

APPENDIX H**DEBRIS MANAGEMENT****TABLE OF CONTENTS**

- i. [FOREWORD](#)
- ii. [ACRONYMS USED IN THIS DOCUMENT](#)
- iii. [TERMS USED IN THIS DOCUMENT](#)

- I. [LOCAL, STATE AND FEDERAL DISASTER RESPONSE ACTIONS](#)
 - A. Natural Disasters
 - B. Local Disaster Response Actions
 - C. State Disaster Response Actions
 - D. Federal Disaster Response Actions
 - E. Disaster Declaration Process
 - F. Federal Response Framework
 - G. FEMA Debris Mission Response Actions
 - H. FEMA Debris Eligibility Criteria
 - I. FEMA Building Demolition Criteria

- II. [PRE-DISASTER PLANNING](#)
 - A. Identifying Potential Types and Amounts of Debris
 - B. Identifying Temporary Debris Storage and Reduction Sites
 - C. Mutual Aid Agreements

- III. [DEBRIS MANAGEMENT STAFF ORGANIZATION AND RESPONSIBILITIES](#)
 - A. Debris Management Staff Organization
 - B. General Debris Staff Responsibilities
 - C. Building and Engineering Staff Responsibilities
 - D. Public Information Management

- IV. [METHOD OF OPERATIONS](#)
 - A. Phase I: Emergency Roadway Debris Clearance
 - B. Phase II: Debris Removal and Disposal Responsibilities
 - C. Debris Issues Requiring Close Coordination
 - D. Recycling

V. CONTRACTING PROCEDURES

- A. Contracting Office Responsibilities
- B. Contracting Procedures for Immediate Response (Phase I)
- C. Contracting Procedures for Recovery Operations (Phase II)
- D. Unit Price and Lump Sum Contracts
- E. Contract Monitoring Responsibilities

VI. SPECIAL DEMOLITION AND DEBRIS REMOVAL SITUATIONS

- A. Private Property Demolition and Debris Removal
- B. Mobile Home Park Debris Removal
- C. Debris Removal Contracts

VII. TEMPORARY DEBRIS STORAGE SITE OPERATIONS AND VOLUME REDUCTION METHODS

- A. Temporary Debris Storage Sites
- B. Household Hazardous Waste
- C. Commercial, Agricultural and Industrial Hazardous and Toxic Waste
- D. Volume Reduction Methods

VIII. TEMPORARY DEBRIS STORAGE AND REDUCTION SITE ENVIRONMENTAL CONSIDERATIONS

- A. Air Quality Monitoring
- B. Site Closeout Procedures
- C. Ash, Soil and Groundwater Testing

APPENDICES

- [Appendix A](#) USACE Hurricane Debris Estimating Model
- [Appendix B](#) Privately-Owned Roads in the City of North Port
- [Appendix C](#) Right of Entry Agreement onto Private Property
- [Appendix D](#) Federal-Aid Roads in North Port
- [Appendix E](#) Aerial View of the FDEP Pre-Approved Temporary Debris Storage and Reduction Site
- [Appendix F](#) Aerial View of The City of North Port
- [Appendix G](#) FDEP Temporary Debris Storage and Reduction Site Pre-Approval Letter
- [Appendix H](#) Health and Safety Supplement
- [Appendix I](#) FEMA Letter of Plan Approval

i. FOREWORD

Each year, local officials from hundreds of communities are faced with the task of removing debris caused by natural disasters. In the past 20 years alone, over 700 major disasters have been declared by the President to facilitate Federal assistance to communities struck by hurricanes, tornadoes, floods, earthquakes, wild fires and other natural disasters.

In some cases, debris clearance, removal and disposal actions can be accomplished quickly using community resources augmented by assistance from neighboring communities, State agencies and contractor resources. In many other cases, however, the damage and debris are so extensive that a comprehensive debris clearance, removal and disposal management plan is required to efficiently and effectively control the operations.

The City of North Port developed this document to provide guidance to community leaders in planning, mobilizing, organizing and controlling a large-scale debris clearance, removal and disposal operation. Although this manual has been developed for large-scale debris clearance, removal and disposal operations, portions of all sections can be utilized on smaller operations. The sections are arranged to enable the reader to progress in a logical manner from one planning element to another. It is recommended that the sections be read consecutively because information presented in one section will be helpful in understanding materials presented in subsequent sections. The guide does not address the removal or disposal of material and products from institutional, commercial, recreational, industrial or agricultural sources that contain certain chemicals as defined by the U.S. Environmental Protection Agency to be toxic, flammable, corrosive or reactive.

This Plan will be reviewed on an annual basis to ensure compliance and consistency with local, State and Federal regulations.

ii. ACRONYMS USED IN THIS DOCUMENT

C&D	Construction and Demolition
DMTF	Debris Management Task Force
DOT	Department of Transportation
DPW	Department of Public Works
DRM	Disaster / Operations Recovery Manager
EOC	Emergency Operations Center
EPA	[U.S.] Environmental Protection Agency
ER	Emergency Relief
ESF	Emergency Support Function
FCO	Federal Coordinating Officer
FEMA	Federal Emergency Management Agency
FDEM	Florida Division of Emergency Management
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FHWA	Federal Highway Administration
GAR	Governor's Authorized Representative
GIS	Geographic Information System
HHW	Household Hazardous Waste
NRF	National Response Framework
PA	Public Assistance
PIO	Public Information Officer
SCO	State Coordinating Officer
SHPO	State Historic Preservation Office
SWM	Department of Solid Waste Management
TDSRS	Temporary Debris Storage and Reduction Site
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture

iii. TERMS USED IN THIS DOCUMENT

Chipping - Reducing wood related material by mechanical means into small pieces to be used as mulch or fuel. Chipping and mulching are often used interchangeably.

Debris - Scattered items and materials broken, destroyed, or displaced by a natural disaster. Example: trees, construction and demolition material, personal property.

Debris Clearance - Clearing the major road arteries by pushing debris to the roadside to accommodate emergency traffic.

Debris Removal - Picking up debris and taking it to a temporary storage site or permanent landfill.

Debris Disposal - Placing mixed debris and/or residue from volume reduction operations into an approved landfill.

Department of Public Works (DPW) - Department typically responsible for clearing debris from the roads and rights-of-way.

Force Account Labor - State or local government employees engaged in debris removal activities.

Garbage - Waste that is regularly picked up by the Department of Solid Waste Management. Example: food, plastics, wrapping, papers.

Hazardous Waste - Material and products from institutional, commercial, recreational, industrial and agricultural sources that contain certain chemicals with one or more the following characteristics, as defined by the Environmental Protection Agency: 1) Toxic, 2) Flammable, 3) Corrosive; and/or 4) Reactive.

Household Hazardous Waste (HHW) - Used or leftover contents of consumer products that contain chemicals with one or more of the following characteristics, as defined by the Environmental Protection Agency: (1) Toxic, (2) Flammable, (3) Corrosive and/or (4) Reactive. Examples of household hazardous waste include small quantities of normal household cleaning and maintenance products, latex and oil based paint, cleaning solvents, gasoline, oils, swimming pool chemicals, pesticides, propane gas cylinders.

Hot Spots - Illegal dump sites that may pose health and safety threats.

Mutual Aid Agreement - An understanding between communities and States obligating assistance during a disaster.

National Response Framework - A document developed to facilitate the delivery of all types of Federal response assistance to States following a disaster. It outlines the planning assumptions, policies, concept of operations, organizational structures and specific assignments and agencies in providing Federal response assistance to supplement the State and local response efforts.

Recycling - The recovery and reuse of metals, soils and construction materials that may have a residual monetary value.

Rights-of-Way - The portions of land over which a facility, such as highways, railroads, or power lines are built. Includes land on both sides of the highway up to the private property line.

Scale/Weigh Station - A scale used to weigh trucks as they enter and leave a landfill. The difference in weight determines the tonnage dumped and a tipping fee is charged accordingly.

Storage Site - A location where debris is temporarily stored until it is reduced in volume and/or taken to a permanent landfill.

Sweeps - The number of times a contractor passes through a community to collect all disaster-related debris from the rights-of-way. Usually limited to three passes through the community.

Tipping Fee - A fee based on weight or volume of debris dumped that is charged by landfills or other waste management facilities to cover their operating and maintenance costs.

Trash - Non-disaster related yard waste, white metals, or household furnishings placed on the curbside for pickup by local solid waste management personnel. A resident must call for pickup. Not synonymous with garbage.

United States Army Corps of Engineers (USACE) - A component of the U.S. Department of the Army which is responsible for constructing and maintaining all military bases and other government-owned and controlled entities. The USACE may be used by FEMA when direct Federal assistance, issued through a mission assignment, is needed.

White Goods – Discarded household appliances such as refrigerators, freezers, air conditioners, heat pumps, ovens, ranges, washing machines, clothes dryers, and water heaters. Many white goods contain ozone-depleting refrigerants, mercury, or compressor oils.

White Metals - Household appliances, such as refrigerators, freezers, stoves, washers and dryers.

I. LOCAL, STATE AND FEDERAL DISASTER RESPONSE ACTIONS

This section provides an overview of local, State and Federal disaster response actions available following a debris-generating natural disaster. Detailed information on the declaration process and eligibility criteria is contained in the Public Assistance Guide, FEMA publication 322.

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 shore lands 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 will be located along the shoreline, flooding and tornadoes spawned by hurricanes can cause damage and leave extensive amounts of natural and manmade debris far inland.
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.
4. Earthquakes - Damage to structures is caused by shockwaves and earth movements along fault lines. Secondary damage, such as fires and explosions, may result from the disruption of utility systems. Debris consists of building materials, personal property and sediment caused by landslides.

4. 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.

B. Local Disaster Response Actions

1. The City of North Port is the first to respond to a disaster. Response efforts are first directed to activities that protect lives, public health and safety, such as evacuations, sheltering, firefighting, utility restoration and clearing roads of debris. These response efforts may be accomplished with local force account labor and equipment, contractors, volunteers and assistance from adjacent communities.
2. The City of North Port has a Comprehensive Emergency Management Plan (CEMP) which identifies key staff members and their responsibilities for managing and controlling debris clearing, removal and disposal operations. This staff will be immediately activated whenever a natural disaster occurs. Staff members will document the critical decisions made in response to the disaster and provide the debris manager and local, State and Federal officials with a clear plan of action. The debris clearing, removal and disposal operations may extend for weeks or months and insufficient documentation of the evolving plan could cause confusion and inefficiency.
3. Safety assessments will be conducted to identify necessary lifesaving actions, assess the magnitude of damage and determine if additional resources are needed from other local governments and the State. Safety assessments shall be conducted in accordance with State/local health and safety standards/requirements.
4. This Debris Management Plan will divide the City into sectors to assess the extent of debris. Sector boundaries can be determined based on the following criteria:
 - a. Type of debris (structural, trees, sediment and mixed)
 - b. Location of debris
 - c. Volume of debris (large versus small)
 - d. Land use (residential, business, agricultural)

- e. Location of existing and potential temporary storage and volume reduction sites
 - f. Location of existing and potential permanent disposal sites (public and/or private landfills)
5. The damage assessment team will then investigate the damaged areas by sector to record the extent of damage and to identify specific assistance requirements. Damage assessment teams will also estimate the amount and composition of debris observed in each sector and annotate the locations on community maps.
6. The debris staff will initiate actions to assess the availability of local, State, Federal and other resources to provide immediate and long-term assistance. Experience has shown that resources will not be used effectively unless work assignments and cleanup priorities are coordinated and controlled by the debris manager (Solid Waste Manger). The designated local debris manager will have total responsibility and authority for managing the debris cleanup operation. The following are examples of local, State, Federal and other resources available for cleanup activities:
- a. Local Government - The City of North Port maintains equipment, such as trucks, rubber tire loaders, graders, chippers, chain saws, small cranes, dozers and backhoes with experienced operators who can be used to open roads and remove debris. Temporary hires may be added to provide additional labor and equipment operators for 24-hour-a-day operations, if needed. The principal advantage to using local government force account equipment and operators is their lower cost and flexibility in assignment. This equipment generally represents the only resources the community can immediately commit to an emergency debris clearance and cleanup operation.
 - b. Mutual Aid Agreements - A Mutual Aid Agreement is an agreement among neighboring communities (and possibly States) to provide assistance to one another in time of need. The operators and equipment of neighboring communities can be used to quickly augment local force account resources and have many of the same advantages.
 - c. State Agencies - The National Guard, Florida Department of Transportation (FDOT) and Florida Department of Environmental Protection (FDEP) have equipment and personnel that may provide limited assistance on a short-

term basis. The FDOT is normally responsible for debris clearance and removal on State roads. This assistance may be obtained by contacting the Florida Division of Emergency Management (FDEM) through the Sarasota County Emergency Operations Center (EOC).

- d. Volunteers - Historically, volunteers have played a significant role in large-scale debris removal operations. Volunteer organizations can assist private property owners or provide financial assistance in the removal of debris from private property. Additionally, community organizations, such as civic clubs, student groups and neighborhood organizations have proven to be a tremendous community resource in past disasters. To provide for maximum utilization of these resources, community leaders will be prepared to organize volunteer groups and keep the debris management staff informed of their activities. They will document the number of volunteers, the type of work performed and the hours worked. Sponsoring organizations will ensure that personnel are properly equipped and that common sense safety precautions are followed.
- e. Federal Agencies - The U.S. Army Corps of Engineers (USACE) may be able to respond for up to 10 days without a Presidential Declaration. Additionally, the Federal Highway Administration (FHWA) and the National Resource Conservation Service (NRCS) may provide grant assistance to State and local governments for debris clearing, removal and repair of roads on the designated Federal Aid System and clearing debris from canals.
- f. Contractors - Labor and equipment for debris clearance, removal and disposal will be available from local contractors. Following a major disaster, emergency contracts can be executed to augment local force account resources.
- g. Immediately following a disaster, engineering personnel on the debris management staff will explore alternative courses of action and update the existing Debris Management Plan based on the initial safety assessment, available resources and any new information. The updated plan can be hand-written initially and later converted to a more formal document.

- h. Maps of the affected area will be annotated to identify damaged sectors, locations of key facilities and disposal sites and distributed with the updated Debris Management Plan. Information will also be entered into a Geographic Information System (GIS) database, if available.

C. State Disaster Response Actions

1. When the response efforts appear to be beyond the capability of the City, Sarasota County normally provides the next level of assistance by declaring a State of Emergency. Florida Division of Emergency Management typically evaluates the disaster situation and provides advice to the Governor on the availability of State resources that could assist local efforts. State resources may consist of the FDOT, the Florida Department of Health, the FDEP and the National Guard. These State resources can assist the City in its immediate response efforts, including debris clearance, removal and disposal activities.

D. Federal Disaster Response Actions

1. The Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93288, as amended, was enacted into law in 1988. It is the centerpiece of the Federal Disaster Relief Programs that are managed by the Federal Emergency Management Agency (FEMA).
2. When a disaster occurs and a locality has responded to the best of its ability but is or will be overwhelmed by the magnitude of the damage, it turns to the State for help. The Governor, after examining the situation, may direct that the State's Emergency Plan be executed. If it is evident that the situation is or will be beyond the capabilities of local and State resources, the Governor may request that the President declare that an emergency or major disaster exists in the State under the authority of the Stafford Act.
3. While the request is being processed, local and State government officials will not delay in taking actions to respond to whether there will be Federal assistance. Commensurate with the supplemental nature of Stafford Act assistance, the Federal share of eligible recovery expenses for declared disasters is normally limited to 75% of eligible costs.

E. Disaster Declaration Process

1. The request for a declaration must come from the Governor or Acting Governor. Before sending a formal request letter to the President, the Governor will request that FEMA conduct a joint preliminary safety assessment (PDA) with the State to verify actual damages and estimate the amount of supplemental assistance that may be needed. After this assessment is complete and if the Governor believes that Federal assistance is necessary, the Governor sends the request letter to the President, through the Regional Director of the appropriate FEMA Region. The request is reviewed by the Regional Director and forwarded with a recommendation to the Director of FEMA who, in turn, makes a recommendation to the President. The President makes the decision whether or not to declare a major disaster or emergency. After the initial declaration, the person designated by the Governor as the Governor's Authorized Representative (GAR) may make requests for additional areas to be eligible for assistance or for additional types of assistance as deemed necessary.
2. After a declaration is made, FEMA will designate the area eligible for assistance and the types of assistance available. With the declaration, a Federal Coordinating Officer (FCO) is appointed who is responsible for coordinating all Federal disaster assistance programs administered by FEMA, other Federal departments and agencies and voluntary organizations. At the same time, the Regional Director or one of his/her staff will be appointed as the Disaster Recovery Manager (DRM), who is responsible for managing the FEMA assistance programs. The same person most often holds these two titles (FCO and DRM). Similarly, the State Coordinating Officer (SCO) and the GAR are generally the same person.

F. National Response Framework

1. The National Response Framework (NRF) is implemented to coordinate the overall delivery of Federal assistance to disaster victims. The plan is organized functionally by Emergency Support Functions (ESF). Each ESF is composed of a lead or primary agency and supporting agencies grouped together to deliver specific services and resources. Delivery of assistance under the Framework is flexible to best meet the unique needs of each disaster. Under the NRF, emergency assistance is provided either by Federal agencies under their own authorities, or under reimbursable mission assignments from FEMA.

G. FEMA Debris Mission Response Actions

1. In catastrophic disasters, FEMA can provide direct Federal assistance to support local and State governments in performing some of the activities related to debris clearance, removal and disposal. The response capabilities of the local and State governments must be clearly exceeded before this level of assistance can be provided. The work that can be performed under this authority is limited to emergency work and debris removal under Sections 402(4), 403 and 407 of the Stafford Act. The assistance will be subject to the cost-sharing provisions as specified in the FEMA-State Agreement. The grantee will reimburse FEMA for the appropriate non-Federal share of the cost of the work, including any administrative costs of the performing Federal agency. According to Florida Statutes Chapters 119 and 257, the Applicant must retain records up to five years after the close of the contract.
2. Following a Presidential Declaration, FEMA may elect to use its mission assignment authority to have the USACE contract for and manage debris clearance, removal and disposal operations. At the County-level, the debris and removal mission assignment is coordinated by Emergency Support Function #3 (ESF #3), Engineering and Public Works liaison officer. Within the structure of the City EOC, the Debris Management Team Leader, through the Public Works Group Supervisor, will be responsible for all functions of debris management.
3. The Debris Management team will meet regularly with FEMA, FDEM, and Sarasota County officials to collect and coordinate information necessary to accomplish the assigned mission.
4. ESF #10, Hazardous Materials liaison officer from the County, will also be included in all debris planning to coordinate the cleanup, transportation and disposal of hazardous materials.

H. FEMA Debris Eligibility Criteria

1. FEMA Public Assistance (PA) funds may be used for debris clearance, removal and disposal operations. Debris that may be eligible for clearance, removal and disposal includes trees, sand and gravel, building wreckage, vehicles and personal property. The debris must be a direct result of the declared event, must occur within the designated disaster area and must be the responsibility

of the applicant at the time of the disaster. Debris removal may be eligible when it:

- a. Eliminates immediate threats to lives, public health and safety;
 - b. Eliminates immediate threats of significant damage to improved public or private property; and/or
 - c. Ensures economic recovery of the affected areas to the benefit of the community-at-large.
2. Debris Removal from Public Property - In general, debris that is on public property must be removed to allow continued safe operation of governmental functions and, therefore, is eligible under one of the first two criteria. However, not all public property clearance is necessarily 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 in a stream or flood channel may cause flooding from a future storm. If such flooding would cause an immediate threat of damage to improved property, removal of the debris only to the extent necessary to protect against an event that could reasonably be expected to occur within five years may be eligible. On the other hand, removal of fallen trees in a forested or wilderness area is not normally eligible.
3. Debris Removal from Private Property - Debris on private property (to include privately-owned roads and gated communities) is treated somewhat differently. Debris removal from private property is the responsibility of the individual property owner or homeowners' association, aided by insurance settlements and assistance from volunteer agencies. Most insurance policies, such as, homeowner, fire and extended coverage policies, have specific coverage for debris removal and demolition of heavily damaged structures. FEMA assistance is generally not available to reimburse private property owners for the cost of removing debris from their property; however, an eligible local or State government may pick up and dispose of disaster-related debris placed at the curb by those private individuals. The extent and duration of this type of work is carefully controlled. FEMA, State and local officials will agree on a time frame during which pick-up from the curb will be eligible for PA funding.

If the debris on private business and residential property is so widespread that public health, safety, or the economic recovery of the community is threatened, the actual removal of debris from the

private property may be eligible. In such situations, the work normally must be done or be contracted for by an eligible applicant, and a Right-of-Entry Agreement must be in-place to permit access onto private property.

4. Debris Removal from Drainage Structures - Debris removal from certain drainage structures may have to meet the following criteria:
 - a. Reservoirs - Removal of disaster-related debris from reservoirs may be eligible if evidence is provided to FEMA that the reservoirs were regularly cleaned prior to the disaster and the pre-disaster level can be established. In addition, removal of debris that poses an immediate threat of clogging or damaging intake or adjacent structures may be eligible.
 - b. Natural Streams - Debris removal from natural streams normally is not eligible for assistance. Only debris that causes a threat to lives or public health and safety or damage to improved property from an event that could be reasonably expected to occur within five years is eligible. Any work in natural streams must also be closely reviewed and monitored to minimize undesirable environmental effects. This type of work will often require a Clean Water Act Section 404 permit from the USACE. The Natural Resources Conservation Service also has the authority to clear streams of debris.
 - c. Engineered Channels and Debris Basins - Debris removal from engineered channels, lined or unlined and debris basins may be eligible. Knowing the pre-disaster level of debris in the channel or basin is required in determining the amount of disaster-related debris. Such facilities must also have had a regular schedule of debris removal to be eligible for clearance.
5. Debris Removal from Roads and Highways - Debris may be removed from roads and highways, including the travel lanes, roadside ditches and drainage structures and the maintained right-of-way.
 - a. Federal Highway Administration's (FHWA) Emergency Relief (ER) Program provides financial assistance to States to repair or reconstruct national highways that are damaged by natural disasters or catastrophic failures from

an external cause. This funding speeds the restoration of major highways following a disaster. Only highways that are normally eligible for under FHWA's Federal Aid Highway Program are eligible for assistance from the FHWA ER program. While ER funds repairs to "Federal Aid" eligible highways, the Federal Emergency Management Agency (FEMA) addresses all other disaster-damaged roads and public infrastructure.

The City of North Port has a number of Federal-Aid roads (See Appendix D) which require special attention for debris clearance. Eligible debris clearance criteria includes: the restoration of essential traffic along Federal-Aid roads (first push), the first pass collection of debris on Federal-Aid roads, minimize the extent of damages to public property, or protect a remaining facility from further damages. Documentation and Reimbursement requirements differ from those used by FEMA. The Detailed Damage Inspection Reports must be used, and to receive full reimbursement for debris removal activities, all work must be completed within 180 days.

Debris clearance and removal from roadways not under the jurisdiction of the FHWA-ER program may be reimbursable under FEMA's Public Assistance program.

- b. Privately-Owned Roads (See Appendix B) - FEMA will not reimburse expenses incurred for debris clearance, removal or disposal from privately-owned roads (to include gated communities), with the following exceptions: (1) The applicant must provide documentation stating that disaster-generated debris on private property in the designated area constitutes an immediate threat to life, public health, and safety, and (2) the applicant has legal responsibility to remove debris from private property through the Right-of-Entry Agreement (Appendix C).
 - i. In 2008, the City has adopted an ordinance which, during a declared emergency, authorizes the City to enter onto privately-owned roads and into gated communities, and collect debris to ensure public health and safety (See City of North Port Codes, Article IV, Disaster Debris Management).

6. Debris Removal from Recreational and Wilderness Areas
 - a. The removal of debris from public parks and recreational areas used by the public is eligible when it affects public health or safety or proper utilization of such facilities.
 - b. Hazardous trees within a naturalized area of public parks or golf courses that are unstable and leaning into the areas used by the public are eligible for removal only, not replacement. Normally, trees requiring removal are flush cut at the ground. Hazardous limbs are also eligible for removal. Hazardous limbs are defined as limbs greater than two inches in diameter that are still hanging in the tree and are threatening a public-use area, such as a trail, sidewalk, road, or golf cart path.
 - c. Generally, stump removal is not considered eligible for reimbursement, except if the stump itself is determined to be a hazard, as when the tree has been uprooted. When eligible, stump removal is accomplished by the least expensive means.
 - d. A tree with more than 50% of the tree crown destroyed or damaged, a split trunk, or broken branches that expose the heartwood, or a tree that has been felled or uprooted is eligible for removal, especially if it is in a location approximate to or within public-use areas. If the applicant chooses to attempt to save a tree that has any of the conditions described above that justify its removal, the expense is the applicant's.
 - c. Removal of debris that does not pose a health or safety threat in wilderness or forested areas of these facilities is not eligible for FEMA reimbursement.

I. FEMA Building Demolition Criteria

1. FEMA Public Assistance (PA) funds may be used for demolition and removal of resulting debris under the authority of Section 403, Essential Assistance, of the Stafford Act. This section allows for the demolition of unsafe structures that pose an immediate threat to life, property, or public health and safety.
2. Health and Safety - The primary responsibility for demolition of unsafe structures lies with the owner. Most insurance policies have

a clause that provides payment for demolishing houses damaged beyond repair. The applicant must certify that no insurance exists that would pay for the demolition, the owner is not capable of paying for such work and there is no opportunity to recoup the cost from the owner. If permission for demolition is not provided, the applicant must follow legal condemnation. The applicant must obtain right of entry and hold harmless agreements prior to start of the work. The ownership of the property remains in the hands of the original owner.

- a. All properties must be reviewed in accordance with environmental, historic and other Federal laws being provided for the demolition. The State will provide each applicant with a demolition checklist that must be completed and returned by the applicant prior to any actual demolition of the property.
- b. The checklist will contain a list of items with which the applicant must comply prior with demolition. These items include verification that the applicant has obtained right of entry and hold harmless agreements and investigated insurance coverage and liens. The applicant will also be provided forms pertaining to historic preservation, environmental, hazardous materials and wetland/floodplain requirements. The applicant must sign and return these forms indicating he/she has read them and understands that it is his/her responsibility to ensure full compliance with all local, State and Federal rules and regulations.
- c. The applicant must provide FEMA with a copy of the bid specifications, final property list and bid results prior to demolition. FEMA reviews the bid specifications to ensure that the specifications contain the proper scope of eligible work.
- d. Once all necessary information has been received and reviewed, FEMA will notify the State that they have no objection to the applicant's proceeding with the demolition of the properties identified in the demolition bid. The State provides the applicant with written authorization to proceed with the demolition project.
- e. Eligible work under health and safety demolition is limited to the demolition and removal of structures that may

represent an immediate threat to public health and safety. An inspection team may inspect each facility to make a determination on the structural integrity of the unit and review the reports of the applicant's building inspector. Structures that are in danger of collapse, thus representing an immediate threat to life and safety, are documented and recommended as eligible for demolition.

- f. Other eligible project descriptions under the health and safety category may include cleaning septic systems, backfilling basements, capping wells, clearing debris and any other actions to mitigate an immediate threat to public health and safety.
- g. Items such as slabs on grade, driveways, fences and structurally sound buildings normally are not eligible for demolition under the public health and safety category because they do not represent an immediate threat to public health and safety.
- h. At the completion of the project, the State notifies FEMA that the applicant's demolition has been completed. A joint FEMA/State team inspects the applicant's demolition sites to ensure full compliance with the project description identified in the report form.
- i. Eligible costs may include any cost incurred by the applicant to complete the demolition project. Costs for monitoring and managing demolition and removal activities are eligible costs. Necessary costs of requesting, obtaining and administering the grant assistance, however, are covered by the Sub grantee Administrative Allowance and are not identified separately as eligible costs.

See the Public Assistance Guide, FEMA publication 322, for more information on the Sub-grantee Administrative Allowance.

- 3. Archaeological Sites or Historic Structures - listed on the National Register of Historic Places or potentially eligible must be reviewed by the State Historic Preservation Officer (SHPO) prior to any demolition. Information and forms outlining the necessary step-by-step procedures to obtain SHPO approval will be provided to the applicant by the State. It is the applicant's responsibility to obtain SHPO approval before demolishing any possible historic structures

or performing ground disturbing activities. Costs associated with the applicant's obtaining SHPO clearance may be eligible.

- a. Each structure must be inspected for hazardous materials, such as asbestos or lead-based paint, prior to actual demolition of the structure. Normally, a representative of the applicant, such as a building inspector or fire marshal, will conduct a preliminary inspection of each structure. If hazardous materials are determined to exist in the structure, the applicant will contract with a certified asbestos or lead-based paint inspector. If the inspection report indicates the presence of asbestos material or lead-based paint, a certified abatement contractor must remove the material prior to demolition. Costs associated with asbestos and lead-based paint inspections, asbestos abatement and third party air monitoring may be eligible.
4. Attractive Nuisance - Private structures that are found to be structurally sound but require extensive repair are normally not eligible for demolition. The primary responsibility for securing the structures until repairs are completed lies with the owners. The applicant must certify that the structure is a health and safety threat to the public if the owners have no insurance or are not capable of paying for such work.
 - a. The applicant must obtain rights of entry and hold harmless agreements prior to start of the work.
 - b. Eligible work under this category is limited to securing the perimeter of the structure to prevent entrance into the structure and may include fencing, where necessary. FEMA can provide funding for materials (plywood or fencing) and labor as part of the project description to secure the structures from access. This funding meets the required need to protect life and safety.
5. Health Hazard - The project description on the report may include the cost of cleaning or removing items such as household hazardous waste (HHW), debris, food, chemical hazardous waste, freezers and refrigerators that may contain Freon and other items that may represent a health hazard.
 - a. The applicant must certify that no insurance exists that would pay for such work, the owner is not capable of paying for such work and there is no opportunity to recoup the cost

from the owner. The applicant must obtain rights of entry and hold harmless agreements prior to start of the work.

II. PRE-DISASTER PLANNING

Major natural 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. However, the speed of initial debris clearance, removal and disposal operations depends upon the depth of pre-disaster planning by City, County and State emergency managers.

A. Identifying Potential Types and Amounts of Debris

1. Before selecting temporary debris storage and reduction sites, it is necessary to identify the areas that may be subject to widespread devastation (such as parks, tree-lined streets, orchards, groves, nurseries, mobile home parks and residential, commercial and industrial areas) and the types and amounts of resultant debris. The types and amounts of debris can be forecast on a land-use basis (such as rural, urban, industrial, or mixed use) and by examining historic records. For example, if an area has not been affected by a major storm for a long period of time, a dense tree canopy may have developed, which will result in a large amount of vegetative debris following a major storm.
2. In addition, the U.S. Army Corps of Engineers (USACE) Emergency Management staff has developed a modeling methodology designed to forecast potential amounts of hurricane-generated debris using actual data from Hurricanes Frederic, Hugo and Andrew. The estimated quantities produced by the model have a predicted accuracy of $\pm 30\%$. The primary factor used by the model is the number of households in a developed urban/suburban area. The other factors are cubic yards of debris generated per household, vegetative cover, commercial density and precipitation.

B. Identifying Temporary Debris Storage and Reduction Sites

1. All activities associated with massive debris clearance, removal and ultimate disposal operations depend upon the availability of suitable temporary debris storage and reduction sites. Identifying these potential sites before a major natural disaster will expedite debris removal and subsequent volume reduction and disposal actions. The Public Works Director and staff will work closely with other City, County and State officials to develop and maintain

current listings of potential debris storage and reduction sites in areas prone to natural disasters. Pre-disaster site selection teams will include local officials who are familiar with the area. The teams will also consult and coordinate with local residents, conservation agencies and environmental groups, if possible, to help identify potential problems. Considerations for evaluating potential temporary debris storage and reduction sites include the following:

- a. Use public lands first to avoid costly leases. Pre-designated sites will be on public property and consist of between 50-100 acres, depending on anticipated needs. Consider locations with respect to noise, traffic and the environment. Use private land only if public sites are unavailable.
- b. When selecting public or private sites consider pre-existing conditions that will have to be restored upon site closeout. Have attorneys review leases for private land to avoid extensive damage claims upon site closeout.
- c. The required size of the site will depend on the expected volume of debris to be collected and planned volume reduction methods. As a general rule, larger sites mean fewer sites and, hence, easier site closeout. However, larger sites may create logistical problems.
- d. Environmentally sensitive areas (such as wetlands, areas with endangered animal and plant species, critical habitats, well fields and surface water supplies and historic/archaeological sites) will be avoided. However, if use of such areas is unavoidable, procedures for temporary waivers will be developed. Consult and coordinate with local residents, conservation agencies, environmental groups and agencies and the State Historic Preservation Office (SHPO).
- e. Public acceptability is largely dependent upon the activities planned for the site. Smoke from burning, around-the-clock light and noise from equipment operation, dust and traffic are tolerated early in the disaster, but may have to be curtailed later. Whenever possible, avoid locating near residential areas, schools, churches, hospitals and other such sensitive areas. Notify citizens early about planned site activities and possible ramifications.

- f. Look for sites with good ingress/egress to accommodate heavy truck traffic.
- g. Consider adjusting traffic signals to accommodate projected truck traffic on critical haul routes.
- h. Identify nearby landfills and determine their present debris capacity and logistical capabilities. Also include any State-to-State or county-to-county agreements.
- i. Identify recycling possibilities, such as timber agreements, mulch and chip disposal in the agriculture community and fuel sources for incinerators or heating. Recycling success will depend on the types of debris and the local recycling environment.
- j. Review local and State ordinances on such items as tarps and tailgates on trucks, traffic control, truck priority, curfew, defining roadway rights-of-way and load limits. coordinate with responsible agencies to develop waiver procedures to expedite emergency operations.
- k. Clearly show critical routes and priorities for clearing debris on local maps. Target emergency routes for City, County, State or Federal clearance efforts. GIS will be used as an efficient mapping tool, if available.
- l. The following questions will help to identify and prioritize appropriate sites based on local requirements and conditions.
 - i. Potential Site Ownership
 - Are public lands available?
 - Are private land lease terms long enough?
 - Are private land lease terms automatically renewable?
 - Does the private land lease include a landscape restoration agreement?
 - ii. Potential Site Size
 - Is the site large enough to accommodate the planned debris storage and/or reduction methods?

- Will the site configuration allow for an efficient layout?
- iii. Potential Site Location
- Does site have good ingress/egress?
 - Does site have good transportation arteries?
 - Does site have open, flat topography?
 - Does site have wetlands? If unavoidable, require the contractor to flag the area and establish buffers and/or sediment barriers.
 - Does site have public water supplies, including well fields and surface waters?
 - Does site have threatened and endangered animal and plant species?
 - Does site have threatened and endangered species' critical habitats?
 - Does site have rare ecosystems?
 - Does site have historic sites?
 - Does site have archaeological sites?
 - Does site have sensitive surrounding land use, such as residential, school and church?
2. To ensure the City has a site where debris may be temporarily stored in the immediate aftermath of a storm, one temporary debris storage and reduction site (TDSRS) has been designated, and received pre-approval by the Florida Department of Environmental Protection (FDEP). The following is a list of the City's pre-approved TDSRS. See Appendix G for pre-approval letters:
- a. Greenland Street Golf Course

C. Negotiating Mutual Aid Agreements

1. Mutual aid agreements will be negotiated and in place prior to a disaster. Mutual Aid providers normally consist of local and county Departments of Public Works from around the State under the Statewide Mutual Aid Agreement. These departments usually offer their assistance in the form of equipment and personnel. All requests for mutual aid will be placed through the Sarasota County EOC.
2. The mutual aid agreement will outline the responsibilities of each party, including the types of costs that will be reimbursed. To ensure that mutual aid providers adhere to the agreements, the

Public Works Director will assign coordinators to monitor each provider. The coordinators will be responsible for tracking the type of work performed and type of equipment used by each mutual aid provider.

3. To be eligible for FEMA assistance, reimbursement by the receiving party must not be conditioned on receipt of FEMA assistance.

III. DEBRIS MANAGEMENT STAFF ORGANIZATION AND RESPONSIBILITIES

This section provides guidelines for debris management staff organization and defines the key responsibilities involved in pre- and post-disaster planning and information management.

A. Debris Management Staff Organization

1. The size and composition of City staff organized to deal with debris clearance, removal and disposal issues will depend on the magnitude of the disaster and the size of the community. A pre-disaster debris planning staff may be quite small; however, following a major disaster, additional staff members may be required. The City debris staff will be comprised of full-time personnel supplemented with personnel from other staffs and agencies. It is essential that prospective staff members have as much training as possible and interface with other agencies responsible for debris clearance, removal and disposal activities, such as the Florida Department of Transportation (FDOT), Federal Emergency Management Agency (FEMA) and the U.S. Army Corps of Engineers (USACE), prior to any anticipated disaster.

City staff will be comprised of personnel to perform the following generic functions:

- a. Administration - Housekeeping supplies, equipment, funding and accounting.
- b. Contracting and Procurement - Bidding requirements, advertisements for bids, instructions to bidders and contract development.
- c. Legal - Contract review, rights of entry permits, community liability, indemnification, condemnation of buildings, land acquisition for temporary staging and reduction sites, site closure/restoration and insurance.

- d. Operations - Supervision of government and contract resources and overall project management.
- e. Engineering and Public Works - Detailed safety assessments, identification of project tasks, assignments of tasks, preparation of cost estimates, scopes of work and specifications for debris contracts.
- f. Public Information - Coordination of press releases, maintenance of contacts with local organizations, individuals, the media and drafting of public notices for debris clearance, removal and disposal operations.

B. General Debris Staff Responsibilities

1. Primary response personnel will be alerted before the disaster and deployed either before or immediately after the disaster. If possible, they will remain part of the debris management staff throughout the disaster cleanup to maintain continuity during the debris clearance, removal and disposal operations. The staff will develop disposal plans either in advance or concurrently with the removal efforts.
2. The Department of Public Works Operations Manager will be responsible for coordinating all removal and disposal activities. The staff will need to coordinate closely with all City, County, State and Federal agencies responsible for disaster response and recovery operations. They may also need to contract removal and disposal services and develop requests for additional assistance from FEMA. They must be prepared to react to evolving needs and available technologies.
 - a. The Operations Manager must be able to assess debris based on:
 - i. Quantities and types.
 - ii. Rural, urban and/or agricultural locations.
 - iii. Number of private homes, mobile homes, public facilities and commercial establishments damaged or destroyed.
 - iv. Miles of roads affected, categorized by type, such as rural, urban and/or expressways.
 - v. Quantity and types of household hazardous wastes.

- b. The Operations Manager and debris staff will be prepared to take the following actions:
 - i. Develop a reliable initial assessment of the disaster's magnitude. This will enable decision-makers to assess human and material requirements for responding to the debris disposal situation.
 - ii. Coordinate with local procurement agencies to establish a contracted work force capable of expeditiously removing the debris.
 - iii. Identify the need to consult with an environmental or historic preservation specialist to assure that legal requirements in these areas are met.
 - iv. Evaluate damaged utility systems, structurally unstable buildings, and other heavily damaged public facilities and determine if they will be expeditiously repaired, deactivated, barricaded or removed. Activities involving these facilities will be structures that constitute a public health and safety threat may be deferred if access to the area can be controlled.
 - v. Develop a Debris Management team using City personnel to monitor the debris removal activities. This will allow the Solid Waste Manager and debris staff to obtain accurate information about the progress of the debris removal operation. The field inspection team becomes the debris manager's "eyes and ears" in the field. The cost for personnel to monitor debris removal activities is reimbursable.
 - vi. Conduct daily update briefings with key debris managers and other officials. Ensure that all debris clearance, removal and disposal actions are reviewed and approved by the local debris manager.
 - vii. Ensure that a debris staff representative attend all briefings to resolve any coordination problems between County, State and Federal debris removal efforts and City debris removal and disposal efforts.
 - viii. Coordinate with City police and FDOT to ensure that traffic control measures expedite debris removal activities.
 - ix. Develop a traffic control plan. Traffic control devices will not be allowed to return to normal operations until all debris operations have been completed. Debris clearance and removal activities must be

given priority at every major intersection to ensure efficient and timely debris operations.

- x. Establish and maintain direct coordination with other City, County and State officials and their staffs with regard to priorities and areas of responsibility. Finally, the debris staff must be able to inform the public in understandable terms of the magnitude of the disaster and about actions the public must take.

C. Building and Engineering Staff Responsibilities

1. The debris management staff will have access to qualified engineering expertise to assess the full scope of the debris clearance, removal and disposal effort. The City may need to hire a local engineering firm if the Public Works' Engineering Division staff is heavily involved with the repair and replacement of publicly-owned facilities damaged by the disaster.
2. The Building Department and Engineering Division within the Department of Public Works will need the following personnel:
 - a. Inspectors to inventory the type and amount of debris within the disaster area.
 - b. Engineers to plan the work for maximum efficiency and to develop the government debris clearance, removal and disposal cost estimate.
 - c. Contract specialists and draftspersons to prepare contract scopes of work and/or specifications. Engineering personnel perform tasks such as the following:
 - i. Define the project scope, if the This is done by specifically defining the disaster area in which work is to be the debris to be removed and disposed of for that area.
 - ii. Determine if the existing landfills have sufficient capacity for the expected volume of debris from the preliminary safety assessment.
 - iii. Consider using pre-identified temporary storage sites for reducing the volume of debris by incinerating, grinding and/or recycling to reduce the impact on landfill sites.
 - iv. If sufficient landfill capacity is not available, identify alternative landfill sites.

- d. The engineering staff might be required to develop scopes of work and specifications if local contractors are used for debris clearing, removal and disposal operations. The following factors will be considered because they will affect overall contract costs:
 - i. Truck Size - Smaller trucks require more trips for a given volume of debris, which increases the driver's time, fuel cost, maintenance and depreciation cost.
 - ii. Length of Haul - The longer the haul, the greater time required to reach the disposal site, which increases costs for labor and equipment.
 - iii. Traffic Conditions - Hauling over heavily traveled streets and roads also increases labor and equipment costs.
 - iv. Roadway Conditions - Poor roadway conditions, such as potholes, unpaved surfaces and deteriorated pavement, increase maintenance costs as well as operational costs.
 - v. Temporary/Permanent Site Access - Single lane unpaved access roads increase cost because of delays caused by restrictions for allowing loaded and empty trucks to pass. In addition, poor weather conditions may make the access road impassable.
- e. Once the above factors are considered, the limits of the disaster area can be clearly defined. For debris contracting and debris management purposes, the boundaries of the disaster area will be delineated on a map. The map will identify the work area or areas to be included in the contract. If multiple contracts are used, this element of contract preparation is extremely important to ensure that the contractors remain in their assigned work areas. The establishment of the work area is also important to identify key items, such as ingress and egress routes to the debris removal area, location of utilities and distance to temporary staging and reduction sites or permanent landfill sites.
- f. A quantitative estimate is extremely important to clearly identify to contractors the scope of work they are being asked to perform. This estimate will also assist in preparing project cost data.
- g. Quantity estimates, or "takeoffs," will be made in the units that are going to be used in establishing contract line-item

prices. Units will be selected based on the method that will be used to verify pay quantities for work under the contract. For debris removal, units are normally "cubic yards," "tons," or "each." Therefore, if a contractor is to be paid for the volume of material removed from a work site by approximate measurement of that volume, the unit will be cubic yards. If it is more convenient to pay the contractor by weighing the trucks used to haul the material to a disposal site, the units will be by weight (tons). If the contractor is to be paid by the number of items removed from the project site (i.e., trees, damaged vehicles, etc.), the unit will be established as "each." Because it is difficult in most debris operations to estimate the weight of material to be removed, the general rule is to use volume and number measurements. An estimate of length, width and height of the material can approximate the volume of debris in question. The amount of material to be removed and the accuracy desired in the estimate will determine the procedures used for this volume measurement. For a large-scale disaster, marking the area on a scaled map and approximating an average height can derive an approximate quantity estimate. When developing quantity estimates, inspectors will be instructed to note the type and location of the debris.

- h. The next step is to develop unit cost data after the quantity, location and type of the debris within the disaster area has been established. Several sources exist that may assist in determining the proper unit price to be used once the project scope has been defined and contract type selected. Many nationally published cost data reports do not take into account the abnormal conditions encountered by contractors in debris operations. They also do not account for the increase in cost due to a disaster or emergency situation. The following sources will be able to provide current cost data necessary to develop the unit price estimate:
 - i. Area engineering and construction firms.
 - ii. Local public works departments.
 - iii. FDOT and Florida Forest Service. The development of a government estimated unit price includes many variables. Factors that influence the unit price are the type of debris, method of removal, distance to

the disposal site, routes to the disposal site, permitting requirements and work-site limitations.

- i. The safety assessment report will provide the engineering staff with information that addresses all items to be included in the government cost estimate. These items will include the actual work that may be required to accomplish the specific tasks.
- j. The individuals performing the government cost estimate will put themselves in the place of the contractor who is being asked to submit a price for the work. This is very important in a disaster situation, where there might be a considerable variety of factors affecting the contractor's pricing. After the cost estimate is prepared, the scope of the project can be defined and the type of contract selected.
- k. The engineering staff will have an understanding of FEMA debris eligibility criteria and be aware that FEMA will only reimburse "reasonable costs" associated with debris clearance, removal and disposal actions. Moreover, plans must include a means to monitor the contractor's activities and certify the accuracy of the amount of debris handled.

D. Public Information Management

1. Public Information Officer (PIO) - A full-time public information specialist will be assigned to work with the debris management staff. This specialist will be responsible for coordination with other public information agencies to keep the public informed on all debris removal activities and schedules. Immediately after a disaster and continually throughout the removal and disposal operation, this person will arrange public notification of all ongoing and planned debris clearance, removal and disposal activities. Notification will include information bulletins, hotline responses, public service announcements for radio and television, handbills, door hangers and newspaper notices in the language(s) prevalent in the affected communities. Provision will be made to compensate for disruption of normal means of mass communication caused by power outages following a major natural disaster.
2. Public Participation - Public notices will emphasize actions that the public can perform to expedite the cleanup process, such as the following:

- a. Separating flammable and nonflammable debris.
 - b. Segregating household hazardous waste.
 - c. Placing debris at the curbside.
 - d. Keeping debris piles away from fire hydrants and valves.
 - e. Reporting locations of illegal dump sites or incidents of illegal dumping.
 - f. Segregating recyclable materials.
3. Important Debris Removal Activities - The public will be kept informed of the following debris removal activities and regulations:
- a. Debris pick-up schedules.
 - b. Disposal methods and ongoing actions to comply with State and Environmental Protection Agency regulations.
 - c. Disposal procedures for self-help and independent contractors.
 - d. Restrictions and penalties for creating illegal dumps.
4. Questions from the Public - The information officer will develop a means of responding to debris removal questions from the press and local residents. Questions that might be asked include the following:
- a. What is the pick-up system?
 - b. What is the schedule of pick-up in my area?
 - c. Who will pick-up and how can I contact the operator?
 - d. Will I separate the different debris materials and how?
 - e. How do I handle household hazardous waste?
 - f. What if I am elderly or infirm?

IV. METHOD OF OPERATIONS

This section discusses how the City will implement a large-scale debris clearance, removal management by dividing the operation into two phases. Phase I consists of clearing the debris that hinders immediate lifesaving actions and that poses an immediate threat to public health and safety. Phase II consists of removing and disposing the debris that hinders the orderly recovery of the community and poses less immediate threats to health and safety. The entities responsible for implementing the strategy will be identified in advance.

A. Phase I: Emergency Roadway Debris Clearance

1. The City EOC will identify in advance which routes are essential to emergency operations. This will allow them to direct local efforts and to target areas for possible State/Federal assistance.
2. The Public Works Director and staff will be aware of City, County and State agencies' capabilities to provide service for emergency roadway debris clearance. Available resources will include the following:
 - a. Municipal force account workers and equipment.
 - b. Florida Department of Transportation (FDOT) workers and equipment.
 - c. Local contractors hired by the City.
3. The Public Works Department Solid Waste and Operations Divisions will be responsible for debris clearance activities. These divisions have the necessary personnel, equipment and contracting experience.
4. A day before a foreseeable disaster, the Solid Waste portion of the debris management plan will be put into effect. Solid Waste and Operations will disperse vehicles throughout the area to minimize the risk of vehicle damage. Anticipated supplies and equipment necessary to complete the work will be purchased or rented. A strategy will be developed to clear all designated emergency roads using all available local force account labor and equipment, military personnel, mutual aid providers and local contractors.
5. Following a disaster, the top priority is to clear major arterial roads, including roads leading to health care facilities. The Public Works Director will organize participants based on personnel and equipment and assign each of them responsibility for certain roadways. At least one lane will be cleared on each arterial, major and secondary road as soon as possible. Available public property will be identified for use as temporary storage areas, with preference to locations that would be less expensive to restore, such as open fields and parks.
6. Debris may include tree blow-down and broken limbs; yard trash such as outdoor furniture and trash cans; utility poles, power, telephone and cable television lines, transformers and other electrical devices; building debris, such as roofs, sheds, block walls

and chimneys; and personal property, such as clothing, appliances, boats, cars, trucks and trailers.

7. In Phase I, roadway debris is quickly moved to the side of the road to provide access into devastated areas. No attempt is made to remove or dispose of the debris, only to provide clear access routes to allow for:
 - a. Movement of emergency vehicles.
 - b. Law enforcement.
 - c. Resumption of critical services.
 - d. Safety assessment of critical public facilities and utilities.
8. The requirements for City services increase dramatically following a major natural disaster. Therefore, after emergency access will be provided to emergency care centers, and police and fire stations, the next priority is to open access to other critical infrastructure, such as schools, municipal buildings, water treatment plants, and wastewater treatment plants.
9. The difficulty of assessing the amounts and types of debris to be removed from key routes slows the deployment of the right mix of equipment and labor, especially when contracting for additional resources. Moreover, local equipment and labor capabilities could be limited. Therefore, the City will be prepared to execute Time and Material (i.e., equipment rental) contracts during Phase I operations. They allow the flexibility to respond to local hot spots at a reasonable cost. Time and Material contracts for services will be very limited in scope and duration. For example, a local construction company may be awarded a Time and Material contract as a stop-gap measure to clear debris from the right-of-way until the contracted debris removal companies are fully mobilized under unit price contracts.

See Section V for additional information on contracting procedures.

B. Phase II: Debris Removal and Disposal Responsibilities

1. The initial roadside piles of debris created during Phase I will become the dumping locations for additional yard waste and other storm-generated debris. Therefore, a private contractor may be required to perform the final disposal of all disaster-related debris from the rights-of-way or storage and reduction sites. The contract will cover hauling and disposal of debris at an approved landfill. If

local contractors are used, the area will be divided into definable sectors for control purposes and bids solicited based on the sectors and the estimated cubic yards of debris in each. Contractors are then responsible for hauling debris from the public rights-of-way to assigned temporary storage areas or approved landfills.

C. Debris Issues Requiring Close Coordination

1. The Public Works Director and debris staff will be faced with a monumental task of coordinating removal of debris that represents a significant health and safety hazard to the community. Expedient removal of debris from in front of residents' homes becomes a high priority because it is a positive sign that recovery actions are underway and expedites the replacement of key utilities located along public rights-of-way.
2. The following issues will require close coordination when removing debris from public rights-of-way:
 - 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, many contractors place everything into the truck or push the curbside debris to a cul-de-sac or an intersection and load it there. Therefore, contractor performance will be closely monitored, with emphasis being placed on curbside sorting. This monitoring will pay dividends in the long run because good sorting will make the final disposal much faster and cheaper.
 - b. Monitoring Contractor Activities - To ensure that contract haulers are in compliance with their contract, the City has contracted with a company to perform debris monitoring services. The monitors will be responsible for initial load tickets where trucks are loaded and verifying the estimated amount of debris hauled at the temporary storage area or landfill. Solid Waste officials will provide overall supervision. The contractor must provide a notarized listing of the measured bed size in cubic yards and license plate number of all trucks to be used to move debris upon award of the contract.
 - i. Once a truck is loaded with debris at the work site, the site monitor will fill out a load ticket, which

usually consists of one white original copy and two carbon copies (yellow and pink). The load tickets issued by the monitors are the basis for debris contractor payment.

- ii. Each ticket will include the following information:
 - Preprinted ticket number.
 - Contract number.
 - Prime Contractor's name.
 - Date.
 - Truck number.
 - Truck capacity in cubic yards.
 - Load size, either cubic yards or tons.
 - Truck driver's name.
 - Debris classification.
 - Burnable
 - Non-burnable
 - Mixed
 - Other
 - Zone/Sector.
 - Dumpsite location.
 - Loading time (from work site).
 - Dumping time (at disposal site).
 - Loading site monitor.
 - Dumping site monitor.

- c. The load ticket copies will be processed in the following manner:
 - i. White copy - The pickup site monitor will fill in the date, truck number, contractor and departure time and sign the ticket. The pickup site monitor will keep the white copy and give the other two copies to the driver.

 - ii. Yellow copy - On arrival at the disposal facility, the driver will give both the yellow and pink tickets to the disposal site monitor. The disposal site monitor will fill out the arrival time, estimate the amount of material on the truck in cubic yards and sign the ticket. The disposal site monitor keeps the yellow ticket.

- iii. Pink copy - This copy will be returned to the driver, who then provides it to the contractor.
 - d. At the end of each day, the white and yellow copies will be submitted to Solid Waste personnel, who will match and compare the tickets. These procedures can be modified to meet local requirements.
 - e. The Federal Emergency Management Agency (FEMA) will reimburse only reasonable costs. Therefore, it is essential that the City be responsible for monitoring debris clearance, removal and disposal activity and be prepared to certify the accuracy of the amounts of debris hauled.
3. Special Monitoring Issues

The issues described below highlight the need for Solid Waste officials to closely monitor large contracted debris clearance, removal and disposal activities. The issues focus on some of the problems associated with major debris disposal contracts and justifies the need to monitor activities at local temporary storage and reduction sites and at final disposal landfill sites. Many of the questionable actions can be attributed to human error or they may be deliberate attempts to defraud the Federal government. In either case, it is essential that Public Works Department contracting officials work closely with FEMA to ensure that contractor's perform the services required and that the services are performed at a reasonable cost.

- a. Site delays - Delays in moving debris and traffic problems on adjacent highways can be caused by the need to establish initial tare weights for each truck going across the landfill site's scale. Tare weights will be established using other scales, if available, before debris hauling begins.
- b. Overweight or unsafe trucks - FDOT enforcement officers will be available to issue fines for overweight vehicles and/or obvious safety hazards.
- c. Tipping fees - Vehicles other than those under contract to the DPW and USACE will be required to pay the normal tipping fee at the landfill. Commercial containerized haulers will not be allowed to dump for free because they normally include the tipping fee as part of their overall costs.

- d. Excessively wet debris - Local site monitors will 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 will 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 in weight and will add to the cost of site restoration. Some minimal dirt pickup is unavoidable.

D. Recycling

The City of North Port shall recycle debris to the greatest extent possible. Local site monitors will identify opportunities for the City to recover materials from disaster debris for beneficial uses. The salvage value for various recyclable or reusable debris materials depends on the regional recycling markets and the City will consider selling disaster debris for a salvage value to offset the cost of eligible debris removal work by the revenues received from the sale of the debris.

V. CONTRACTING PROCEDURES

This section highlights the procedures necessary to contract additional private debris clearance, removal and disposal resources and services. 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 force account or contracted resources, State resources, mutual aid agreements and volunteer labor and equipment. The Public Works Director and staff will 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.

To ensure the availability of qualified contractors in the immediate aftermath of a disaster, when appropriate resources are scarce, the City has competitively bid, reviewed and awarded debris clearance and removal contracts with three privately-owned companies, and a single contract for debris monitoring. These

contracts will be reviewed, extended/or re-bid on a three-year cycle. During the current contracting cycle, the following contractors have been pre-qualified:

Debris Removal

- CrowderGulf (Primary)
- TAG Grinding Services, Inc. (Secondary)
- AshBritt, Inc. (Tertiary)

Monitoring:

- Rostan Solutions (Primary)
- Thompson Consulting Services (Secondary)

A. Contracting Office Responsibilities

The City's Purchasing Division will have key personnel available to develop, process and administer debris clearance, removal and disposal contracts. The responsibilities entail the following actions:

1. Determine the type and method of contracting needed to satisfy specific debris clearance, removal and disposal requirements of an unusual and compelling urgency.
2. Solicit bids, evaluate offers, award contracts and issue notices to proceed with all contract assignments.
 - a. To ensure objectivity and fairness in selection of a contractor, bidders may be rated by criteria to reflect their qualifications for Disaster Experience, Financial Strength, Operational Plan, and Compensation Schedule.
3. Supervise the full acquisition process for service and supply contracts and the oversight of contract actions to ensure conformance to regulatory requirements.
4. Coordinate with the Public Works Department.
5. The Emergency Operations Center and Public Works Department must take care to avoid the solicitation of assistance from the general public and giving the impression that compensation will be provided for such assistance. Such instances would be considered by FEMA as a request for volunteer resources and treated in that manner. In addition, there are a number of other issues involved with such a solicitation, including licensing, bonding, insurance, the

potential for the communities to incur liability in the event of injury or death, supervision and certification of work done.

B. Contracting Procedures for Immediate Response (Phase I)

Most State procurement regulations allow for abbreviated contract procedures when the Governor declares a State of Emergency. In emergency situations, City Code authorizes the waiver of certain procurement regulations, and grants the City Manager signature authority on contracts to a specified dollar amount.

Although normally not an ideal alternative, the Time and Material (i.e., equipment rental) contract is an acceptable method of contracting during Phase I. Under this type of contract, the contractor is paid on the basis of time spent in accomplishing a particular task. The contract will be set on an hourly basis for the equipment and operator because Phase I debris operations involve primarily equipment usage. Work orders will be issued for a particular piece of equipment and operator for a set number of hours. To ensure competitive bidding, hourly rates will be solicited from several contractors. Additionally, for simplicity, bid requests will specify that the hourly rate includes the operator, fuel, maintenance and repair. This will greatly simplify bookkeeping, auditing and monitoring of the work.

1. A Time and Material contract will clearly state that:
 - a. The price for the equipment applies only when the equipment is operating.
 - b. The hourly rate includes the operator, fuel, maintenance and repair.
 - c. The community reserves the right to terminate the contract at its convenience.
 - d. The community does not guarantee a minimum number of hours.
 - e. The contract has either a dollar ceiling or a not-to-exceed number of hours clause.
2. Time and Material contracts will be limited to a maximum of 70 hours of actual emergency debris clearance work and will be used only after all available City and State government equipment has been committed. Time and Material contracts for debris clearing, hauling and/or disposal will be terminated once the designated not-to-exceed number of hours is reached. On occasion, Time and Material contracts may be extended for a short period when

absolutely necessary, for example, until appropriate Unit Price contracts have been prepared and executed.

3. Supervision of Time and Material contracts is extremely important. Work inspection reports will be prepared each day. These reports will clearly state the amount of work accomplished that day in quantitative terms, such as the number of cubic yards of debris hauled, the type and number of trucks used and the number of hours worked.
4. Load tickets may be used if debris is being hauled based on cubic yards under a Time and Material contract as a way of checking contractor efficiency. Solid Waste inspection personnel will verify certification of work performed and copies of the inspection reports will be furnished to the contractor to expedite the submittal of invoices for payment.

C. Contracting Procedures for Recovery Operations (Phase II)

It will become readily apparent during Phase I whether the magnitude of the debris clearance, removal and disposal operation is within the capabilities of local force account, mutual aid agreements, State and limited contract resources. If it is determined that the situation is beyond the capabilities of existing resources, immediate action must be taken to develop an organization to administer and manage Phase II recovery operations using contractors.

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, the need for private property debris removal and requirement for site closure and restoration.

D. Unit Price and Lump Sum Contracts

1. Unit Price and Lump Sum contracts are recommended after the immediate response phase.
2. Cost plus percentage-of-cost contracts and contingency contracts are not eligible for FEMA reimbursement and will not be used.
3. A contract proposal will always be structured to encourage prompt performance of the work; however, the proposal will not, by its

requirements, place heavy or unusual risk factors on the contractor. Such risk will be reflected in higher bids.

4. Unit Price Contract - The unit price contract uses construction units and prices for these units to develop line item costs and total contract cost. The unit price contract is used when the scope of work is difficult to define and is based on estimated quantities. It will be noted that the total "bottom line" of the contract could increase or decrease depending upon the accuracy of the final unit quantity. For this reason, it is as important to properly estimate units as it is to estimate unit cost. Change orders to adjust the estimated bid quantity to that quantity actually removed may be issued during or at the end of the contract.
 - a. The advantage of the unit price contract is that the scope of work can be easily increased or decreased, because unit pricing for the work accomplished is established at the time of the bidding process. The contract also provides line items for the contractor to list all charges associated with the work, thereby taking the guesswork out of the contractor's bidding procedure. The units used in the unit price contracts will 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.
 - b. Unit Price Contract Verification - Proper and efficient management of a temporary storage and reduction site or landfill disposal site is essential with unit price contracts because the site becomes the focal point for quantity verification for payment.
 - i. Well-organized and managed inspection stations will be established near the entrance of the site. When the contract unit trucks as they enter the site. If the contract unit of measurement is cubic yards, inspection stands will be built for the inspection of loaded trucks.
 - c. Payment under a unit price contract is normally made on the basis of load tickets. The following procedures will be followed when using load tickets:
 - i. Load tickets will be treated as accounting forms.

-
- ii. A work site supervisor will examine all contract trucks leaving a designated contract area and record the following information on the load ticket:
- Preprinted ticket number
 - Contract number
 - Prime Contractor's name
 - Date
 - Truck number
 - Truck capacity in cubic yards
 - Load size, either cubic yards or tons
 - Truck driver's name
 - Debris classification
 - Burnable
 - Non-burnable
 - Mixed
 - Other
 - Zone/Sector
 - Dumpsite location
 - Loading time (from work site)
 - Dumping time (at disposal site)
 - Loading site monitor
 - Dumping site monitor
- d. To expedite filling out the form, all contract trucks will have the contractor's name or initials, the truck number and the measured capacity of the truck, as determined by a government representative, clearly visible on both sides of the vehicle.
- e. The work site monitors will retain one copy of the form, which is returned to the operations office and give two copies to the truck driver after completing the initial information.
- f. The temporary storage and reduction site or disposal site monitor will estimate the volume of debris and note arrival time and volume in cubic yards on the load ticket. The truck driver will keep one copy and the site monitor will keep the other. The site monitor's copy will be returned to the operations office to be matched against the work site inspector's copy for pay verification. The truck driver's copy is the basis of contract billings.

requires the contractor to conduct a one-time pass to remove all debris from the curbside and deposit it at the local landfill for a fixed fee.

- ii. Pass Method Example - Debris will be placed at the curbside as homeowners repair their homes over a 3-week period. The scope of work requires the contractor to conduct a minimum of three passes throughout the community during the 3-week period (one pass per week) and deposit the debris at the local landfill for a fixed fee.

E. Contract Monitoring Responsibilities

1. The Public Works Director will assign a debris staff member to work directly with other City officials in developing and monitoring debris clearance, removal and disposal contracts. The following will be considered when developing and monitoring local debris removal and disposal contracts:
 - a. Existing landfill capacities
 - b. Tipping fees
 - c. Scale house operations
 - d. Private commercial haulers
 - e. Law enforcement
 - f. Ingress/egress to site
 - g. Site logistics
 - h. Truck weight restrictions
 - i. Highway and bridge weight restrictions
 - j. Household hazardous waste
 - k. Hazardous and toxic waste
 - l. Mixed debris
 - m. Construction and demolition debris
 - n. Ash
 - o. Traffic control
 - p. Illegal dumping
 - q. Environmental issues
 - r. Site closure/restoration requirements
2. Contract Administration - This term is generally used to encompass all of the activities that will take place after a contract is awarded and work commences. Contract administration ensures that the contract is performed as agreed.

3. Monitoring Performance - Continuous monitoring of all activities of a contractor promotes satisfactory performance. In evaluating a contractor's performance, primary interest is in the progress toward completion of the services called for and the financial status of the contract. It is important that the contract provide for submission of reports and payment estimates to aid in evaluating the contractor's progress. In lieu of progress reports, frequent visits to the job sites can be a productive method of monitoring performance.
4. Contract Modification - During the administration of the contract, modifications may be necessary to provide contractual coverage for situations that develop after the contract is awarded. All modifications will be in writing to protect the interests of both parties. The contract will contain a clause that permits the Contracting Officer to make changes unilaterally within the scope of the contract, subject to an equitable adjustment of the contract price.
5. Inspection - The City of North Port will maintain an inspection and control system under their own supervision to ensure that the work being performed complies with the terms of the contract. In addition to load ticketing, the inspection and control process will consider the following factors:
 - a. Bond requirements
 - b. Insurance requirements
 - c. Rights-of-way and indemnification
 - d. Mobilization of proper equipment
 - e. Posting of permits
 - f. Contractor personnel safety standards
 - g. General public safety standards
 - h. Completion schedules
 - i. Clearance procedures
 - j. Demobilization procedures
 - k. Site closure/restoration procedures
6. Acceptance and Payment - Final inspection and the method of interim and final payments are part of the general conditions of the contract. The following will be set forth in the original specification or other contract documents:
 - a. Parts of or all of the work will be accepted only after verification through the inspection process that the work

was performed in accordance with the standards stipulated in the contract.

- b. If the contract period is less than one calendar month, normal payment will be made in one total sum. In the event the authorized work tenure exceeds a period of one month, provisions can be made to make progress payments to the contractor at least monthly.
7. Closing Out Contracts - A contract is complete when all of the services or items called for have been delivered or performed and accepted. The contract is not administratively complete, however, until all actions taken in compliance with the contract have been properly documented and final payment has been made.

VI. SPECIAL DEMOLITION AND DEBRIS REMOVAL SITUATIONS

This section provides guidance on private property demolition and removal of debris from mobile home parks and waterways that may present a health and safety hazard.

A. Private Property Demolition and Debris Removal

1. Although flood insurance policies do not provide coverage for debris removal, most homeowner, fire and extended coverage insurance policies have specific coverage for debris removal from private property and for demolition of heavily damaged structures.
2. Demolishing or securing remaining structures that threaten the health and safety of adjacent residents will be the responsibility of the owner or local government; however, experience has shown that unsafe structures will remain because of lack of insurance, absentee landlords, or understaffed and under-equipped local governments. Consequently, ensuring the demolition of these structures may become the responsibility of the local Public Works Director and staff, which requires complete cooperation of numerous local and State government officials and may require resources from any or all of the following:
 - a. Tax office
 - b. Local law and/or code enforcement agencies
 - c. State Historic Preservation Office
 - d. Environmental contractors qualified to remove asbestos and lead-based paint

- e. Field teams to photograph and document the sites before and after demolition. Health and Safety program requirements contained in 29 and 40 CFR will be adhered to with respect to hazardous waste. When removing any suspected hazardous waste workers will only work in well-ventilated areas, wear chemical protective clothing and evacuate the area if a chemical odor is noticed.
3. Demolition of private property will present significant coordination problems. The checklist shown below identifies key tasks that local officials will perform before the structure is approved for demolition. To expedite the overall effort, many of the tasks will be conducted concurrently.
 4. Private Property Documentation Checklist
 - a. Obtain copies of all ordinances that authorize the community to condemn privately-owned structures. The authority to condemn privately-owned structures might be different from the authority for the demolition of publicly owned structures.
 - b. Coordinate use of adjacent lands, easements and rights-of-way necessary for accomplishing the approved work.
 - c. Implement laws that reduce the time it takes to go from condemnation to demolition.
 - d. Obtain copies of all applicable permits required for demolition of subject structure(s).
 - e. Document the age of the structure to determine if eligible or on the National Registration of Historic Places with the SHPO.
 - f. Obtain copies of pertinent temporary well-capping standards.
 - g. Obtain executed right-of-entry and hold harmless agreements that have been signed by the owner and by renter, if rented. Right-of-entry will indicate any known intent by owner to rebuild to ensure foundation and utilities are not damaged. If these agreements are not executed, document reason(s).
 5. Agreement example
 - a. Use radio, public meetings and newspaper ads to give notice to property owners and their renters to remove personal property in advance of demolition.

- b. Document name of owner on the title, the complete address and legal description of the property and the source of this information.
6. Document name of renter, if available
 - a. Ensure property will be vacated by demolition date.
 - b. Provide written notice to property owners that clearly and completely describe the structures designated for demolition. Additionally, provide a list that identifies related structures, trees, shrubs, fences and other items to remain on the respective property.
 - c. Notify mortgagor of record.
 - d. Provide the property owner the opportunity to participate in the decision on whether the property can be repaired.
 - e. Determine the existence and amount of insurance on the property prior to demolition.
 - f. Specify procedures to determine when cleanup of a property is completed.
7. Private Property Inspection Checklist
 - a. Coordinate all pertinent site inspections with local, State and Federal inspection team(s). Identify asbestos and lead-based paint materials prior to demolition.
 - b. Notify the owner and/or renter of all site inspections.
 - c. Verify that all personal property has been removed from private structure(s).
 - d. Immediately prior to demolition, verify that the building is unoccupied.
 - e. Ensure that the property is properly posted.
 - f. Obtain a clear, concise and accurate property description and demolition verification.
 - g. Include a Public Health official on the demolition inspection team.
 - h. Evaluate the structural integrity of the building and also demonstrate "imminent and impending peril" to public health and safety caused by the structure.
 - i. Make arrangements to remove and transport all asbestos and lead-based paint materials to a permitted facility prior to building demolition.
 - j. Obtain photographs of the property and verify the address. Provide additional photographs of the property taken immediately prior to and following demolition.

8. Private Property Utilities Checklist
 - a. Locate, mark, turn off and disconnect all water and sewer lines.
 - b. Locate, mark, turn off and disconnect electrical, telephone and cable television services.
 - c. Locate, mark, turn off and disconnect gas service.

9. Private Property Demolition and Debris Removal Checklist - The following actions will require close coordination when removing debris from demolished buildings on private property:
 - a. Ensure that buildings have been properly condemned according to local ordinances.
 - b. Ensure that right-of-entry and hold harmless agreements are properly executed.
 - c. Ensure that local officials remove any legal residents or squatters from the building before demolition and debris removal begins.
 - d. Ensure that buildings identified for demolition are properly inspected to verify that they are unsafe, cannot be repaired and present a hazard to the community.
 - e. Ensure that the inspection team includes a structural engineer and a hazardous materials specialist. Any household hazardous waste, such as paints, oils, cleaning supplies and pesticides that are found will be removed prior to demolition. Houses that contain asbestos or lead-based paint will be demolished and debris removed according to current environmental regulations under a separate contract.
 - f. Local code enforcement officers will accompany the contractor to ensure that they do not tear down the wrong house. The responsibility is on the community to identify the correct structure.
 - g. Demolition work and debris removal will be coordinated with utility companies to ensure that all services are turned off.

B. Mobile Home Park Debris Removal

1. Post-Disaster Requirements - Hurricanes and tornadoes can cause severe damage to mobile homes and create extensive amounts of mixed debris confined to relatively small areas. The following are examples that comprise mixed debris:

- a. Tree blow-down
 - b. Out buildings
 - c. Screened porches
 - d. Mobile home frames
 - e. Personal property, such as clothing, food and furniture
 - f. Appliances, such as stoves, refrigerators, washers and dryers
 - g. Household cleaners and paints
 - h. Propane and oxygen tanks
 - i. Gasoline, oil and lubricants
 - j. Automobiles, trucks and boats
 - k. Bicycles and lawn mowers
 - m. Utility hookups
2. Local mobile home parks will be surveyed and arrangements will be made with park owners for City resources or contractors to clear the parks of debris. The Public Works Director and staff will need to closely coordinate the cleanup activities and enforce condemnation procedures. Legal, health and safety concerns will have an important impact on the debris removal activities.
 3. Planning Issues - Prior to a major natural disaster, local officials will do the following:
 - a. Develop generic scopes of work for debris removal.
 - b. Identify sites suitable for temporary storage of mobile home debris.
 - c. Prioritize mobile home parks for debris removal.
 - d. Develop a set of procedures to be followed that will combine debris removal activities and utility repair/replacement at mobile home parks into a single operation.
 4. Documentation Checklist - City officials will provide the following documentation:
 - a. Copies of the local ordinance authorizing condemnation of mobile home parks. Condemnation for health issues is associated with prolonged exposure of trailer contents to the natural elements.
 - b. A copy of the local government resolution with appropriate recitals required to support adoption or enactment of ordinances to condemn, demolish and remove mobile home park contents.

- c. Maps showing easements and rights-of-way access to the property.
 - d. Documentation signed by the mobile home park owner and mobile home owner that holds the local, State or Federal government free from liability for damage caused by the requested work and indemnifies the local, State or Federal government against any claims arising from such work.
 - e. Documents allowing right-of-entry to the mobile home parks.
 - f. Notice to individual mobile home owners to remove items of personal property in accordance with local ordinances.
 - g. Documentation providing the names of mobile home parks and of mobile home park owners, complete addresses and legal descriptions of the properties and limits, if any, of debris clearance to occur within the parks. Additional materials will include plats of the mobile home parks and any information about existing utilities.
 - h. Standards for capping all utilities.
 - i. All applicable permits necessary for any demolition work in the mobile home park.
5. Inspection Prior to Debris Removal - City officials will perform the following actions:
- a. Ensure that the mobile home park will be vacated prior to the removal of any debris from the site.
 - b. Describe clearly and completely the extent of debris removal required within the mobile home park. Specify any structures, other than mobile homes, that are to be removed.
 - c. Locate and estimate amount of household hazardous waste within the park and ensure that appropriate procedures are established for separation and removal of such materials prior to debris removal. Household hazardous waste typically found on-site includes cleaning supplies, propane tanks, paint cans, paint thinners, pesticides, refrigerators and freezers. A qualified environmental contractor will be hired to ensure proper removal and disposal of asbestos, lead-based paint and other commercial, agricultural or industrial hazardous waste.
 - d. Conduct initial inspections of the mobile home park with representatives from the local government, public health office, building and zoning office, real estate office and other State and Federal officials.

- e. Ensure that the contract scope of work reflects findings of the field inspection.
 - f. Ensure that the mobile homes are unoccupied.
 - g. Ensure that the property is posted in accordance with local regulations and that mobile home owners have removed their personal property.
 - h. To avoid subsequent disputes, ensure that any agreement made with the mobile home park owner is in writing.
 - i. Obtain photographic documentation of mobile home sites prior to commencement of work.
 - j. Have organic and perishable materials removed from the site.
6. Mobile Home Park Utilities - City officials will accomplish the following actions:
- a. Consider whether using heavy equipment will cause further damage to existing utilities.
 - b. Be responsible for turning off utility services, such as water, telephone, electricity, natural gas and propane gas.
 - c. Flag septic tank locations prior to debris removal. Special care must be given to protect septic tanks during debris removal operations.

C. Debris Removal Contracts

1. Contracts will include provisions for the following:
 - a. Provide that all private automobiles are stored in a specific location within the park to be retrieved later by the owners.
 - b. Provide salvage rights to the contractor for materials remaining on-site at the time of debris removal where beneficial to the government.
 - c. Require flagging of existing utilities prior to debris removal.
 - d. Use rubber tire vehicles and backhoe with grapple attachments to protect existing utilities.
 - e. Require the contractor to phase debris removal operations to allow utility repair and or replacement to begin immediately after an area has been cleared. Navigation Hazard Removal
2. Coordination - Damage to publicly-owned marinas caused by a major natural disaster can include abandoned sunken boats and other debris that may impede navigation. The Public Works Director and staff will coordinate with the U.S. Coast Guard, Florida

Fish and Wildlife Commission, legal counsel, contractors specializing in marine salvage operations, commercial divers and certified surveyors to ensure that navigation hazards are removed safely and efficiently.

VII. TEMPORARY DEBRIS STORAGE SITE OPERATIONS AND VOLUME REDUCTION METHODS

The preparation and operation of a temporary debris storage and reduction site are usually left to the contractor. However, the Public Works Director and debris staff will understand how a temporary debris storage and reduction site is set up and operated. This information will be extremely valuable in developing ultimate disposal plans, keeping local government officials and the public informed on debris clearance, removal and disposal operations and ensuring compliance with various regulations. This section provides guidelines on temporary site operations, the handling of household hazardous waste and the volume reduction methods in priority of recycling, , chipping, grinding and incineration.

A. Temporary Debris Storage Site

1. Site Preparation - The topography and soil/substrate conditions will be evaluated to determine best site layout. When planning site preparation, think of ways to make site closure and restoration easier. For example, if the local soils are very thin, the topsoil can be scraped to bedrock and stockpiled in perimeter berms. Upon site closeout, the uncontaminated soil can be re-spread to preserve the integrity of the tillable soils.
2. Site Operations - Lined temporary storage areas will be established for ash, household hazardous waste, fuels and other materials that may contaminate soils and groundwater. Plastic liners will be placed under stationary equipment such as generators and mobile lighting plants. These actions will be included as a requirement in the contract scope of work.
 - a. If the site is also an equipment storage area, fueling and equipment repair will be monitored to prevent and mitigate spills of petroleum products and hydraulic fluids. Include clauses in the contract to require immediate cleanup by the contractor.
 - b. Be aware of and lessen the effects of operations that might irritate occupants of neighboring areas. Establishment of a

- buffer zone can abate concerns over smoke, dust, noise and traffic.
- c. Consider on-site traffic patterns and segregate materials based on planned volume reduction methods.
 - d. Operations that modify the landscape, such as substrate compaction and over excavation of soils when loading debris for final disposal, will adversely affect landscape restoration.
 - e. Debris removal and disposal will be viewed as a multi-staged operation with continuous volume reduction. There will be no significant accumulation of debris at temporary storage sites. Instead, debris volume will be constantly reduced and residue sent to recyclers, incinerators or a landfill in that priority.
3. Baseline Data Collection - Private land and public land used as debris storage and reduction sites will be returned to its original condition following site closeout. Baseline data are essential to document the condition of the land before it is used as a debris storage and reduction site. As soon as a site is selected, the Public Works Director and staff will work closely with County and State officials to develop baseline data. The following actions will be taken to develop baseline data on all selected sites:
- a. Videotape and Photograph the Site - Thoroughly videotape and/or photograph (ground or aerial) each site before any activities begin and periodically update video and photographic documentation to track site evolution.
 - b. Document Physical Features - Notations about existing structures, fences, culverts, irrigation systems and landscaping can help evaluate possible damage claims made later.
 - c. Sample Soil and Water - Random soil samples can be easily collected prior to volume reduction activities. More time-consuming groundwater sampling can be done soon after operations commence. Household hazardous waste, ash and fuel storage areas will be sampled prior to site setup. Advance planning with community and State environmental agencies can establish requirements, chain of custody, acceptable collection methods, certified

laboratories and test parameters. If in-house assets are not available, consider establishing an off-the-shelf contract with an environmental consulting firm that can respond rapidly.

- d. Sketch Site Operation Layout - Periodically map or sketch activity locations so that areas of concern can be pinpointed later for additional sampling.
- e. Document Quality Assurance Issues - Document contractor operations that will have a bearing on site closeout, such as petroleum spills at fueling sites, hydraulic fluid spills at equipment breakdowns, contractor installation of water wells for stock pile cooling or dust control, discovery of household hazardous waste in debris and details on any commercial, agricultural or industrial hazardous and toxic waste storage and disposal.
- f. Plan Environmental Remediation - Final restoration of the landscape must be acceptable to the landowner. Therefore, plan the landscape restoration as early as possible, preferably incorporating a basic plan in the lease. Come to an agreement with the landowner prior to occupancy to establish reasonable expectations of site conditions upon site closeout.
- g. Baseline Data Checklist - The following is a suggested baseline data checklist:
 - i. Before activities begin
 - Take ground or aerial video/photographs.
 - Note important features, such as structures, fences, culverts and landscaping.
 - Check with the State Historic Preservation Officer to determine if any structures identified are listed on or eligible for the National Register of Historic Places.
 - Take random soil samples.
 - Take water samples from existing wells.
 - Check the site for volatile organic compounds.
 - ii. After activities begin

- Establish groundwater monitoring wells.
 - Take groundwater samples.
 - Take spot soil samples at household hazardous waste, ash and fuel storage areas.
- iii. Progressive updates
- Update videos and photographs.
 - Update maps and sketches of site layout.
 - Update quality assurance reports and fuel spill reports.

B. Household Hazardous Waste

1. Pre-Disaster Planning - The Public Works Director and staff are aware of the effects that household hazardous waste can have on the overall debris clearance, removal and disposal mission. Pre-disaster planning will include having professional hazardous waste response teams assigned ahead of time to provide assistance in identifying and disposing of household hazardous waste.
 - a. Household hazardous waste generated by a natural disaster may consist of common household cleaning supplies, pesticides, motor oil, lubricants, transmission and brake fluid, gasoline, anti-freeze, paints, propane tanks, oxygen cylinders and auto/marine batteries. Household hazardous waste may become mixed with other debris, requiring close attention throughout the debris clearance, removal and disposal process.
 - b. White goods are defined as discarded household appliances such as refrigerators, freezers, air conditioners, heat pumps, ovens, ranges, washing machines, clothes dryers, and water heaters. Many white goods contain ozone-depleting refrigerants, mercury, or compressor oils. The Clean Air Act prohibits the release of refrigerants into the atmosphere, and requires that certified technicians extract refrigerants from white goods before they are disposed of or recycled. Some States also require certified technicians to extract compressor oils before disposing of or recycling white goods. Applicants should follow all Federal, State, and local requirements concerning ozone-depleting refrigerants, mercury, or oils. Documentation of proper disposal may be required for Public Assistance grant consideration.

- c. The Public Works Director and staff will implement the following pre-disaster planning actions:
 - i. Assign trained hazardous waste response teams to collect, sort, store and dispose of excessive quantities of household hazardous waste.
 - ii. Have emergency hazardous waste contracts in place or prepare generic scopes of work that can be fine-tuned with minimal effort for removal and disposal of accumulated household hazardous waste.
 - iii. Coordinate with County, State and Federal regulatory agencies concerning possible regulatory waivers and other emergency response requirements.
2. Removal and Disposal Operations - Household hazardous waste items will be segregated at curbside or brought to a designated drop-off site. Specially trained field technicians can identify dangerous product constituents, segregate incompatible chemicals and properly store or pack the waste for transportation to a facility specially permitted to accept hazardous waste. The following actions are required to ensure that household hazardous waste items are removed and disposed of safely:
 - a. Where possible, separate household hazardous waste from other debris before removal. Arrange for salvageable household hazardous waste materials to be collected and segregated based on their intended use.
 - b. Properly trained environmental contractors or emergency response personnel will remove industrial, commercial or agricultural hazardous and toxic waste.
 - c. Maintain contact with regulatory agencies to ensure cleanup actions meet County, State and Federal regulations.
 - d. Complete household hazardous waste identification and segregation before any demolition work begins.
 - e. Qualified environmental contractors will remove any questionable debris that may be contaminated by household or commercial hazardous waste.
 - f. Regular demolition contractors can remove uncontaminated debris.
3. Special Handling at Temporary Storage Sites - A separate storage area for household hazardous waste materials, contaminated soils

and contaminated debris will be established at each site. The household hazardous waste storage site will be lined with an impermeable material and bermed to prevent contamination of the groundwater and surrounding area. Household hazardous waste materials will be removed from the temporary storage area and disposed of by a qualified environmental contractor in accordance with County, State and Federal regulations.

C. Commercial, Agricultural and Industrial Hazardous and Toxic Waste

1. Removal and disposal of large quantities of commercial, agricultural and industrial hazardous and toxic waste, such as asbestos, lead-based paint, pesticides, or fertilizers, may require the use of professional hazardous and toxic waste contractors. A contractor's inspection team will do the following:
 - a. Establish contacts with County, State and Federal regulatory agencies.
 - b. Interview tenants and building owners.
 - c. Assess sites to document potential commercial or agricultural hazardous and toxic waste problems.
 - d. Search buildings to establish potential hazards, such as asbestos, lead-based paint and underground tanks.
 - e. Prioritize problems based on risk to human health and safety.

D. Volume Reduction Methods Listed by Priority

1. Volume Reduction by Recycling - Recycling will be considered early in the debris clearance, removal and disposal operation because it may present an opportunity to reduce the overall cost of the operation. Metals, wood and soils are prime candidates for recycling.
 - a. Hurricanes and earthquakes may present opportunities to contract large-scale recycling operations and achieve an economic return from some of the prime contractors who exercise their initiative to segregate and recycle debris as it arrives at the storage and reduction sites.
 - b. Specialized contractors will be available to bid on disposal of debris by recycling, if it is well sorted. Contracts and monitoring procedures will be developed to ensure that the recycling contractors comply with County, State and Federal environmental regulations.

- c. Residue that cannot be recycled, such as cloth, plastic, mattresses, rugs and trash, will be shredded to reduce volume before being sent to a landfill for final disposal.
- d. The following materials are suitable for recycling:
 - i. Metals - Hurricanes and tornadoes can cause extensive damage to mobile homes, sun porches and green houses. Most of the nonferrous and ferrous metals are suitable for recycling. Metal maulers and shredders can be used to shred trailer frames, trailer parts, appliances and other metal items. Ferrous and non-ferrous metals are separated using an electromagnet and then sold to metal recycling firms.
 - ii. Soil - Cleanup operations using large pieces of equipment pick up large amounts of soil. The soil is transported to the temporary combined with other organic materials that will decompose over time. Large amounts of soil can be recovered if the material is put through some type of screen or shaker system. This procedure can produce significant amounts of soil that can either be sold or recycled back into the agricultural community. It is more expensive to transport and pay tipping fees at local before moving the material. Shakers can be used to remove dirt from mixed debris. The cover material or sold to the agricultural community.

In agricultural areas where chemical fertilizers are used heavily, recovered soil may be too contaminated for use on residential or existing agricultural land. Monitoring and testing the soil may be necessary to ensure that it is not contaminated with chemicals. If the soil is not suitable for any agricultural use and is a risk to the public health, it may be used as cover material at a landfill.
 - iii. Construction Materials - Construction and demolition waste is material generated in the demolition of disaster damaged structures and facilities. This waste stream includes concrete,

asphalt, gypsum, wood waste, glass, red clay bricks, clay roofing tile and asphalt roofing tile. Much of this material can be recycled, if recycling contractors are readily available.

- iv. Wood - Clean, woody debris can be ground, chipped, shredded, or removed by timber operations or pulpwood cutters.
2. Volume Reduction by Grinding and Chipping - Hurricanes, tornadoes and ice storms may present the opportunity to employ large-scale grinding and chipping operations as part of the overall debris volume reduction strategy. Hurricanes can blow away scarce topsoil in the agricultural areas and cause extensive tree damage and blow-down. This two-fold loss, combined with local climatic conditions, may present an opportunity to reduce clean, woody debris into suitable mulch that can be used to replenish the topsoil and retain soil moisture.
 - a. The economic feasibility of grinding and chipping woody debris must be studied carefully. The cost of chipping and grinding is basically equal to that of incineration; however, there are significant differences in volume reduction. Incineration, for example, reduces the volume approximately 95%, leaving only an ash residue for disposal. Chipping and grinding reduces the volume on a 4-to-1 ratio (four cubic yards is reduced to one cubic yard) or by 75%. For chipping and grinding to be feasible, the 25% of volume remaining must have some benefit or use. The ability to use the recycled wood chips as mulch for agricultural purposes or as fuel for industrial heating or in a cogeneration plant helps to tip the economic scale toward chipping and grinding. Because of shallow topsoil conditions in some locations, mulch is a desirable product. In other locations, however, the mulch may become nothing more than a landfill product. The Public Works Director and staff will work closely with local environmental and agricultural groups to determine if there is a market for mulch.
 - b. There are numerous makes and models of grinders and chippers on the market. When contracting, the most important item to specify is the size of the mulch. If the grinding operation is strictly for volume reduction, size is not important; however, mulch to be used for agricultural

purposes must be of a certain size and virtually free of paper, plastic and dirt.

- c. Grinders are ideal for use at debris storage and reduction sites because of their high volume reduction capacity. However, there is a need for a large area to hold the resulting mulch. Ingress and egress to the site is also an important consideration. Finally, properly locating the grinders is critical for noise and safety considerations.
- d. The following specifications will provide a mulch product that is suitable for agricultural purposes:
 - i. The average size of wood chips produced will not exceed four inches in length and ½ inch in diameter.
 - ii. Production output will average 100 to 150 cubic yards per hour when debris is moderately contaminated with plastic and dirt and feeding operations are slow and 200 to 250 cubic yards per hour for relatively clean debris. Note that this is not machine capability; this is contractor output or performance capability.
 - iii. Chips or mulch will be stored in piles no higher than 15 feet and located so as not to hinder hauling operations.
 - iv. Contaminants are all materials other than wood products and will be held to 10% or less for the mulch to be acceptable.
 - v. Plastics will be eliminated completely. To help eliminate contaminants, root rake loaders will be used to feed or crowd materials to the chipper or grinder. Bucket-loaders tend to scoop up earth, causing excessive wear to the grinder or chipper. Hand laborers will remove contaminants prior to feeding the grinders. Shaker screens will be used when processing stumps with root balls or when large amounts of soil are present in the woody debris. The separated soil can also be recycled back to the agricultural community.
- e. Brush chippers are ideal for use in residential areas, orchards, or groves. The damaged and uprooted trees present significant problems if they are pushed to the right-of-way to wait for eventual pick-up and transport to storage and reduction sites. In addition, the use of on-site chippers

allows the material to be used as mulch in the area where it is chipped, thereby saving the cost of transporting it.

3. Volume Reduction by Incineration - There are several incineration methods available for volume reduction. Each method will be considered in developing a volume education strategy. The appropriate State regulatory agencies (e.g., Department of Environmental Protection and Florida Forest Service) will be contacted to acquire all respective permits for burn authorizations when using this option as a reducing technique. This will include permits for the disposal of all products of incineration.
4. Uncontrolled Open-Air Incineration - The least desirable method of volume reduction is uncontrolled open-air incineration because it lacks any type of environmental control. However, in the haste to make progress, local officials and/or independent landowners may employ this method early in a disaster. Uncontrolled open-air incineration will be closely monitored to ensure that only clean, woody debris is incinerated.
5. Controlled Open-Air Incineration - Controlled open-air incineration is a cost-effective method for reducing clean, woody debris in rural areas. Incineration of clean woody debris presents little environmental damage and the local agricultural community can use the resulting ash as a soil additive. Local agricultural extension personnel will be consulted to determine if the resulting ash can be recycled as a soil additive. The controlled open-air incineration option will be terminated if mixed debris enters the waste stream.
6. Air Curtain Pit Incineration - Air curtain pit incineration offers an effective means to expedite the volume reduction process while substantially reducing the environmental concerns caused by open-air incineration. The air curtain incineration method uses a pit constructed by digging below grade or building above grade (if a high water table exists) and a blower unit. The blower unit and pit comprise an engineered system that must be precisely configured to function properly.
 - a. The blower units deliver air at predetermined velocities and capacities. The blower unit must have adequate air velocity to provide a "curtain effect" to hold smoke in and to feed air to the fire below. A nozzle 20 feet long will provide air at a velocity of over 120 miles per hour and will deliver over 20,000 cubic feet of air per minute to the fire. The air traps smoke and small particles and re-circulates them to

enhance combustion, which reaches over 2,500 degrees Fahrenheit. Manufacturers claim that combustion rates of approximately 25 tons per hour are achievable while still meeting emission standards.

- b. Specifications and statements of work will be developed to expedite the proper use of the system. Before awarding a contract, the Public Works Director and staff need to ensure that the contractors are knowledgeable about air curtain pit incinerator design and operating procedures.
 - c. Following are recommendations and warnings to assist the Public Works Director and debris staff in planning for air curtain pit incineration operations:
 - i. Be aware that there are no industrial standards for air curtain pit incinerator operations. The set-up has to be customized using the information provided by the manufacturer and will consider such specifications as minimum blower air velocity, pit construction configuration, pit materials, ash handling, acceptable smoke levels and air monitoring requirements.
 - ii. Pits must be constructed out of a highly compacted material that will hold its shape.
 - iii. The water table elevation governs whether the pit is constructed above or below grade.
 - iv. Controls will be implemented to prevent contamination of the ground water. An acceptable solution is to use compacted limestone fill placed over an impervious clay layer.
 - v. Planners will take the initiative in keeping the public informed. Local officials, environmental groups and local residents will be thoroughly briefed on the incineration means being used, how the systems work, environmental standards, health issues and the risk associated with each type of incineration. A proactive public information strategy will be included in any operation that uses incineration as a primary means of volume reduction.
7. Portable Air Curtain Incinerators - Portable incinerators use the same methods as air curtain pit incinerator systems. The only difference is that portable incinerators off-site constructed earth/limestone pit. Portable air curtain incinerators are the most

efficient incineration systems available because the pre-manufactured pit is engineered to precise dimensions to complement the blower system. The pre-manufactured pit requires little or no maintenance as compared to earth/limestone constructed pits, which are susceptible to erosion. Portable air curtain units are ideal for areas with high water tables and sandy soils and areas where smoke opacity must be kept to a minimum.

8. Environmental Controls - The following are recommended environmental controls for all incineration methods:
 - a. A setback of at least 100 feet will be maintained between the debris piles and the incineration area. Keep at least 1,000 feet between the incineration area and the nearest building. Contractors will use fencing and warning signs to keep the public away from the incineration area.
 - b. The fire will be extinguished approximately two hours before anticipated removal of the ash mound. The ash mound will be removed when it reaches two feet below the lip of the incineration pit.
 - c. The incineration pit will be either constructed above ground or below ground so that it is less than eight feet wide and between nine and 14 feet deep.
 - d. The incineration pits will be constructed with limestone and reinforced with earth anchors or wire mesh to support the weight of the loaders. There will be a one foot impervious layer of clay or limestone on the bottom of the pit to seal the ash from the aquifer.
 - e. The ends of the pits will be sealed with dirt or ash to a height of four feet.
 - f. A 12-inch dirt seal will be placed on the lip of the incineration pit area to seal the blower nozzle. The nozzle will be three to six inches from the end of the pit.
 - g. There will be one foot high nonflammable warning stops along the edge of the pit's length to prevent the loader from damaging the lip of the incineration pit.
 - h. To prevent explosions, hazardous or contaminated flammable material will not be placed in the pit.
 - i. The airflow will hit the wall of the pit approximately two feet below the top edge of the pit opposite the blower and the debris will not break the path of the airflow except during dumping.
 - j. The pit will be no longer than the length of the blower system and will be loaded uniformly along its length.

- k. Check with appropriate State agencies for Florida-specific requirements.
9. Smoke - Smoke generated by any of the above incineration methods is often interpreted by the general public as having an environmental impact. Therefore, it is important to also address smoke as part of the air monitoring guidelines. The visual measure of smoke emitted by a burning source is referred to as its "opacity." For disaster situations, the recommended opacity requirements will be set at 15% for 50 minutes out of an hour, not to exceed 40% for the remaining 10 minutes. This allows for additional debris that may be put into the incinerator during that hour. A 30-minute start-up time with a maximum of 40% opacity will be allowed.

VIII. TEMPORARY DEBRIS STORAGE AND REDUCTION SITE ENVIRONMENTAL CONSIDERATIONS

Debris clearance, removal and disposal activities can have significant environmental ramifications. The temporary storage and reduction sites must be setup, operated and closed out properly to minimize environmental harm. This section provides guidelines for air quality monitoring and site closeout procedures, including ash, soil and groundwater testing.

A. Air Quality Monitoring

1. Following a major natural disaster, emphasis is on rapid debris removal from the public rights-of-way. This results in debris coming into a temporary storage site faster than it can be reduced and ultimately disposed of. As a result, organic matter in debris piles begins to decompose and may create toxic or volatile vapors. Incineration operations may also produce pollutants that impact the air quality of the area. Air quality must be monitored to ensure compliance with County, State and Federal environmental regulations.
2. Air quality monitoring will be instituted at all debris storage and reduction sites to check for volatile organic vapors of a petrochemical origin and airborne pollutants caused by incineration operations.
3. Actions will be taken by the temporary debris storage and reduction site operators to keep pollutants at or below acceptable local, State and Federal environmental standards. Testing procedures will include readings for ozone, carbon monoxide,

nitrogen dioxide, sulfur dioxide, lead and particulate matter smaller than 2.5 microns.

4. Flame- and photo-ionization detectors will be used to detect volatile organic vapors. The flame-ionization detector is used to establish parts-per-million at the debris pile. If readings are above acceptable standards, the photo-ionization detector will be used to verify the initial readings.
5. Incineration site readings will be taken at the edge of the incineration pit and approximately 150 feet away. Scattered locations will be established and checked periodically. Wind direction, temperature and any other pertinent meteorological information will be recorded.
6. Coordinate with the appropriate County, State and Federal environmental agency responsible for implementing the Quality Assurance Sampling Plan.
7. The following situations may negatively affect the air quality at a temporary storage and reduction site:
 - a. The incineration pit is not properly constructed.
 - b. The incineration pit has degraded to the point where key specifications are no longer met.
 - c. A poorly trained operator improperly feeds the pits.
 - d. The material is not properly segregated.
 - e. Prolonged rains may accelerate the decomposition process, thereby causing the emission of volatile organic gases. Site Closeout Procedures
8. Each temporary debris storage and reduction site will eventually be emptied of all material and restored to its previous condition and use. The contractor must assure the Public Works Director and staff that all sites are properly restored. Local, State and Federal government monitors will verify this. Site restoration will go smoothly if baseline data were properly collected and site operation procedures were followed.

B. Site Closeout Procedures

1. The key to timely closeout of the sites is the efficient advance scheduling of activities for multiple sites.
2. The basic closeout steps are:

- a. Remove all debris from the site.
 - b. Conduct an environmental audit or assessment.
 - c. Develop a restoration plan.
 - d. Submit the plan for review and approval by the appropriate State regulatory agency
 - e. Execute the plan
 - f. Get acceptance from the landowner
 - g. Terminate lease payments
3. Potential Problems:
- a. The length and terms of private property leases can create suspense dates that become very costly to meet and difficult to manage.
 - b. Differences between local, State and Federal government environmental regulations may cause problems.
 - c. Failure to collect baseline data can result in fraudulent claims for damage to nonexistent structures or the land itself. Videotape recordings and/or photographs will be taken prior to opening a site to prevent fraudulent claims. Background soil and water samples will also be taken before site activities begin to compare with closeout soil and water samples.
4. Planning Requirements - The following planning requirements will be implemented to closeout a temporary storage and reduction site:
- a. Coordinate with local and State officials responsible for construction, real estate, contracting, project management and legal counseling regarding requirements and support for implementation of a site restoration plan.
 - b. Establish a testing and monitoring program for air, ash, soil and groundwater.
 - c. Ensure that the contractors are required to remove all residual debris from temporary sites to approved landfills prior to closure.
 - d. Reference appropriate and applicable environmental regulations.
 - e. Prioritize site closures.
 - f. Schedule closeout activities.
 - g. Develop cost estimates.
 - h. Develop decision criteria for certifying satisfactory closure based on limited baseline information.

- i. Develop administrative procedures and contractual arrangements for site closeout.
 - j. Designate approving authority to review and evaluate contractor closure activities and progress.
 - k. Retain staff during the closure phase to develop site-specific restoration actions.
5. Temporary Site Closure Checklist - The following is a recommended temporary site closure checklist. Narrative responses may be required along with other closure documents.
- a. Site number and location
 - b. Date closure complete
 - c. State regulatory permits observed
 - d. Household hazardous waste removed
 - e. Contractor equipment and temporary structures removed
 - f. Contractor petroleum spills cleaned
 - g. Ash piles removed
 - h. Comparison of baseline information to conditions after the contractor has vacated the temporary site
 - i. Appendices
 - j. Closure documents
 - k. Contracting status reports
 - l. Contract
 - m. Testing results
 - n. Correspondence
 - no. Narrative responses

C. Ash, Soil and Groundwater Testing

Ash, soil and groundwater need to be tested to determine that no long-term environmental contamination is left on the site. High levels of site activity may require additional testing and contaminated material may need to be disposed of in an approved landfill.

1. Ash Testing - All ash piles will be tested using the Toxicity Characteristic Leaching Procedure. One composite sample from each separate ash pile will be analyzed. A minimum of ten samples taken from different strata within the pile is appropriate to develop the composite sample. If unacceptable contamination is not found, ash may be placed in a Class I landfill. If unacceptable levels of contamination are detected, the material will be further evaluated, if appropriate and placed in a hazardous material landfill, as appropriate.

2. Soil Testing - After the stockpiles are removed from the site, soils will be tested for the presence of volatile hydrocarbon contamination. Samples will be taken immediately below the surface, if it is determined that the contractor spilled hazardous materials, such as oil or diesel fuel, on the site.

The entire incineration site will be inspected for any areas of discoloration, odor, or obvious problems. Such areas will be identified and restored, as necessary.

3. Groundwater Testing - Runoff from the incineration sites and other debris stockpiled within storage areas have the potential to contaminate the aquifer. Although the probability of contamination is low, consideration will be given to placing ground water monitoring wells around the perimeter of the site, if it is adjacent to an important aquifer. Groundwater will be tested to determine the probable effects of rainfall leaching through either the ash areas or the stockpile areas and be compared to generally accepted water quality standards.

APPENDIX A

U.S. ARMY CORPS OF ENGINEERS

HURRICANE DEBRIS ESTIMATING MODEL

Background

- The U.S. Army Corps of Engineers (USACE) emergency management staff has developed a modeling methodology designed to forecast potential amounts of hurricane generated debris, based on actual data from Hurricanes Frederic, Hugo and Andres
- The estimated quantities produced by the model have a predicted accuracy of plus or minus 30%
- The primary factor used by the model is the number of households in a developed urban/suburban area
- Other factors utilized are:
 1. Cubic yards of debris generated per household per storm category
 2. Vegetative cover
 3. Commercial density
 4. Precipitation
- Household debris includes damage to the house, contents and surrounding shrubs/trees
- Vegetative cover includes all trees and shrubbery located along public rights-of-way, parks and residential areas
- Commercial density includes debris generated by damage to businesses and industrial facilities
- Private contractors will remove the majority of commercial related debris; however, disposal/reduction space is still required
- Very wet storms will cause ground saturations, increasing tree fall

Initial Planning Data

- For planning purposes, the worst case scenario should be used for the subject area
- The most accurate process is to determine the defined areas by using Doppler radar (National Weather Service Broadcasts) and geographical information systems (GIS)
- Doppler radar will define the storm's intensity and the exact track of the eye of the storm in relation to the affected area
- Track the storm and plot the eye path and 5-mile wide bands out from the eye to defined areas and estimate wind speeds
- The wind speed of the eye wall normally determines the reported storm category with the outward or 5-mile bands being a lesser category
- Track to storm inland until the wind speeds dissipate below hurricane strength

- Divide outlined areas by storm category
- Enter coordinates into a GIS database to determine areas and demographic information such as: Populations, Schools and Businesses

STEP 1 –ESTIMATED DEBRIS QUANTITIES

The formula used in this model will generate debris quantity as an absolute value based on a known/estimated population or a debris quantity per square mile based upon population density per square mile.

- Determine population (P) in the affected area
- For example, 2007 census data for North Port, FL is 57,000, therefore P = 57,000
- The assumption of 3 persons per household (H) is used for this model
- Known/estimated population (P) for a jurisdiction may be used to determine a value for H or $H=P/3$

Example

A Category 4 storm passes through the City of North Port. The area is primarily single family dwellings with some apartment complexes, schools, and shopping centers. Vegetation characteristic is heavy because of the proliferation of residential landscape shrubbery and trees throughout the area. The storm is very wet, with rain before and continuing for a few days after the hurricane.

Formula: $Q = (H)(C)(V)(B)(S)$

Q is the quantity of debris in cubic yards
H is the number of households
C is the storm category factor in cubic yards
V is the vegetation characteristic multiplier
B is the commercial/business/industrial use multiplier
S is the storm precipitation characteristic multiplier

$H = P/3 = 57,000/3 = 19,000$ (3 persons per household)
 $C = 50$ (Factor for a Category 4 storm)
 $V = 1.5$ (Multiplier for heavy vegetation)
 $B = 1.3$ (Multiplier for heavy commercial due to schools/stores/apartments)
 $S = 1.3$ (Multiplier for wet storm event)

Then $Q = 19,000 \times 50 \times 1.3 \times 1.3 = 1,605,500$ cubic yards of debris or 1.6 million CY

C is the storm category factor as shown below. It expresses debris quantity in cubic yards (yd³) per household by hurricane category and includes the house and its contents, plus land foliage

Hurricane Category	Value of "C" Factor
1	2 yd ³
2	8 yd ³
3	26 yd ³
4	50 yd ³
5	80 yd ³

V is the vegetation multiplier as shown below. It acts to increase the quantity of debris by adding vegetation, including shrubbery and trees on public rights-of-way.

Vegetative Cover	Value of "V" Multiplier
Light	½
Medium	1.3
Heavy	1.5

B is the multiplier that takes into account areas that are not solely single-family residential, but includes small retail stores, schools, apartments, shopping centers, and light industrial/manufacturing facilities. Built into this multiplier is the offsetting commercial insurance requirement for owner/operator salvage operations.

Commercial Density	Value of "B" Multiplier
Light	1.0
Medium	1.2
Heavy	1.3

S is the precipitation multiplier that takes into account either a "wet" or "dry" storm event. A "wet" storm for Category 3 or greater storms will generate more vegetative debris due to the uprooting of complete trees.

Precipitation Characteristics	Value of "S" Multiplier
None To Light	1.0
Medium To Heavy	1.2

NOTE: Steps 2 and 3 of this model can also be applied to other debris generating events once an estimated quantity of debris is established.

STEP 2 – DEBRIS STORAGE SITE REQUIREMENTS

- Estimate debris pile stack height of 10 feet
- 60% usage of land area to provide for roads, safety buffers, burn pits and household hazardous waste areas

$$1 \text{ acre (ac)} = 4,840 \text{ square yards (yd}^2\text{)}$$

$$10 \text{ foot stack height} = 3.33 \text{ yards (y)}$$

$$\text{Total volume per acre} = 4,840 \text{ yd}^2/\text{ac} \times 3.33 \text{ y} = 16,117 \text{ yd}^3/\text{ac}$$

- From the example above, the acreage required for debris reduction site is:
$$1,600,000 / 16,117 \text{ yd}^3/\text{ac} = 99 \text{ acres (required for debris storage only)}$$
- To provide for roads and buffers, the acreage must be increased by a factor of 1.66

$$99 \text{ ac} \times 1.66 = 164.34 \text{ acres or, since one square mile (mi}^2\text{)} = 640 \text{ acres}$$

$$164 \text{ ac}/640\text{as}/\text{mi}^2 = 0.26 \text{ mi}^2$$

- If you assume a 100 acre storage site can be cycled every 45 to 60 days or one time during the recovery period, then $720/2 = 360 \text{ ac}$, or four 100 acre sites would be required.
- The number of sites varies with size, distance from source, speed of reduction (mixed debris is slower than clean woody debris)
- Removal urgency
- The USACE commonly removes approximately 70% of the total volume generated with local governments, volunteer groups, and private individuals removing the remainder.

If 1.6 million cy were estimated, the USACE would estimate removing approximately 1.12 million yd³ of debris

STEP 3 – CATEGORIES OF DEBRIS

Debris removed will consist of two broad categories: clean wood debris and construction and demolition (C&D) debris

- The clean debris will come early in the removal process as residents and local governments clear yards and rights-of-way
- The debris removal mission can be facilitated if debris is segregated as much as possible at the origin along the right-of-way, according to type
- The public should be informed regarding debris segregation as soon as possible after the storm
- Time periods should be set for removal, the first seven to 10 days clean woody debris only, then followed by other debris, with the metals segregated from non-metals
- Most common hurricane-generated debris will consist of the following:

30 % Clean woody debris
70% Mixed C&D

Of the 70% Mixed C&D:

42% burnable, but required sorting
5% soil
14% metals
38 % landfilled

- Based on the above, 1,600,000 yd³ of debris would break down as follows:

480,000 yd³ clean, woody debris
1,120,000 yd³ mixed, C&D

- Of the 1,120,000 yd³ of mixed C&D:

470,400 yd³ is burnable but requires sorting
56,000 yd³ is soil
156,800 yd³ is metals
425,600 is landfilled

- Burning will produce about 95% volume reduction
- Chipping and grinding reduce the debris volume on a 4 to 1 ratio (4 yd³ is reduced to 1 yd³) or by 75%
- The rate of burning is basically equal to the rate of chipping/grinding, about 200 yd³/hr. However, chipping requires on-site storage and disposal of the chips/mulch.

APPENDIX B**PRIVATELY-OWNED ROADS IN THE CITY OF NORTH PORT**

Acacia Ct.	Greenview Court	Osprey Circle
Alani Court	Greenwood Drive	Palena Blvd.
Amoko Court	Haawi Court	Palm Court
Anapa Court	Haele Court	Palmetto Way
Apopo Court	Haki Court	Park Blvd.
Awana Court	Hauli Court	Park Circle
Bailey Palm Court	Herron Creek Blvd.	Parkview Ct.
Bayhill Court	Hidden Oak Court	Peach Circle
Berkley Ct.	Hikina Drive	Pecan Drive
Berry St.	Hoemi Ct.	Phoenix Palm Ter.
Birkdale Court	Holiday Park Blvd.	Pickwick Road
Blossom St.	Holo Court	Pine Shadow Circle
Bobcat Trail	Honu Court	Pine Shadow Court
Boulton Ct.	Jasmine Way	Pine Shadow Lane
Boxwood Street	Joy Ct.	Pinehurst Court
Canary Palm Way	Keena Court	Plantation Blvd.
Carlton Ct.	Kentia Palm Court	Pleasant Ct.
Center Lane	Keystone Ct.	Randwick Ct.
Charm Court	Kilepa Court	Regency Ct.
Chelsea Ct.	Kilohee Court	Rivera Court
Coconut Palm Circle	Kimball Road	Royal Palm Drive
Concord Drive	Kipa Court	Rufus Road
Cottonwood Lane	Kula Ct.	Rutherford Court
Creek Nine Drive	Lady Palm Court	Sable Trace Drive
Dixie Lane	Lakeview Lane	Sage Lane
Dogwood Court	Laurel Ct.	Savannah Drive
Dover Ct.	Lynx Run	Savoy Ct.
Eager St.	Lynx Trail	Scarlett Avenue
Egret Court	Magnolia Drive	Seville Ct.
Elton Ct.	Mallory Ct.	Silver Palm Way
Fairway Court	Marlowe Ct.	Solitaire Palm Court
Fairway Drive	Meade Ct.	St. James Court
Fairway Place	Medinah Court	Tara Drive
Fantasy Ct.	Moonlight Court	Tuscola Blvd.
Filesmere Ct.	Moonlight Cove	Vista Lane
Fishtail Palm Court	Neighborly Court	Whispering Oaks Court
Fleetwood Court	Night Wind Terrace	Whispering Oaks Drive
Floral Court	Oakmont Court	White Ibis Court
Grand Terrace	Ocean Court	White Ibis Drive

APPENDIX C

RIGHT OF ENTRY AGREEMENT

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

_____, _____,
(city/town) (county)

State of _____ do hereby grant and give feely and without coercion, the
right of access and entry to said property in the County/City of _____,
its agencies, contractors, and subcontractors thereof, for the purpose of removing and
clearing any or all storm-generated debris of whatever nature from the above described
property.

It is fully understood that this permit is not an obligation to perform debris clearance.
The undersigned agrees and warrants to hold harmless the City of

_____,
State of _____, its agencies, contractors, and subcontractors, for damage of
any type, whatsoever, either to the above described property or persons situated
thereon and hereby release, discharge, and waive any action, either legal or equitable
that might arise out of any activities on the above described property. The property
owner(s) will mark any storm damaged sewer lines, water lines, and other utility lines
located on the described property.

I/We (have ____, have not ____) (will ____, will not ____) received any compensation
for debris removal from any other source including Small Business Administration (SBA),
National Resource Conservation Service (NRCS), private insurance, individual and family
grant program or any other public assistance program. I will report for this property
any insurance settlements to me or my family for debris removal that has been
performed at government expense. For the considerations and purposes set forth
herein, I set my hand this _____ day of _____, 20__.

Witness

Owner

Owner

Telephone Number

Address

APPENDIX D

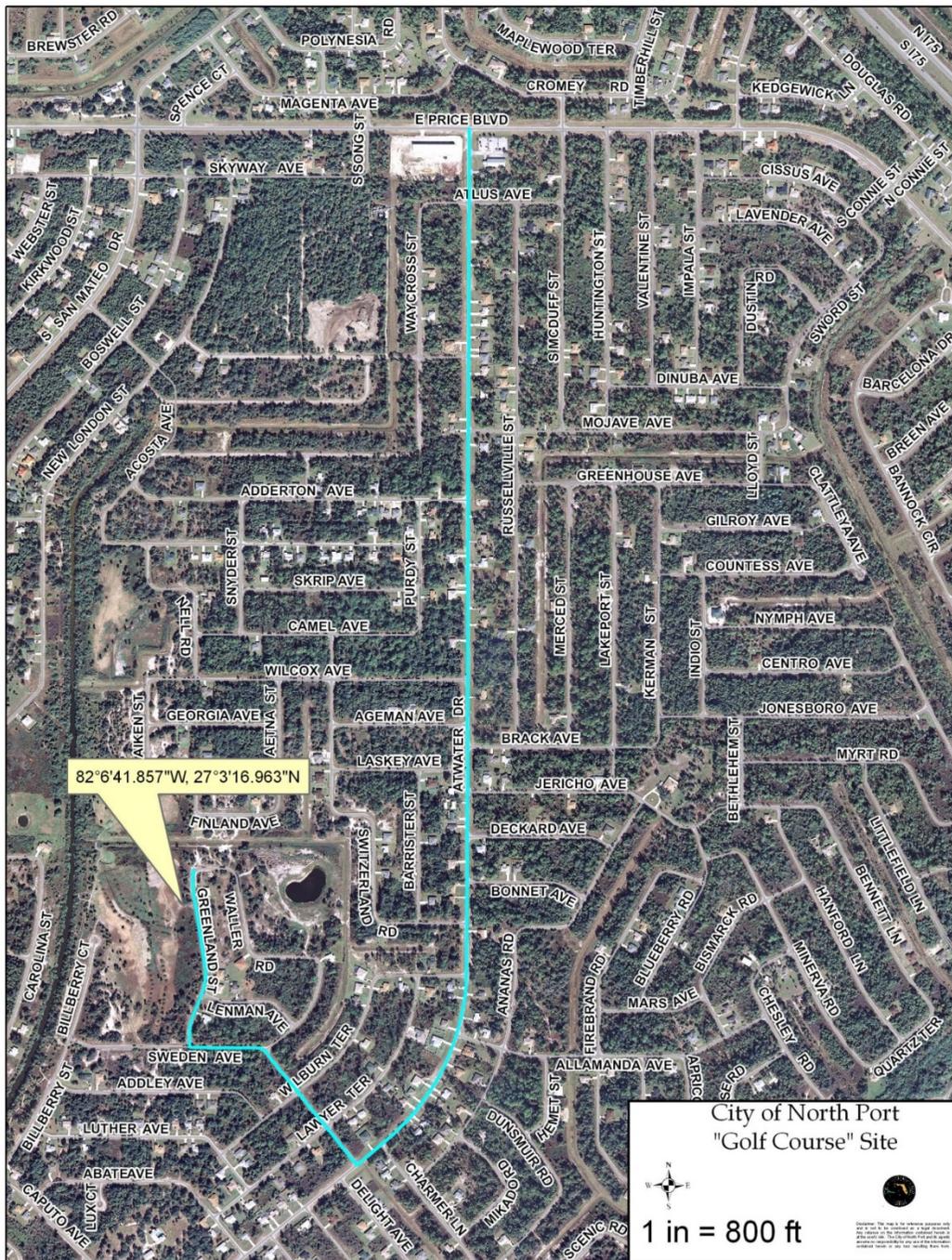
FEDERAL AID ROADWAYS IN THE CITY OF NORTH PORT

Local Name	Mile Point +/- .005	From (Beginning of this segment)	Mile Point +/- .005	To (End of this segment)	Net Length
Appomattox Drive	0.000	Pan American Blvd.	1.560	So. Sumter Blvd.	1.560
Atwater Blvd.	0.000	Hillsborough Blvd-Co/L	2.700	E. Price Blvd.	2.700
Chamberlain Blvd.	0.000	Hillsborough Blvd-Co/L	2.800	W. Price Blvd.	2.800
Cranberry Blvd.	0.000	Hillsborough Blvd-Co/L	2.900	W. Price Blvd.	2.900
Elyton Drive	0.000	Biscayne Drive	0.335	Pan American Blvd.	0.335
N. Biscayne Blvd.	0.000	Trionfo Ave.	1.552		1.552
N. Biscayne Blvd.	1.552		1.803	Ponce De Leon Blvd.	0.251
N. River Road	0.000	SR 45/US 41	5.596	SR 93/I-75	5.596
N. Sumter Blvd.	0.000	W. Price Blvd.	2.132		2.132
N. Sumter Blvd.	2.132		2.377		0.245
N. Sumter Blvd.	2.377		3.120	Tropicaire Blvd.	0.743
North Port Blvd.	0.000	S. Biscayne Blvd.	1.482	Appomattox Drive	1.482
Ortiz Blvd.	2.223	Deleon Dr.	2.436		0.213
Ortiz Blvd.	3.440		4.245	SR 45/US 41	0.805
Ortiz Blvd.	0.000	SR 45/US 41	0.739	Trionfo Ave.	0.739
Pan American Blvd.	0.167	Biscayne Drive	0.555	SR 45/US 41	0.388
Pan American Blvd.	0.000	SR 45/US 41	1.187	Appomattox Drive	1.187
Ponce De Leon Blvd.	0.000	N. Biscayne Blvd.	1.143		1.143
Ponce De Leon Blvd.	1.143		2.302	SR 93/I-75	1.159
Price Blvd.	0.000	Toledo Blade Blvd.	0.294		0.294
Price Blvd.	0.294		6.200	Raintree Blvd.	5.906
Raintree Blvd.	0.000	Charlotte Co. Line	1.600	SR 93/I-75	1.600
Rockley Blvd.	0.000	SR 45/US 41	2.000	Center Street	2.000
S. Biscayne Blvd.	0.000	Chancellor Blvd-Co/L	1.630	SR 45/US 41	1.630
S. Salford Blvd.	0.000	SR 45/US 41	2.541	W. Price Blvd.	2.541
S. Sumter Blvd.	0.000	SR 45/US 41	2.400	W. Price Blvd.	2.400
S. River Road	0.000	SR 45/US 41	1.460		1.460
S. River Road	1.460		3.478		2.018
S. River Road	3.478		6.790	Pine Street	3.312
San Mateo Dr.	0.000	Hillsborough Blvd-Co/L	3.000	E. Price Blvd.	3.000
SR 93/I-75	0.000	Charlotte Co Line	MM 171	City Limit	MM 187
Sumter Blvd.	0.000	Chancellor Blvd.	0.383	SR 45/Us 41	0.383
Tamiami Trail	0.000	Charlotte Co Line	6.141	CR 777/River Rd	6.141
Tamiami Trail	6.141	CR 777/River Rd	9.495		3.354
Tamiami Trail	9.495		14.895	SR 45A (US 41)	5.400
Tamiami Trail	14.895	SR 45a (Us 41)	17.131	CR 772	2.236
Toledo Blade Blvd.	0.000	Hillsborough Blvd-Co/L	4.651	SR 93/I-75	4.651
Tropicaire Blvd.	0.000	Van Camp Street	3.793		3.793
Tropicaire Blvd.	3.793		6.254	Choctaw Blvd	2.461
Tuscola Blvd.	0.000	S. Biscayne Blvd	0.445	SR 45/US 41	0.445
W. Price Blvd.	0.000	N. Biscayne Blvd.	3.300	Salford Blvd.	3.300
W. Price Blvd.	0.000	Salford Blvd.	2.510	Toledo Blade Blvd.	2.510
Winchester Blvd.	0.000	Charlotte Co. Line	3.152	River Road/CR 777	3.152
Yorkshire Blvd.	0.000	Hillsborough Blvd-Co/L	2.384	SR 93/I-75	2.384

APPENDIX E

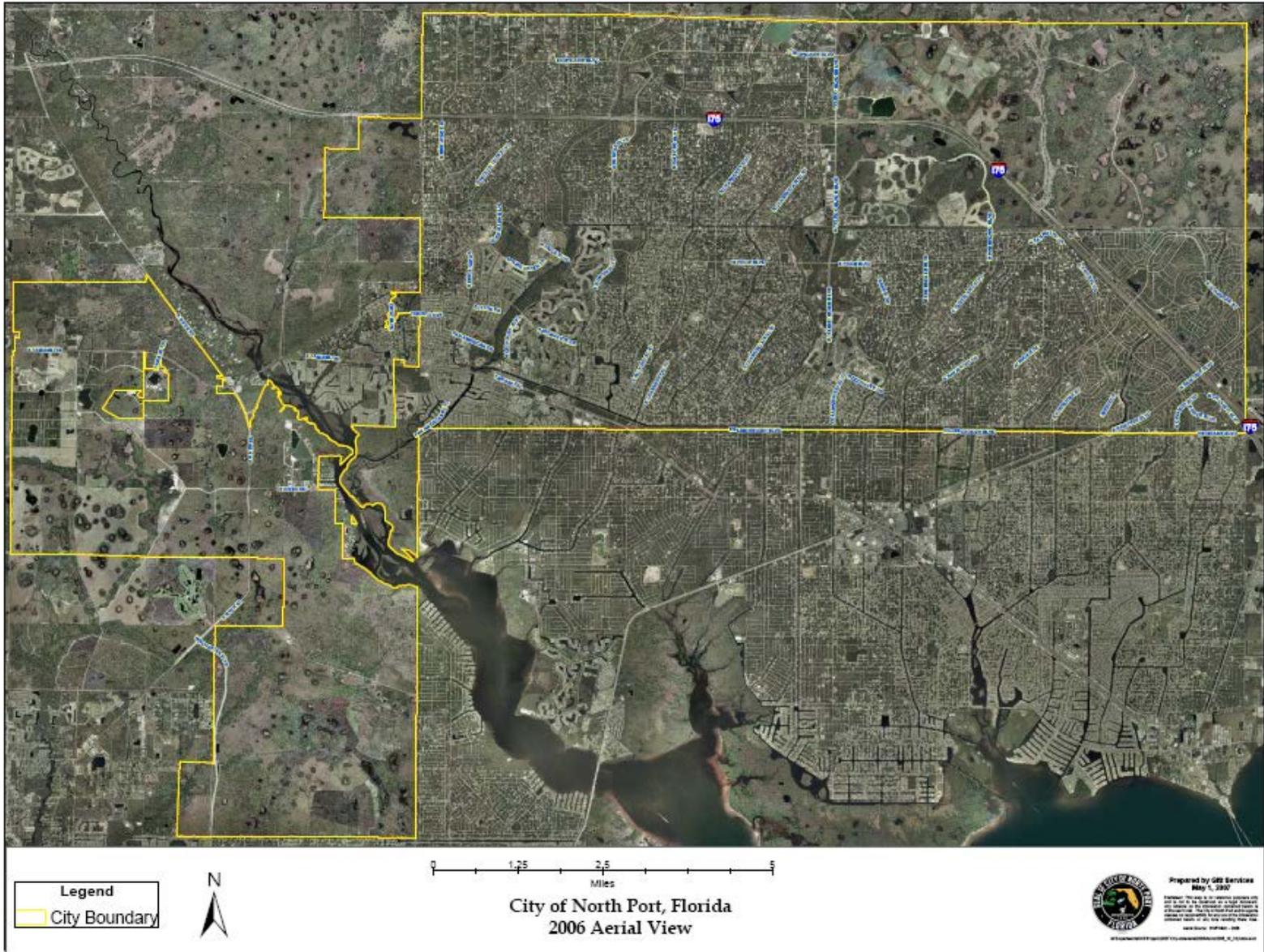
AERIAL VIEW OF THE FDEP PRE-APPROVED TEMPORARY DEBRIS STORAGE AND REDUCTION SITE

Greenland Street TDSRS



APPENDIX F

AERIAL VIEW OF THE CITY OF NORTH PORT



APPENDIX G

**TEMPORARY DEBRIS STORAGE REDUCTION SITES
FDEP PRE-APPROVAL LETTER**



**FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION**

South District Office
2295 Victoria Avenue, Suite 364
Fort Myers, Florida 33901-3881

RICK SCOTT
GOVERNOR

CARLOS LOPEZ-CANTERA
LT. GOVERNOR

RYAN E. MATTHEWS
INTERIM SECRETARY

Sent via email to: mbramble@cityofnorthport.com

Date: 5/18/2017

Monica Bramble
1100 N Chamberlain Blvd
North Port, FL 34286

RE: 2017 - Pre-Authorization for Disaster Debris Management Sites (DDMS)

Dear Monica Bramble:

This is to notify you that on 5/18/2017, we approved your request for pre-authorization of a disaster debris management site (DDMS) located in Sarasota County for 2017. Disaster debris includes hurricane/storm-generated debris and all other types of disaster debris.

The Department has evaluated your request for a DDMS at the following location:

WACS ID: 100033
Greenland Street
Golf Course Site, North Port
Lat 27:3:23.826 / Long 82:6:46.512
Waste Planned for Management: Yard Trash

In the event of a major storm event or other disaster which results in the Department issuing an Emergency Final Order (the Order) for your county, you may begin using this temporary DDMS as necessary, while also requesting issuance of a field authorization from the Department. Once activated, a DDMS is subject to the following conditions, in addition to the requirements of the Order and Florida Statute 403.7071:

1. Standing water must not be allowed to accumulate in or within 50 feet of areas used to store or process disaster debris;

2. The Department must be notified when the site is opened and begins accepting debris, and when the site is closed and stops accepting debris;
3. Access must be controlled to prevent unauthorized dumping and scavenging;
4. A DDMS must have spotters to correctly identify and segregate waste types for appropriate management;
5. Once the site is open, a spotter must be located in the area where waste is being deposited in order to spot and remove prohibited waste items;
6. The DDMS is limited to managing the type(s) of debris listed above; any putrescible waste received at the DDMS must be removed from the site within 48 hours; all other types of prohibited waste should be managed in accordance with the guidance document (see link below);
7. Unless otherwise approved by the Department in response to a written request from you, the DDMS must cease operation and all disaster debris must be removed from the sites on or before the expiration date of an Order that has been executed by the Department, unless it is modified or extended by further authorization.

The Department has also prepared a guidance document on the establishment, operation and closure of a DDMS for disaster debris. This guidance includes recommended practices, which you are expected to follow as much as practicable, as well as additional requirements from the Order. A copy of this guidance document is available on the DEP website http://www.dep.state.fl.us/mainpage/em/files/debris_guidance.pdf

If you have any questions or comments on this pre-authorization letter, please feel free to contact Rick Roudebush by E-mail at rick.roudebush@dep.state.fl.us or by phone at (239) 344-5653. In order to provide better service to you, the Department is using electronic documents as much as possible. Please provide your E-mail address when replying.

Sincerely,



5/18/2017

Ryan Snyder
South District

Date

RS / rr

Cc: rick.roudebush@dep.state.fl.us , samuel.cannon@em.myflorida.com ,
enrique.hernandez@em.myflorida.com , richard.knowles@em.myflorida.com ,
timothy.parsons@dos.myflorida.com , rick.roudebush@dep.state.fl.us , chad.fetrow@dep.state.fl.us ,
jason.aldridge@dos.myflorida.com

This letter generated by roudebush r.

Appendix H

Health and Safety Supplement

Purpose

The purpose of this Health and Safety Supplement is to support the existing City safety plan and/or procedures in regards to debris removal activities. These are recommended baseline safety provisions. Ultimately, health and safety is the responsibility of the contracted parties involved in debris removal activities. This document will outline some of the general steps necessary to provide a safe work environment for debris removal and monitoring employees. In addition, this document will identify some representative work hazards and the appropriate measures to reduce risk of injury.

1.0 Dissemination of Information

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

2.0 Compliance

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

3.0 Job Hazard Assessment

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

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

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

4.0 Administrative and Engineering Controls

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

Collection Operations

- Conduct debris removal operations during daylight hours only.
- Limit clean-up operations to one side of the road at a time.
- Limit collection work under overhead lines.

- Inspect piles before using heavy equipment to remove them to ensure that there are no hazardous obstructions.
- Make sure that all collection vehicles have properly functioning lights, horns and back-up alarms.
- Load collection vehicles properly (not overloaded or unbalanced).
- Cover and secure loads, if necessary.
- When monitoring the collection process, stay alert in traffic and use safe driving techniques.

Power Tools

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

Debris Reducing Machinery (Grinders/Wood Chippers)

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

DMS/Disposal Operations

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

5.0 Personal Protective Equipment

Personal Protective Equipment (PPE) is the last resort to providing a safe working environment for workers. PPE does not eliminate or even reduce hazards as

administrative and engineering controls do. PPE works to reduce the risk of injury by creating a protective barrier between the individuals and work place hazards.

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

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

- **Head Protection** – Equipment designed to provide protection for an individual's head against hazards such as falling objects or the possibility of striking one's head against low hanging objects. PPE used to protect the head must comply with ANSI Z89.1-1986, "American National Standard for Personnel Protection - Protective Headwear for Industrial Workers – Requirements."
- **Foot Protection** – Equipment designed to provide protection for an individual's feet and toes against hazards such as falling or rolling objects, objects that may pierce the sole or upper section of the foot, etc. PPE used to protect the feet and toes must comply with ANSI Z-41-1991, "American National Standard for Personal Protection-Protective Footwear."
- **Hand Protection** – Equipment designed to provide protection for an individual's hands against hazards such as sharp or abrasive surfaces. The proper hand protection necessary is dependent upon the situation and characteristics of the gloves. For instance, specific gloves would be used for protection against electrical hazards while the same gloves may not be appropriate in dealing with sharp or abrasive surfaces.
- **Vision/Face Protection** – Equipment designed to provide protection for an individual's eyes or face against hazards such as flying objects. PPE used to protect eyes and face must comply with ANSI Z87.1-1989, "American National Standard Practice for Occupational and Educational Eye and Face Protection." Again, the proper eye/face protection necessary is dependent upon the situation and characteristics of the equipment. For instance, eye and face protection used by individuals who are welding may not be appropriate for individuals operating a wood chipper.
- **Hearing Protection** – Equipment designed to provide protection for an individual's hearing against prolonged exposure to high noise levels. According to OSHA, the permissible level of sound is an average of 90 decibels over the course of an eight (8) hour work day. Above the sound exposure level, hearing

protection is required. PPE used to protect hearing must comply with ANSI S3.19-1974, "American National Standard Practice for Personal Protection-Hearing Protection."

- **Respiratory Protection** – Equipment designed to provide protection for an individual's respiratory system against breathing air contaminated with hazardous gases, vapors, airborne particles, etc. PPE used to the respiratory system must comply with ANSI Z88.2-1992. In addition, the use of respiratory protection requires a qualitative fit test and in some cases a pulmonary fit test by a licensed medical professional.

6.0 PPE Debris Removal Activity

PPE requirements are made based upon the results of the job hazards assessment. The following list of PPE is organized by debris removal activity and is meant to be a representative list. Specific PPE requirements vary from location to location. In general, individuals involved in the debris removal process should personally monitor water consumption to avoid dehydration and use appropriate skin protection (breathable clothes, light colors, sunscreen, etc.). Ultimately, the selection of PPE is the responsibility of the debris removal contractor and monitoring firm project managers.

Debris Collection Monitoring

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

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

Debris Disposal Monitoring

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

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

Debris Removal

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

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

Debris Disposal and Reduction

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

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

Debris Cutting and Trim Work

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

- Reflective Vest;
- Hand and Foot protection (rugged shoes or boots, steel toe if required);
- Vision and hearing protection
- Long pants; and
- Hard Hat

For additional information regarding health and safety requirements, contact OSHA.

Health and Safety Contact Information	
Occupational Safety & Health Administration	800-321-6742
City Contact	(941) 429-7130

Appendix I

FEMA Letter of Plan Approval

U.S. Department of Homeland Security
Region IV
3003 Chamblee-Tucker Road
Atlanta, GA 30341



FEMA

June 30, 2014

Mr. Bryan W. Koon, Director
Florida Division of Emergency Management
2555 Shumard Oak Boulevard
Tallahassee, Florida 32399-2100

Attention: Steve Hyatt

Reference: Public Assistance Pilot Program
Debris Management Plan Review
City of North Port

Dear Mr. Koon:

This letter responds to the Florida Division of Emergency Management request dated April 22, 2014, for the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) to accept the City of North Port's Debris Management Plan (Plan) for participation in the Public Assistance (PA) Alternative Procedures Pilot Program for Debris Removal. This pilot program allows a one-time two (2) percent Federal cost share increase for debris removal operations performed within 90 days from the start of the incident period of a major disaster or emergency declaration.

FEMA Region IV has determined that the Plan:

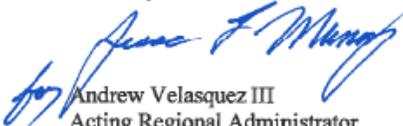
- Contains the basic planning elements of a Debris Management Plan along with at least one prequalified debris and wreckage removal contractor (see enclosed Debris Management Plan Checklist). Therefore, FEMA has determined the Plan is acceptable. Accordingly, the City of North Port may receive a one-time two (2) percent Federal cost share increase as part of the PA Alternative Procedures Pilot Program for Debris Removal. Your office should notify FEMA when the City of North Port wishes to apply the incentive to its debris removal work.**
- Does not contain the basic planning elements as noted in the enclosed Debris Management Plan Checklist. The City of North Port may revise its Plan and resubmit it to FEMA, through your office, for reconsideration.

www.fema.gov

Once the Plan is accepted, it does not mean that FEMA is approving any operational component of the plan nor does it mean that the Federal government will fund work conducted under any aspect of the Plan. Eligibility of costs for debris removal and management in a declared major disaster or emergency will be determined based on established PA Program authorities, regulations, policies and guidance. Subgrantees must comply with Federal procurement requirements (i.e., competitive bidding), as outlined in 44 CFR §13.36 in the procurement of debris removal services.

If you have questions or need additional information, please contact Mr. Jesse F. Munoz, CEM, Director, Recovery Division, at (770) 220-5300.

Sincerely,



Andrew Velasquez III
Acting Regional Administrator