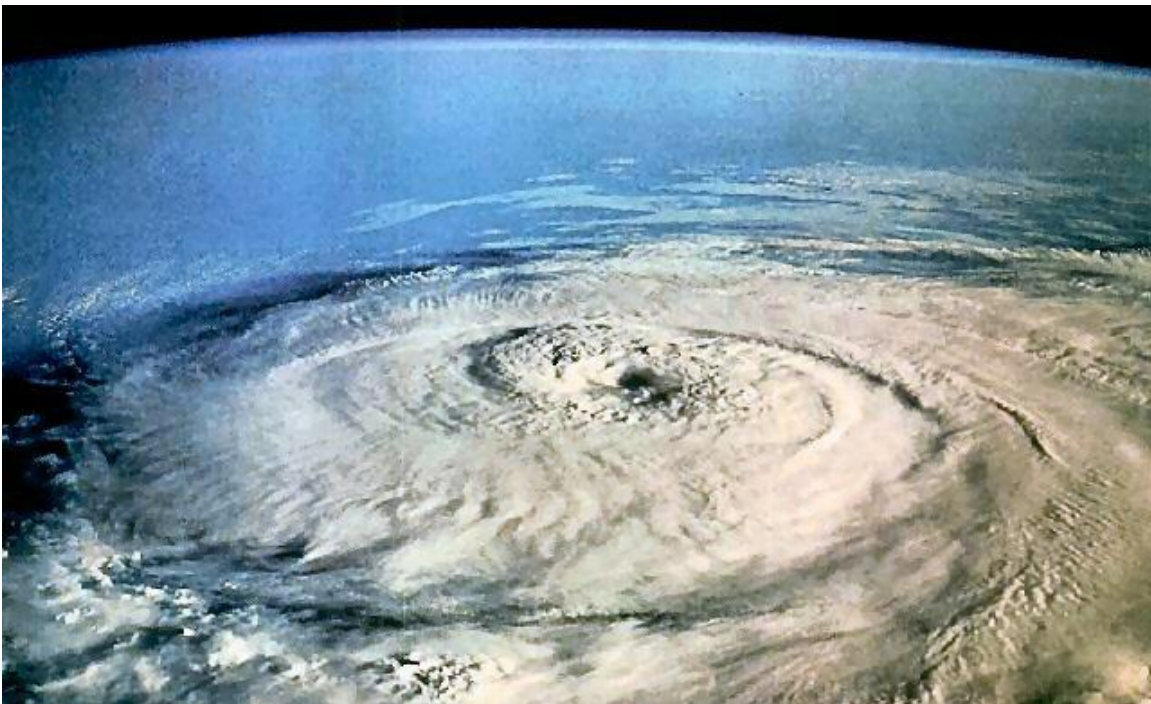


Franklin County, MA
Franklin Regional Council of Governments

Disaster Debris Management Plan and Action Manual

January 1, 2009



Prepared by:

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Franklin Regional Council of Governments

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Franklin County, MA Disaster Debris Management Action Manual

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Executive Summary

Creating a Franklin County Debris Management Plan

Usually a State or a large county that has a regional department of public works with a solid waste management division will create and implement a disaster debris management plan. Massachusetts is not organized with county governments that function with regional public works departments. However, the Franklin Regional Council of Governments is the first regional entity in Massachusetts to prepare a debris management plan without regional public works capability. Under these conditions, the effort to prepare a debris management plan has resulted in the following recommendations:

1. Debris management is a “recovery” exercise at a time when the focus of emergency management has been on “response”. Therefore, there has to be a shift at the level of State, Regional and Local Emergency Planning Committees to begin an examination of disaster recovery.
2. Debris management is a public works function however; public works officials are absent from many Emergency Planning Committees. Most emergency preparedness funding is going to support police, fire, and emergency management officials. There needs to be an aggressive invitation for public works officials to participate in the emergency preparedness community.
3. There is no Commonwealth Disaster Debris Management Plan. A plan was drafted early in 2002 as an annex to the State’s CEMP, but it has not been updated. In the Post-Katrina era of debris management, the landscape has completely changed and Massachusetts needs to create a workable plan.
4. Locating debris staging sites is at the heart of a workable debris management plan. This should be a function of the Commonwealth’s regional planning agencies at a cost of at least \$120,000 per region for a two-year process that includes public participation.
5. The Mass Department of Environmental Protection (Mass DEP) must develop an expanded mission when it addresses the regulatory component of disaster

debris management. Mass DEP's mission is to protect the environment from people at the same time the Emergency Management Agency's mission is to protect people from the environment. The State's Solid Waste Master Plan must recognize this disconnect and address regulatory and policy obstacles necessary to an effective debris management plan.

6. Massachusetts Emergency Management Agency (MEMA) must be in the position to assist communities in localized disasters that may not qualify for Federal funds. Currently, MEMA does not have access to any funding to assist municipalities for smaller events that can be just as devastating.
7. Stand by contracts (or on-call contracts) for debris management should be managed by entities qualified to manage large engineering and construction contracts involving heavy equipment and operations personnel. Most municipal organizations lack the experienced staff and the contractual and legal ability to implement what may be a large multi million-dollar contract.
8. It is strongly recommended that MEMA, Mass DEP and the Operational Services Division (OSD) proceed with the creation of a statewide services contractor for disaster debris cleanup and monitoring. Under this scenario a pre-determined disaster debris expert will be brought in to assist MEMA and their procurement team with managing both the monitoring and cleanup contracts issued by the OSD. The biggest advantage to Franklin County is that municipalities can utilize these state maintained contracts. This might be the best way to address the region's lack of authority and skilled personnel to maintain regional contracts. For the FRCOG, the Council's procurement officer with assistance from the Franklin County Debris Management Team can utilize the statewide contract so that it serves as a strategy for the Franklin County Debris Management Plan.

Special thanks to Dave Murphy and staff at Tighe and Bond for their assistance in preparing the Franklin County Debris Management Plan and Action Manual.

Prologue: DISASTER OVERVIEW

Due to the infrequency of disasters in the Northeast, people understandably are confused about what constitutes a disaster versus an emergency. Fundamentally, a disaster is more significant. The resources that a community needs to respond to an emergency are different and less comprehensive than the resources it needs to respond to and recover from a disaster. It is important to note every event that evolves into a disaster first begins as an emergency. This progression from emergency to disaster contributes to the confusion as the terms emergency and disaster are used interchangeably. This Debris Management Plan identifies the tools and outlines the steps for recovering from a disaster. The following table is intended to help distinguish the key differences between an emergency and a disaster.

<i>Emergencies</i>	<i>Disasters</i>
Impacts localized	Impacts widespread and severe
Response mainly local	Response multi-jurisdictional and inter-governmental but bottom up
Standard operating procedures used	Disaster plans put into effect but challenges remain
Vast majority of response resources are unaffected	Extensive damage and disruption to key emergency services
Public generally not involved in response	Public extensively involved in response and recovery
No significant recovery challenges	Major recovery challenges

FEMA Incentives

The Federal Emergency Management Agency (FEMA) has identified the process of cleaning up disaster debris as the costliest and most time-consuming recovery activity following an event. For this reason, FEMA created a pilot program that increases its reimbursement to communities from 75% of debris cleanup costs to 80%. To qualify for

the program, municipalities must meet a prerequisite of having a FEMA-approved debris management plan in place. The rationale for the requirement is that the efficiencies inherent in a pre-disaster debris management plan result in a savings to the Federal Government. In addition, with a FEMA approved plan, a jurisdiction may keep any revenue earned from recycling salvageable materials. The hope is that this incentive will increase the beneficial use of disaster debris. These FEMA programs provide fine incentives for creating a debris management plan, but these incentives by no means represent the only benefits. The more significant benefit of disaster planning is to provide our Franklin County communities with the best opportunity to recover from a devastating natural event. Beyond the utilitarian goal of managing a timely and cost-efficient recovery process, real recovery must include attention to restoring the public spaces of our hometowns, our homes, the local economy, and the overall well being of our communities.

Pre-disaster Planning

Municipal government officials must understand that disaster response and recovery is a bottom-to-top exercise and that FEMA and MEMA have limited resources to contribute. The ability to respond appropriately to disaster events depends solely upon the preparedness of municipalities and the effectiveness of the professionals and volunteers who are immediately available to them. When local response resources become overwhelmed in addressing a disaster event, response managers need to turn to other communities, to the State, and to the private sector for help. Knowledge of what human and material resources are available and of how to mobilize assistance is an essential part of pre-disaster planning. Pre-disaster planning also identifies the funding protocols that have been established by the Federal and State governments to allow municipalities to access supplemental disaster-response services. These funding protocols often require the presence of trained local officials who have the skills needed for timely and accurate reporting.

Disaster Preparedness Resources

Professional and volunteer personnel: Every community should have a core group of individuals to serve as first responders in a disaster event. That group should include representatives of local/regional emergency planning committees, emergency managers, fire, police, MEMA local coordinators, emergency medical technicians, Community Emergency Response Teams (CERT), Red Cross, Salvation Army, and etc.

Mutual Aid Agreements: An MAA ensures that communities will be reimbursed for the resources they dedicate to a neighboring community in a disaster.

Private sector: Private businesses can make available many resources in the form of equipment, expertise, and experience. But these resources come at cost. In order to ensure that local governments can pay for these services, municipal officials need to follow procurement guidelines defined by FEMA. If officials adhere to the guidelines properly, their local governments should qualify for funding.

Disaster Declaration

It is illegal for municipalities to spend money that they do not have. So when an emergency begins to escalate beyond the resources of a local government, municipal officials begin to consider declaring a state of emergency. By declaring a state of emergency, local officials notify MEMA that the intensity of the event requires assistance. A template for declaring a local state of emergency is attached in **Appendix A**. MEMA will respond by dispatching a field official to begin the Preliminary Damage Assessment that includes an evaluation of damage indicators that are essential for a disaster declaration. If the local emergency leads to a state declaration, then the Governor requests a federal declaration. Once the Federal government declares a disaster, the local government becomes eligible to apply for FEMA funding and is encouraged to submit a Request for Public Assistance. Upon receipt of this request, FEMA appoints a Public Assistance Coordinator (PAC) to work with each applicant for funding. It is important to note that the process of securing funding described here is for remediation only of public impacts due to disaster events. Private residences and businesses have a different and usually parallel damage assessment process through FEMA's Individuals and Households Program.

Damage Indicators

For an emergency to escalate into a disaster declaration, the event must meet a threshold of damage determined by a damage indicator that is based on recovery costs. In order to receive the status of a federally declared disaster and thereby qualifying for federal funding, FEMA requires the State to meet a statewide dollar threshold. For Massachusetts to qualify for federal funds, the damage indicators must determine that response and recovery costs exceed \$1.22 per capita statewide. Using state census data the statewide damage indicators must be \$7.8 million. Once the statewide threshold is met, then each affected county would need to meet the county dollar threshold of \$3.05 per capita. This means the threshold for a disaster declaration in Franklin County would be \$218,181 (pop 71,535). For impacts that cross county boundaries, counties may combine their damage indicators to qualify for funding.

Incident Command System

Each community has a Comprehensive Emergency Management Plan (CEMP) that identifies the various skills necessary to respond to emergencies and disasters. It is the public works department and local highway departments that make the biggest contribution in addressing disaster debris clearance and pickup. Ideally, a debris management coordinator is available through the public works function of the local emergency planning committee (ESF#3) that guides the debris management activities for both the response and recovery phases of a disaster. However, the public works functions have been rarely tested or included in training exercises and emergency preparedness officials have begun to recognize this. The organization of people with their particular skills into a working team conforms to the guidelines of the Incident Command System (ICS). The ICS is a system of organization adopted by communities that allows for an effective and efficient response to emergencies and disasters. It is here that additional resources available to the community are made known by the community's Emergency Management Director (EMD). These additional resources include the resource inventory in the local CEMP, the mutual aid agreement process with neighboring communities, availability of Red Cross shelters, CERT and MRC deployments, etc.

Summary of Initial Response and Recovery

1. It is the responsibility of the each municipality's Chief Elected Official (CEO) to make an emergency declaration. In most cases, the CEO confers with other officials (including the emergency management director and DPW staff). After an initial inspection, the CEO determines if the local resources are inadequate to meet the response and recovery demands of the event. It is incumbent on the CEO to make an emergency declaration if the costs to respond and recover are above and beyond the budget limitations of the Town.
2. If the CEO declares an emergency, then MEMA is notified and an impact assessment team is dispatched. Their main purpose is to determine if the damage indicators of the disaster event meets the threshold for a local, regional or state disaster declaration. A disaster declaration is desirable because it means federal funds may become available to meet recovery costs
3. Because this determination may take time, in the meantime local communities must continue its response and recovery efforts. The initial tool available to communities includes a Mutual Aid Agreement (MAA). Each Franklin County town has signed an MAA that ensures neighboring communities will be reimbursed for the resources they dedicate to a disaster. Along with the MMA, each community also has a Community Emergency Management Plan (CEMP) that contains, among other things, an inventory of each town's resources that could be available in the event of a disaster. The municipality's emergency management director has access to the CEMP and is responsible for initiating and following through with this activity.
4. Another immediate tool available to municipalities is a *Time and Material Contract*. **Appendix B** contains a sample contract for Franklin County. This contract can be used to hire private resources for debris clearance during the first 70 hours of a disaster event. This is called the 70-hour push and it includes the first 70 hours of "working time" by a contractor. The main reason to use a contractor in a disaster is to assist local governments in the clearing of debris from roads in order to allow access to critical facilities or for

evacuations if necessary. 100% of the costs for the 70-hour push are reimbursable by FEMA however; the contractor costs cannot exceed the costs listed in FEMA cost codes. Lastly, municipalities will not be reimbursed for clearing debris from federally funded State roads. Mass Highway is responsible for the 70-hour push on these roads and most local road departments are familiar with these same snow removal protocols.

5. The Incident Command System, designed for use by local emergency personnel in an emergency and disaster, requires the activation of the appropriate Emergency Operation Center. It is here that disaster debris management efforts will begin to fold into the larger and more comprehensive response and recovery efforts. Especially important to debris management is the Public Information Officer who has the responsibility of keeping the public informed of response and recovery activities in a coordinated manner.

It is at this point in a disaster event that pre-disaster planning offers its biggest advantages, and it is here where the Debris Management Action Plan is the most effective.

Section 1: Debris Management Cycle

Background

All communities have unique circumstances that impact their response to disaster events. These circumstances include local business/industry base, land use, size of the region, topography, economics, etc. Franklin County has made an effort to address these unique circumstances during the development of this Debris Action Plan. This focus is necessary in order to respond to the extraordinary demands placed on public and private resources for debris management following a disaster event. The Franklin County Disaster Debris Action Manual seeks to define roles, responsibilities, and procedures and provide guidance for development and implementation of all elements involved in managing debris removal operations.

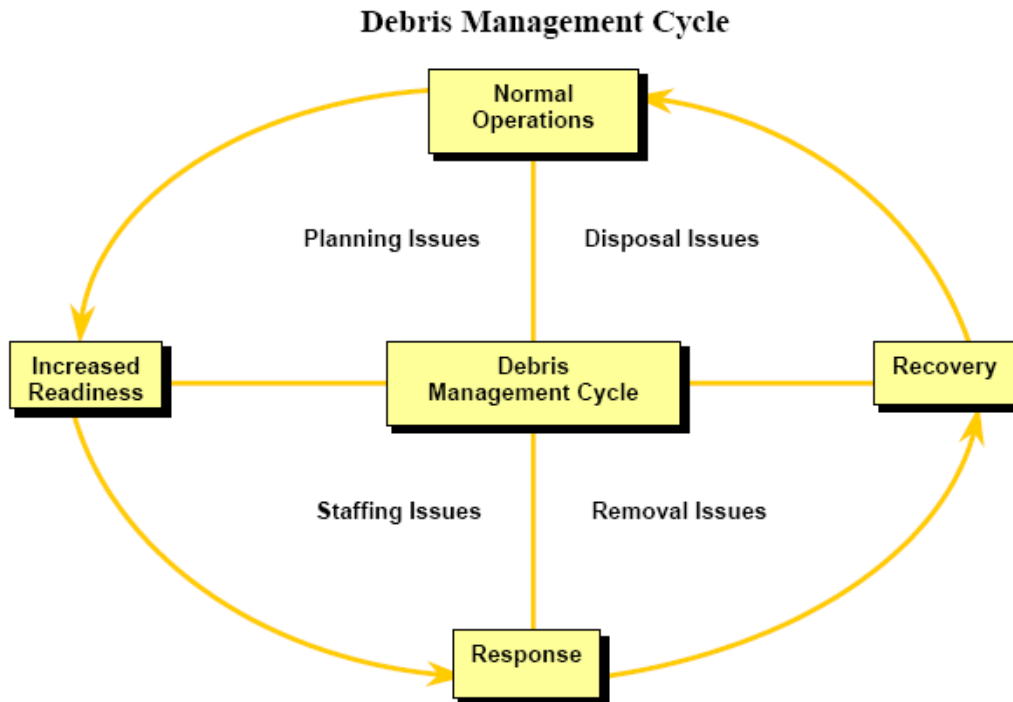
Purpose of the Plan

This Disaster Debris Management Plan (Plan) was commissioned by the Franklin County Regional Emergency Planning Committee for a number of key reasons, including:

1. To provide a centralized repository of information critical to kicking-off and operating a disaster debris management program (including location of debris staging sites, zone maps, road lists, and pre-positioned contracts, etc.);
2. To outline the various local government officials and other stakeholders involved in the debris management process and the key areas of responsibility for each;
3. To educate local government officials and other stakeholders on the general scope of debris removal activities;
4. To identify important rules, regulations, and guidelines enacted by FEMA, MEMA and other agencies governing the disaster debris removal process;
5. To identify key steps (in the form of checklists and an operational plan) that Franklin County will need to take prior to and during a disaster event;
6. To identify critical issues that need to be addressed in order to improve Franklin County's response to a disaster debris-generating event; and
7. To take advantage of a 5 % increase in federal funding for those local governments that have approved disaster debris management plans.

Debris Management Cycle

This section provides the guidance required to deal with all phases of a disaster event. These phases include: Normal Operations, Increased Readiness, Response and Recovery. Each phase is unique and necessary to properly plan for and respond to a disaster. A summary of each phase has been provided below.



Normal Operations

Normal Operations is the period of time when Franklin County is not in any serious threat of a disaster event. The Normal Operations phase is the ideal time for the County to create a strong public works support function in the Regional Emergency Planning Committee, to establish pre-positioned contracts for debris removal, monitoring and debris staging operations, to identify and secure pre-approval from Mass DEP for locations to serve as Debris Staging Sites, and lastly to review current local ordinances and bylaws for their potential impact on debris removal operations. The Normal Operations period is the ideal time for the Franklin County REPC to re-evaluate the roles and responsibilities of all emergency preparedness staff. The purpose of this evaluation is to ensure that all appropriate municipal departments and Franklin County agencies

maintain the capacity to fulfill their obligation in a timely and effective manner should a disaster strike. Evaluation should establish road clearance and debris removal priorities in the event of a disaster. Finally, a review and update (as required) of this Plan should occur during this phase.

Normal Operations Checklist

- Create Debris Management Team as a public works support function within the Franklin County Regional Emergency Planning Committee
- Establish Pre-positioned Contracts
 - Debris Staging Site Operator
 - Debris Hauler(s)
 - Debris Monitor
- Emergency Roadway Clearing (Optional)
- Review and Update Federal and State Road List
- Review and Update Emergency Contact List
- Review and Update the Debris Staging Site locations
- Review and Update Relevant Ordinances/Bylaws
- Review and Update Inter-Municipal Agreements and MOUs
- Monitor and Evaluate Debris Staging Capacity at Landfills
- Review and Update the Debris Management Plan
- Draft Pre-disaster Media Press Releases

Increased Readiness

The Increased Readiness phase occurs when there is a high probability that a natural disaster will impact the County. This phase calls for the County to prepare for a disaster event under the assumption that the threat is imminent. Key personnel and representatives of appropriate outside agencies will be put on alert and will monitor the progress of the storm event to gauge where and when it might strike the area and with what severity. All participating parties will be briefed of their specific duties. The availability of pre-selected/pre-approved Debris Staging Site locations will be evaluated. Alternative locations will be considered by prioritizing potential sites if one or more pre-approved sites are not available. Emergency preparedness officials will put pre-

positioned contractors on stand-by and request each contractor provide a representative at the local or regional Emergency Operations Center no later than 24 hours prior to the estimated landfall time.

Increased Readiness Checklist

- Download Most Recent Road List and Relevant Documents to a CD
- Alert Key Personnel
- Review Debris Plan with Key Personnel
- Pre-event Media Press Release
- Alert Debris Contractors and Place on Standby

Response

The Response phase is the period immediately after the event occurs and a disaster declaration is issued. For contractual and FEMA reimbursement purposes, the response phase is generally defined as the first 70 contractor *working* hours following a storm. (This time frame is subject to change due to severity of the event and other disaster specific circumstances). During this phase, the Mass Highway Department and local highway departments will initiate emergency roadway debris clearing operations. Road clearance priorities are pre-established to ensure access to critical public facilities such as: fire stations, police stations, hospitals, emergency supply centers, shelters, and other critical facilities.

Response Phase Checklist

- Activate Action Plan
- Conduct Damage Assessment
- Begin Emergency Roadway Debris Clearance
- Activate Debris Removal Contractors
- Prepare Debris Staging Sites Based on Concentration of Debris
- Conduct Meetings/Briefings with Key Personnel
- Review Debris Volume and Collection Cost Assessment
- Request Contact Information and Meeting with MEMA Public Assistance Officer
- Issue Media Press Release (*Appendix C*)

Recovery

For the purpose of debris management, the Recovery Phase is marked by debris removal contractor(s) collection and reduction of storm generated debris from the public right-of-way (ROW). Concurrent to the commencement of ROW debris removal operations, the County evaluates the need for contract debris removal on private property, parks, and waterways. The County will also confirm that Mass Highway Department and local highway departments are either under way or in the process of initiating programs that address debris removal on the roads for which they are responsible. A detailed recovery phase checklist is located on pg. 27.

Section 2: Action Plan

This section provides the guidance for pre-event preparations once a storm event becomes imminent. These Action Plan phases include, Pre-Event Preparation, Post Event Response, and Post Recovery. A summary of each phase has been provided below and outlined in the Disaster Recovery Timeline (**Figure 1**)

Pre-Event Preparation

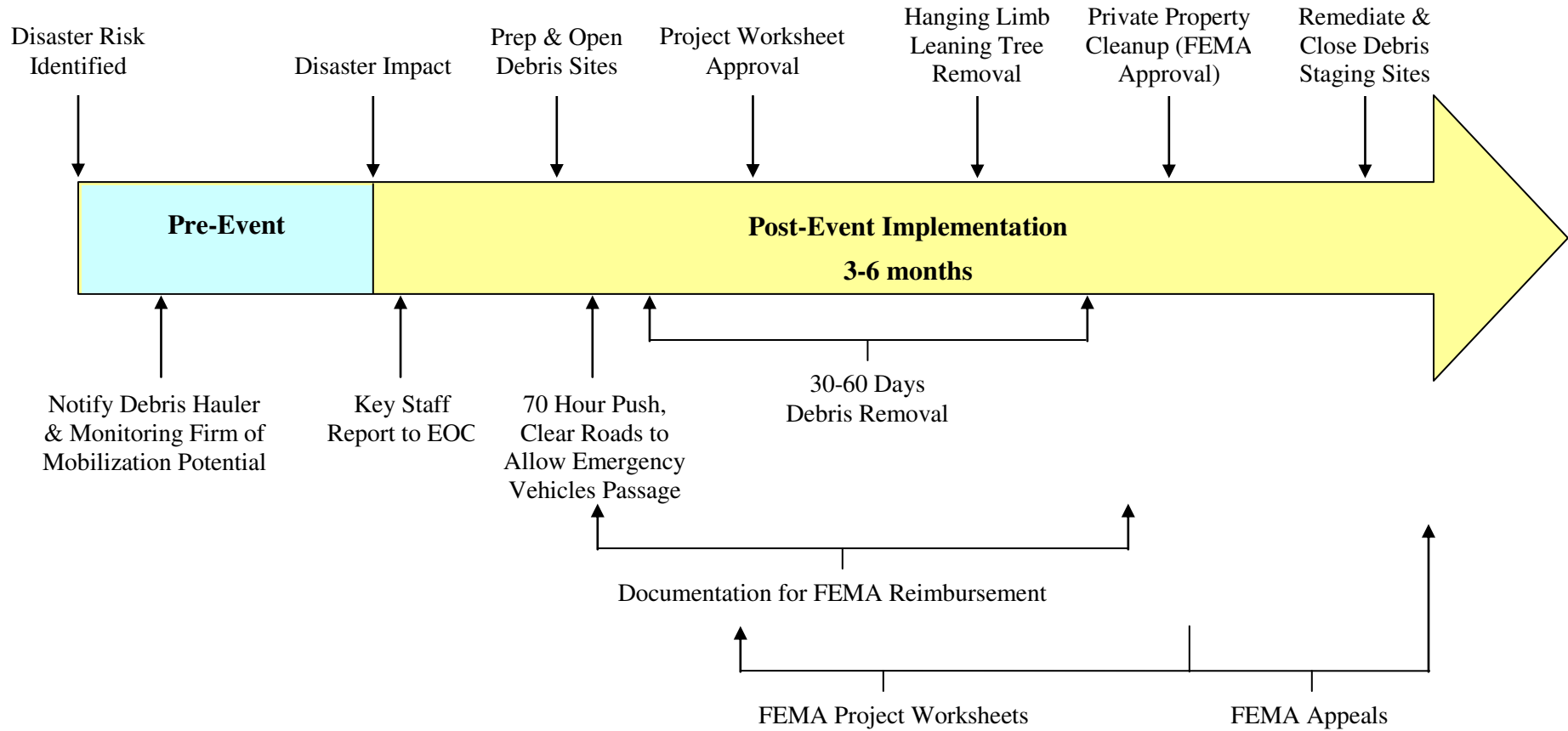
Franklin County begins pre-event preparations when a disaster event is moving towards the northeast section of the country and the storm event has been placed in the NOAA five day forecast map. Key emergency personnel and representatives of involved outside agencies will be put on alert and will monitor the progress of the storm event to gauge where and when it might strike the area and with what severity. All participating parties will be briefed of their specific duties. The availability of pre-selected/pre-approved debris staging site locations will be evaluated. A list of these locations can be found in Debris Staging Sites Appendix. Alternative locations will be considered by prioritizing potential alternate sites if one or more pre-approved site is not available. County representatives will place pre-positioned contractors on stand-by and request each provide a representative at the Franklin County EOC no later than 24 hours prior to the estimated arrival of the storm event.

Pre-Event Checklist

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

- Download most recent road list and relevant documents to a CD and print a hard copy
- Alert key personnel and place contractors on stand-by
- Public Information Officer (“PIO”) issues pre-event media press release preparing residents for the potential debris removal operation. Appendix B. Press Releases.
- Issue media press release about transfer station closure times/dates.

Figure 1. Disaster Recovery Timeline



Download Most Recent Road List and Relevant Documents to a CD

The Franklin County Regional Emergency Planning Committee (REPC) will coordinate with the Massachusetts Highway GIS Department to acquire the most recent federal and state road list and maps of the County prior to the storm event. Identifying these roads is important because debris clearance is the responsibility of Mass Highway Dept. and local governments will not be reimbursed for any resources they commit to clearing these roads. Many of the computers and servers that store this information may be unavailable immediately after the event. Having this information on-hand ensures that debris collection operates properly and commences in a timely manner. The most recent road list has been downloaded and is affixed to this Plan (*Appendix D*). It is critical that local governments be provided with regular updates (on a compact disc) of this road list by the Regional Emergency Planning Committee as they become available. Copies of the CD should be stored in the local Emergency Operation Centers and in a safe location outside the projected path of the storm event.

Alert Key Personnel and Place Contractors on Stand-by

Key personnel from the Debris Management Contact List (Table 1) should be put on alert by the Franklin County Debris Management Team and Debris Management Coordinator. The Franklin County REPC's Debris Management Team should contact these primary points of contact via verbal and electronic communication informing them of information needed to begin the response and recovery process. In addition, the Debris management Coordinator should schedule a meeting with primary points of contact at the EOC to discuss emergency road clearing activities and response activities. All debris contractors should be put on alert by the REPC Debris Management Coordinator and informed that their contracts may be activated. Discussions with the Contractors should address the following key issues:

- Availability and amount of assets that will be dedicated to debris removal operations;
- Estimating time of mobilization;
- Identification of primary points of contact;

- Exchange mobile contact information; and
- Determine if Contractor presence is needed at the EOC during the event.
- Identify staging areas for Truck Certification for vehicles used in hauling debris.

Table 1. Debris Management Contact List

<u>Franklin County Regional Emergency Planning Committee</u>	
John Taylor, Chairperson,	413 625-6527
<u>Debris Management Coordinator</u>	
Michael Pattavina (acting)	413-773-8366
Cell	413 335-5956
<u>Debris Management Team Members</u>	
Jan Ameen, FCSWMD	413 772-2438
Robert Barry, MEMA	413 821-1500
Thomas Williams, FRCOG	413 774-3167 x112
Sandra Shields, Town of Greenfield DPW	413 772-1528
<u>Massachusetts Emergency Management Agency (MEMA)</u>	
Robert Barry, Local Coordinator	413 821-1500
Lorraine Eddy, Disaster Recovery Coordinator	508 820-2055
Barbara Legatowicz, Animals In Disaster Coordinator	508 820-2032
<u>Massachusetts Department of Environmental Protection (DEP)</u>	
Myles Brown, Emergency Management Coordinator	617 292-5789
John Fischer, Waste Planning	617 292-5632
<u>Franklin Regional Council of Governments (FRCOG)</u>	
Thomas Williams, Program Manager	413 774-3167 x112
Ryan Cleary, GIS	413 774-1194
Margaret Williams, Chief Procurement Officer	413 774-3167 x104
<u>Franklin County Solid Waste Management District (FCSWMD)</u>	
Jan Ameen, Animal Carcass Disposal Coordinator	413 772-1528
<u>Town of Greenfield, Massachusetts</u>	
Sandra Shields, DPW Director	413 772-1528
<u>Massachusetts Highway Department (Mass Highway)</u>	
Thomas Loughlin, Dir. of Statewide Highway Operations	617 973-7246

Review Plan with Key Personnel

Once a meeting is scheduled with all primary points of contact, the FCREPC's Debris Management Team and its Contractors should review the Debris Management Action Plan, the Personnel Contact List, and roles and responsibilities. Once roles are reviewed and agreed upon, the meeting should focus on key activities that need to occur immediately following the storm including damage assessments and emergency road clearing activities.

Pre-event Media Press Release

The County will issue a press release to the public that assures them that Franklin County is prepared and has a plan in place to immediately respond to the event. In addition, the Franklin County Solid Waste Management District should provide information on proper setout procedures and estimates on when the cleanup will begin. A draft Press Release for this scenario is included in *Appendix C. Press Releases*.

Post Event Response (70 Hour Push)

The 70-Hour Push encompasses the period of time with which roadways are cleared of scattered debris, leaning trees, and other roadway obstructions to emergency response vehicles. This operation is reimbursable by FEMA on a time and materials basis, so it is critical that all the types and time durations of equipment used are documented with detail and accuracy. (Please note that the reimbursement criteria and duration for time and materials work is subject to change following a disaster) During this phase, the Franklin County REPC and Debris Management Coordinator will initiate emergency roadway debris clearing operations and utilize internal equipment. If necessary, the REPC may request additional resources for emergency road clearance operations from its contractors. Road clearance priorities are pre-established to allow access to critical public facilities such as: fire stations, police stations, hospitals, emergency supply centers, and other critical facilities. Concurrent to emergency push operations, County debris contractors should perform necessary preparation work to open debris-staging sites. Note

that all identified Debris Staging Sites may not be necessary, and will depend on the strength and location of impact of the storm event.

Response Checklist

- Initiate Damage Assessments
- Begin Emergency Roadway Debris Clearance
- Activate Debris Removal Contractors – Establish Contractor Boundaries
- Prepare Debris Staging Sites based on concentration of debris
- Conduct Meetings/Briefings with Key Personnel
- Review Collection Zone Maps
- Estimate Debris Volume and Collection Cost Assessment
- Request contact information and meeting with FEMA Public Assistance Officer (This request is made through Mass Emergency Management Agency – MEMA)
- Begin Truck Certification
- Issue Media Press Release

Initiate Damage Assessment

Damage assessments are necessary to determine the extent and the location of the debris. Windshield surveys of the County’s municipalities are taken and used to communicate critical damage areas to the Debris Management Coordinator to assist him/her in prioritizing road clearance efforts. If possible, additional surveys should be conducted by helicopter in order to obtain an aerial view of damaged areas within the County. Often times helicopter surveys are available through debris removal contractors independently surveying Franklin County to determine asset levels and configuration.

Begin Emergency Roadway Debris Clearance

Mass Highway Department commences with road clearance or “cut and toss” activities and determines the necessity for activating its Emergency Road Clearance Contractor. These operations first focus on major arteries leading to storm shelters, hospitals, supply

points, and other critical locations throughout Franklin County. Mass Highway maintains road clearance responsibility for all State and Federal Roads.

Activate Debris Removal Contractors

Franklin County REPC and the Debris Management Coordinator will utilize the damage assessments conducted by MEMA and local government officials to determine whether to activate debris removal contractors. The Debris Management Coordinator should meet with the FCREPC's Contract Administrator before making this determination. Debris hauling and monitoring contractors are generally required if the storm event such as a hurricane is a Category 2 or greater. If/when the contractors are activated; each contractor should review an updated road list and the debris collection zone map. The full list of debris collection zones has been provided in *Appendix H*. Contractors should begin logistical coordination and equipment ramp-up immediately upon receiving a Notice-to-Proceed.

Prepare Debris Staging Locations Based on Concentration of Debris

Franklin County REPC's Debris Management Coordinator, pre-positioned contractors, and Consultant staff will meet to discuss the opening and operation of pre-identified debris staging locations.

Qualification criteria should be reviewed at this time:

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

Upon a review of availability and suitability, the debris contractors begin site preparation. The Debris Management Coordinator and the debris clearance-monitoring firm will oversee the contractor's activities to ensure that they are in compliance with their contractual obligations, environmental standards, and acting in the best interest of the

County and its residents. Mass DEP will be contacted to provide final approval under an emergency declaration for the Debris Staging Site locations.

Conduct Meetings/Briefings with Key Personnel

Coordination meetings and briefings with key personnel are conducted to update the status of the road clearance efforts, debris staging site openings, contractor asset ramp-up, and pertinent public information for press releases. Franklin County REPC will recommend daily meetings occur between 8:00 am and 4:00 pm (at a location determined by the REPC) to include key Franklin County REPC personnel, County contractors, and the Franklin County Solid Waste Management District. The morning briefing will focus on daily objectives and will include a discussion of operational progress and best debris management practices. During each day, the FCREPC Debris Management Coordinator will review real time statistics and GIS layers that reflect operations through the end of the previous day.

Review Debris Volume and Collection Cost Assessment

The Debris Management Coordinator, the debris-monitoring firm, and debris-hauling contractors will meet to review the debris assessment. The topics included in this meeting may include, but not be limited to:

- Amount of debris generated – in terms of cubic yards
- Type of debris generated - vegetative, C&D and/or sand
- Number and estimated date of arrival for assets – trucks, loaders, monitoring personnel
- Estimated number of Debris Staging Site location necessary for recovery
- Preliminary scope of debris removal efforts
- Estimated cost of the debris removal efforts

Following this meeting, the Debris Management Coordinator and/or monitoring firm will begin to collect required documentation for the development of FEMA Project Worksheets and contact the FEMA Public Assistance Officer responsible for Franklin County.

Request Contact Information and Meeting with FEMA Public Assistance Officer

The Franklin County REPC's Debris Management Coordinator will immediately request the contact information of the designated Public Assistance Officer (PAO) for the disaster. Upon receiving the information, a meeting with FEMA will be requested.

During this meeting the following issues will be discussed:

- Summarize the County's debris removal operations to date;
- Review debris and cost estimates for the County;
- Review any Disaster Specific Guidance (DSG) documents issued by FEMA;
- Examine the County's debris removal plan;
- Provide contact information for all County contractors and primary points of contact;
- Determine what additional information the PAO (Public Assistance Officer) will need in order to generate Project Worksheets (PW) for the County.

In order for FEMA to generate a Category A: Emergency Phase Debris Removal and Debris Monitoring Project Worksheet, the following information will be required:

1. A copy of the debris removal contract(s)
2. A copy of the debris monitoring contract(s)
3. Information on the procurement process on the debris removal and monitoring contracts.
4. Address and GPS Coordinates for all Debris Staging Sites
5. Debris estimates (using Appendix D models and damage assessment reports)
6. Monitoring estimate (based on budgeted labor hours)
7. A brief debris removal plan overview

Truck Certification

Truck Certification is one of the most important functions in initiating a debris removal operation. Accuracy and documentation of all measurements is critical. All container units hauling debris under a volumetric contract with the County will have capacity and

dimensions measured, sketched, photographed, and documented on a truck certification form. Each unit will be assigned a unique number for debris tracking and invoice reconciliation purposes. Field documents will be developed by the debris contractor hired to operate the debris staging site with input from the Debris Management Team.

Issue Media Press Release

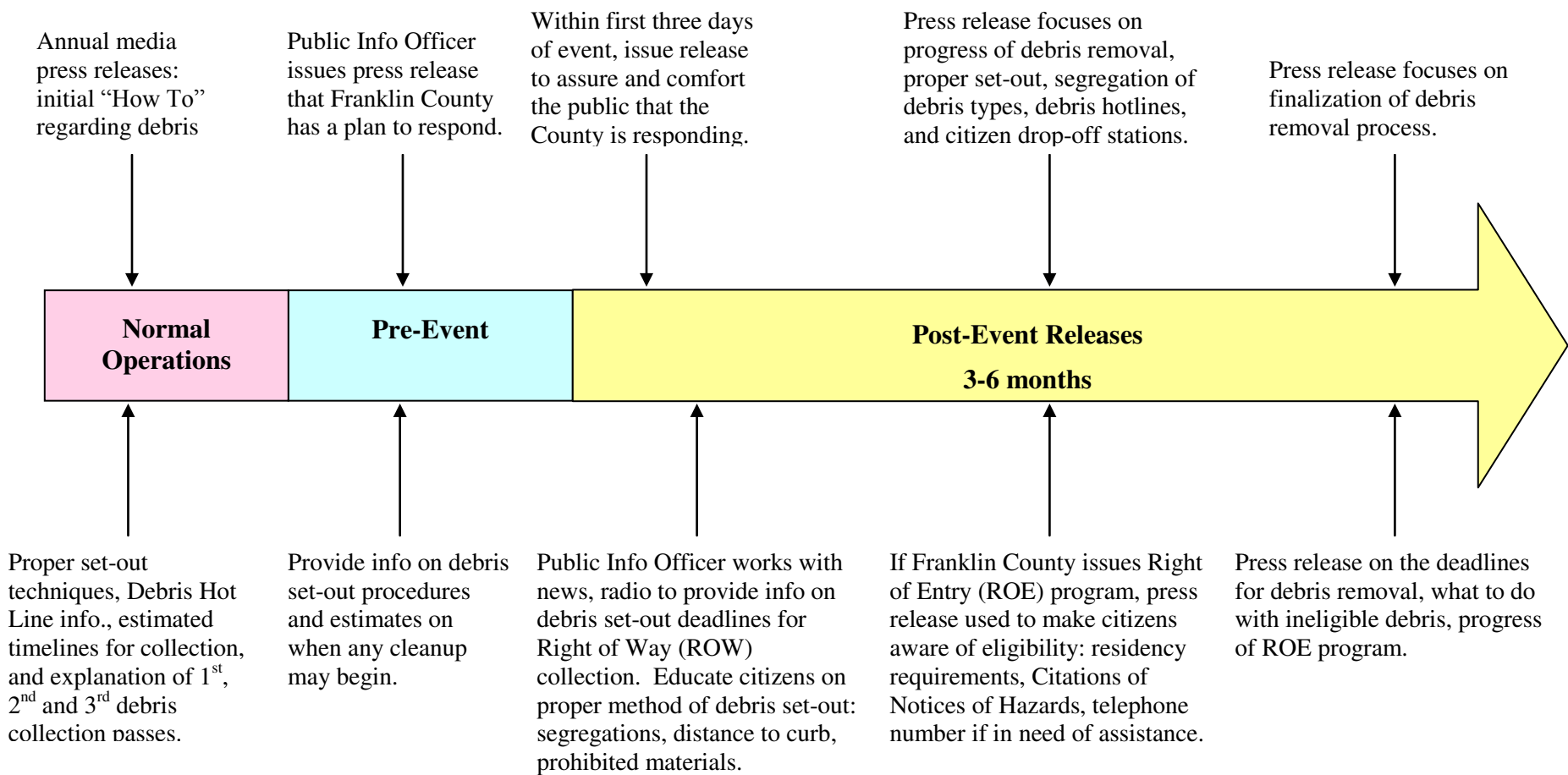
A press release from the local governments and PIO (Public Information Officer) to various media sources will be issued within the first three days following the storm. The subject matter of the press release will be to reassure and comfort the public that the County is responding and has activated contractors to begin debris removal activities.

Figure 2. Press Release Timeline (next page) contains a linear display of public information releases designed to keep the public informed of debris management efforts and accomplishments.

Recovery

For the purpose of debris management, the Recovery Phase is marked by debris removal contractor(s) collecting and reducing storm generated debris from the public right-of-way (ROW). Concurrent to the commencement of ROW debris removal operations, the County must evaluate the need for contract debris removal on private property, parks, and waterways. As noted in the Disaster Recovery Timeline (Table 1.), these specialized debris removal operations typically do not begin until roughly 60 days following the disaster event. This is because they are often governed by DSG (Disaster Specific Guidance) and requires some level of FEMA pre-validation. However, if the County determines that there is an immediate and imminent threat to public health and safety, these programs can be expedited.

Figure 2. Press Release Timeline



Recovery Phase Checklist

5 Days – 2 Weeks

- ***Open Debris Staging Sites***- begin with those closest to the most heavily impacted areas
- ***Prioritize Roads/Areas*** - Areas in the County that sustain more extensive damage may need to be subdivided into smaller work zones and recorded on the County's GIS shape files.
- ***Issue Second Press Release*** - The segregation of vegetative, C&D, HHW
- ***Begin ROW Debris Removal*** – Vegetative waste
- ***Begin ROW Debris Removal*** – C&D Waste, HHW waste
- ***Perform Parks Damage Assessment*** – Franklin County Debris Management Coordinator, in consultation with MEMA, must first determine who is responsible for the removal of safety hazards in local Parks and Recreation Areas. If responsible, the Debris Management Coordinator must identify, in coordination with the local gov't parks and recreation departments, the vegetative hazards that require removal in Parks. Current eligibility criteria include:
 - Leaning trees 24" in diameter or greater
 - Hanging limbs 2" in diameter or greater
 - Uprooted stumps 24" in diameter or greaterEligibility criteria for cutwork are extremely sensitive to the size and scale of the disaster. When surveying damages, it is extremely important for the County and its contractors to be fully cognizant of all Disaster Specific Guidance. If the scope of work required is not consistent with current scopes under contract, it is recommended that the County fully develop the park scope of work and bid it as a separate, competitive contract.
- ***Coordinate with External Agencies***

The Mass Highway Department needs to be in coordination with the municipalities of Franklin County to ensure that all County road segments are progressing with debris removal operations. Mass Highway Dept. have their own pre-positioned contracts for debris clearance during the emergency push.
- ***Initiate discussions with FEMA Debris Team***

It is critical that Franklin County Debris Management Team and its consultant clearly communicate debris removal plans and operations to the FEMA Debris Team. It fosters a coordinated effort that enhances the transparency of the operation for auditors and ensures maximum FEMA reimbursement.

□ ***Obtain FEMA guidance for private property debris removal.***

FEMA will issue Disaster Specific Guidance for debris removal on private properties and within gated communities. Eligibility will be determined on a case-by-case basis following an event. In order for FEMA to make an eligibility determination, the following events must occur:

- FEMA must determine that the damage poses a threat to the health and safety of the community at large and that the scale and cost associated with the debris removal operation exceed the County's financial ability to bear.
- The County demonstrates that it has the legal authority to enter private property and gated communities and accept the responsibility to abate all hazards, regardless of whether or not a Federal Disaster Declaration is made.
- The County attains a signed Right-of-Entry (ROE) form holding the Federal government harmless from any damages caused to private property. An example of this form can be found in *Appendix F*. The County may execute ROE forms prior to a disaster under the condition that the ROE does not reference a particular event or disaster number.

2 Weeks – 1 Month

□ ***Maintain and evaluate ROW Cleanup – Vegetative and C & D***

Information on debris collection and progress completion will be mapped and recorded on GIS shape files and provided to the REPC on a daily basis.

A completion map will be posted on the appropriate website and updated daily.

To ensure proper record keeping and reimbursement from all appropriate agencies, it is important for the County to announce the completion of first pass.

□ ***Open additional Debris Staging Sites as necessary***

- ***Open Residential Drop-off stations***
 These sites accommodate anxious residents eager to remove debris from their property. Further, the sites can be used as a drop-off area for HHW to supplement additional County facilities, if necessary. In order to avoid illegal dumping, site security and published hours of operation and closure dates are recommended.
- ***Conduct daily meetings with FEMA Debris Team to ensure strong coordination and address any operational problems.***
- ***If approved, begin debris removal from private property and gated communities.***
- ***Communicate project close-out to residents via press release.*** This should focus on clarifying ineligible debris confusion and communicating debris set-out deadline in order to minimize illegal dumping. Protocol for leaners/hangers and gated community debris removal programs, if applicable, should be communicated at this time.

1 Month – 3 Months

- ***Maintain and evaluate ROW Cleanup – Vegetative and C&D***
 Information on debris collection and progress completion will be mapped and recorded on GIS shape files by the FRCOG GIS Dept. and provided to the Debris Management Team on a daily basis. A completion map will be posted on the County’s website and updated daily. During this period, the County must announce the completion of second pass and establish a deadline for residents to set out debris on the ROW, as well as a deadline for County contractors to complete the third pass.
- ***Begin ROW Leaners/Hangers Program***
 Following the emergency push, the Debris Management Team may determine that a significant amount of threats to public health and safety remain in the form of hanging limbs and leaning trees on the ROW. These threats must be identified and verified against Disaster Specific Guidance criteria for eligibility prior to the commencement of work to ensure maximum reimbursement.

- *Initiate Haul-out of reduced debris from Debris Staging Sites to final disposal sites, as necessary.*
- *Progress to weekly meetings with the FEMA Debris Team.*

3 Months – Project Completion

- *Complete all Debris Recovery Activities* - County contractors will punch-list and remove all remaining eligible debris piles.
- *Identify ineligible debris on ROW* - Once identified the County can proceed in one of several ways:
 1. Work with County Code Enforcement to hold individual homeowners responsible for the disposal of ineligible debris.
 2. Handle the removal of ineligible debris internally with local government's resources.
 3. Task the County contractor with the removal of ineligible debris and incur the associated cost. It is recommended that this debris be direct hauled to the local Transfer Station to reduce associated handling costs.
- *Finalize the disposal of reduced debris* - Ensure that County Contractors attain proper disposal tipping fee information.
- *Closeout and Remediate Debris Staging Sites.* This will require a walk through and approval by a representative of the Mass DEP.
- *Conduct project closeout meetings with FEMA Debris Team and External Agencies.*

Section 3: Roles and Responsibilities

Lead Agencies

The absence of County government in Massachusetts has fragmented our local government's ability to address regional needs. Although here in Franklin County our local governments have created regional organizations to handle activities with obvious scales of economy, not all local governments choose to participate e.g. only 20 of Franklin County's 26 towns are members of the Regional Solid Waste District.

Therefore, it is recommended that debris management activities be handled by a "Debris Management Team" to ensure all Franklin County local governments are represented in pre-disaster preparations. The Debris Management Team should have a chairperson designated as the Debris Management Coordinator. The Debris Management Team should consist of representatives from the following:

- Franklin County Regional Emergency Planning Committee
- Massachusetts Emergency Management Agency
- Franklin County Solid Waste Management District
- Franklin Regional Council of Governments
- The Town of Greenfield

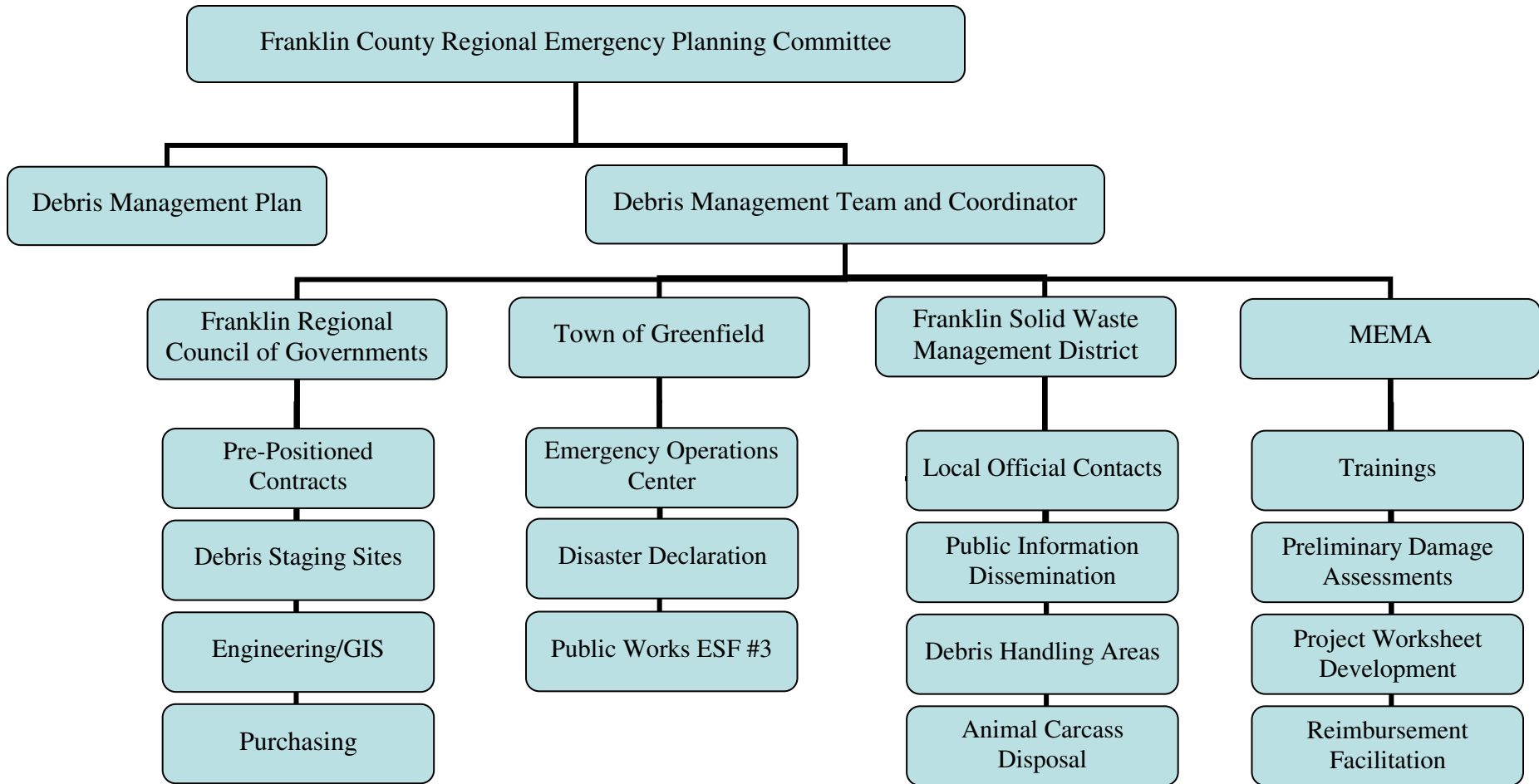
A proposed organizational chart is included in **Figure 3**. The organizational chart is intended to clarify roles and facilitate communication to more effectively respond to an emergency situation.

Franklin County Regional Emergency Planning Committee

The Franklin County Regional Emergency Planning Committee (FCREPC) regulates all emergency management preparedness, response and recovery activities in Franklin County. The FCREPC will be responsible for opening and coordinating the Emergency Operations Center (EOC), and leading any emergency response activities.

Representatives from the FRCOG, FCREPC and the Franklin County Solid Waste Management District will work in conjunction so that all debris management plans are updated. The FCREPC will designate one person as the Debris Management Coordinator and he/she will serve as the primary support function for debris clearance.

Figure 3. Organizational Chart



Franklin Regional Council of Governments (FRCOG)

The Franklin Regional Council of Governments will provide a degree of oversight and coordination for all debris removal activities. Moreover, the FRCOG's Contract and Purchasing agent will ultimately be responsible for the activities of the debris-hauling contractor and monitoring firm. In conjunction with the Franklin County Solid Waste Management District, the FRCOG purchasing and legal staff will work to ensure that the FRCOG is not exposed to possible non-reimbursement for ineligible activities in the interpretation of FEMA rules and regulations.

Franklin County Solid Waste Management District (FCSWMD)

The Franklin County Solid Waste Management District (FCSWMD) is the lead agency for the debris removal process for its member municipalities. The FCSWMD's responsibilities are to facilitate the debris removal, reduction, and disposal activities. One individual from the FCSWMD should be designated as the primary point of contact. Typically, it will be the duty of the organization's Director; however the District may choose to consider assigning an individual to serve with an appointed Debris Management Coordinator in order to assure the effective communication between District member Towns and the Emergency Operation Center. The FCSWMD's responsibilities include but are not limited to:

- Serving on the FCREPC's Debris Management Team;
- Representing the public works functions of the District's member Towns on debris management planning;
- Representing Franklin County's debris management efforts in discussions and meetings with various State and Federal agencies (i.e. FEMA, Mass DEP, and Mass Highway);
- Assist in the scheduling of training activities and educational meetings regarding debris management;
- Initiating animal carcass disposal activities;
- Participating in the activation and oversight of all private contractors including hauling and monitoring firms through the duration of a debris cleanup process;

- Providing elected officials and the public with information regarding the progress of the debris removal effort.

Massachusetts Emergency Management Agency (MEMA)

MEMA's responsibility is to coordinate the resources of the Commonwealth to avert or to combat the effects of disasters; natural or technological. MEMA carries out its mission within the federal structure of the Federal Emergency Management Agency and functions as an integral part of the federal emergency management system executing FEMA regulations and *administering federal relief funds*. The Massachusetts Comprehensive Emergency Management Plan (CEMP) was developed by MEMA who also assists in the maintenance of local government CEMPs. It organizes the Commonwealth's emergency response system and includes a statewide Disaster Debris Management Plan as an annex to the CEMP. MEMA will supply a representative to the Debris Management Team.

Inter-Department Roles and Responsibilities

Massachusetts Highway Department

Mass Highway Department's primary responsibility is the design, construction, and maintenance of the Commonwealth's state highways and bridges. In the event of disaster, it is the Mass Highway Department's responsibility to clear Franklin County's federally funded roads of debris in Phase I (first 70 hours) of an emergency. The Mass Highway Department is responsible for emergency road clearing activities immediately after a natural disaster and the "first pass" of debris removal on all State roads. Upon the completion of first pass, the local governments will be responsible for all debris removal.

Local Roads Department

The local roads department's primary responsibility is to conduct the emergency road clearing activities following a disaster event. Primary arteries (other than state roads) leading to hospitals, shelters and distribution centers will be identified and cleared as soon as possible.

Engineering/GIS

Engineering expertise will be primarily involved in the damage assessment immediately following the hurricane. The damage assessment will be used to develop preliminary FEMA Project Worksheets and debris estimates. Engineering will also be instrumental in coordinating mapping and GIS related data, as well as, overseeing river front restoration activities. The Geographic Information Systems (GIS) Department coordinates and provides maps for the debris management activities. These maps include road lists with the most updated street centerline information, parcels maps for each property in Franklin County, and is instrumental in initiating the private property vegetative debris Right-of-Entry (ROE) program. For public information purposes, GIS may also be used to map the progress of debris removal. Lastly, GIS will be instrumental in determining the location of Debris Staging Sites in Franklin County.

Municipal Attorney

In order to ensure that local governments have full legal authority to remove all hazardous or abandoned storm related material that poses a threat to public health and safety, or is a detriment to overall public morale and welfare, it is recommend that a detailed legal review of existing ordinances/bylaws, agreements, etc. is performed. The lack of preparation may result in delays in obtaining FEMA approval for private property debris removal following a disaster event. This may be a simple review rather than a complex analysis. Specific issues that need to be addressed in local ordinances and bylaws include:

- ❑ Legal authority to remove debris on private property (including debris placed alongside private roads as well as more comprehensive private property debris removal programs);
- ❑ Legal authority to condemn and demolish uninhabitable structures;
- ❑ Legal responsibility to remove abandoned vessels from navigable waterways and abandoned autos from public property.

Purchasing Department

The primary responsibility of the Purchasing Department is to work with the Debris Management Team during the RFP process for the pre-positioned contracts. It is imperative that the Debris Team and the County Purchasing Department are involved in the finalization of the “Scope of Services” so that their input and expertise be incorporated into the final RFP. To ensure that the RFP abides by all local and state requirements, the Purchasing Department should take the lead role in the development of all forms and standard language, the advertisement and notification to prospective contractors, pre-bid meetings, and contract negotiations. This department will also generate Contractor Purchase Orders (PO) as necessary throughout the cleanup and restoration process. The Purchasing Dept. will be the primary contact for the debris removal-monitoring firm with regard to invoice reconciliation and project worksheet development. Working in conjunction with the debris management and monitoring firm hired by the Debris Team, the Purchasing Department will help ensure that the County’s contractors are paid in a timely fashion and that all documentation for FEMA reimbursement is kept in order.

Public Information and Communication

The appointed Public Information and Communication Officer (PIO) will be responsible for coordinating all press releases to the public regarding the debris removal process. These activities will include the development of a proactive Integrated Communications Plan (ICP) for debris management during the non-hurricane season. The focus of the ICP will be to provide the public with information on:

- Proper debris set-out procedures;
- Progress of the debris cleanup process;
- Explanation of any FEMA disaster declarations;
- Deadlines for debris set-out and removal; and
- Locations of residential debris drop-off sites.

Local Parks and Recreation Departments

Because land that is maintained by local government's Parks and Recreation Department has historically been used as Debris Staging Sites, Parks Departments should coordinate with the Debris Management Team on a pre- and post-event basis for the selection and operation of local Debris Handling Areas. On-going communication to ensure that this land is still available will be imperative for contractors to begin the cleanup process. In addition, the Parks Department will be responsible for coordinating any debris removal activities on Park property. Local staff will need to coordinate with the Debris Team and contractors to ensure that each park is surveyed prior to debris removal or tree trimming/removal activities commence.

Code Enforcement

The Code Enforcement Division is charged with the identification and cleanup of any and all ineligible debris set out in the right-of-way (ROW). This is largely made up of debris set out in the ROW after the deadline for residential setout or contracted debris removal has ceased. Code enforcement should work closely with the Office of Public Information and Communication to inform the public of deadlines. Additionally, the Code Enforcement Division should particularly target private contractors dumping debris on the ROW. Code Enforcement staff tags these debris piles and the individuals responsible for the "illegal dumping" are notified of their violation.

Massachusetts Department of Environmental Protection

Massachusetts Department of Environmental Protection (Mass DEP) must approve the Debris Staging Site selections. They also must approve any Debris Management Plan and have developed a checklist of tasks need for approval. During the site selection process, the Debris Management Team should notify and work with the Mass DEP in order to get pre-approval for the use of these sites in the event of a disaster event. The Debris Management Coordinator should be in regular communication with the Mass DEP staff and they should be provided with all necessary documentation regarding the Debris Staging Site operations.

Federal Emergency Management Agency (FEMA)

Representatives from FEMA will be onsite during the response and recovery phases of the debris management cycle. FEMA staff will provide guidance to the Debris Management Team with regards to debris eligibility and the FEMA reimbursement process. FEMA's primary role will be in the development of project worksheets for the County's debris cleanup operations; a key function of the reimbursement process. In addition, staff will be onsite to oversee any ROE private property cleanup, should this be necessary for Franklin County.

Section 4: OVERVIEW OF RULES AND REGULATIONS

The documents described in this section provide the legal authority for local governments to engage in debris cleanup operations and seek reimbursement from the Federal Government. The County should review each of these documents on an annual basis not only to re-familiarize themselves with the governing statutes, but to also identify any changes to the regulations and guidelines. This section also contains information specific to local disaster declarations and the reimbursement process critical to local governments.

Gubernatorial State of Emergency

What is a Gubernatorial State of Emergency?

The Governor of the Commonwealth of Massachusetts is authorized under state law to declare a Gubernatorial State of Emergency upon the occurrence of a natural or man-made disaster. The law gives the Governor broad authorities to implement emergency measures to ensure the safety and health of the residents of the Commonwealth, take appropriate steps to mobilize state assets, and conduct other emergency business for the protection of the Commonwealth. A Gubernatorial State of Emergency (SOE) is initiated when it becomes necessary for the Governor to assume command (direction and control) for the efficient utilization of the total resources of the Commonwealth, in order to mitigate the effects on people and property of a large-scale threat, emergency or disaster.

There is a misconception that various restrictions or bans automatically are triggered when there is a Gubernatorial State of Emergency in place. This is not so. The declaration of a State of Emergency does not in itself affect the operation of private enterprise. Travel is not automatically banned; businesses and schools are not automatically closed. Many businesses do have contractual agreements with their employees regarding whom does/does not have to report to work when a Gubernatorial State of Emergency is issued. Following the January 22-23, 2005 Blizzard, some businesses revisited their policies which were probably instigated by memories of the Blizzard of '78. The January 2005 Snowstorm presented some unique dilemmas for employers and employees, alike. There were no travel restrictions; also, the SOE was in place for the entire Commonwealth from January 22nd through 26th, in large regard, due to the major snow removal issues on the South Shore and Cape Cod.

A SOE may be accompanied by a request by the Governor to stay off the roads, to release employees early, or to stagger arrival at work, in order to promote Public Safety. Such actions, however, are usually in the form of a request, not an order. In extreme circumstances, the Governor, as part of his SOE, may order roads be closed to all but emergency traffic, restricting normal travel, such as occurred during and immediately following the Blizzard of '78.

The Governor is authorized to exercise certain powers when a SOE is declared, including the power to exercise any and all authority over persons and property necessary for meeting the State of Emergency, including the taking and using of property for the protection of the Commonwealth. Actions such as ordering evacuations, restricting access, implementing curfews, driving bans or restrictions, etc. can be stated in the declaration to protect health and welfare if determined to be warranted.

The SOE may cover a specific municipality (a tornado), multiple communities or counties (a coastal storm), or the entire Commonwealth (a major blizzard). The governor is also authorized to issue Executive Orders to meet the needs of a threat, emergency or disaster. These Orders have the force of law and supersede existing law if there is any conflict between a law and the Executive Order.

The Governor looks to the Massachusetts Emergency Management Agency (MEMA) Director and her/his staff for recommendations concerning all matters related to carrying out the operational aspects of the Commonwealth's Emergency Management Program. Specifically, in case of any and all disasters, it is as a result of the recommendation from the MEMA Director that the Governor would declare a Gubernatorial SOE. The Governor may, on a recommendation by the Director, authorize assistance from various appropriate State Agencies, and request Federal Agency support allowable under existing Federal statutory authority, to tender assistance. MEMA drafts the appropriate documentation for a Gubernatorial SOE and requests for Presidential Assistance when needed.

A Gubernatorial SOE does not mean that the state will provide financial assistance to cities and towns affected by the disaster. There is no Disaster Fund available to the Governor or the MEMA Director. State financial assistance may be made available by a vote of the Legislature following the declaration of a Gubernatorial SOE, because of the disaster. It is important to note that there are many instances when a Gubernatorial SOE is declared, however there is not a need for financial support to carry out emergency actions. Operational and financial recovery assistance may become available from the Federal Government following a disaster. It is predicated upon a Presidential Declaration of Emergency or Disaster, as we saw following the January 22-23, 2005 Blizzard, and requires the Governor's activation of the Massachusetts Comprehensive Emergency Management (CEM) Plan, with written justification that the Commonwealth and its political subdivisions have inadequate resources to cope with anticipated or existing consequences of the emergency or disaster.

The Governor is authorized with these broad emergency powers through a number of sources including the Massachusetts Constitution, which vests supreme executive power in the Governor, and Chapter 639 of the Massachusetts General Laws, which spells out the Commonwealth's preparation for and response to emergencies and disasters.

This article was originally printed in City and Town, a publication of the Massachusetts's Department of Revenue's Division of Local Services.

Federal Emergency Management Agency Guidelines

Under the current Federal system the Federal Emergency Management Agency (FEMA) coordinates the response and recovery efforts for all Presidential declared disasters. FEMA provides guidance documents for local governments to be used as a guide for disaster planning and response. Three guidance documents that are generally associated with debris recovery have been summarized below.

- **FEMA Publication 322 – Public Assistance Guide**

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

- **FEMA Publication 323 – Applicant Handbook**

The Applicant Handbook (Handbook) is the official “how to” for local governments who are considering applying for reimbursement following a disaster through the PA Program. This Handbook should be used in conjunction with this Debris Management Action Plan immediately following a hurricane. The Handbook provides the rules, procedures, and sample documents that local governments need as the “applicant” to FEMA. The publication is formatted so that the applicant has a step-by-step guide for each phase of the reimbursement process including what information is critical to ensure reimbursement.

- **FEMA Publication 325 – Debris Management Guide**

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

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

Other Relevant Documents

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

- **Robert T. Stafford Disaster Relief and Emergency Assistance Act**

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

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

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

The Code of Federal Regulations – Title 44 Emergency Management and Assistance (44 CFR) provide procedural requirements for the PA Program operations. These regulations are designed to implement a statute based upon FEMA’s interpretation of the Stafford Act. They govern the PA Program and outline program procedures, eligibility, and funding.

Disaster-Specific Guidance

A Disaster Specific Guidance (DSG) is a policy statement issued in response to a specific post-event situation or need in a State or Region. Each DSG is issued a number and is generally referred to along with their numerical identification. These guidance documents typically relate to the authorization of private property cleanup, cleanup and payment of stump removal, or notification of large projects. Staff should be aware of any new DSG that are issued by FEMA following an event.

Localized Disasters and State Funding Opportunities

There are many examples of localized events that go beyond a local government's resources and yet do not meet the thresholds to qualify for funding. Recent examples in Franklin County include the 2006 microburst in the Town of Wendell and the 2007 ice storm in the Town of Heath. However, if disaster declaration thresholds are not met, local governments may seek state assistance through their state legislators in hopes of securing state reimbursement for public damages. MEMA has in the past administered State assistance approved by State Legislators (no FEMA involvement); no dollar threshold is set for this type of state assistance. At the request of the legislators, MEMA will collect a cost estimate from an affected community. The amount referenced in the legislation is based on the total cost estimate amount. Should the legislation be approved, MEMA will advise the communities of the available state funding and will conduct an applicants briefing explaining the reimbursement process. Essentially, MEMA mimics the FEMA Public Assistance Program for determining eligibility associated with their damages. Because the legislation is approved for a finite dollar amount, each community is reserved the cost estimate amount they originally reported. All expenses are certified and reimbursed by MEMA. Should a community or communities inform MEMA they spent more than their original reported cost estimate, MEMA will reimburse them their cost estimate amount and hold all overrun amounts until all projects for all communities are complete and if there is a balance remaining in the appropriation they may reimburse them for their cost overruns at that time.

Appendix A

(PLACE ON CITY OR TOWN LETTERHEAD)

EMERGENCY DECLARATION

WHEREAS, a sudden, generally unexpected occurrence of circumstances demanding public action has arisen within the **CITY/TOWN**; and

WHEREAS, The **TITLE** of the **CITY/TOWN**, Massachusetts, upon advice from the Director of the community Department of Emergency Management, or their designees, have determined that the incident poses a present, reasonable and imminent danger to public health, safety, or general welfare of the people of **CITY/TOWN** or their property so that it has become necessary for the Director to utilize and coordinate the services, equipment, supplies, and facilities of existing departments, offices, and agencies or the community for the purposes of emergency management and emergency functions; and

WHEREAS, the Governor of the Commonwealth of Massachusetts has determined that the immediate public action is needed to prevent, minimize, or mitigate damage to public health, safety, or general welfare of the people of **CITY/TOWN** or the property which may otherwise result from the above described incident and that taking the time required to comply with the various state and local procurement laws would endanger the health or safety of the people or their property; and procurement laws would endanger the health and safety of the people and their property; and

WHEREAS, the Governor of the Commonwealth of Massachusetts has recommended that a State of Emergency be declared in the community of **CITY/TOWN**, and

WHEREAS, the people of the community of **CITY/TOWN** should be able to depend upon guidance from their Chief Municipal Official,

NOW THEREFORE, I, **NAME CHIEF MUNICIPAL OFFICIAL**, **TITLE** of the community of **CITY/TOWN**, Massachusetts, hereby declare that as of **TIME, DAY, YEAR** a State of Emergency exists in the community of **CITY/TOWN**. This Declaration of Emergency shall remain in effect until notice is given, pursuant to my judgment, that the State of Emergency no longer exists.

Date: _____

TITLE of CITY/TOWN

Appendix B SAMPLE Time and Materials Contract

Franklin Regional Council of Governments

ARTICLE 1:

Agreement between Parties

This contract is entered into on this _____ day of _____ 20____, by and between the town/city/county of _____, hereinafter called the ENTITY and, _____ hereinafter called the CONTRACTOR.

ARTICLE 2:

Scope of Work

This contract is issued pursuant to the Solicitation and Procurement on, _____ 20____, for the removal of debris caused by the sudden natural or manmade disaster of _____, 20____. It is the intent of this contract to provide equipment and manpower to remove all hazards to life and property in the affected communities. Clean up, demolition, and removal will be limited to: 1) that which is determined to be in the interest of public safety and; 2) that which is considered essential to the economic recovery of the affected area.

ARTICLE 3:

Schedule of Work

Time is of the essence for this debris removal contract. Notice to proceed with the Work. The Work under this contract will commence on _____, 20____. The equipment shall be used for (recommended not to exceed 70) _____ hours, unless the ENTITY initiates additions or deletions by written change order. Based upon unit prices of equipment and labor, no minimum or maximum number of hours is guaranteed.

ARTICLE 4:

Prevailing Wages

Prevailing Wage Rates, required by MGL, Chapter 149, Sections 26 – 27, as set by the Massachusetts Department of Labor and Workforce Development, Division of Occupational Safety, apply to this contract, and should be attached. If this contract has been made before the prevailing wage rates have been received, that does not negate the required payment of wage rates. The only way the Prevailing Wage Rates will not be required to be paid for this contract, is if the Governor or the President declare the Prevailing wages unnecessary.

ARTICLE 5:

Contract Price

The hourly rates for performing the work stipulated in the contract documents, which have been transposed from FEMA's Schedule of Equipment and Labor Rates, shall apply.

Equipment/Machine/Operator *Manufacturer, Model*

Mobilization/Hourly Rate *Total unit rate shall be given which includes maintenance, fuel, overhead, profit, and other associated costs with the equipment. Estimated Cost per unit of material: labor man-hours, protective clothing, fringe benefits, hand tools, supervision, transportation, and any other costs.*

Demobilization Cost *Only actual invoice amounts will be paid*

ARTICLE 6:

Payment

The ENTITY shall pay the Contractor for mobilization and demobilization if the Notice to Proceed is used and will pay for only the Time that the equipment and manpower is actually being used in accomplishing the work. The Contractor shall submit certified pay requests for completed work. The Entity shall have 10 calendar days to approve or disapprove the pay request. The Entity shall pay the Contractor for his/her performance under the contract within 30 days of approval of the pay estimate. On contracts over 30 days in duration, the Entity shall pay the Contractor a pro-rata percentage of the contract amount on a monthly basis, based on the amount of work completed and approved in that month. Payments shall be subject to a retainer of _____ % on each payment. Retainer shall be released upon substantial completion of the work. Funding for this contract is

authorized pursuant to General Laws of the State of Massachusetts and Local Statutes or ordinances.

**ARTICLE 7:
Change Orders**

If the scope of work is changed by the Entity, the change in price and contract time will be promptly negotiated by the parties, prior to commencement of work.

**ARTICLE 8:
Contractor's Obligations**

The Contractor shall supervise and direct the Work, using skillful labor and proper equipment for all tasks. Safety of the Contractor's personnel and equipment is the responsibility of the Contractor. Additionally, the Contractor shall pay for all materials, equipment, personnel, taxes, insurance, and fees necessary to perform under the terms of the contract. Any unusual, concealed, or changed conditions are to be immediately reported to the Entity. The Contractor shall be responsible for the protection of existing utilities, sidewalks, roads, building, and other permanent fixtures. Any unnecessary damage will be repaired at the Contractor's expense. The Contractor shall comply with applicable laws, by-laws and codes of the local, state, and federal government.

**ARTICLE 9:
Entity's Obligations**

The Entity's representative(s) shall furnish all information, documents, and utility locations, necessary for commencement of Work. Costs of construction permits, disposal sites, and authority approvals will be borne by the Entity. A representative will be designated by the Entity for inspecting the work and answering on-site questions. This representative shall receive the Contractor's daily inspection reports including work accomplished and certification of hours worked. The Entity shall designate the public and private property areas where the disaster mitigation work is to be performed. Copies of complete "Right of Entry" forms, where they are required by the State and local law for private property, shall be furnished to the Contractor by the Entity. The Entity shall hold harmless and indemnify the Contractor and his employees against any liability for any and all claims, suits, judgments, and awards alleged to have been caused by services rendered under this contract for disaster relief work unless such claims are caused by the gross negligence of the Contractor, his subcontractors or his employees. The Entity will terminate this contract for failure to perform as specified or for default by the Contractor.

**ARTICLE 10:
Claims**

If the Contractor wishes to make a claim for additional compensation, for work or materials not clearly covered in the contract, or not ordered by the Entity as a modification to the contract, he/she shall notify the Entity in writing. The Contractor and the Entity will negotiate the amount of adjustment promptly; however, if no agreement is

reached, a binding settlement will be determined by a third party acceptable to both Entity and Contractor under the sections of applicable Massachusetts General Laws.

ARTICLE 11:

Insurance and Bonds

The contractor shall furnish proof of Worker's Compensation Coverage, Automobile Liability Coverage, and Comprehensive General Liability Insurance (Premises-Operations, Personal injury, etc. as deemed necessary by the Entity). Surety: The Contractor shall deliver to the Entity fully executed Performance and Payment Bonds in the amount which is required by the specifications, or general or special conditions of the contract. The Contractor will pay for the cost of the Bonds.

ARTICLE 12:

Non-Discrimination

The Contractor shall not discriminate against any person because of race, age, handicap, sex, religious creed, color, national origin, ancestry, or sexual orientation.

ARTICLE 13:

Conflict of Interests

Each party shall adhere to the provisions of Massachusetts General Laws, Chapter 268A, with respect to the Conduct of Public Employees. In addition, no member, officer, or employee of either party, or its designees, or agents, no member of the governing body of the locality in which the program is situated, and no other public official of such locality or localities who exercises any functions or responsibilities with respect to the program during his tenure or for one (1) year thereafter (or such longer period as may be provided in Chapter 268A of the Massachusetts General Laws), shall have any interest in any contract or subcontract, or the proceeds thereof, for work to be performed in connection with the program assisted under this Agreement. Each party shall incorporate, or cause to be incorporated, in all such contracts or subcontracts a provision prohibiting such interest, pursuant to the purposes of this subsection.

ARTICLE 14:

Notices

Any and all notices or other communications required or permitted by this Contract or by law to be served or given to either the Entity or the Contractor by the other party shall be in writing and shall be deemed duly served and given when personally delivered to the party to whom it is directed, or in lieu of such personal services when sent by U.S. mail, first-class, postage prepaid, addressed to the (*Entity Name and Address*) or the Contractor at (CLEARLY STATE FULL NAME AND ADDRESS):

**ARTICLE 15:
Contractor Qualifications**

The Contractor must be duly licensed in the State of Massachusetts.

**ARTICLE 16:
Entire Understanding**

This Contract, together with all documents included by reference of this contract, represents the entire understanding of the parties, and neither party is relying upon any representation not contained herein.

THIS CONTRACT IS DULY SIGNED BY ALL PARTIES HERETO:

Contractor Name

President /Authorized Signature

Contractor Address

Printed Name & Title of Above

Contractor Address

Telephone Number

Fax Number

Date of Contractor Signature

Entity (City, County, Town, Etc)

Mayor or Chair of the Selectboard

Selectboard Member

Selectboard Member

Date of Mayor/Selectboard Signatures

Entity Accountant Signature

Date of Accountant Signature

Appendix C Sample Press Releases

For Immediate Release Franklin County, Massachusetts

Franklin County will begin clearing storm-generated debris as soon as weather permits for safe conditions. The debris removal process will have 3 initial stages. Stage one will be an Emergency Road Clearance. Access roads to Hospitals, Police and Fire Stations, as well as critical Government Buildings will be cleared first, followed by all major arteries within the County. This process will be completed within approximately 70 daylight hours. The next phase of debris removal will be all Right-of-Way Vegetation pick up. Franklin County residents should make every effort to separate clean, woody debris from construction and demolition debris. Please put as much organic, burnable debris at your Right-of-Way as possible. Please do not mix household garbage, tires, or roof singles with the vegetative debris. The 3rd stage will be Construction and Demolition Debris removal. Any shingles, siding, and treated wood will be removed during this phase. In order for the Construction and Demolition debris to be picked up, it must be a direct result of the Hurricane. All reconstruction debris is the responsibility of the homeowner. Please do not mix hazardous material, such as paint cans, aerosol sprays, batteries, or appliances with the C&D Debris. Those items must be dropped off at the _____ Debris Handling Area at the Transfer Station on _____ during normal business hours. If you have any questions or concerns regarding debris removal in your neighborhood, or the location of residential disposal area, please call _____.

For Immediate Release Franklin County, Massachusetts –

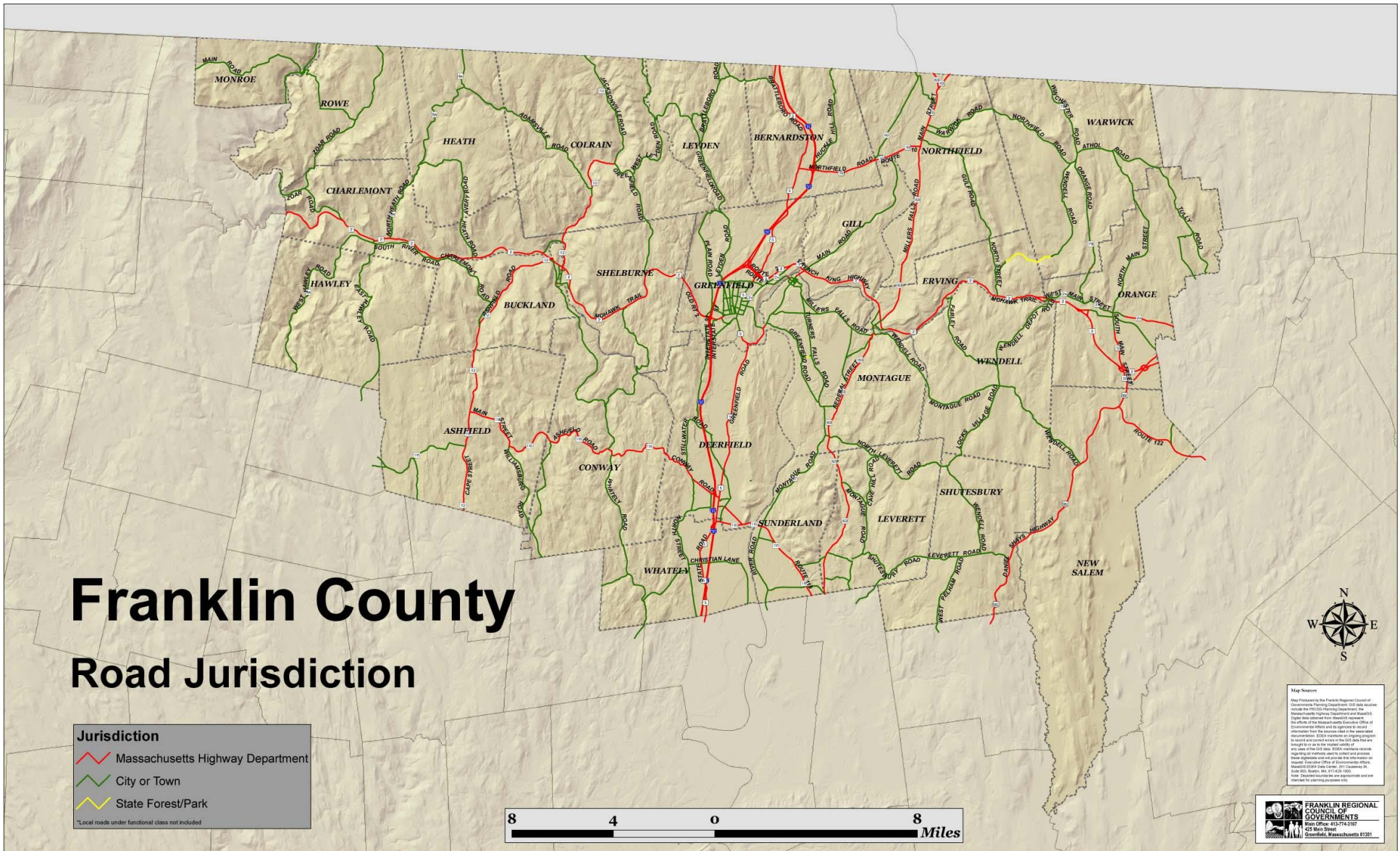
Final preparations are being made for the third, and potentially final, pass of debris removal in the wake of Hurricane _____. Franklin County residents should have any storm generated debris in front of their homes on the public Right-Of-Way no later than _____ in order to be eligible for pick up. Debris removal crews will only be making one pass on each street, so it is crucial for that you have debris you want removed out on the right of way by the afore mentioned dead line. Please continue to separate Vegetative Debris (woody burnable debris such as limbs and shrubbery) and Construction & Demolition Debris (siding, drywall, etc.). Any storm-damaged appliances may such as refrigerators and air conditioning units may also be put on the Right-of-Way separate from other debris. You may continue to deposit hazardous household chemicals such as paint cans and batteries at the _____ Debris Handling Area/Transfer Station at _____ during normal business hours. You can follow the debris removal efforts in your neighborhood and the rest of Franklin County by going to the Franklin County Solid Waste Management District's web site, or by calling _____. As Franklin County and the rest of Western Massachusetts begins to rebuilt and recover from this latest disaster, rest assured that the State and local Governments are working hard to restore your normal way of life. Storm generated debris removal efforts might have already begun in your neighborhood. If they haven't, they will shortly. To help those efforts, you can place any organic debris, such as

branches, limbs, or shrubbery, at the edge of your property, between the sidewalk, on the tree belt, and debris removal crews will pick it up as quickly as possible. At this time, the County will only be picking up vegetative debris. Pay attention to your local newspaper, radio stations and the FCSWMD's Web Site for information regarding construction and demolition debris removal. Should you have any questions or concerns regarding the debris removal efforts in your community, please call _____. The recovery process is a long one, but with your help and patients, we will get through it.

For Immediate Release Franklin County, Massachusetts

Final preparations are being made for the third, and potentially final, pass of debris removal in the wake of Hurricane _____. Franklin County residents should have any storm-generated debris in front of their homes on the public Right-Of-Way no later than _____ in order to be eligible for pick up. Debris removal crews will only be making one pass on each street, so it is crucial for that you have debris you want removed out on the right of way by the afore mentioned dead line. Please continue to separate Vegetative Debris (woody burnable debris such as limbs and shrubbery) and Construction & Demolition Debris (siding, drywall, etc.). Any storm-damaged appliances may such as refrigerators and air conditioning units may also be put on the Right-of-Way separate from other debris. You may continue to deposit hazardous household chemicals such as paint cans and batteries at the _____ during normal business hours. You can follow the debris removal efforts in your neighborhood and the rest of Franklin County by going to the FCSWMD's web site, or by calling _____.

Appendix D Mass Highway List of Federal and State Roads



Appendix E Sample Right of Entry Form
Right of Entry

Contractor Name: _____

Address: _____

Tel. Number: _____

RIGHT OF ENTRY – WITHOUT PREJUDICE

Owner(s) of Record: *Property owners name* _____

Address: *(address of property)* _____

Permission is hereby given to the above contractor to enter upon my property to make drainage repairs and improvement as discussed on such and such date and other details that might be pertinent

This entry to be made without prejudice to my rights in settlement of claims for damages that may hereafter appear.

Granted by:

Owner(s) or Authorized Representative

Date

Contractor Signature – Title

Date

Printed Name & Title Above

Appendix F Best Management Practices

Source separation of the debris stream will result in the highest and best use of disaster debris. Failure to separate debris into general categories will result in a mixed waste stream that may make it impossible to separate materials for recycling and reuse. Generally speaking, there are only two options for large amounts of mixed disaster debris: landfilling and incineration (including air curtain incineration). Both these options should be last resort. Air curtain incineration, because of its potential to negatively impact air quality, and landfilling where potentially large amounts of debris can quickly eat up valuable landfill space. FEMA has created some financial incentive by creating a pilot program where a jurisdiction can keep any revenues from the sale of recycled or reused materials generated in a federally declared disaster event.

What can municipalities do to ensure that disaster debris is beneficially used? The following planning activities can help accomplish this:

- Create pre-disaster press releases that inform the public about separating debris in the event of a disaster. At a minimum debris should be separated into the following categories (of course the type and intensity of the disaster event will dictate some of the details): C&D debris/furniture, yard waste and tree debris, household hazardous waste, appliances/white goods/other metals, and electronics.
- Have pamphlets and booklets ready about what potentially should be done with waste generated in disasters.
- Coordinate with the local emergency planning committees and the person assigned as the public information officer about the importance of separating disaster debris by types. Create a timeline in the local debris plan that consistently reinforces the public's concept of separating materials for recycling and reuse.
- Lastly, contact state officials and non-profits that work on waste management issues. Mass DEP, and numerous non-profits that receive government funding, have created market directories and market surveys. These tools identify end-use markets that may be able to accept separated or processed debris generated in a disaster.

Lastly, state governments and local municipalities can include language into pre-positioned contracts that require contractors to beneficially reuse materials. The nature of a disaster means that local governments have turned to the private sector for help because their own resources have been exhausted. Pre-positioned contracts should include the following clauses to ensure the contractors address recycling and reuse:

- *Contractors are required to maximize recycling and beneficial use of debris.*
- *Only debris waste stream accepted for landfilling is putrescible waste & residue from debris reduction/recycling operations.*
- *County holds right to approve or deny final disposal methods and disposal sites utilized by debris contractors.*
- *To the maximum extent possible, contractors use recycled wood chips from vegetative debris for agricultural purposes.*

Inadequately identifying and securing markets in a pre-disaster plan is the largest impediment to beneficial use of disaster debris. The following table identifies the available, on-line databases of potential markets for the beneficial use of disaster-generated debris.

VENDOR LISTINGS

This table provides web links to listings of various types of vendors: Brokers, Collectors, End Users, Material Recycling Facilities, Processors, and Recyclers. To use this table, look in the left hand column for the type of material you are interested in and then for your state. The list begins with "Multiple Materials" and then lists specific materials in alphabetical order. The stars (★) used in the right section of the table indicate whether the listing is a broker, collector, recycler, etc. Contact information is also provided.

Definitions

<p>Brokers are individuals, organizations, or companies who act as agents in the marketing of recyclables, for a fee or commission. Brokers negotiate a price for the materials and set up transportation to a buyer. They are not processors.</p>

<p>Collectors are businesses that collect recyclables but may or may not process the materials.</p>
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<p>End Users, Manufacturers, and Suppliers of various materials. These listings include companies that use recyclables as raw materials (feedstock) to make new products, or supply a raw recycled material.</p>

<p>Material Recycling Facilities (MRF) (pronounced "MURF") are processing facilities where recyclables (typically paper, glass, metal, and plastics) are sorted and baled before being marketed to industries which use recycled materials.</p>
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<p>Recyclers are loosely defined as collectors, handlers, or processors of various materials.</p>
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"Market Resources for Recycling Industries." Northeast Recycling Council, Inc. January 2008. www.nerc.org info@nerc.org

Vendor Listings								
Material Type	Geographic Area Served	Website & Contact Info	Broker	Collector	Processor	End-User	Recyclers	MRFs
Multiple Materials	DE	Delaware Reuse Guide Delaware Economic Development Office 302-739-4271					★	
Multiple Materials	ME	Waste Management Services Directory Maine State Planning Office 207- 287-3261, 800-662-4545	★	★	★		★	
Multiple Materials	MA	Recycling Services Directory for Massachusetts WasteCap of Massachusetts 781-679-2176				★	★	★
Multiple Materials	NH	Brokers of Recyclables Serving NH NH Dept. of Environmental Services 603-271-2900	★					
Multiple Materials	NJ	Buy Recycled Products Information Site NJ Dept. of Environmental Protection 609-633-1418				★		
Multiple Materials	NY/Region	New York Recycling Markets Database NY Empire State Development 518-292-5340	★	★	★	★	★	★
Multiple Materials	PA	Material Recovery Facilities in Pennsylvania PA Dept. of Environmental Protection 717-787-7382					★	★
Multiple Materials	PA	Pennsylvania Recycled Products Manufacturers PA Dept. of Environmental Protection 800-346-4242				★		
Multiple Materials	PA	Recycling Markets Search PA Dept. of Environmental Protection 800-346-4242	★		★	★	★	★
Multiple Materials	PA	Unique Recyclables Facility List PA Dept. of Environmental Protection 717-787-0115					★	
Multiple Materials	USA	Earth 911 Business Resources Enter your zip code, then select “Business Resources” from the navigation bar on the resulting page					★	

Vendor Listings								
Material Type	Geographic Area Served	Website & Contact Info	Broker	Collector	Processor	End-User	Recyclers	MRFs
Multiple Materials	USA	Comprehensive Procurement Guidelines Supplier Database Comprehensive Procurement Guideline (CPG) 800-424-9346				★		
Multiple Materials	USA	North Carolina Recycling Markets Directory NC Dept. Environment and Natural Resources 800-763-0136					★	
Multiple Materials	USA	Recycled-Content Product Directory California Integrated Waste Management Board (CIWMB) 916-341-6000				★		
Multiple Materials	USA	Recycling Markets Directory Mid-Atlantic Consortium of Recycling and Economic Development Officials (MACREDO) 215-843-7364	★		★	★	★	★
Antifreeze	NH	Antifreeze Recycling Equipment Vendors NH Dept. of Environmental Services 603-271-3503					★	
Batteries	NH	Automotive Battery Recycling Companies NH Dept of Environmental Services 603-271-2900					★	
Batteries	NH	Dry Cell Battery Collection Services and Recycling Facilities NH Dept of Environmental Services 603-271-2900	★	★			★	
Construction & Demolition Debris	CT	Construction & Demolition Material Processing Facilities CT Dept. of Environmental Protection 860-424-3365					★	
Construction & Demolition Debris	NH	Companies that Resell or Reuse Construction & Demolition Materials NH Dept. of Environmental Services 603-271-2928				★		
Construction & Demolition Debris	NH	Construction and Demolition Debris Processors Servicing New Hampshire NH Dept. of Environmental Services 603-271-2928			★			

Vendor Listings								
Material Type	Geographic Area Served	Website & Contact Info	Broker	Collector	Processor	End-User	Recyclers	MRFs
Construction & Demolition Debris	VT	Vermont Construction Site Reuse & Recycling Database VT Agency of Natural Resources 802-241-3888					★	
Construction & Demolition Debris	USA	Construction Waste Management Database National Institute of Building Sciences (NIBS) 202-289-7800		★	★			
Construction & Demolition Debris	USA	National Wood Recycling Directory American Forest and Paper Association (AF&PA) 800-878-8878					★	
Electronics	NH	Vendors for Computer Recycling NH Dept. of Environmental Services 603-271-2925					★	
Electronics	NY	Dismantlers and Recyclers of Used Electronics NYS Dept. of Environmental Conservation 518-402-8633					★	
Electronics	PA	Computer Recyclers and Reusers in Pennsylvania PA Dept. of Environmental Protection 800-346-4242					★	
Electronics	VT	Where to Reuse and Recycle your Old Computers VT Agency of Natural Resources 802-241-3888					★	
Electronics	USA	EIA Environment Consumer Education Initiative Electronic Industries Alliance (EIA) 703-907-7500					★	
Electronics	USA	International Association of Electronic Recyclers (IAER) International Association of Electronic Recyclers (IAER) 888-989-IAER (4237)					★	
Glass	CT	Glass Recycling Markets CT Dept. of Environmental Protection 860-424-3365					★	
Mercury Products	CT	Fluorescent Lamp Recycling Facilities and Lamp Brokers CT Dept. of Environmental Protection 860-424-3242					★	

Vendor Listings								
Material Type	Geographic Area Served	Website & Contact Info	Broker	Collector	Processor	End-User	Recyclers	MRFs
Mercury Products	NH	<u>Fluorescent Lamp and Ballast Recycling Facilities</u> NH Dept. of Environmental Services 603-271-2900					★	
Mercury Products	USA	<u>Recycling Companies List</u> <u>National Electrical Manufacturers Association (NEMA)</u> 703-841-3200					★	
Metal	USA	<u>Steel Recycling Database</u> <u>Steel Recycling Institute</u> 1-800-YES-1-CAN (937-1226)					★	
Organics	CT	<u>Brush and Stump Grinding Facilities and Services</u> CT Dept. of Environmental Protection 860-424-3365			★		★	
Organics	MA	<u>Permitted Food Residual Composting Facilities in Massachusetts</u> <u>MA Dept. of Environmental Protection</u> 617-292-5500					★	
Organics	USA	<u>FindAComposter.com</u> BioCycle magazine			★			
Paper	CT	<u>Connecticut Waste Paper Processors</u> CT Dept. of Environmental Protection 860-424-3365			★			
Plastic	PA	<u>Glass and Plastic Processors Serving Pennsylvania</u> PA Dept. of Environmental Protection 717-787-7382			★			
Plastics	USA	<u>Materials Buyers and Sellers List</u> <u>Association of Postconsumer Plastic Recyclers</u> 202-316-3046				★		
Plastics	USA	<u>EPS Packaging Suppliers</u> <u>Alliance of Foam Packaging Recyclers</u> 410-451-8340				★		
Plastics	USA	<u>Post-Consumer Pet Plastic Reclaimers</u> <u>The National Association for PET Container Resources (NAPCOR)</u> 707-996-4207				★		

Vendor Listings								
Material Type	Geographic Area Served	Website & Contact Info	Broker	Collector	Processor	End-User	Recyclers	MRFs
Plastics	USA	Recycled Plastic Markets Database American Chemistry Council Plastics Division 518-432-7835				★		
Propane Tanks	CT	Recycling Propane Grill Tanks CT Dept. of Environmental Protection 860-424-3365					★	
Propane Tanks	NH	Recycling 20 Pound Propane Tanks NH Dept. of Environmental Services 603-271-2900					★	
Used Oil	NH	New Hampshire Used Oil Marketers NH Dept. of Environmental Services 603-271-3503		★				
Used Oil	PA	Find the Used Oil Collection Site Nearest You PA Dept. of Environmental Protection 800-346-4242		★				

Appendix G Debris Staging Sites

Under contract with the Franklin Regional Council of Governments (FRCOG), *Tighe and Bond* engineers chose seven sites in Franklin County to assess as possible debris staging sites (DSS) to be utilized in the event of a large debris-generating emergency:

- Greenfield (two sites) – Murphy Park and the town landfill and transfer station
- Orange (two sites) – Town landfill and transfer station and town airport
- Whately – Town transfer station/DPW/Police Station property
- Montague – Town landfill and transfer station
- Colrain – Town landfill and transfer station

The Deerfield landfill and transfer station was also assessed, based on information obtained from a Tighe & Bond employee familiar with the location. Two lists of screening criteria used to assess the sites and a summary of each site visit are included below.

Screening Criteria

Sites in Franklin County were initially screened using geographic information system (GIS) maps created by FRCOG for this project. Due to limited GIS data layers all screening criteria (i.e assessors layers) were not able to be plotted. The following screening criteria were used with the available data to identify sites on the maps that may be suitable for disaster debris management. Sites were excluded if they fell within:

- One-quarter mile buffer around special needs facilities, such as schools, daycare facilities, hospitals and nursing homes
- A defined Zone II area
- A 250 foot buffer around a public groundwater supply
- A 500 foot buffer around a surface water public water supply
- A 100 foot buffer around mapped wetlands
- An Interim Wellhead Protection Area, or
- A 100 foot buffer around lakes, ponds, or surface water

After initial screening based on the above criteria, Tighe & Bond selected seven potential sites in different areas of Franklin County. These sites were not eliminated as a result of the initial screening and had potential for use as DDSs. On October 31st and November 13th, 2008, Tighe & Bond visited the sites using additional screening criteria to determine site suitability. A summary of the additional screening criteria and the visits are included below.

Additional Screening Criteria

The following additional screening criteria were used during the site visits. If a site did not meet certain eliminating criteria, such as property size, Tighe & Bond took photographs but did not tour the property. The following screening criteria were used during the site visits:

- Usable property area (at least four to five acres is necessary for a DDS)
- Adequate space for tower and/or scale installation
- Adequate space for truck queue and truck turnaround
- Presence of low-hanging wires onsite

- Presence of low-hanging wires on access road
- Distance from site to closest residence
- Distance from site entrance/exit to closest residence
- Distance from entrance/exit to closest main road
- Number of traffic lights between entrance/exit and closest main road
- Site topography
- Site runoff characteristics
- Presence of non-mapped wetlands or jurisdictional resource areas

Site Visit Summaries

The following sites are ranked in order of the most preferable to the least preferable of the sites visited.

Montague Landfill and Transfer Station, Montague, MA

Tighe & Bond visited the Montague Landfill and Transfer Station and was shown various areas of the property by landfill employees. The property is large and meets the usable property area criterion. There are two areas at the landfill; the western half of the landfill property is the former landfill (now closed), and the eastern half of the landfill property contains open space, a transfer station, brush storage, and DPW buildings. The following factors were observed at the site:

- Past excavation activities have resulted in areas with standing water that may be non-mapped wetlands and an uneven topography in some sections of the property
- The landfill is approximately 20 acres, and approximately 25% of the space is covered with second growth plants, which would be relatively easy to clear for use
- The nearest residences to the landfill property are located on Turnpike Road approximately 800 feet away from the landfill property boundary. No sensitive receptors were observed in the vicinity of the landfill
- The landfill is approximately 3.2 miles from Route 2, when traveling west on Turnpike Road and north on Montague City Road, which turns into Avenue A and intersects Route 2.
- The site likely has room for a truck turnaround, as well as possible site management appurtenances such as towers and scales. Truck queuing and exiting would occur along the landfill access road, which is adjacent to an industrial facility.
- No low hanging wires that could impede truck traffic were observed

Orange Municipal Airport, Orange, MA

Priscilla Curtis, the manager of the Orange Transfer Station, noted that the Orange Municipal Airport is a public airport owned by the Town of Orange. The airport is located on East River Street and has two runways. There is an area of land that is part of the airport but outside the operational area associated with flight activities. The three to four acre area is outside the functioning airport between the airport fence and East River Street. The following factors were observed at the site:

- The area is level area devoid of trees or other encumbrances that could be used as a DDS

- The nearest residences are directly across East River Street, and the site entrances and exits are directly across from residences as well
- The site has room for a truck turnaround and queues, as well as possible site management appurtenances such as towers and scales
- Based on the visit, the site did not appear to have any wet areas, although a more thorough site visit in the spring may be appropriate to verify
- One set of transmission poles with lower hanging wires were observed at the site. There may be enough clearance under the wires for trucks to pass, however if this is not the case, the site is large enough to route truck traffic in a manner that would not require passing under the transmission lines
- The airport is located on East River Street. The shortest access route to Route 2/202 is to head east on East River Street approximately 0.7 miles to a stop sign intersection, then to turn right onto Daniel Shays Highway and travel approximately 0.9 mile to the Exit 16 onramp for Route 2/202.

Use of the Orange Municipal Airport may require a permit from the Federal Aviation Authority. The contact information at the FAA office at the Orange airport is below:

Manager:	Leonard Bedaw
Address:	80 Airport Street, Orange, MA 01364
Phone number:	978-544-8189

Greenfield Landfill and Transfer Station, Greenfield, MA

Tighe & Bond met with Sandy Shields, Greenfield Department of Public Works (DPW) Director, to view the property. The Greenfield Landfill is closed and capped. The landfill property is approximately 30 acres, of which approximately one acre that is not part of the landfill could be used for debris staging. The capped landfill is potentially usable as well. The top of the capped landfill is relatively flat and is potentially suitable as a DDS. In order to provide adequate protection to the existing landfill cap, an 18 to 24 inch gravel base would need to be placed above the existing cap prior to any debris management activity. The city is considering other uses for the landfill, such as placement of a photovoltaic solar array. The following features were observed:

- The landfill has a passive methane venting system with PVC piping vents placed at intervals across the surface. Use of the site as a DDS would require protection of this system
- The closest residence is 600 feet away from the entrance to the landfill
- No wetlands, other jurisdictional resource areas, non-mapped resource areas, or seasonally wet areas were observed at the site
- The closest major roads to the landfill are Routes 5 and 10, located approximately 0.75 mile away from the landfill entrance. Egress from the site to Routes 5 and 10 requires exit from the landfill to the north on Cumberland Road approximately 0.15 mile, then travel east on Petty Plain Road approximately 0.6 mile to Routes 5 and 10

Deerfield Landfill and Transfer Station

Based on conversation with a Tighe & Bond employee, the Deerfield landfill and the transfer station property may be suitable as a DDS. According to the Department of Environmental Protection, the landfill area is 15 acres, and the Deerfield Board of health

sates the entire property is 23 acres. Of the 23 acres, approximately one acre that is not part landfill and could be used for debris staging, however the cleared space is situated within the operating area of the transfer station, and will not easily accommodate truck movement. The capped landfill is potentially usable as well. The top of the capped landfill is relatively flat and is potentially suitable as a DDS. As with the Greenfield landfill, in order to provide adequate protection to the existing landfill cap, an 18 to 24 inch gravel base would need to be placed above the existing cap prior to any debris management activity.

Murphy Park, Greenfield, MA

Tighe & Bond visited Murphy Park with Sandra Shields to ascertain suitability for use as a DDS. The park is made up of several ball fields used for recreational purposes. The Town uses an area at the back of the park for woody debris storage, however the area does not meet the usable space criterion for disaster debris management and would require travel through the recreational areas for access. Truck turnaround and queuing would require impacts to the recreational areas as well.

Orange Landfill and Transfer Station, Orange, MA

Tighe & Bond met with Priscilla Curtis, manager of the transfer station, to view the property. The Orange Landfill is closed and capped. The property is approximately 1 acres, of which the landfill is approximately 12 acres. Approximately one acre of the property that is currently used for brush storage could be used for debris staging. The capped landfill has relatively steep grades and therefore would not be suitable for use as a DDS. Because the site does not meet the usable property area criterion, the suitability of the site based on other criteria is not pertinent.

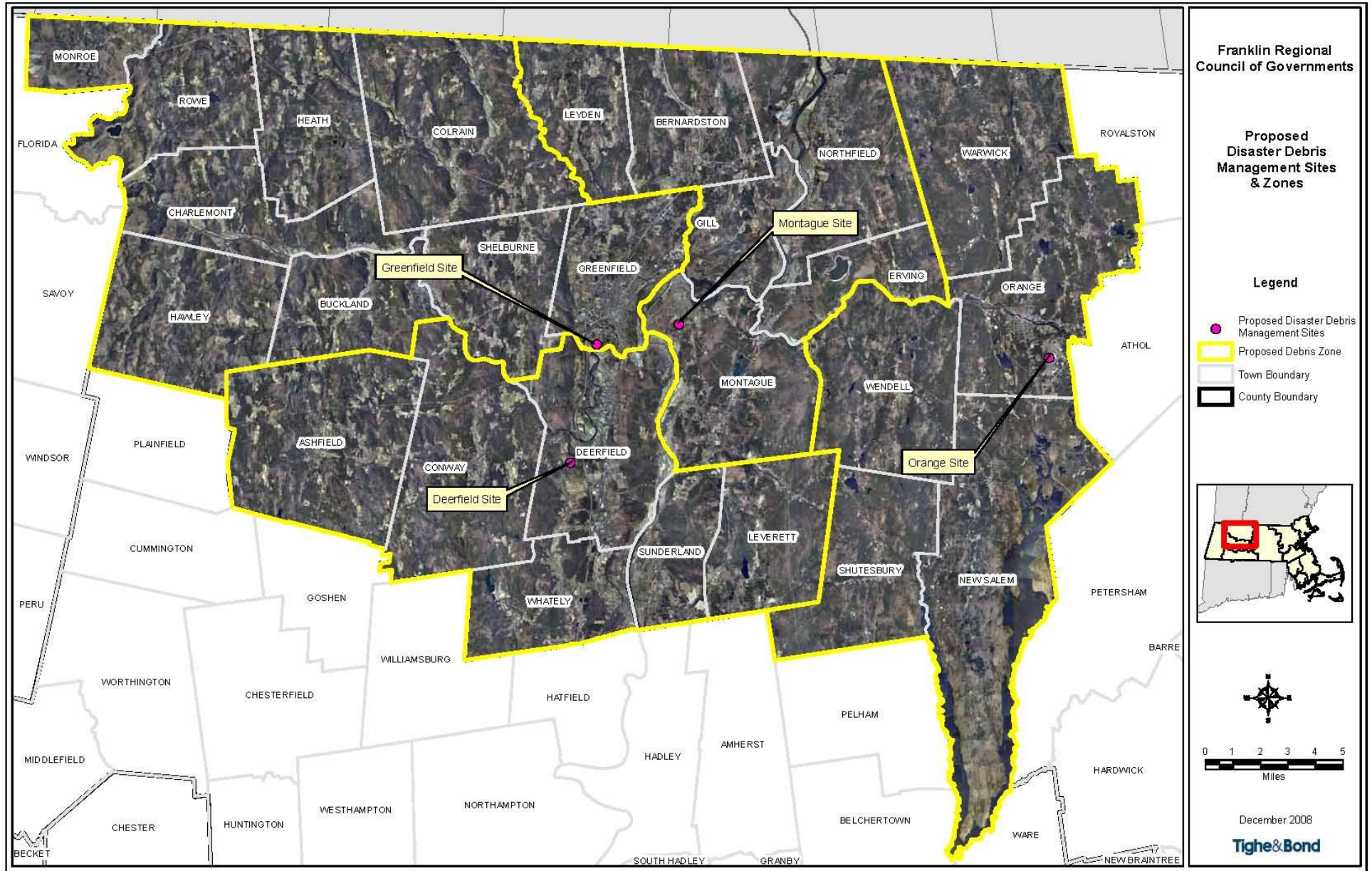
Colrain Landfill and Transfer Station, Colrain, MA

Tighe & Bond met with Bob White, Colrain DPW Director, to view the property. The Colrain Landfill is closed and capped. The landfill is approximately 10 acres, however there is no usable space for disaster debris management. The capped landfill has relatively steep grades and would not be suitable for use as a DDS. Because the site does not meet the usable property area criterion, the suitability of the site based on other criteria is not pertinent.

Whately Transfer Station, Whately, MA

Tighe & Bond met with Keith Bardwell, Highway Department Supervisor, to view the property. The Whately transfer station property also includes the town Highway Department and Police Department, and does not meet the usable space criterion. The property is comprised of several level contiguous lots, but is occupied by numerous buildings and structures associated with the operations noted above. Because the site does not meet the usable property area criterion, the suitability of the site based on other criteria is not pertinent.

Debris Staging Site Collection Zones



Appendix H.1. Pre-Positioned Contracts Franklin County Debris Management Action Plan

Contract 1: Debris Removal and Delivery and Debris Staging Site Operation

Scope of Work

This scope of work (SOW) addresses (1) debris removal from public and potentially private land and the delivery of such debris to designated debris staging sites, and (2) the operation of debris staging sites. The specific obligations for each SOW are presented respectively in SOW Parts I and II, below. It is the intention of this RFP that both the debris removal and delivery and staging site operation will be conducted by the selected contractor(s).

Part I: Debris Removal and Delivery Scope of Work

- **Introduction**

Part I of this SOW is for disaster debris removal and delivery operations. The Contractor(s) shall provide equipment, operators, and laborers for debris removal operations that includes, but is not limited to, segregation, removal, hauling, disposal, and structural demolition on public lands, and in some cases as determined necessary by the FRCOG, private property. The Contractor(s) shall be solely responsible for their own costs of developing the proposal associated with this RFP. The primary components and the requirements and specifications of the RFP for which a subsequent contract will be awarded will include:

- I. Project Management
- II. Debris Removal Operations

- **Requirements and Specifications**

- I. Project Management**

Project management is comprehensive and shall encompass a number of activities, such as: mobilization and demobilization; planning, scheduling, and coordination; administrative and fiscal support; determining eligible and non-eligible costs; administering debris management operations; logistics and resource allocation; providing technical assistance regarding public assistance funding; and participate in annual training sessions. The following are specific tasks that shall be included in project management:

- A. Mobilization**

- 1. When a major disaster occurs or is imminent, the FRCOG designee will contact (either verbal or written Notice to Proceed) the firm(s) holding the Debris Removal and Delivery Contract to advise them of the municipality's intent to activate the contract. The municipality, upon

contacting the Contractor, may issue a Task Order for Disaster Response Planning. (See Exhibit A entitled Sample Task Order). The issuance of this Task Order will allow the Contractor to begin pre-mission preparations and facilitate the immediate response once the recovery begins. The Contractor(s) shall commence performance within (24) hours of receipt of Notice to Proceed. The Contractor will begin coordination with the Franklin County Emergency Operations Center (FCEOC). The Contractor will mobilize and deploy a Pre-Execution Planning Team that will report to the FCEOC designated person within twelve (12) hours of Task Order issued. The Team shall consist of the following members:

- Operations Manager
- Operations Planner
- Environmental Health and Safety Manager

The Team will deploy to a location identified by the FCEOC designated person. The Team will function as part of a county debris planning team. The Team will provide technical assistance for the following activities:

- Estimation of debris volumes
- Sectoring disaster area for most efficient debris management
- Determining personnel and equipment resources (crews) required
- Performing environmental health and safety evaluations

Prior to commencing debris removal operations and within three days after the Task Order is issued, Contractor(s) shall submit to the FCEOC designate a preliminary Management/Operations Plan which describes the organizational structure and key personnel involved in the cleanup, the technical approach and methodology to be used, site specific operational components, the geographic area management, safety requirements, the Contractor Quality Control Plan, and approaches to debris waste reduction and recycling. The Plan will indicate where operations will begin and which streets/roads will be cleared during the initial seven-day period. Operation locations will be decided upon in conjunction with the FCEOC. This Plan will be discussed at a pre-work conference with the FCEOC to discuss the work plan as well as coordination among municipal governments and utilities, establish payment processes, and establish a working understanding among the parties. No later than seven (7) days after the Task Order is issued, the Contractor shall provide a final Management and Operations Plan describing all aspects of the debris management mission. Maximum allowable time for debris removal and cleanup shall be negotiated at the time the scope of work and geographic area(s) are identified.

The Plan shall be updated by the Contractor(s) as necessary and as required by the FCEOC designated person. The Contractor(s) final Management Plan/Operation Plan shall include a safety component that outlines an Accident Prevention Program (APP). The Contractor's APP will be job-specific and will include work to be performed by subcontractors and measures to be taken by the Contractor to control hazards associated with materials, services, or equipment provided by

suppliers. The contractor shall not commence physical work within an Assigned Debris Control Zone until the APP Program has been accepted by the FCEOC designated person. A map of the Franklin County Assigned Debris Control Zones and Debris Staging Sites is included as Exhibit B.

To ensure coordinated and efficient operations, the Contractor(s) shall be National Incident Management Systems (NIMS) compliant. Project managers must have taken the *Federal Emergency Management Agency (FEMA) IS-700 NIMS An Introduction Course* prior to contract activation. Contractor(s) shall be able to verify the completion of such training. During implementation of the work, the Contractor(s) shall attend any and all meetings convened by FRCOG with respect to the clean-up effort, when directed by FRCOG to do so or otherwise necessary to carryout the work. The FCEOC designated person will issue subsequent Task Orders to mobilize and begin debris clearance, debris removal, and debris reduction operations. Once tasked, the Contractor must be prepared to provide a minimum of 6 crews within twenty-four (24) hours of a Task Order to commence debris removal operations if requested. A typical crew is composed of the following:

- Five dump trucks 16-20 cubic yard (CY) capacity with drivers
- One front end loader with operator
- One foreman/Quality Control
- Three laborers/flagmen

All activity associated with debris loading and hauling in public areas shall be performed during visible daylight hours only, unless night hauling is authorized through an Emergency Authorization or other directive from the FRCOG/FCEOC designated person and/or FEMA.

The Contractor(s) shall use only designated debris locations/areas as directed by the FRCOG.

B. Provision of Operations Manager to coordinate with State and Federal agencies, other municipalities and local utility companies on the disaster debris management effort. Provision of Operation Supervisors to serve in the field as Point-of-Contacts.

1. Contractor(s) will provide an Operations Manager (OM) and a designated alternate for each awarded Assigned Debris Control Zone to the FCEOC to serve as the principal liaison between the FRCOG and the Contractor(s) workforce. The assigned OM must be knowledgeable of all facets of the Contractor's operations and have authority in writing to commit the resources of the Contractor(s). The OM shall be on-call 24 hours per day, seven days per week as specified by the FRCOG. The Contractor(s) shall have electronic capability for transmitting and receiving relevant information and for making arrangements for on-site accommodations. Communication ability shall provide immediate contact via cell phone, fax machine, and have internet capabilities. The OM will participate in daily meetings, functioning as a primary source to provide relevant information to the Contractor's workforce and to the FCEOC

designated person. While this position will not require constant presence, the OM will be required to work a full workday, typically more than eight hours per day, and be on call and physically capable of responding to the FCEOC designated person within 30 minutes of notification.

2. The Contractor(s) OM shall be NIMS compliant and shall maintain records of such training and provide documentation to this effect. The Contractor(s) shall retain records for a period of three years following the close-out of the project and shall make such records available for review by the FRCOG.
3. The Contractor(s) OM shall coordinate with the FRCOG on all Preliminary Damage Assessments (PDAs) and operations.
4. The Contractor(s) OM shall make recommendations to the FRCOG regarding distribution of FRCOG work assignments and priorities.
5. The Contractor(s) OM shall assist the FRCOG in the preparation and dissemination of information for the public regarding pick-up schedules, disposal methods, ongoing activities, and self-help.
6. The Contractor(s) OM shall assist the FRCOG under other related project management activities.
7. The Contractor(s) OM shall assign one or more Operations Supervisor (OS) to serve in the field as the Contractor's day-to-day point of contact and representative with the FRCOG as the need arises to perform field operations. Depending upon the magnitude and complexity of the debris removal operations, it may be permissible by the FRCOG to allow an individual OS to represent the Contractor(s) OM.
8. The Contractor(s) employees shall cooperate to the full extent with oversight personnel individuals but not limited to federal agencies, State authorities or its designated agent (i.e., monitors), and State and local response personnel. Failure to do so may indicate serious nonconformance to contract conditions.

C. Administration: Provide administrative support and track all costs incurred during the cleanup; prepare reports and other documents necessary to adequately document emergency response, management and recovery; document management; worker safety; and other.

1. Costs incurred with Debris Management Operations
Payment for debris hauled will be based on the quantity of debris hauled in a truck as measured in cubic yards or tons and the distance hauled depending on where the debris is taken, to a Debris Staging Site or final recycling or disposal facility. Load tickets will be the documentation necessary for the contractor to receive payment. The FRCOG will reimburse the Contractor(s) for transport and tipping fees at final recycling or disposal facilities. Prior to final reuse and or disposal, the Contractor(s) will provide to the FRCOG three bids for final recycling or waste disposal facilities. The FRCOG will, in turn, perform due diligence and make a determination of the final recycling or waste disposal facility and shall

inform the Contractor. The Contractor(s) will be required to transport the debris to the chosen facility.

2. Load Tickets

The Contractor(s) are made aware that payment for debris hauled will be based on the quantity of debris hauled in a truck as measured in cubic yards or tons and the distance hauled depending on where the debris is taken, to a Debris Staging Site or final recycling or disposal facility. Load tickets will be the documentation necessary for the contractor to receive payment. The FRCOG will reimburse the Contractor(s) for tipping fees at final recycling or disposal facilities. Prior to final disposal, the Contractor(s) will provide to the FRCOG three bids for final recycling or waste disposal facilities. The FRCOG will, in turn, perform due diligence and make a determination of the final recycling or waste disposal facility and shall inform the Contractor. The Contractor(s) will be required to transport the debris to the chosen facility. If utilized, Debris Removal Contractor(s) will have the responsibility of installing truck scales at their expense (see Section I.C.3. Portable Scales at Debris Staging Site). Trucks will be weighed both entering and leaving the debris management site(s) and the weight of the load will be the calculated difference. The debris removal Contractor(s) will be required to use either the volume method or the weight method for all loads hauled to any one debris management site, and will not be allowed alternate methods. The authorized debris monitors working for the FRCOG and the disposal facility monitors will use their best judgment in estimating the quantity of debris in the trucks when measurements are to be volume based. For purposes of this RFP, the authorized monitors under FRCOG contract are the final authority. Deductions from load volume will be made for: consolidation during hauling, lightly packed loads with excessive air voids, and voids caused by incomplete loading at the loading site. For reference on deductions, see the diagrams provided in Exhibit C entitled Truck Load Deductions.

Load Tickets: Load Tickets shall be supplied by the FRCOG to the debris monitoring engineer(s). It will be the responsibility of the debris monitoring engineer(s) to keep an accurate record of the distribution of the Load Tickets. The Debris Monitoring Project Manager will be responsible for providing the Load Tickets to the Field Debris Supervisor(s), who will in turn provide these to the Field Debris Monitors and the Fixed Site Debris/Tower Monitors. The Load Ticket is a dual use ticket covering either of the following scenarios:

- **Load Ticket: From Curbside Initial Pickup (Scenario #1)** – records the loading and transport of debris from the public right-of-way to the Debris Staging Site or directly to final recycling facilities or final disposal facilities, both in-state and/or out-of-state.
- **Load Ticket: From Debris Staging Site (Scenario #2)** – records the loading and transport of processed and segregated debris from a Debris Staging Site to recycling facilities or final disposal facilities.

A sample of the Load Ticket is found in the Franklin County Massachusetts Disaster Debris Management Planning Document. The Load Ticket is a five-part ticket. The Load Ticket is the primary record for the monitoring and measuring of debris removal operations. The following describes the procedures that will be used in the use of the Load Tickets:

- **Scenario #1. From Curbside Initial Pickup: Initial loading of debris from the public right-of-way to the Debris Staging Site or directly to final recycling facilities or disposal facilities.**
 - (1) From Curbside - Initial Loading Site:

The first part of the ticket shall be completed at the initiation of each load in the public right-of-way, signed by the Field Debris Monitor and will be retained by the Field Debris Monitor. The Field Debris Monitor is required to keep and turn in the first of the five-part ticket at the end of each day to their Field Debris Supervisor. The Field Debris Monitor shall remove the first of the five part ticket and then give the remaining four parts of that Load Ticket to the debris removal Contractor(s) driver. The driver, as directed, can then transport the debris to one of the following designated sites: a Debris Staging Site or may take the debris to a final disposal facility or recycling facility, both in-state or out-of-state, if it has been determined that this is the appropriate action.
 - (2) To Debris Staging Site – Receipt of Load:

The driver will hand the remaining four parts of the Load Ticket to the Fixed Site Debris/Tower Monitor at the Inspection Station/Debris Staging Site. That Fixed Site Debris/Tower Monitor will inspect the load, record the appropriate volume or weight, record the appropriate haul distance based on transport mileage, and initial the Load Ticket. The second of the five-part Load Ticket shall remain with the Fixed Site Debris/Tower Monitor. The Fixed Site Debris/Tower Monitor is required to turn in the second of the five-part ticket at the end of each day to their supervisor. The other remaining three parts of the five-part ticket shall be given to the driver, to be turned in to the debris removal Contractor(s) representative.
 - (3) To Final Disposal Facility or Recycling Facility, both in-state and out-of-state, Receipt of Load:

The driver will hand the remaining four parts of the Load Ticket to a duly authorized representative of the Solid Waste Disposal facility. The authorized representative at the Solid Waste Disposal facility will inspect the load, record the appropriate volume or weight, record the appropriate haul distance based on transport mileage, and initial the ticket and shall keep the second and third parts. One will remain with the

facility; the other will be forwarded to the Debris Monitoring Project Manager. The driver will retain the fourth and fifth part of the Load Ticket to be turned in to their respective debris removal Contractor(s) representative.

- **Scenario #2. Loading of segregated and/or processed waste materials at the Debris Staging Site for transport to the final recycling facility or final disposal facilities.**

- (1) From Debris Staging Site Loading Site:

The first part of the Load Ticket shall be completed at the Debris Staging Site, signed by the Fixed Site Debris/Tower Monitor, and will be retained by the Fixed Site Debris/Tower Monitor. The Fixed Site Debris/Tower Monitor is required to keep and turn in the first of the five-part ticket at the end of each day to their supervisor. The Fixed Site Debris/Tower Monitor shall give the remaining four parts of that Load Ticket to the debris removal Contractor driver.

- (2) To Final Recycling Facility and Disposal Facilities:

The driver will hand the remaining four parts of the Load Ticket to the duly authorized representative of the final recycling or disposal facility. The authorized representative of the facility will inspect the load, record the appropriate volume or weight, record the appropriate haul distance based on transport mileage, and initial the ticket. Part two and three of the five-part load ticket shall remain with the authorized representative of the final disposal site. One will remain with the facility; the other will be forwarded by the receiving facility to the Debris Monitoring Project Manager. The other remaining parts of the Load Ticket, four and five, shall be given to the driver, to be turned in to their respective debris removal Contractor(s) representative.

3. Animal Carcasses Payment

For animal carcasses hauled to an authorized disposal facility will be based on the prices submitted in Exhibit D and will include collection/loading costs, transportation costs and processing costs based on a “fully loaded mile”. Payment will be made against the Contractor’s invoice once the Field Debris Monitors and/or Fixed Site Debris/Tower Monitors and load tickets and/or scale tickets match.

4. Temporary Storage of Documents

The Contractor(s) shall provide protective storage of daily or disaster-related documents and reports during the disaster event and shall be available to the State EOC designee when requested.

5. Worker Safety

The Contractor(s) shall supervise and direct all work related to both debris collection/transport and management of the Debris Staging Site, ensuring skilled labor and proper equipment for all tasks. Safety of the Contractor’s personnel and equipment is the responsibility of the

Contractor(s). The Contractor (s) shall designate in writing the individual responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work to be performed. The Contractor(s) shall comply with all applicable safety and health protection codes, laws, ordinances, rules, and regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury, or loss. The Contractor(s) shall notify owners of adjacent property and of underground structures and improvements and utility owners when implementation of the work may affect them, and shall cooperate with them in the protection, removal, relocation or replacement of their property. The Contractor(s) duties and responsibilities for the safety and protection of the work shall continue until such time as the work is completed and final acceptance by the FRCOG has occurred. Accidents shall be investigated and reports completed by the immediate supervisor of the employee(s) involved and reported to the appropriate State and federal authorities, including the FRCOG. All data reported must be complete, timely and accurate. A follow-up report shall be submitted when the estimated lost time days differs from the actual lost time days.

D. Determine eligible vs. ineligible debris for FEMA Public Assistance funding

1. Eligible Debris

Eligible debris is debris caused by the disaster in a declared county and on public property and which has been properly documented are the four main requirements of FEMA. Eligible debris under this contract is limited to only that debris that FEMA determines eligible for the disaster event and is consistent with FEMA regulations and Public Assistance guidance. Payment will only be made for that debris meeting FEMA eligibility guidelines. The Contractor(s) shall arrange for collection and disposal of debris in a manner complying with all applicable Federal, State and local laws and regulations. Any ineligible debris collected by the Contractor(s) shall be properly disposed of at the Contractor's expense. Any loads rejected at the final recycling or disposal facility shall be the Contractor's responsibility.

2. Reporting and Documentation; Recordkeeping

The Contractor(s) shall provide and submit to the FRCOG all reports and documents as may be necessary to adequately document the debris emergency response, management, and recovery services in accordance with FEMA/FRCOG requirements. The Contractor(s) shall retain all records, documents, and communications of any kind (including electronic in disk or print form) that relate in any manner to the contract awarded as a result of this RFP and its performance. Such records shall be maintained and kept in their original form for a period of three years after the completion of the project; and shall be available to the FRCOG at any time.

E. Determine the method and manner of debris removal and lawful disposal operations consistent with this Scope of Work, the Franklin

County Massachusetts Disaster Debris Management Planning Document, 2006, and the FRCOG Debris Management Plan, September 2008, or as amended.

1. Debris Collection

The Contractor(s) within their awarded Assigned Debris Control Zone(s), shall be responsible for collecting and removing, from public rights-of-way and public property, all debris to: a Debris Staging Site for volume reduction in preparation for final recycling and/or waste disposal facility (either in-state or out-of-state) or directly from the curb to a final recycling or disposal facility; and from a Debris Staging Site to a final recycling or final disposal (in-state or out-of-state). The work shall consist of clearing and removing disaster generated debris. Curbside segregation of debris is required prior to removal when not previously accomplished by property owners. Typical segregation categories include putrescent municipal solid waste (MSW) (primarily food spoilage and contaminated or damaged recyclables such as wet or mildewed newspaper, cardboard which requires immediate disposal), C&D debris, uncontaminated green waste (or vegetative waste), white goods, and electronics. Household garbage is not eligible for removal unless resulting from the disaster event (i.e., refrigerator or freezer waste placed curbside). To the extent possible, solid waste collection haulers are expected to maintain their normal schedules for MSW that would have been generated under pre-event conditions and as such, the Contractor is not expected to perform this service. A typical segregation crew and equipment includes one foreman, 3 laborers, and one loader with grapple and the manpower necessary to accomplish this task. The Contractor(s) shall coordinate with the FRCOG as to the number of passes that will be made in an Assigned Debris Control Zone. The Contractor(s) will collect and remove all debris existing on a street or road during each pass and not leave any debris for subsequent passes. This does not preclude the Contractor(s) from using separate vehicles and crews to: separate bagged debris from other types of debris; collecting C&D debris; collecting recyclable timber or from hauling stumps with root balls. The Contractor(s) will organize equipment and crews so that all types of debris are collected within any one pass. The public Right-of-Way is typically defined as the portion of land over which a facility, such as highways, railroads, or power lines are built. This includes land on both sides of the highway up to the private property line. The Contractor(s) shall coordinate with the FRCOG with regard to more defined widths of public Right-of-Ways. The Contractor(s) shall not move from one designated work area to another designated work area without prior approval from the FCEOC designated person. The Contractor(s) shall conduct the work so as not to interfere with other disaster response and recovery activities of the federal government, State government and municipalities, or any public utilities.

2. **Securing Debris**
The Contractor(s), in their assigned debris control zone, shall be responsible for properly and adequately securing debris on each piece of equipment utilized to haul debris. Prior to leaving the loading site, the Contractor(s) shall ensure that each load is secure and trimmed so that no debris extends horizontally beyond the bed of the equipment in any direction. All loose debris shall be reasonably compacted during loading and secured during transport. Tarps and other coverings shall be provided by the Contractor to prevent reduction by-products and other materials from being blown from the bed during hauls to Debris Staging Site or disposal facilities.
3. **Clearance**
The Contractor(s) shall be responsible for verifying the clearance of bridges and overpasses on all routes to be used as well as verifying clearance for all overhead structures and wires.
4. **Traffic Control**
The Contractor(s) in their Assigned Debris Control Zone shall be responsible for control of pedestrian and vehicular traffic in the work area. At a minimum, one police detail or flag person if allowed should be posted at each approach to the work area.
5. **Ownership of Debris and Final Recycling and/or Waste Disposal**
The FRCOG shall assume ownership of the debris upon collection and removal from the public right-of-way. The Contractor(s) will be responsible for all recycling and disposal of debris, either in-state or out-of-state. Tip fees will be paid by the FRCOG. Contractor(s) will be required to seek at least three bids for final disposal and present a package comparing various disposal and transportation costs to the FRCOG for their ultimate approval.
6. **Construction and Demolition (C&D) Recycling and Clean Wood**
C&D recycling of construction and demolition debris, through material salvage, and recycling of clean, woody debris by mulching and composting is consistent with the goals of the MADEP's Solid Waste Master Plan and the Franklin County Solid Waste Management District policies and will be pursued to the extent practical. Recycling of debris removed by the Contractor(s) is the preferred management approach and efforts will be made by the Contractor(s) to recycle materials to the greatest extent practicable.
7. **Licenses, Permits, and Violations**

The Contractor(s) must be duly licensed to perform all work in accordance with the statutory requirements of Massachusetts. The Contractor(s) in consultation with the FRCOG, shall be responsible for determining what permits are necessary to perform under the contract. The Contractor(s) shall obtain all permits necessary to complete the work and shall make these available to the FRCOG prior to commencing work. In addition, the Contractor(s) shall be responsible for correcting conditions subject of any notices of violations or other enforcement action issued as a result of the Contractor(s) or subcontractor's actions or operations during the performance of this contract. Corrections for any such violations shall be at no additional cost to the FRCOG and/or municipalities.

8. Equipment and Equipment Signage

All trucks, trailers, and equipment must be in compliance with all applicable Federal, State, and local rules and regulations. The Contractor shall submit to the FRCOG or its designated agent (i.e., Debris Monitoring Engineer) certifications indicating the type of vehicle, make and model, license plate number, equipment number, and measured maximum volume, in cubic yards, of the load bed of each piece of equipment utilized to haul debris. The measured volume of each piece of equipment shall be calculated from actual internal physical measurement performed and certified by the Contractor(s) and approved by the FRCOG. Maximum volumes may be rounded to the nearest cubic yard. The reported measured maximum volume of any load bed shall be the same as shown on the signs fixed to each piece of equipment. The FRCOG or its designated agent reserves the right to re-measure trucks at any time to verify reported capacity. Trucks or other equipment designated for use under this contract for the purpose of transporting debris will be equipped with two signs, one attached to each side. Signs will be provided by the Contractor(s) and will prominently display the following information:

- Prime Contractor Name
- Subcontractor Name
- Truck Number (no duplicates)
- Cubic Yard Capacity and Tare Weight
- Contractor Certification Number for Vehicle

Any equipment used to haul debris must be capable of rapidly dumping its load without the assistance of other equipment and be equipped with a tailgate that will effectively contain the debris during transport, permits the trucks to be filled to capacity, and facilitates dumping debris without becoming caught in the bed. Frameless, dump trailers are not acceptable. Sideboards or other extensions to the bed are allowed and, if installed, must be constructed of 2" x 6" boards or greater and may not extend more than 2 feet above the metal bedsides and must remain in place throughout the operation. All extensions to the bed, and any exceptions to the above

requirements, are subject to acceptance or rejection by the FRCOG. It is the Contractor's responsibility to report any adjustments of the sideboards to the FRCOG and/or its Authorized Agent and truck signage shall report revised cubic yard capacity. Truck loading shall comply with State Department of Transportation rules and regulations including weight limitations and the covering of truckloads. Trucks or equipment that are designed for use under the executed Contract shall not be used for any other work. The Contractor(s) shall not solicit or accept work from private citizens or others to be performed during the operations of the executed Contract. Under no circumstance will the Contractor(s) mix unauthorized debris hauled from others. Contractors will not mix debris being hauled for different Contractors and regions unless authorized by the FRCOG and/or FEMA authorities.

F. Logistics and Resource Distribution for the purpose of providing for facilities, services, materials, equipment, equipment parts, and fuel necessary for the Contractor(s) to carry out disaster debris management operations.

1. Materials, Goods and Services

The Contractor(s) shall be responsible in providing all personnel sustaining goods and services to include items such as packaged ice, bottled water, ready-to-eat meals and shelter and all materials such as equipment parts, tools, fuel, etc. and the distribution thereof, supporting emergency and/or disaster recovery and mitigation efforts. The Contractor(s) is responsible for the safe handling and storage of any equipment and parts, tools, fuel, and other related items so as to prevent damage and environmental impacts to public and private property.

G. Technical Assistance Regarding Public Assistance Funding.

1. The Contractor(s) shall provide, if requested by the FRCOG, services via a well-qualified and experienced staff of personnel to assist the FRCOG in Federal program emergency/disaster assistance as follows:

- a. Pre-declaration – provide training regarding the federal public assistance program and preliminary damage assessments.
- b. Post-declaration – participate in applicant briefings and inspection of damaged sites; provide eligibility guidance and insurance oversight services; assist in preparing necessary scopes-of-work and cost estimates for projects (e.g. structural demolition); perform preliminary damage assessments; assist in preparing submissions to FEMA; advise on hazard mitigation opportunities; and assist in reporting and closeout activities.

H. Annual Training Exercises

1. The Contractor(s) shall, at no cost to the FRCOG, participate in an annual training exercise related to debris management recovery operations that may be available in the Commonwealth.

II. Debris Removal Operations

This section describes debris removal operations from public and private property, the demolition of structures, and the types of debris and appropriate management of this material. These activities are tied to Exhibit D that identifies the price schedule. The Contractor(s) are expected to be familiar with all relevant and current FEMA debris related policies.

When considering debris removal operations, FEMA Recovery Policy – RP9523.12 dated May 1, 2006 has determined it is not reasonable to reimburse applicants for hand-loaded vehicles and mechanically loaded vehicles at the same rate. FEMA has determined that vehicles of the same loaded capacity that are loaded by mechanical equipment and reasonably compacted, carry at least twice the volume of debris as those loaded physically by hand. Therefore, the maximum amount recorded for a hand-loaded vehicle will be 50% of its measured capacity.

A. Debris removal from public property

1. **Debris Removal from Public Property**
The Contractor(s) shall remove eligible debris resulting from a disaster event from public property. See III D for list of eligible debris items.
2. **Debris Removal from Drainage Systems**
The Contractor(s), in their Assigned Debris Control Zone, may be required to clear debris from various drainage swales, ditches, streams, lakes, reservoirs, structures and other drainage components. This clearing may require either hauling or disposal on site as directed by the FRCOG. When this type of work is required, the FRCOG will develop a Scope of Work for each of the system component (swales, ditches, other) including: description of debris to be removed including the sizes and numbers of trees, locations, photographs, access points and similar information, as well as determining permitting requirements. Payment for the debris clearing, removal and hauling to an authorized waste handling facility will be based on an agreed to cost and authorized task order at the time required.

B. Debris removal from private property will not be conducted without written direction from the FRCOG, nor without the approved documentation for Right-of-Entry.

1. **Collection on Private Property**

The Contractor(s) is not authorized to perform work on private property and shall not seek or accept requests from private property owners to perform debris clearing or removal activities. Under certain circumstances, it may benefit all parties to the contract to obtain access to private property, or permission to cross private property, for the purpose of clearing and removing debris from public property of right-of-way. Debris removal from private property will not be conducted without written direction from the FRCOG, and the approved documentation for Right-of-Entry. Contractor shall conduct all work related to removal of debris on private property as per the authority of the local building inspector. A sample Right-of-Entry Agreement Form is provided as Exhibit E.

2. **Damages to Public and Private Property**

The Contractor(s) in their Assigned Debris Control Zone, shall be responsible for reporting to the FRCOG or its designated agent and repairing any damages to private or public property that result from Contractor(s) collection and removal activities. This includes all roadways, sidewalks, utilities, drainage structures and other features not designated for demolition or removal which are damaged by Contractor's operations. When feasible, repair of damaged areas will be performed immediately. The affected area or item will be restored to its original condition. This shall include contouring to original grade. The Contractor(s) shall supply the FRCOG with lists showing all damage claims that have been settled and all claim issues that remain outstanding. These records shall be retained per requirements found in Section I.D.2 Reporting and Documentation; Recordkeeping. Final payment will be subject to a pre-authorized task order and an agreed to cost. Payment may be withheld until claims are adequately resolved.

C. Demolition of Structures

1. **Demolition of Structures**

This scope of work applies to decommission, demolition, and debris removal from both public and privately-owned structures. The Contractor(s) shall conduct this work only with written approval by the FRCOG and/or FEMA. The Contractor(s) shall provide all equipment, operators, and laborers for work as specified in individual Task Order(s). The work shall consist the lawful abatement of asbestos-containing materials and remediation of hazardous materials/components from each of the specified structures. Subsequent demolition of the specified structures shall be performed in accordance with applicable Federal, State and local requirements. These requirements may include coordination with the local board of health and fire department, at a minimum. Compliance

with the National Emissions Standards for Hazardous Air Pollutants (NESHAP), 40 CFR, Part 61 requirements is also necessary. Contractor shall be responsible for permitting requirements including but not limited to the submission of MADEP's BWP AQ06 permit for demolition. Contractor shall also be responsible for abiding by any No Action Assurance policies that EPA may authorize as a result of the disaster event. Payment for this item shall be by the cubic yard as identified in Exhibit D Price Schedule.

D. Debris type and removal within the public right-of-way shall include all types of disaster generated debris, including collection, transport and processing for final recycling or disposal.

This RFP identifies waste types and makes recommendations on the proper handling and disposal of this debris waste. The terms defining the waste types used in this RFP are derived from a number of key sources and include: the *Franklin County Massachusetts Disaster Debris Management Planning Document*, October 2006, the Massachusetts Solid Waste Management regulations at 310 CMR 19.000, *Disaster Debris Management Planning: An Introduction for Local Government Officials*, August 2007, and FEMA guidance. The following two scenarios describe the method in which debris will be transported:

- Scenario #1 – The initial loading of debris from the public right-of-way to the Debris Staging Site or directly to final recycling or disposal facilities (in-state or out state).
- Scenario #2 – The transport of debris that has been segregated and/or processed debris at a Debris Staging Site to a final recycling or disposal facilities (in-state or out-of-state).

The bid fee schedule includes an origination point for each of the waste items. For some of the items the origination point includes two categories, one from the public right-of-way and the other from the Debris Staging Site. The origination point identified as "From R.O.W." assumes Scenario #1. The origination point identified as "From Debris Staging Site" assumes Scenario #2.

1. The types of debris to be managed (during removal and/or at debris staging sites) include, but are not limited to, the following:

- D-1 Uncontaminated green waste/vegetative debris
- D-2 Construction and demolition debris (C&D)
- D-3 Electronic waste (E-waste)
- D-4 Household hazardous waste (HHW)
- D-5 Putrescent municipal solid waste (Household trash)

- D-6 White goods (home appliances)
- D-7 Aggregate (fill materials)
- D-8 Animal mortalities
- D-9 Contaminated soil, silt, sand and sediment
- D-10 Hazardous waste
- D-11 Scrap metal
- D-12 Sunken vessel removal
- D-13 Vehicle removal from the Public Right-of-Way
- D-14 Vessel removal from the Public Right-of-Way

Types of Waste/Debris Material and Removal Procedures:

- D-1 **Uncontaminated Green Waste/Vegetative Debris**
consists of whole trees, tree stumps, tree branches, tree trunks, and other brush and leafy material. It is recommended that the Contractor(s) possess an arbor license or be under the direction of a licensed arborist.

- D-1.1 *Uncontaminated green waste/Vegetative debris (From R.O.W; From Debris Staging Site)* Vegetative debris in this instance has already been separated or required no separation and has been placed on the right-of-way for collection. A cubic yardage rate is associated with mechanical collection and transportation of vegetative debris from the public right-of-way of the Assigned Debris Control Zone. An alternative option is that the Contractor(s) may be directed by the FRCOG or its designated agent, to chip this material and leave on-site where feasible, posing little or no environmental impact. Final recycling or disposal will depend on market needs and opportunities for alternative use (e.g., biomass). This debris may be managed by burning, but only as a last resort if authorized by MADEP. For this item, the unit price shall be stated in per cubic yards units and is based on mileage intervals.

- D-1.1.1 *Removal of Hazardous Limbs (Hangers)(From ROW)*
Contractor(s) in their Assigned Debris Control Zone, shall remove limbs greater than 2” in diameter that are still hanging in a tree and threatening a public use area (e.g., sidewalks, parking lots, trails, golf cart paths, sitting areas in parks, etc.) and which are located on improved public property. All hazardous limbs in a tree should be cut at the same time the work is being conducted in that sector. An eligible scope-of-work will be to cut the branch at the

closest main branch junction. Removing the entire branch back to the trunk is not the preferred method.

For this item, the unit price shall be given for each tree; the price shall include the removal of the hazardous limb and transport to a Debris Staging Site. Once processed at a Debris Staging Site, the cost of transport shall be figured under the item D-1.1 vegetative debris.

D-1.1.2

Removal of Hazardous Trees (standing leaners)(From ROW) The FRCOG or its designated agent (i.e., municipal tree wardens) will be responsible for evaluating trees and shall make a determination of the tree's condition (hazardous or nonhazardous). A tree shall be considered "hazardous" and will be field marked by the FRCOG or its designated agent and removed by the Contractor(s) in their Assigned Debris Control Zone, if its condition was caused by the disaster; if it is an immediate threat to lives, public health and safety, or improved property; and if it is six inches in diameter or greater, when measured at breast height; and when one or more of the following criteria are met:

- More than 50% of the crown is damaged or destroyed.
- It has a split trunk or broken branches that expose the heartwood. It has fallen or been uprooted within a public use area.
- It is leaning at an angle greater than 30 degrees.

Trees determined to be hazardous that have less than 50% of the root-ball exposed should be cut flush at the ground level. The cut portion of the tree will be included with regular green waste (vegetative debris). The eligible scope-of-work for a hazardous tree may include removing the leaning portion and cutting the stump to ground level. Contractor(s) shall bring debris to the nearest designated Debris Staging Site for eventual grinding.

For this item, the unit price shall be given for each tree; the price shall include the removal of the hazardous tree and transport to a Debris Staging Site. Once processed at a Debris Staging Site, the cost of transport shall be figured under the item D-1.1 vegetative debris.

D-1.1.3

Removal of Fallen Trees (From ROW) The FRCOG or its designated agent shall confirm for the Contractor(s) the

removal of fallen trees from the public right-of-way. The Contractor(s), in their Assigned Debris Control Zone, shall cut and remove a fallen tree that extends onto the right-of-way from private property, at the point where it enters the right-of-way. Vegetative debris will be placed on the right-of-way for collection with other vegetative storm debris. Contractor(s) shall bring debris to the nearest designated Debris Staging Site for eventual grinding.

For this item, the unit price shall be given for each tree based on diameter as indicated on the fee schedule; the price shall include the removal of the fallen tree and transport to a Debris Staging Site. Once processed at a Debris Staging Site, the cost of transport shall be figured under the item D-1.1 vegetative debris.

D-1.1.4 *Removal of Hazardous Stumps (From ROW; From Debris Staging Site)* Management of this debris type must be consistent with FEMA Recovery Policy – RP9523.11 entitled Hazardous Stump Extraction and Removal Eligibility, dated May 1, 2006 (review date May 1, 2009). The Contractor(s) is expected to be completely familiar with this FEMA Recovery Policy (RP9523.11); the following numbered items under - VII Policy - are excerpted to provide information for preparing unit price schedules.

- Policy
- A1. If it is necessary to remove an uprooted stump before it can be inspected by FEMA because it poses a threat that must be dealt with immediately, the FRCOG must submit documentation to FEMA, including photographs, that establishes its location on public property, specifies the threat, stump diameter measured two feet up the trunk from the ground, quantity of material to fill the hole, and any special circumstances.
- A2. FEMA will reimburse applicants for extraction, transport and disposal of stumps with a diameter of 24 inches or smaller at the unit cost rate for regular vegetative debris, using the FEMA Stump Conversion Table, as such stumps do not require special equipment.
- A3. FEMA will reimburse applicants at the unit cost rate (usually cubic yards) for normal debris removal for all stumps, regardless of size, place on the rights-of-

way by others (i.e., contractors did not extract them from public property or property of eligible Private Non Profit organization). In such instances, applicants do not incur additional cost to remove these stumps – the same equipment is used to pick up “regular” debris can be used to pick up these stumps.

- A4. If an applicant incurs additional costs in picking up large stumps (over 24 inches in diameter) from rights-of-way, it should complete the Hazardous Stump Worksheet and present documentation to FEMA in advance for consideration.
- A5. Stumps with less than 50% of their root ball exposed should be cut flush at ground level, and the cut portion included with regular vegetative debris. Straightening or bracing of trees is not eligible for reimbursement.

Removal of eligible hazardous stumps can be from public or, where authorized by the state from private property.

For this item, the unit price shall be based on cubic yards based on the stump conversion table as provided by FEMA’s Recovery Policy RP9523.11. This will apply to all sized stumps. However, stumps over 24 inches in diameter will require the completion of FEMA’s Hazardous Stump Worksheet to be presented to FEMA in advance for consideration. The unit price provides for the extraction, transport, and disposal of stumps. Once processed at a Debris Staging Site, the cost of transport shall be figured under the item D-1.1 vegetative debris.

D-2

Construction and Demolition (C&D) Debris consists of debris resulting from structural damage to buildings as well as buildings that will require demolition as a result of the disaster event, and damage to roads and bridges, and will include items such as lumber, masonry, road paving materials, rebar and plaster. wood (both clean and treated), roofing and siding materials, wallboard, metals, carpeting and flooring, insulation, glass, tile, window coverings, plastic pipe, heating and ventilating, and air conditioning systems and their components, light fixtures, furnishings and fixtures. In addition some asphalt brick and concrete that cannot be reasonably segregated can be included as C&D. Some light fixtures (pre-1977) may contain a PCB light ballast which, if leaking, must be handled according to federal and state regulations. Ineligible debris shall not be

loaded, hauled, or disposed of under this Contract (i.e., C&D generated from restoration work rather than disaster-generated). Fee schedule shall provide for two categories of C&D removal: (1) non-asbestos containing C&D debris, and (2) asbestos containing C&D debris. See discussion below.

D-2.1 *Non-asbestos containing C&D (From ROW; From Debris Staging Site)* Contractor shall perform mechanical collection and transportation of construction and demolition debris (C&D) free of asbestos from the public right-of-way of an Assigned Debris Control Zone to the nearest Debris Staging Site for processing and segregating. If the situation exists where segregation at the curbside is possible and materials can be separated out for recycling, the Contractor shall transport the material to a pre-determined recycling facility. Refer to separate specifications included herein for scrap metal, aggregate waste (asphalt, brick, concrete) and white goods that can be separated from C&D. Contractor shall load processed C&D into trucks for transport to approved final disposal sites. For this item, the unit price shall be given in both cubic yards and tons and is based on mileage intervals.

D-2.2 *Asbestos containing C&D (From ROW; From Debris Staging Site)* Contractor(s) shall refer to the EPA document entitled *Guidelines for Catastrophic Emergency Situations Involving Asbestos published by the USEPA, document number EPA 340/1-92-010, February 1992*. Compliance with the National Emissions Standards for Hazardous Air Pollutants (NESHAP), 40 CFR, Part 61 requirements is also necessary.. Contractor(s) shall use the services of State licensed asbestos contractors. Known or suspect asbestos containing material (ACM) should be segregated by a licensed asbestos contractor and disposed of at a licensed asbestos facility. ACM shall be disposed of in a landfill licensed to accept and dispose of ACM. Materials that could contain ACM and that should be segregated include, but are not limited to, the following: floor tiles, roofing shingles, linoleum, ceiling tiles, exterior shingles, concrete flooring covered with mastic or flooring adhesive, pipe and/or boiler insulation, ceiling and/or wall texture, and stippled or blown on surfacing materials. Asbestos containing waste shall be appropriately labeled and properly disposed of at a waste disposal facility that is authorized and permitted to accept friable and non-friable

asbestos containing materials. For this item, the unit price shall be given in both cubic yards and tons and is based on mileage intervals.

D-3 **Electronic Waste** (E-waste) includes items such as stereos, televisions, VCRs, DVD players and computers and peripheral accessories, telephones, and other devices.

D-3.1 *Electronic Waste (From ROW; From Debris Staging Site)* will be collected by the Contractor, if licensed to do so, or a licensed E-waste subcontractor, and disposed of at a facility licensed to accept E-waste in accordance with Massachusetts regulations at 310 CMR 19.000. For this item, the unit price shall be given in tons and is based on mileage intervals.

D-4 **Household Hazardous Waste** (HHW) includes, but is not be limited to, items such as automobile fluids (used waste oil, antifreeze), batteries, paints and stains, cleansers, photo chemicals, lawn-care chemicals, unidentified liquids, household cleaners, and pesticides.

D-4.1 *HHW Handling and Disposal (From ROW; From Debris Staging Site)* HHW is excluded from the definition of hazardous waste and therefore does not require the same collection or handling procedures as hazardous waste. While every effort will be made to have the local residents separate at curbside HHW from the other debris, if this does not occur, the crew(s) handling the normal debris removal process are required to separate any HHW to the extent possible or as needed during collection. Crew(s) shall be designated for removal of HHW material normally consisting of a truck and two individuals with the appropriate personal protective equipment (PPE). Each member of the crew shall be trained in accordance with EPA and OSHA requirements for handling HHW materials. The truck should be equipped with separate compartments, drums, or containers for the wastes. This will allow the crew to segregate the HHW items. However, depending on the ability to identify these wastes, they may be bulked or may have to be over-packed. The Contractor(s), in their designated Assigned Debris Control Zone, shall deliver HHW loads to a Debris Staging Site or directly to a permitted HHW regional facility if available for use. Note that source segregated debris collection offers the potential of high salvage value and efficient recycling/reduction

processing. This method will be primary when collecting HHW. The Contractor shall load and transport HHW (that has been separated and processed) at the Debris Staging Site for final disposal and/or recycling at an approved and permitted site. For this item, the unit price shall be given per 55-gallon drum collection and is based on mileage intervals.

D-5 Putrescent Municipal Solid Waste is considered as primarily food spoilage and contaminated or damaged recyclables such as wet or mildewed newspaper, cardboard, etc. which requires immediate disposal. There is the expectation that normal operations will resume for weekly garbage collection and these activities are outside this debris removal RFP.

D-5.1 *Putrescent MSW (From ROW; From Debris Staging Site)*
The Contractor, in their Assigned Debris Control Zone, shall collect and transport to a Debris Staging Site and/or final disposal site, such as a permitted landfill or resources recovery facility, all refrigerator and freezer contents to be disposed of as a result of a loss in power resulting from the disaster event and damaged recyclables and that have been placed curbside. Refrigerator and freezer contents that have been removed from a Debris Staging Site shall be loaded by the Contractor and transported to a permitted resources recovery facility or permitted landfill. For this item, the unit price shall be given in both cubic yards and tons and is based on mileage intervals.

D-6 White Goods/Household Appliances are a category of scrap metal and include appliances such as stoves, refrigerators, freezers, dishwashers, washers, dryers, microwaves, air conditioners, other similar types of appliances.

D-6.1 *Collection and Final Recycling/Disposal of White Goods (From ROW; From Debris Staging Site)* The Contractor(s), in their Assigned Debris Control Zone, shall load and transport all FEMA eligible reimbursement white goods (Freon and non-Freon) that are placed in the right-of-way to a Debris Staging Site or final recycling/disposal facility. Contractor(s) shall load and transport from a Debris Staging Site for final recycling and/or disposal all white goods only after removal of Freon has occurred. Only a contractor certified in accordance with 40 CFR Part 82

Section 150 through 166 shall remove chlorofluorocarbon liquid (CFC). White goods shall be brought to a scrap metal recycling facility. For this item, the unit price shall be given for each white good and is based on mileage intervals.

- D-6.2 *Removal and Disposal of Freon (From Debris Staging Site)*
The Contractor(s), in their Assigned Debris Control Zone, shall remove and recover Freon from any white goods at the Debris Staging Site or final recycling/disposal facility in accordance with all federal, state, and environmental and safety regulations and laws. The Contractor(s) shall make some distinguishing mark on each white good indicating that the Freon has been removed and recovered. The Contractor(s) shall maintain all licenses to perform said work. For this item, the unit price shall be given for each white good for the extraction and recovery of Freon.
- D-7 **ABC** consists of asphalt, brick, and concrete.
- D-7.1 *ABC – Clean (From ROW; From Debris Staging Site)* The Contractor(s), in their Assigned Debris Control Zone, shall load, haul, and dump broken brick, block, concrete, and asphalt meeting MADEP’s regulations in 310 CMR 16.02 to an ABC recycling facility. The public shall be instructed to place ABC materials in separate piles in the public right-of-way. The Contractor(s), in their Assigned Debris Control Zone, shall load, haul, and dump broken brick, block, concrete, and asphalt chunks to a Debris Staging Site and/or a final disposal site. For this item, the unit price shall be given in both cubic yards and tons and is based on mileage intervals.
- D-7.2 *ABC – Contaminated (From ROW; From Debris Staging Site)* Broken brick, block, concrete, and asphalt that has been contaminated by an oil or chemical spill as a result of the disaster event or that is coated painted or impregnated shall be prepared for disposal with other contaminated construction and demolition materials. Refer to specification D-2.1 for ABC that cannot be separated from C&D. The contractor may as an alternative obtain a beneficial use permit for reuse of the facility if approved by FRCOG. For this item, the unit price shall be given in both cubic yards and tons and is based on mileage intervals.

- D-8** **Animal mortalities** are defined as a significant loss of livestock, pets, and/or natural wildlife.
- D-8.1 *Animal Carcasses (From ROW)* The Contractor(s) shall collect all animal carcasses separately from the assigned debris control zone for transport to an authorized disposal facility in a timely manner. The primary methods of animal carcass disposal shall be burying, incineration, or composting. However, the Contractor(s) shall first consult with FRCOG for a final determination on the appropriate disposal method for dead animal carcasses. For this item, the unit price shall be based on collection/loading costs and transport costs per “fully loaded mile” per mileage intervals.
- D-9** **Soil, Silt, Sediment and Sand** is defined as residuals deposited by receding flood waters which may include historical sediment from nearby water bodies, soil from yards, road and construction debris, and other material. The Contractor(s), in their Assigned Debris Control Zone, shall remove and transport storm-deposited sand, silt, and soil from the public Right-of- Way, to be hauled to a Debris Staging Site for processing to remove extraneous waste materials or directly to an approved disposal/reuse facility. The Contractor(s) shall load and transport sand (including sand removed from sand bags), silt, and soil from a Debris Staging Site to an approved site.
- D-9.1 *Soil, Silt, Sediment and Sand – Uncontaminated (From ROW; From Debris Staging Site)* This is material that has not been subjected to spills, floodwaters or has been determined through analytical testing to be not contaminated. This material could be transported to a staging area until final disposal or reuse has been determined. The Contractor can as an alternate identify a reuse site and haul directly if approved by FCROG. For this item, the unit price shall be given in both cubic yards and tons and is based on mileage intervals.
- D-9.2 *Soil, Silt, Sediment and Sand – Contaminated (From ROW; From Debris Staging Site)* As a result of certain conditions, some soils may exhibit visible or known traces of petroleum or chemical spills. These soils shall be excavated and placed in weather-tight containers, such as a covered and lined roll-off or inter-modal container. If these containers must be stored temporarily, they should be

placed on an impervious surface, such as a concrete or asphalt parking lot for no more than 90 days. This material could be transported to a staging area until final disposal or reuse has been determined. If necessary analytical testing shall be performed to determine if the material can be reused or must be disposed.

- D-9.2.1 *Soil, Silt, Sediment and Sand – Contaminated (From ROW, From Debris Staging Site) and Eligible for Disposal in Unlined Landfills* per MADEP Policy #COMM-97-001: Reuse & Disposal of Contaminated Soil at Massachusetts Landfills.
- D-9.2.2 *Soil, Silt, Sediment and Sand – Contaminated (From ROW, From Debris Staging Site) and Eligible for Disposal in Lined Landfills* per MADEP Policy #COMM-97-001: Reuse & Disposal of Contaminated Soil at Massachusetts Landfills.
- D-9.2.3 *Soil, Silt, Sediment and Sand – Contaminated (From ROW, From Debris Staging Site) and Requiring In-state Treatment or Out-Of-State Disposal*
- D-9.2.4 *Soil, Silt, Sediment and Sand – Contaminated (From ROW, From Debris Staging Site) with PCBs.* If it is evident that the spill is the result of an empty or leaking piece of equipment (e.g., electrical equipment or similar source) which has not been tested, some testing of the soil may be necessary to identify if PCBs are present. PCB containing materials must be sent to a Toxics Substance Control Act (TSCA) or hazardous waste landfill. If it contains PCB less than 50 parts per million (ppm), it can go to a subtitle D landfill with authorization from the MADEP. Testing must be by EPA approved method 8082. If material is contaminated by a piece of PCB equipment, the equipment must be addressed by containerizing the entire item, if small enough or by draining the remaining fluid into drums and disposing of both the fluid and empty machine carcass at TSCA disposal facilities out-of-state. Empty equipment that had contained fluid with less than 50 ppm, once drained, can be managed as scrap metal. For this item, the unit price shall be given in both cubic yards and tons and is based on mileage intervals.
- D-9.3 *Contaminated Sandbags (From ROW; from Debris Staging Site)* The Contractor(s), in their assigned debris control

zone, shall collect, transport, and dispose of all used sandbags as directed by the FRCOG. Sand bags shall be transported to a designated Debris Staging Site for processing or existing MADEP soil reuse site as directed by the FRCOG designated person. For this item, the unit price shall be given in both cubic yards and tons and is based on mileage intervals.

D-10 **Hazardous Waste** includes materials like petroleum-contaminated media, chlorofluorocarbons (CFCs), and all other substances as defined in 40 CFR (Code of Federal Regulations) 261.3.

D-10.1 *Hazardous Waste Handling and Disposal (From ROW; From Debris Staging Site)* This waste category shall also include bio-hazardous waste, or other contaminated waste. The methods of handling and transporting these wastes from the site are the responsibility of the Contractor. The Contractor(s), in their Assigned Debris Control Zone, shall work with Connecticut licensed Hazardous Waste Transporters and licensed Spill Response Contractors in hazardous waste clean-ups that shall include materials like petroleum-contaminated media, chlorofluorocarbons (CFCs), and all other substances as defined in 40 CFR (Code of Federal Regulations) 261.3. A hazardous waste release, once identified by private owners or State and local officials, must be segregated from other disaster-generated waste, stored separately, and ultimately transported to a permitted commercial hazardous waste disposal facility. Generators (meaning any person, by site, whose act or process produces hazardous waste identified or listed in Part 261 of 40 CFR or whose act first causes a hazardous waste to become subject to regulation.) will be permitted to use knowledge of the material to conclude that the material is hazardous waste without conducting a TCLP analysis. If hazardous or unknown materials such as lead, PCBs, solvents, pesticides, pool chemicals, industrial grade cleaning solutions, etc. are discovered during a demolition or cleanup, the materials should be staged separately and with secondary containment to collect leaks and prevent further mixing with other hazardous waste or incompatible chemicals. To the extent possible, the Contractor(s) will assist with segregating the material from the rest of the demolition and cleanup. During a debris management crisis, owners will be responsible for notifying the MADEP

at 1-888-304-1133. For this item, the unit price shall be given in 55 gallon drums per mileage intervals.

D-11 **Scrap Metal** refers to ferrous metals such as structural steel and steel framing members and non-ferrous metals such as wiring/conduit, plumbing (pipes and fixtures) and HVAC materials (ductwork, motors). White goods are considered as scrap metal, but are described separately.

D-11.1 *Scrap metal (From ROW; From Debris Staging Site)* The Contractor(s) shall in their Assigned Debris Control Zone, shall to the extent possible, segregate scrap metal in the public right-of-way and bring to a Debris Staging Site or directly to a scrap metal processor located in the State. At the Debris Staging Site, the processing of C&D debris will in most cases result in the separation of scrap metal. Scrap metal containing motors shall be drained of all liquids prior to transport to a disposal facility and managed appropriately. This scrap metal shall be loaded and transported to a scrap metal recycling facility, preferably in-state. Any revenues generated shall be accrued to the FRCOG. For this item, the unit price shall be given in both CY and tons per mileage interval.

D-12 **Sunken Vessel Removal**

D-12.1 *Sunken Vessel Removal (From ROW; From Aggregation Sites)* For water based salvage/removal operation of vessels not under the purview (non-navigable waters) of the United States Coast Guard or the United States Army Corps of Engineers, the Contractor(s) shall have extensive/knowledge and experience in marine salvage and marine wreck removal. Contractor must show experience with numerous salvage wreck removal contracts and the ability to quickly mobilize specialized salvage equipment into position. Contractor(s) shall determine and set forth at the request of the FRCOG, the best approach method for removal of vessels in a marine environment. Contractor must be capable of providing salvage services to include re-floating, staging, and disposal of vessel as necessary. The Contractor(s) shall factor the approach into the quoted price along with all the necessary items to complete Sunken Vessel removal. Marine based operations shall be priced per linear foot of unit. For this item, the unit price shall be given based on each vessel size (recreational boats – sail boats and power boats, ranging in size from 12 feet to 43

feet) and the based on per mileage interval for transport to aggregation site.

D-13 Vehicle Removal from the Public Right-of-Way includes cars, trucks, motorcycles, and recreational vehicles.

D-13.1 *Wrecker Services for Stray and Abandoned Vehicle (Towing) (From ROW; From Aggregation Sites)* The Contractor(s) shall be responsible for retaining wrecker services in managing abandoned and disabled motor vehicles; these vehicles are to be moved to the nearest pre-approved vehicle aggregation site. Contractor shall make all the financial arrangements with towers that are hired as subcontractors. The Contractor(s) will coordinate with the FRCOG and shall adhere to State protocols on vehicle removals from the public Right-of-Way. The Contractor shall issue work orders to within 48 hours, containing all pertinent data supplied by the FRCOG, to the subcontracted licensed towers. The licensed towers arriving on the scene will be responsible for evaluating environmental and safety issues. Should the licensed tower find any major threats to health, safety or the environment, vehicle shall not be moved, and the FRCOG shall immediately be notified. Once all concerns are addressed, the vehicle shall be lifted, properly secured and transported to the assigned aggregation site using the safest and most direct route. Recovered vehicles shall, within 24 hours, arrive at the site and be immediately inspected. The vehicles will be processed. The vehicles will be stored in a manner to allow ample access for inspection by the State to allow for retrieval and reclamation by vehicle owner when applicable and the Contractor when the holding period has expired and the vehicle is being removed for final dismantling, recycling and/or disposal. For this item, the unit price shall be given for each vehicle (cars, light trucks, trucks, tractor trailers) per mileage interval.

D-14 Vessel Removal from the Public Right-of-Way is defined as recreational boats. D-15.1 *Recovery of Stray and/or Abandoned Vessels (From ROW; From Aggregation)* Contractor shall have recovery equipment and tow vehicles prepared to mobilize upon the first notification to recover vessels from the Public Right-of-Way and waterways as directed by the FRCOG. Vessels that have been identified and cleared for recovery and towing from public lands by the FRCOG will be recovered within 72 hours of

notification. Recovery will begin with identification of the vessel using GPS coordinates. Contractor shall inspect the vessel and make a record of the vessel location, description, registration number, and the type and extent of damage. Prior to towing, Contractor shall mitigate any fluid leaks. Outboard motors shall be tilted to the utmost position. Batteries shall be disconnected; leaks shall be mitigated. Vessels will then be transported to the aggregation site safely and securely by Contractors towing vehicles, trailers, and equipment. Vessels will be processed at the aggregation sites. For this item, the unit price shall be given for each vessel (recreational boats – sail boats and power boats, ranging in size from approximately 12 feet to 43 feet) per mileage interval.

Part II: Debris Staging Site Operation

A. Introduction

As noted in the DDMPD, there are no landfills in Franklin County and all waste is transported out of the region through the use of transfer stations. However, many of these transfer stations are too small in area to handle the additional waste generated in a disaster. Therefore, collected disaster debris will be managed at sites for transport within and out of the region referred to as “Debris Staging Sites”. Four Debris Staging Site locations will be pre-designated by the Franklin County Regional Emergency Planning Committee. Part II of this SOW describes the operation of Debris Staging Sites by private contractors.

Contractors will be responsible for:

- I.** Setting up, managing and operating Debris Staging Sites for the acceptance, sorting, reduction, and incineration, in preparation for recycling or ultimate disposal of disaster related debris and in accordance with the FRCOG Debris Staging Site Operations Plan
- II.** Obtaining all permits necessary to operate Debris Staging Sites
- III.** Documentation of all costs with records kept and requesting reimbursement for work in a manner which is in compliance with all state and federal requirements
- IV.** Collection of site baseline data prior to use, including documentation of site condition and identification of any environmental contamination
- V.** Proper closure of Debris Staging Site, including removal of all materials from the site for proper use or disposal, soil and groundwater sampling conducted where appropriate to identify any contamination resulting from operation of the site, and appropriate coordination with the Massachusetts Department of Environmental Protection (MADEP).

A Debris Staging Site is a location designated to temporarily store, segregate, transfer and/or reduce disaster-generated debris on a regional level, for recycling or final disposal. Criteria included in the Franklin County DDMPD were used to select four staging sites for debris processing and storage in Franklin County. These sites are shown on Exhibit B – Map of Franklin County Assigned Debris Control Zones and Debris Staging Sites.

I. Setting up, Managing and Operating Debris Staging Sites

The Contractor(s) shall manage Debris Staging Site operations to coincide with hauling operations during daylight hours, seven days per week or as defined in the Emergency Authorization (permit to operate) issued in response to the storm event.

For this item, the unit price shall be given as a Lump Sum for each site for the following tiers of debris generating events – 50,000, 200,000, and 400,000 cubic yards (CY) of debris generated – and includes mobilization, build-out of site, and operations at site. Debris Staging Site operations should be conducted in accordance with the FRCOG Debris Staging Site Operations Plan (included as Exhibit F).

A. Inspection Tower Construction

The Contractor(s) shall construct an inspection tower for each assigned Debris Staging Site such that the monitor can easily look down into the truck bed to fully view the debris load, establishing a volume. Inspection towers shall be constructed using wood or equivalent structural steel members. The floor elevation of the tower shall be ten foot above the existing ground level elevation. The floor area shall be 8'x12', constructed of 2"x10" joists, 16" on center with ¾" plywood supported by four 6" x 6" posts. A 4-foot high wall constructed of 2" x 4" studs and ½ inch plywood shall protect the perimeter of the floor area. The floor area shall be covered with a corrugated metal roof with 2' eaves all around, and shall be provided with a rain gutter to protect the access stairs from roof run-off. The roof joist shall not be spaced greater than 24" on center and shall provide a minimum of 7 ft. of headroom below these roof support joists. Access stairs shall be a minimum of 36" wide, and shall be provided with a 42" handrail with mid-rail on both sides of the stairs. Stair treads shall be provided with a non-slip surface for all weather access. Inspection towers shall include the construction of a worktable, 6'L x 30"W x 42"H with a ¾" plywood top supported at all four corners. The inspection tower shall be provided with a means to protect occupants against inclement weather (e.g. rain, wind, dust, etc.). Inspection towers shall be installed in the center of a 14' by 18' level pad, and shall be adequately anchored and braced to withstand a 45 mph wind load. Inspection towers shall be supplied with adequate lighting and 120v power. A minimum of four duplex 120v receptacles shall be provided (two for the work table, and one on each adjacent wall) and shall be mounted 42" above finished floor. If a generator is used the Contractor will provide a 250 Watt (minimum) uninterruptible power supply. The generator shall be positioned a minimum of 50 feet from the inspection tower to reduce noise and exhaust emissions for tower occupants. This item includes all labor and materials costs associated with constructing the inspection tower. The Contractor(s) may submit for FRCOG consideration a request to substitute prefabricated metal scaffold tower installations for the specified wood tower installations. The Contractor(s) may provide a mechanical lift with roof cover to be used in place of the constructed tower. Hauling operations will not be allowed into any Debris Staging Site until an inspection tower is provided. The Contractor(s) shall provide and maintain portable restroom facilities at all Debris Staging Sites.

B. Portable Scales at Debris Staging Sites

The FRCOG may direct, at the pre-event planning stage or at a later time period, the Contractor(s) to install portable scales at a particular Debris Staging Site, and to use weight as the method for determining quantities. The Contractor(s) will provide a price for installing and maintaining such portable truck weighing scales on Exhibit D Price Schedule. Contractor-provided scales shall be pre-registered with the State of Massachusetts and be NTEP approved. A registered service person must locate and put in-place the scales. The weigh master must be a registered public weigher with the State of Massachusetts Department of

Consumer Protection. Invoices for work performed will be submitted using the alternate unit prices for tons provided, where shown, on the Exhibit D.

C. Compliance

The Debris Staging Site, including the inspection tower, will be periodically inspected by the FRCOG or its Authorized Agent for compliance with this specification and applicable safety criteria.

D. Operational Boundaries

The Contractor(s) shall clearly define the different use areas at the Debris Staging Sites. In establishing the operation boundaries, the Contractor(s) may consider using earthen berms, temporary barriers, or any other physical restriction. The separation of all areas as listed below will need to be clearly defined and field delineated. As operations proceed, the lines may be moved to accommodate either growing demand for space or reducing in preparation for closure. This will aid traffic circulation and help keep debris amassing at the debris-staging site to a minimum. Common operational activities will include:

- Reduction in volume
- Recycling/sorting
- Tipping or unloading areas
- Loading areas for processed debris to go to its final disposition
- Drop-off areas for the general public (for debris such as green waste/vegetative debris, recycling, or C&D)
- Household hazardous waste storage
- Monitoring tower locations
- Equipment, fuel, and water storage

E. Household Hazardous Waste Containment Area

The Contractor(s) shall construct a hazardous material containment area at each Debris Staging Site. The perimeter shall be lined with hay bales and staked in place. The area shall be lined with a heavy gauge plastic minimum 20 mil to provide a non-permeable barrier. A six-inch layer of sand will be added as an absorbent and to protect plastic from puncture or tear. Additional plastic sufficient to cover the ground area is required to prevent stormwater from entering the containment area. The containment area shall have a non-permeable cover at all times. It is the Contractors responsibility to be informed of all laws pertaining to the handling of hazardous materials. Site run-off must be redirected from the containment area by site grading. This item includes all labor and materials costs associated with constructing containment area(s).

II. Obtaining Necessary Permits

Contractor is responsible for determining what permits are necessary to operate debris staging sites. Copies of all permits shall be submitted to FRCOG prior to commencement of work. The Contractor shall be responsible for control of pedestrian and vehicular traffic within the debris staging sites.

III. Documenting Costs, Recordkeeping and Requests for Reimbursement

The Contractor shall provide and submit to FRCOG all reports and documents as may be necessary to adequately document the debris emergency response, management, and recovery services in accordance with FEMA and State requirements.

IV. Collection of Baseline Site Data

If circumstances allow and per FEMA guidance, the soil, groundwater and/or surface water at and near a debris staging area should be tested prior to receipt of disaster generated debris to establish pre-existing baseline conditions. Contractor shall provide copies of the environmental baseline study, site description, and site plan to MADEP for each site so that the information is readily available for public assistance funding applications.

V. Closure of Debris Staging Site

The Contractor shall remove all equipment and temporary structures and shall dispose of all residual debris from the Debris Staging Site at an approved final disposition site. The Contractor is responsible for the reclamation and remediation of the Debris Staging Site to its original state prior to use. See Exhibit G entitled Close-out of Debris Staging Site for more information with regard to close-out procedures and requirements.

VI. Demobilization

Upon completion of all clean-up work, Contractor(s) shall remove all equipment, and close out TDSRS as per the requirements of the State and specifications contained herein.

Exhibit A - Example Task Order (to be prepared by others)

Exhibit B – Map of Franklin County Debris Control Zones and Debris Staging Sites

Exhibit C – Example Truck Load Deductions

Exhibit D – Example Price Schedule (to be prepared by others)

Exhibit E – Example Right-of-Entry Agreement Form

Exhibit F – FRCOG Debris Staging Site Operations Plan

Exhibit G - Close-out of Debris Staging Site (to be prepared by others)

Appendix H.2. Pre-Positioned Contracts Franklin County Debris Management Action Plan

Contract 2. Debris Collection and Delivery Monitoring Scope of Work

- 1. The Engineer(s) shall** provide qualified personnel to assist the FRCOG with the monitoring, documenting, and reporting requirements of the disaster debris removal services that will be performed by Engineers retained under a separate FRCOG Contract. The types of personnel needed to perform this function could include, but are not limited to, the following: Project Manager; Debris Monitoring Operations Manager; Field Debris Supervisor; Field Debris Monitors; Fixed Site Debris/Tower Monitors; and support staff (administrative and technical support).
- 2. The Engineer(s) shall** be National Incident Management Systems (NIMS) compliant, so as to ensure coordinated and efficient operations. The Project Manager and the Debris Monitoring Operation Manager must have taken the *Federal Emergency Management Agency (FEMA) IS-700 NIMS An Introduction Course* prior to contract activation. The Engineer(s) shall maintain training records and upon request, make these available to the FRCOG or its designated Agent.
- 3. The Engineer(s) shall** be responsible for the health and safety of its workforce. The Engineer(s) shall supervise and direct all work related to monitoring. Safety of the Engineer's personnel and equipment is the responsibility of the Engineer(s). The Engineer(s) shall designate in writing the individual responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work to be performed. The Engineer(s) shall comply with all applicable safety and health protection codes, laws, ordinances, rules, and regulations of any public body having jurisdiction for the safety of persons or property to protect them from damage, injury, or loss. The Engineer shall notify owners of adjacent property and of underground structures and improvements and utility owners when implementation of the work may affect them, and shall cooperate with them in the protection, removal, relocation or replacement of their property. The Engineer(s) shall observe and encourage safety conscious debris removal contractor operations involving loading and transport of debris in and through public right-of-ways. Engineer's duties and responsibilities for the safety and protection of the work shall continue until such time as the work is completed and final acceptance by the FRCOG has occurred. Accidents shall be investigated and reports completed by the immediate supervisor of the employee(s) involved and reported to the appropriate State and Federal authorities. All data reported must be complete, timely and accurate.
- 4. The Engineer(s) shall** be responsible and liable for the accurate quantity measurements and completeness of the debris removal activities of the contractor(s) working under the separate FRCOG Contract for Debris Removal and Delivery within an

Assigned Debris Control Zone(s) (see Exhibit A for Franklin County Assigned Debris Control Zones and Debris Staging Sites).

5. The Engineer(s) shall provide the FRCOG with written and, if requested, electronic media documentation of debris/waste volumes removed and their locations (i.e., curbside, Debris Staging Site, other), including Engineer(s) payment estimates, weekly progress reports, debris removal schedules, and media releases that have been subject to review and approval by the FRCOG (if requested).

6. The Engineer(s) responsibilities shall include, but are not be limited to, the following:

- A. *Monitor debris clean-up operations:*
 1. Development of a truck measuring system.
 2. Establish procedures to routinely check and compare debris removal contractor(s) truck size volumes relative to certified truck volumes provided by others.
 3. Development of a plan for standard reporting of completed areas.
 4. Coordinate and monitor all debris removal activities under contract.
 5. Monitor debris removal contractor(s) operations to minimize unnecessary damage to public and/or private property.
 6. Ensure that only eligible debris are removed.
 7. Initiate/document load tracking tickets at the point of pick-up.
 8. Complete load tracking tickets at authorized Debris Staging Site and other re-use and or disposal sites.
 9. Verify cleanup is complete for each area/street prior to moving load operations to next area/street.
 10. Coordinate work with onsite MEMA and FEMA representatives as applicable.
 11. Provide schedule of pick-up locations to be used to FRCOG and municipal public relations personnel.
 12. Identify and record locations where debris needs to be separated by property owners prior to removal.
 13. Timely report of locations of any illegal dumping or stockpiling by debris removal contractor(s) or others.
 14. Timely report if unauthorized equipment is mobilized and used by debris removal contractor(s).
 15. Photograph any questionable area(s) (i.e. tree removal extending beyond right-of-way limits).
 16. Report, document, and follow-up on damage claims (if any).
 17. Observe and encourage safety conscious debris removal contractor or Debris Staging Site operator activities.
 18. Assist FRCOG in identifying hazardous conditions on private property that may need debris removal.
 19. Attend daily debris removal contractor or Debris Staging Site operator initiated safety meetings to discuss possible hazards to include, but not limited to, the following: backing vehicles, working within the road right-of-way, shoulders, and lane closures; and trucks not permitted to leave

with excess debris hanging over the sides that could fall off or contact other traveling vehicles or stationary objects.

B. Collect and compile debris clean-up data:

1. Track locations that have undergone or are presently undergoing debris clean-up operations.
2. Assist with prioritizing debris clean-up operations to maintain or enhance the efficient use of resources.
3. Document progress with compiled load data and coded location maps.
4. Document areas of unacceptable debris composition that were skipped over.
5. Provide daily progress reports of clean-up efforts and any problem areas to the Franklin County Emergency Operations Center (FCEOC) or FRCOG designated person.

C. Document observed areas needing maintenance repairs:

1. Obstructed storm drainage pipes or outfalls.
2. Damaged shoulders, ditches, and drainage structures.
3. Damaged regulatory, warning or guide signs.
4. Damaged guardrail or controlled access fencing.
5. Other areas as identified through task orders.

D. Close-out documentation:

1. Load tickets (completed).
2. Copies of any correspondence related to debris activities.
3. Debris removal Contractor services invoice copies.
4. Summation report of total volume(s) of debris removed at completion of contract.
5. Copies of weekly (or monthly) reports of debris removal activities, including debris removal contractor estimated pay schedules.
6. Any additional expense invoices (if applicable).
7. Documentation or reports on any unresolved issues relating to the debris removal, including damage claims, if any.
8. Certification, description and identification of truck volumes used for debris hauling.
9. Any other pertinent information required through FEMA, etc., relating to debris removal activities.

7. The Engineer(s) shall provide the following personnel:

A. Project Management

Engineer(s) shall provide a Project Manager to oversee all work (i.e., operational and administrative) related to this contract. The Project Manager will maintain daily contact with the Debris Monitoring Operations Manager on the progress of

cleanup operations and prepare daily operational reports to keep the FRCOG, MEMA and FEMA personnel as appropriate informed of work progress. The Project Manager will coordinate with both the FRCOG and debris removal contractors per the Assigned Debris Control Zones with regard to daily briefings, work progress, staffing and coordination, as well as all other work related efforts. The Project Manager will coordinate with the FRCOG with the receipt, allocation and oversight of the Load Tickets (Load Tickets are discussed in more detail in section number 12, below).

B. Debris Monitoring Operations Management

Engineer(s) shall provide project management to oversee debris monitoring operations and activities in the field. Services will include, but not be limited to, the following:

1. Coordinating daily activities and future planning.
2. Scheduling and monitoring resources and deployment timing.
3. Communication with Project Manager, MEMA, FEMA FRCOG, and municipal personnel.
4. Maintaining communication with debris monitoring management and supervisory level contractors responsible for debris removal operations.
5. Making recommendations to improve the efficiency of collection and removal of debris.
6. Overseeing and supervising field monitoring activities.
7. Overseeing accurate measuring of load-hauling compartments and the accurate computing of volume capacity in cubic yards.
8. Documenting and recording measurements and computations.

C. Field Debris Monitoring Supervision

Engineer(s) shall provide Field Debris Monitoring Supervisor(s) to work directly with Field Debris Monitors and Fixed Site Debris/Tower Monitors. Services will include, but not be limited to, the following:

1. Addressing immediate needs of field monitors and fixed debris site monitors.
2. Providing written daily reports to Operations Manager on progress of debris removal operations.
3. Identifying potential or existing gaps in monitoring operations.
4. Identifying, addressing, and troubleshooting any questions or problems that could impact work area safety and eligibility.
5. Taking receipt of partially completed Load Tickets from both the Field Debris Monitor and/or the Fixed Debris Site/Tower Monitors.
6. Distribution of Load Tickets to the Field Debris Monitors for loading and transporting curbside material and to the Fixed Debris Site/Tower Monitors for loading and transporting from the Debris Staging Site processed debris for final recycling or final disposal.

D. Field Debris Monitoring

Engineer(s) shall perform roving on-site, street level work area inspections of debris cleanup and collection. Engineer(s) will provide the Field Debris Monitors to inspect and control debris collection using manifest Load Tickets (provided by the FRCOG). Services will include, but not be limited to, the following:

1. Providing field monitor personnel at designated areas to check and verify information on debris removal.
2. Maintaining communications with their respective Field Debris Supervisor and/or Debris Monitoring Operations Manager.
3. Monitoring collection activity of trucks.
4. Issuing manifest Load Tickets at loading sites for each load and providing the partially completed Load Ticket to their designated Field Debris Supervisor.
5. Ensuring Freon containing appliances are sorted and ready for Freon removal on site or separate transport for Freon removal before final disposal.
6. Accurately measuring load-hauling compartments and accurately computing volume capacity in cubic yards; document and record measurements and computations.
7. Properly monitoring and recording performance and productivity of debris removal crew.
8. Ensuring that loads are contained and covered properly before leaving the loading area.
9. Ensuring only eligible debris is collected for loading and hauling.
10. Ensuring that curbside segregated debris is kept separate during transport to temporary Debris Staging Sites.
11. Ensuring only debris from approved public areas is loaded for removal.
12. Performing other duties from time to time as directed by their Field Debris Supervisor or Debris Monitoring Operations Manager.
13. Checking the area for safety considerations such as – downed power lines, children playing in area, other traffic control/safety needs, the operation of trucks and equipment in a safe manner.
14. Ensuring work area is clear of debris to the specified level before equipment moves to a new loading area.
15. Performing a pre-work inspection of areas to check debris piles to identify and fieldmark blocked and covered drainage swales, utility meters, transformers, fire hydrants, mail boxes, etc. to help prevent damage from loading equipment and to look for potential problems.
16. Documenting and reporting damages that may occur to utility components, driveways, road surfaces, public and private property, vehicles, etc.

E. Fixed Site Debris/Tower Monitoring

Engineer(s) shall provide personnel to oversee the inspection of the disposal or unloading sites by providing the monitoring, verification of load capacity,

and documentation at designated Debris Staging Site. In addition to the above outlined responsibilities, services will include, but not be limited to, the following:

1. Providing monitors at the Debris Staging Site and aggregation points for stray and abandoned vehicles and vessels.
2. Completing records of contractor debris removal haulers' cubic yardage, tons, or per individual unit and other record keeping as may be needed on the provided Load Ticket and providing the partially completed Load Ticket to their designated Field Debris Supervisor.
3. Initialing each Load Ticket before permitting truck to proceed from the check-in area to the tipping area.
4. Maintaining a daily Debris Staging Site Load Tracking Log (see Exhibit B) that shall be returned to their Field Debris Supervisor.
5. Assuring communication lines are kept open at all times with the contractor(s) responsible for the debris removal management and operations.
6. Performing other duties as directed by their supervisor.
7. Accurately measuring load-hauling compartments and accurately computing volume capacity in cubic yards.
8. Documenting and recording measurements and computations.

F *Provide support staff to perform necessary administrative and technical support functions.*

1. The Engineer(s) is responsible for the distribution of FRCOG-prepared, pre-printed and numbered Load Tickets to the Field Debris Supervisor(s) and keeping accurate and complete tracking records of this distribution.
 2. The Engineer(s) is responsible to be knowledgeable with all MEMA and FEMA standards and requirements for performing a comprehensive review, reconciliation, and validation of the debris removal contractor(s) invoices prior to submission to the FRCOG for processing. The Engineer(s) is responsible for preparing project worksheets and other pertinent report preparation required for reimbursement by FEMA and any other applicable agencies for disaster recovery efforts by debris removal contractor(s).
 3. The Engineer(s) shall have and use GIS capability to track locations of generated debris and assist in prioritizing debris removal and disposal activities. The Engineer(s) shall work with FRCOG as directed to provide estimated amounts of debris and tracking assistance in debris removal operations.
9. **The Engineer(s) is not responsible** for the construction of Inspection Towers for viewing of the load bed of each piece of equipment being utilized to haul debris. The construction of the Inspection Towers is the responsibility of the contractors performing the debris removal work/Debris Staging Site operations.

10. **The Engineer(s) shall audit** the debris removal contractors State certifications indicating the type of vehicle, make and model, license plate number, equipment number, US DOT trucking number and measured maximum volume, in cubic yards, of the load bed of each piece of equipment utilized to haul debris. Maximum volumes may be rounded to the nearest cubic yard. The reported measured maximum volume of any load bed shall be the same as shown on the signs fixed to each piece of equipment. The FRCOG reserves the right to re-measure trucks at any time to verify reported capacity and the monitoring contractor may be directed to perform this action.

11. **The Engineer(s) shall** be responsible for reporting requirements such as Load Tickets. If FEMA is providing grant assistance for the applicant's monitoring contract, a sample of the reporting requirements outlined in the contract will be required to substantiate the eligible costs. This sample must be adequate to demonstrate that sufficient measures were taken to ensure eligibility and accurate quantities are being reported as part of the grant. Debris monitors will be required to submit daily reports on load quantities, debris management site operations, and operational and safety issues in the field. Regular reporting will help to promote and ensure quality assurance and provide the applicant with a consistent accounting of operations in the field.

12. **The Engineer(s) are made** aware that payment to contractors for debris hauled will be based on the quantity of debris hauled in a truck as measured in cubic yards or tons and the distance hauled depending on where the debris is taken, to a Debris Staging Site or final recycling or disposal facility. Load tickets will be the documentation necessary for the contractor to receive payment (an example load ticket is included in Exhibit C). The FRCOG will reimburse the debris removal contractor(s) for transport and tipping fees at final recycling or disposal facilities. Prior to final disposal, the contractor(s) will provide to the FRCOG three bids for final recycling or waste disposal facilities. The FRCOG will, in turn, perform due diligence and make a determination of the final recycling or waste disposal facility and shall inform the debris removal contractor. The contractor(s) will be required to transport the debris to the chosen facility. If utilized, debris removal contractor(s) will have the responsibility of installing truck scales at their expense. Trucks will be weighed both entering and leaving the debris management site(s) and the weight of the load will be the calculated difference. The debris removal contractor(s) will be required to use either the volume method or the weight method for all loads hauled to any one debris management site, and will not be allowed alternate methods. The authorized debris monitors working for the FRCOG and the disposal facility monitors will use their best judgment in estimating the quantity of debris in the trucks when measurements are to be volume based. For purposes of this RFP, the authorized monitors under FRCOG contract are the final authority. Deductions from load volume will be made for: consolidation during hauling, lightly packed loads with excessive air voids, and voids caused by incomplete loading at the loading site. For reference on deductions, see the diagrams provided in Exhibit D entitled Truck Load Deductions.

Load Tickets: Load Tickets shall be supplied by the FRCOG to the Debris Monitoring Engineer(s). It will be the responsibility of the Debris Monitoring Engineer(s) to keep an accurate record of the distribution of the Load Tickets. The Debris Monitoring Project Manager will be responsible for providing the Load Tickets to the Field Debris Supervisor(s), who will in turn provide these to the Field Debris Monitors and the Fixed Site Debris/Tower Monitors. The Load Ticket is a dual use ticket covering either of the following scenarios:

- **Load Ticket: From Curbside Initial Pickup (Scenario #1)** – records the loading and transport of debris from the public right-of-way to the Debris Staging Site or directly to final recycling facilities or final disposal facilities, both in-state and/or out-of-state.
- **Load Ticket: From Debris Staging Site (Scenario #2)** – records the loading and transport of processed and segregated debris from a Debris Staging Site to recycling facilities or final disposal facilities.

A sample of the Load Ticket is found in the Franklin County Massachusetts Disaster Debris Management Planning Document. The Load Ticket is a five-part ticket. The Load Ticket is the primary record for the monitoring and measuring of debris removal operations. The following describes the procedures that will be used in the use of the Load Tickets:

Scenario #1. From Curbside Initial Pickup: Initial loading of waste debris from the public right-of-way to the Debris Staging Site or directly to final recycling facilities or disposal facilities.

(1) From Curbside - Initial Loading Site:

The first part of the ticket shall be completed at the initiation of each load in the public right-of-way, signed by the Field Debris Monitor and will be retained by the Field Debris Monitor. The Field Debris Monitor is required to keep and turn in the first of the five-part ticket at the end of each day to their Field Debris Supervisor. The Field Debris Monitor shall remove the first of the five part ticket and then give the remaining four parts of that Load Ticket to the debris removal contractor(s) driver. The driver, as directed, can then transport the debris to one of the following designated sites: a Debris Staging Site or may take the debris to a final disposal facility or recycling facility, both in-state or out-of-state, if it has been determined that this is the appropriate action.

- (2) To Debris Staging Site – Receipt of Load:
The driver will hand the remaining four parts of the Load Ticket to the Fixed Site Debris/Tower Monitor at the Inspection Station/Debris Staging Site. That Fixed Site Debris/Tower Monitor will inspect the load, record the appropriate volume or weight, record the appropriate haul distance based on transport mileage, and initial the Load Ticket. The second of the five-part Load Ticket shall remain with the Fixed Site Debris/Tower Monitor. The Fixed Site Debris/Tower Monitor is required to turn in the second of the five-part ticket at the end of each day to their supervisor. The other remaining three parts of the five-part ticket shall be given to the driver, to be turned in to the debris removal contractor(s) representative.
- (3) To Final Disposal Facility or Recycling Facility, both in-state and out-of-state, Receipt of Load:
The driver will hand the remaining four parts of the Load Ticket to a duly authorized representative of the Solid Waste Disposal facility. The authorized representative at the Solid Waste Disposal facility will inspect the load, record the appropriate volume or weight, record the appropriate haul distance based on transport mileage, and initial the ticket and shall keep the second and third parts. One will remain with the facility; the other will be forwarded to the Debris Monitoring Project Manager. The driver will retain the fourth and fifth part of the Load Ticket to be turned in to their respective debris removal contractor(s) representative.

Scenario #2. Loading of segregated and/or processed waste materials at the Debris Staging Site for transport to the final recycling facility or final disposal facilities.

- (1) From Debris Staging Site Loading Site:
The first part of the Load Ticket shall be completed at the Debris Staging Site, signed by the Fixed Site Debris/Tower Monitor, and will be retained by the Fixed Site Debris/Tower Monitor. The Fixed Site Debris/Tower Monitor is required to keep and turn in the first of the five-part ticket at the end of each day to their supervisor. The Fixed Site Debris/Tower Monitor shall give the remaining four parts of that Load Ticket to the debris removal contractor driver.
- (2) To Final Recycling Facility and Disposal Facilities:
The driver will hand the remaining four parts of the Load Ticket to the duly authorized representative of the final recycling or disposal facility. The authorized representative of the facility will inspect the load, record the appropriate volume or weight, record the appropriate haul distance based on transport mileage, and initial the ticket. Part two and three of the five-part load ticket shall remain with the authorized representative of the final disposal site. One will remain with the facility; the other will be forwarded by the receiving facility to the Debris Monitoring Project Manager. The other remaining parts of the Load Ticket, four and five, shall be given to the driver, to be turned in to their respective debris removal contractor(s) representative.

13. **Mobilization and Demobilization** When a major disaster occurs or is imminent, the FRCOG will contact (either verbal or written Notice to Proceed) the firm(s) holding the Disaster Debris Monitoring Contract to advise them of the FRCOG's intent to activate the contract. The FRCOG, upon contacting the Engineer, may issue a Task Order for Debris Monitoring. The Engineer(s) shall commence performance within twenty-four (24) hours of receipt of the Task Order (see Exhibit E). The Engineer will begin coordination with the FCEOC. The Engineer will mobilize and deploy essential and necessary staff. When additional debris monitoring is needed to meet MEMA and FEMA monitoring requirements, Engineer shall be prepared to increase the number of monitors for the FRCOG to use as needed. Upon completion of assigned tasks, the Engineer shall be responsible for closing out all related operations, including but not limited to, records and documents to support the FRCOG's reimbursements costs from the federal government.
14. **Logistics and Resource Distribution** The Engineer(s) shall be responsible in providing all personnel sustaining goods and services to include items such as packaged ice, bottled water, ready to eat meals, shelter, and all materials such vehicles, equipment, parts, tools, fuel, etc. and the distribution thereof, supporting monitoring tasks. Engineer(s) are responsible for the safe handling and storage of any equipment and parts, tools, fuel, and other related items so as to prevent damage and environmental impacts to public and private property. If spills or damages do result, then the Engineer(s) shall be held responsible and shall be required to report such incidents.
15. **Communication** The Engineer(s) Debris Monitoring Project Manager (or designated alternate) for debris monitoring responsibilities shall report directly to the designated FRCOG representative responsible for the project management of the FRCOG Disaster Debris Monitoring Contract. The Engineer (s) Project Manager shall be available for communication at all times. While this position will not require constant presence, the Project Manager will be required to work a full workday, typically more than eight hours per day, and be on call and physically capable of responding to the FCEOC designated person within 30 minutes of notification.
16. **Reporting and Documentation; Recordkeeping** The Engineer(s) shall provide and submit to the FRCOG all reports and documents as may be necessary to adequately document the debris emergency response, management, and recovery services in accordance with FEMA/FRCOG requirements. The Engineer(s) shall retain all records, documents, and communications of any kind (including electronic in disk or print form) that relate in any manner to the contract awarded as a result of this RFP and its performance. Such records shall be maintained and kept in their original form for a period of three years after completion of the project; and shall be made available to the FRCOG at any time. Arrangements will be made between the Engineer(s) and the FRCOG for records retention beyond that time period.

Exhibits

Exhibit A - Franklin County Assigned Debris Control Zones and Debris Staging Sites (to be created by Tighe & Bond)

Exhibit B - Example Site Load Tracking Log (to be created by others)

Exhibit C – Example Load Ticket (from Franklin County DDMP)

Exhibit D - Example Truck Load Deductions

Exhibit E - Example Task Order (to be created by others)

APPENDIX I.

**FRANKLIN COUNTY ANIMAL
CARCASS DISPOSAL OVERVIEW**

December 2007

***ANNEX TO THE FRANKLIN COUNTY REGIONAL NATURAL
HAZARDS MITIGATION PLAN 2004***

**Prepared by the Franklin County Solid Waste Management District
and the Franklin Regional Council of Governments**

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FRANKLIN COUNTY CARCASS DISPOSAL OVERVIEW

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Franklin County Carcass Disposal Overview

Section 1. Introduction

Natural disasters have occurred throughout history. One result is typically a large amount of debris that must be cleaned up and managed. Usually, local and state crews work to sort and process disaster debris. In order to plan for this type of scenario, the Franklin Regional Council of Governments (FRCOG), through a USDA grant, has compiled a Disaster Debris Planning and Implementation Guide. This guide will lead local municipalities through the process of preparing to manage disaster debris, such as wood waste, metal waste, demolition waste, and green waste.

A component of disasters that is often overlooked is the need to manage and dispose of deceased animals (carcasses). Franklin County is home to a diversity of farm and domestic animal populations. In the event of a natural disaster or a disease outbreak, such as avian influenza, there will be carcasses needing to be managed. The type and volume of carcasses will depend on the specific incident.

This animal carcass disposal overview is an effort to provide local municipalities with information about carcass disposal management in an emergency situation. It is a collaborative effort between the FRCOG and the Franklin County Solid Waste Management District. This overview will be followed by an implementation guide.

A. Purpose of the Carcass Disposal Overview

Pre-planning for a natural disaster or disease outbreak that results in deceased animals is imperative in order to protect human health and limit environmental contamination. It is also important for local emergency management planners to understand the scope of issues relating to carcass management and disposal. This document presents general management information as well as animal data specific to Franklin County's twenty-six municipalities.

The goals of this overview are:

- To provide basic information on carcass disposal,
- To identify locations of farm animals,
- To review management options,
- To lay the groundwork for the Carcass Disposal Implementation Guide.

B. Content of the Carcass Disposal Overview

Section 1: Introduction

The Franklin County Carcass Disposal Overview is the first step in developing a regional Carcass Disposal Plan. This overview is an initial resource document for understanding the issues that can arise from a natural disaster or disease outbreak affecting farm animals.

Section 2: Potential Disaster Scenarios

This section reviews the disaster scenarios that are possible in western Massachusetts and that could result in animal mortalities. This section is divided into natural disasters and disease outbreaks.

Section 3: Animal Population Estimates

This section addresses farm animals in Franklin County. Estimates of farm animals are derived from town data and direct mail surveys to farms.

Section 4: Carcass Generation Forecasts

This section focuses on calculating estimated carcasses generated from specific disease outbreaks because it is not possible to forecast animal mortalities from a natural disaster. Carcass generation estimates for Franklin County are made for hoof-and-mouth disease, spongiform encephalopathy (BSE in cows and TSE in sheep), avian influenza, and exotic Newcastle disease.

Section 5: State Regulations

This section identifies the two state agencies that would be involved with carcass disposal: MA Department of Environmental Protection (DEP) and MA Department of Agricultural Resources (DAR). It also notes the MA solid waste regulations that affect disposal.

Section 6: Disposal Methods

Using research and experience from universities and states, this section identifies disposal methods for carcasses. Each method is discussed, including pros and cons, and whether each method is feasible and available for a specific situation.

Section 7: Regional Disposal Facilities

There are only a few disposal facilities in western Massachusetts that could be used for animal carcasses. This section briefly identifies disposal facilities that have expressed a willingness to accept animal carcasses from a disaster or disease situation.

C. Natural Disaster versus Disease Outbreak

Animal carcasses can be generated by either a natural disaster or a disease outbreak. Depending on the cause of the mortality, a different group of state and federal agencies will be involved.

In a natural disaster, such as a flood, animal carcasses may be dispersed by rising waters making recovery efforts more complicated. Even if animal carcasses are not dispersed but remain in a central location on a farm, the fact that they resulted from a natural event means that the management falls into a disaster debris scenario. In a natural disaster, local government would be assisted by the state and federal emergency management agencies (MEMA and FEMA), the MA Department of Agricultural Resources, the MA Department of Environmental Protection, the Franklin Regional Council of Governments, and the Franklin County Solid Waste Management District.

In a disease outbreak situation, such as avian influenza or hoof-and-mouth disease, the MA Department of Agriculture and the MA State Veterinarian would implement their emergency response plans. They would have ultimate control of how carcasses were managed. The MA Department of Environmental Protection would assist. There would most likely be assistance by the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS). If appropriate, regional assistance would be provided by the Franklin Regional Council of Governments and the Franklin County Solid Waste Management District.

Ultimately, options for disposal will depend on whether the causal event is a natural disaster or a disease outbreak. Animal mortalities from a natural disaster can be disposed off-site while the preferred management strategy for mortalities from a disease outbreak is on-site disposal. On-site disposal is preferred because it restricts the spread of the disease to neighboring farms and agricultural operations.

Section 2. Potential Disaster Scenarios

A. Introduction

There are two potential disaster scenarios that could create animal carcasses needing proper management. One is a natural disaster and the other is a disease outbreak. In pre-disaster planning efforts, it is important to try to predict the disaster impacts that have a reasonable probability of occurring in a planning area. Potential natural disasters and disease outbreak scenarios are described below.

B. Natural Disasters

For purposes of this document, three types of natural disaster events will be discussed. The natural hazards considered to be a high risk for Franklin County are: hurricanes, floods, and winter storms. These disasters could generate a significant amount of storm debris that would severely impact the existing infrastructure that farms rely on for feed, medicine, and animal maintenance, such as milking. They could also result in animals being stranded without food and shelter, drowned, or untended to because of electricity

failure. Animals may also have to be abandoned by their owners if an evacuation is ordered by emergency response personnel.

It is not possible to evaluate the level of threat and resulting number of carcasses for each natural disaster. It is not always probable that animals will die en masse from a severe weather disturbance. Therefore, this overview will focus on general preparedness for disposal of carcasses based upon type of animal and possible quantity affected by each situation.

Table 2-1 below identifies the three likely natural disasters, the hazards, and the geographic areas that could be affected. Farms within a flood plain are prone to be affected by hurricanes and floods. All farms could be affected by a winter storm, including a severe ice storm. Farms at higher elevations, particularly in West County, could be more seriously affected by a winter storm than farms at lower elevations. However, most farms are well equipped with generators and diesel fuel and have indicated that a winter storm would not necessarily pose a high risk for evacuation or for animal mortalities.

Table 2-1. Natural Disasters, Hazards, and Affected Areas

Event	Hazards	Affected Areas
Hurricane	High Velocity Winds Flooding Power Outages Restricted Access	All towns Flood plains, especially Connecticut, Deerfield, Green, and North Rivers
Flood	Inundation High Water Velocity Landslides Restricted Access Power Outages	Flood plains, especially Connecticut, Deerfield, Green, and North Rivers Areas prone to flash flooding Areas vulnerable to stormwater runoff
Winter Storm	Ice and Snow Loads Restricted Access Power Outages	All towns, especially those at higher elevation in West County

C. Disease Outbreak

Transmittable diseases in animal populations can quickly spread and reach a crisis level. Disposal of diseased carcasses is much more complicated than disposal for carcasses from a natural disaster.

The most notable disease outbreak is avian influenza (AI). AI has several strains. Throughout U.S. history, strains of AI have appeared in the poultry population. The low pathogenic (LPAI) strain appeared in Virginia in 2002. During that outbreak over 3 million poultry were destroyed and required disposal. To date, the high pathogenic strain, H5N1, that is believed to be capable of transmutating into a poultry-to-human form, has not been found in the United States.

Other diseases that can affect large animals and farm animals are: hoof-and-mouth in cloven-hoofed animals, BSE (“mad cow disease”) in cows, TSE (scrapie) in sheep, and exotic Newcastle disease in birds. Other countries and the U.S. have had outbreaks of these diseases. For any outbreak, the immediate goal is to prevent the transmission of the disease to other farms, then to depopulate the infected herd/flock and properly dispose of the carcasses.

This document will address the specific potential diseases, affected animal populations, estimated number of animals affected in each Franklin County town, and disposal options.

Section 3: Animal Population Estimates

This document will focus on farm animals. Efforts were made to collect the actual numbers and types of animals in each town. Data was collected from public records for the calendar year 2006 as well as by direct contact with farm operations. Data is missing or incomplete in towns that were not able to provide information through the assessors’ office. In towns that do not charge a farm excise tax or do not have local knowledge of farm owners, an attempt has been made to identify farms individually. Contacts were made with some town agricultural commissions to request assistance gathering this data. Because of the federal government’s animal identification system (NAIS) and local concerns about that program, many farmers have elected not to share their information. While that is understandable, it hinders the pre-planning effort for those towns.

There is missing data in the table below for the following towns: Leverett, Leyden, Northfield, Rowe, Shelburne, Sunderland, and Wendell. If accurate numbers can be collected, they will increase the totals in all of the tables in this document.

The table below includes all animals identified by the methods described above. In some cases, this data will include total number of animals from the animal inspector’s report from the 2006 Town Report. However, the GIS map of farm locations (in the appendix) might only include farms that voluntarily provided their location and animal data. The GIS map also only includes farms that have more than three large animals. In order to respect the state’s homeland security biosecurity concerns, each town copy of this document will only include farms identified for that specific town. For example, Bernardston’s copy will include a GIS map in the appendix that will show the locations of Bernardston’s farms. The FRCOG and solid waste district will maintain a GIS map of the county with all known farms located on it.

Table 3-1. Animal Data for Franklin County Towns

Town	Beef Cattle	Dairy Cows	Chickens/Ducks/Turkeys	Sheep/Goats	Swine	Horses/Donkeys	Other	Total
Ashfield ¹	105	182	111	51	3	14	7 oxen	473
Bernardston ^{1,3}	0	343	0	1	0	30	6 bulls	380
Buckland ²	68	341	185	165	0	34	8 steers	801
Charlemont ¹	117	0	246	152	3	56	12 oxen 13 emus	599
Colrain ²	94	689	200	210	4	47	65 llamas	1309
Conway ¹	93	243	161	64	0	133	9 oxen	703
Deerfield ¹	2	343	22	45	90	5	13 bulls/steers	520
Erving ¹	3	0	0	0	0	0	0	3
Gill ¹	54	251	178	43	0	45	4 steers	575
Greenfield ¹	0	65	56	6	2	19	7 bulls/steers 2 llamas	157
Hawley ¹	56	178	80	52	10	5	26 llamas 3 oxen/bull	410
Heath ¹	45	0	0	0	0	0	0	45
Leverett ^{1,3}	22	0	32	2	0	70	2 llamas	128
Leyden ⁴	209	50	161	215	0	66	8 llamas	709
Montague ¹	0	68	0	0	0	0	15 llamas	83
Monroe	0	0	0	0	0	0	0	0
New Salem ³	0	0	0	0	0	0	15 alpacas	15
Northfield ^{1,3}	48	399	0	135	0	28	28 oxen	638
Orange ^{1,2}	43	336	375	53	62	169	9 oxen	1047
Rowe ^{1,3}	12	8	0	0	0	0	0	20
Shelburne ^{1,3}	12	200	40	50	5	1	0	308
Shutesbury ¹	0	3	0	0	0	3	0	6
Sunderland ^{1,3}	220	1	45	4	0	0	0	270
Warwick ^{1,2}	11	55	127	38	17	56	4 oxen 11 alpacas	319
Wendell ³	11	0	21,100	8	0	7	0	21,126
Whately ^{1,2}	121	135	388	40	7	36	28 alpacas	755
TOTALS	1346	3890	23,507	1334	203	824	295	31,399

source: ¹ Town Assessors ² 2006 Town Report ³ Farm Surveys ⁴ 2005 town report

Section 4: Carcass Generation Forecasts

A. Natural Disasters

In preparing for a natural disaster, a model can be applied to estimate the type and quantity of debris generated. However, it is not possible to apply a model to carcass generation. This is because a natural disaster, such as an ice storm, could affect a narrow geographic area in Franklin County and that area may or may not have animal populations that would be affected. A widespread ice storm or other natural disaster could affect large animals like cattle but not poultry or swine if food and shelter are available for them. Thus, it is not possible to apply any type of formula that would result in relatively accurate numbers of animal mortalities due to a specific natural disaster.

Instead, emergency managers will have to use the data in Table 3-1 and whatever town data is available to identify the locations of animals that could be affected in a particular natural disaster. Because of this, it is important to have pre-disaster knowledge of the types and volumes of animals in each town.

B. Disease Outbreaks

While it is not possible to apply a forecasting model to determine a probable number of carcasses resulting from a specific infectious disease, it is possible to identify some common contagious animal diseases and the worst-case scenarios if all animals were infected.

The diseases listed below were chosen for generation numbers because they have a probability of occurring in the United States or have already occurred in the United States. Most notable is the 2002 outbreak of low pathogenic avian influenza in Virginia and the 2002 outbreak of exotic Newcastle disease in California. Both affected bird populations. The other diseases discussed below have occurred recently in Europe or Asia. Because of global commerce it is possible that infected animals could inadvertently enter the United States.

The four diseases reviewed are:

- Hoof-and-mouth disease
- Spongiform encephalopathy
- Avian influenza
- Exotic Newcastle disease.

Carcass generation estimates are made for all four diseases. Because there are two forms of spongiform encephalopathy, one for bovines and one for sheep, Table 4-2 identifies potential carcasses totals for each animal type.

1. Hoof-and-mouth disease: Hoof-and-mouth disease affects cloven-hoofed animals. This includes cattle, cows, oxen, swine, sheep, and goats. This disease does not always generate high mortalities, but affected herds must be depopulated to prevent the disease from spreading to other farms. With the exception of a large, commercial poultry farm in Wendell, cloven-hoofed animals are the majority of farm animals in Franklin County. An outbreak would result in over 50% of the animal population being affected in most towns.

Table 4-1. Total number of animals affected by hoof-and-mouth disease

Town	Beef Cattle	Dairy Cows	Other	Sheep/ Goats	Swine	Total	% of Animals in Town
Ashfield	105	182	7	51	3	348	74%
Bernardston	0	343	6	1	0	350	92%
Buckland	68	341	8	165	0	582	73%
Charlemont	117	0	12	152	3	284	47%
Colrain	94	689	0	210	4	997	76%
Conway	93	243	9	64	0	409	58%
Deerfield	2	343	13	45	90	493	95%
Erving	3	0	0	0	0	3	100%
Gill	54	251	4	43	0	352	61%
Greenfield	0	65	7	6	2	80	51%
Hawley	56	178	3	52	10	299	73%
Heath	45	0	0	0	0	45	100%
Leverett*	22	0	0	2	0	24	19%
Leyden*	209	50	0	215	0	474	67%
Montague	0	68	0	0	0	68	82%
Monroe	0	0	0	0	0	0	-
New Salem	0	0	0	0	0	0	-
Northfield	48	399	28	135	0	610	96%
Orange	43	336	0	53	62	494	47%
Rowe*	12	8	0	0	0	20	100%
Shelburne*	12	200	0	50	5	267	87%
Shutesbury	0	3	0	0	0	3	50%
Sunderland*	220	1	0	4	0	225	83%
Warwick	11	55	4	38	17	125	39%
Wendell*	11	0	0	8	0	19	0%
Whately	121	135	0	40	7	303	40%
TOTALS	1346	3890	101	1334	203	6874	67% **

Note: Towns with an asterisk indicate missing or incomplete data so the actual number of affected animals could be higher than listed.

** The large poultry flock in Wendell is excluded from the total county animal population because it skews the percentage calculations.

2. Spongiform encephalopathy: This disease affects the central nervous system of animals. In cattle it is called “bovine spongiform encephalopathy” (BSE) and is commonly called “mad cow disease.” In sheep it is called “transmissible spongiform encephalopathy” (TSE) and is commonly called “scrapie.” This disease is fatal to infected animals but entire herds will have to be depopulated to prevent the spread of BSE or TSE. The table below shows the number of animals in each Franklin County town that could be affected by BSE or TSE. An outbreak of BSE would be more severe and generate far more carcasses than an outbreak of TSE.

Table 4-2. Total number of animals affected by spongiform encephalopathy

Town	Beef Cattle	Dairy Cows	Other	Total	% of Animals in Town	Sheep/Goats	% of Animals in Town
Ashfield	105	182	7	294	62%	51	11%
Bernardston	0	343	6	349	92%	1	-
Buckland	68	341	8	417	52%	165	21%
Charlemont	117	0	12	129	22%	152	25%
Colrain	94	689	0	783	60%	210	16%
Conway	93	243	9	345	49%	64	9%
Deerfield	2	343	13	358	69%	45	9%
Erving	3	0	0	3	100%	0	-
Gill	54	251	4	309	54%	43	78%
Greenfield	0	65	7	72	46%	6	4%
Hawley	56	178	3	237	58%	52	13%
Heath	45	0	0	45	100%	0	-
Leverett*	22	0	0	22	17%	2	0%
Leyden*	209	50	0	259	37%	215	30%
Montague	0	68	0	68	82%	0	-
Monroe	0	0	0	0	-	0	-
New Salem	0	0	0	0	-	0	-
Northfield	48	399	28	475	74%	135	21%
Orange	43	336	0	379	36%	53	5%
Rowe*	12	8	0	20	100%	0	-
Shelburne*	12	200	0	212	69%	50	16%
Shutesbury	0	3	0	3	50%	0	-
Sunderland*	220	1	0	221	82%	4	-
Warwick	11	55	4	70	22%	38	12%
Wendell*	11	0	0	11	0%	8	1%
Whately	121	135	0	256	34%	40	5%
TOTALS	1346	3890	101	5337	52%**	1334	13%**

Note: Towns with an asterisk indicate missing or incomplete data so the actual number of affected animals could be higher than listed. ** The large poultry flock in Wendell is excluded from the total county animal population because it skews the percentage calculations.

3. Avian influenza: Avian influenza (AI) affects chickens, turkeys, pheasants, quail, ducks, geese, and guinea fowl. Avian influenza is commonly called “bird flu.” There are two classifications of AI: low pathogenic (LPAI) and high pathogenic (HPAI). The low pathogenic strain has affected flocks in the United States. Virginia had an LPAI outbreak in 2002 that resulted in over 3 million carcasses. The Delmarva peninsula (Delaware/Maryland/Virginia) had an LPAI outbreak in 2004 resulting in over 4 million carcasses. HPAI, including the H5N1 strain, has not been found in any U.S. flocks to date. However, even LPAI can necessitate high depopulation numbers to prevent the spread of the disease. The poultry population is small in most towns, except for Wendell which has a very large commercial poultry operation. Poultry accounts for three-quarters of all animals in the county (only one-quarter excluding Wendell).

Table 4-3. Total number of animals affected by avian influenza

Town	Chickens/Ducks/Turkeys	% of Animals in Town
Ashfield	111	24%
Bernardston	0	-
Buckland	185	23%
Charlemont	246	41%
Colrain	200	15%
Conway	161	23%
Deerfield	22	4%
Erving	0	-
Gill	178	31%
Greenfield	56	36%
Hawley	80	20%
Heath	0	-
Leverett*	32	25%
Leyden*	161	23%
Montague	0	-
Monroe	0	-
New Salem	0	-
Northfield	0	-
Orange	375	36%
Rowe*	0	-
Shelburne*	40	13%
Shutesbury	0	-
Sunderland*	45	17%

Warwick	127	40%
Wendell	21,100	100%
Whately	388	51%
TOTALS	23,507	76%

Note: Towns with an asterisk indicate missing or incomplete data so the actual number of affected animals could be higher than listed.

4. Exotic Newcastle Disease: This disease also affects bird populations. Exotic Newcastle Disease is a highly infectious, rapidly spreading virus. It is capable of spreading to domestic birds (pets) and wild birds. There was an outbreak of this disease in Southern California in 2002. An outbreak of this disease in Franklin County would likely result in depopulation of most bird flocks in order to control the spread of the disease. Table 4-3 above for avian influenza is also applicable for Exotic Newcastle Disease and represents the number of poultry carcasses that could be generated.

Section 5: State Regulations

In Massachusetts the Department of Environmental Protection (DEP) regulates the disposal of any waste product, including carcasses resulting from a disaster. In order to manage solid waste, a facility must meet certain, regulatory criteria. Only existing permitted facilities, such as landfills and incinerators, would be authorized to accept animal carcasses. Facilities that agree to accept animal carcasses need a special waste approval (310 CMR 19.061) from DEP. In western MA, the regional DEP office in Springfield would process and approve a special waste permit. Ideally, disposal facilities will receive a special waste permit for carcasses prior to an emergency situation. However, it is expected that DEP would issue an emergency order allowing disposal facilities to accept animal mortalities during a disaster or disease outbreak situation.

The Department of Agricultural Resources (DAR) regulates agricultural activities, including the on-site management of animal carcasses. Common on-farm disposal options regulated by DAR include burial and composting. In the event of a natural disaster, DAR would implement emergency protocols for managing carcasses on a farm. Similarly, DAR would be the state agency leading any emergency efforts in a disease outbreak. The USDA would be the federal lead agency in a disease outbreak scenario.

MA DEP's Bureau of Waste Prevention and MA DAR's Bureau of Animal Health have draft guidelines and policies for the disposal of carcasses from an avian influenza outbreak. The guidelines have not yet been finalized. In the future, DEP expects to draft carcass disposal guidelines for other disease outbreaks.

Section 6: Disposal Options

A. Introduction

There are five disposal options for animal carcasses from a natural disaster or disease outbreak:

- composting
- burial
- incineration
- rendering
- alkaline hydrolysis.

Composting, burial, incineration, rendering, and alkaline hydrolysis have been identified at a state and national level as being possible disposal options for animal carcasses. Composting, burial, and incineration are options that are currently feasible based on facility and technological availability. These three disposal processes can take place either on-farm or off-site at a commercial facility. Each method will be discussed below, including the pros, cons, and environmental limitations. This information has been gleaned from the experiences of other states and other countries. Their actual experience of managing large numbers of animal carcasses allows us to identify the preferred disposal methods and requirements for different scenarios (a flood versus avian influenza for example).

Rendering and alkaline hydrolysis are not currently feasible options in Franklin County. There are no animal rendering facilities in MA, CT, NY, RI, or VT. This option is discussed below to provide readers with basic knowledge of how rendering would be used as a disposal option if a facility was available in the future.

Similar to rendering, alkaline hydrolysis has been used in other parts of the U.S. but there are currently no facilities (permanent or mobile) in the region. MA DEP has indicated that any alkaline hydrolysis facility would have to go through a solid waste facility permit process. A brief description of alkaline hydrolysis is included in this document to provide basic knowledge about the process in case a facility is permitted in the future.

A superb reference guide that was used to complete the sections below is “Carcass Disposal: A Comprehensive Review” written by numerous contributors and published in 2004 through Kansas State University. This document is only available on-line at <http://fss.k-state.edu/FeaturedContent/CarcassDisposal/CarcassDisposal.htm>.

B. Composting

Composting is the process of biological degradation of organic material. Animal composting has been tested by other states and countries on large volumes of carcasses with positive results. In a natural disaster it is possible that carcasses could be transported off-site to a commercial composting operation, if permitted by DEP and DAR, or they could stay on-farm. In a disease outbreak carcasses would typically stay on-farm in order to isolate the disease.

In general, composting requires a large volume of carbon (sawdust, wood chips, corn husks, silage), in addition to equipment, containment, protective gear, and monitoring. Composting has been shown to deactivate the avian influenza virus in 90 minutes at 133°

F or 10 minutes at 140° F. A study in Canada showed some degradation of the scrapie prion through composting when pile temperatures reached 140°F for two weeks. While composting is fairly easy for small animals like chicken and sheep, it is rather cumbersome and time-consuming for larger animals such as beef cattle and dairy cows. While large animals will eventually decompose into organic matter, it is not typically feasible to use composting for large animals in an emergency situation because of the extreme amount of carbon needed and the amount of open space required.

The USDA and MA state agencies (DEP and DAR) have identified composting as the preferred disposal method for animal carcasses, especially as a result of a disease outbreak. This is because a primary goal in a disease outbreak is to contain the disease to the farm and burial is not always feasible or desirable.

On-farm composting

On-site composting is the preferred management option for both disaster and disease-related animal mortalities for small animals (poultry, sheep, goats). On-site composting can be done inside poultry houses if they are large enough, outside in a bio-bag, or outside in a windrow. With the proper mix of materials, composting can deactivate avian influenza in poultry and scrapie in sheep. In order to reach ideal temperatures, the compost pile must have enough carbon per pound of carcasses. Research indicates that there needs to be a least 1.5 pounds of carbon for every one pound of mortalities. Carbon sources include but are not limited to: sawdust, wood chips, straw, and silage.

MA DEP and MA DAR have set siting criteria for on-farm outdoor composting piles. These criteria address distance to neighbors, private wells, perennial watercourses, and groundwater. The criteria also place restrictions on composting in a Zone 1 water supply area and Zone A surface drinking water supply area.

The following set of exclusionary criteria for on-farm composting is recommended in the MA DEP's Draft Avian Flu Debris Management Plan:

- The composting area should be at least 500 feet from residents or sensitive receptors.
- The composting area should not be located in a water supply Zone I area. If possible, the composting area should not be located in a Zone II area.
- The composting area should not be within Zone A of a surface drinking water supply area. If possible, the composting area should not be located within a Zone B area.
- The composting area should not be within 500 feet of a private well.
- The composting area should not be within 400 feet of a perennial watercourse.
- The composting area should have some amount of separation from the groundwater table. Four feet of separation is preferred, although a smaller gap may be acceptable if sufficient management practices are in place to limit and collect compost pile runoff.

On-farm composting is effective for containing diseases to a specific site, is relatively easy to implement, requires minimal equipment (skid steer/loader), limited monitoring

over a short time period (2 weeks), and has limited risks of environmental contamination. While on-farm composting will eventually result in a usable, organic product, when it is generated from diseased animals it should be landfilled or land-applied.

Off-site composting

There is currently a commercial on-farm composting operation in Greenfield, Martin's Farm, which is permitted by DEP and DAR to accept residential organic waste. However, it is not currently permitted to accept animal carcasses. In an emergency, it is possible that DEP and DAR would allow the site to accept some non-diseased animal mortalities. Otherwise, it is not practical or feasible to consider off-site composting as an option for managing carcasses.

Pros and cons

Composting is the preferred carcass disposal method for small animals from both disasters and disease outbreaks. It has been shown to effectively deactivate disease organisms such as the avian influenza virus and prions from BSE and scrapie. Composting can take place inside a poultry house or outside in windrows or "bio-bags." If managed properly, it will not result in odors. It results in an organic end-product.

Composting is not ideal or very feasible for large animals, although it can be done. A major consideration for composting in any disaster is the availability of a high volume of carbon material.

C. Burial

Historically, burying animal carcasses is a long standing option. Many farms have the necessary equipment for excavating a pit or trench and loading the carcasses into it. However, in a disease or disaster-related situation it may not be practical or environmentally sound to bury large numbers of animals or diseased animals. Off-site burial in a permitted, lined landfill will be feasible if the landfills agree to accept the waste.

On-farm burial

In some emergency situations burial on-farm may be feasible. On-farm burial is limited by many factors: available space, soil type, vicinity of surface water, and depth to groundwater. Because there is a lack of oxygen underground, most carcasses buried on-site do not decompose fully. However, some initial fluid loss and decomposition will occur, so it is important to place restrictions on where burial can occur. DEP has set siting restrictions for on-farm burial that are similar for on-farm outdoor composting. Most important is a 4-foot separation from burial depth to groundwater. Also important is the type of soil found on-site. The USDA's National Resources Conservation Service has a web-based soil survey that can identify whether a specific location is acceptable for burying carcasses (<http://websoilsurvey.nrcs.usda.gov/app/>). In the next planning phase, this tool will be used and applied to existing farm locations so emergency preparedness officials will know in advance whether burial is a viable option. This option also requires

heavy equipment to excavate pits or trenches, move and stack carcasses, and cover them. It is labor-intensive and time-consuming.

Off-site burial (landfill)

More feasible than on-farm burial is transporting carcasses to a permitted, lined landfill in western MA. In both disaster and disease-related situations, mortalities can be transported in a large poly bag with zippers that fits into an open-top rolloff or tip trailer. The poly bags contain the animals throughout transportation and burial at the landfill. Landfills will need to receive approval from DEP to accept “special wastes” as outlined in the solid waste regulations (310 CMR 19.061). This option will require a supply of specially designed zippered poly bags, heavy equipment, manual labor, and trucks for transportation. In a disease-related scenario all workers would have to wear personal protective equipment and biosecurity measures would have to be taken.

Pros and cons

Burial off-site at a landfill is a preferred option, especially if carcasses are first placed into a zippered poly bag. This option uses an existing solid waste infrastructure of equipment and trucking. This option can be used for both disaster and disease-related mortalities.

Burial on-farm is not preferred but is possible, especially for non-disease mortalities. On-farm burial would require that the site meet a specific set of siting criteria for soil type and water sources (both depth to groundwater and distance to surface water). Historically, carcasses that are buried tend not to decompose, and can be an issue with future land use.

D. Incineration

Incineration is another carcass disposal option, although there are several issues that would need to be addressed. Both on-farm and off-site incineration in a commercial waste-to-energy facility are labor intensive and logistically demanding. While open air burning has been used in other places, it is not desirable or effective, and would most likely not be allowed by MA DEP. The only possible on-farm incineration method to consider is the use of an air-curtain incinerator. Off-site incineration would take place by transporting carcasses to a permitted waste-to-energy incinerator.

On-farm incineration (air-curtain)

Air-curtain incinerators work by blowing air into a manifold that increases the temperature of the burn. It basically creates a more intense fire and heat than open burning. Air-curtain incinerators can be mobile and could be transported to locations with animal carcasses. However, there are severe limitations for using them. They need a large supply of dry wood, such as pallets, and a large supply of diesel fuel to power the fan. They also require trained operators and trained equipment operators to load the fuel and load the carcasses.

Additional limitations for air-curtain incinerators are that they create smoke, odor, and air pollution. Neighbors’ complaints are common when they are used. During a LPAI outbreak in Virginia, state officials found that the poultry carcasses did not burn well

because of the feathers and high moisture content. The carcasses also rotted faster than they could be burned (using 24-hours/day operation). Virginia also had a difficult time getting the necessary volume of dry wood fuel for the volume of carcasses. Depending on the specific situation, an air-curtain burn could require twice the volume of dry wood compared to the volume of carcasses.

The benefits of air-curtain incinerators are keeping diseased animals on-site and the creation of a benign waste product: ash.

Off-site incineration

Privately owned and operated waste-to-energy incinerators could accept and burn animal carcasses. Limiting factors include the incinerator's capacity, operating permit, transportation, and biosecurity if it is a disease-related situation. Similar to an air-curtain incinerator, carcasses will not burn easily in a commercial facility and adjustments to the fuel load would have to be made.

Similar to the landfill scenario, carcasses would be loaded into zippered poly for transportation. In a disease-related scenario security and safety measures would have to be taken. This option will require a supply of specially designed zippered poly bags, heavy equipment, manual labor, and roll-off trucks for transportation.

Pros and cons

Incineration can be an effective disposal option in some situations. It will deactivate disease organisms related to avian influenza and BSE/scrapie. Some commercial facilities will be able to handle large animals. If a commercial facility is used, the current solid waste equipment and transportation infrastructure can be used. The end product will be non-toxic ash.

Air-curtain incineration is not a preferred disposal option. It requires a tremendous quantity of clean, dry wood for fuel. It typically generates significant odor and air pollution. Many carcasses will not burn efficiently because of body liquid or feathers.

E. Rendering

Rendering is a process that separates animal fat from other body components using high temperatures. The fat is then "rendered" into tallow. Rendering must take place at a permitted, commercial facility. Some facilities make edible tallow used for human consumption; other facilities make inedible tallow used in animal feed. Rendering can technically be used for any type of animal. However, animals can't be in a state of decomposition or be diseased. These limitations preclude rendering as a feasible disposal option in most cases. One possible scenario for rendering as a disposal choice is if carcasses are generated from a winter storm. In that scenario, if temperatures are consistently below freezing then the carcasses may be preserved enough for rendering. There are currently no animal rendering facilities in MA, CT, NY, or VT making this option highly improbable.

F. Alkaline Hydrolysis

Alkaline hydrolysis is a process that uses sodium or potassium hydroxide, high temperatures (300°F), and pressure to break down biological material. This process takes place in a specially-designed vessel. Alkaline hydrolysis can be used on any type of animal and is effective at destroying disease organisms, including BSE and TSE. The resulting effluent from the process is difficult to manage. There are currently no permitted facilities in the state and MA DEP has indicated that mobile alkaline hydrolysis units would need to be fully permitted through the solid waste regulations. While alkaline hydrolysis is used in other parts of the country, it is not currently a feasible option for Franklin County.

G. Considerations for Selecting Disposal Options

There are multiple variables that affect which is the best disposal option for animal carcasses. The first variable is whether the mortalities result from a natural disaster or a disease outbreak. Some disposal options will be not be viable during a disease outbreak, such as composting BSE infected cattle. Another variable is the type of animal and the quantity (volume) of carcasses. Environmental limitations, such as soil type and vicinity of water sources, will affect disposal options. The following is a basic list of considerations for selecting disposal options:

- Disaster or disease-related
- Animal type
- Volume of carcasses
- Weather (time of year)
- Location of other affected farms
- Environmental limitations (soil type, water table, surface water)
- Transportation routes
- Availability and capacity of disposal facilities.

H. Comparison of Advantages and Disadvantages of Disposal Options

The most feasible disposal options for carcasses are composting, burial, and incineration. As described above, these options can occur either on-farm or off-site. Based on national research, it is preferable to manage diseased animals on-farm if possible. However, there can be environmental limitations for on-farm disposal options, such as burial. Off-site disposal options also have advantages and disadvantages. Table 6-1 below lists some general advantages and disadvantages for each disposal method. Rendering and alkaline hydrolysis are included in order to provide a comprehensive overview of all options.

Table 6-1. Advantages and Disadvantages of Disposal Options

Disposal Option	Advantages	Disadvantages
On-farm composting	<p>Can handle disaster and disease-related carcasses</p> <p>Highly biosecure</p> <p>Low technology</p> <p>Beneficial end-product</p>	<p>Requires large volume of carbon</p> <p>End-product might be seen as unusable, if from disease</p> <p>Not ideal for large animals</p>
Off-site composting	<p>Low technology</p> <p>Beneficial end-product</p>	<p>Not ideal for diseased carcasses (biosecurity issues)</p> <p>Requires large volume of carbon</p> <p>Not ideal for large animals</p>
On-farm burial	<p>Can handle disaster and some disease-related carcasses</p> <p>Highly biosecure</p> <p>Low technology</p>	<p>Geologic and environmental limitations</p> <p>Minimal decomposition</p> <p>Leachate</p>
Off-site burial (landfill)	<p>Can handle disaster and disease-related carcasses</p> <p>Lined cells with leachate collection</p> <p>Regional facilities available</p>	<p>Excessive tonnage could affect operation and permit</p> <p>Requires bio-security during transportation, off-loading, and burial for diseased animals</p>
On-farm incineration	<p>Can handle disaster and disease-related carcasses</p> <p>Highly biosecure</p> <p>Results in benign end-product</p>	<p>Requires large volumes of dry wood and diesel fuel</p> <p>Creates air pollution and odor</p> <p>Not ideal for large volumes of carcasses needing rapid destruction</p>
Off-site incineration	<p>Can handle disaster and disease-related carcasses</p> <p>No environmental impact</p>	<p>Permit and operational limitations</p> <p>Size of “hopper” to accept</p>

	Regional facilities available	large animals Requires bio-security during transportation, off-loading, and burial for diseased animals
Rendering	Creates usable product No environmental impact	Can't accept degraded or diseased carcasses No facilities in 5-state region
Alkaline Hydrolysis	Can handle disaster and disease-related carcasses	Limited capacity in units End product difficult to dispose No permitted facilities

I. Comparison of Disposal Options by Animal Type

Disposal options might be limited by the size of the animal(s) and/or whether they are disease-related mortalities. Table 6-1 above reviews general advantages and disadvantages of disposal options. Tables 6-2 and 6-4 below look at the feasibility of disposal options based upon the size of the animal and whether the carcasses are disaster or disease related. Rendering and alkaline hydrolysis are included, but are not currently available options. Tables 6-3 and 6-5 below consider the *probability* of MA DEP and MA DAR allowing these options based on environmental concerns or biosecurity issues as well as whether they are currently available.

Table 6-2. Feasibility of Disposal Options for Non-Diseased Disaster-related Carcasses

	Cattle/cows	Poultry	Sheep/goats	Swine
Composting on-farm	Yes	Yes	Yes	Yes
Composting off-site	Yes	Yes	Yes	Yes
Burial on-farm	Yes	Yes	Yes	Yes
Burial off-site (landfill)	Yes	Yes	Yes	Yes
Incineration on-farm (air curtain)	No	Yes	Yes	Yes
Incineration off-site	Yes	Yes	Yes	Yes
Rendering	Yes	Yes	Yes	Yes
Alkaline Hydrolysis	Yes	Yes	Yes	Yes

Note: Composting large animals, such as cattle and cows, is possible but not necessarily practical because of the large area and large volume of carbon needed. Off-site incineration of cattle/cows is feasible but not practical.

Table 6-3. Probability of Disposal Options for Non-Diseased Disaster-related Carcasses

	Cattle/cows	Poultry	Sheep/goats	Swine
Composting on-farm	Maybe	Yes	Yes	Yes
Composting off-site	Maybe	Yes	Yes	Yes
Burial on-farm	Yes	Yes	Yes	Yes
Burial off-site (landfill)	Yes	Yes	Yes	Yes
Incineration on-farm (air curtain)	No	No	No	No
Incineration off-site	No	Yes	Maybe	Maybe
Rendering	No	No	No	No
Alkaline Hydrolysis	No	No	No	No

Note: Large animals, such as cattle and cows, are difficult to manage unless they are size-reduced. Most animals do not burn efficiently in commercial incinerators. Poultry are included for off-site incineration because of their size and if there are small numbers of carcasses.

Table 6-4. Feasibility of Disposal Options for Carcasses from a Disease Outbreak

	Cattle/cows	Poultry	Sheep/goats	Swine
Composting on-farm	Yes*	Yes	Yes*	Yes
Composting off-site	No	Yes	Yes*	Yes
Burial on-farm	Yes	Yes	Yes	Yes
Burial off-site (landfill)	Yes	Yes	Yes	Yes
Incineration on-farm (air curtain)	No	Yes	Yes*	Yes
Incineration off-site	Yes*	Yes	Yes*	Yes
Rendering	Yes	Yes	Yes	Yes
Alkaline Hydrolysis	Yes	Yes	Yes	Yes

Notes: *Animals with spongiform encephalopathy should not be composted. If they are incinerated, the temperature must exceed 1562° F to destroy prions.

Table 6-5. Probability of Disposal Options for Carcasses from a Disease Outbreak

	Cattle/cows	Poultry	Sheep/goats	Swine
Composting on-farm	Maybe	Yes	Yes	Yes
Composting off-site	No	No	No	No
Burial on-farm	No	No	No	No
Burial off-site (landfill)	Yes	Yes	Yes	Yes
Incineration on-farm (air curtain)	No	No	No	No
Incineration off-site	No	Yes	Maybe	Maybe
Rendering	No	No	No	No
Alkaline Hydrolysis	No	No	No	No

Section 7: Regional Disposal Facilities

There are only a few disposal facilities in western Massachusetts that can be considered for animal carcasses. Each facility has the right to accept or deny animal carcasses and each facility would need a special waste permit from MA DEP specifically for animal carcasses. There are three lined landfills (two privately owned and one municipally owned) and an incinerator in western MA that have been approached about accepting animal carcasses. At this point, the Waste Management landfills in Chicopee and Holyoke have expressed interest in accepting carcasses. The city-owned Northampton Landfill is also willing to consider accepting carcasses as long as this waste is not included in their annual tonnage limits. The Covanta incinerators in Agawam and Pittsfield are interested and are permitted to accept poultry infected with avian influenza. However, there are operational limitations at the incinerator that must be considered. Most carcasses do not burn easily or efficiently and a large volume of carcasses could be extremely difficult to handle. Conversely, disposal at a lined landfill has few limitations other than the operator's willingness to accept the carcasses.

Section 8: Conclusion

Franklin County has been fortunate not to have experienced a natural disaster or disease outbreak that generated animal carcasses. However, as a region with over 30,000 animals it is imperative to begin the process of identifying a management and disposal strategy should a devastating event occur in the future. This overview is the first step in that planning process. Research was conducted to identify how a large volume of animal carcasses should, ideally, be managed and disposed. That research led to numerous case studies from the U.S. and foreign countries based on actual disasters or disease outbreaks. The case studies from Virginia's avian influenza outbreak in 2002 particularly show how quickly overwhelmed government agencies and agricultural operations can become with the sheer volume of carcasses needing disposal. This coupled with a warm season can easily wreak havoc for emergency management responders. Their experiences allows

Franklin County to create a response plan that will avoid their mistakes and the pitfalls inherent in being unprepared.

While this overview strives to present basic information about carcass disposal, it is far from being a comprehensive carcass management plan. Still to be accomplished in this planning process is a carcass disposal implementation guide that will identify action steps during an emergency, vendors that can assist with carcass disposal, identification of disposal facilities, and further identification of disposal options available to specific farms, such as burial.

A critical component of preparedness for carcass disposal management is instruction and training of local and regional emergency managers, health agents, and agricultural operations. Such training is imperative and could be accomplished on a state or regional level. It is important for emergency managers to understand the roles of local, regional, and state officials as well as to understand the potential for adverse public health and public perception in these situations. In this way, carcass disposal is at a more complex level than disaster debris management.

Finally, it will be constructive for state agencies and regional emergency managers to develop a working group that can meet to review and discuss the incident command structure, specific roles for each group, resources, and ways to incorporate local knowledge into an emergency response.

Next Steps: This document is meant to provide an overview of carcass disposal issues for emergency planners and health agents. An implementation guide will follow in 2008. The implementation guide will include specific information about disposal facilities and will pre-position contracts with equipment operators, transportation companies, and vendors instrumental in providing services in the event that a natural disaster or disease outbreak affects farm animals.

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