contact the Chief Engineer's Office to obtain the emergency maximum limit. If a high maximum dollar value is established, the Chief Engineer will notify each Division Engineer.

Emergency Contracts should include, as a minimum, the following items:

- Cover Sheet
- Scope of Work
- Form W-9 (Tax Payer Identification)
- Bid Form
- MB/WB Contractor's Self-Certification Form
- Small Business Enterprise Contractor's Self-Certification Form
- MB/WB Listing of Contractors/Subcontractors

Once the proposal is complete, in order to save time, the document can be faxed or emailed to local contractors, completed, signed and sent back via fax. Corresponding documentation can be imaged into the SAP Computer System and a purchase order issued immediately. If it is not possible to enter a requisition during an emergency, a (991XXXXXXX) confirming purchase order number can be given for the interim time until normal processing of the transaction can be done. "Confirming Purchase Order #991XXXXXXX", is to be placed in the "Tracking Number" section of the requisition and a comment in the item text indicating that the work should be charged to the event. In addition, applicable emergency WBS element numbers should be included.

Requests for payment will be submitted to the requisitioning field office and should include all appropriate documents and notations as indicated in Chapter VIII, "Documentation and Record Keeping".

There is no dollar limit on the value of a purchase order contract under an emergency, except those established by each Division or the Chief Engineer's Office. Contact the Division Office to obtain those limits.

b. Fully Operated Rental of Equipment

Most divisions will have pre-existing purchase orders for fully operated rental of equipment already in place. Use of existing fully operated rental of equipment purchase orders is acceptable for emergencies. Applicable emergency job order numbers and site codes should be included on all payment requests. This will aid in reporting the dollars for reimbursement later. There is no dollar limit for the amount that can be spent using this method, except those established by each division. Contact the Division Office to determine those limits.

During severe emergencies, divisions will have a need for additional purchase orders for fully operated rental of equipment. Some divisions may want new purchase orders put in place for the sole purpose of keeping the expenditures to be charged to the event separate from those charged for non-emergency work. In either case and as time and conditions permit, a new RE–1 agreement should be completed and signed by the contractor. A confirming purchase order can be obtained by contacting Purchasing in order for work to begin immediately. A requisition number should be given to the agent at the time of the request.

Following the event, the requisition and the RE-1 form should be forwarded to Purchasing for processing. If the contractor has never worked for the department, a W-9 (federal tax reporting form) should be completed and sent with the other documents. Again, the requisition should contain a note in the item text stating "Confirming Purchase Order # XXXXXX" and indicating that the work should be charged to the emergency There are no dollar limits on the amount spent using this method, except those established by each division. Contact with the division should be made to determine those limits.

In the event that a state of disaster or imminent threat of a disaster is declared, the Department of Crime Control and Public Safety, Division of Emergency Management has the authority (Chapter 166A, NC Emergency Management Act of 1977) to task the

North Carolina Department of Transportation (NCDOT) to perform emergency work on non-system roadways. The NCDOT should receive the request for any non-system roadway work from the Division of Emergency Management. The NCDOT has the authority to perform this type of work, with the coordination and approval through the Chief Engineer's Office.

c. Rental of Equipment (NCDOT operated)

During emergencies every effort should be made to utilize NCDOT owned equipment first. Contact should be made, following division protocol, with the Equipment Fleet Support Engineer (see Equipment Section for contact name) with Central Equipment in Raleigh to locate additional equipment within the fleet. Equipment from non-effected divisions can often be transported quickly to assist in the cleanup efforts.

However, there will be cases where additional specialized equipment not in the NCDOT owned fleet will be needed. Local contractors should be contacted to determine the availability of the equipment needed. If no local contractor's equipment is available, the Equipment Fleet Support Engineer should be contacted for assistance. Once the equipment is located, a confirming purchase order can be obtained by contacting Purchasing. A requisition number should be given to the agent when making the request.

Following the event, the requisition along with the RE-1A form should be forwarded to Purchasing for processing. If the contractor has never done business with NCDOT a W-9 form (federal tax reporting form) should be included with the requisition. Again, the requisition should contain a note stating "Confirming Purchase Order Number XXXXXXXXXX" and indicating that the costs should be charged to the emergency. In addition, all applicable emergency WBS element numbers should be included. There are no dollar limits using this method, except those established by the division. Contact with the division should be made to determine those limits.

PURURCHASING: EMERGENCY PERSONNEL CONTACTS

Donnie Thorne, Purchasing Officer

EMAIL	Dthorne@dot.state.nc.us	
PURCHASING	(919) 733-7101	MAIN NUMBER
OFFICE	(919) 807-0126	
HOME	(919) 965-8083	
CELLULAR	(919) 631-7550	

Larry Brodie, Deputy Purchasing Officer

EMAIL	lbrodie@dot.state.nc.us
OFFICE	(919) 733-4730
HOME	(919) 620-7578
CELLULAR	(919) 426-6599

Elaine Young, Deputy Purchasing Officer

EMAIL	eyoung@dot.state.nc.us
OFFICE	(919) 733-3618
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NORTH CAROLINA
EMERGENCY HIGHWAY TRAFFIC REGULATION (EHTR) PLAN

JUNE 2000

(REVISED JUNE 2005)

Emergency Highway Traffic Regulation Plan

Table of Contents

Emergency Highway Traffic Regulation (EHTR) Plan

Purpose

The purpose of this plan is to set forth the structure for the regulation and use of highway facilities within the state of North Carolina during an emergency. The Emergency Highway Traffic Regulation (EHTR) plan will cover response to natural or man-made disasters or military action.

Authority

Under Presidential Executive Order 12656, dated November 18, 1988, Assignment of Emergency Preparedness Responsibilities, and US Department of Transportation Order 1900.8, dated March 15, 1984, Civil Emergency Preparedness Policies and Programs.

North Carolina General Statutes (GS) 166A (North Carolina Emergency Management Act), establishes the authority and responsibilities of the Governor, State Agencies, and local government for Emergency Management in North Carolina. The Secretary of Crime Control & Public Safety is responsible to the Governor for all State emergency management activities.

Implementation of Plan

Under North Carolina GS 166A (North Carolina Emergency Management Act), this plan shall be implemented during emergency/disaster events or the imminent threat of these events, which require activation of the Emergency Operations Center (EOC) and State Emergency Response Team (SERT). Such activation may occur as described above, or upon declaration of a national emergency by the President of the United States or by concurrent resolution of the Congress, by order of the Governor of the state of North Carolina or, in the absence of such specific direction, upon occurrence of a national emergency.

Effective Date

This plan will become effective by the signature of the Secretary of the Department of Transportation, the Secretary of the Department of Crime Control and Public Safety, and the Federal Highway Administration (FHWA).

Definitions

1. **Emergency Highway Traffic Regulation Plan**
   During times of EOC/SERT activation, this plan will be a system for traffic management devised to regulate the use of highways and to expedite and facilitate vehicle movements during an emergency or disaster event. This plan includes provisions for civilian evacuations as well as for military movements, and indicates responsibilities of each participating state and federal department managing the roadways during an emergency. The plan also indicates how this directive will be implemented.

2. **Disaster –** Any act of nature, national security emergency, or human-caused event that is, or threatens to be, of such severity and magnitude as to cause extensive loss of life and/or damage to or loss of property.

3. **Emergency Operations Center (EOC)**
   The EOC is the facility in which the SERT meets to coordinate the state's response to a disaster. When the SERT is not activated, NCDEM maintains a continuously staffed communications function in the EOC to receive and to coordinate actions requiring state notification.

4. **State Emergency Response Team (SERT) –** The SERT is comprised of four basic sections: Infrastructure Support, Emergency Services, Human Services, and Logistics. Each section is staffed by employees of many state agencies. The SERT structure allows the state to respond efficiently and effectively to disasters. The Director, North Carolina Division of Emergency Management (NCDEM) functions as SERT Leader. The Director, NCDEM activates SERT formation using criteria specified in the North Carolina Emergency Operations Plan.

5. **NCDOT Chief Engineer's Office - Operations**
   The Chief Engineer's Office – Operations will have overall supervision of the administration of Department of Highway (DOH) functions related to the Emergency Highway Traffic Regulation Plan within the state of North Carolina. It is an operating agency staffed with personnel from NCDOT and has representatives serving on the SERT. The Chief Engineer's Office makes final determination for DOH on all matters concerned with emergency highway traffic regulations, within the policy guidance provided. The office coordinates fully with internal agencies within DOT as well as the State Highway Patrol (SHP), Division of Emergency Management (NCDEM), environmental agencies (DENR), and the SERT if formed. The Chief Engineer's office will direct the activities of the DOH field staff on reporting road closure locations. The Chief Engineer's Office will coordinate with adjoining states DOT's on transportation matters which may affect inter-state travel demand and capacity.

6. **NCDOT Division Offices**
   The Division Offices across the state determine temporary road closures and provides this information to the Chief Engineer's Office – Operations according

to protocol. Each Division, headed up by a Division Engineer, is responsible for the roads within the confines of their division boundaries (refer to Principal Agency Information Section). Road closure and detour information is provided to the Division Office by NCDOT District and County Maintenance personnel. The Division Offices coordinate with local governments, enforcement and Emergency Management representatives.

7. **Federal Highway Administration** – Assistance in the administration of the Emergency Highway Traffic Regulation plan will be provided by the North Carolina FHWA Division Office. If the emergency involves other states or other modes of transportation, the North Carolina FHWA Division Office will be available to coordinate with the FHWA offices in those states and the appropriate branches of the USDOT.

8. **Highways** - all federal and state highways, bridges, tunnels, and appurtenant structures.

9. **Clear routes** - highways that are available to unrestricted use.

10 **Regulated routes** - highways that must be regulated because of hazardous conditions, special uses, or limited capacity in relation to demand.
   a. Class A – highways in area contaminated by radioactivity.
   b. Class B – highways reserved exclusively for military or civil defense movement.
   c. Class C – highways that require road use permit.

11. **Strategic Highway Corridor Network (STRAHNET)** – A highway system across the United States that includes the National System of Interstate and Defense Highways (NSIDH) and other non-interstate highways (see figure in Appendix A). This highway system is strategically important to the defense of the United States. During times of defense, these highways gather and deploy personnel and equipment as needed.

Responsibilities

The North Carolina Department of Transportation is Responsible for:

1. Implementing appropriate emergency response plan(s) based on the event. (Refer to Appendix B for list of current emergency response plans/policies.)

2. Providing road closure, condition and detour information as changes occur and as required.

3. Evaluating highway damage and determining the effect on traffic movement.

4. Monitoring the travel capacities of the clear and regulated routes.

5. Designating highways as regulated routes within the Strategic Highway Network pursuant to the event.

6. Coordinating with adjoining states to facilitate highway traffic movements.

7. Implementing Ferry Division Emergency Operations Plan.

8. Preparing and releasing highway information to the public and pertinent governmental agencies, and coordinating public information activity with the SERT Public Information Office to ensure consistency of information/instructions to the public.

The North Carolina Division of Emergency Management (NCDEM) is Responsible for:

1. Coordinating response to disasters or emergencies.

2. Leading the State Emergency Response Team (SERT) as specified in North Carolina General Statutes 166A, North Carolina Emergency Management Act.

3. Directing NCDEM's three branch offices and their fifteen area coordinators. These offices and people coordinate directly with the Incident Commander and local government offices.

4. Identifying and analyzing hazards that may impact a community.

5. Coordinating emergency operation plans.

The North Carolina State Highway Patrol is Responsible for:

1. Leading traffic law enforcement activities.

2. Assisting local emergency management authorities with radiological monitoring on a limited basis.

3. Providing traffic control in support of evacuation, and rerouting of traffic, such as around a contaminated area. Also, responding within an area that has been determined to be contaminated radiologically as long as the levels fall under certain administrative levels.

4. Arranging for the removal of disabled vehicles from the roadway on regulated routes that impede the flow of traffic.

5. Enforcing emergency declaration travel restrictions.

6. Coordinating public information activity with the SERT Public Information Office to

ensure consistency of information/instructions to the public in accordance with protocol.

7. Coordinating with local government representatives on emergency evacuation and reentry strategies.

8. Notifying representatives of the FHWA, Region Four, in Raleigh.

The North Carolina National Guard is Responsible for:

1. Handling military actions in any area of operations and providing military support to the EOC.

2. The Defense Movement Coordinator (DMC) located at the State Area Command (STARC) Army National Guard, is responsible for operating the State Movement Control Center (SMCC).

3. The SMCC will establish liaison with the Department of Transportation to determine the condition of the highway network and establish Class B routes for the movement of military vehicles in and through the state. These movements will not impede the flow of civilian traffic unless required to accomplish the mission.

4. Nationwide martial law is not an acceptable planning assumption. Martial law as a local measure is to be avoided whenever possible. Consequently, all civil emergency planning is based on the premise that the military services would assist but not replace civil government in carrying out its essential functions.

5. When ordered by the Governor, the National Guard will provide Military Forces to assist local law enforcement in emergency/disaster area security, control of entrance to and exit from disaster area, and protection of people and property.

6. Monitoring and arranging for removal of abandoned/disabled vehicles in rest areas during an event.

7. Enforcing travel restrictions.

8. Supporting other enforcement activities.

Procedures

Department of Transportation Procedures

1. Identify and evaluate the availability and the capacity of highways and roads within the state, including those within areas of controlled use.

2. Be an active member of SERT during activation.

3. Develop and maintain a state situation map showing damaged or destroyed highways and highway facilities.

4. Monitor collector routes to determine whether the traffic volume is approaching capacity of the route. As capacity is reached, take measures to institute partial or complete traffic regulation of the route to insure the movement of essential traffic.

5. Install signs as necessary in accordance with the *Manual on Uniform Traffic Control Devices (MUTCD*), including evacuation and detour routes. Coordinate necessary information dissemination utilizing ITS devices (variable message boards, highway advisory radios, etc.)

6. Issue overweight/oversized permits as directed on the use of highway space of state-maintained facilities and recognize permission granted by other states for single trips involving use of highways within the state of North Carolina. Coordinate oversize/overweight vehicles with the Overweight Permit Office of NCDOT and the State Movement Control Center (SMCC) of the Department of Defense, as well as other vehicle restrictive situations.

7. Inform all NCDOT Division Offices of the regulated routes within the Division boundaries, as well as DMV.

8. Refer problems to the Federal Highway Administration when they are of a regional (multi-state) nature and cannot be resolved by mutual agreement between the state of North Carolina and other states concerned.

9. Maintain communication within and between agencies.

Enforcement Agency (SHP) Procedures

1. Restrict the use of regulated routes to authorized vehicles

2. Assign personnel to traffic control posts as necessary

3. Maintain communication within and between agencies.

4. Integrate emergency vehicles (such as ambulances, fire fighting equipment, vehicles bearing physicians, etc.) into the traffic flow.

5. Assist in providing a suitable holding area for unauthorized vehicles as necessary.

6. Establish procedures for handling non-emergency vehicles with essential goods and services for permission to proceed.

7. Ensure that each traffic road closure station provides, as a minimum, the following:
    a. Motor vehicles for patrolling the regulated route,
    b. Wrecker availability for moving disabled vehicles,
    c. Illuminating equipment for night operation, coordinated in conjunction with local and state agencies. Coverage may include the daytime hours if necessary.
    d. Readily available first-aid materials and equipment coordinated in conjunction with the local Emergency Operations Center.
    e. Safe drinking water and food for law enforcement road closure personnel, and
    f. Fire extinguishers (minimum of 1 per law enforcement vehicle).

National Guard Procedures

1. Designate Class B regulated routes.

2. Provide heavy vehicles for logistical and transportation requirements.

3. Provide aerial evacuation of personnel from threatened area(s).

4. Coordination of all state law enforcement resources to support local law enforcement once martial law is declared.

5. Stage HF-equipped mobile units as needed to provide communications in and around a disaster area.

Cargo Priorities on Regulated Routes

It is the function of the State EOC, through the Division of Emergency Management to ration road space as necessary but not to determine cargo priority. (NOTE: this sentence is not true -- neither the state EOC nor NCDEM rations road space. Maybe it should state, "Situations requiring rationing of road space are identified to the SERT for coordination and approval by the Governor.")

Cargo traffic should not impede the movement of other vehicles on regulated routes.

In an emergency situation traffic regulation will be based on oversize and overweight load restrictions, numbers of vehicles on the roadway, and structural capacity of the road.

Unless specifically authorized, haulers will arrange for special permits through normal channels. Normal channels in North Carolina are: for all oversize or overweight loads contact the Permits Unit at 1-888-221-8166.

Communications

Activation of State Emergency Response Team

Using criteria as specified in the The North Carolina Emergency Operations Plan, the Director, NCDEM will activate the SERT. Participating SERT members will report to the EOC in the Administration Building, Jones Street, Raleigh.

Statewide Communication Systems

The Raleigh Highway Patrol Communication Center is the designated State Warning point for natural and manmade disasters. Information received at this Center is forwarded where deemed necessary.

Radio and telephone communications are maintained with the EOC and with NCDOT personnel statewide

The EOC has two redundant communication capabilities. The primary backup system consists of satellite telephones located in the EOC, all county warning points, and the seven National Weather Service offices serving North Carolina. The EOC also uses 23 VHF (Freq. 47.46, 47.50, 47.54, 47.58, 47.62) low-band radio base stations to communicate with state and county base stations and mobile units.

NCDOT Radio System Locations

1. NCDOT's radio network would be its principal means of communication. Permanent radio installations are located at all Division, District and County Offices. Vehicles are also equipped with mobile radio units for Division management and supervisory personnel for backup communication. Internet or Computer networks will also be available as a means for tracking road closure and road status reports.

2. Cellular communications will be alternate means of communication of road status within NCDOT.

Release of Information to the Public

Communication to the public will be coordinated with and issued by the SERT Public Information and the NCDOT Public Information Offices. Public Information press releases originating at lower level centers shall be coordinated and approved by higher level centers and ultimately by the SERT before release to the public.

In some cases, transportation information will be coordinated through the NCDOT Chief Engineer's Office for accurate and timely release to the public. Such a release of information may be in the form of the internet, phone service, news releases or interviews.

PRINCIPAL AGENCY CONTACT INFORMATION

The following is a list of locations and telephone numbers of the principal agency center relevant to this plan. This section also includes a county breakdown map as it pertains to the Division of Emergency Management, the fourteen divisions of the Department of Transportation, and the State Highway Patrol.

North Carolina Division of Emergency Management (NCDEM)
Administration Building
West Jones Street
Raleigh, N.C.
(919) 733-3867
www.ncem.org

County Emergency Management Coordinators
www.dem.dcc.state.nc.us/serc/localcontacts.htm

State of North Carolina

Division of Emergency Management

Western Branch
Tim Miller, Manager
3305-15 16th Avenue SE
Conover, NC 28613
828-466-5555

Area	Coordinator
11	Greg Atchley
12	Mike Cook
13	Jeff Cardwell
14	Jimmy Ramsey
15	Danny Gee

Central Branch
Billy Gentry, Manager
611 Central Ave.
Butner, NC 27509
919-575-4122

Area	Coordinator
6	Paul Denison
7	Elaine Wathen
8	Woody Washburn
9	Ed Cash
10	Ron Campbell

Eastern Branch
James Smith, Manager
5601 Highway 264 West
Washington, NC 27889
252-946-2773

Area	Coordinator
1	David Humphrey
2	George Sullivan
3	Cathy Henry
4	Doug Haas
5	Tom Collins

North Carolina Division of Highways (DOH)
1 South Wilmington Street
Raleigh, N.C. 27611
(919) 733-7621
(919) 733-4141 (fax)
www.ncdot.org/doh/

North Carolina Department of Transportation

HIGHWAY DIVISIONS

NCDOT DIVISION BREAKDOWN BY COUNTY

Division 1:
Currituck
Camden
Pasquotank
Perquimans
Chowan
Gates
Hertford
Northampton
Bertie
Martin
Washington
Tyrrell
Dare
Hyde

Division 2:
Beaufort
Pitt
Greene
Lenoir
Jones
Craven
Pamlico
Carteret

Division 3:
Sampson
Duplin
Onslow
Pender
New Hanover
Brunswick

Division 4:
Halifax
Nash
Edgecombe
Wilson
Wayne
Johnston

Division 5:
Warren
Vance
Granville
Person
Durham
Wake
Franklin

Division 6:
Harnett
Cumberland
Bladen
Robeson
Columbus

Division 7:
Rockingham
Caswell
Orange
Alamance
Guilford

Division 8:
Randolph
Chatham
Lee
Montgomery
Moore
Richmond
Scotland
Hoke

Division 9:
Stokes
Forsyth
Davie
Davidson
Rowan

Division 10:
Mecklenburg
Stanly
Anson
Union
Cabarrus

Division 11:
Avery
Caldwell
Watauga
Ashe
Alleghany
Wilkes
Surry
Yadkin

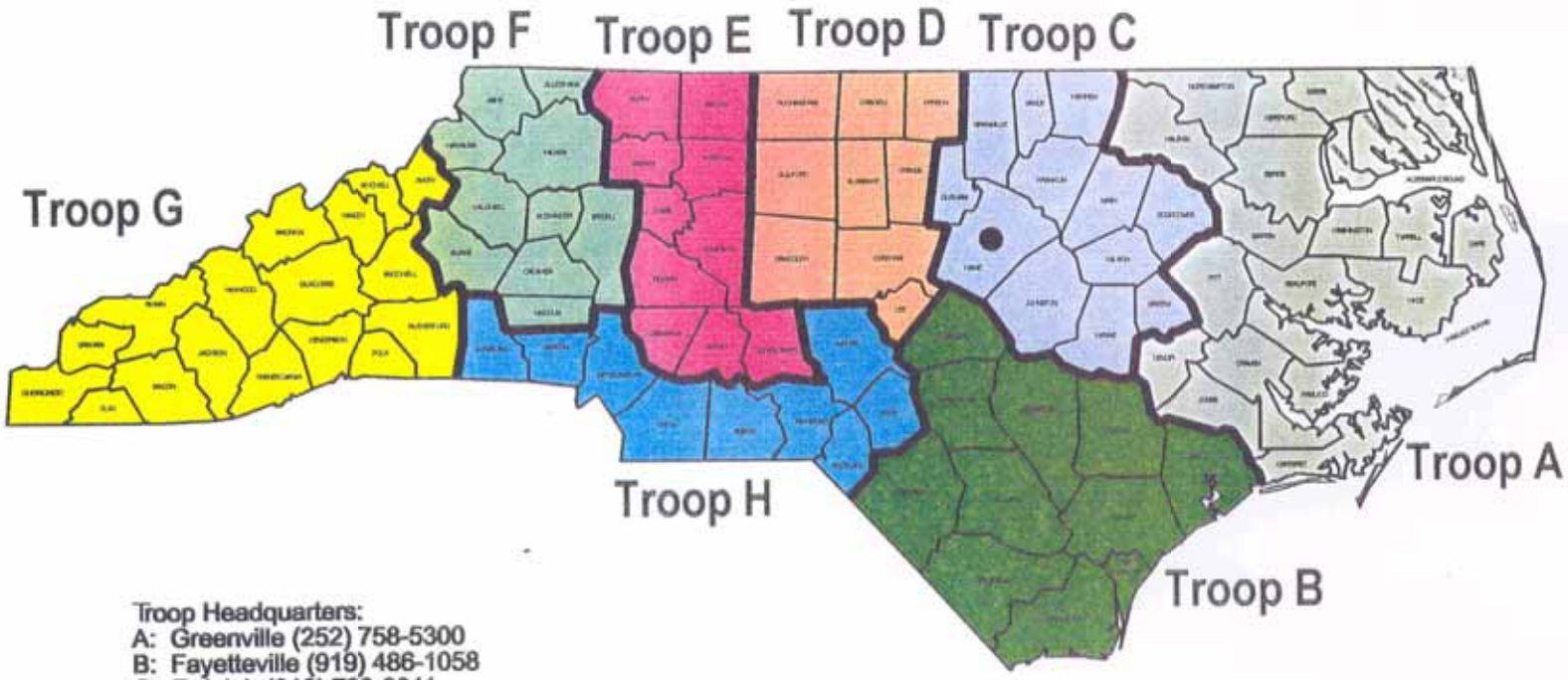
Division 12:
Alexander
Iredell
Catawba
Lincoln
Cleveland
Gaston

Division 13:
Madison
Yancey
Mitchell
Buncombe
Rutherford
McDowell
Burke

Division 14:
Cherokee
Clay
Graham
Swain
Macon
Jackson
Haywood
Transylvania
Henderson
Polk

North Carolina State Highway Patrol
512 North Salisbury Street
Raleigh, N.C. 27699-4702
(919) 733-7952

North Carolina State Highway Patrol Troop Breakdown

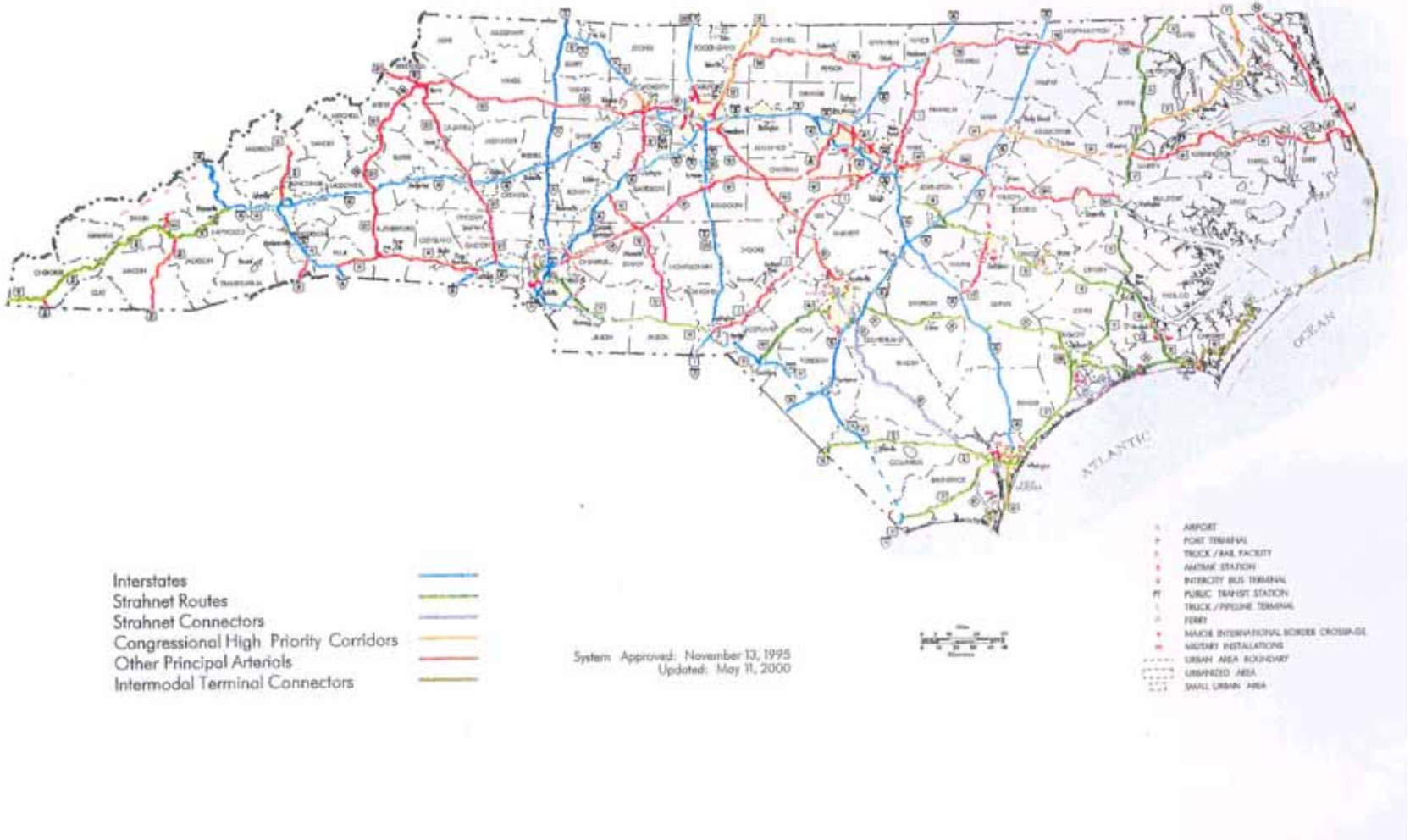


Troop Headquarters:
A: Greenville (252) 758-5300
B: Fayetteville (919) 486-1058
C: Raleigh (919) 733-3911
D: Greensboro (336) 334-5621
E: Salisbury (704) 637-0207
F: Newton (828) 466-5504
G: Asheville (828) 298-4253
H: Monroe (704) 283-8559

● Patrol Headquarters

APPENDIX A

NORTH CAROLINA
NATIONAL HIGHWAY SYSTEM (NHS)



APPENDIX B

EMERGENCY / DISASTER REFERENCE LIST

- Manual of Uniform Traffic Control Devices (MUTCD)
- Standard Specifications and Roadway Standard Drawings
- Maintenance Management Manual
- I-40 Reversible Plan
- Emergency Evacuation Plan for weather (on file with the local EOC and SHP at State EOC)
- Emergency Evacuation Plan for nuclear generating facilities
- North Carolina Administrative Code
- Transportation and Highway Laws of North Carolina
- Roadway Design Manual
- Purchase Order Contract Administration Manual
- Workplace Safety Manual
- Safety Policy and Procedures Manual
- Emergency Management's Emergency Operations Plan (EOP)
- Local Incident Management Operating Procedures
- Incident Detour Information (major routes)/plans
- Emergency Response and Procedures Manual
- Emergency Response Guide Book
- Emergency Highway Traffic Regulation Plan
- Dam Burst Plan
- DMV Policy and Procedures Manual
- OTAGNC Pam 600-30 Emergency Operations (National Guard)
- Traveler Information Management System (TIMS) Instruction Book
- Strategic Highway Network Map
- IMAP skill based pay manuals
- Unified Incident Command System manual
- Emergency Response Manual for Hazardous Materials
- Ferry Division Emergency Operations Plan
- Field Fiscal Procedures Manual

North Carolina National Highway System (NHS) Definitions

Interstates: Special system of direct interregional highways, with all necessary connections through and around cities, designed to meet the requirements of the national defense and the needs of a growing peacetime traffic of longer range.

STRAHNET Routes: Strategic Highway Network (STRAHNET). The network includes the National System of Interstate and Defense Highways (NSIDH) and other noninterstate highways. This highway system is strategically important to the defense of the United States. The purpose of this national system is to: (1) in peacetime, maintain the readiness of our fighting forces, assist in the maintenance of a credible deterrent posture, and enable the rapid mobilization of military forces during increased tension; (2) in wartime, gather and deploy personnel and equipment, as needed; and (3) support industrial mobilization.

STRAHNET Connectors: Roads that connect military installations and ports of embarkation to the STRAHNET network. STRAHNET and its connectors must be considered in Federal and State highway programs so that the facilities are adequately maintained and upgraded to ensure they can support rapid deployment.

Congressional High Priority Corridors: Portions of NHS Routes that were selected by congress as corridors with a high priority for improvements in the Federal transportation legislation.

Intermodal Terminal Connectors: Those public highways which link the Nation's ports, rail and truck terminals, airports and passenger transit terminals to the NHS. These proposed routes were approved by the TEA21 legislation, and are now officially on the NHS.

April 25, 2000

MEMORANDUM

In accordance with Executive Order 12656, dated November 18, 1988, Part 14, Section 1401(5), which states that the Secretary of Transportation shall "Coordinate with State and local highway agencies in the management of all federal, State, city, local and other highways, roads, streets, bridges, tunnels, and publicly owned highway maintenance equipment to assure the efficient and safe use of road space during national security emergencies", this document entitled the Emergency Highway Traffic Regulation Plan was set in place. The responsibility of getting each State to coordinate for such a plan has been delegated to the Federal Highway Administration.

Henceforth, the following plan outlines provisions for maintaining an efficient transportation infrastructure in North Carolina. This plan will become effective by the signature of the Secretary of the Department of Transportation, the Secretary of the Department of Crime Control and Public Safety, and the Division Administrator of the Federal Highway Administration – NC Division.

FORWARD

Under Presidential Executive Order 12656, dated November 18, 1988, Assignment of Emergency Preparedness Responsibilities, and US Department of Transportation Order 1900.8, dated March 15, 1984, Civil Emergency Preparedness Policies and Programs, the following Emergency Highway Traffic Regulation Plan has been prepared. This plan is to provide an orderly procedure for maximum utilization of the system roads and streets during an emergency, and in agreement with the Federal Highway Administration, will be reviewed yearly for revisions or expansions as needed.

Preparedness for emergencies is essential to provide maximum safety and usability of the highway system. Each individual assigned responsibility in this plan must be knowledgeable and effective in performing these responsibilities.

This plan is will become effective by the following signatures:

_____

Secretary, North Carolina Department of Crime Control and Public Safety Date

_____

Secretary, North Carolina Department of Transportation Date

_____

Division Administrator, Federal Highway Administration – NC Division Date

Emergency Response & Procedures
I-40 Reversal

A. Purpose

The I-40 Reversal is designed to evacuate the Wilmington area of the coast before a major hurricane. The eastbound lanes of traffic will be reversed to provide westbound traffic flow so that more traffic can exit the area.

B. Criteria for I-40 Reversal

The I-40 Reversal Control Group (RCG), made up of NCDOT, State Highway Patrol and Division of Emergency Management, will evaluate the need to reverse the eastbound lanes of I-40. To reverse the flow of traffic in the Eastbound lanes of I-40, there must be a mandatory evacuation of the Wilmington area due to a strong Category II hurricane (sustained winds of 103 mph or higher) that is forecast to reach Category III strength, that is projected to hit within 50 miles north and 100 miles south of Wilmington. The I-40 Reversal should only be done during daylight. The Reversal Control Group will also consider the National Hurricane Center advisory, forecast of the storm, the volume of traffic to be evacuated, and the time an evacuation may begin as factors in deciding whether or not to reverse I-40.

Media advisories will be issued to alert the public of the start/stop time of the reversal and throughout the reversal, as needed.

C. Location

The I-40 Reversal will run from the Martin Luther King, Jr. Parkway/College Road (NC 132) intersection in Wilmington (south of Milemarker 420) to the median crossover near Milemarker 331 (approximately 90 miles). Two lanes of westbound traffic will flow in the normally eastbound lanes. Traffic will be allowed to exit from most interchanges but must re-enter into the regular lanes.

D. Pre-Event Planning

1. General

Refer to Appendix A for a detailed DOT timeline of events for the I-40 reversal. More information may also be found at the ITS Portal:
then select “I-40 Reversal”.

2. Personnel

DOT Staff from Divisions 3, 4, 5, and 6 will be requested to respond in the event of a reversal of I-40. The Division Engineer or his designee(s) should insure that job assignments and responsibilities have been clearly defined for all employees at the beginning of each hurricane season.

Each Division should insure that primary and relief personnel have been properly trained to operate equipment needed for the Reversal safely and effectively before hurricane season begins since there will be little time for training with the impending landfall of a hurricane.

IMAP Personnel from other parts of the State will patrol I-40 during the Reversal. The "I-40 Reversal IMAP Guidance Document" on the ITS Portal describes in detail the purpose and procedures for IMAP during the I-40 Reversal.

3. Equipment

Equipment required for the I-40 reversal should be inventoried at the beginning of each hurricane season, since some devices for the reversal may be used by other units within the Division during the year. Equipment should serviced prior to hurricane season in accordance with the "ITS Device Checklist" (found on the ITS Portal) and be tested to make sure it is in proper working condition.

4. Communication

Radios (800 MHz and Low Band) and cellular phones will be used for DOT communication during the reversal. SHP Communications will be the primary communication system for the Reversal between the agencies.

Communication to the public is also crucial during the implementation of the I-40 reversal. Employees should be trained in how to enter events into the Traveler Information Management System (TIMS). Road conditions should be updated as they change. Entries for the reversal should be made on corridors that will be closed due to the implementation of the I-40 reversal

5. Documentation of charges

The costs associated with setting up the I-40 lane reversal may be eligible for federal reimbursement from both the FHWA and FEMA. Refer the Section VIII Documentation and Record Keeping for instructions as to how these related expenses should be charged to the disaster WBS configurations.

E. During Event

1. General

IMAP Drivers will patrol I-40 from Wilmington to I-95 during the I-40 Reversal to look for incidents that may inhibit the flow of traffic. DOT has towers on contract that will be on stand-by along the reversed section of I-40 to assist with any incidents that occur.

2. Personnel

Specific DOT personnel from ITS Operations Unit and IMAP, as well as Division 3, 4, 5 and 6 personnel will be responding during the I-40 Reversal. The SHP will coordinate with the Divisions, ITS Operations Unit and IMAP personnel during the reversal for assistance with traffic management. EMS and Fire/Rescue squads will be stationed at each interchange along the reversal.

3. Equipment

Changeable Message Signs and Highway Advisory Radios will be used along I-40 during the reversal to let traffic know of ramp closures and other information. Barricades and drums will be used to block the closed ramps at each interchange during the reversal. Barricades and drums will also be need at the beginning of the reversal and on some routes leading into the reversal.

F. Post-Event Activities

Two (2) hours before the onset of tropical storm force winds or sunset, the I-40 Reversal shall end. After all westbound traffic flowing in the eastbound lanes has exited the reversal, the eastbound lanes will be re-opened to regular eastbound traffic. Barricades and drums will be removed and ramps will be opened. Equipment should be returned to its staging location. All personnel should report to safety. After the storm equipment should be returned to its home.

Attachments:
I-40 Reversal Plan Decision Guidelines
I-40 Reversal Plan DOT Timeline

Supplemental I40 Reversal Documents that may be found on the ITS Portal:

-I-40 Reversal IMAP Guidance Document
-I-40 Reversal Plan Public Information Documents – poster, flyer, press releases, etc.
-I-40 Reversal Plan (on portal by July 2005)

NCDOT I-40 REVERSAL PLAN
TIMELINE
DAYTIME REVERSAL

6/13/2005

All times are approximate and subject to change.
NCDOT employee safety is the primary consideration.
Activities are planned based on a Cat III Event.
Actions may occur earlier for stronger storms.

TIME	EVENT	ACTION	BY WHO	NOTES
72*	Begin Coordination w/Control Group	Chief to Conf Call Divs (3,4,5,6,7,9,& 10)		
		Divisions to verify staff availability, locate and ready devices		
		Division 10 to alert IMAP drivers and prepare for cash advance		
		ITS Ops to make IMAP hotel reservations and establish WBS for Reversal		
		ITS Ops Coordinate for SHP Command Facility		
48*	RCG Conference Call / Chief Calls Divs	**Move Equipment to Staging Locations (Maint Yards)**		
24	(These are same time)	ITS Ops to pick up IMAP Supplies from Equipment Unit		
		Patty Eason & IMAP Drivers to Raleigh for briefing ITS Operations Spare VMS to Kenansville with IMAP Driver		
		SHP Command Facility Ready		
18	RCG Conference Call / Chief Calls Divs	IMAP Drivers review routes and gas locations then go to hotel.		
		SHP Command Facility Set Up		
		Divs Check In Once All Equip is Staged (Maint Yard)		
12	RCG Conference Call / Chief Calls Divs	**Recommendation to Secretaries and Governor**		
		Division 3 to coordinate with City of Wilmington re Signals		
		Pick up work zones on I-40 and I-95		
		Install Crash Cushions as needed		

		ITS Ops Ask Trucking Assn to urge trucks to use "regular" westbound lanes		
6	RCG Conference Call / Chief Calls Divs	**Governor Makes Announcement**		
	DECIDE GO/ NO GO	Public Information Releases		
4	RCG Conference Call / Chief Calls Divs			
3	**Corridor Staging**	**Div 3, 4, 5 & 6 - Move equipment to I-40 and I-95 and approaches**		
		Div 3, 4 and 6 - Close EB on ramps		
		Div 4, 5, 6, 7, 9,& 10 - Begin Statewide DMS/HAR & 511 Messages		
		Towers Report to Command Facility		
2	**On Scene Implementation**	Set Out VMS & HAR & barricades & drums on I-40, I-95 and approaches		
		Divs to notify SHP at each interchange when interchange is ready		
		IMAP to Stations - Check for Abandoned Vehicles En Route		
1	NCSHP to Sweep I-40 EB	All EB lanes clear of traffic and all devices in place		
	Fire & Rescue staged at each interchange	SHP to give final "All Ready" notice		
0	**Begin I-40 Reversal/Evacuation**	SHP Leads first cars from MLK/College into EB lanes		
		DOT allows vehicles to enter reversed lanes as SHP passes		
		IMAP Patrols begin		
T-2	**Breakdown I-40 Reversal**	Take Down Outer VMS/HAR & 511		
		End IMAP Patrols- Pick Up VMS & HAR & barricades & drums - return to pre-stage		
		IMAP to Armories/Hotels		

		All DOT staff to safety		
T	Onset of Tropical Storm Force Winds			

After Storm Has Passed

Owning Divisions to Pick Up VMS/HAR

Reversal Debriefing

* = # of hours before storm hits

All other times are before beginning reversal

Reversal will likely run approximately 10 hours.

Decision Process Guidelines
For The
Interstate 40 Emergency Reversal Plan
July 2004

THREAT CRITERION

- The decision process to reverse the flow of traffic in the eastbound lanes of I-40 begins when a strong Category II hurricane (sustained winds of 103 mph or higher) is forecast to reach Category III strength, and it is forecast to make landfall within 50 miles north or within 100 miles south of Wilmington, NC. This area includes the counties of Brunswick, Pender, New Hanover, and Horry County, SC.

REVERSAL CONTROL GROUP (RCG)

- The purpose of the RCG is to evaluate the need to reverse the flow of traffic on I-40 and when reversal is necessary, to recommend approval to the Secretaries, Crime, Control, and Public Safety (CCPS) and Department of Transportation (DOT).
- The RCG members are:

Department/Division	Position	POC
Department of CCPS:		
Emergency Management (EM)	Operations Chief	Doug Hoell
Highway Patrol (SHP)	Field Operations	Maj. Mark Johnson
DOT:		
Division of Highways	Chief Engineer, Operations	Steve Varnedoe

RCG ACTIVATION

- Standby – The Operations Chief, EM will notify RCG members to be available for immediate telephone contact Upon when the State EOC (SEOC) is at Level 3 activation for conditions meeting the threat criterion,.
- Recall – The Operations Chief, EM will recall ECG members to the SEOC w the threat criterion is met ands (sustained winds of 39 mph or higher)to occur inthreat area .

ACTIONS -- PRE-REVERSAL

- This group will coordinateactivities by conducting conference calls near 6:00 a.m. plus every 6 hoursonce an evacuation appears to be likely within 48 hours
- After the initial activation call, calls will occur every 6 hours (6:30 and 12:30 am/pm) until the Reversal Plan is executed or the threat has passed.
-
- CallSERT members at the SEOC, NCDOT Emergency Information Center and Control GroupsenedTopics to be covered will be theNHC the volume of traffic likely

to be evacuated, discussion of the pending evacuations and will focus on the volume of traffic likely to be evacuated and the likely time for evacuation to begin.

- The action guidelines in attachment 1 will guide actions by RCG agencies. It identifies the sequence of actions required to implement lane reversal. However, actions may be modified if conditions warrant such as the storm's unique characteristics, a large number of evacuees, and the timing for daylight hour operations. Reversing I-40 increases evacuation to 5,000 vehicles per hour.

The Control Group will determine whether to reverse I-40 and when to begin reversal preparation. Upon reaching consensus to reverse, the Control Group will pass this recommendation to their respective Secretaries.

- The, will approve or disapprove the RCG's recommendationIf approved,Control Group representatives will disseminate decision itsto their respective organizations..

- ACTIONS -- DURING REVERSALEM Control Group conference calls will be conducted every 2 hours, and they will cover status and problems,.
- SHP units will lead the vehicles entering the reversed lanes upon initial opening of the reversed lanes.
- Each interchange on the reversed lanes will be opened to reversed traffic flow as the SHP-led traffic passes.

ACTIONS -- TERMINATION

Highway Patrol will have primary responsibility to recommend termination of Reversal to Control Group based on traffic levels.

Control Group Reversal termination order will be issued at least 2 hours before forecast of landfall of gale force winds in the Wilmington Area to allow Reversal staff to seek shelter.

,, whichever occurs earliestSHPearly if traffic levelswarrant

- **ACTIONS --** One of two may be used depending on how quickly clearance is needed.
- ople who are and, east to west,that , east to west, will remove traffic faster. It can be used for unusual conditions such as a hazardous material spill, storm acceleration, or a major

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backup of traffic at an ending point. If rapid traffic removal is necessary, the SHP will recommend implementation of this alternate procedure to the RCG for its approval. The alternate closure procedure consists of:cingrallalldingalleast

SUPPLEMENTARYOTHER

- **The decision to evacuate is a county responsibility.CONSIDERATIONS**Effective and near continuous c for and ful execution of tReversal operations should be conducted in daylight only.Commercial/large vehicles will be restricted to normal westbound lanes.NCDOT will begin to stage equipment in its Division yards 48 hours prior to implementation of the I-40 Reversal Plan.
- Although law enforcement resources (SHP and DMV) will be drawn from areas outside the threatened area, fire, rescue, and ambulance resources will be drawn from agencies within the threat area. OEMS and OSFM have identified those resources, made assignments, and will coordinate their mobilization.EM will initiate Control Group Meeting 1 month prior to the onset of the hurricane season each year to update contact information and make any necessary modifications to the plan or decision process.

APPROVAL

The I-40 Reversal Plan and the Decision Process Guidelines are hereby approved this ____day of August 2000.,the Secretary,

_____ _____

Secretary of Crime Control & Public Safety Secretary of Transportation

Secretary

Attachment
Action Guidelines For the I-40 Reversal Plan

NON-DECLARED EMERGENCIES AND FEDERALLY DECLARED EMERGENCY PROCEDURES

Not all disasters that affect the state are officially recognized by federal agencies as declared events. Although the response to all disaster emergencies is basically the same, the procedures in handling documentation and reimbursement may differ. Federally declared disasters change projects from purely engineering projects to engineering/financial projects with specific documentation requirements and time frames that must be taken into consideration. This section will detail the requirements to be followed whether the event is declared or non-declared

Non-Declared Disasters

General: The NCDOT infrastructure system has and will continue to be affected by isolated naturally occurring disasters that do not meet the financial threshold for a federal declaration, therefore disallowing reimbursement for public assistance. These isolated events may result in damages to the infrastructure exceeding the capability of the field unit to use their allocated maintenance budget. In the event that the cost to repair the damage exceeds the budget capability of the field unit, the division may submit an application to the Division of Highways Operations Unit requesting financial assistance to cover a portion of the repair costs.

If approved, the division is responsible for the first $50,000 in repair expenses. The Chief Engineer's Office will determine, based upon the repair estimates submitted by the division, the amount of financial assistance that will be provided. If the request is approved, a special work order will be created in SAP to track all of the expenditures of the repair project. The Disaster Recovery section of the State Road Maintenance Unit will monitor the work order to assure that the repair expenditures do not exceed the project estimate. When the repair project is complete, the special work order will be closed.

Federally Declared Disasters

General: There are two Federal programs from which the State may receive funds in the event of an emergency, catastrophe, or major disaster. One is Public Law 93-288, "Disaster Relief Act of 1974," which is administered by the Federal Emergency Management Administration (FEMA), and the other is Title 23, United States Code, which is administered by the Federal Highway Administration (FHWA).

The expenditures incurred by the State on non-Federal Aid system roads are eligible for reimbursement by FEMA, which ranges from 75% to 90% of eligible charges. Costs incurred on the Federal Aid system are eligible for FHWA reimbursement, which ranges from 80% to 100% of eligible charges. All non-reimbursed expenditures are covered with State funds.

Federal Emergency Management Agency Declared Events

When a disaster occurs and a locality has responded to the best of its ability and is, or will be, overwhelmed by the magnitude of the damage, the community turns to the State for help. The Governor, after examining the situation, may direct that the State's emergency plan be executed and commit State resources as appropriate to the situation. If it is evident that the situation is or will be beyond the combined capabilities of the local and State resources, the Governor may request that the President declare, under authority of the Stafford Act, that an emergency or major disaster exists in the State. A Federal declaration will identify the categories of work and which counties are included in the declaration.

While this request is being processed, local and State government officials should not delay in taking the necessary response and recovery actions. Such actions should not be dependent upon whether there will be Federal assistance.

Preliminary Damage Estimates

Following the disaster and as soon as it is deemed safe to venture out, it is necessary to begin estimating the damage caused by the event. FEMA recognizes several categories of damage: debris, emergency protective measures, signs/signals, stabilization, and permanent, site specific repairs. The NCDOT plays a significant role in determining whether or not a Federal declaration will be issued. FEMA declarations are granted on a county by county basis. The preliminary damage estimates for FEMA should only be compiled based upon damage to FEMA routes. DO NOT include damage to Federal Highway Administration routes in these estimates. Check the Functional Classification maps for route clarification.

A designated person within each district office in the affected disaster area should be identified to collect the estimates submitted from the counties. FEMA assigns Public Assistance Coordinators (PACs) to collect the preliminary damage estimates and compile reports necessary for determining the eligibility for a declaration. The PACs may periodically contact the designated individuals in the district offices for additional information or clarification of estimates that have been collected.

Federal Declaration

Should a Federal declaration be made, FEMA has divided disaster-related work into seven categories. These categories are divided into emergency work and permanent work as shown in the following table. NCDOT is eligible for reimbursement in categories A, B, C, and E.

Category		Type of Work
Emergency Work:	A	Debris Removal
	B	Emergency Protective Measures
Permanent Work:	C	Roads and Bridges
	D	Water Control Facilities
	E	Buildings and Equipment
	F	Utilities
	G	Parks, Recreational Facilities, and Other Items

Category A – Debris Removal

Eligible debris removal activities include clearance of:

- trees and woody debris
- building wreckage
- sand, mud, silt, and gravel
- vehicles
- other disaster-related material

To be eligible for public assistance, such activities must be necessary to do one of the following:

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

By statute, the NCDOT is only allowed to remove debris from its system right-of-way. Unless specifically tasked by NC Emergency Management, the NCDOT can not collect debris located on private property or collect debris that has fallen on non-system roadways. This includes "cut and shove" operations.

Debris on public property that must be removed to allow continued safe operation of governmental functions or to alleviate an immediate threat is eligible. Debris that is blocking streets and highways is a threat to public health and safety because it blocks passage of emergency vehicles or it blocks access to emergency facilities such as hospitals.

Debris on private property is treated somewhat differently. Debris removal from private property is the responsibility of the individual property owner aided by insurance settlements and assistance from volunteer agencies. A FEMA eligible local or State government may pick up and dispose of disaster-related debris placed at the curb by those private individuals. This type of work must be carefully controlled with regard to extent and duration.

Debris cleared from roads and highways, including the travel lanes and shoulders, roadside ditches and drainage structures, and the maintained right-of-way may be eligible. When FHWA Emergency Relief assistance is granted for specific portions of Federal Aid routes actually damaged by the disaster, debris on undamaged sections of Federal Aid routes may be eligible for FEMA assistance.

Debris contracts must be approved by FEMA prior to execution. Due to changes in FEMA debris policies, NCDOT debris contracts must be reviewed and approved subsequent to each disaster. The State Road Maintenance Unit is responsible for getting the debris contracts through the FEMA review process. As soon and the debris contract is approved by FEMA, the SRMU will make the approved debris contracts available to the field units. DO NOT

automatically assume that a debris contract used during prior disasters will comply with current FEMA requirements. Executing a contract that does not meet current FEMA conditions may result in the Department's inability to receive reimbursement of its costs.

Time Frame

The Department has 180 days from the applicants' briefing date to complete the debris-clearing project. If, due to the large volume of debris or situations beyond your control, the debris-clearing project will extend beyond the 180 days, contact the Disaster Recovery section of the State Road Maintenance Unit. The NC Emergency Management may grant extensions due to extraordinary circumstances, however, the request for an extension must be made in writing no less than thirty days prior the to 180th day.

Documentation

All expenses associated with debris removal should be charged to the SAP FEMA disaster configuration ending in 001 entitled Countywide Debris. FEMA will reimburse eligible expenses deemed to be reasonable. In order to determine reasonable costs, it is imperative that load tickets containing accurate debris volume be maintained. Volume can be recorded either in tons or cubic yards. A downloadable database is available to capture this information and should be used. The database is located at the Disaster Recovery web site on the NCDOT Intranet. The database can be saved to a local computer. It is a stand-alone database and not connected to the SAP financial accounting system. Source documents used in compiling damage expenditures are to be preserved for a period of at least 3 years after payment of the final voucher by FEMA.

FEMA Reimbursement

When the debris-project is complete and all expenses processed against the appropriate disaster WBS element, the Disaster Recovery section will run customized reports on the project. The Public Assistance Coordinator assigned to project and the district contact person will review the reports and conduct a field audit of the documentation. The PAC will complete the Project Worksheet and submit the PW to NC Emergency Management for processing.

FEMA reimburses debris projects at a rate of 75 percent of actual expenses. Eligible expenses for reimbursements are force account labor overtime, equipment, material, and contracts. NCDOT absorbs all unreimbursed expenses.

Category B – Emergency Protective Measures

Emergency protective measures are those activities undertaken before, during, and following a disaster that are necessary to do one of the following:

- eliminate or reduce an immediate threat to life, public health, or safety; or
- eliminate or reduce an immediate hazard that threatens significant damage to improved public or private property.

Generally, prudent actions taken to reduce the disaster damage, ensure the continuation of essential public services, and protect the lives and public health or safety are eligible for assistance. The following list provides examples of activities that may be eligible.

- I-40 Lane Reversal
- Securing loose material at a facility
- Boarding windows or doors
- Prepositioning barricades
- Removing construction barrels
- Cut and shove operations
- Removing/replacing draw bridge gate arms
- Sand bagging
- Straightening signs and signal heads
- Bridge inspections after a flood

Time Frame

The Emergency Protective Measures WBS elements ending in 002 will be released prior to the disaster. Generally, the time period for collecting these expenditures is 48 to 72 hours prior to the disaster and 48 to 72 hours after the disaster. Transition from an emergency protection mode to a recovery mode occurs at the 72-hour time frame. Expenditures occurring after this time should be charged according to the following chart. DO NOT continue charging to the Emergency Protective Measures WBS element after 72 hours unless specifically instructed.

Type of Expense		WBS Element
Debris	A	Countywide Debris - 001
Signs and Signals	C	Countywide Signs/Signals - 003
Minor shoulder washouts	C	Countywide Stabilization - 004
Road damage	C	Site Specific – Beginning with 010
Bridge damage	C	Site Specific – Beginning with 800

Documentation

Emergency Protective Measures is only recognized by FEMA. Therefore, all expenditures incurred should be charged to the DF disaster configuration. Measures taken on FEMA designated primary and secondary routes should be charged to the DFXXXXX.2XXX002 road system. The only exception is if the I-40 lane reversal plan is put into effect. The Federal Highway Administration has agreed to reimburse NCDOT for the removal of stalled or broken down vehicles along the I-40 corridor during the activation of the plan. Therefore, all towing charges incurred during the activation of the plan should be charged to XXXXX.1XXX002. All activity being charged to Emergency Protective Measures WBS elements must be documented on the FR 1101. Source documents used in compiling damage expenditures are to be preserved for a period of at least 3 years after payment of the final voucher by FEMA.

FEMA Reimbursement

When the Emergency Protective Measures project is complete and all expenses processed against the appropriate disaster WBS element, the Disaster Recovery section will run customized reports on the project. The Public Assistance Coordinator assigned to project and the district contact person will review the reports and conduct a field audit of the documentation. The PAC will complete the Project Worksheet and submit the PW to NC Emergency Management.

FEMA reimburses Emergency Protective Measures projects at a rate of 75 percent of actual expenses. Eligible expenses for reimbursements are force account labor overtime, equipment, material, and contracts. Expenditures charged to the Emergency Protective Measures after the cutoff date will not be reimbursed. NCDOT absorbs all unreimbursed expenses.

Category C – Roads and Bridges

Roads, bridges, and associated facilities are eligible for public assistance. For roads (paved, gravel, and dirt), eligible items include:

- surfaces;
- bases;
- shoulders;
- ditches;
- drainage structures; and
- low water crossings.

For bridges, eligible items include:

- decking and pavement;
- piers;
- girders;
- abutments;
- slope protection; and
- approaches.

Only repairs to disaster-related damage are eligible. In some cases, it may be possible to review pre-disaster bridge inspection reports to determine if damage to a bridge was present before the disaster. Permanent restoration of any facility, whether it is a road, bridge, or auxiliary structure, that falls under the authority of the FHWA is not eligible for public assistance. Other examples of ineligible facilities include private roads, homeowners' association roads, and private bridges.

Upgrades necessary to meet current codes and standards for road and bridge construction, such as standards for pavement and lane width, may be eligible for public assistance.

Specific eligibility criteria apply to slope failures and washouts that are considered landslides. Stabilization or restoration of failed slopes is only eligible in situations described below:

- Emergency work: If a disaster-related landslide poses an immediate threat to life, public health, and safety, or improved public or private property, cost-effective measures for reducing the threat may be eligible. Public assistance will be provided to address the area of the immediate threat only, not to stabilize the entire landslide.
- Permanent work: If a landslide damages an eligible facility, repairs to that facility are eligible as long as the site is stable. However, if the site was unstable before the disaster, the applicant must pay to stabilize the site before public assistance funds are provided to repair the facility. The Public Assistance Coordinator assigned to review this project may ask that a statement confirming site stability prior to the disaster be written by a Professional Engineer be included with the project worksheet.

Time Frame

The Department has eighteen months from the applicants' briefing date to complete permanent repair projects. If any permanent repair project will extend beyond eighteen months, contact the Disaster Recovery section of the State Road Maintenance Unit. The NC Emergency Management may grant extensions due to extraordinary circumstances, however, the request for an extension must be made in writing no less than thirty days prior the to eighteenth month.

Documentation

All expenses associated with the permanent repair project should be charged to the appropriate SAP WBS element. It is important to take pictures of the damage site prior to the start of any repair work. Also, FEMA requires GPS coordinates for all permanent repair sites. Source documents used in compiling damage expenditures are to be preserved for a period of at least 3 years after payment of the final voucher by FEMA.

FEMA Reimbursement

When the permanent repair project is complete and all expenses processed against the appropriate disaster WBS element, the Disaster Recovery section will run customized reports on the project. The Public Assistance Coordinator assigned to project and the district contact person will review the reports and conduct a field audit of the documentation. The PAC will complete the Project Worksheet and submit the PW to NC Emergency Management for processing.

FEMA reimburses permanent repair projects at a rate of 75 percent of actual expenses. Eligible expenses for reimbursements are force account labor, equipment, material, and contracts. NCDOT absorbs all unreimbursed expenses.

Category E – Buildings and Equipment

Buildings, including contents such as furnishings and interior systems such as electrical work, are eligible for repair or replacement. If an insurance policy applies to a building, FEMA must take that policy into account before providing funds for restoration of the building.

When equipment, including vehicles, is not repairable, FEMA will approve the cost of replacement with used items that are approximately the same age, capacity, and condition.

When a piece of applicant-owned equipment is performing eligible disaster work, extraordinary damage to the equipment that is caused by the disaster may be eligible. However, the cost of increased maintenance resulting from excess use is not eligible, because the cost of maintenance is included in NCDOT's equipment rates. Source documents used in compiling damage expenditures are to be preserved for a period of at least 3 years after payment of the final voucher by FEMA.

If any damage to buildings and equipment is incurred as a result of a disaster, contact the Disaster Recovery section.

Small and Large Projects

To facilitate project review, approval, and funding, projects are divided into two groups. The division is based on the monetary threshold established in Section 422 of the Stafford Act. Small projects are those projects with total estimated or actual costs below the threshold, and large projects are those projects with total estimated or actual costs at or above the threshold. The determination of the threshold that will be used for a disaster is based on the declaration date of the disaster, regardless of when the project approval is made or when the work is performed. Funding methods for small and large projects differ as explained below:

> **Small Projects.** Small project funding is based on estimated costs, if actual costs are not yet available. This simplified procedure was provided in the Stafford Act to streamline processing and speed payment to the applicant. If at all possible, it is preferred that the small projects be written after all actual expenditures have been collected and charged to the appropriate WBS element.
>
> **Large Projects.** Large project funding is based on documented actual costs. Because of the complexity and nature of most large projects, work typically is not complete at the time of FEMA approval. Therefore, large projects initially are approved based upon estimated costs. When all work associated with the project is complete, FEMA or NCEM performs a reconciliation of actual costs and submits the final project worksheet to FEMA for funding adjustments.

The Project Worksheet

The project worksheet (PW) is the primary form used to document the scope of work and cost estimate for the project. The PW includes the location, damage description and dimensions, scope of work, and cost estimate for each project.

Generally, the preferred method is to have the Public Assistance Coordinator or Project Officer assigned to the project complete the PW and then have it reviewed by the county maintenance engineer or district engineer.

Combining Work and Creating Projects

The applicant may combine work items into projects. Emergency work and permanent work may be combined into one project only when the emergency work is incidental to the permanent work.

Multiple sites, similar in nature, within a specific geographical area may be combined. For example, multiple minor washouts along a stretch of secondary roadway may be combined into a single project.

Environmental Considerations

All repair projects must comply with the requirements of the National Environmental Policy Act (NEPA).

Federal Highway Administration Declared Events

General: This portion covers only those criteria and procedures applicable to the Emergency Response (ER) program for Federal-aid highways. Congress authorized a special program from the Highway Trust Fund for repair or reconstruction of Federal-aid highways that have suffered damage as a result of natural disasters or catastrophic failures from an external source. ER funds are not intended to cover all damage repair costs nor interim emergency repairs that will necessarily restore predisaster conditions. Economic hardship is not a factor in determining repair eligibility. Generally, the FHWA has determined that eligible ER repairs in the State in the range of $700,000 or more are significant enough to justify approval of ER funds.

The decision to seek ER financial assistance rests with the State. Local municipalities do not deal directly with the FHWA.

The Governor must make a formal proclamation of the existence of a disaster. A Presidential declaration, or Governor's request for this declaration, can serve the same purpose. The State must file a letter of intent to apply for ER funding to the FHWA Division Office in Raleigh. If the request for ER funding is approved, contrary to FEMA's county specific declaration, FHWA

makes ER funding available to all counties provided the damage is disaster related and meets the criteria set forth in this section.

Reimbursement

Emergency repair work to restore essential traffic, minimize the extent of damage, or protect the remaining facilities, accomplished in the first 180 days after the occurrence of the disaster, may be reimbursed at 100 percent Federal share. Starting the 181st day after the disaster, work to repair damage on Interstate highways drops to 90 percent. For all other Federal-aid highways, the Federal share drops to 80 percent. There are not exceptions to the drop-down rates. The drop-down rates are set by law.

Disaster Assessment

The damage assessment is an evaluation to determine if the basic conditions exist for a reasonable request for ER funding. Damage assessments are conducted three ways. They are: a detailed Damage Inspection Report (DIR) on each site; the windshield inspections based upon a limited number of sites; and the quick release method based upon surveys done by NCDOT. The need to expedite the delivery of ER funding often involves the quick release form of assessment. The initial damage estimate may involve a more detailed follow-up inspection at a later date. The damage estimates for determining ER funding should only include disaster damage to Federal-aid highways. DO NOT include damage to FEMA routes in these estimates. Check the Functional Classification maps for route clarification.

Eligibility

Roadway and bridge damage, to be repaired and eligible for ER funds, must be on Federal-aid highways and must be a direct result of an approved natural disaster or catastrophic failure. Normally, eligible work must be within the right-of-way limits of the damaged Federal-aid highway facility. A minimum $5,000 in repair cost per site is used as guidance to determine if the extent of repair work at a site is beyond the scope of heavy maintenance. Betterments are not generally eligible for ER funding unless justified on the basis of preventing future recurring damage.

All repair work is classified under two categories, namely emergency repairs and permanent repairs. Emergency repairs are those repairs during and immediately following a disaster to restore essential traffic, to minimize the extent of damage, or to protect the remaining facilities. These repairs can begin immediately following a disaster. Prior approval from FHWA is not required. Properly documented costs will later be reimbursed once the Administrator makes a finding that the disaster is eligible for ER funding. Permanent repairs are those repairs undertaken after emergency repairs have been completed to restore the highway to its predisaster condition. Permanent repairs must have prior FHWA approval and authorization unless done as part of the emergency repairs.

All elements of the highway within its cross-section, which have suffered direct damage as a result of a disaster, are eligible for repair under the ER program. This includes, but is not limited to, element such as:

- Pavement
- Shoulders
- Slopes and embankments
- Guard rails
- Signs and traffic control devices
- Bridges
- Culverts
- Cribbing or other bank control features
- Bike and pedestrian paths
- Fencing
- Retaining walls

Detours should be constructed to be consistent with the anticipated volume and type of essential traffic, reasonable speeds, safety, term of use, and costs. Temporary ferry service (ferryboat, ferry operation and maintenance, docking and loading facilities) is eligible for ER funds. Repair to surface damage to a designated detour caused by traffic that has been detoured from a damaged or impassable Federal-aid highway is eligible for ER funds. A documented survey condition report of the proposed designated detour route prior to detouring traffic on it should be helpful in determining the scope of restoration work to predisaster condition. A designated detour can be a non-Federal-aid highway (FEMA secondary). Highway officials must officially establish signage for the designated detour route as the detour route

Clearing downed debris within the highway right-of-way is eligible for ER funds. Snow and ice removal are not eligible as debris removal.

Ineligible Items

Only repair work that exceeds heavy maintenance, is extraordinary, and will restore predisaster service is eligible. Examples of repair activities that are not eligible for ER funds are:

- Heavy maintenance
- Damage estimate under $5,000 per site
- Traffic damage
- Frost heaving
- Applicant-owned material
- Erosion damage
- Prior scheduled work
- Snow/ice removal
- Catastrophic failure from internal cause

Documentation

All expenses associated with the emergency and permanent repair projects should be charged to the appropriate SAP WBS element. It is important to take pictures of the damage site prior to the start of any repair work. Also, FHWA requires GPS coordinates for all permanent repair sites. Source documents used in compiling damage expenditures are to be preserved for a period of at least 3 years after payment of the final voucher by FHWA.

Environmental Considerations

All repair projects must comply with the requirements of the National Environmental Policy Act (NEPA).

NCDOT EMERGENCY CASH CARD PROGRAM
Policy and Procedures
December 21, 2006

Purpose:

The NCDOT Emergency Cash Card Program is designed to provide the Department's Division of Highways a tool to manage disaster related operations that require emergency cash during non-banking hours. This program will only be used in extreme emergency situations to enable field forces to respond more quickly to the public.

Program Overview:

- NCDOT will use the Bank of America Procurement Card Program as the tool to receive emergency cash during non-banking hours.
- Two Program Administrators (Fiscal Representatives) will oversee the Bank of America Procurement Card Program.
- Approved Individuals (cardholders) are issued procurement cards, which are tied to the Bank of America Procurement Card Program.
- The cards remain inactive until a Program Administrator activates a card.
- A card is activated once it is determined that emergency cash is required during non-banking hours.
- The activated card is used to withdrawal cash from a bank machine. The maximum amount that can be withdrawn per transaction is $800. The total amount of cash that can be withdrawn by a single cardholder per emergency event is limited to $5,000.
- A travel advance will be posted in SAP. The cash is accounted for in the same way emergency cash is currently accounted for when a check is issued for a travel advance. The ATM receipts should be retained for reconciliation and settlement of the cash advance.

Issuance of Card:

- The Secretary of Transportation, State Highway Administrator or designee will determine who needs to be issued an Emergency Cash Card. Currently all Division Engineers and the Director of Equipment and Inventory Control are eligible to receive a card.
- An individual must complete a Cardholder Agreement/Application Form before they receive an Emergency Cash Card with the appropriate signature from management.
- Program Administrator will process an on-line application so an individual can be issued a card.
- Cards are non-transferable and shall be turned in to the Program Administrator upon the cardholders end of employment with the Department.

Use of Card:

- The card will only be used to receive cash for emergency response during non-banking hours.

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- Upon receiving a request for emergency cash card activation form, the NCDOT Chief Engineer or his designee will make the determination if it is necessary to activate a card. If a card is to be activated, the Director or Deputy Director of Fiscal will be contacted so a card can be activated.
- Cardholder's Responsibilities:
  - The cardholder is the only individual authorized to make withdrawals with the card.
  - Once cash is withdrawn, a travel advance must be entered into SAP in the cardholder's name for the amount withdrawn. The travel advance should be entered into SAP by the next business day. The cardholder is responsible for repayment of the travel advance and/or posting expenditures against the travel advance, including expenses paid in the performance of other employees.

    Disbursement of cash to other employees:
    - If the cash is disbursed to another employee, the employee receiving cash from the cardholder is required to fill out Part I of the 'Emergency Cash Card Travel Advance Form' acknowledging receipt of the cash from the cardholder.
    - The employee is required to fill out Part II of the 'Emergency Cash Card Travel Advance Form' when the cash is to be repaid and/or expenses are settled with the cardholder.
    - Non-compliance with the established policies and procedures will result in payroll deductions from the employee that acknowledged receipt of cash from the cardholder.
  - The cardholders travel advance liability will be reduced by the 'Amount of Travel Advance' signed for by other employees on Part I of the 'Emergency Cash Card Travel Advance Form'

- Non-compliance with the established policies and procedures will result in payroll deductions from the cardholder.

Program Management:

- There will be two Program Administrators from the Commercial Accounts Section of the Financial Management Unit. The current Program Administrators are Todd Morgan and Matt Daughtrey.
- The responsibilities of the Program Administrators are as follows:
  - Enroll NCDOT into Bank of America Procurement Card Program and manage any changes in the program.
  - Ensure the proper DOT employees are enrolled into the Program. This includes setting up and canceling individuals with a procurement card
  - Activate a procurement card once there is a need for emergency cash during non-banking hours. Ensure proper payment to Bank of America is made for cash withdrawals.
  - Deactivate an emergency cash card the first business day following the emergency event.

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- Ensure the proper accounting entries are done in SAP for cash withdrawals.
- Reconcile the Bank of America account on a monthly basis.

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NCDOT EMERGENCY CASH CARD PROGRAM
CARD HOLDER AGREEMENT / APPLICATION FORM

NAME _____ PERSONNEL NUMBER _____

DIVISION / UNIT _____ POSITION _____

WORK LOCATION ADDRESS _____

WORK PHONE _____ MAIL SERVICE CENTER _____

I agree to comply with the following terms and conditions regarding my use of the Bank of America Procurement Card.

- I agree to use this card for approved agency business only and agree not to use it for personal purchases under any circumstances.

- I will follow the established procedures for the use of the card. Failure to do so or any misuse of the card may result in revocation of my use privileges and /or disciplinary action(s) up to and including possible dismissal, in accordance with disciplinary policies of the Department of Transportation and the Office of State Personnel.

- I agree to return the card immediately upon request or separation from employment (including termination, transfer, resignation or retirement).

- I understand that I am being entrusted with property of the Department of Transportation and the Department of Transportation will monitor all card transactions and activities associated with the card.

SIGNATURE OF CARDHOLDER _____ DATE _____

MANAGEMENT SIGNATURE _____ DATE _____

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
EMERGENCY CASH CARD PROGRAM – TRAVEL ADVANCE

EMPLOYEE RECEIVING EMERGENCY CASH	PERSONNEL NUMBER
COST CENTER	BASE OF OPERATION (COUNTY)

PART I TRAVEL ADVANCE

AMOUNT OF TRAVEL ADVANCE: $ _____

NAME OF EMERGENCY CASH CARDHOLDER: _____

Under penalties of perjury I certify that the amount I have received for an emergency travel advance is true and accurate. I understand that all Expense Vouchers (600-EXP) for expenses paid in the performance of my duties and expenses paid for the performance of other employees must be filed within 30 days. The expense forms and any unused cash will be returned to the Emergency Cash Cardholder, whom I received the cash from.

_____
Employee's Signature Date

I approve this request for a travel advance and certify that it is just, reasonable, and conforms to State and Department travel policy.

_____
Division Engineer / Unit Head Date

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PART II REPAYMENT OF TRAVEL ADVANCE – To be completed upon employees completion of emergency assignment or within 30 days, which ever occurs first.

Expenses paid in the performance of my duty (600-EXP):	$
Expenses paid in the performance of other employees (600-EXP):	$
Total reimbursable expenses:	$
Less travel advance:	$
(Total unused cash to be reimbursed to the Emergency Cash Cardholder) / Total Reimbursement Due To Employee:	$

Under penalties of perjury I certify this is a true and accurate statement of the expenses incurred in the service of the state.

Employee's Signature Date

I have examined the reimbursement requests and certify that they are just, reasonable, necessary and conform to State and Department travel policy.

Division Engineer / Unit Head Date

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NCDOT EMERGENCY CASH CARD PROGRAM
REQUEST FOR EMERGENCY CASH CARD ACTIVATION

_____ _____
NAME PERSONNEL NUMBER

_____ _____
DIVISION / UNIT POSITION

_____
EMERGENCY PHONE NUMBER

Due to the need to mobilize the employees and equipment in response to the recovery efforts associated with the below listed event, I am requesting activation of the Bank of America Emergency Cash Card issued in my name. Based on preliminary cost estimates to deploy the resources during non-banking hours, I am requesting that the Bank of America emergency cash card be activated in the amount indicated below. The cash will be used in accordance with the policies and procedures outlined for the emergency cash card program.

_____ $_____
EVENT REQUESTED AMOUNT

_____ _____
SIGNATURE OF CARDHOLDER DATE

_____ _____
CHIEF ENGINEER SIGNATURE DATE

Fax to Chief Engineer's Office at: (919) 733-4141

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APPENDIX

1. ERPM-1 Division Crew Transfer Roster
2. ERPM-2 Division Equipment Transfer Roster
3. ERPM-3 List of Contractors
4. ERPM-4 Emergency Response Daily Status Report
5. ERPM-5 Emergency Meal Reimbursement – Employee Receipt
6. ERPM-6 Request for Imprest Warrant
7. ERPM-7 Employee Roster For Emergency Meals and Lodging
8. ERPM-8 Request For Transfer of Charges
9. Emergency Information Center (EIC)/State EOC Phone List
10. Emergency Preparedness
11. Chief Engineer's Office Personnel
12. Division Office Staff Personnel (statewide)
13. SRMU Personnel
14. Crew & Supplies List
15. List of Available Equipment
16. Media Contacts and News Media Guide

FHWA Eligible Secondary Routes

Division 1
Division 2
Division 3
Division 4
Division 5
Division 6
Division 7
Division 8
Division 9
Division 10
Division 11
Division 12
Division 13
Division 14

ERPM-1

DIVISION _____ CREW TRANSFER ROSTER

EVENT _____

Assigned to Division: _____ Date of Assignment: _____ Date Assignment Complete or Reassigned: _____

DEPT/CO.	NAME	HOME OFFICE PHONE	PERSONNEL #	JOB TITLE/CLASSIFICAITON	EMERGENCY CONTACT PERSON AND NUMBER

Instructions: This completed form shall be provided to the identified emergency division contact. A copy of the completed form shall be submitted to the Chief Engineer at time of transfer.

cc: Chief Engineer - Operations

ERPM-2

DIVISION _____ EQUIPMENT TRANSFER ROSTER

EVENT _____

Assigned to Division: _____ Date of Assignment: _____ Date Assignment Complete or Reassigned: _____

EQUIPMENT TYPE	COST CENTER (DEPT.)	EQUIPMENT NUMBER	RENTAL COMPANY (If applicable)

Instructions: This completed form shall be provided to the identified emergency division contact. A copy of the completed form shall be submitted to the Chief Engineer at
time of transfer.

cc: Chief Engineer - Operations

ERPM-3

List of Contractors/Suppliers

Contractor Name	Address	Contact Person	Equipment	Telephone	Fax	Mobile, Pager	Other

Report Date: _____ ERPM-4

EMERGENCY RESPONSE DAILY STATUS REPORT

EVENT: _____ DATE WORK PERFORMED: _____

DIVISION: _____ COUNTY: _____

PERSONNEL & EQUIPMENT:

NUMBER OF DOT EMPLOYEES _____

NUMBER OF INMATES _____

NUMBER OF DOT EQUIPMENT _____

NUMBER OF CHAINSAWS _____

NUMBER OF CONTRACTORS WORKING _____

NUMBER OF CONTRACTOR EMPLOYEES _____

NUMBER OF CONTRACTOR EQUIPMENT _____

NUMBER OF CONTRACTOR CHAINSAWS _____

NUMBER OF OTHER GROUPS WORKING _____

NUMBER OF PEOPLE _____

NUMBER OF EQUIPMENT _____

NUMBER OF CHAINSAWS _____

DEBRIS HAULED:

NUMBER OF LOADS _____

NUMBER OF CUBIC YARDS HAULED _____

MAJOR REPAIRS MADE: (Attach additional sheets if necessary)

_____

_____

_____

_____

Instructions: This form is to be submitted to the Chief Engineer's Office by 10:00 a.m. for the previous day's work. Fax Number (919) 733-4141

ERPM-5 06/01/05

EMERGENCY MEAL REIMBURSEMENT - EMPLOYEE RECEIPT

EVENT			
PAY PERIOD DATES	FROM:	TO:	

To be used for Emergency Meal Reimbursement only. All employees listed on this sheet must use the same account assignment..

CHECK NUMBER	
CHECK DATE	

DIVISION	PAY PERIOD	COST CENTER	GL ACCOUNT	WBS ELEMENT INTERNAL ORDER	FUNCTIONAL AREA	ROUTE
			52724001			

My signature certifies that I received the stated amount of cash on the date indicated:

Print Name | Dates Worked (mo/day) | No. of 12 hr. Shifts | X $10 = | $ Amount Rec'd
Employee Signature Personnel No: | Date Received | Dates Worked (mo/day)

Print Name | Dates Worked (mo/day) | No. of 12 hr. Shifts | X $10 = | $ Amount Rec'd
Employee Signature Personnel No: | Date Received | Dates Worked (mo/day)

Print Name | Dates Worked (mo/day) | No. of 12 hr. Shifts | X $10 = | $ Amount Rec'd
Employee Signature Personnel No: | Date Received | Dates Worked (mo/day)

Print Name | Dates Worked (mo/day) | No. of 12 hr. Shifts | X $10 = | $ Amount Rec'd
Employee Signature Personnel No: | Date Received | Dates Worked (mo/day)

Print Name | Dates Worked (mo/day) | No. of 12 hr. Shifts | X $10 = | $ Amount Rec'd
Employee Signature Personnel No: | Date Received | Dates Worked (mo/day)

Print Name | Dates Worked (mo/day) | No. of 12 hr. Shifts | X $10 = | $ Amount Rec'd
Employee Signature Personnel No: | Date Received | Dates Worked (mo/day)

Print Name | Dates Worked (mo/day) | No. of 12 hr. Shifts | X $10 = | $ Amount Rec'd
Employee Signature Personnel No: | Date Received | Dates Worked (mo/day)

Department Total $ **Page Total** $

I certify that all employees listed on this page worked a continuous twelve hour shift for each day indicated.

ENGINEER / SUPERINTENDENT TITLE DATE

APPROVAL: ______________________ Page ______ of ______

DIVISION ENGINEER DATE

REQUEST FOR CHECK FOR EMERGENCY MEAL REIMBURSEMENT
ONE OR MULTIPLE COST CENTERS

DIVISION: _____

Write check payable to: _____

Use cost assignment shown below

Please prepare a check for the amount indicated below as per the attached forms ERPM-5:

CHARGE CODE					COST CENTER TOTAL
COST CENTER	**GL ACCOUNT**	**WBS ELEMENT INTERNAL ORDER**	**FUNC AREA**	**ROUTE**	
	52724001				**$**
	52724001				**$**
	52724001				**$**
	52724001				**$**
	52724001				**$**
	52724001				**$**
	52724001				**$**
	52724001				**$**
	52724001				**$**
	52724001				**$**

Amount for Check $ _____

_____
Requested by Supervising Engineer **Date**

_____
Approved by Division Engineer **Date**

Check No. _____

Date of Check _____

EMPLOYEE ROSTER FOR EMERGENCY MEALS AND LODGING

EVENT				
PAY PERIOD DATES	FROM:		TO:	

To be used for Emergency Meal Reimbursement only. All employees listed on this sheet must use the same charge code.

CHECK NUMBER	
CHECK DATE	

Check one:

☐ **LODGING** (GL 52721000)

☐ **SNACK** (GL 52727000)

☐ **MEAL** (GL 52724001)

VENDOR:

DATE(S) OF SERVICE:

DIVISION	PAY PERIOD	COST CENTER	GL ACCOUNT	WBS ELEMENT INTERNAL ORDER	FUNC AREA	ROUTE

EMPLOYEE	PERSONNEL #	DATE(S)

EMPLOYEE	SSN	DATE(S)

Total Employees for Dept:		**Times Subsistence Rate:**		**Equals:**	**$**

Breakfast $6.75 / Lunch $8.75 / Supper $15.00 / Snack $4.00 – Authorization must be attached if rate exceeds State rate

Invoice may not exceed this amount.

I certify that all employees listed on this page received service on the dates indicated.

ENGINEER / SUPERINTENDENT TITLE DATE

APPROVAL: _____
DIVISION ENGINEER DATE

Page _____ of _____

ERPM-8

REQUEST FOR TRANSFER OF CHARGES

COST CENTER

FR1101 JOB REPORTS Labor/Equipment

Transfer $ _____

FROM WBS # _____ G/L Account # _____ Function Code _____

TO WBS # _____ G/L Account # _____ Function Code _____

Transfer $ _____

FROM WBS # _____ G/L Account # _____ Function Code _____

TO WBS # _____ G/L Account # _____ Function Code _____

Transfer Doc # _____
(To be completed by Div Office)

INVOICES/CONTRACTS/ISSUES

Transfer $

FROM WBS # _____ G/L Account # _____ Function Code _____

TO WBS # _____ G/L Account # _____ Function Code _____

Transfer $ _____

FROM WBS # _____ G/L Account # _____ Function Code _____

TO WBS # _____ G/L Account # _____ Function Code _____

Transfer Doc # _____
(To be completed by Div Office)

Reason for transfer:

_____ _____
Signature Date

(SUPPORTING DOCUMENTATION MUST BE ATTACHED TO REQUEST)

Emergency Response and Procedures Manual Update Committee

Steering Committee

Steve Varnedoe
Lacy Love
Bill Rosser
Jennifer Brandenburg

Working Committee

Don Aschbrenner
Scott Capps
Lonnie Watkins
Cheryl Barbour
McCray Coates
Pat Boykin
Karen Fussell
Angie Ayskew
Brent Hamilton
(Rep from Purchasing)

Section Review Advisors

Chapter 1– Safety - Bob Andrews
Chapter 2 – Environmental Issues - Ken Pace
Chapter 7 – Equipment & Inventory - Drew Harbinson
Chapter 10 – Emergency Highway Traffic Regulation Plan - Terry Wyatt
Index – Secondary Roads/FHWA - Donna Dancausse

EMERGENCY PREPAREDENESS
DIVISION OFFICE COMMITTEES

Staples – Food, Ice, Cots, Linens, Emergency Telephone Logs, etc.

Clerical Staff

MAINTENANCE ISSUES (EMERGENCY POWER NEEDS)

Division Maintenance Engineer
Division Engineer
Staff Engineer
Equipment Superintendent
Division Bridge Engineer
Computer Consultant
Division Environmental Engineer

TRAFFIC SERVICES ISSUES

Division Traffic Engineer
Assistant Division Traffic Engineer

FINANCIAL ISSUES

Business Officer
Accounting Technician
Personnel Technician

PERSONNEL (INCOMING & DISTRIBUTION)

Division Construction Engineer
Division Cadd Operator

HOUSING FOR INCOMING PERSONNEL (COMMUNICATION NEEDS)

Division Operations Engineer
Safety Officer

Each committee is responsible for preplanning their needs in advance of an emergency and to be responsible for that area of needs during the crisis. The first position on the committee shall serve as its chair.

Chief Engineers Office Personnel

Division Office Staff Personnel (statewide)

SRMU Personnel

It is recommended that the County Maintenance Engineer in charge of each group bring all the necessary forms (FR-1101's etc.), documentation, and clerical supplies needed for conducting operations. This would also include other clerical items such as calculators, pens, pencils, file folders, paper, paper clips, clip boards, etc.

RECOMMENDED CREW SUPPLIES AND EQUIPMENT

Communications equipment (2 way radios/hand held radios/cell phones)
Chainsaws
Chainsaw Chains
Chainsaw oil
Chainsaw files
Chainsaw fuel containers
Chaps
Face protection
Hearing protection
Gloves
First aid supplies (including bee sting, poison ivy supplies, etc.)
Safety vests
Hard hats
Insect repellant
Water coolers (and cups)
Stop/slow paddles, flags, etc.
Work zone signs
Log chains
Bush axes
NC Highway maps

PERSONAL SUPPLIES

Cash advances for meals, lodging, and expenses
Clothing (for minimum of 5 days)
Personal information
- Identification
- Medications
- Medical and insurance information
- Emergency contacts

List of available equipment owned by DOT which can be re-located during an emergency:

CLASS CODE	DESCRIPTION	QUANTITY STATEWIDE
0212	Truck, Tandem 50,000 GVW	725
0217	Truck, Tractor Tandem 50,000 GVW	114
0227	Truck, Tractor Tandem 110,000 GCWR	14
0232	Truck, Dump 4 Axle 55,000 GVW	41
0314	Backhoe Loader	260
0404	Tractor Crawler 101-115 fwhp	3
0405	Tractor Crawler 150-190 fwhp	42
0408	Tractor Crawler 191-200 fwhp	7
0900	Grader 155 hp 25,000 lb.	528
1852	Excavator 5/8 CY Hyd. Rub. Tire	41
1853	Excavator 7/8 CY Hyd. Crawler	42
1854	Excavator 1/2 CY Hyd. Crawler	14
2002	Loader 2 CY Rub. Tire	246
2008	Loader 1 3/4 CY Hyd. Rub. Tire	20
2014	Loader 4 CY Rub. Tire	3
2102	Generator, Standby 10-35 KW	57
2115	Light Plant, Trlr. Mtd.	19
3151	Tank, Lube Fuel	110
3206	Trailer, 40 Ton LW Bed	101
3506	Pump, Water Centrifugal 6”	13
3508	Pump, Water Centrifugal 8”	2
3509	Pump, Water Centrifugal 10”	2
3512	Pump, Water PTO 12” Trlr. Mtd.	2
4102	Chipper, Brush	102
4139	Compactor, Soil Hand Held	303

Updated: 05/12/2005

Media Contacts During Emergencies

In an emergency situation you can expect media coverage. To avoid misinformation and confusion, there should be a regular free flow of accurate information to the media. Providing good information to the news media can make operations safer for NCDOT employees as well as the traveling public.

A. Pre-event Planning

Prior to any event you should make a list of who to contact in the case of an emergency with phone numbers. This list should include the appropriate Division and District Office staff, Emergency Management and the local news media.

B. During An Event

The District and Division Offices should be notified immediately in the case of road closings and should be provided with regular updates as the event progresses. The Division Office will notify the Chief Engineer's Office of all road conditions as requested.

The local media and the local emergency response offices should be notified of all road closings and associated detours to provide timely notification to the traveling public. Any information sent to the medial should also be copied to the DOT Public Information Office.

Where be necessary, variable message signs should be utilized on major routes to assist in the notification of detours.

C. How to Talk to the Media

When you talk with the media, the information you provide should be accurate, factual and based on firsthand knowledge of the subject. If ;you do not know the answer to a question, offer to get the information or direct the reporter to the proper source.

When a reporter wants an interview, make an assessment of the situation and be prepared to answer Who?, What?, When?, Where?, Why?, How?, and What is next? If your division prefers to handle the media through the NCDOT Public Information Office, refer them to (919) 715-2391.

Public Information and The News Media Guide

Do not avoid the media

Do not speculate on causes of the incident or how it could have been prevented

Do not offer your opinions

Do not go “off the record”

Do not be distracted by small talk

Do give information that reassures the public you are taking steps to do the right thing

Do stick to the facts in the situation

Do ask the reporter what the interview is about before you go on camera

Do assume every word you say will be recorded and quoted

Do be judicious in what you say to a reporter and remember the vast audience

Do answer only the question they ask

Do practice your remarks before talking with a reporter

Do tell the truth!

Secondary routes eligible for FHWA Emergency Relief funds
Updated March 2010

	Co. #	County	Route	Whole Road	From	To
1	20	CHOWAN	SR 1200	No	SR 1234	NC 32
1	20	CHOWAN	SR 1234	Yes		
1	20	CHOWAN	SR 1319	No	US 17	US 17 Bus.
1	27	DARE	SR 1206	No	US 158	US 158
1	45	HERTFORD	SR 1212	Yes		
1	45	HERTFORD	SR 1213	Yes		
1	47	HYDE	SR 1121	Yes		
1	47	HYDE	SR 1124	No	SR 1128	SR 1121
1	47	HYDE	SR 1128	Yes		
1	57	MARTIN	SR 1001	Yes		
1	57	MARTIN	SR 1409	Yes		
1	57	MARTIN	SR 1445	Yes		
1	57	MARTIN	SR 1446	Yes		
1	65	NORTHAMPTON	SR 1209	Yes		
1	65	NORTHAMPTON	SR 1211	No	SR 1212	Virginia State Line
1	65	NORTHAMPTON	SR 1212	Yes		
1	65	NORTHAMPTON	SR 1214	Yes		
1	69	PASQUOTANK	SR 1101	No	SR 1269	SR 1133
1	69	PASQUOTANK	SR 1133	Yes		
1	69	PASQUOTANK	SR 1139	No	SR 1269	Urban Boundary
1	69	PASQUOTANK	SR 1164	Yes		
1	69	PASQUOTANK	SR 1169	No	NC 344	SR 1133

Secondary routes eligible for Federal Aid

1	69	PASQUOTANK	SR 1268	Yes		
1	69	PASQUOTANK	SR 1269	Yes		
1	69	PASQUOTANK	SR 1306	No	US 17	SR 1307
1	69	PASQUOTANK	SR 1307	Yes		
1	69	PASQUOTANK	SR 1308	Yes		
1	69	PASQUOTANK	SR 1309	No	US 17	SR 1333
1	69	PASQUOTANK	SR 1329	No	US 158	SR 1411
1	69	PASQUOTANK	SR 1332	No	SR 1309	SR 1343
1	69	PASQUOTANK	SR 1333	No	SR 1309	US 17/158
1	69	PASQUOTANK	SR 1343	Yes		
1	69	PASQUOTANK	SR 1411	Yes		
1	93	WASHINGTON	SR 1300	Yes		
1	93	WASHINGTON	SR 1325	Yes		
1	93	WASHINGTON	SR 1357	No	US 64/NC32	SR 1325

Secondary routes eligible for FHWA Emergency Relief funds
Updated March 2010

Div.	Co. #	County	Route	Whole Road	From	To
2	6	BEAUFORT	SR 1001	No	Martin Co. Line	US 17
2	6	BEAUFORT	SR 1003	Yes		
2	6	BEAUFORT	SR 1300	Yes		
2	6	BEAUFORT	SR 1303	Yes		
2	6	BEAUFORT	SR 1306	Yes		
2	6	BEAUFORT	SR 1352	Yes		
2	6	BEAUFORT	SR 1403	No	US 264	US 17
2	6	BEAUFORT	SR 1404	Yes		
2	6	BEAUFORT	SR 1416	Yes		
2	6	BEAUFORT	SR 1422	No	NC 32	NC 171
2	6	BEAUFORT	SR 1501	No	US 264	Urban Boundary
2	6	BEAUFORT	SR 1507	No	SR 1501	Urban Boundary
2	6	BEAUFORT	SR 1509	Yes		
2	15	CARTERET	SR 1124	Yes		
2	15	CARTERET	SR 1125	Yes		
2	15	CARTERET	SR 1141	Yes		
2	15	CARTERET	SR 1154	No	SR 1155	SR 1155
2	15	CARTERET	SR 1155	Yes		
2	15	CARTERET	SR 1163	Yes		
2	15	CARTERET	SR 1176	No	US 70	SR 1179
2	15	CARTERET	SR 1177	No	US 70	SR 1241

2	15	CARTERET	SR 1178	No	SR 1179	SR 1241
2	15	CARTERET	SR 1179	Yes		
2	15	CARTERET	SR 1182	Yes		
2	15	CARTERET	SR 1241	Yes		
2	15	CARTERET	SR 1247	Yes		
2	15	CARTERET	SR 1300	Yes		
2	15	CARTERET	SR 1332	Yes		
2	15	CARTERET	SR 1334	Yes		
2	15	CARTERET	SR 1335	Yes		
2	15	CARTERET	SR 1347	No	US 70	SR 1335
2	15	CARTERET	SR 1387	Yes		
2	15	CARTERET	SR 1602	Yes		
2	15	CARTERET	SR 1605	Yes		
2	15	CARTERET	SR 1627	Yes		
2	24	CRAVEN	SR 1003	No	SR 1611	Beaufort Co. Line
2	24	CRAVEN	SR 1004	No	Jones Co. Line	SR 1167
2	24	CRAVEN	SR 1005	Yes		
2	24	CRAVEN	SR 1167	Yes		
2	24	CRAVEN	SR 1200	Yes		
2	24	CRAVEN	SR 1213	Yes		
2	24	CRAVEN	SR 1214	Yes		
2	24	CRAVEN	SR 1215	Yes		
2	24	CRAVEN	SR 1262	Yes		

Secondary routes eligible for FHWA Emergency Relief funds
Updated March 2010

2	24	CRAVEN	SR 1278	Yes		
2	24	CRAVEN	SR 1309	Yes		
2	24	CRAVEN	SR 1400	No	NC 118	SR 1470
2	24	CRAVEN	SR 1400	No	SR 1440	NC 43
2	24	CRAVEN	SR 1402	Yes		
2	24	CRAVEN	SR 1403	Yes		
2	24	CRAVEN	SR 1440	Yes		
2	24	CRAVEN	SR 1444	Yes		
2	24	CRAVEN	SR 1470	Yes		
2	24	CRAVEN	SR 1471	Yes		
2	24	CRAVEN	SR 1611	No	SR 1003	SR 1615
2	24	CRAVEN	SR 1615	Yes		
2	24	CRAVEN	SR 1735	Yes		
2	24	CRAVEN	SR 1737	Yes		
2	24	CRAVEN	SR 1745	Yes		
2	24	CRAVEN	SR 1746	No	SR 1745	US 70
2	24	CRAVEN	SR 1756	Yes		
2	24	CRAVEN	SR 1763	Yes		
2	39	GREENE	SR 1004	Yes		
2	39	GREENE	SR 1254	Yes		
2	39	GREENE	SR 1301	No	US 258	SR 1325
2	39	GREENE	SR 1325	Yes		
2	51	JONES	SR 1004	Yes		

2	51	JONES	SR 1005	Yes		
2	53	LENOIR	SR 1001	No	US 258	Gum Swamp Creek
2	53	LENOIR	SR 1003	Yes		
2	53	LENOIR	SR 1004	Yes		
2	53	LENOIR	SR 1541	No	US 258	NC 58
2	53	LENOIR	SR 1557	Yes		
2	53	LENOIR	SR 1569	Yes		
2	53	LENOIR	SR 1570	Yes		
2	53	LENOIR	SR 1571	Yes		
2	53	LENOIR	SR 1572	No	SR 1557	SR 1581
2	53	LENOIR	SR 1573	Yes		
2	53	LENOIR	SR 1578	Yes		
2	53	LENOIR	SR 1579	Yes		
2	53	LENOIR	SR 1600	Yes		
2	53	LENOIR	SR 1603	No	SR 1003	US 70
2	53	LENOIR	SR 1703	No	NC 58	Urban Boundary
2	53	LENOIR	SR 1742	No	NC 58	Urban Boundary
2	53	LENOIR	SR 1745	No	NC 58	NC 11
2	53	LENOIR	SR 1746	Yes		
2	53	LENOIR	SR 1747	Yes		
2	53	LENOIR	SR 1804	Yes		
2	53	LENOIR	SR 1810	No	NC 11/55	Urban Boundary
2	53	LENOIR	SR 1838	Yes		

Secondary routes eligible for FHWA Emergency Relief funds
Updated March 2010

2	53	LENOIR	SR 1845	No	SR 1810	NC 11/55
2	53	LENOIR	SR 2010	Yes		
2	73	PITT	SR 1126	No	NC 11/903	Railroad St.
2	73	PITT	SR 1128	No	NC 11	SR 1134
2	73	PITT	SR 1130	Yes		
2	73	PITT	SR 1133	Yes		
2	73	PITT	SR 1139	No	US 258	US 264 Alt.
2	73	PITT	SR 1149	Yes		
2	73	PITT	SR 1200	No	SR 1467	SR 1229
2	73	PITT	SR 1203	No	SR 1467	US 13
2	73	PITT	SR 1221	Yes		
2	73	PITT	SR 1229	No	SR 1200	US 264
2	73	PITT	SR 1241	Yes		
2	73	PITT	SR 1467	Yes		
2	73	PITT	SR 1529	No	NC 33	US 264
2	73	PITT	SR 1530	Yes		
2	73	PITT	SR 1531	No	NC 33	First St.
2	73	PITT	SR 1551	Yes		
2	73	PITT	SR 1565	No	NC 33	US 264
2	73	PITT	SR 1571	No	US 13	W. Fifth St.
2	73	PITT	SR 1579	Yes		
2	73	PITT	SR 1598	Yes		
2	73	PITT	SR 1620	Yes		

2	73	PITT	SR 1700	Yes		
2	73	PITT	SR 1702	Yes		
2	73	PITT	SR 1703	Yes		
2	73	PITT	SR 1704	Yes		
2	73	PITT	SR 1707	Yes		
2	73	PITT	SR 1708	Yes		
2	73	PITT	SR 1711	Yes		
2	73	PITT	SR 1723	No	NC 102	SR 1700
2	73	PITT	SR 1725	No	SR 1708	SR 1711
2	73	PITT	SR 1726	No	NC 33	SR 1708
2	73	PITT	SR 1755	No	NC 33	Juniper Branch
2	73	PITT	SR 1759	No	SR 1755	SR 2241
2	73	PITT	SR 1774	No	NC 43	SR 2241
2	73	PITT	SR 1939	Yes		
2	73	PITT	SR 2241	No	SR 1700	SR 1759

Secondary routes eligible for FHWA Emergency Relief funds
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Div.	Co. #	County	Route	Whole Road	From	To
3	9	BRUNSWICK	SR 1182	Yes		
3	9	BRUNSWICK	SR 1303	Yes		
3	9	BRUNSWICK	SR 1357	Yes		
3	9	BRUNSWICK	SR 1419	No	US 74	SR 1426
3	9	BRUNSWICK	SR 1426	Yes		
3	9	BRUNSWICK	SR 1432	Yes		
3	9	BRUNSWICK	SR 1435	Yes		
3	9	BRUNSWICK	SR 1437	No	SR 1472	SR 1438
3	9	BRUNSWICK	SR 1438	Yes		
3	9	BRUNSWICK	SR 1441	Yes		
3	9	BRUNSWICK	SR 1472	No	SR 1438	US 17
3	9	BRUNSWICK	SR 1551	No	US 17	NC 133
3	30	DUPLIN	SR 1004	No	NC 11	NC 403
3	64	NEW HANOVER	SR 1002	No	US 117/NC 133	Urban Boundary
3	64	NEW HANOVER	SR 1100	Yes		
3	64	NEW HANOVER	SR 1140	Yes		
3	64	NEW HANOVER	SR 1175	No	NC 132	SR 1327
3	64	NEW HANOVER	SR 1187	Yes		
3	64	NEW HANOVER	SR 1209	Yes		
3	64	NEW HANOVER	SR 1218	Yes		
3	64	NEW HANOVER	SR 1219	Yes		

3	64	NEW HANOVER	SR 1272	Yes		
3	64	NEW HANOVER	SR 1301	Yes		
3	64	NEW HANOVER	SR 1302	Yes		
3	64	NEW HANOVER	SR 1318	No	SR 1302	SR 1336
3	64	NEW HANOVER	SR 1322	No	US 117	NC 132
3	64	NEW HANOVER	SR 1336	No	SR 1318	Urban Brdy
3	64	NEW HANOVER	SR 1371	Yes		
3	64	NEW HANOVER	SR 1399	Yes		
3	64	NEW HANOVER	SR 1409	Yes		
3	64	NEW HANOVER	SR 1411	Yes		
3	64	NEW HANOVER	SR 1452	Yes		
3	64	NEW HANOVER	SR 1492	Yes		
3	64	NEW HANOVER	SR 1521	No	US 421	SR 1492
3	64	NEW HANOVER	SR 1565	No	SR 1492	NC 132
3	64	NEW HANOVER	SR 1573	Yes		
3	64	NEW HANOVER	SR 1576	Yes		
3	64	NEW HANOVER	SR 1627	Yes		
3	64	NEW HANOVER	SR 2048	Yes		
3	64	NEW HANOVER	SR 2181	Yes		
3	64	NEW HANOVER	SR 2251	Yes		
3	64	NEW HANOVER	SR 2782	Yes		
3	64	NEW HANOVER	SR 2816	Yes		
3	64	NEW HANOVER	SR 2817	Yes		

3	66	ONSLOW	SR 1105	No	NC 53	Southwest Creek, Bridge #72
3	66	ONSLOW	SR 1107	No	US 17	Urban Boundary
3	66	ONSLOW	SR 1113	Yes		
3	66	ONSLOW	SR 1212	No	SR 1213	NC 53
3	66	ONSLOW	SR 1213	No	US 258	Urban Boundary
3	66	ONSLOW	SR 1308	Yes		
3	66	ONSLOW	SR 1336	Yes		
3	66	ONSLOW	SR 1402	Yes		
3	66	ONSLOW	SR 1403	Yes		
3	66	ONSLOW	SR 1406	Yes		
3	66	ONSLOW	SR 1411	No	SR 1406	SR 1423
3	66	ONSLOW	SR 1423	No	SR 1411	SR 1427
3	66	ONSLOW	SR 1434	Yes		
3	66	ONSLOW	SR 1470	Yes		
3	66	ONSLOW	SR 1503	No	Bear Creek, Bridge #21	SR 1509
3	66	ONSLOW	SR 1509	No	SR 1503	Bogue Inlet, Bridge #77
3	66	ONSLOW	SR 1568	Yes		
3	66	ONSLOW	SR 1718	Yes		
3	66	ONSLOW	SR 2357	Yes		
3	66	ONSLOW	SR 2358	Yes		
3	81	SAMPSON	SR 1006	Yes		
3	81	SAMPSON	SR 1214	No	.06 MI W SR 1288	SR 1231

3	81	SAMPSON	SR 1231	Yes		
3	81	SAMPSON	SR 1275	Yes		
3	81	SAMPSON	SR 1281	No	SR 1296	SR 1275
3	81	SAMPSON	SR 1296	Yes		
3	81	SAMPSON	SR 1311	No	.10 MI W SR 1352	US 421
3	81	SAMPSON	SR 1356	Yes		
3	81	SAMPSON	SR 1749	No	SR 1356	US 701 Bus.
3	81	SAMPSON	SR 1838	Yes		
3	81	SAMPSON	SR 1839	Yes		
3	81	SAMPSON	SR 1851	Yes		
3	81	SAMPSON	SR 1852	Yes		
3	81	SAMPSON	SR 1855	Yes		
3	81	SAMPSON	SR 1856	Yes		

Secondary routes eligible for FHWA Emergency Relief funds
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Div.	Co. #	County	Route	Whole Road	From	To
4	32	EDGECOMBE	SR 1002	No	SR 1164	SR 1135
4	32	EDGECOMBE	SR 1005	Yes		
4	32	EDGECOMBE	SR 1006	Yes		
4	32	EDGECOMBE	SR 1152	Yes		
4	32	EDGECOMBE	SR 1157	Yes		
4	32	EDGECOMBE	SR 1164	Yes		
4	32	EDGECOMBE	SR 1165	Yes		
4	32	EDGECOMBE	SR 1207	Yes		
4	32	EDGECOMBE	SR 1208	No	Urban Boundary	NC 122
4	32	EDGECOMBE	SR 1211	Yes		
4	32	EDGECOMBE	SR 1212	Yes		
4	32	EDGECOMBE	SR 1213	Yes		
4	32	EDGECOMBE	SR 1225	No	US 64	US 64 Alt.
4	32	EDGECOMBE	SR 1232	No	.06 W SR 1230	US 64 Bus.
4	32	EDGECOMBE	SR 1243	Yes		
4	32	EDGECOMBE	SR 1250	Yes		
4	32	EDGECOMBE	SR 1278	Yes		
4	32	EDGECOMBE	SR 1289	No	NC 33	US 64 Alt.
4	32	EDGECOMBE	SR 1308	No	SR 1211	SR 1289
4	32	EDGECOMBE	SR 1350	Yes		
4	32	EDGECOMBE	SR 1351	Yes		

4	32	EDGECOMBE	SR 1400	No	NC 97	SR 1404
4	32	EDGECOMBE	SR 1402	Yes		
4	32	EDGECOMBE	SR 1404	Yes		
4	32	EDGECOMBE	SR 1518	Yes		
4	32	EDGECOMBE	SR 1537	Yes		
4	32	EDGECOMBE	SR 1577	Yes		
4	32	EDGECOMBE	SR 1578	Yes		
4	41	HALIFAX	SR 1001	No	SR 1206	NC 481
4	41	HALIFAX	SR 1002	No	NC 4	NC 481
4	41	HALIFAX	SR 1003	No	US 301	NC125/903
4	41	HALIFAX	SR 1400	Yes		
4	41	HALIFAX	SR 1426	Yes		
4	41	HALIFAX	SR 1434	No	SR 1426	NC 48
4	41	HALIFAX	SR 1686	Yes		
4	41	HALIFAX	SR 1745	Yes		
4	41	HALIFAX	SR 1752	Yes		
4	41	HALIFAX	SR 1911	Yes		
4	41	HALIFAX	SR 1912	Yes		
4	41	HALIFAX	SR 1913	Yes		
4	41	HALIFAX	SR 1914	Yes		
4	41	HALIFAX	SR 1915	Yes		
4	41	HALIFAX	SR 1916	Yes		
4	50	JOHNSTON	SR 1002	No	Wayne Co. Line	US 70

Secondary routes eligible for FHWA Emergency Relief funds
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4	50	JOHNSTON	SR 1003	Yes		
4	50	JOHNSTON	SR 1004	Yes		
4	50	JOHNSTON	SR 1007	Yes		
4	50	JOHNSTON	SR 1008	Yes		
4	50	JOHNSTON	SR 1009	Yes		
4	50	JOHNSTON	SR 1010	Yes		
4	50	JOHNSTON	SR 1162	No	Urban Boundary	.10 mi S I-95
4	50	JOHNSTON	SR 1178	No	I-95	SR 1182
4	50	JOHNSTON	SR 1182	No	US 301	SR 1178
4	50	JOHNSTON	SR 1555	No	SR 1557	NC 42
4	50	JOHNSTON	SR 1708	No	SR 1004	Oakdale Ave.
4	50	JOHNSTON	SR 1913	No	US 70	US 70 Bus.
4	50	JOHNSTON	SR 1923	Yes		
4	50	JOHNSTON	SR 2082	Yes		
4	50	JOHNSTON	SR 2309	No	SR 1927	Holloman Lane
4	50	JOHNSTON	SR 2398	Yes		
4	50	JOHNSTON	SR 2500	Yes		
4	50	JOHNSTON	SR 2548	Yes		
4	50	JOHNSTON	SR 2560	Yes		
4	63	NASH	SR 1006	Yes		
4	63	NASH	SR 1170	No	US 64 B	SR 1603
4	63	NASH	SR 1522	Yes		
4	63	NASH	SR 1524	No	US 301	Edcombe Co. Line

4	63	NASH	SR 1538	Yes		
4	63	NASH	SR 1539	No	Edgecombe Co. Line	SR 1538
4	63	NASH	SR 1541	Yes		
4	63	NASH	SR 1542	Yes		
4	63	NASH	SR 1544	No	SR 1714	SR 1604
4	63	NASH	SR 1555	Yes		
4	63	NASH	SR 1599	Yes		
4	63	NASH	SR 1603	No	SR 1770	SR 1604
4	63	NASH	SR 1604	No	SR 1609	NC 43
4	63	NASH	SR 1609	Yes		
4	63	NASH	SR 1613	No	SR 1717	.37 S. SR 1612
4	63	NASH	SR 1616	Yes		
4	63	NASH	SR 1700	No	US 64 Bus.	.93 W. SR 1145
4	63	NASH	SR 1713	No	.13 mi W. SR 1613	US 301
4	63	NASH	SR 1714	Yes		
4	63	NASH	SR 1717	No	SR 1714	SR 1613
4	63	NASH	SR 1717	No	NC 58	I-95
4	63	NASH	SR 1727	Yes		
4	63	NASH	SR 1733	Yes		
4	63	NASH	SR 1770	No	SR 1603	US 64 Bus.
4	95	WAYNE	SR 1002	Yes		
4	95	WAYNE	SR 1003	Yes		
4	95	WAYNE	SR 1007	Yes		

Secondary routes eligible for FHWA Emergency Relief funds
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4	95	WAYNE	SR 1008	Yes		
4	95	WAYNE	SR 1059	Yes		
4	95	WAYNE	SR 1131	No	SR 1219	US 13
4	95	WAYNE	SR 1219	No	SR 1131	SR 1220
4	95	WAYNE	SR 1222	No	SR 1926	SR 1219
4	95	WAYNE	SR 1223	Yes		
4	95	WAYNE	SR 1236	Yes		
4	95	WAYNE	SR 1243	Yes		
4	95	WAYNE	SR 1300	No	SR 1304	SR 1316
4	95	WAYNE	SR 1305	Yes		
4	95	WAYNE	SR 1306	Yes		
4	95	WAYNE	SR 1313	Yes		
4	95	WAYNE	SR 1316	Yes		
4	95	WAYNE	SR 1326	No	US 70	0.38 mi. N. US 70
4	95	WAYNE	SR 1555	Yes		
4	95	WAYNE	SR 1556	No	US 70	SR 1571
4	95	WAYNE	SR 1560	Yes		
4	95	WAYNE	SR 1565	Yes		
4	95	WAYNE	SR 1569	Yes		
4	95	WAYNE	SR 1570	No	SR 1003	SR 1571
4	95	WAYNE	SR 1571	No	US 13	US 117
4	95	WAYNE	SR 1572	Yes		
4	95	WAYNE	SR 1574	Yes		

4	95	WAYNE	SR 1579	Yes		
4	95	WAYNE	SR 1702	No	SR 1003	SR 1714
4	95	WAYNE	SR 1709	Yes		
4	95	WAYNE	SR 1711	No	US 70 Bus.	SR 1709
4	95	WAYNE	SR 1712	Yes		
4	95	WAYNE	SR 1713	Yes		
4	95	WAYNE	SR 1714	Yes		
4	95	WAYNE	SR 1719	Yes		
4	95	WAYNE	SR 1731	Yes		
4	95	WAYNE	SR 1745	No	Duplin Co. Line	SR 1915
4	95	WAYNE	SR 1900	Yes		
4	95	WAYNE	SR 1915	Yes		
4	95	WAYNE	SR 1918	Yes		
4	95	WAYNE	SR 1919	Yes		
4	95	WAYNE	SR 1925	Yes		
4	95	WAYNE	SR 1926	No	SR 1120	SR 1222
4	95	WAYNE	SR 1928	Yes		
4	95	WAYNE	SR 2052	Yes		
4	95	WAYNE	SR 2062	No	US 70 Bus.	N. James St
4	95	WAYNE	SR 2075	Yes		
4	97	WILSON	SR 1158	Yes		
4	97	WILSON	SR 1162	No	SR 1169	NC 42
4	97	WILSON	SR 1163	No	SR 1165	NC 42/58

Secondary routes eligible for FHWA Emergency Relief funds
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4	97	WILSON	SR 1165	Yes		
4	97	WILSON	SR 1168	Yes		
4	97	WILSON	SR 1169	Yes		
4	97	WILSON	SR 1184	Yes		
4	97	WILSON	SR 1186	Yes		
4	97	WILSON	SR 1192	Yes		
4	97	WILSON	SR 1320	Yes		
4	97	WILSON	SR 1323	Yes		
4	97	WILSON	SR 1326	Yes		
4	97	WILSON	SR 1327	Yes		
4	97	WILSON	SR 1332	No	NC 58	SR 1327
4	97	WILSON	SR 1356	Yes		
4	97	WILSON	SR 1369	Yes		
4	97	WILSON	SR 1377	Yes		
4	97	WILSON	SR 1515	Yes		
4	97	WILSON	SR 1516	Yes		
4	97	WILSON	SR 1602	No	SR 1628	Mary Ella St.
4	97	WILSON	SR 1606	No	US 264	SR 1670
4	97	WILSON	SR 1607	Yes		
4	97	WILSON	SR 1608	Yes		
4	97	WILSON	SR 1618	Yes		
4	97	WILSON	SR 1645	No	US 117 Alt.	SR 1649
4	97	WILSON	SR 1649	No	SR 1645	US 301

4	97	WILSON	SR 1670	Yes		

Secondary routes eligible for FHWA Emergency Relief funds
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Div.	Co. #	County	Route	Whole Road	From	To
5	31	DURHAM	SR 1002	Yes		
5	31	DURHAM	SR 1004	Yes		
5	31	DURHAM	SR 1107	Yes		
5	31	DURHAM	SR 1109	Yes		
5	31	DURHAM	SR 1110	No	SR 1109	SR 1107
5	31	DURHAM	SR 1116	No	NC 751	US 15/501
5	31	DURHAM	SR 1118	Yes		
5	31	DURHAM	SR 1121	Yes		
5	31	DURHAM	SR 1127	Yes		
5	31	DURHAM	SR 1146	Yes		
5	31	DURHAM	SR 1158	Yes		
5	31	DURHAM	SR 1183	Yes		
5	31	DURHAM	SR 1305	Yes		
5	31	DURHAM	SR 1306	No	Orange Co. Line	SR 1307
5	31	DURHAM	SR 1307	Yes		
5	31	DURHAM	SR 1308	Yes		
5	31	DURHAM	SR 1320	Yes		
5	31	DURHAM	SR 1321	Yes		
5	31	DURHAM	SR 1322	Yes		
5	31	DURHAM	SR 1327	Yes		
5	31	DURHAM	SR 1361	Yes		

5	31	DURHAM	SR 1401	Yes		
5	31	DURHAM	SR 1404	Yes		
5	31	DURHAM	SR 1407	Yes		
5	31	DURHAM	SR 1413	Yes		
5	31	DURHAM	SR 1443	Yes		
5	31	DURHAM	SR 1445	Yes		
5	31	DURHAM	SR 1448	Yes		
5	31	DURHAM	SR 1449	No	NC 157	SR 1401
5	31	DURHAM	SR 1456	Yes		
5	31	DURHAM	SR 1628	Yes		
5	31	DURHAM	SR 1631	Yes		
5	31	DURHAM	SR 1632	Yes		
5	31	DURHAM	SR 1634	Yes		
5	31	DURHAM	SR 1637	No	I-85	SR 1800
5	31	DURHAM	SR 1639	Yes		
5	31	DURHAM	SR 1669	Yes		
5	31	DURHAM	SR 1670	No	SR 1818	SR 1632
5	31	DURHAM	SR 1670	No	US 15/501 S.	SR 1800
5	31	DURHAM	SR 1675	No	I-85	SR 1800
5	31	DURHAM	SR 1800	Yes		
5	31	DURHAM	SR 1811	No	SR 1917	SR 1814
5	31	DURHAM	SR 1814	Yes		
5	31	DURHAM	SR 1818	Yes		

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5	31	DURHAM	SR 1838	Yes		
5	31	DURHAM	SR 1926	Yes		
5	31	DURHAM	SR 1945	Yes		
5	31	DURHAM	SR 1959	Yes		
5	31	DURHAM	SR 1973	Yes		
5	31	DURHAM	SR 1977	Yes		
5	31	DURHAM	SR 1978	Yes		
5	31	DURHAM	SR 1999	Yes		
5	31	DURHAM	SR 2028	Yes		
5	31	DURHAM	SR 2095	Yes		
5	31	DURHAM	SR 2145	Yes		
5	31	DURHAM	SR 2146	Yes		
5	31	DURHAM	SR 2147	Yes		
5	31	DURHAM	SR 2148	Yes		
5	31	DURHAM	SR 2294	Yes		
5	31	DURHAM	SR 2295	Yes		
5	31	DURHAM	SR 2472	Yes		
5	31	DURHAM	SR 2602	No	SR 1004	SR 1794
5	31	DURHAM	SR 2733	Yes		
5	31	DURHAM	SR 2746	Yes		
5	31	DURHAN	SR 2220	Yes		
5	34	FRANKLIN	SR 1100	Yes		
5	34	FRANKLIN	SR 1147	No	US 1 Alt.	US 1

5	34	FRANKLIN	SR 1770	No	NC 39	Nash Co. Line
5	38	GRANVILLE	SR 1004	Yes		
5	38	GRANVILLE	SR 1100	No	I -85	SR 1103
5	38	GRANVILLE	SR 1103	No	SR 1100	SR 1239
5	38	GRANVILLE	SR 1112	Yes		
5	38	GRANVILLE	SR 1120	Yes		
5	38	GRANVILLE	SR 1127	Yes		
5	38	GRANVILLE	SR 1138	Yes		
5	38	GRANVILLE	SR 1164	Yes		
5	38	GRANVILLE	SR 1167	Yes		
5	38	GRANVILLE	SR 1169	Yes		
5	38	GRANVILLE	SR 1170	No	SR 1167	SR 1232
5	38	GRANVILLE	SR 1195	Yes		
5	38	GRANVILLE	SR 1206	Yes		
5	38	GRANVILLE	SR 1207	Yes		
5	38	GRANVILLE	SR 1232	No	SR 1170	US 15
5	38	GRANVILLE	SR 1239	Yes		
5	38	GRANVILLE	SR 1430	No	US 15	Vance Co. Line
5	38	GRANVILLE	SR 1513	Yes		
5	38	GRANVILLE	SR 1521	No	SR 1522	SR 1514
5	38	GRANVILLE	SR 1522	No	US 158 Bus.	SR 1521
5	38	GRANVILLE	SR 1600	No	US 158	0.19 mi. S. SR 1606
5	38	GRANVILLE	SR 1602	Yes		

Secondary routes eligible for FHWA Emergency Relief funds
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5	38	GRANVILLE	SR 1606	Yes		
5	38	GRANVILLE	SR 1646	Yes		
5	38	GRANVILLE	SR 1665	Yes		
5	72	PERSON	SR 1152	No	0.3 mi S SR 1153	US 158
5	72	PERSON	SR 1156	Yes		
5	72	PERSON	SR 1333	No	US 158	SR 1346
5	72	PERSON	SR 1333	No	SR 1351	SR 1337
5	72	PERSON	SR 1337	Yes		
5	72	PERSON	SR 1340	Yes		
5	72	PERSON	SR 1351	Yes		
5	72	PERSON	SR 1363	Yes		
5	72	PERSON	SR 1409	No	US 158	SR 1333
5	72	PERSON	SR 1531	Yes		
5	72	PERSON	SR 1534	Yes		
5	72	PERSON	SR 1536	No	SR 1601	Urban Boundary
5	72	PERSON	SR 1542	No	US 158	Urban Boundary
5	72	PERSON	SR 1596	Yes		
5	72	PERSON	SR 1601	Yes		
5	90	VANCE	SR 1001	Yes		
5	90	VANCE	SR 1101	No	Urban Boundary	US 1 Bus.
5	90	VANCE	SR 1115	No	SR 1519	US 1
5	90	VANCE	SR 1120	Yes		
5	90	VANCE	SR 1128	No	US 158 Bus.	I-85

5	90	VANCE	SR 1137	Yes		
5	90	VANCE	SR 1139	Yes		
5	90	VANCE	SR 1143	No	NC 39	US 1
5	90	VANCE	SR 1148	Yes		
5	90	VANCE	SR 1162	No	US 158	US 158 Bus.
5	90	VANCE	SR 1165	Yes		
5	90	VANCE	SR 1214	Yes		
5	90	VANCE	SR 1228	Yes		
5	90	VANCE	SR 1295	No	SR 1303	I-85
5	90	VANCE	SR 1303	No	SR 1162	SR 1336
5	90	VANCE	SR 1317	No	I-85	US 158
5	90	VANCE	SR 1329	No	NC 39	Granville Co. Line
5	90	VANCE	SR 1336	Yes		
5	90	VANCE	SR 1369	Yes		
5	90	VANCE	SR 1371	Yes		
5	90	VANCE	SR 1437	Yes		
5	90	VANCE	SR 1518	No	NC 39	SR 1519
5	90	VANCE	SR 1519	No	SR 1001	SR 1115
5	90	VANCE	SR 1524	Yes		
5	90	VANCE	SR 1533	No	NC 39	SR 1524
5	91	WAKE	SR 1001	No	SR 2466	NC 96
5	91	WAKE	SR 1002	Yes		
5	91	WAKE	SR 1003	Yes		

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5	91	WAKE	SR 1004	Yes		
5	91	WAKE	SR 1005	No	SR 2000	NC 98
5	91	WAKE	SR 1006	No	US 401	NC 42
5	91	WAKE	SR 1007	Yes		
5	91	WAKE	SR 1009	Yes		
5	91	WAKE	SR 1010	Yes		
5	91	WAKE	SR 1011	No	NC 54	SR 1142
5	91	WAKE	SR 1012	Yes		
5	91	WAKE	SR 1013	Yes		
5	91	WAKE	SR 1101	No	SR 1115	NC 42
5	91	WAKE	SR 1107	Yes		
5	91	WAKE	SR 1110	Yes		
5	91	WAKE	SR 1127	No	US 1	SR 1011
5	91	WAKE	SR 1141	Yes		
5	91	WAKE	SR 1152	No	SR 1009	55 Byp.
5	91	WAKE	SR 1173	No	NC 42	Harnett Co. Line
5	91	WAKE	SR 1300	No	SR 1397	SR 1312
5	91	WAKE	SR 1301	No	NC 55	SR 2767
5	91	WAKE	SR 1313	Yes		
5	91	WAKE	SR 1315	Yes		
5	91	WAKE	SR 1319	Yes		
5	91	WAKE	SR 1321	Yes		
5	91	WAKE	SR 1370	Yes		

5	91	WAKE	SR 1371	Yes		
5	91	WAKE	SR 1375	No	SR 1010	SR 1371
5	91	WAKE	SR 1379	Yes		
5	91	WAKE	SR 1381	Yes		
5	91	WAKE	SR 1382	No	SR 1381	SR 1009
5	91	WAKE	SR 1393	Yes		
5	91	WAKE	SR 1415	Yes		
5	91	WAKE	SR 1435	Yes		
5	91	WAKE	SR 1497	Yes		
5	91	WAKE	SR 1521	Yes		
5	91	WAKE	SR 1564	Yes		
5	91	WAKE	SR 1571	Yes		
5	91	WAKE	SR 1605	Yes		
5	91	WAKE	SR 1613	Yes		
5	91	WAKE	SR 1615	No	SR 1605	SR 1616
5	91	WAKE	SR 1616	Yes		
5	91	WAKE	SR 1645	No	I-540	US 70
5	91	WAKE	SR 1650	Yes		
5	91	WAKE	SR 1652	No	NC 54	I-40
5	91	WAKE	SR 1655	No	SR 5808	SR 1656
5	91	WAKE	SR 1656	Yes		
5	91	WAKE	SR 1657	Yes		
5	91	WAKE	SR 1664	Yes		

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5	91	WAKE	SR 1670	Yes		
5	91	WAKE	SR 1728	Yes		
5	91	WAKE	SR 1800	Yes		
5	91	WAKE	SR 1820	No	US 70	SR 5147
5	91	WAKE	SR 1822	No	SR 1829	SR 1006
5	91	WAKE	SR 1827	Yes		
5	91	WAKE	SR 1829	No	SR 1822	SR 2000
5	91	WAKE	SR 1837	Yes		
5	91	WAKE	SR 1907	No	NC 98	Urban Boundary
5	91	WAKE	SR 1909	No	US 1	SR 1917
5	91	WAKE	SR 1917	Yes		
5	91	WAKE	SR 1930	Yes		
5	91	WAKE	SR 1933	Yes		
5	91	WAKE	SR 1945	No	NC 98	US 401
5	91	WAKE	SR 2000	Yes		
5	91	WAKE	SR 2006	Yes		
5	91	WAKE	SR 2012	No	SR 2015	SR 2000
5	91	WAKE	SR 2015	No	SR 2000	0.3 MI west of SR 3555
5	91	WAKE	SR 2018	Yes		
5	91	WAKE	SR 2026	Yes		
5	91	WAKE	SR 2036	Yes		
5	91	WAKE	SR 2041	Yes		
5	91	WAKE	SR 2045	Yes		

5	91	WAKE	SR 2051	Yes		
5	91	WAKE	SR 2108	Yes		
5	91	WAKE	SR 2204	Yes		
5	91	WAKE	SR 2205	Yes		
5	91	WAKE	SR 2206	Yes		
5	91	WAKE	SR 2215	Yes		
5	91	WAKE	SR 2224	Yes		
5	91	WAKE	SR 2231	Yes		
5	91	WAKE	SR 2233	No	SR 2049	SR 1007
5	91	WAKE	SR 2298	Yes		
5	91	WAKE	SR 2303	No	NC 96	Urban Boundary
5	91	WAKE	SR 2320	No	SR 1003	SR 1001
5	91	WAKE	SR 2352	No	Johnston Co. Line	SR 2353
5	91	WAKE	SR 2353	Yes		
5	91	WAKE	SR 2358	Yes		
5	91	WAKE	SR 2516	No	US 64 Bus.	SR 1007
5	91	WAKE	SR 2542	Yes		
5	91	WAKE	SR 2544	Yes		
5	91	WAKE	SR 2561	Yes		
5	91	WAKE	SR 2564	Yes		
5	91	WAKE	SR 2683	Yes		
5	91	WAKE	SR 2684	Yes		
5	91	WAKE	SR 2697	Yes		

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5	91	WAKE	SR 2710	No	SR 2794	SR 2711
5	91	WAKE	SR 2711	No	SR 1006	SR 2710
5	91	WAKE	SR 2713	Yes		
5	91	WAKE	SR 2715	Yes		
5	91	WAKE	SR 2720	Yes		
5	91	WAKE	SR 2751	No	US 401	NC 42
5	91	WAKE	SR 2767	Yes		
5	91	WAKE	SR 2768	Yes		
5	91	WAKE	SR 2770	No	US 401	SR 2767
5	91	WAKE	SR 2794	Yes		
5	91	WAKE	SR 2812	No	US 70	NC 50
5	91	WAKE	SR 2824	Yes		
5	91	WAKE	SR 2825	Yes		
5	91	WAKE	SR 2900	Yes		
5	91	WAKE	SR 2911	Yes		
5	91	WAKE	SR 2921	Yes		
5	91	WAKE	SR 3007	Yes		
5	91	WAKE	SR 3008	Yes		
5	91	WAKE	SR 3009	Yes		
5	91	WAKE	SR 3014	Yes		
5	91	WAKE	SR 3015	No	I-40	SR 1002
5	91	WAKE	SR 3067	Yes		
5	91	WAKE	SR 3073	Yes		

5	91	WAKE	SR 3081	Yes		
5	91	WAKE	SR 3097	No	I-540	SR 1002
5	91	WAKE	SR 3112	Yes		
5	91	WAKE	SR 3466	Yes		
5	91	WAKE	SR 3555	No	US 1	SR 2015
5	91	WAKE	SR 3670	Yes		
5	91	WAKE	SR 3977	Yes		
5	91	WAKE	SR 4363	Yes		
5	91	WAKE	SR 4369	Yes		
5	90	WAKE	SR 5147	Yes		
5	91	WAKE	SR 5147	Yes		
5	91	WAKE	SR 5233	Yes		
5	91	WAKE	SR 5418	Yes		
5	91	WAKE	SR 5650	Yes		
5	91	WAKE	SR 5651	Yes		
5	91	WAKE	SR 5652	Yes		
5	91	WAKE	SR 5653	Yes		
5	91	WAKE	SR 5654	Yes		
5	91	WAKE	SR 5655	Yes		
5	92	WARREN	SR 1001	Yes		
5	92	WARREN	SR 1134	Yes		
5	92	WARREN	SR 1200	Yes		
5	92	WARREN	SR 1318	No	SR 1344	SR 1345

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5	92	WARREN	SR 1344	Yes		
5	92	WARREN	SR 1345	Yes		
5	92	WARREN	SR 1362	Yes		

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Div.	Co. #	County	Route	Whole Road	From	To
6	8	BLADEN	SR 1001	Yes		
6	8	BLADEN	SR 1004	Yes		
6	23	COLUMBUS	SR 1001	Yes		
6	23	COLUMBUS	SR 1002	No	Robeson Co. Line	NC 242
6	23	COLUMBUS	SR 1004	Yes		
6	23	COLUMBUS	SR 1166	No	US 701	Urban Boundary
6	23	COLUMBUS	SR 1437	No	US 701	Pine Swamp Bridge
6	23	COLUMBUS	SR 1439	Yes		
6	23	COLUMBUS	SR 1552	No	US 74-76	US 701
6	23	COLUMBUS	SR 1574	No	US 74	US 74 Bus.
6	23	COLUMBUS	SR 1706	Yes		
6	23	COLUMBUS	SR 1735	No	NC 214	US 74
6	23	COLUMBUS	SR 1916	Yes		
6	23	COLUMBUS	SR 1920	Yes		
6	23	COLUMBUS	SR 1953	No	US 701 Bus.	US 74 Bus.
6	25	CUMBERLAND	SR 1003	Yes		
6	25	CUMBERLAND	SR 1006	No	I-95 Bus./US 301	NC 24
6	25	CUMBERLAND	SR 1006	No	SR 1826	Sampson Co. Line
6	25	CUMBERLAND	SR 1007	No	Reilly St	SR 2337
6	25	CUMBERLAND	SR 1011	No	US 401	I-95
6	25	CUMBERLAND	SR 1104	Yes		

6	25	CUMBERLAND	SR 1107	Yes		
6	25	CUMBERLAND	SR 1112	No	SR 1139	SR 1104
6	25	CUMBERLAND	SR 1112	No	SR 1003	NC 59
6	25	CUMBERLAND	SR 1115	No	SR 1116	SR 1112
6	25	CUMBERLAND	SR 1116	No	SR 1115	SR 1117
6	25	CUMBERLAND	SR 1117	No	SR 1116	Robeson Co. Line
6	25	CUMBERLAND	SR 1118	Yes		
6	25	CUMBERLAND	SR 1131	No	NC 59	SR 1132
6	25	CUMBERLAND	SR 1132	Yes		
6	25	CUMBERLAND	SR 1139	Yes		
6	25	CUMBERLAND	SR 1141	No	SR 2311	Mary Kirk Dr.
6	25	CUMBERLAND	SR 1219	Yes		
6	25	CUMBERLAND	SR 1344	Yes		
6	25	CUMBERLAND	SR 1363	Yes		
6	25	CUMBERLAND	SR 1400	Yes		
6	25	CUMBERLAND	SR 1402	No	SR 1400	SR 3569
6	25	CUMBERLAND	SR 1403	Yes		
6	25	CUMBERLAND	SR 1404	Yes		
6	25	CUMBERLAND	SR 1408	No	SR 1404	SR 1437
6	25	CUMBERLAND	SR 1409	Yes		
6	25	CUMBERLAND	SR 1410	Yes		
6	25	CUMBERLAND	SR 1411	Yes		
6	25	CUMBERLAND	SR 1414	Yes		

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6	25	CUMBERLAND	SR 1415	Yes		
6	25	CUMBERLAND	SR 1437	Yes		
6	25	CUMBERLAND	SR 1451	Yes		
6	25	CUMBERLAND	SR 1593	Yes		
6	25	CUMBERLAND	SR 1596	Yes		
6	25	CUMBERLAND	SR 1600	Yes		
6	25	CUMBERLAND	SR 1601	Yes		
6	25	CUMBERLAND	SR 1605	Yes		
6	25	CUMBERLAND	SR 1606	No	SR 1605	SR 1607
6	25	CUMBERLAND	SR 1607	No	US 401	SR 1606
6	25	CUMBERLAND	SR 1611	No	SR 1600	US 401
6	25	CUMBERLAND	SR 1613	Yes		
6	25	CUMBERLAND	SR 1614	Yes		
6	25	CUMBERLAND	SR 1615	Yes		
6	25	CUMBERLAND	SR 1714	No	SR 1728	Urban Boundary
6	25	CUMBERLAND	SR 1728	Yes		
6	25	CUMBERLAND	SR 1802	No	US 301	SR 1812
6	25	CUMBERLAND	SR 1812	Yes		
6	25	CUMBERLAND	SR 1815	Yes		
6	25	CUMBERLAND	SR 1826	No	US 13	SR 1850
6	25	CUMBERLAND	SR 1828	No	US 301	Urban Boundary
6	25	CUMBERLAND	SR 1835	Yes		
6	25	CUMBERLAND	SR 1838	No	I-95 Bus.	SR 1835

6	25	CUMBERLAND	SR 1850	Yes		
6	25	CUMBERLAND	SR 2000	Yes		
6	25	CUMBERLAND	SR 2010	Yes		
6	25	CUMBERLAND	SR 2220	Yes		
6	25	CUMBERLAND	SR 2252	No	I-95	Urban Boundary
6	25	CUMBERLAND	SR 2260	No	I-95 Bus.	SR 2341
6	25	CUMBERLAND	SR 2283	Yes		
6	25	CUMBERLAND	SR 2299	Yes		
6	25	CUMBERLAND	SR 2311	Yes		
6	25	CUMBERLAND	SR 2337	No	SR 2205	SR 1007
6	25	CUMBERLAND	SR 2341	No	SR 2260	I-95
6	25	CUMBERLAND	SR 3421	Yes		
6	25	CUMBERLAND	SR 3499	No	SR 3196	SR 1415
6	25	CUMBERLAND	SR 3578	Yes		
6	25	CUMBERLAND	SR 3826	Yes		
6	25	CUMBERLAND	SR 3827	Yes		
6	25	CUMBERLAND	SR 3828	Yes		
6	25	CUMBERLAND	SR 3950	Yes		
6	42	HARNETT	SR 1002	No	US 301	I-95
6	42	HARNETT	SR 1121	No	NC 210	Chestnut St.
6	42	HARNETT	SR 1209	Yes		
6	42	HARNETT	SR 1280	No	Lee Co. Line	US 421 N
6	42	HARNETT	SR 1412	Yes		

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6	42	HARNETT	SR 1532	No	NC 55	SR 2084
6	42	HARNETT	SR 1703	No	SR 1581	SR 1718
6	42	HARNETT	SR 1705	No	US 301	SR 1722
6	42	HARNETT	SR 1718	Yes		
6	42	HARNETT	SR 1720	Yes		
6	42	HARNETT	SR 1725	Yes		
6	42	HARNETT	SR 1726	Yes		
6	42	HARNETT	SR 1735	Yes		
6	42	HARNETT	SR 1746	Yes		
6	42	HARNETT	SR 1769	No	NC 82	Juniper Creek
6	42	HARNETT	SR 1777	Yes		
6	42	HARNETT	SR 1779	No	US 401	NC 217
6	42	HARNETT	SR 1780	No	SR 1777	US 301
6	42	HARNETT	SR 1785	No	SR 1793	SR 1837
6	42	HARNETT	SR 1790	No	US 421	Urban Boundary
6	42	HARNETT	SR 1793	No	US 301	I-95
6	42	HARNETT	SR 1808	No	US 301	I-95
6	42	HARNETT	SR 2016	No	US 401	SR 2021
6	42	HARNETT	SR 2021	No	SR 2016	SR 1779
6	42	HARNETT	SR 2027	No	US 401	NC 217
6	42	HARNETT	SR 2048	No	SR 2048	Urban Boundary
6	42	HARNETT	SR 2084	Yes		
6	77	ROBESON	SR 1002	Yes		

6	77	ROBESON	SR 1003	No	SR 1207	SR 2236
6	77	ROBESON	SR 1004	Yes		
6	77	ROBESON	SR 1005	No	SR 1997	Urban Boundary
6	77	ROBESON	SR 1006	No	SR 1001	SR 2041
6	77	ROBESON	SR 1101	No	NC 83	SR 1107
6	77	ROBESON	SR 1107	No	SR 1101	SC Line
6	77	ROBESON	SR 1154	Yes		
6	77	ROBESON	SR 1302	Yes		
6	77	ROBESON	SR 1307	Yes		
6	77	ROBESON	SR 1310	Yes		
6	77	ROBESON	SR 1312	No	NC 71	SR 1313
6	77	ROBESON	SR 1313	Yes		
6	77	ROBESON	SR 1318	No	SR 1762	SR 1514
6	77	ROBESON	SR 1324	Yes		
6	77	ROBESON	SR 1340	No	NC 711	NC 710
6	77	ROBESON	SR 1505	No	SR 1779	SR 1777
6	77	ROBESON	SR 1514	Yes		
6	77	ROBESON	SR 1527	No	SR 1532	NC 72
6	77	ROBESON	SR 1528	Yes		
6	77	ROBESON	SR 1536	No	SR 1528	NC 41
6	77	ROBESON	SR 1600	Yes		
6	77	ROBESON	SR 1712	No	SR 1713	NC 71
6	77	ROBESON	SR 1713	Yes		

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6	77	ROBESON	SR 1762	No	SR 1318	SR 1006
6	77	ROBESON	SR 1776	Yes		
6	77	ROBESON	SR 1777	No	SR 1505	SR 1776
6	77	ROBESON	SR 1779	Yes		
6	77	ROBESON	SR 1924	No	SR 1931	SR 1935
6	77	ROBESON	SR 1931	No	SR 1924	SR 1006
6	77	ROBESON	SR 1935	No	SR 1955	SR 1924
6	77	ROBESON	SR 1955	No	SR 1935	NC 41
6	77	ROBESON	SR 1997	Yes		
6	77	ROBESON	SR 2055	Yes		
6	77	ROBESON	SR 2104	No	NC 211	SR 2111
6	77	ROBESON	SR 2202	Yes		
6	77	ROBESON	SR 2207	Yes		
6	77	ROBESON	SR 2235	No	NC 130	SR 2236
6	77	ROBESON	SR 2236	Yes		
6	77	ROBESON	SR 2289	Yes		
6	77	ROBESON	SR 2290	Yes		
6	77	ROBESON	SR 2413	No	SR 2513	US 74
6	77	ROBESON	SR 2413	No	SR 2501	NC 41
6	77	ROBESON	SR 2435	No	SR 2433	SR 2455
6	77	ROBESON	SR 2455	No	US 301	SR 2435
6	77	ROBESON	SR 2489	Yes		
6	77	ROBESON	SR 2501	No	SR 2499	SR 2413

6	77	ROBESON	SR 2513	Yes		

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Div.	Co. #	County	Route	Whole Road	From	To
7	0	ALAMANCE	SR 1001	Yes		
7	0	ALAMANCE	SR 1002	No	NC 87	SR 1593
7	0	ALAMANCE	SR 1005	Yes		
7	0	ALAMANCE	SR 1007	No	NC 119	I-40
7	0	ALAMANCE	SR 1113	No	SR 1115	NC 62
7	0	ALAMANCE	SR 1115	Yes		
7	0	ALAMANCE	SR 1136	No	NC 62	NC 49
7	0	ALAMANCE	SR 1147	Yes		
7	0	ALAMANCE	SR 1148	No	SR 1148	NC 49
7	0	ALAMANCE	SR 1154	Yes		
7	0	ALAMANCE	SR 1157	Yes		
7	0	ALAMANCE	SR 1158	No	US 70	Urban Boundary
7	0	ALAMANCE	SR 1184	Yes		
7	0	ALAMANCE	SR 1301	No	SR 1308	SR 1504
7	0	ALAMANCE	SR 1306	Yes		
7	0	ALAMANCE	SR 1308	No	SR 1158	SR 1301
7	0	ALAMANCE	SR 1309	Yes		
7	0	ALAMANCE	SR 1311	Yes		
7	0	ALAMANCE	SR 1323	Yes		
7	0	ALAMANCE	SR 1363	Yes		
7	0	ALAMANCE	SR 1452	Yes		

7	0	ALAMANCE	SR 1454	Yes		
7	0	ALAMANCE	SR 1455	Yes		
7	0	ALAMANCE	SR 1500	No	NC 100	Travis Creek
7	0	ALAMANCE	SR 1503	Yes		
7	0	ALAMANCE	SR 1506	No	SR 1508	SR 1454
7	0	ALAMANCE	SR 1508	No	SR 1506	SR 1509
7	0	ALAMANCE	SR 1509	Yes		
7	0	ALAMANCE	SR 1515	Yes		
7	0	ALAMANCE	SR 1522	No	Wicker St.	SR 1545
7	0	ALAMANCE	SR 1529	Yes		
7	0	ALAMANCE	SR 1530	No	NC 87	SR 1593
7	0	ALAMANCE	SR 1537	Yes		
7	0	ALAMANCE	SR 1545	Yes		
7	0	ALAMANCE	SR 1547	Yes		
7	0	ALAMANCE	SR 1593	No	SR 1530	SR 1002
7	0	ALAMANCE	SR 1700	Yes		
7	0	ALAMANCE	SR 1712	Yes		
7	0	ALAMANCE	SR 1716	Yes		
7	0	ALAMANCE	SR 1719	No	McKinney St.	SR 2396
7	0	ALAMANCE	SR 1720	Yes		
7	0	ALAMANCE	SR 1729	No	SR 1712	Urban Boundary
7	0	ALAMANCE	SR 1735	No	SR 1729	SR 1731
7	0	ALAMANCE	SR 1737	No	SR 1740	Indian Village Tr.

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7	0	ALAMANCE	SR 1752	No	NC 49	Urban Boundary
7	0	ALAMANCE	SR 1921	No	SR 1948	SR 1952
7	0	ALAMANCE	SR 1927	No	NC 49	Urban Boundary
7	0	ALAMANCE	SR 1928	No	SR 1927	SR 2123
7	0	ALAMANCE	SR 1935	No	NC 49	SR 1936
7	0	ALAMANCE	SR 1936	Yes		
7	0	ALAMANCE	SR 1940	Yes		
7	0	ALAMANCE	SR 1941	Yes		
7	0	ALAMANCE	SR 1962	Yes		
7	0	ALAMANCE	SR 1980	Yes		
7	0	ALAMANCE	SR 1981	No	SR 1936	I-40/85
7	0	ALAMANCE	SR 1996	Yes		
7	0	ALAMANCE	SR 2100	No	NC 87	SR 2113
7	0	ALAMANCE	SR 2111	Yes		
7	0	ALAMANCE	SR 2113	Yes		
7	0	ALAMANCE	SR 2116	No	SR 2158	NC 87
7	0	ALAMANCE	SR 2123	Yes		
7	0	ALAMANCE	SR 2126	No	NC 119	SR 2129
7	0	ALAMANCE	SR 2158	Yes		
7	0	ALAMANCE	SR 2164	Yes		
7	0	ALAMANCE	SR 2171	Yes		
7	0	ALAMANCE	SR 2183	Yes		
7	0	ALAMANCE	SR 2304	Yes		

7	0	ALAMANCE	SR 2309	No	NC 87	SR 2317
7	0	ALAMANCE	SR 2312	Yes		
7	0	ALAMANCE	SR 2317	No	NC 49	SR 2312
7	0	ALAMANCE	SR 2396	Yes		
7	0	ALAMANCE	SR 2423	Yes		
7	0	ALAMANCE	SR 2451	Yes		
7	0	ALAMANCE	SR 2452	Yes		
7	0	ALAMANCE	SR 2700	Yes		
7	16	CASWELL	SR 1001	Yes		
7	16	CASWELL	SR 1300	No	NC 158	NC 86
7	16	CASWELL	SR 1341	No	SR 1300	US 29
7	16	CASWELL	SR 1360	Yes		
7	16	CASWELL	SR 1372	Yes		
7	16	CASWELL	SR 1502	Yes		
7	16	CASWELL	SR 1503	No	NC 86	SR 1627
7	40	GUILFORD	SR 1001	No	US 220	NC 150
7	40	GUILFORD	SR 1002	No	US 220	SR 2347
7	40	GUILFORD	SR 1003	No	SR 2622	US 311 Bus.
7	40	GUILFORD	SR 1005	Yes		
7	40	GUILFORD	SR 1006	Yes		
7	40	GUILFORD	SR 1007	No	SR 1105	W Florida St.
7	40	GUILFORD	SR 1008	Yes		
7	40	GUILFORD	SR 1112	No	SR 1260	SR 1007 N.

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7	40	GUILFORD	SR 1113	Yes		
7	40	GUILFORD	SR 1115	Yes		
7	40	GUILFORD	SR 1116	No	SR 1129	SR 1392
7	40	GUILFORD	SR 1117	Yes		
7	40	GUILFORD	SR 1129	No	NC 62	SR 1421
7	40	GUILFORD	SR 1132	No	SR 1129	Urban Boundary
7	40	GUILFORD	SR 1137	No	SR 1131	SR 1113
7	40	GUILFORD	SR 1145	Yes		
7	40	GUILFORD	SR 1154	Yes		
7	40	GUILFORD	SR 1174	Yes		
7	40	GUILFORD	SR 1193	Yes		
7	40	GUILFORD	SR 1231	Yes		
7	40	GUILFORD	SR 1278	Yes		
7	40	GUILFORD	SR 1300	Yes		
7	40	GUILFORD	SR 1311	Yes		
7	40	GUILFORD	SR 1332	Yes		
7	40	GUILFORD	SR 1334	No	Mildred Ave.	SR 1486
7	40	GUILFORD	SR 1352	Yes		
7	40	GUILFORD	SR 1355	No	SR 1144	SR 1113
7	40	GUILFORD	SR 1372	No	SR 1479	SR 4121
7	40	GUILFORD	SR 1383	No	SR 1129	McCuiston Rd.
7	40	GUILFORD	SR 1392	No	SR1117	SR 1116
7	40	GUILFORD	SR 1398	Yes		

7	40	GUILFORD	SR 1424	Yes		
7	40	GUILFORD	SR 1468	Yes		
7	40	GUILFORD	SR 1479	Yes		
7	40	GUILFORD	SR 1486	Yes		
7	40	GUILFORD	SR 1523	No	SR 1486	SR 1538
7	40	GUILFORD	SR 1536	No	SR 1541	SR 1486
7	40	GUILFORD	SR 1538	Yes		
7	40	GUILFORD	SR 1539	Yes		
7	40	GUILFORD	SR 1541	No	SR 1546	NC 68
7	40	GUILFORD	SR 1545	Yes		
7	40	GUILFORD	SR 1546	Yes		
7	40	GUILFORD	SR 1549	Yes		
7	40	GUILFORD	SR 1552	Yes		
7	40	GUILFORD	SR 1556	Yes		
7	40	GUILFORD	SR 1768	Yes		
7	40	GUILFORD	SR 1818	Yes		
7	40	GUILFORD	SR 1820	Yes		
7	40	GUILFORD	SR 1850	Yes		
7	40	GUILFORD	SR 1858	Yes		
7	40	GUILFORD	SR 1970	Yes		
7	40	GUILFORD	SR 1988	Yes		
7	40	GUILFORD	SR 2007	No	SR 2132	SR 1008
7	40	GUILFORD	SR 2009	Yes		

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7	40	GUILFORD	SR 2010	Yes		
7	40	GUILFORD	SR 2016	Yes		
7	40	GUILFORD	SR 2028	Yes		
7	40	GUILFORD	SR 2085	Yes		
7	40	GUILFORD	SR 2117	No	US 220	NC 150
7	40	GUILFORD	SR 2124	Yes		
7	40	GUILFORD	SR 2128	Yes		
7	40	GUILFORD	SR 2131	Yes		
7	40	GUILFORD	SR 2132	No	NC 68	SR 2007
7	40	GUILFORD	SR 2133	Yes		
7	40	GUILFORD	SR 2135	Yes		
7	40	GUILFORD	SR 2136	Yes		
7	40	GUILFORD	SR 2137	Yes		
7	40	GUILFORD	SR 2140	Yes		
7	40	GUILFORD	SR 2147	Yes		
7	40	GUILFORD	SR 2179	Yes		
7	40	GUILFORD	SR 2182	Yes		
7	40	GUILFORD	SR 2190	Yes		
7	40	GUILFORD	SR 2204	Yes		
7	40	GUILFORD	SR 2254	Yes		
7	40	GUILFORD	SR 2269	Yes		
7	40	GUILFORD	SR 2334	Yes		
7	40	GUILFORD	SR 2347	No	SR 2334	SR 1002

7	40	GUILFORD	SR 2348	No	SR 2349	Lake Jeanette Rd.
7	40	GUILFORD	SR 2349	Yes		
7	40	GUILFORD	SR 2509	Yes		
7	40	GUILFORD	SR 2516	Yes		
7	40	GUILFORD	SR 2523	No	Lees Chapel Rd.	SR 2630
7	40	GUILFORD	SR 2526	No	US 29	0.4 S SR 2561
7	40	GUILFORD	SR 2565	No	SR 2526	SR 2819
7	40	GUILFORD	SR 2630	Yes		
7	40	GUILFORD	SR 2732	No	SR 2832	SR 2835
7	40	GUILFORD	SR 2747	Yes		
7	40	GUILFORD	SR 2752	No	.09 E SR 2762	NC 61/100
7	40	GUILFORD	SR 2755	No	SR 2761	NC 61/100
7	40	GUILFORD	SR 2770	No	SR 3163	SR 2819
7	40	GUILFORD	SR 2790	Yes		
7	40	GUILFORD	SR 2819	Yes		
7	40	GUILFORD	SR 2826	Yes		
7	40	GUILFORD	SR 2832	Yes		
7	40	GUILFORD	SR 2835	Yes		
7	40	GUILFORD	SR 2851	Yes		
7	40	GUILFORD	SR 3000	No	Franklin Blvd.	SR 3078
7	40	GUILFORD	SR 3024	Yes		
7	40	GUILFORD	SR 3029	Yes		
7	40	GUILFORD	SR 3037	Yes		

7	40	GUILFORD	SR 3041	Yes		
7	40	GUILFORD	SR 3045	No	US 70	SR 3145
7	40	GUILFORD	SR 3051	No	SR 3045	SR 3175
7	40	GUILFORD	SR 3078	Yes		
7	40	GUILFORD	SR 3093	Yes		
7	40	GUILFORD	SR 3143	No	SR 3000	SR 3045
7	40	GUILFORD	SR 3163	Yes		
7	40	GUILFORD	SR 3175	Yes		
7	40	GUILFORD	SR 3269	Yes		
7	40	GUILFORD	SR 3285	Yes		
7	40	GUILFORD	SR 3287	Yes		
7	40	GUILFORD	SR 3289	Yes		
7	40	GUILFORD	SR 3300	Yes		
7	40	GUILFORD	SR 3303	Yes		
7	40	GUILFORD	SR 3314	Yes		
7	40	GUILFORD	SR 3325	Yes		
7	40	GUILFORD	SR 3373	Yes		
7	40	GUILFORD	SR 3418	No	SR 3621	SR 3505
7	40	GUILFORD	SR 3437	Yes		
7	40	GUILFORD	SR 3505	Yes		
7	40	GUILFORD	SR 3549	Yes		
7	40	GUILFORD	SR 3621	Yes		
7	40	GUILFORD	SR 3717	Yes		

7	40	GUILFORD	SR 3738	Yes		
7	40	GUILFORD	SR 3841	Yes		
7	40	GUILFORD	SR 4121	Yes		
7	40	GUILFORD	SR 4239	Yes		
7	40	GUILFORD	SR 4240	Yes		
7	40	GUILFORD	SR 4464	Yes		
7	40	GUILFORD	SR 4771	No	SR 2526	US 29
7	40	GUILFORD	SR 4871	Yes		
7	40	GUILFORD	SR 5101	Yes		
7	67	ORANGE	SR 1002	Yes		
7	67	ORANGE	SR 1004	No	US 70	SR 1352
7	67	ORANGE	SR 1005	Yes		
7	67	ORANGE	SR 1006	No	SR 1102	I-40
7	67	ORANGE	SR 1006	No	I-85	SR 1009
7	67	ORANGE	SR 1008	Yes		
7	67	ORANGE	SR 1009	Yes		
7	67	ORANGE	SR 1010	Yes		
7	67	ORANGE	SR 1102	Yes		
7	67	ORANGE	SR 1104	Yes		
7	67	ORANGE	SR 1107	Yes		
7	67	ORANGE	SR 1113	Yes		
7	67	ORANGE	SR 1148	Yes		
7	67	ORANGE	SR 1150	Yes		

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7	67	ORANGE	SR 1156	Yes		
7	67	ORANGE	SR 1161	No	US 70	SR 1150
7	67	ORANGE	SR 1192	Yes		
7	67	ORANGE	SR 1357	Yes		
7	67	ORANGE	SR 1376	Yes		
7	67	ORANGE	SR 1538	Yes		
7	67	ORANGE	SR 1548	Yes		
7	67	ORANGE	SR 1567	Yes		
7	67	ORANGE	SR 1569	No	SR 1567	Durham Co. Line
7	67	ORANGE	SR 1710	No	NC 86	SR 1713
7	67	ORANGE	SR 1713	Yes		
7	67	ORANGE	SR 1716	No	Durham Co. Line	SR 1714
7	67	ORANGE	SR 1718	No	Beech Bluff Ln.	Durham Co. Line
7	67	ORANGE	SR 1723	Yes		
7	67	ORANGE	SR 1727	Yes		
7	67	ORANGE	SR 1729	Yes		
7	67	ORANGE	SR 1733	Yes		
7	67	ORANGE	SR 1734	No	US 15/501	SR 1737
7	67	ORANGE	SR 1742	Yes		
7	67	ORANGE	SR 1750	Yes		
7	67	ORANGE	SR 1772	Yes		
7	67	ORANGE	SR 1777	Yes		
7	67	ORANGE	SR 1780	Yes		

7	67	ORANGE	SR 1791	Yes		
7	67	ORANGE	SR 1838	Yes		
7	67	ORANGE	SR 1843	Yes		
7	67	ORANGE	SR 1902	Yes		
7	67	ORANGE	SR 1915	Yes		
7	67	ORANGE	SR 1919	Yes		
7	67	ORANGE	SR 1937	No	NC 54	SR 1005
7	67	ORANGE	SR 1942	Yes		
7	67	ORANGE	SR 1951	No	NC 54	SR 1005
7	67	ORANGE	SR 1994	Yes		
7	67	ORANGE	SR 2048	Yes		
7	77	ROBESON	SR 2289	Yes		
7	78	ROCKINGHAM	SR 1152	Yes		
7	78	ROCKINGHAM	SR 1378	No	US 220	SR 1380
7	78	ROCKINGHAM	SR 1380	Yes		
7	78	ROCKINGHAM	SR 1535	No	SR 1561	Urban Boundary
7	78	ROCKINGHAM	SR 1561	Yes		
7	78	ROCKINGHAM	SR 1603	Yes		
7	78	ROCKINGHAM	SR 1604	No	NC 770	SR 1605
7	78	ROCKINGHAM	SR 1605	Yes		
7	78	ROCKINGHAM	SR 1700	No	SR 3004	NC 14
7	78	ROCKINGHAM	SR 1708	No	SR 3004	SR 1709
7	78	ROCKINGHAM	SR 1709	Yes		

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7	78	ROCKINGHAM	SR 1714	Yes		
7	78	ROCKINGHAM	SR 1716	Yes		
7	78	ROCKINGHAM	SR 1747	No	SR 3003	NC 700
7	78	ROCKINGHAM	SR 1785	Yes		
7	78	ROCKINGHAM	SR 1962	Yes		
7	78	ROCKINGHAM	SR 1982	Yes		
7	78	ROCKINGHAM	SR 1998	No	Bridge #238	Urban Boundary
7	78	ROCKINGHAM	SR 2066	Yes		
7	78	ROCKINGHAM	SR 2281	Yes		
7	78	ROCKINGHAM	SR 2282	Yes		
7	78	ROCKINGHAM	SR 2413	No	Urban Boundary	SR 2525
7	78	ROCKINGHAM	SR 2525	Yes		
7	78	ROCKINGHAM	SR 2544	No	SR 2687	US 158
7	78	ROCKINGHAM	SR 2549	No	SR 2545	SR 1982
7	78	ROCKINGHAM	SR 2571	No	SR 2594	Dockery Rd.
7	78	ROCKINGHAM	SR 2594	No	SR 2817	SR 2571
7	78	ROCKINGHAM	SR 2670	Yes		
7	78	ROCKINGHAM	SR 2671	Yes		
7	78	ROCKINGHAM	SR 2686	Yes		
7	78	ROCKINGHAM	SR 2687	Yes		
7	78	ROCKINGHAM	SR 2804	Yes		
7	78	ROCKINGHAM	SR 2817	Yes		
7	78	ROCKINGHAM	SR 3002	Yes		

7	78	ROCKINGHAM	SR 3003	Yes		
7	78	ROCKINGHAM	SR 3004	Yes		
7	78	ROCKINGHAM	SR 3005	Yes		

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Div.	Co. #	County	Route	Whole Road	From	To
8	18	CHATHAM	SR 1004	No	US 64	US 421
8	18	CHATHAM	SR 1006	Yes		
8	18	CHATHAM	SR 1008	No	SR 1972	Orange Co. Line
8	18	CHATHAM	SR 1011	No	Lee Co. Line	US 1
8	18	CHATHAM	SR 1012	Yes		
8	18	CHATHAM	SR 1107	No	SR 1006	Bloodrun Creek Bridge #411
8	18	CHATHAM	SR 1317	Yes		
8	18	CHATHAM	SR 1726	Yes		
8	18	CHATHAM	SR 1916	Yes		
8	18	CHATHAM	SR 1972	Yes		
8	18	CHATHAM	SR 2103	Yes		
8	18	CHATHAM	SR 2113	No	SR 2103	US 421
8	46	HOKE	SR 1003	No	SR 1406	Cumberland Co. Line
8	46	HOKE	SR 1105	No	NC 211	Robeson Co. Line
8	46	HOKE	SR 1113	No	SR 1105	Robeson Co. Line
8	46	HOKE	SR 1300	No	SR 1301	US 401
8	46	HOKE	SR 1301	Yes		
8	46	HOKE	SR 1302	No	US 401	Powerline Rd.
8	46	HOKE	SR 1303	No	US 401	Urban Boundary
8	46	HOKE	SR 1406	No	SR 1003	Urban Boundary
8	46	HOKE	SR 1422	No	SR 1406	Urban Boundary

8	46	HOKE	SR 1424	Yes		
8	46	HOKE	SR 1440	No	SR 1003	Urban Boundary
8	46	HOKE	SR 1441	Yes		
8	52	LEE	SR 1001	No	NC 78	SR 1160
8	52	LEE	SR 1002	No	US 1 Bus.	Urban Boundary
8	52	LEE	SR 1009	Yes		
8	52	LEE	SR 1100	Yes		
8	52	LEE	SR 1107	Yes		
8	52	LEE	SR 1117	Yes		
8	52	LEE	SR 1119	Yes		
8	52	LEE	SR 1122	No	NC 78	SR 1119
8	52	LEE	SR 1133	Yes		
8	52	LEE	SR 1136	Yes		
8	52	LEE	SR 1144	Yes		
8	52	LEE	SR 1146	No	SR 1133	NC 78
8	52	LEE	SR 1152	No	SR 1117	SR 1237
8	52	LEE	SR 1160	Yes		
8	52	LEE	SR 1179	No	US 1	SR 1144
8	52	LEE	SR 1237	Yes		
8	52	LEE	SR 1239	No	SR 1133	SR 1240
8	52	LEE	SR 1240	Yes		
8	52	LEE	SR 1325	No	SR 1332	SR 1326
8	52	LEE	SR 1326	Yes		

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8	52	LEE	SR 1328	Yes		
8	52	LEE	SR 1329	No	SR 1009	SR 1328
8	52	LEE	SR 1332	No	SR 1325	NC 42
8	52	LEE	SR 1405	Yes		
8	52	LEE	SR 1406	Yes		
8	52	LEE	SR 1415	Yes		
8	52	LEE	SR 1466	Yes		
8	52	LEE	SR 1509	No	SR 1002	Urban Boundary
8	52	LEE	SR 1514	Yes		
8	52	LEE	SR 1515	No	SR 1560	US 421
8	52	LEE	SR 1516	Yes		
8	52	LEE	SR 1519	Yes		
8	52	LEE	SR 1538	No	SR 1579	Urban Boundary
8	52	LEE	SR 1560	Yes		
8	52	LEE	SR 1579	Yes		
8	52	LEE	SR 9000	Yes		
8	62	MOORE	SR 1004	No	SR 1112	NC 211
8	62	MOORE	SR 1006	Yes		
8	62	MOORE	SR 1112	Yes		
8	62	MOORE	SR 1115	No	NC 5	SR 1122
8	62	MOORE	SR 1122	No	SR 1162	SR 1115
8	62	MOORE	SR 1126	No	SR 1125	SR 1137
8	62	MOORE	SR 1137	Yes		

8	62	MOORE	SR 1205	Yes		
8	62	MOORE	SR 1208	Yes		
8	62	MOORE	SR 1216	Yes		
8	62	MOORE	SR 1309	Yes		
8	62	MOORE	SR 1843	Yes		
8	62	MOORE	SR 1848	Yes		
8	62	MOORE	SR 1853	No	US 1	SR 1843
8	62	MOORE	SR 1857	No	SR 2080	SR 1802
8	62	MOORE	SR 1905	Yes		
8	62	MOORE	SR 2026	No	SR 2183	Urban Boundary
8	62	MOORE	SR 2033	Yes		
8	62	MOORE	SR 2035	Yes		
8	62	MOORE	SR 2036	Yes		
8	62	MOORE	SR 2053	Yes		
8	62	MOORE	SR 2055	Yes		
8	62	MOORE	SR 2074	Yes		
8	62	MOORE	SR 2075	Yes		
8	62	MOORE	SR 2080	Yes		
8	62	MOORE	SR 2105	Yes		
8	62	MOORE	SR 2183	Yes		
8	75	RANDOLPH	SR 1004	Yes		
8	75	RANDOLPH	SR 1006	Yes		
8	75	RANDOLPH	SR 1007	Yes		

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8	75	RANDOLPH	SR 1144	No	NC 49	Urban Boundary
8	75	RANDOLPH	SR 1193	Yes		
8	75	RANDOLPH	SR 1311	No	SR 1390	US 64
8	75	RANDOLPH	SR 1344	Yes		
8	75	RANDOLPH	SR 1405	Yes		
8	75	RANDOLPH	SR 1408	No	SR 1544	SR 1004
8	75	RANDOLPH	SR 1415	Yes		
8	75	RANDOLPH	SR 1416	No	SR 1411	SR 1415
8	75	RANDOLPH	SR 1442	Yes		
8	75	RANDOLPH	SR 1443	Yes		
8	75	RANDOLPH	SR 1444	Yes		
8	75	RANDOLPH	SR 1451	Yes		
8	75	RANDOLPH	SR 1462	No	US 220	US 220 Bus.
8	75	RANDOLPH	SR 1502	Yes		
8	75	RANDOLPH	SR 1504	No	SR 2163	US 220
8	75	RANDOLPH	SR 1514	Yes		
8	75	RANDOLPH	SR 1526	No	US 311	SR 1858
8	75	RANDOLPH	SR 1547	Yes		
8	75	RANDOLPH	SR 1558	Yes		
8	75	RANDOLPH	SR 1564	No	SR 3252	NC 62
8	75	RANDOLPH	SR 1566	Yes		
8	75	RANDOLPH	SR 1571	Yes		
8	75	RANDOLPH	SR 1577	Yes		

8	75	RANDOLPH	SR 1595	Yes		
8	75	RANDOLPH	SR 1596	Yes		
8	75	RANDOLPH	SR 1610	No	SR 1618	SR 1595
8	75	RANDOLPH	SR 1612	Yes		
8	75	RANDOLPH	SR 1618	Yes		
8	75	RANDOLPH	SR 1619	Yes		
8	75	RANDOLPH	SR 1625	Yes		
8	75	RANDOLPH	SR 1627	Yes		
8	75	RANDOLPH	SR 1707	Yes		
8	75	RANDOLPH	SR 1712	No	US 220 Bus.	US 220
8	75	RANDOLPH	SR 1858	Yes		
8	75	RANDOLPH	SR 1901	Yes		
8	75	RANDOLPH	SR 1928	No	US 311	SR 1922
8	75	RANDOLPH	SR 1936	No	SR 1990	US 311
8	75	RANDOLPH	SR 1950	No	SR 1952	US 220 Bus.
8	75	RANDOLPH	SR 1952	Yes		
8	75	RANDOLPH	SR 1990	Yes		
8	75	RANDOLPH	SR 2116	Yes		
8	75	RANDOLPH	SR 2117	No	SR 2119	Urban Boundary
8	75	RANDOLPH	SR 2119	No	US 220 Bus.	Urban Boundary
8	75	RANDOLPH	SR 2122	Yes		
8	75	RANDOLPH	SR 2159	Yes		
8	75	RANDOLPH	SR 2163	Yes		

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8	75	RANDOLPH	SR 2167	Yes		
8	75	RANDOLPH	SR 2182	Yes		
8	75	RANDOLPH	SR 2183	Yes		
8	75	RANDOLPH	SR 2184	Yes		
8	75	RANDOLPH	SR 2189	Yes		
8	75	RANDOLPH	SR 2197	Yes		
8	75	RANDOLPH	SR 2216	Yes		
8	75	RANDOLPH	SR 2224	Yes		
8	75	RANDOLPH	SR 2226	Yes		
8	75	RANDOLPH	SR 2237	Yes		
8	75	RANDOLPH	SR 2261	Yes		
8	75	RANDOLPH	SR 2269	Yes		
8	75	RANDOLPH	SR 2270	Yes		
8	75	RANDOLPH	SR 2327	Yes		
8	75	RANDOLPH	SR 2403	Yes		
8	75	RANDOLPH	SR 2407	No	US 421	Guilford Co. Line
8	75	RANDOLPH	SR 2812	No	US 220 Bus.	SR 2815
8	75	RANDOLPH	SR 2919	Yes		
8	75	RANDOLPH	SR 2922	Yes		
8	75	RANDOLPH	SR 3106	No	SR 1547	SR 1557
8	75	RANDOLPH	SR 3252	Yes		
8	75	RANDOLPH	SR 3255	No	US 64	SR 1444
8	76	RICHMOND	SR 1103	No	SR 1124	SR 1109

8	76	RICHMOND	SR 1108	No	SR 1109	SR 1966
8	76	RICHMOND	SR 1124	No	US 74	SR 1125
8	76	RICHMOND	SR 1125	Yes		
8	76	RICHMOND	SR 1419	Yes		
8	76	RICHMOND	SR 1423	Yes		
8	76	RICHMOND	SR 1424	No	US 1	SR 1430
8	76	RICHMOND	SR 1426	Yes		
8	76	RICHMOND	SR 1437	Yes		
8	76	RICHMOND	SR 1441	No	SR 1442	SR 1450
8	76	RICHMOND	SR 1442	No	SR 1489	SR 1441
8	76	RICHMOND	SR 1450	Yes		
8	76	RICHMOND	SR 1453	Yes		
8	76	RICHMOND	SR 1489	No	SR 1442	US 1
8	76	RICHMOND	SR 1615	No	NC 38	NC 177
8	76	RICHMOND	SR 1624	Yes		
8	76	RICHMOND	SR 1639	Yes		
8	76	RICHMOND	SR 1640	Yes		
8	76	RICHMOND	SR 1643	No	SR 1646	SR 1645
8	76	RICHMOND	SR 1646	Yes		
8	76	RICHMOND	SR 1648	Yes		
8	76	RICHMOND	SR 1650	No	US 74 Bus.	SR 1624
8	76	RICHMOND	SR 1803	No	SR 1825	NC 38
8	76	RICHMOND	SR 1811	Yes		

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8	76	RICHMOND	SR 1825	No	NC 177	SR 1803
8	76	RICHMOND	SR 1900	No	US 74	NC 177
8	76	RICHMOND	SR 1903	Yes		
8	76	RICHMOND	SR 1909	Yes		
8	76	RICHMOND	SR 1925	No	US 74 Bus.	SR 1903
8	76	RICHMOND	SR 1927	No	SR 1966	SR 1903
8	76	RICHMOND	SR 1966	Yes		
8	82	SCOTLAND	SR 1105	No	SR 1383	SR 1273
8	82	SCOTLAND	SR 1107	Yes		
8	82	SCOTLAND	SR 1108	No	SR 1107	SC Line
8	82	SCOTLAND	SR 1117	Yes		
8	82	SCOTLAND	SR 1271	No	SR 1272	SR 1614
8	82	SCOTLAND	SR 1272	Yes		
8	82	SCOTLAND	SR 1273	Yes		
8	82	SCOTLAND	SR 1319	Yes		
8	82	SCOTLAND	SR 1323	No	Urban Boundary	US 401
8	82	SCOTLAND	SR 1369	Yes		
8	82	SCOTLAND	SR 1383	Yes		
8	82	SCOTLAND	SR 1394	Yes		
8	82	SCOTLAND	SR 1403	No	US 401	SR 1407
8	82	SCOTLAND	SR 1407	No	Robeson Co. line	US 401
8	82	SCOTLAND	SR 1416	No	US 401	SR 1421
8	82	SCOTLAND	SR 1421	No	SR 1425	SR 1416

8	82	SCOTLAND	SR 1425	Yes		
8	82	SCOTLAND	SR 1433	Yes		
8	82	SCOTLAND	SR 1436	Yes		
8	82	SCOTLAND	SR 1438	No	US 74	SR 1323
8	82	SCOTLAND	SR 1439	Yes		
8	82	SCOTLAND	SR 1471	Yes		
8	82	SCOTLAND	SR 1601	No	SR 1438	US 74
8	82	SCOTLAND	SR 1614	No	Bridge #59	Urban Boundary NE
8	82	SCOTLAND	SR 1615	No	SR 1105	Urban Boundary
8	82	SCOTLAND	SR 1640	Yes		
8	82	SCOTLAND	SR 1641	Yes		
8	82	SCOTLAND	SR 1642	Yes		
8	82	SCOTLAND	SR 1643	Yes		
8	82	SCOTLAND	SR 1670	No	SR 1614	Urban Boundary
8	82	SCOTLAND	SR 1674	No	US 15 Bus.	US 501 Bus.

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Div.	Co. #	County	Route	Whole Road	From	To
9	28	DAVIDSON	SR 1002	Yes		
9	28	DAVIDSON	SR 1104	No	NC 8	Audrey Lane
9	28	DAVIDSON	SR 1147	Yes		
9	28	DAVIDSON	SR 1192	No	SR 3346	SR 1200 W
9	28	DAVIDSON	SR 1213	No	SR 1147	SR 1220
9	28	DAVIDSON	SR 1242	No	SR 1243	SR 1647
9	28	DAVIDSON	SR 1243	Yes		
9	28	DAVIDSON	SR 1254	No	SR 1104	NC 8
9	28	DAVIDSON	SR 1298	Yes		
9	28	DAVIDSON	SR 1408	Yes		
9	28	DAVIDSON	SR 1412	Yes		
9	28	DAVIDSON	SR 1457	No	NC 8	US 52
9	28	DAVIDSON	SR 1499	No	SR 1505	W. Urban Boundary
9	28	DAVIDSON	SR 1508	No	US 52	Forsyth Co. Line
9	28	DAVIDSON	SR 1516	Yes		
9	28	DAVIDSON	SR 1520	No	SR 1537	Bridge #429
9	28	DAVIDSON	SR 1537	Yes		
9	28	DAVIDSON	SR 1700	No	SR 1711	Urban Boundary
9	28	DAVIDSON	SR 1711	Yes		
9	28	DAVIDSON	SR 1735	No	SR 1737	SR 1741
9	28	DAVIDSON	SR 1737	Yes		

9	28	DAVIDSON	SR 1741	Yes		
9	28	DAVIDSON	SR 1755	No	Guilford Co. Line	SR 1756
9	28	DAVIDSON	SR 1756	No	NC 109	SR 1755
9	28	DAVIDSON	SR 1757	No	SR 1761	Guilford Co. Line
9	28	DAVIDSON	SR 1761	No	SR 1757	SR 1762
9	28	DAVIDSON	SR 1762	Yes		
9	28	DAVIDSON	SR 1763	No	Guilford Co. Line	SR 1762
9	28	DAVIDSON	SR 1769	Yes		
9	28	DAVIDSON	SR 1770	Yes		
9	28	DAVIDSON	SR 1772	No	NC 109	SR 1769
9	28	DAVIDSON	SR 1776	Yes		
9	28	DAVIDSON	SR 1792	No	SR 2143	I-85
9	28	DAVIDSON	SR 1798	No	I-85 Bus	NC 109
9	28	DAVIDSON	SR 1800	No	NC 109	SR 3056
9	28	DAVIDSON	SR 1813	No	SR 1844	SR 1841
9	28	DAVIDSON	SR 1841	Yes		
9	28	DAVIDSON	SR 1842	Yes		
9	28	DAVIDSON	SR 1843	No	SR 1844	SR 1842
9	28	DAVIDSON	SR 1844	No	SR 1813	I-85 Bus.
9	28	DAVIDSON	SR 2010	Yes		
9	28	DAVIDSON	SR 2020	No	SR 2024	SR 2025
9	28	DAVIDSON	SR 2024	No	SR 2033	SR 2020
9	28	DAVIDSON	SR 2025	Yes		

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9	28	DAVIDSON	SR 2031	Yes		
9	28	DAVIDSON	SR 2032	Yes		
9	28	DAVIDSON	SR 2037	Yes		
9	28	DAVIDSON	SR 2048	No	SR 1792	I-85
9	28	DAVIDSON	SR 2051	Yes		
9	28	DAVIDSON	SR 2053	Yes		
9	28	DAVIDSON	SR 2054	Yes		
9	28	DAVIDSON	SR 2055	Yes		
9	28	DAVIDSON	SR 2056	Yes		
9	28	DAVIDSON	SR 2060	No	SR 2183	SR 2031
9	28	DAVIDSON	SR 2060	No	SR 2055	NC 62
9	28	DAVIDSON	SR 2066	No	SR 2055	SR 2091
9	28	DAVIDSON	SR 2070	No	SR 2183	SR 2119
9	28	DAVIDSON	SR 2085	Yes		
9	28	DAVIDSON	SR 2087	Yes		
9	28	DAVIDSON	SR 2091	Yes		
9	28	DAVIDSON	SR 2104	No	SR 2010	SR 2109
9	28	DAVIDSON	SR 2119	Yes		
9	28	DAVIDSON	SR 2123	No	I-85	SR 1787
9	28	DAVIDSON	SR 2144	Yes		
9	28	DAVIDSON	SR 2165	Yes		
9	28	DAVIDSON	SR 2183	No	SR 3405	Urban Boundary
9	28	DAVIDSON	SR 2184	No	SR 2055	SR 2183

9	28	DAVIDSON	SR 2203	Yes		
9	28	DAVIDSON	SR 2205	Yes		
9	28	DAVIDSON	SR 2212	Yes		
9	28	DAVIDSON	SR 2250	No	SR 2205	SR 2230
9	28	DAVIDSON	SR 2351	No	NC 47	SR 2507
9	28	DAVIDSON	SR 2507	Yes		
9	28	DAVIDSON	SR 2932	Yes		
9	28	DAVIDSON	SR 3010	Yes		
9	28	DAVIDSON	SR 3159	No	SR 1133	SR 3125
9	28	DAVIDSON	SR 3345	Yes		
9	28	DAVIDSON	SR 3346	Yes		
9	28	DAVIDSON	SR 3405	Yes		
9	29	DAVIE	SR 1143	No	I-40	US 64
9	33	FORSYTH	SR 1001	No	Keating Dr.	Plemmons Rd.
9	33	FORSYTH	SR 1003	Yes		
9	33	FORSYTH	SR 1005	Yes		
9	33	FORSYTH	SR 1100	No	SR 1891	SR 1103
9	33	FORSYTH	SR 1101	No	SR 1891	SR 1100
9	33	FORSYTH	SR 1103	Yes		
9	33	FORSYTH	SR 1120	Yes		
9	33	FORSYTH	SR 1122	Yes		
9	33	FORSYTH	SR 1171	No	SR 1166	SR 1001
9	33	FORSYTH	SR 1308	Yes		

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9	33	FORSYTH	SR 1314	Yes		
9	33	FORSYTH	SR 1348	Yes		
9	33	FORSYTH	SR 1393	Yes		
9	33	FORSYTH	SR 1465	No	NC 67	Urban Boundary
9	33	FORSYTH	SR 1525	No	NC 67	SR 1305
9	33	FORSYTH	SR 1528	Yes		
9	33	FORSYTH	SR 1611	Yes		
9	33	FORSYTH	SR 1620	No	SR 1611	NC 67
9	33	FORSYTH	SR 1632	Yes		
9	33	FORSYTH	SR 1686	Yes		
9	33	FORSYTH	SR 1725	Yes		
9	33	FORSYTH	SR 1763	Yes		
9	33	FORSYTH	SR 1770	Yes		
9	33	FORSYTH	SR 1807	Yes		
9	33	FORSYTH	SR 1891	No	SR 1100	SR 1103
9	33	FORSYTH	SR 1898	Yes		
9	33	FORSYTH	SR 1920	No	NC 8	Urban Boundary
9	33	FORSYTH	SR 1965	No	SR 2009	US 158
9	33	FORSYTH	SR 1969	Yes		
9	33	FORSYTH	SR 1977	No	SR 1975	US 311
9	33	FORSYTH	SR 2014	Yes		
9	33	FORSYTH	SR 2017	No	NC 150	SR 2109
9	33	FORSYTH	SR 2021	No	NC 66	SR 2024

9	33	FORSYTH	SR 2024	Yes		
9	33	FORSYTH	SR 2045	Yes		
9	33	FORSYTH	SR 2207	Yes		
9	33	FORSYTH	SR 2211	No	NC 66	SR 2207
9	33	FORSYTH	SR 2377	No	SR 2662	NC 66
9	33	FORSYTH	SR 2385	No	US 158	SR 2377
9	33	FORSYTH	SR 2456	No	Indiana Ave.	NC 66
9	33	FORSYTH	SR 2613	Yes		
9	33	FORSYTH	SR 2624	Yes		
9	33	FORSYTH	SR 2632	No	SR 4315	NC 66
9	33	FORSYTH	SR 2643	Yes		
9	33	FORSYTH	SR 2648	Yes		
9	33	FORSYTH	SR 2649	Yes		
9	33	FORSYTH	SR 2662	No	SR 2377	I-40 Bus.
9	33	FORSYTH	SR 2678	No	I-40	Fiddler Creek
9	33	FORSYTH	SR 2705	Yes		
9	33	FORSYTH	SR 2743	Yes		
9	33	FORSYTH	SR 2747	No	Old Lexington Rd.	SR 3010
9	33	FORSYTH	SR 2758	Yes		
9	33	FORSYTH	SR 2775	Yes		
9	33	FORSYTH	SR 2983	Yes		
9	33	FORSYTH	SR 2999	No	Guilford Co. Line	SR 3000

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9	33	FORSYTH	SR 3000	No	SR 2999	SR 1103
9	33	FORSYTH	SR 3011	Yes		
9	33	FORSYTH	SR 3013	Yes		
9	33	FORSYTH	SR 3024	Yes		
9	33	FORSYTH	SR 3153	Yes		
9	33	FORSYTH	SR 3173	No	NC 150	Ramp #3628
9	33	FORSYTH	SR 3210	Yes		
9	33	FORSYTH	SR 3410	Yes		
9	33	FORSYTH	SR 4000	Yes		
9	33	FORSYTH	SR 4001	No	SR 4000	SR 1763
9	33	FORSYTH	SR 4002	Yes		
9	33	FORSYTH	SR 4205	Yes		
9	33	FORSYTH	SR 4278	Yes		
9	33	FORSYTH	SR 4309	Yes		
9	33	FORSYTH	SR 4315	No	SR 1824	NC 66
9	33	FORSYTH	SR 4325	No	US 311	Diggs Blvd.
9	33	FORSYTH	SR 4325	No	I-40	SR 4315
9	79	ROWAN	SR 1002	Yes		
9	79	ROWAN	SR 1004	Yes		
9	79	ROWAN	SR 1006	Yes		
9	79	ROWAN	SR 1007	Yes		
9	79	ROWAN	SR 1100	Yes		
9	79	ROWAN	SR 1104	Yes		

9	79	ROWAN	SR 1124	Yes		
9	79	ROWAN	SR 1136	Yes		
9	79	ROWAN	SR 1163	Yes		
9	79	ROWAN	SR 1197	Yes		
9	79	ROWAN	SR 1210	No	NC 152	SR 1221
9	79	ROWAN	SR 1211	No	SR 2739	NC 152
9	79	ROWAN	SR 1221	No	SR 1210	SR 1238
9	79	ROWAN	SR 1221	No	SR 1235	US 29
9	79	ROWAN	SR 1225	Yes		
9	79	ROWAN	SR 1232	No	SR 2739	US 29
9	79	ROWAN	SR 1238	No	Cabarrus Co. Line	SR 1221
9	79	ROWAN	SR 1242	Yes		
9	79	ROWAN	SR 1243	No	Daybrook Rd	US 29
9	79	ROWAN	SR 1254	Yes		
9	79	ROWAN	SR 1267	No	SR 1322	SR 2739
9	79	ROWAN	SR 1308	No	SR 1267	I-85
9	79	ROWAN	SR 1322	Yes		
9	79	ROWAN	SR 1337	No	US 29	SR 1346
9	79	ROWAN	SR 1350	No	NC 152	SR 1351
9	79	ROWAN	SR 1351	No	SR 1350	Cabarrus Co. Line
9	79	ROWAN	SR 1360	No	SR 1361	SR 1351
9	79	ROWAN	SR 1363	Yes		
9	79	ROWAN	SR 1369	Yes		

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9	79	ROWAN	SR 1371	No	SR 1124	Cabarrus Co. Line
9	79	ROWAN	SR 1464	Yes		
9	79	ROWAN	SR 1500	No	I-85	SR 1503
9	79	ROWAN	SR 1503	No	SR 1509	SR 1500
9	79	ROWAN	SR 1505	No	SR 1002	SR 1006
9	79	ROWAN	SR 1509	No	NC 152	Little Creek Bridge #213
9	79	ROWAN	SR 1526	No	NC 150	NC 801
9	79	ROWAN	SR 1673	No	NC 152	SR 2740
9	79	ROWAN	SR 1703	No	SR 1002	Brenner Ave.
9	79	ROWAN	SR 1710	Yes		
9	79	ROWAN	SR 1910	No	Mahaley Ave.	Urban Boundary
9	79	ROWAN	SR 1915	No	US 601	SR 2037
9	79	ROWAN	SR 2048	No	NC 801	US 601
9	79	ROWAN	SR 2094	Yes		
9	79	ROWAN	SR 2100	Yes		
9	79	ROWAN	SR 2114	Yes		
9	79	ROWAN	SR 2120	No	US 29	I-85
9	79	ROWAN	SR 2200	Yes		
9	79	ROWAN	SR 2313	Yes		
9	79	ROWAN	SR 2314	Yes		
9	79	ROWAN	SR 2315	Yes		
9	79	ROWAN	SR 2341	No	US 52	SR 2343
9	79	ROWAN	SR 2350	No	SR 2351	SR 2352

9	79	ROWAN	SR 2351	Yes		
9	79	ROWAN	SR 2352	No	SR 2350	SR 2354
9	79	ROWAN	SR 2528	No	I -85	SR 1006
9	79	ROWAN	SR 2541	Yes		
9	79	ROWAN	SR 2664	Yes		
9	79	ROWAN	SR 2739	Yes		
9	79	ROWAN	SR 2740	Yes		
9	84	STOKES	SR 1112	Yes		
9	84	STOKES	SR 1122	No	SR 1132	NC 66
9	84	STOKES	SR 1128	No	SR 1112	SR 1131
9	84	STOKES	SR 1131	Yes		
9	84	STOKES	SR 1132	No	SR 1122	SR 1131
9	84	STOKES	SR 1236	No	Forsyth Co. Line	Urban Boundary
9	84	STOKES	SR 1973	No	NC 66	Urban Boundary

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Div.	Co. #	County	Route	Whole Road	From	To
10	3	ANSON	SR 1003	No	Union Co. Line	SR 1228
10	3	ANSON	SR 1121	No	SR 1205	SR 1228
10	3	ANSON	SR 1205	No	SR 1121	NC 109/742
10	3	ANSON	SR 1228	No	SR 1003	SR 1121
10	3	ANSON	SR 1418	Yes		
10	3	ANSON	SR 1472	Yes		
10	3	ANSON	SR 1703	No	Urban Boundary	SR 1730
10	3	ANSON	SR 1730	No	US 74	SR 1801
10	3	ANSON	SR 1801	No	SR 1730	US 74
10	12	CABARRUS	SR 1002	No	US 29	Rowan Co. Line
10	12	CABARRUS	SR 1006	Yes		
10	12	CABARRUS	SR 1008	Yes		
10	12	CABARRUS	SR 1132	No	US 601	Urban Boundary
10	12	CABARRUS	SR 1139	Yes		
10	12	CABARRUS	SR 1153	No	SR 1155	Urban Boundary
10	12	CABARRUS	SR 1155	Yes		
10	12	CABARRUS	SR 1156	Yes		
10	12	CABARRUS	SR 1157	No	SR 1139	SR 1007
10	12	CABARRUS	SR 1166	No	SR 1168	NC 49
10	12	CABARRUS	SR 1168	Yes		
10	12	CABARRUS	SR 1300	No	NC 49	US 29

10	12	CABARRUS	SR 1304	Yes		
10	12	CABARRUS	SR 1305	No	SR 1394	US 29
10	12	CABARRUS	SR 1335	Yes		
10	12	CABARRUS	SR 1394	Yes		
10	12	CABARRUS	SR 1414	Yes		
10	12	CABARRUS	SR 1429	Yes		
10	12	CABARRUS	SR 1431	Yes		
10	12	CABARRUS	SR 1442	No	NC 73	SR 1394
10	12	CABARRUS	SR 1622	Yes		
10	12	CABARRUS	SR 1624	No	SR 1622	SR 1625
10	12	CABARRUS	SR 1625	Yes		
10	12	CABARRUS	SR 1628	Yes		
10	12	CABARRUS	SR 1643	Yes		
10	12	CABARRUS	SR 1680	Yes		
10	12	CABARRUS	SR 1691	Yes		
10	12	CABARRUS	SR 1706	Yes		
10	12	CABARRUS	SR 1745	Yes		
10	12	CABARRUS	SR 1766	Yes		
10	12	CABARRUS	SR 1778	Yes		
10	12	CABARRUS	SR 1790	Yes		
10	12	CABARRUS	SR 1913	Yes		
10	12	CABARRUS	SR 1947	Yes		
10	12	CABARRUS	SR 2000	No	Rowan Co. Line	SR 2180

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10	12	CABARRUS	SR 2001	Yes		
10	12	CABARRUS	SR 2113	No	SR 1002	SR 2114
10	12	CABARRUS	SR 2114	Yes		
10	12	CABARRUS	SR 2119	No	SR 2114	Urban Boundary
10	12	CABARRUS	SR 2126	No	SR 2291	Dickens Pl.
10	12	CABARRUS	SR 2154	Yes		
10	12	CABARRUS	SR 2180	Yes		
10	12	CABARRUS	SR 2287	Yes		
10	12	CABARRUS	SR 2408	No	NC 73	SR 2477
10	12	CABARRUS	SR 2635	No	NC 3	SR 2641
10	12	CABARRUS	SR 2643	Yes		
10	12	CABARRUS	SR 2894	No	Bridge #235	US 29
10	59	MECKLENBURG	SR 1004	No	Union Co. Line	SR 3128
10	59	MECKLENBURG	SR 1009	Yes		
10	59	MECKLENBURG	SR 1010	Yes		
10	59	MECKLENBURG	SR 1020	Yes		
10	59	MECKLENBURG	SR 1116	Yes		
10	59	MECKLENBURG	SR 1126	No	SR 1128	Crompton St.
10	59	MECKLENBURG	SR 1128	No	NC 49	SR 1126
10	59	MECKLENBURG	SR 1128	No	Downs Rd.	SR 1130
10	59	MECKLENBURG	SR 1138	Yes		
10	59	MECKLENBURG	SR 1156	No	W. Tyvola Rd.	SR 5469
10	59	MECKLENBURG	SR 1177	No	SR 1156	NC 160

10	59	MECKLENBURG	SR 1191	No	SR 1195	US 29
10	59	MECKLENBURG	SR 1195	Yes		
10	59	MECKLENBURG	SR 1197	Yes		
10	59	MECKLENBURG	SR 1291	Yes		
10	59	MECKLENBURG	SR 1410	Yes		
10	59	MECKLENBURG	SR 1441	Yes		
10	59	MECKLENBURG	SR 1490	Yes		
10	59	MECKLENBURG	SR 1601	No	SR 1625	Moores Chapel Rd.
10	59	MECKLENBURG	SR 1625	Yes		
10	59	MECKLENBURG	SR 1641	Yes		
10	59	MECKLENBURG	SR 1666	Yes		
10	59	MECKLENBURG	SR 1784	Yes		
10	59	MECKLENBURG	SR 1914	Yes		
10	59	MECKLENBURG	SR 1979	Yes		
10	59	MECKLENBURG	SR 1984	Yes		
10	59	MECKLENBURG	SR 2004	Yes		
10	59	MECKLENBURG	SR 2019	Yes		
10	59	MECKLENBURG	SR 2025	No	SR 2019	SR 2108
10	59	MECKLENBURG	SR 2042	Yes		
10	59	MECKLENBURG	SR 2074	No	SR 2050	SR 2128
10	59	MECKLENBURG	SR 2108	Yes		
10	59	MECKLENBURG	SR 2113	Yes		
10	59	MECKLENBURG	SR 2116	Yes		

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10	59	MECKLENBURG	SR 2117	No	NC 115	SR 2120
10	59	MECKLENBURG	SR 2120	Yes		
10	59	MECKLENBURG	SR 2128	Yes		
10	59	MECKLENBURG	SR 2130	Yes		
10	59	MECKLENBURG	SR 2136	Yes		
10	59	MECKLENBURG	SR 2138	Yes		
10	59	MECKLENBURG	SR 2158	Yes		
10	59	MECKLENBURG	SR 2373	No	SR 2004	NC 16
10	59	MECKLENBURG	SR 2427	No	SR 2439	NC 73
10	59	MECKLENBURG	SR 2439	Yes		
10	59	MECKLENBURG	SR 2442	Yes		
10	59	MECKLENBURG	SR 2448	Yes		
10	59	MECKLENBURG	SR 2459	No	NC 115	SR 2475
10	59	MECKLENBURG	SR 2467	No	SR 2480	SR 2463
10	59	MECKLENBURG	SR 2472	Yes		
10	59	MECKLENBURG	SR 2475	Yes		
10	59	MECKLENBURG	SR 2480	No	US 29/NC 49	Brookstone Dr.
10	59	MECKLENBURG	SR 2480	No	Yorkford Dr.	SR 2459
10	59	MECKLENBURG	SR 2519	Yes		
10	59	MECKLENBURG	SR 2540	Yes		
10	59	MECKLENBURG	SR 2601	Yes		
10	59	MECKLENBURG	SR 2691	Yes		
10	59	MECKLENBURG	SR 2693	No	NC 115	NC 73

10	59	MECKLENBURG	SR 2772	Yes		
10	59	MECKLENBURG	SR 2802	Yes		
10	59	MECKLENBURG	SR 2803	No	SR 2826	NC 24
10	59	MECKLENBURG	SR 2805	Yes		
10	59	MECKLENBURG	SR 2810	Yes		
10	59	MECKLENBURG	SR 2822	Yes		
10	59	MECKLENBURG	SR 2826	Yes		
10	59	MECKLENBURG	SR 2828	No	SR 2827	SR 2976
10	59	MECKLENBURG	SR 2935	Yes		
10	59	MECKLENBURG	SR 2939	Yes		
10	59	MECKLENBURG	SR 2940	Yes		
10	59	MECKLENBURG	SR 2974	Yes		
10	59	MECKLENBURG	SR 2975	Yes		
10	59	MECKLENBURG	SR 2976	No	NC 24	SR 2828
10	59	MECKLENBURG	SR 3128	Yes		
10	59	MECKLENBURG	SR 3135	Yes		
10	59	MECKLENBURG	SR 3143	Yes		
10	59	MECKLENBURG	SR 3156	Yes		
10	59	MECKLENBURG	SR 3168	Yes		
10	59	MECKLENBURG	SR 3174	Yes		
10	59	MECKLENBURG	SR 3300	Yes		
10	59	MECKLENBURG	SR 3356	Yes		
10	59	MECKLENBURG	SR 3440	No	SR 3468	SR 3445

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10	59	MECKLENBURG	SR 3445	No	NC 16	SR 3440
10	59	MECKLENBURG	SR 3448	No	SR 3468	SR 1010
10	59	MECKLENBURG	SR 3468	Yes		
10	59	MECKLENBURG	SR 3474	Yes		
10	59	MECKLENBURG	SR 3585	Yes		
10	59	MECKLENBURG	SR 3600	Yes		
10	59	MECKLENBURG	SR 3624	No	NC 16	NC 51
10	59	MECKLENBURG	SR 3626	No	SR 4982	SR 3649
10	59	MECKLENBURG	SR 3649	Yes		
10	59	MECKLENBURG	SR 3687	Yes		
10	59	MECKLENBURG	SR 3814	Yes		
10	59	MECKLENBURG	SR 3815	Yes		
10	59	MECKLENBURG	SR 3998	Yes		
10	59	MECKLENBURG	SR 4497	Yes		
10	59	MECKLENBURG	SR 4798	Yes		
10	59	MECKLENBURG	SR 4979	Yes		
10	59	MECKLENBURG	SR 4982	Yes		
10	59	MECKLENBURG	SR 5223	Yes		
10	59	MECKLENBURG	SR 5383	Yes		
10	59	MECKLENBURG	SR 5384	Yes		
10	59	MECKLENBURG	SR 5385	Yes		
10	59	MECKLENBURG	SR 5386	Yes		
10	59	MECKLENBURG	SR 5394	Yes		

10	59	MECKLENBURG	SR 5469	Yes		
10	59	MECKLENBURG	SR 5544	Yes		
10	59	MECKLENBURG	SR 5901	Yes		
10	83	STANLY	SR 1004	Yes		
10	83	STANLY	SR 1134	No	NC 24/27	US 52
10	83	STANLY	SR 1140	Yes		
10	83	STANLY	SR 1274	Yes		
10	83	STANLY	SR 1400	No	SR 1474	SR 1214
10	83	STANLY	SR 1401	No	NC 73	SR 1409
10	83	STANLY	SR 1474	Yes		
10	83	STANLY	SR 1494	Yes		
10	83	STANLY	SR 1522	No	SR 1535	Urban Boundary
10	83	STANLY	SR 1524	No	US 521	Urban Boundary
10	83	STANLY	SR 1535	No	SR 1573	SR 1522
10	83	STANLY	SR 1542	Yes		
10	83	STANLY	SR 1549	Yes		
10	83	STANLY	SR 1573	Yes		
10	83	STANLY	SR 1578	No	SR 1004	Rowan Co. Line
10	83	STANLY	SR 1584	Yes		
10	83	STANLY	SR 1625	Yes		
10	83	STANLY	SR 1650	Yes		
10	83	STANLY	SR 1922	Yes		
10	83	STANLY	SR 1923	No	SR 1922	US 52

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10	83	STANLY	SR 1963	No	SR 1274	Urban Boundary
10	89	UNION	SR 1002	No	SR 1758	SR 1751
10	89	UNION	SR 1003	Yes		
10	89	UNION	SR 1004	Yes		
10	89	UNION	SR 1005	No	US 601	US 74
10	89	UNION	SR 1007	Yes		
10	89	UNION	SR 1008	Yes		
10	89	UNION	SR 1009	Yes		
10	89	UNION	SR 1111	No	NC 75	SR 1117
10	89	UNION	SR 1117	Yes		
10	89	UNION	SR 1162	No	NC 75	SR 2544
10	89	UNION	SR 1223	Yes		
10	89	UNION	SR 1245	Yes		
10	89	UNION	SR 1344	Yes		
10	89	UNION	SR 1367	No	SR 1515	SR 1615
10	89	UNION	SR 1377	Yes		
10	89	UNION	SR 1501	Yes		
10	89	UNION	SR 1515	Yes		
10	89	UNION	SR 1520	No	US 74	SR 1501
10	89	UNION	SR 1525	No	SR 1501	SR 1004
10	89	UNION	SR 1606	No	NC 218	Stanly Co. Line
10	89	UNION	SR 1618	Yes		
10	89	UNION	SR 1627	Yes		

10	89	UNION	SR 1630	Yes		
10	89	UNION	SR 1635	Yes		
10	89	UNION	SR 1637	Yes		
10	89	UNION	SR 1751	Yes		
10	89	UNION	SR 1758	No	0.44 S. US 74	SR 1006
10	89	UNION	SR 2100	Yes		
10	89	UNION	SR 2102	No	SR 2181	Lake Lee
10	89	UNION	SR 2139	No	NC 200	Sally Macfarms Dr.
10	89	UNION	SR 2180	Yes		
10	89	UNION	SR 2181	Yes		
10	89	UNION	SR 2188	Yes		
10	89	UNION	SR 2769	Yes		

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Div.	Co. #	County	Route	Whole Road	From	To
11	2	ALLEGHANY	SR 1422	No	SR 1453	SR 1433
11	2	ALLEGHANY	SR 1433	No	SR 1422	SR 1444
11	2	ALLEGHANY	SR 1441	Yes		
11	2	ALLEGHANY	SR 1444	No	SR 1433	US 21
11	2	ALLEGHANY	SR 1453	Yes		
11	4	ASHE	SR 1315	Yes		
11	13	CALDWELL	SR 1001	Yes		
11	13	CALDWELL	SR 1002	Yes		
11	13	CALDWELL	SR 1106	Yes		
11	13	CALDWELL	SR 1107	No	SR 1869	US 321 Alt.
11	13	CALDWELL	SR 1130	Yes		
11	13	CALDWELL	SR 1131	Yes		
11	13	CALDWELL	SR 1143	No	US 64	SR 1145
11	13	CALDWELL	SR 1145	No	US 64	SR 1143
11	13	CALDWELL	SR 1159	Yes		
11	13	CALDWELL	SR 1178	Yes		
11	13	CALDWELL	SR 1300	Yes		
11	13	CALDWELL	SR 1310	No	SR 1404	NC 18 Bus.
11	13	CALDWELL	SR 1511	No	SR 1544	SR 1523
11	13	CALDWELL	SR 1523	No	SR 1511	US 321
11	13	CALDWELL	SR 1545	No	SR 1548	Sunrise Circle

11	13	CALDWELL	SR 1548	Yes		
11	13	CALDWELL	SR 1549	No	SR 1548	NC 18
11	13	CALDWELL	SR 1718	No	SR 1108	Bridge #90
11	13	CALDWELL	SR 1751	No	SR 1757	US 321
11	13	CALDWELL	SR 1933	Yes		
11	13	CALDWELL	SR 1959	Yes		
11	85	SURRY	SR 1001	No	SR 1315	US 601 Bus.
11	85	SURRY	SR 1003	Yes		
11	85	SURRY	SR 1100	No	SR 1003	US 601 Bus.
11	85	SURRY	SR 1138	Yes		
11	85	SURRY	SR 1315	Yes		
11	85	SURRY	SR 1350	No	SR 1395	SR 1387
11	85	SURRY	SR 1357	No	SR 2258	US 601
11	85	SURRY	SR 1365	No	SR 1394	US 601
11	85	SURRY	SR 1366	Yes		
11	85	SURRY	SR 1387	No	SR 1394	SR 1350
11	85	SURRY	SR 1394	No	SR 1624	SR 1325
11	85	SURRY	SR 1395	Yes		
11	85	SURRY	SR 1624	Yes		
11	85	SURRY	SR 1700	Yes		
11	85	SURRY	SR 1701	No	SR 1700	SR 1708
11	85	SURRY	SR 1708	No	SR 1701	US 52 Bus.
11	85	SURRY	SR 1717	No	SR 1701	SR 1952

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11	85	SURRY	SR 1756	No	SR 1759	NC 103
11	85	SURRY	SR 1759	Yes		
11	85	SURRY	SR 1815	No	US 52	SR 2012
11	85	SURRY	SR 1856	Yes		
11	85	SURRY	SR 2012	No	SR 2019	SR 1815
11	85	SURRY	SR 2019	Yes		
11	85	SURRY	SR 2426	Yes		
11	85	SURRY	SR 2432	Yes		
11	94	WATAUGA	SR 1102	No	US 321	SR 1163
11	94	WATAUGA	SR 1163	Yes		
11	94	WATAUGA	SR 1514	No	SR 1523	US 421
11	94	WATAUGA	SR 1522	Yes		
11	94	WATAUGA	SR 1523	Yes		
11	96	WILKES	SR 1002	Yes		
11	96	WILKES	SR 1304	No	SR 1315	NC 16
11	96	WILKES	SR 1315	No	SR 1372	Culvert #776
11	96	WILKES	SR 1322	No	SR 1325	SR 1323
11	96	WILKES	SR 1323	Yes		
11	96	WILKES	SR 1325	No	SR 1372	SR 1322
11	96	WILKES	SR 1372	Yes		
11	96	WILKES	SR 1500	Yes		
11	96	WILKES	SR 2026	No	SR 2071	NC 268
11	96	WILKES	SR 2355	No	US 421 Bus.	Culvert #748

11	96	WILKES	SR 2461	No	US 421	SR 2462
11	96	WILKES	SR 2462	Yes		
11	96	WILKES	SR 2467	No	NC 18	SR 1001
11	98	YADKIN	SR 1134	No	SR 1502	US 601
11	98	YADKIN	SR 1300	No	SR 1310	Urban Boundary
11	98	YADKIN	SR 1331	No	US 21 Bus.	Culvert #48
11	98	YADKIN	SR 1386	No	US 21 Bus.	Urban Boundary
11	98	YADKIN	SR 1502	Yes		
11	98	YADKIN	SR 1503	No	SR 1506	SR 1502
11	98	YADKIN	SR 1506	Yes		
11	98	YADKIN	SR 1510	No	SR 1506	SR 1585
11	98	YADKIN	SR 1570	No	SR 1583	NC 67
11	98	YADKIN	SR 1583	No	SR 1570	SR 1585
11	98	YADKIN	SR 1585	Yes		

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Div.	Co. #	County	Route	Whole Road	From	To
12	1	ALEXANDER	SR 1002	Yes		
12	1	ALEXANDER	SR 1005	Yes		
12	1	ALEXANDER	SR 1137	No	NC 127	Urban Boundary
12	1	ALEXANDER	SR 1143	No	NC 127	SR 1144
12	17	CATAWBA	SR 1005	Yes		
12	17	CATAWBA	SR 1007	Yes		
12	17	CATAWBA	SR 1008	No	Urban Boundary	NC 127
12	17	CATAWBA	SR 1124	No	Urban Boundary	Burke Co. Line
12	17	CATAWBA	SR 1143	Yes		
12	17	CATAWBA	SR 1146	Yes		
12	17	CATAWBA	SR 1149	Yes		
12	17	CATAWBA	SR 1154	Yes		
12	17	CATAWBA	SR 1155	Yes		
12	17	CATAWBA	SR 1164	No	SR 1149	SR 1283
12	17	CATAWBA	SR 1196	Yes		
12	17	CATAWBA	SR 1283	Yes		
12	17	CATAWBA	SR 1306	Yes		
12	17	CATAWBA	SR 1307	Yes		
12	17	CATAWBA	SR 1312	Yes		
12	17	CATAWBA	SR 1314	Yes		
12	17	CATAWBA	SR 1354	Yes		

12	17	CATAWBA	SR 1355	Yes		
12	17	CATAWBA	SR 1358	Yes		
12	17	CATAWBA	SR 1400	Yes		
12	17	CATAWBA	SR 1401	No	SR 1453	SR 1400
12	17	CATAWBA	SR 1402	Yes		
12	17	CATAWBA	SR 1404	Yes		
12	17	CATAWBA	SR 1441	Yes		
12	17	CATAWBA	SR 1453	No	SR 1007	SR 1517
12	17	CATAWBA	SR 1468	No	US 70/321	SR 1692
12	17	CATAWBA	SR 1476	Yes		
12	17	CATAWBA	SR 1481	Yes		
12	17	CATAWBA	SR 1484	Yes		
12	17	CATAWBA	SR 1517	No	SR 1453	SR 1515
12	17	CATAWBA	SR 1692	Yes		
12	17	CATAWBA	SR 1709	No	US 70	Lyle Creek
12	17	CATAWBA	SR 1713	Yes		
12	17	CATAWBA	SR 1714	Yes		
12	17	CATAWBA	SR 1715	Yes		
12	17	CATAWBA	SR 1722	No	NC 10	Urban Boundary
12	17	CATAWBA	SR 1727	No	SR 1722	Hagan Fork
12	17	CATAWBA	SR 1732	Yes		
12	17	CATAWBA	SR 1735	Yes		
12	17	CATAWBA	SR 1739	No	NC 16	SR 2642

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12	17	CATAWBA	SR 1780	Yes		
12	17	CATAWBA	SR 1802	No	NC 10	SR 1804
12	17	CATAWBA	SR 1880	No	NC 10/16	Pinch Gut Creek
12	17	CATAWBA	SR 2105	Yes		
12	17	CATAWBA	SR 2231	Yes		
12	17	CATAWBA	SR 2932	Yes		
12	17	CATAWBA	SR 2959	Yes		
12	22	CLEVELAND	SR 1001	No	SR 2001	NC 182
12	22	CLEVELAND	SR 1003	No	SR 1191	NC 150
12	22	CLEVELAND	SR 1004	Yes		
12	22	CLEVELAND	SR 1005	No	NC 18	Urban Boundary
12	22	CLEVELAND	SR 1100	Yes		
12	22	CLEVELAND	SR 1103	No	SR 1100	SR 2201
12	22	CLEVELAND	SR 1105	No	SR 1110	SR 1100
12	22	CLEVELAND	SR 1110	Yes		
12	22	CLEVELAND	SR 1115	Yes		
12	22	CLEVELAND	SR 1121	Yes		
12	22	CLEVELAND	SR 1127	No	SR 1121	NC 150
12	22	CLEVELAND	SR 1151	No	SR 1121	US 74
12	22	CLEVELAND	SR 1161	Yes		
12	22	CLEVELAND	SR 1187	Yes		
12	22	CLEVELAND	SR 1191	No	SR 1187	SR 1003
12	22	CLEVELAND	SR 1213	Yes		

12	22	CLEVELAND	SR 1253	Yes		
12	22	CLEVELAND	SR 1305	Yes		
12	22	CLEVELAND	SR 1313	No	SR 1351	US 74
12	22	CLEVELAND	SR 1314	Yes		
12	22	CLEVELAND	SR 1323	No	SR 1351	SR 1314
12	22	CLEVELAND	SR 1350	No	SR 1351	SR 1363
12	22	CLEVELAND	SR 1351	No	SR 1350	SR 1313
12	22	CLEVELAND	SR 1363	No	SR 1350	NC 226
12	22	CLEVELAND	SR 1612	No	SR 1643	NC 18
12	22	CLEVELAND	SR 1643	Yes		
12	22	CLEVELAND	SR 1809	No	NC 226	SR 1813
12	22	CLEVELAND	SR 1813	Yes		
12	22	CLEVELAND	SR 1827	No	SR 1848	SR 1846
12	22	CLEVELAND	SR 1845	Yes		
12	22	CLEVELAND	SR 1846	Yes		
12	22	CLEVELAND	SR 1848	Yes		
12	22	CLEVELAND	SR 1850	No	SR 1005	SR 1851
12	22	CLEVELAND	SR 1861	Yes		
12	22	CLEVELAND	SR 1958	Yes		
12	22	CLEVELAND	SR 2001	No	SR 1001	SR 2002
12	22	CLEVELAND	SR 2002	No	SR 2001	SR 2008
12	22	CLEVELAND	SR 2008	Yes		
12	22	CLEVELAND	SR 2020	Yes		

Secondary routes eligible for FHWA Emergency Relief funds
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12	22	CLEVELAND	SR 2025	Yes		
12	22	CLEVELAND	SR 2026	Yes		
12	22	CLEVELAND	SR 2033	No	SR 2052	SR 2026
12	22	CLEVELAND	SR 2049	Yes		
12	22	CLEVELAND	SR 2050	Yes		
12	22	CLEVELAND	SR 2052	No	US 74 BUS	SR 2033
12	22	CLEVELAND	SR 2235	No	SR 2245	SR 2246
12	22	CLEVELAND	SR 2245	No	SR 2256	SR 2235
12	22	CLEVELAND	SR 2256	Yes		
12	35	GASTON	SR 1001	No	NC 275/279	Urban Boundary
12	35	GASTON	SR 1002	No	NC 50	SR 1636
12	35	GASTON	SR 1103	No	SR 1109	US 321
12	35	GASTON	SR 1112	No	Bridge #52	SR 1103
12	35	GASTON	SR 1122	No	SR 1131	US 29
12	35	GASTON	SR 1126	No	SR 1112	SR 1128
12	35	GASTON	SR 1128	Yes		
12	35	GASTON	SR 1131	No	SR 1128	US 29/74
12	35	GASTON	SR 1133	Yes		
12	35	GASTON	SR 1135	No	US 29/74	NC 274
12	35	GASTON	SR 1136	Yes		
12	35	GASTON	SR 1153	Yes		
12	35	GASTON	SR 1255	Yes		
12	35	GASTON	SR 1302	Yes		

12	35	GASTON	SR 1307	Yes		
12	35	GASTON	SR 1312	Yes		
12	35	GASTON	SR 1336	No	US 321	SR 2278
12	35	GASTON	SR 1339	Yes		
12	35	GASTON	SR 1416	No	NC 274	SR 1438
12	35	GASTON	SR 1438	Yes		
12	35	GASTON	SR 1443	No	NC 274	Urban Boundary
12	35	GASTON	SR 1448	No	NC 274	Bridge #131 Long Creek
12	35	GASTON	SR 1452	No	NC 274	Bridge # 135 Long Creek
12	35	GASTON	SR 1484	Yes		
12	35	GASTON	SR 1609	No	Johns Place	Lincoln Co. Line
12	35	GASTON	SR 1812	No	Thompkins St.	US 321
12	35	GASTON	SR 1823	No	SR 1827	SR 1831
12	35	GASTON	SR 1831	No	SR 1823	NC 27
12	35	GASTON	SR 1905	Yes		
12	35	GASTON	SR 1918	Yes		
12	35	GASTON	SR 1923	Yes		
12	35	GASTON	SR 1992	Yes		
12	35	GASTON	SR 2000	Yes		
12	35	GASTON	SR 2003	Yes		
12	35	GASTON	SR 2014	Yes		
12	35	GASTON	SR 2021	Yes		
12	35	GASTON	SR 2029	Yes		

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12	35	GASTON	SR 2032	No	SR 2029	SR 2040
12	35	GASTON	SR 2035	Yes		
12	35	GASTON	SR 2036	Yes		
12	35	GASTON	SR 2040	Yes		
12	35	GASTON	SR 2041	Yes		
12	35	GASTON	SR 2044	Yes		
12	35	GASTON	SR 2050	Yes		
12	35	GASTON	SR 2093	Yes		
12	35	GASTON	SR 2198	Yes		
12	35	GASTON	SR 2200	No	SR 2003	SR 2446
12	35	GASTON	SR 2200	No	SR 2445	NC 274
12	35	GASTON	SR 2201	Yes		
12	35	GASTON	SR 2209	Yes		
12	35	GASTON	SR 2213	Yes		
12	35	GASTON	SR 2269	Yes		
12	35	GASTON	SR 2275	Yes		
12	35	GASTON	SR 2278	Yes		
12	35	GASTON	SR 2329	Yes		
12	35	GASTON	SR 2339	Yes		
12	35	GASTON	SR 2349	Yes		
12	35	GASTON	SR 2400	Yes		
12	35	GASTON	SR 2412	Yes		
12	35	GASTON	SR 2416	Yes		

12	35	GASTON	SR 2420	Yes		
12	35	GASTON	SR 2439	Yes		
12	35	GASTON	SR 2445	Yes		
12	35	GASTON	SR 2446	Yes		
12	35	GASTON	SR 2457	Yes		
12	35	GASTON	SR 2466	Yes		
12	35	GASTON	SR 2478	Yes		
12	35	GASTON	SR 2481	Yes		
12	35	GASTON	SR 2490	Yes		
12	35	GASTON	SR 2519	Yes		
12	35	GASTON	SR 2560	Yes		
12	35	GASTON	SR 2565	Yes		
12	35	GASTON	SR 2594	Yes		
12	48	IREDELL	SR 1001	No	I-77	US 21/NC115
12	48	IREDELL	SR 1004	No	SR 1379	US 64
12	48	IREDELL	SR 1005	Yes		
12	48	IREDELL	SR 1100	No	SR 1177	US 21/NC115
12	48	IREDELL	SR 1102	No	I-77	NC 115
12	48	IREDELL	SR 1109	Yes		
12	48	IREDELL	SR 1117	Yes		
12	48	IREDELL	SR 1125	No	NC 115	SR 1142
12	48	IREDELL	SR 1150	No	NC 152	Urban Boundary
12	48	IREDELL	SR 1171	Yes		

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12	48	IREDELL	SR 1339	Yes		
12	48	IREDELL	SR 1359	No	US 64/NC90	US 64/NC90
12	48	IREDELL	SR 1379	Yes		
12	48	IREDELL	SR 1420	Yes		
12	48	IREDELL	SR 1421	Yes		
12	48	IREDELL	SR 1541	Yes		
12	48	IREDELL	SR 1543	No	NC 90	SR 1541
12	48	IREDELL	SR 1548	Yes		
12	48	IREDELL	SR 1551	No	SR 1548	NC 115
12	48	IREDELL	SR 1621	Yes		
12	48	IREDELL	SR 1639	Yes		
12	48	IREDELL	SR 1640	Yes		
12	48	IREDELL	SR 1645	No	NC 115	SR 1541
12	48	IREDELL	SR 1907	No	NC 115	SR 1929
12	48	IREDELL	SR 2158	No	SR 2437	SR 2169
12	48	IREDELL	SR 2171	No	US 21	SR 2174
12	48	IREDELL	SR 2173	No	US 21	SR 2187
12	48	IREDELL	SR 2174	Yes		
12	48	IREDELL	SR 2187	Yes		
12	48	IREDELL	SR 2316	Yes		
12	48	IREDELL	SR 2318	No	US 70	SR 2342
12	48	IREDELL	SR 2320	Yes		
12	48	IREDELL	SR 2321	Yes		

12	48	IREDELL	SR 2333	Yes		
12	48	IREDELL	SR 2342	No	US 21	SR 2318
12	48	IREDELL	SR 2437	No	SR 2174	SR 2158
12	48	IREDELL	SR 2735	Yes		
12	54	LINCOLN	SR 1001	No	NC 27/150	SR 1262
12	54	LINCOLN	SR 1003	No	NC 27/150	SR 1339
12	54	LINCOLN	SR 1005	Yes		
12	54	LINCOLN	SR 1008	No	NC 27	SR 1005
12	54	LINCOLN	SR 1172	No	NC 150	Gaston Co. Line
12	54	LINCOLN	SR 1222	No	NC 27	NC 150
12	54	LINCOLN	SR 1242	Yes		
12	54	LINCOLN	SR 1262	Yes		
12	54	LINCOLN	SR 1267	Yes		
12	54	LINCOLN	SR 1405	Yes		
12	54	LINCOLN	SR 1406	Yes		
12	54	LINCOLN	SR 1959	Yes		

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Div.	Co. #	County	Route	Whole Road	From	To
13	10	BUNCOMBE	SR 1003	No	US 19 Bus.	SR 2109
13	10	BUNCOMBE	SR 1004	Yes		
13	10	BUNCOMBE	SR 1220	No	SR 1224	US 19
13	10	BUNCOMBE	SR 1224	No	SR 1220	SR 3412
13	10	BUNCOMBE	SR 1228	Yes		
13	10	BUNCOMBE	SR 1332	Yes		
13	10	BUNCOMBE	SR 1338	Yes		
13	10	BUNCOMBE	SR 1348	Yes		
13	10	BUNCOMBE	SR 1369	Yes		
13	10	BUNCOMBE	SR 1477	Yes		
13	10	BUNCOMBE	SR 1641	No	SR 1623	SR 1002
13	10	BUNCOMBE	SR 1674	Yes		
13	10	BUNCOMBE	SR 1684	Yes		
13	10	BUNCOMBE	SR 1725	Yes		
13	10	BUNCOMBE	SR 1742	No	NC 251	SR 1741
13	10	BUNCOMBE	SR 1756	No	SR 1740	US 19
13	10	BUNCOMBE	SR 1781	Yes		
13	10	BUNCOMBE	SR 1839	Yes		
13	10	BUNCOMBE	SR 2002	Yes		
13	10	BUNCOMBE	SR 2053	Yes		
13	10	BUNCOMBE	SR 2109	Yes		

13	10	BUNCOMBE	SR 2123	Yes		
13	10	BUNCOMBE	SR 2148	No	US 19/23	NC 197
13	10	BUNCOMBE	SR 2207	No	US 19/23	SR 2147
13	10	BUNCOMBE	SR 2230	No	US 25	SR 2109
13	10	BUNCOMBE	SR 2435	No	US 70	SR 2727
13	10	BUNCOMBE	SR 2472	Yes		
13	10	BUNCOMBE	SR 2474	No	US 70	SR 2473
13	10	BUNCOMBE	SR 2474	No	0.06 S. of SR 2476	NC 9
13	10	BUNCOMBE	SR 2500	Yes		
13	10	BUNCOMBE	SR 2776	No	US 74 Alt.	SR 2782
13	10	BUNCOMBE	SR 2806	No	SR 2810	SR 2815
13	10	BUNCOMBE	SR 2815	No	US 74 Alt.	SR 2806
13	10	BUNCOMBE	SR 3116	Yes		
13	10	BUNCOMBE	SR 3121	Yes		
13	10	BUNCOMBE	SR 3136	Yes		
13	10	BUNCOMBE	SR 3214	Yes		
13	10	BUNCOMBE	SR 3238	Yes		
13	10	BUNCOMBE	SR 3284	Yes		
13	10	BUNCOMBE	SR 3412	Yes		
13	10	BUNCOMBE	SR 3548	No	Clingman Ave.	I-240 US 70/74 Alt.
13	10	BUNCOMBE	SR 3548	No	I-240	Riverside Dr.
13	10	BUNCOMBE	SR 3556	Yes		

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13	11	BURKE	SR 1001	No	Catawba Co. Line	SR 1737
13	11	BURKE	SR 1002	No	US 70	Henry River Bridge
13	11	BURKE	SR 1007	Yes		
13	11	BURKE	SR 1102	No	US 64/70	SR 1112
13	11	BURKE	SR 1107	Yes		
13	11	BURKE	SR 1112	No	SR 1102	US 64
13	11	BURKE	SR 1129	No	I-40	US 70
13	11	BURKE	SR 1142	No	SR 1149	I-40
13	11	BURKE	SR 1147	No	I-40	Catawba River
13	11	BURKE	SR 1149	Yes		
13	11	BURKE	SR 1168	Yes		
13	11	BURKE	SR 1223	No	SR 1147	Catawba River
13	11	BURKE	SR 1304	Yes		
13	11	BURKE	SR 1419	No	NC 181	0.17mi s.of SR 1421
13	11	BURKE	SR 1443	Yes		
13	11	BURKE	SR 1501	Yes		
13	11	BURKE	SR 1512	Yes		
13	11	BURKE	SR 1522	Yes		
13	11	BURKE	SR 1531	Yes		
13	11	BURKE	SR 1535	Yes		
13	11	BURKE	SR 1538	Yes		
13	11	BURKE	SR 1546	Yes		

13	11	BURKE	SR 1576	Yes		
13	11	BURKE	SR 1611	Yes		
13	11	BURKE	SR 1618	Yes		
13	11	BURKE	SR 1621	Yes		
13	11	BURKE	SR 1623	Yes		
13	11	BURKE	SR 1627	Yes		
13	11	BURKE	SR 1628	Yes		
13	11	BURKE	SR 1642	Yes		
13	11	BURKE	SR 1647	Yes		
13	11	BURKE	SR 1653	Yes		
13	11	BURKE	SR 1704	Yes		
13	11	BURKE	SR 1713	Yes		
13	11	BURKE	SR 1716	Yes		
13	11	BURKE	SR 1733	Yes		
13	11	BURKE	SR 1734	No	I-40	US 70
13	11	BURKE	SR 1744	Yes		
13	11	BURKE	SR 1761	No	US 70	SR 1786
13	11	BURKE	SR 1761	No	SR 1785	SR 1002
13	11	BURKE	SR 1780	Yes		
13	11	BURKE	SR 1785	Yes		
13	11	BURKE	SR 1786	No	SR 1788	SR 1761
13	11	BURKE	SR 1803	No	SR 1761	0.16 mi.N of SR 1809

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13	11	BURKE	SR 1890	Yes		
13	11	BURKE	SR 1922	No	SR 1940	SR 1924
13	11	BURKE	SR 1924	No	NC 18	SR 1939
13	11	BURKE	SR 1931	Yes		
13	11	BURKE	SR 1940	Yes		
13	11	BURKE	SR 1949	Yes		
13	11	BURKE	SR 1956	No	SR 1949	SR 2002
13	56	MADISON	SR 1151	Yes		
13	56	MADISON	SR 1198	Yes		
13	56	MADISON	SR 1206	Yes		
13	56	MADISON	SR 1609	Yes		
13	56	MADISON	SR 1636	Yes		
13	58	MCDOWELL	SR 1001	No	SR 1327	SR 1257
13	58	MCDOWELL	SR 1137	Yes		
13	58	MCDOWELL	SR 1168	No	SR 1001	I-40
13	58	MCDOWELL	SR 1191	No	SR 1299	SR 1001
13	58	MCDOWELL	SR 1195	Yes		
13	58	MCDOWELL	SR 1327	Yes		
13	58	MCDOWELL	SR 1434	Yes		
13	58	MCDOWELL	SR 1500	No	Madison St.	SR 1507
13	58	MCDOWELL	SR 1501	No	US 221	SR 1597
13	58	MCDOWELL	SR 1501	No	SR 1500	SR 1502
13	58	MCDOWELL	SR 1507	Yes		

13	58	MCDOWELL	SR 1510	Yes		
13	58	MCDOWELL	SR 1741	No	SR 1736	NC 226
13	58	MCDOWELL	SR 1802	Yes		
13	60	MITCHELL	SR 1121	Yes		
13	60	MITCHELL	SR 1164	No	SR 1171	SR 1167
13	60	MITCHELL	SR 1167	Yes		
13	60	MITCHELL	SR 1170	No	SR 1172	NC 80
13	60	MITCHELL	SR 1171	Yes		
13	60	MITCHELL	SR 1172	No	SR 1170	SR 1171
13	60	MITCHELL	SR 1250	No	SR 1167	NC 226
13	60	MITCHELL	SR 1403	Yes		
13	80	RUTHERFORD	SR 1218	Yes		
13	80	RUTHERFORD	SR 1510	No	SR 1549	US 74 Alt.
13	80	RUTHERFORD	SR 1538	No	US 74 Alt.	SR 1548
13	80	RUTHERFORD	SR 1576	No	US 74 Bus.	SR 1006
13	80	RUTHERFORD	SR 1966	Yes		
13	80	RUTHERFORD	SR 2169	Yes		
13	80	RUTHERFORD	SR 2179	No	SR 2241	SR 2213
13	80	RUTHERFORD	SR 2184	No	US 221 /74 Bus.	US 74
13	80	RUTHERFORD	SR 2185	No	US 221 /74 Bus.	SR 2184
13	80	RUTHERFORD	SR 2210	No	US 221 Alt.	SR 2146
13	80	RUTHERFORD	SR 2213	No	US 221 /74 Bus.	US 74 Alt.
13	80	RUTHERFORD	SR 2241	Yes		

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14	19	CHEROKEE	SR 1426	No	US 19/74/129	SR 1374
14	19	CHEROKEE	SR 1428	Yes		
14	19	CHEROKEE	SR 1505	Yes		
14	21	CLAY	SR 1100	Yes		
14	21	CLAY	SR 1112	Yes		
14	43	HAYWOOD	SR 1004	No	I-40	Buncombe Co. Line
14	43	HAYWOOD	SR 1111	Yes		
14	43	HAYWOOD	SR 1164	Yes		
14	43	HAYWOOD	SR 1168	Yes		
14	43	HAYWOOD	SR 1173	No	W. Main St.	SR 1164
14	43	HAYWOOD	SR 1184	Yes		
14	43	HAYWOOD	SR 1196	Yes		
14	43	HAYWOOD	SR 1243	Yes		
14	43	HAYWOOD	SR 1334	No	SR 1338	NC 209
14	43	HAYWOOD	SR 1338	Yes		
14	43	HAYWOOD	SR 1375	No	SR 1375	NC 209
14	43	HAYWOOD	SR 1376	No	SR 1405	SR 1375
14	43	HAYWOOD	SR 1509	No	SR 1549	Urban Boundary
14	43	HAYWOOD	SR 1513	No	SR 1549	US 74
14	43	HAYWOOD	SR 1519	Yes		
14	43	HAYWOOD	SR 1523	No	NC 209	US 74
14	43	HAYWOOD	SR 1532	Yes		
14	43	HAYWOOD	SR 1549	No	SR 1513	SR 1509
14	43	HAYWOOD	SR 1800	Yes		
14	43	HAYWOOD	SR 1818	No	US 23 Bus.	SR 1823
14	43	HAYWOOD	SR 1823	Yes		
14	43	HAYWOOD	SR 1863	No	NC 110	SR 1871
14	43	HAYWOOD	SR 1871	No	NC 110	SR 1863
14	44	HENDERSON	SR 1006	No	US 25	SR 1783
14	44	HENDERSON	SR 1127	Yes		
14	44	HENDERSON	SR 1138	Yes		
14	44	HENDERSON	SR 1164	Yes		
14	44	HENDERSON	SR 1171	No	SR 1127	Urban Boundary
14	44	HENDERSON	SR 1172	No	State Street	SR 1173
14	44	HENDERSON	SR 1173	Yes		

14	44	HENDERSON	SR 1180	Yes		
14	44	HENDERSON	SR 1309	No	SR 1312	SR 1310
14	44	HENDERSON	SR 1310	No	SR 1310	NC 191
14	44	HENDERSON	SR 1312	Yes		
14	44	HENDERSON	SR 1345	No	SR 1365	US 25
14	44	HENDERSON	SR 1365	Yes		
14	44	HENDERSON	SR 1381	Yes		
14	44	HENDERSON	SR 1383	Yes		
14	44	HENDERSON	SR 1503	Yes		
14	44	HENDERSON	SR 1508	No	SR 1511	SR 1525
14	44	HENDERSON	SR 1511	Yes		
14	44	HENDERSON	SR 1525	No	SR 1508	SR 1739
14	44	HENDERSON	SR 1534	No	US 25	SR 1006
14	44	HENDERSON	SR 1545	Yes		
14	44	HENDERSON	SR 1547	Yes		
14	44	HENDERSON	SR 1551	No	SR 1545	SR 1553
14	44	HENDERSON	SR 1551	No	SR 1696	Buncombe Co. Line
14	44	HENDERSON	SR 1553	No	SR 1551	SR 1539
14	44	HENDERSON	SR 1647	Yes		
14	44	HENDERSON	SR 1695	Yes		
14	44	HENDERSON	SR 1696	Yes		
14	44	HENDERSON	SR 1722	No	US 176	SR 1803
14	44	HENDERSON	SR 1733	Yes		
14	44	HENDERSON	SR 1755	Yes		
14	44	HENDERSON	SR 1757	No	SR 1779	SR 1755
14	44	HENDERSON	SR 1779	Yes		
14	44	HENDERSON	SR 1783	No	US 176	US 64
14	44	HENDERSON	SR 1793	No	SR 1525	SR 1893
14	44	HENDERSON	SR 1803	No	SR 1722	SR 1812
14	44	HENDERSON	SR 1812	Yes		
14	44	HENDERSON	SR 1902	No	SR 1733	SR 1783
14	44	HENDERSON	SR 2120	Yes		
14	49	JACKSON	SR 1001	No	SR 1328	NC 107
14	49	JACKSON	SR 1002	No	NC 107	SR 1797
14	49	JACKSON	SR 1340	No	NC 107	SR 1344
14	49	JACKSON	SR 1429	Yes		
14	49	JACKSON	SR 1432	Yes		
14	49	JACKSON	SR 1449	Yes		
14	49	JACKSON	SR 1513	No	US 23 W. Bus.	US 23/74
14	55	MACON	SR 1310	Yes		
14	55	MACON	SR 1323	No	NC 28	SR 1489
14	55	MACON	SR 1401	Yes		
14	55	MACON	SR 1442	No	SR 1310	US 441 Bus.

14	55	MACON	SR 1448	Yes		
14	55	MACON	SR 1489	Yes		
14	55	MACON	SR 1513	No	US 23/441	Urban Boundary
14	55	MACON	SR 1699	Yes		
14	55	MACON	SR 1729	No	US 441 N. Bus.	SR 1667
14	87	TRANSYLVANIA	SR 1110	No	US 64	Urban Boundary
14	87	TRANSYLVANIA	SR 1113	Yes		
14	87	TRANSYLVANIA	SR 1116	Yes		
14	87	TRANSYLVANIA	SR 1118	Yes		
14	87	TRANSYLVANIA	SR 1304	Yes		
14	87	TRANSYLVANIA	SR 1344	Yes		
14	87	TRANSYLVANIA	SR 1347	Yes		
14	87	TRANSYLVANIA	SR 1348	Yes		
14	87	TRANSYLVANIA	SR 1349	Yes		
14	87	TRANSYLVANIA	SR 1351	No	Whitmire St.	W. French Broad Ave.
14	87	TRANSYLVANIA	SR 1388	Yes		
14	87	TRANSYLVANIA	SR 1504	No	US 64	SR 1528
14	87	TRANSYLVANIA	SR 1512	Yes		
14	87	TRANSYLVANIA	SR 1528	Yes		
14	87	TRANSYLVANIA	SR 1540	Yes		
14	87	TRANSYLVANIA	SR 1543	Yes		
14	87	TRANSYLVANIA	SR 1544	Yes		
14	87	TRANSYLVANIA	SR 1546	Yes		
14	87	TRANSYLVANIA	SR 1551	Yes		
14	87	TRANSYLVANIA	SR 1556	Yes		
14	87	TRANSYLVANIA	SR 1610	Yes		
14	87	TRANSYLVANIA	SR 1611	Yes		
14	87	TRANSYLVANIA	SR 1612	Yes		