

DISASTER DEBRIS MANAGEMENT PLAN

TEMPLATE

November 2016



Prepared by:



Franklin Regional Council of Governments

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Prepared for:



Western Region Homeland Security Advisory Council

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This template was funded through the Western Region Homeland Security Advisory Council (WRHSAC).

Cover photo: Downed trees on Chestnut Plain Road in Whately, MA after the July 19, 2008 thunderstorm

TABLE OF CONTENTS

EXECUTIVE SUMMARY	ES-1
LOCAL DEBRIS MANAGEMENT PLAN DEVELOPMENT CHECKLIST	CL-1
1.0 OVERVIEW	1
1.1 Purpose of the Plan.....	1
1.2 Background.....	2
1.3 Plan Development	4
1.4 Eligibility for Debris Removal	5
2.0 EMERGENCY ORGANIZATIONS AND RESPONSIBILITIES.....	9
2.1 Federal Government.....	9
2.2 State of Massachusetts	11
2.3 INSERT COUNTY/REGION NAME	14
2.4 Municipalities.....	15
2.5 Mutual Aid Agreements.	19
3.0 SITUATION AND ASSUMPTIONS	21
3.1 Storms and Earthquakes	22
3.2 Infectious Diseases.....	25
3.3 Terrorist Attacks or Facility-Based Disasters	26
3.4 Debris Separation and Debris Types	26
3.5 Management Recommendations for Major Types of Debris	29
3.6 Debris Disposal and Transfer Capacity.....	33
3.7 Use and Procurement of Contracted Services	34
3.8 Identification of Debris Removal Contractors.....	36
3.9 Use of Force Account Labor	39
4.0 LOCAL GOVERNMENT PLANNING AND RESPONSE.....	41
4.1 Normal Operations	41
4.2 Increased Readiness.....	42
4.3 Response	42
4.4 Recovery	44
5.0 INSERT NAME OF MUNICIPALITY PLAN CONCEPT OF OPERATIONS.....	47
5.1 Debris Management Coordination.....	48
5.2 Public Information	48
5.3 Debris Management Sites (DMS).....	50

5.4	Debris Collection and Removal	54
5.5	Monitoring of Debris Operations.	58
5.6	Debris Management Site Closure	62

APPENDICES

A.	Debris Plan Acronyms.....	A-1
B.	Disaster Debris Management Resources: Web Links	B-1
C.	Road Jurisdiction Map.....	C-1
D.	FEMA Public Assistance Pilot Program Guides	D-1
	1) Public Assistance Alternative Procedures Pilot Program Guide for Debris Removal (Version 2); June 27, 2014	D-3
	2) Debris Management Plan Review Job Aid v.2; June 28, 2015	D-17
	3) Public Assistance Alternative Procedures Pilot Program – Debris Removal Standard Operating Procedures; June 27, 2014	D-25
	4) Public Assistance Alternative Procedures Pilot Program for Debris Removal: Frequently Asked Questions; June 28, 2015	D-41
E.	Mutual Aid Agreements:	E-1
	1) Western Massachusetts Intergovernmental Emergency Mutual Aid Agreement.....	E-3
	2) MEMA Statewide Public Safety Mutual Aid Agreement.....	E-9
	3) MEMA Statewide Public Works Mutual Aid Agreement.....	E-23
	4) MEMA Statewide Mutual Aid Opt – In Communities Map	E-29
F.	Corps of Engineers Debris Modeling Methodology and Debris Estimates by Municipality	F-1
G.	Standard Public Communications.....	G-1
	1) Sample Emergency Declaration.....	G-3
	2) Sample Press Releases.....	G-4
	3) Media Resources.....	G-7
H.	Debris Management Site Data.....	H-1
I.	State Contract User Guides.....	I-1
	1) MassDEP Summary of Massachusetts Disaster Debris Monitoring & Management Contracts	I-3
	2) Disaster Debris Monitoring Services (HLS02)	I-7
	3) Disaster Debris Management Services (HLS03).....	I-10
	4) Hazardous/Universal, Medical, and Electronic Waste Disposal and Emergency Response Statewide Contract (FAC82)	I-17
J.	Local Contractor Procedures and Forms.....	J-1
	1) Model Purchase Order Form (October 2012)	J-3
	2) Massachusetts Prevailing Wage Law: Forms and Sample Rates.....	J-6

	3) Sample Emergency Purchasing Process	J-10
K.	Local Government Officials Guide and Checklist.....	K-1
	1) Disaster Debris Management Planning: An Introduction for Local Government Officials.....	K-3
	2) Massachusetts Local Disaster Debris Management Plan Checklist.....	K-17
L.	Sample Right of Entry (ROE) Form.....	L-1
M.	DEP Site Approval Memo.....	M-1
N.	MEMA and FEMA Acceptance Letters.....	N-1
O.	Local Agency Adoption Letters.....	O-1
P.	Municipal Endorsements.....	P-1
	1) Certificate of Adoption	P-3
	2) FEMA Public Assistance Alternative Procedures Pilot Program for Debris Removal Acknowledgement; December 13, 2013.....	P-4
Q.	FEMA Forms	Q-1

EXECUTIVE SUMMARY

This *Disaster Debris Management Plan Template* has been developed with funding provided by the Western Region Homeland Security Advisory Council (WRHSAC) to fill an identified gap in the emergency preparedness planning activities of many cities and towns in the four Western Massachusetts counties of Berkshire, Franklin, Hampden, and Hampshire.

In general, pre-emergency planning is essential to creating resilient, safer communities. Planning helps ensure faster, safer, and less expensive emergency responses that result in lives saved, property protected and the environment safeguarded. The specific goals of planning for disaster debris management through development of a Disaster Debris Management Plan in advance of an emergency are to:

- Improve response and recovery times following an emergency
- Reduce the costs of debris management
- Qualify for Federal reimbursements

The tasks involved in the disaster debris management planning process include these key activities to be undertaken by the local municipality in the following order:

1. **Identify appropriate debris management sites (DMS)** for anticipated volumes and types of waste and submit Site Selection Worksheets¹ and site plans/layouts for all of the proposed sites to the appropriate Massachusetts Department of Environmental Protection (MassDEP) Regional Office Solid Waste Chief for pre-certification.²
2. **Develop a Disaster Debris Management Plan specific to the local municipality** using this template and submit it to MEMA for review in advance of a hazard event. Once the plan has been accepted by MEMA, their staff will submit the plan to FEMA for acceptance. When a Plan has been determined acceptable by FEMA and has identified at least one or more pre-qualified contractors before the date of the disaster declaration incident period, FEMA will provide a one-time incentive of a two (2) percent increased cost share adjustment for the first 90 days of debris removal activities, beginning the first day of the declared incident period, provided the Plan is implemented for that disaster. Multiple municipalities may join together to identify DMS sites and develop a Disaster Debris Management Plan, but each individual municipality would need to formally adopt the plan to be eligible for federal reimbursement.
3. **Enter into Memoranda of Agreement (MOAs)** with DMS site owners, key contractors, agencies, and/or other municipalities to establish an effective debris management and monitoring system that can be activated quickly when disaster strikes.

This template is divided into two parts. The first part provides an overview of debris management planning; outlines the emergency organizations that would be involved in debris

¹ See the Disaster Debris Management Site Selection Worksheet dated July 2014 on pp. H-3 and H-4 in the Appendices to this plan template.

² MassDEP Western Regional Office: 436 Dwight St., Springfield, MA 01103. Main telephone: 413-784-1100. Solid Waste Management Section Chief: Dan Hall; 413-755-2212.

Web page: <http://www.mass.gov/eea/agencies/massdep/about/contacts/western-region.html>.

management and their respective responsibilities; identifies the various hazard situations and management assumptions that would define the debris management process; reviews the local government's planning and response activities associated with the various stages of the debris management cycle; and defines a concept of operations for debris clearance and removal. Included below is a ***Debris Management Plan Development Checklist*** to be used as a step-by-step guide to ensure that all required information is included in the plan.

The second part is the Appendices, which provide critical reference materials, including a list of acronyms used in the plan, links to on-line disaster debris management resources, FEMA guides and forms, mutual aid agreements and maps, debris management site data samples, state contract user guides, and other key forms and endorsement letters.

A companion ***Debris Management Action Guide*** provides quick step-by-step guidance on how to respond to a real-world debris management incident. The target audience for the guide is department of public works/highway departments and select boards who will be primarily responsible for debris management in the event of an emergency.



Local Disaster Debris Management Plan Development Checklist

This ***Local Disaster Debris Management Plan Development Checklist*** is designed to be used in tandem with the ***WRHSAC Disaster Debris Management Plan Template and Appendices***. This checklist incorporates the required information included in the ***MassDEP Local Disaster Debris Management Plan Checklist*** dated July 2014 and in the ***FEMA Debris Management Plan Checklist*** attached to the ***FEMA Public Assistance Alternative Procedures Pilot Program – Debris Removal Debris Management Plan Review Job Aid*** dated June 28, 2015. Completion of the items in this checklist and its submission with the plan should help to facilitate a timely acceptance of the plan by state and federal authorities reviewing the plan for compliance with their requirements, including MassDEP, MEMA, and FEMA.

Section and Page references included below (*shown in italics*) refer to locations in the Template and its associated Appendices, where applicable. Municipalities developing their own plans based on the Template should revise these references to refer to the specific locations in their own plan. Likewise, the potential Responsible Parties (also shown below in italics) should be revised to reflect the specific officials and agencies designated as the responsible parties for key tasks as assigned by the municipality in their own individualized plan. Municipalities may want to submit the completed checklist along with their Draft Plan to the reviewing agencies. PLEASE NOTE THAT THE BOXES NEXT TO THE ITEMS IN THE CHECKLIST CAN BE CHECKED OFF BY SIMPLY CLICKING ON THEM WITH A CURSOR.

Key steps in the municipal planning process for developing a Local Disaster Debris Management Plan are summarized below, with more detailed tasks and strategies for completing them identified in the following checklist:

1. Form a Local Disaster Debris Management Plan Development Planning Committee, including a leader and clerk
2. Assess likely events that could generate disaster debris, focusing especially on a Category 3 hurricane
3. Develop estimates of the types and quantities of debris to be managed
4. Assess possible/available debris management sites (DMS) for each type of debris
5. Submit information and site plans for each identified DMS to the MassDEP Western Regional Office's Solid Waste Management Section Chief for pre-certification
6. Develop a Draft Local Disaster Debris Management Plan using the ***WRHSAC Disaster Debris Management Plan Template*** and submit to local and regional agencies for review
7. Submit the final Draft Local Disaster Debris Management Plan to the MEMA Mitigation & Disaster Recovery Section for review and acceptance; once they have accepted the Plan, MEMA staff will transmit the plan to the FEMA Region I Public Assistance Branch for final review and acceptance
8. Adopt the FEMA-accepted Plan and submit it to key local and regional agencies for formal endorsement

If this is an active emergency and there is no approved or proposed DMS, refer to the ***WRHSAC Debris Management Action Guide*** for instructions on how to proceed with the emergency DMS identification process.

LOCAL GOVERNMENT ROLES AND RESPONSIBILITIES

Does your plan do the following:	Section/Page
<input type="checkbox"/> Describe the plan's purpose and objectives?	§1.1/p.1
<input type="checkbox"/> Establish a debris management team, including a team leader?	§2.4/pp.15-19
<input type="checkbox"/> Outline who is responsible for the functions identified?	Responsible Parties §2.4/pp.15-19
⇒ Pre-planning: This includes forecasting debris quantities, identifying local government and contractor resources, establishing a master street map and recommended debris collection routes, and identifying a debris management site(s)	<i>administration, operations, contracting, planning, public works, solid waste facilities, EMD, BOH, ConCom, utilities/water/sewer, historic commission, fire, police</i> §2.4/pp.15-19
⇒ Estimating post-disaster debris quantities	<i>operations, public works, solid waste facilities, Debris Management Site project manager, monitors and safety personnel</i> §2.4/pp.15-19
⇒ Local incident command: Overseeing debris management activities as part of the overall disaster response	<i>administration, EMD, fire, police</i> §2.4/pp.15-19
⇒ Conducting response activities	<i>administration, emergency management director operations, engineering, contractors</i> §2.4/pp.15-19 §4.3/pp.42-44
⇒ Conducting recovery activities	<i>administration, EMD, operations, engineering, contractors</i> §2.4/pp.15-19 §4.4/pp.44-45
⇒ Monitoring and tracking costs for reimbursement purposes	<i>planning, administration, finance, monitors</i> §2.4.2/p.17 §2.4.4/p.18
⇒ Managing reimbursement with state and federal government	<i>contracting, finance, administration</i> §2.4.2/p.17 §2.4.4/p.18
⇒ Communicating with state and federal emergency management officials	<i>local incident command, administration, EMD, operations, public information staff</i> §2.4/pp.15-19
⇒ Preparing public information and outreach	<i>local incident command, public information staff</i> §2.4/pp.15-19
⇒ Managing and overseeing any applicable contractors, including what duties contractors will be responsible for	<i>contracting, operations, engineering, public works, Debris Management Site project manager, solid waste facilities</i> §2.4/pp.15-19
⇒ Establishing or updating mutual aid agreements with adjacent and other nearby towns	<i>administration, legal</i> §2.5/p.19
⇒ Ensuring that health and safety procedures are in accordance with State/local health and safety standards/requirements	<i>administration, Debris Management Site project manager, legal, BOH, ConCom, fire, police</i> §2.4/pp.15-19
<input type="checkbox"/> Establish an organizational chart with names and contact numbers for distribution to the planning staff?	Table 2.1/p.17
<input type="checkbox"/> List information in different formats (i.e., paper and electronic) and in multiple locations?	Appendices, esp. Appendix B

GENERAL DEBRIS MANAGEMENT PLANNING

Have you coordinated with MassDEP and MEMA on the development of your debris plan?

Does your plan do the following:

Section/Page

Describe how workers and the public will be protected and discuss the specific measures for adherence to safety rules and procedures?

§5.4.7/p.56

Identify all debris operations that will trigger compliance with environmental and historic preservation laws and how compliance will be attained?

§5.4.8/p.57

Include a schedule to train staff and others on the debris management plan?

§2.3/pp.14-15
§2.4/pp.15-19
§4.1.1/pp.41-42

Include a debris collection and management site hazard analysis? (see FEMA's Public Assistance: Debris Management Guide – 325, Appendix E: Debris Collection and Management Site Hazard Analysis at: <http://www.fema.gov/pdf/government/grant/pa/demagde.pdf>)

§5.3/pp.50-54
Appendix H

Identify equipment and other resources that could be shared among neighboring municipalities? Does the community have mutual aid agreements with other communities?

§2.5/p.19

Identify local ordinances that may apply to debris management activities?

§2.4/pp.15-19
§4.1/pp.41-42

Identify procedures for acquiring required regulatory permits or other approvals?

§5.3/pp.50-54
§5.4.7/p.56
§5.4.8/p.57
§5.6/pp.62-63

Ensure that debris management planning is addressed in the jurisdiction's Comprehensive Emergency Management Plan?

§2.4/pp.15-19
§4.1/pp.41-42
§4.3/pp.42-44

Include a schedule to update the debris management plan?

§4.1.1/pp.41-42

DEBRIS QUANTITIES AND TYPES

Does your plan do the following:

Section/Page

Forecast the type and quantity of debris to better determine the required response and recovery resources, number and size of storage and reduction sites, and the final disposition of the disaster-related debris. In Massachusetts a class 3-hurricane will likely be the worst-case scenario. See the USACE model for hurricanes at: <http://www.usace.army.mil/Missions/EmergencyOperations/DisasterImpactModels.aspx>

§3.4.1/pp.27-28
Appendix F

Address the basis for planning, which includes assumptions for various events and forecasting/modeling for debris volumes? Does the plan use historical or existing information, or, does it use the USACE forecasting model?

§3.4.1/pp.27-28
Appendix F

Identify the overall debris estimate total for a class 3 hurricane? If included, specify here: _____ cubic yards

Table 3.1/p.28

Consider the different types of debris? For a list of debris types see the MassDEP's *Disaster Debris Management Planning: An Introduction for Local Government Officials* guide located at: <http://www.mass.gov/eea/docs/dep/recycle/laws/debrguid.pdf>

§3.4.2/pp.28-29
§3.5/pp.29-33

DEBRIS CLEARANCE AND COLLECTION PLAN

Does your plan do the following:	Section/Page
<input type="checkbox"/> Include priorities for the clearance of debris and outline a response operation, including mapping critical facilities and anticipated concentrations of debris?	§4.3/pp.42-44 DMS Map/p.51 Appendix C
<input type="checkbox"/> Include priorities for collection of debris? What collection options does the plan include? (You may check more than one)	§1.4/pp.5-7
<input type="checkbox"/> Curbside collection through existing solid waste and recycling contractors	§3.7/p.35 §5.4.9/pp.57-58
<input type="checkbox"/> Additional clearance and collection routes for certain types of debris (e.g., white goods or electronics, vehicles)	§3.5/p.30 §5.3/pp.53
<input type="checkbox"/> Collecting material at existing or temporary additional drop-off centers	§5.4.9/pp.57-58
<input type="checkbox"/> Residents self-hauling material directly to debris management sites	§5.4.9/pp.57-58
<input type="checkbox"/> Relying on the state disaster debris management contract (HLS03)	§3.7/pp.34-38 §3.8/p.37 Appendix I #3
<input type="checkbox"/> Identify all local resources that may be available to assist with debris collection and management?	§3.7/pp.34-38
<input type="checkbox"/> Does the plan define the types of work force account labor will accomplish?	§3.9/pp.39-40
<input type="checkbox"/> Outline contracting needs/operations to be outsourced?	§3.7/pp.34-38
<input type="checkbox"/> Emphasize debris separation to maximize recycling, composting, and other diversion from disposal throughout all stages of debris management?	§3.6/pp.33-34 §5.4/p.54 Appendix B
<input type="checkbox"/> Identify a process for the collection of any materials that require separation (e.g., hazardous waste, white goods, vehicles)?	§3.5/pp.29-33 §3.6/pp.33-34 Appendix B Appendix I #4
<input type="checkbox"/> Address monitoring of the debris pickup sites?	§3.8/pp.36-39 §4.4.1/p.45 §5.1/pp.48 §5.4.4/p.55 §5.5/pp.58-61

DEBRIS DESTINATIONS AND DEBRIS MANAGEMENT SITES (DMS)

Does your plan do the following:	Section/Page
<input type="checkbox"/> Include an estimate of the number of acres of debris management sites needed to handle the given quantities of debris? (To estimate debris site storage requirements from a hurricane, see the US Army Corps of Engineers Hurricane Debris Estimating Model at: http://www.usace.army.mil/Missions/EmergencyOperations/DisasterImpactModels.aspx <u>Estimated Acreage Needed</u> _____)	§3.4.1/pp.27-28 Table 3.1/p.28 Appendix F
<input type="checkbox"/> Identify all recycling, composting, C&D processing, and other solid waste diversion outlets within reasonable shipping range, as well as transfer stations, landfills and other municipal waste combustors that can be used?	§1.2.3/p.4 Table 1.4/p.4 Appendix B
<input type="checkbox"/> Include priorities for clearance, collection, and disposal of debris?	§3.5/pp.29-33
<input type="checkbox"/> Include a process for the management of hazardous waste and/or white goods?	§3.5/pp.29-33 §3.6/pp.33-34 Appendix B Appendix I #4
<input type="checkbox"/> Design the necessary environmental controls for hazardous waste at the collection centers, such as liners and berms?	§3.5/pp.31-32 §5.4.8/p.57

<input type="checkbox"/> List a selected DMS site(s) that meets the preferred selection criteria set by MassDEP? If it is not possible to meet all the criteria, sites that meet the criteria as closely as possible should be selected. (For preferred selection criteria in Massachusetts, see MassDEP's <i>Disaster Debris Management Planning: An Introduction for Local Government Officials</i> guide located at: http://www.mass.gov/eea/docs/dep/recycle/laws/debrguid.pdf).	§5.3/pp.50-54 DMS Map/p.51 Appendix H
<input type="checkbox"/> Address notification to and pre-certification by MassDEP of the proposed DMS site location(s)?	Exec. Summary §5.3/p.54 Appendix H Appendix M
<input type="checkbox"/> Address local, state, and federal DMS environmental requirements? (Local requirements may vary. For State requirements, see MassDEP's <i>Disaster Debris Management Planning: An Introduction for Local Government Officials</i> guide located at: http://www.mass.gov/eea/docs/dep/recycle/laws/debrguid.pdf). For other requirements see FEMA's Public Assistance: Debris Management Guide – 325: http://www.fema.gov/pdf/government/grant/pa/demagde.pdf) Particular issues to consider include:	§5.4.8/p.57 Appendix B Appendix K #1
<input type="checkbox"/> Necessary permits or permission to operate	§5.3/pp.50-54 §5.4.7/p.56 §5.4.8/p.57 §5.6/pp.62-63
<input type="checkbox"/> Baseline data for each location that includes photos and identification of any existing contamination	§5.3/pp.50-54 DMS Map/p.51 Appendix H
<input type="checkbox"/> Proper ingress and egress routes for each site	Appendix H
<input type="checkbox"/> Site layout and the proper flow of debris throughout the site	Appendix H
<input type="checkbox"/> Proper site preparation	§4.3.1/p.43
<input type="checkbox"/> A process to consolidate materials for recycling	§3.6/pp.33-34 §5.4/p.54 Appendix B
<input type="checkbox"/> Volume reduction methods and procedures?	§5.3/p.50 §5.4/p.54
<input type="checkbox"/> For chipping?	§3.5/p.29 §3.7/p.35
<input type="checkbox"/> For burning? (only with prior written approval from MassDEP)	§3.7/p.34-38 §5.6/pp.62-63
<input type="checkbox"/> Disposing of materials that cannot be diverted?	§5.6/pp.62-63
<input type="checkbox"/> Include an environmental monitoring program? Are there sample debris monitor reports?	§5.5.1/pp.59-60 Appendix Q
<input type="checkbox"/> Have a site closure plan?	§5.6/pp.62-63
<input type="checkbox"/> Whether the locality will contract out operation of the DMS? If so, are there clear contracting terms on proper management of the site?	§3.7/pp.34-38 §3.8/pp.36-39

PRIVATE PROPERTY DEMOLITION AND DEBRIS REMOVAL

Does your plan address the following:	Section/Page
<input type="checkbox"/> Authority and processes for private property debris removal including condemnation criteria and procedures? Does it include:	§5.4.9/pp.57-58
<input type="checkbox"/> Legal documentation	§5.4.9/pp.57-58
<input type="checkbox"/> Demolition permitting	§5.4.9/pp.57-58

<input type="checkbox"/> Inspection authority	§5.4.9/pp.57-58 Appendix L
<input type="checkbox"/> Hazardous waste removal authority	§5.4.9/pp.57-58 Appendix L
CONTRACTING	
Does your plan do the following:	Section/Page
<input type="checkbox"/> Describe the types of debris operations that will be contracted? Does the plan describe the process and procedure for acquiring competitively procured contracted services?	§3.7/pp.34-38 Appendix I Appendix J
<input type="checkbox"/> Identify at least one or more debris contractors that it has prequalified to conduct disaster debris management work? (Note: State contract # “HLS03” provides disaster debris management services that can be accessed by cities and towns at their cost.) You may also choose to rely on an existing contract (e.g., trash and recycling collection, hazardous product collections) for some services. For more information, see the WRHSAC Disaster Debris Management Plan Template, Appendix I, #3 on p. I-10 for a copy of the HLS03 Contract User Guide and/or do the following:	§3.8/pp.36-39 Appendix I
⇒ Visit www.commbuys.com	
⇒ Select the Contract & Bids Search	
⇒ Click on Contracts/Blankets	
⇒ In Contract/Blanket Description enter “HLS03”	
⇒ Click “Find It”	
COMMUNICATION AND OUTREACH	
Does your plan do the following:	Section/Page
<input type="checkbox"/> Include a public information strategy to ensure that the general public and media receive accurate and timely information about debris operations?	§5.2/pp.48-49 Appendix G
<input type="checkbox"/> Identify and outline alternative outreach channels that can be used? <i>Please list:</i> _____	Appendix G #3
<input type="checkbox"/> Include pre-scripted information (e.g., press releases, fliers explaining collection and separation procedures, emergency contact information, etc.)?	Appendix G
FUNDING, REIMBURSEMENT, MONITORING, AND RECORD KEEPING	
Does your plan do the following:	Section/Page
<input type="checkbox"/> Outline funding mechanisms for debris management?	§2.1/pp.9-11 §4.3/pp.42-44
<input type="checkbox"/> Does the plan describe who and how debris removal contractors will be monitored at pickup sites, Debris Management Sites/Temporary Debris Storage and Reduction Sites and final disposal?	§3.8/pp.36-39 §5.5/pp.58-61
<input type="checkbox"/> Include monitoring report procedures and forms as listed in the appendices of the FEMA’s Public Assistance: Debris Management Guide – 325: http://www.fema.gov/pdf/government/grant/pa/demagde.pdf Note that state contract # “HLS02” provides disaster debris monitoring services that can be accessed by cities and towns at their cost (see the WRHSAC Disaster Debris Management Plan Template, Appendix I, #2 on p. I-7 for a copy of the HLS02 Contract User Guide or follow the instructions above for accessing the information on www.commbuys.com).	§5.5.3/pp.60-61 Appendix B Appendix I #2 Appendix Q

SECTION 1.0: OVERVIEW

1.1 PURPOSE OF THE PLAN

This *Disaster Debris Management Plan* was developed by **INSERT AGENCY/ COMMUNITY NAME** 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 enable a faster recovery process while ensuring cost effectiveness, including qualifying for State and Federal reimbursements;
6. To identify key steps (in the form of checklists and an operational plan) that **INSERT NAME OF MUNICIPALITY** will need to take prior to and during a disaster event; and
7. To identify critical issues that need to be addressed in order to improve **INSERT NAME OF MUNICIPALITY'S** response to a disaster debris-generating event.

This plan anticipates and plans for debris management needs that may result from any type of disaster event that could create unusual or extensive debris management challenges that may temporarily overwhelm existing solid waste, recycling, and composting programs. The types of disaster events that this plan addresses include natural disasters such as hurricanes, tornados, floods, and earthquakes; animal or human infectious diseases; acts of terrorism; and facility specific chemical spills or fires. Different types of disasters can pose very different debris management challenges depending on the amount, scope, and types of debris generated.

A significant percentage of Federal Emergency Management Agency (FEMA) disaster relief funds are spent on disaster debris related activities. Beyond the high cost of cleaning up debris after a major disaster, large amounts of debris threaten public health and safety by harboring rodents and disease; creating fire hazards; contaminating water supplies, threatening housing and businesses and blocking road access for emergency vehicles, vital supply vehicles, and repair equipment. Commencement of clean-up operations improves general sanitation and signals the beginning of recovery and the restoration of public order.

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. **INSERT NAME OF MUNICIPALITY** has made an effort to address these unique circumstances during the development of this *Disaster Debris Management 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 accompanying **INSERT NAME OF MUNICIPALITY Debris Management Action Guide** seeks to define roles, responsibilities,

and procedures and provide guidance for development and implementation of all elements involved in managing debris removal operations when the scope and severity of a hazard event overwhelms an individual community’s response capabilities.

The ability to respond appropriately to disaster events depends 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 in the county, 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 and contractors who have the skills needed for the monitoring of debris management activities and for timely and accurate reporting.

Training in the fundamentals of the National Incident Management Systems’ (NIMS) Incident Command System (ICS) is of particular importance in ensuring that all first responders, contractors, and public officials are speaking the same language and following the same consistent protocols in responding to an emergency situation. The organization of people with their particular skills into a working team with a clear chain of command conforms to the guidelines of the 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 through the ICS system 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 and other shelters, CERT and MRC deployments, etc.

1.2 BACKGROUND

Table 1.1: Basic Information Describing INSERT NAME OF MUNICIPALITY

General Location in State	
Identifying Landmarks	
Topography	
Total # of Square Miles	
Total # of Miles of Roadways	
MassDOT	
City or Town	

Population Density (people/square mile) Massachusetts = 835 people/square mile	
Primary Land Uses (in acres)	<u>Percentage of Total Acreage</u>
Residential	
Commercial	
Industrial	
Public/Institutional	
Forest	
Farm (cropland, pasture, orchard, nursery)	
Water	
Wetlands	
Open Land	
Other	
Total Acres =	100%

1.2.1 Population, Households, and Employment

INSERT DATA INTO TABLES BELOW FROM MOST RECENT U.S CENSUS AND AMERICAN COMMUNITY SURVEY FIVE-YEAR ESTIMATES—see the American Fact Finder website of the U. S. Census Bureau at: <http://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>

Table 1.2: U.S. Census Population and Household Data for **INSERT NAME OF MUNICIPALITY**

Total Population (2010)	
Population Trends	
Total Number of Households	
Total Number of Housing Units	
Total Number of Occupied Housing Units	
Single Unit Dwellings (as a percentage of occupied units)	
Percentage Owner-Occupied	
Percentage Renter-Occupied	
Average Owner-Occupied Household Size	
Average Renter-Occupied Household Size	
Vacant Housing Units (seasonal homes) (as a percentage of total units)	

Table 1.3: U.S. Census Employment Data by Industry for **INSERT NAME OF MUNICIPALITY**

Industry Sector	# of Workers	Percentage of Workers

ADD DETAILS ABOUT SPECIFIC MAJOR EMPLOYERS AND NEW BUSINESS OPPORTUNITIES IN EMERGING CLUSTERS

1.2.2 Transportation Network

INSERT INFORMATION ON HIGHWAYS, TRANSIT SERVICES, AIRPORTS, AND RAIL NETWORKS

1.2.3 Solid Waste Management

INSERT INFORMATION ON THE APPLICABLE SOLID WASTE MANAGEMENT FACILITIES IN THE TABLE BELOW—see the complete lists of operating solid waste facilities across the state at:

<http://www.mass.gov/eea/agencies/massdep/recycle/solid/landfills-transfer-stations-and-compost-sites.html>

Table 1.4: Solid Waste Management Facilities Serving **INSERT NAME OF MUNICIPALITY**

Site Name	Site Location	Waste Category	Responsible Organization Type	Responsible Organization Name	Site Phone #

1.3 PLAN DEVELOPMENT

In 2014, the Massachusetts Emergency Management Agency (MEMA) updated the Commonwealth of Massachusetts All Hazards Disaster Debris Management Plan, Revision #5, an annex to the State Comprehensive Emergency Management Plan (CEMP) (*see Appendix B for web links to this and other disaster debris management resources referenced in this Plan*). In addition, statewide contracts for debris management and monitoring have been established (and renewed) with pre-qualified debris contractors that can be activated and used by local communities.

Development of this plan was undertaken in **INSERT DATE** by **INSERT AGENCY AND OFFICIALS NAMES AND DESCRIBE PROCESS IN DETAIL**.

This plan closely follows the format and content of the 2014 statewide plan and is organized to comply with FEMA’s Debris Management Checklist (*see Appendix J for FEMA’s Debris Management Plan Review Job Aid, which includes the checklist.*) Reference was also made to the Disaster Debris Management Plan for Westborough, MA, dated June 2008.

This plan went through a process of internal review and approval by local officials and acceptance by regional, state and federal agencies as shown in the table below.

INSERT INFORMATION ABOUT THE INTERNAL REVIEW PROCESS, DEP, MEMA AND FEMA REVIEWS, AND ADOPTION BY OTHER REGIONAL AGENCIES INTO THE TABLE BELOW

Table 1.5: Plan Review Process

Review Official/Agency	Date of Acceptance/Adoption
Local Emergency Management Director	
Local Department of Public Works Director	
Local Fire Chief	
Local Police Chief	
Local Board(s) of Health	
Local Chief Elected Official	
MassDEP Western Regional Office Solid Waste Management Section Chief	
MEMA Mitigation & Disaster Recovery Section Chief	
FEMA Region 1 Administrator (submitted to FEMA by MEMA staff)	
REGIONAL PLANNING AGENCY	
SOLID WASTE MANAGEMENT FACILITIES	
EMERGENCY PLANNING COMMITTEE	
ADD OTHER AGENCIES AS NEEDED	

(See Appendix O for copies of acceptance/adoption letters from these agencies.)

Local municipalities are encouraged to adopt the **INSERT NAME OF MUNICIPALITY** *Disaster Debris Management Plan* and submit it to MEMA and FEMA for acceptance so that they can be eligible to participate in FEMA’s Public Assistance Alternative Procedures for Debris Removal as the legally responsible applicant and potentially receive reimbursement for the costs of debris removal. When the Plan has been determined acceptable by FEMA and has identified at least one or more pre-qualified contractors before the date of the disaster declaration incident period, FEMA will provide a one-time incentive of a two (2) percent increased cost share adjustment for the first 90 days of debris removal activities, beginning the first day of the declared incident period, provided the Plan is implemented for that disaster. Multiple municipalities may join together to identify DMS sites and develop a Disaster Debris Management Plan, but each individual municipality would need to formally adopt the plan to be eligible for federal reimbursement. *(See Appendix P for a municipal Certificate of Adoption of the Plan to be printed on city/town letterhead and endorsed by the city/town’s Chief Elected Official and the FEMA Public Assistance Alternative Procedures Pilot Program for Debris Removal Acknowledgement form.)*

1.4 ELIGIBILITY FOR DEBRIS REMOVAL

Debris removal is the clearance, removal, and/or disposal of items such as trees, woody debris, sand, mud, silt, gravel, building components and contents, wreckage (including that produced during the conduct of emergency work), vehicles on public property, and personal property. For debris removal to be eligible for reimbursement under FEMA’s Public Assistance (PA) Program, the work must be necessary to:

- Eliminate an immediate threat to lives, public health and safety.

- Eliminate immediate threats of significant damage to improved public or private property when the measures are cost effective.
- Ensure the economic recovery of the affected community to the benefit of the community-at-large.
- Mitigate the risk to life and property by removing substantially damaged structures and associated appurtenances as needed to convert property acquired using FEMA hazard mitigation program funds to uses compatible with open space, recreation, or wetlands management practices.

Improved property is any structure, facility, or item of equipment that was constructed, built, or manufactured. Examples of improved property include: buildings, levees, roads and bridges, vehicles and equipment, improved and maintained natural features. Unimproved property is not eligible for FEMA funding for permanent restoration or for protection by the performance of emergency protective measures. Examples of unimproved property include agricultural land, a hillside or slope, forest, or a natural stream bank.

Examples of *eligible* debris removal activities include:

- Debris removal from a street or highway to allow the safe passage of emergency vehicles.
- Debris removal from roads in private communities, including debris moved to the curb in the community.
- Debris removal from public property to eliminate health and safety hazards.

Examples of *ineligible* debris removal activities include:

- Removal of debris, such as tree limbs and trunks, from natural (unimproved) wilderness areas.
- Removal of pre-disaster sediment from engineered channels.
- Removal of debris from a natural channel unless the debris poses an immediate threat of flooding to improved property from a flood that has a 20% chance of occurring in any one year.

In general, debris on private property is the responsibility of the individual property owner aided by insurance settlements and assistance from volunteer agencies. FEMA assistance is not available to reimburse private property owners for the cost of removing debris from their property. State or local government collection and management of disaster-related debris placed at the curb by residents typically is considered an eligible cost. Coordination between FEMA approved right-of-entry work on private property and privately financed removal processes is important in determining eligible expenses. Debris on private property that must be removed to allow continued safe operation of governmental functions or to alleviate an immediate threat is considered an eligible cost. This work must be carefully controlled with regard to extent and duration. Generally, costs that can be directly tied to the performance of eligible work are eligible for FEMA reimbursement. Such costs must be:

- Reasonable and necessary to accomplish the work;
- Compliant with Federal, State and local requirements for procurement; and
- Reduced by all applicable credits, such as insurance proceeds and salvage values.

Local governments should refer to FEMA guidance for more specifics on what costs are eligible for reimbursement. (See the *FEMA 325 Debris Management Guide* at: <http://www.fema.gov/pdf/government/grant/pa/demagde.pdf>. Web links to other important FEMA documents are provided in Appendix B.)

SECTION 2.0: EMERGENCY ORGANIZATIONS AND RESPONSIBILITIES

2.1 FEDERAL GOVERNMENT

The Federal Response Plan outlines the process under which Federal support may be provided. MEMA is the State contact for Federal emergency assistance. The Governor may request a Presidential Disaster Declaration when local and State response and recovery efforts are unable to adequately cope with the situation. MEMA assembles the data for such a request working through the MEMA Area offices and their respective communities.

If an emergency or major disaster declaration is made under the authority of the Disaster Relief Act (Public Law 93-288) as amended by the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 101-7-7), assistance is usually provided in the form of financial reimbursement of a portion of the disaster-related costs for approved projects. Debris removal costs incurred by municipalities and the State would be evaluated and if determined eligible would be reimbursed on a cost-sharing basis (normally 75% federal and 25% local; in special individual instances the State may contribute to the local share).

2.1.1 Federal Emergency Management Agency (FEMA)

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 (*see Appendix B for links to FEMA publications associated with debris recovery*). FEMA may provide support to State and local governments during and after emergency events. In catastrophic disasters, FEMA can also provide direct Federal assistance to support municipalities and the Commonwealth in performing some debris removal activities. The response capability must clearly exceed the resources of local and State efforts. FEMA may also direct other Federal agencies to provide debris removal technical assistance to municipalities and the State. Technical assistance may be provided in contract preparation, bid solicitation, contract management, and debris disposal activities. Municipalities and the State remain responsible for all debris removal activities and are reimbursed for their eligible costs.

Representatives from FEMA may be on site during the response and recovery phases of the debris management cycle if a Presidential disaster has been declared. FEMA staff will provide guidance 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.

Although not every disaster may qualify for declaration as a Federal emergency or major disaster, all disasters in which debris is a significant component should be conducted as though Federal assistance will be provided. By doing so, the State agencies and local governmental entities will help ensure compliance with FEMA requirements and regulations, minimize delays in obtaining funding, maximize eligible funding, and reduce the potential for problems both during and after disaster operations. Complying with those requirements during non-Federal disasters, as well as training scenarios, will help ensure compliance during a declared event.

Particular attention should be focused on these areas of FEMA eligibility: reasonable costs, contracting procedures, debris monitoring, and documentation. Planning requirements for each of these areas are detailed in FEMA Publication 325 Debris Management Guide (DMG325) (*see Appendix B for link to the guide*).

Public Assistance Grant Program

Under the Public Assistance (PA) Program, which is authorized by the Stafford Act, FEMA awards grants to assist State and local governments and certain Private Nonprofit (PNP) entities with the response to and recovery from disasters. Specifically, the program provides assistance for debris removal, emergency protective measures, and permanent restoration of infrastructure to pre-disaster condition. The Federal share of these expenses typically cannot be less than 75 percent of eligible costs of debris removal, emergency services related to the disaster, and repairing, replacing or restoring damaged public facilities and infrastructure. The program also encourages protection from future damage by providing assistance for hazard mitigation measures during the recovery process. The PA Program encourages planning for disaster recovery, but PA Program funds may not be used for the costs of planning. The costs incurred implementing the plans are eligible for reimbursement only if they meet PA Program eligibility criteria. The Code of Federal Regulations – Title 44 Emergency Management and Assistance (44 CFR) provides 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.

FEMA Incentives

On January 29, 2013, President Obama signed into law the Sandy Recovery Improvement Act of 2013 (P.L. 113-2). This law amends Title IV of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5121 et seq.) (Stafford Act). Specifically, the law adds section 428, which authorizes alternative procedures for the Public Assistance Program under sections 403(a)(3)(A), 406, 407 and 502(a)(5) of the Stafford Act. It also authorizes the Federal Emergency Management Agency (FEMA) to implement the alternative procedures through a pilot program. Based on an annual evaluation of the pilot’s effectiveness at achieving its goals, FEMA may elect to discontinue the program, extend the pilot for an additional performance period, or issue regulations that would institute the program changes authorized by the law. To date, FEMA has decided on an annual basis to continue to extend the pilot program through June 27, 2017. (*Information on the Alternative Procedures Program may be found in Appendix D.*)

The law identifies the following goals for these procedures:

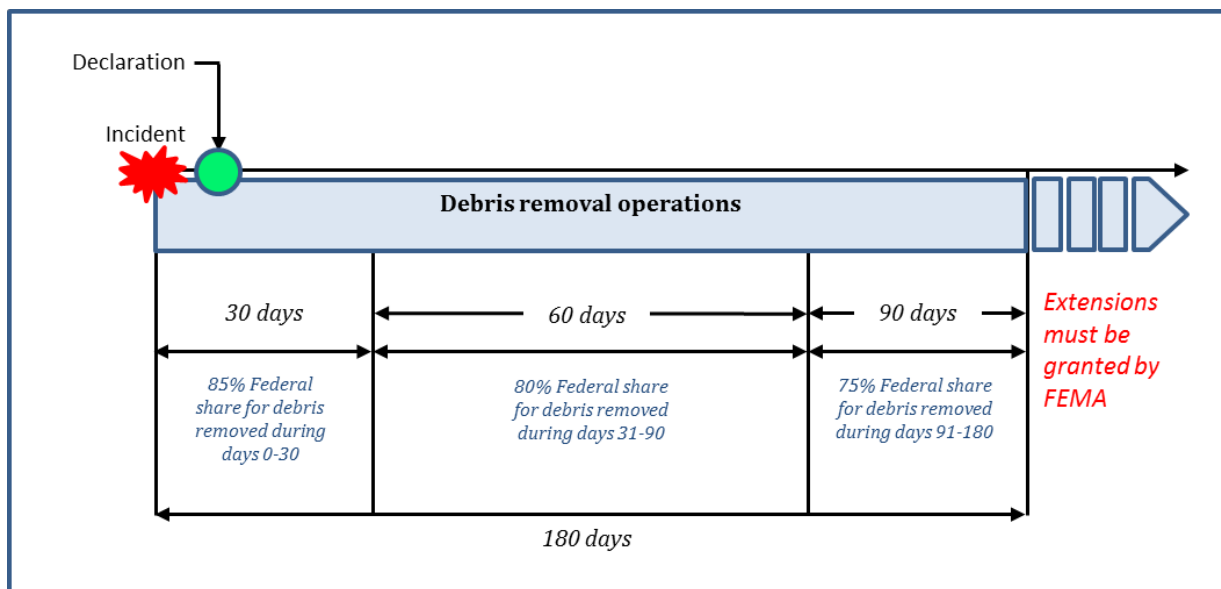
- Reducing the costs to the Federal Government of providing Public Assistance.
- Increasing flexibility in the administration of such assistance.
- Expediting the provision of assistance to a State, Tribal or local government, or nonprofit owner or operator of a private nonprofit facility.
- Providing financial incentives and disincentives for timely and cost-effective completion of projects with such assistance.

The alternative procedures authorized under the law pertain to debris removal (emergency work) and repair, restoration, and replacement of disaster-damaged public and private nonprofit

facilities (permanent work). For debris removal, the law allows for, and FEMA is currently piloting:

- The use of a sliding scale for determining the Federal share for removal of debris and wreckage based on the time it takes to complete debris and wreckage removal (*see Figure 1 below*);
- The use of program income from recycled debris without offset to the grant amount;
- Reimbursing base and overtime wages for the employees of State, Tribal or local governments, or owners or operators of private nonprofit facilities performing or administering debris and wreckage removal; and
- Providing incentives to a State or Tribal or local government to have a debris management plan approved by the FEMA Administrator and have pre-qualified one or more debris and wreckage removal contractors before the date of declaration of the major disaster. (*See Appendix J for FEMA’s Public Assistance Alternative Procedures Guide for Debris Removal and Debris Management Plan Review Job Aid.*)

Figure 2.1: FEMA Pilot Program Timeline for use of the sliding scale for debris removal



Source: Public Assistance Alternative Procedures Pilot Program Guide for Debris Removal; FEMA; June 28, 2013.

The law also authorizes the FEMA to make grants for debris removal on the basis of fixed estimates, and to allow communities to use excess funds from those grants for approved purposes, but FEMA is not implementing these procedures as part of this pilot at this time, though they may do so in the future.

2.2 STATE OF MASSACHUSETTS

This section briefly describes the responsibilities of the various state agencies involved in debris management specifically, and emergency management in general.

2.2.1 Governor's Office

Under a gubernatorial State of Emergency Declaration, the Governor normally issues an Executive Order which directs State agencies to take such actions as may be necessary to assist affected areas in repairing, restoring and protecting public and private facilities and to provide such other emergency assistance as would protect the public health and safety.

Frequently, in the aftermath of a disaster, municipalities and public utilities remove large quantities of debris as part of their efforts to restore services. When a State Emergency is declared, State agencies may be directed to assist in those efforts. However, the approach and strategies in this Plan should be applied to a variety of situations that generate large amounts of debris, whether or not there is a declared State of Emergency.

2.2.2 Massachusetts Emergency Management Agency (MEMA)

MEMA is responsible for coordinating emergency response during major disasters including the management and direction of State resources. State Agencies are organized in the Massachusetts Comprehensive Emergency Management Plan (CEMP) into Emergency Support Function (MAESF) groups. The MEMA Director could utilize the CEMP resources and structure in responding to a disaster in the Commonwealth. MEMA will activate the State CEMP and notify MAESF personnel to report to the State Emergency Operations Center (SEOC). The Governor may declare a State of Emergency if conditions merit State resources to protect lives and public safety. MEMA also sponsors WebEOC, a web-enabled incident management system that provide enhanced situational awareness across the state during crisis events. The MEMA Region 3 & 4 (West/Central) Office serving communities in Berkshire, Franklin, Hampshire, Hampden, and Worcester counties is located in Agawam at 1002 Suffield Street. The main phone contact number is 413-750-1400 and the Regional Manager is Pat Carnevale.

2.2.3 Department of Conservation and Recreation (DCR)

DCR operates and maintains a regional park, roadway, and recreational system in the Boston metropolitan area and watershed areas at Quabbin and Wachusett Reservoirs and manages the state forests. DCR will coordinate with Public Works and Engineering (MAESF-3) agencies in committing resources, as needed, in support of public works and engineering response efforts, including utilizing its equipment and personnel resources to assist in removing debris from the public right-of-way and in maintaining emergency communications, as needed.

2.2.4 Massachusetts Department of Transportation (MassDOT) Highway Division

MassDOT's Highway Division has responsibility for the building and maintenance of state highways and bridges and, as such, will coordinate with MAESF-3 to support emergency response efforts related to public works and engineering. In the event of disaster, it is the Highway Division's responsibility to clear **INSERT MUNICIPALITY NAME's** federally funded roads of debris in Phase I (first 70 hours) of an emergency. The Highway Division 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 are responsible for all debris removal.

2.2.5 Division of Capital Asset Management (DCAM)

DCAM is responsible for planning, design, property management, facilities maintenance, and supervision, acquisition, renovation and demolition of public buildings of the state. The Division will provide construction expertise in support of MAESF-3. Buildings under state control in **INSERT MUNICIPALITY NAME**, include the following: **INSERT NAMES AND LOCATIONS OF STATE BUILDINGS**.

2.2.6 Department of Environmental Protection (MassDEP)

MassDEP regulates hazardous and solid waste management, drinking water and wastewater systems, and hazardous waste site cleanup in the Commonwealth. MassDEP is responsible for determining necessary waste disposal capacity as set out in the Solid Waste Act of 1987, M.G.L. Chapter 16, Section 21. MassDEP will coordinate with other MAESF-3 agencies, as needed, in committing resources in support of public works and engineering response efforts. MassDEP also will provide guidance to support development of local disaster debris management plans prior to a disaster event.

MassDEP's Final 2010-2020 Solid Waste Master Plan: A Pathway to Zero Waste, released in May 2013 maintains the Commonwealth's preference for source reduction, recycling, and composting over disposal. It establishes policies and strategies to achieve a 30 percent waste reduction rate by 2020 and 80% by 2050. The plan features a diverse strategy that will increase commercial and residential recycling and materials re-use, tighten waste ban enforcement across the Commonwealth, increase the diversion of organics and food waste, encourage the growth of anaerobic digestion and composting capacity, extend producer responsibility for a variety of products, and provide funding to municipalities to support recycling and re-use efforts. Recognizing that by 2020 Massachusetts will have a shortfall of capacity to dispose of waste the cannot be recycled or re-used, the plan also modified the incinerator moratorium to encourage the development of innovative and alternative technologies for converting municipal solid waste to energy or fuel on a limited basis. The plan can be found on-line at: <http://www.mass.gov/eea/docs/dep/recycle/priorities/swmp13f.pdf>.

2.2.7 Massachusetts Water Resources Authority (MWRA)

MWRA operates the sewer and water delivery systems for the Boston metropolitan area, and has the authority to rebuild sewage treatment facilities and water supply pipelines. The MWRA will coordinate with MAESF-3 in the repair and restoration of impacted water and wastewater treatment systems.

2.2.8 Massachusetts Department of Agriculture (MDAR)

MDAR has responsibility for the protection of domestic animal victims (animals, fish and wildlife) and disposal of dead animals. MDAR will coordinate with MAESF-3 to support emergency response efforts related to disposal of animal carcasses.

2.2.9 Massachusetts Department of Fish and Game/Division of Fisheries and Wildlife (DFW)

DFW has responsibility for the protection of wild animal victims, (fish and wildlife) and disposal of dead animals. DFW will coordinate with MAESF-3 to support emergency response efforts related to disposal of animal carcasses.

2.2.10 Massachusetts Department of Public Health (DPH)

DPH provides for protection of public health. The DPH will coordinate with MAESF-3 to support emergency response efforts related to disposal of animal carcasses and infectious wastes.

2.2.11 Massachusetts Environmental Police (MEP)

The Massachusetts Environmental Police is the state agency responsible for addressing abandoned or wrecked boats in water, on shore, or in tidal waters. Various Massachusetts General Laws dictate proper protocol to be followed by the Environmental Police in the event that a boat has been abandoned or wrecked. Relevant statutes include MGL Chapter 91, Sections 38- 41.

2.3 INSERT COUNTY/REGION NAME

There are several agencies that operate at the county or regional level in **INSERT COUNTY/REGION NAME**, though it is important to remember that those agencies have only so much power and authority as are delegated to them under the Home Rule system by the individual municipalities since the abolishment of county government in the western part of the state.

2.3.1 INSERT NAME Emergency Planning Committee

The **INSERT NAME** Emergency Planning Committee is primarily responsible for the oversight of hazardous materials management in **INSERT MUNICIPALITY/ COUNTY/ REGION NAME** under its federal authorizing statute. However, the Emergency Planning Committee has taken on the role of providing input and guidance for all types of emergency management planning activities in **INSERT MUNICIPALITY/ COUNTY/ REGION NAME**, though it does not have funding or staff to take an operational role. The Emergency Planning Committee could be involved in the regular review and updating of this debris management plan, when funding is available, and might assist in the scheduling of training activities and educational meetings regarding debris management.

2.3.2 INSERT NAME OF REGIONAL PLANNING AGENCY

The **INSERT NAME OF REGIONAL PLANNING AGENCY** may play a role in assisting member communities in locating and applying for potential funding for the regular review and updating of this debris management plan, including identifying additional debris management sites (as needed), and assisting member communities with the development of specific debris management plans for their communities. Their GIS staff may assist in the location and mapping of DMS and areas affected by an emergency situation. The Procurement Officer may provide

guidance to communities on the contracting process. In addition, RPA staff may work with the **INSERT NAME OF EMERGENCY PLANNING COMMITTEE** in the development and scheduling of trainings and other educational opportunities for municipality officials involved in debris management. They may also play a role in representing local and regional debris management efforts in discussions and meetings with various State and Federal agencies (e.g., FEMA, MEMA, MassDEP, and MassDOT).

2.3.3 Northwest Massachusetts Incident Management Team (NWMIMT)

The Northwest Massachusetts Incident Management Team can be activated in an emergency situation to insure that the incident is being operated under the National Incident Management System (NIMS) Guidelines as directed by both federal and state declarations. An Incident Management Team (IMT) is a comprehensive resource (a team) to either augment ongoing operations through provision of infrastructure support, or when requested, transition to an incident management function to include all components/functions of a Command and General Staff. An IMT:

- Includes command and general staff members and support personnel.
- May have statutory authority and/or formal response requirements and responsibilities if delegated by the municipality pursuant to M.G.L. Ch.40, §4A.
- Has pre-designated roles and responsibilities for members who are on-call and able to be contacted for deployment.
- Is available 24/7/365.

This team, which is based in Franklin County in Western Massachusetts, is one of only two such teams established in the state of Massachusetts. The team can be deployed anywhere in the state or in the country, depending on need. Ultimately the role of the IMT in events of any scale is to assist with or provide a command structure for the key mitigation goals of life safety, incident stabilization and property preservation. This is achieved by implementing a proven process of unified command, operational span of control, flexible planning schedule and consolidated resource ordering and deployment. The IMT's role is to safely and efficiently accomplish the goals of the agency providing the authority to operate.

2.4 MUNICIPALITIES

Due to the governmental structure in western Massachusetts where municipalities have primary responsibility for governmental functions under Home Rule, local officials will of necessity be the primary authorities initiating and overseeing emergency operations during a hazard event requiring debris management. During a disaster or emergency, local governments may activate their local Emergency Operations Center (EOC). The EOC functions as a designated focal point of coordination and communication activities within the municipality. The EOC will be staffed per the Comprehensive Emergency Management Plan's (CEMP) Incident Command System (ICS).

Disaster debris management is a function of the local disaster response. Response efforts will first be directed to protect lives and property such as evacuation, sheltering, firefighting, search and rescue, utility restoration, and clearing debris from key roads. Local government will be

responsible for debris management throughout the lifecycle of the event, to include collecting debris and establishing debris management sites during the ongoing response and recovery phases. Municipal personnel, equipment and resources may be augmented by contractors, volunteers and mutual aid from neighboring communities. A local State of Emergency may be declared when resources are inadequate to cope with an emergency. Local resources must be fully utilized before state resources will be brought into play. MEMA may provide support if requested under such circumstances.

It is advisable that local officials be properly trained in advance of an emergency and that they coordinate their actions through MEMA at the state level and with local and regional officials while the hazard event is ongoing. All local officials should be trained in ICS 100 (Introduction to Incident Command System) and ICS 700 (Introduction to National Incident Management System) and should regularly participate in training exercises with emergency preparedness officials.

Communities in which Debris Management Sites (DMS) pre-qualified by MassDEP are located are encouraged to enter into Memoranda of Understanding (MOUs) with the local owners of the sites in advance of an emergency situation. These MOUs should spell out the procedures for activating the site, the circumstances under which the site would be utilized for debris management, and the final condition that the site should be in when the debris management operation is completed.

Local governments are strongly encouraged to enter into mutual aid agreements, such as the Statewide Mutual Aid Agreement, to provide assistance to one another during an emergency or a natural disaster extending beyond the borders of the host community. The agreements should either stipulate reciprocal services or set labor and equipment rates. In order for emergency assistance provided under a mutual aid agreement to be eligible for reimbursement by FEMA, the agreement must be in writing and must be in place before the disaster. (*See Appendix E for information on Mutual Aid Agreements.*)

Record-keeping will need to be done and documentation maintained at the municipal level for purposes of applying to FEMA for reimbursement of emergency-related expenses. The municipal applicant must track the debris from “cradle to grave.” If a regional facility is used to store debris, the monitors must identify what trucks are coming from which community and the quantity from each truck load must be documented and tracked from site, to holding area, to final disposal and any other step in between.

The primary authorities involved in debris management at the local level include those listed in the table below. The roles of these local officials are described in the following sections. The table also includes the names and contact information for the individuals in those positions in **INSERT NAME OF MUNICIPALITY.**

Table 2.1: Municipal Authorities and Contact Information

Local Authority	Title	Primary Contact Name	Phone	E-mail Address
Chief Elected Officials				
Municipal Administration				
Finance Director				
Emergency Management Director (EMD)				
Board of Health (BOH)				
Fire Department				
Building Inspector				
Police Department				

2.4.1 Chief Elected Officials

A municipality’s Chief Elected Officials are responsible for the overall management of the municipality. They are the parties vested with directing the emergency management director to establish an Emergency Operations Center (EOC), if necessary, ensuring that the necessary town resources are made available when needed, and that the public is informed about the progress of emergency operations.

2.4.2 Municipal Administration

INSERT NAME OF MUNICIPALITY is served by a **CHOOSE TITLE: Town Administrator/Town Manager/Mayor** who oversees day-to-day operations under the supervision of the municipality’s Chief Elected Officials. The **CHOOSE TITLE: Town Administrator/Town Manager/Mayor** may have authority to act on behalf of the municipality if the Chief Elected Officials are not available. The **CHOOSE TITLE: Town Administrator/Town Manager/Mayor** also has the overall responsibility for coordinating the records and may also have responsibility for general public relations, under the direction of the Chief Elected Officials.

A municipality’s Finance Director, a key member of the administrative team, will also play a major role in monitoring and tracking costs for reimbursement purposes and for managing reimbursement with state and federal government.

2.4.3 Emergency Management Director (EMD)

Each municipality in Massachusetts has designated an EMD to take overall responsibility for emergency preparedness and response for their community. For the most part, these are volunteers appointed by the municipality’s Chief Elected Officials who also hold other positions within the community (often as the Fire Chief). Once an emergency was declared by the municipality’s chief elected or appointed officials, it would be the EMD who would be responsible for establishing and running an EOC and for working with the designated Public Information Officer to keep the public informed about the status of the emergency situation, and requesting additional assistance from surrounding communities and from MEMA if the

municipality does not have the capacity to respond to a widespread or especially damaging event.

2.4.4 Department of Public Works (DPW)/ Highway Department

The local roads department's primary responsibility is to conduct the emergency road clearing activities following a disaster event. Primary arteries leading to critical facilities such as hospitals, shelters and distribution centers will be identified as priorities and cleared as soon as possible. Primary arteries also include evacuation routes. (See the **INSERT NAME OF MUNICIPALITY** Disaster Debris Management Sites Map and the individual site Locus Maps in Appendix H for the locations of primary arteries including the roadways to critical facilities and primary, secondary, tertiary, and alternative evacuation routes.) Because of their key role in emergency operations, DPW staff in particular should be trained in ICS 100 and ICS 700 and should regularly participate in training exercises with emergency preparedness officials. DPW staff will also play a role in monitoring and tracking costs of the debris management operations for reimbursement purposes and for ensuring that health and safety procedures are observed in accordance with State and local public health and safety standards.

2.4.5 Board of Health (BOH)

The BOH is responsible for participating in the damage assessment and determining any imminent threat to the public health and safety. In particular, the BOH is responsible for the condemnation of dwellings unfit for human habitation; hazardous and infectious materials management; safe food, water, air, and housing; vector and disease control, debris/waste site assignments; and permitting waste haulers of all types.

2.4.6 Fire Department

The Fire Department is responsible for participating in the damage assessment and determining any imminent threat to the public health and safety, along with the Board of Health, the Building Inspector, and the Police Department. The Fire Chief has authority to send and receive mutual aid automatically under the existing Mutual Aid Agreements without additional written contracts with individual municipalities. In those communities where the EMD is also the Fire Chief, this can provide an additional level of operational efficiency, particularly in the critical first 70 hours of the emergency.

2.4.7 Building Inspector

The Building Inspector is responsible for participating in the damage assessment and determining any imminent threat to the public safety, along with the Board of Health, the Fire Department, and the Police Department.

2.4.8 Police Department

The Police Department is responsible for participating in the damage assessment and determining any imminent threat to the public safety, along with the Board of Health, the Fire Department, and the Building Inspector. Local police may also be involved in the identification and clean-up of ineligible debris set out in the right-of-way (ROW), particularly targeting private

contractors illegally dumping debris in the ROW. They are also responsible for the removal of abandoned vehicles.

2.5 MUTUAL AID AGREEMENTS

Local governments are strongly encouraged to enter into mutual aid agreements to provide assistance to one another during an emergency or a natural disaster. The agreements should either stipulate reciprocal services or set labor and equipment rates. In order for emergency assistance provided under a mutual aid agreement to be eligible for reimbursement by FEMA, the agreement must be in writing and must be in place before the disaster. Additional requirements for FEMA assistance include:

- Assistance should be directly related to the disaster and meet other FEMA eligibility requirements;
- Mutual Aid Agreement should not be contingent upon federal funding or declaration of disaster by the federal government;
- The eligible applicant receiving aid must request the grant from FEMA.
- The entity providing aid may not apply for a grant directly.
- The applicant must be able to provide documentation that aid was requested, that aid was received and costs incurred by the entity providing aid.

There are three mutual aid agreements (MAAs) that municipalities may participate in for emergency preparedness and response activities, including debris management:

- 1) Western Massachusetts Intergovernmental Emergency Mutual Aid Agreement;
- 2) MEMA Statewide Public Safety Mutual Aid Agreement; and
- 3) MEMA Statewide Public Works Mutual Aid Agreement.

INSERT NAME OF MUNICIPALITY is a signatory of the following mutual aid agreements:
INSERT NAME(S) OF MAAs THAT MUNICIPALITY HAS SIGNED

(See Appendix E for the text of these agreements, a map, and lists of participating municipalities.)

SECTION 3.0: SITUATION AND ASSUMPTIONS

Initial emergency response emphasizes the importance of life saving operations and the clearing of access ways for emergency personnel and equipment by pushing debris to the edge of rights-of-way. The **INSERT NAME OF MUNICIPALITY Disaster Debris Management Plan**'s primary focus is on the clean-up that follows. The types and volumes of debris to be cleaned up will depend on the nature of the hazard event and how it interacts with the terrain and existing land uses throughout the municipality.

INSERT A COUPLE PARAGRAPHS WITH BASIC DETAILS OF GEOGRAPHY, TOPOGRAPHY, LAND USE AND HOW THEY IMPACT POTENTIAL THREATS IN THE RELEVANT MUNICIPALITY, AS IDENTIFIED IN ITS MULTI-HAZARD MITIGATION PLAN, COMPREHENSIVE EMERGENCY MANAGEMENT PLAN, OPEN SPACE AND RECREATION PLAN, AND OTHER LOCAL AND REGIONAL PLANNING DOCUMENTS.

Massachusetts has experienced various natural and technological disasters throughout the years that have generated quantities of debris that have exceeded local capability resulting in requests to MEMA for assistance. In recent years, Western Massachusetts and the broader region have experienced multiple natural hazard events on a devastating scale. The year 2011 was particularly eventful, including a tornado in the Springfield area in June, massive flooding from Tropical Storm Irene in August across the region and particularly up into Vermont, and a huge snowstorm in late October that resulted in widespread and lengthy power outages due to downed trees.

Most non-natural or man-made hazards fall into two general categories: intentional acts and accidental events, although these categories can overlap. Some of the hazards included in these two categories, as defined by MEMA, consist of intentional acts such as explosive devices, biological and radiological agents, arson and cyberterrorism and accidental events such as nuclear hazards, infectious disease, invasive species, infrastructure failure, industrial and transportation accidents. The recent Boston Marathon bombing in 2012 is an example of an intentional act intended to terrorize the public. Accidental events can arise from human activities such as the manufacture, transportation, storage, and use of hazardous materials. The plan assumes any of these major disasters would overload individual communities' waste management capacity and that the potentially massive volumes of debris and/or infectious or hazardous debris would require special debris management strategies.

As an all hazards plan, this plan recognizes that a wide variety of disaster events could generate very different combinations of different categories of debris and diverse challenges in managing that debris. This plan provides an overall framework for addressing debris management and provides detailed management recommendations for specific types of debris. The plan recognizes that regular waste management approaches may be inadequate following a disaster that generates large amounts of debris and that different approaches may be required in some cases. This section describes the potential types of disasters that could generate large amounts of debris, and the types of debris that would typically be generated by each. The volume of debris to be generated in a worst-case-scenario Category 3 hurricane is also estimated. The section continues with recommended general debris management approaches across all types of debris,

followed by recommendations for managing each specific category of debris, and information about the use and procurement of contracted services for debris management.

3.1 STORMS AND EARTHQUAKES

The quantity and type of debris generated varies widely depending on the kind of disaster event, its location, as well as the event's magnitude, duration, and intensity. Below is a list of the types of hazard events, both natural and man-made, that might be experienced in **INSERT NAME OF MUNICIPALITY** and the types of damage most commonly associated with each.

3.1.1 Hurricanes

In Massachusetts, major hurricanes occurred in 1904, 1938, 1954, 1955, 1960 and 1976, 1985, 1991 and 2011. The damaging forces of hurricanes and tropical storms include high velocity winds (up to 150 miles per hour or higher in gusts), heavy rainfall, storm surge, and wave action. Hurricane debris consists primarily of vegetation, sediments, trees, personal property and building materials. The Saffir-Simpson Hurricane Wind Scale is a 1 to 5 rating based on a hurricane's sustained wind speed. This scale estimates potential property damage. Hurricanes reaching Category 3 and higher are considered major hurricanes because of their potential for significant loss of life and damage. Category 1 and 2 storms are still dangerous, however, and can generate significant quantities of debris. Hurricane Bob, a weak category 2 hurricane, made landfall in New England in August 1991. In **INSERT NAME OF MUNICIPALITY**, Hurricane Bob caused **INSERT \$** in property and crop damages.³

3.1.2 Tornadoes, Thunderstorms, and Microbursts

Tornadoes are swirling columns of air that typically form in the spring and summer during severe thunderstorm events. In a relatively short period of time and with little or no advance warning, a tornado can attain rotational wind speeds in excess of 250 miles per hour and can cause severe devastation along a path that ranges from a few dozen yards to over a mile in width and can extend for miles in length. The intensity of a tornado is measured by the Fujita Scale of Tornado Intensity, with ratings between F0 (wind of less than 73 mph and light damage) and F5 (winds between 261-318 mph and incredible damage). The path of a tornado may be hard to predict because they can stall or change direction abruptly and may skip across a wide area with several touchdowns. Debris from tornadoes consists of trees, structures, and personal property.

INSERT LOCAL TORNADO HISTORICAL DATA

On June 1, 2011, a tornado ripped through western and central Massachusetts, killing one person and injuring four others. The fearsome storm downed trees, ripped roofs from hundreds of homes, and damaged many historic properties, causing property damage in excess of \$24 million in communities such as Westfield, Springfield, and Monson.

This category also includes thunderstorm events, and associated storm effects including, heavy rain, hail, lightning, and strong winds. A typical thunderstorm produces periods of heavy rain and can last anywhere from 30 minutes to an hour. Hail is a form of precipitation that occurs

³ Spatial Hazard Events and Losses Database (SHELDUS): <http://webra.cas.sc.edu/hvri/>.

when updrafts in thunderstorms carry raindrops upward into extremely cold areas of the atmosphere where they freeze into ice.⁴ Lightning is always present in thunderstorms and can strike structures, trees, and individuals, potentially causing fire, injury, and even death. Lightning often strikes outside of heavy rain and may occur as far as 10 miles away from a thunderstorm center, increasing its unpredictability and risk to individuals and property. Microbursts are also referred to as “straight-line winds.” These winds are produced by the downward momentum in the downdraft region of a thunderstorm. Straight-line wind damage pushes debris in the same direction the wind is blowing, as compared to tornado damage, which scatters the debris in a variety of different directions since the winds of a tornado are rotating violently.

3.1.3 Floods

Floods are classified as either *flash floods*, which are the product of heavy, localized precipitation in a short time period over a given location or *general floods*, which are caused by precipitation over a longer time period in a particular river basin. There are several local factors that determine the severity of a flood event, including: stream and river basin topography, precipitation and weather patterns, recent soil moisture conditions, amount of impervious surface area, and the degree of vegetative clearing. Floods occur more frequently and are one of the most costly natural hazards in the United States. Flooding is often confined to discernible floodplain areas, but may also occur as a result of a dam failure or flash flood in areas downstream of higher elevation streams, ponds and rivers. Flooding poses a significant threat to life and public health and can cause severe property damage. Flooding causes damage to property due to inundation and erosion. Debris consists of sediments deposited on public and private property, and water damaged materials. Soil, gravel, rock and construction materials may also be eroded by floodwaters.

Flooding can be caused by many different types of storm events, including hurricanes and tropical storms. On August 27 and 28, 2011, Tropical Storm Irene brought heavy rain to the region, causing extensive and long term damage to a number of Western Massachusetts communities.

INSERT LOCAL DATA ON TROPICAL STORM IRENE EXPERIENCE AND OTHER HISTORICAL FLOOD DATA

3.1.4 Earthquakes

An earthquake is a sudden, rapid shaking of the ground that is caused by the breaking and shifting of rock beneath the Earth’s surface. Earthquakes can occur suddenly, without warning, at any time of the year. New England experiences an average of 30 to 40 earthquakes each year although most are not noticed by people.⁵ Ground shaking from earthquakes can rupture gas mains and disrupt other utility service, damage buildings, bridges and roads, and trigger other hazardous events such as avalanches, flash floods (from dam failure) and fires. Un-reinforced masonry buildings, buildings with foundations that rest on

⁴ http://www.nssl.noaa.gov/primer/hail/hail_basics.html

⁵ Northeast States Emergency Consortium Web site: <http://www.nesec.org/hazards/earthquakes.cfm.html>.

filled land or unconsolidated, unstable soil, and mobile homes not tied to their foundations are at risk during an earthquake.⁶

The Richter Magnitude Scale is used as a common measurement for earthquakes, which are recorded on seismographs around the world. Earthquakes with magnitudes of about 2.0 or less are called microearthquakes and are generally not felt by people and are only recorded on seismographs near the epicenter. Earthquakes with magnitudes of roughly 4.5 and greater are recorded at seismograph stations around the world. There are several thousand of these shocks recorded each year. Magnitudes do not measure damage, which is dependent on where the shock occurs.⁷ Massachusetts introduced earthquake design requirements into their building code in 1975. However, these specifications apply only to new buildings or to extensively modified existing buildings. Buildings, bridges, water supply lines, electrical power lines and facilities built before 1975 may not have been designed to withstand the forces of an earthquake.

INSERT INFO ON RELEVANT FAULT LINES

3.1.5 Ice/Winter Storms

Severe ice and winter storms can pose a significant risk to property and human life because the rain, freezing rain, ice, snow, cold temperatures and blizzard-like winds associated with these storms can disrupt utility service, phone service and make roadways extremely hazardous. Infrastructure and other property are also at risk from severe winter storms and the associated flooding that can occur following heavy snow melt and ice jams. Power and telephone lines, trees, and telecommunications structures can be damaged by ice, wind, snow, and falling trees and tree limbs. Icy road conditions or roads blocked by fallen trees may make it difficult to respond promptly to medical emergencies or fires. Prolonged, extremely cold temperatures can also cause inadequately insulated potable water lines and fire sprinkler pipes to rupture and disrupt the delivery of drinking water and cause extensive property damage.

The severe winter storm that hit Western Massachusetts on October 29, 2011 was a rare and historic nor'easter that brought very heavy snow to portions of southern New England and is sometimes referred to as the "Snowtober" storm. Snowfall accumulations of one to two feet were common in the Monadnocks, Berkshires, Connecticut Valley, and higher elevations in central Massachusetts. Snowfall rates reached 3 inches per hour for several hours during the storm. The accumulation of the heavy wet snow on trees that still had their leaves and on power lines resulted in widespread tree damage and power outages across many communities in central and western Massachusetts.

A blizzard is a severe snowstorm characterized by strong winds and low temperatures. A severe blizzard has winds over 72 km/h (45 mph), near zero visibility, and temperatures of -12 °C (10 °F) or lower. The term ice storm is used to describe occasions when damaging

⁶ Federal Emergency Management Agency Web site: <http://www.fema.gov/earthquake>.

⁷ United States Geological Survey (USGS) Earthquake Hazards Program:
<http://earthquake.usgs/learn/topics/richter.php>.

accumulations of ice are expected during freezing rain situations. Significant accumulations of ice pull down trees and utility lines resulting in loss of power and communication and can complicate the already difficult task of clearing debris from the roadways.

INSERT HISTORICAL ICE STORM DATA

3.1.6 Landslides

Landslides are geological phenomena that include a wide range of ground movement, such as rock falls, failure of slopes and shallow debris flows. They can occur in coastal, mountain, and river edge environments. Landslides occur when the stability of a slope changes from a stable to an unstable condition. A change in the stability of a slope can be caused by a number of factors, acting together or alone, both natural and man-made. The Connecticut River Valley is given a Moderate landslide incidence rating (1.5% to 15% of the area involved) while the remainder of the state is listed as Low landslide incidence (less than 1.5% of the area involved).⁸

INSERT HISTORICAL LANDSLIDE DATA

3.2 INFECTIOUS DISEASES

Infectious diseases may be either animal diseases or human pandemic diseases, each of which results in different infectious and/or medical wastes that require specific management approaches.

3.2.1 Avian Flu

Low Pathogenic Avian Influenza (LPAI), is a respiratory disease of poultry, turkeys, gamebirds and waterfowl. MassDEP is continuing to work with MDAR, DPH, DFW and other state and federal agencies to develop a specific debris management plan for managing the large numbers of avian flu infected carcasses and other associated debris, as indicated in the MassDEP/ U.S. Environmental Protection Agency (EPA) Program Plan and Performance Partnership Agreement for the Federal Fiscal Year 2013-2015 & One-Year Workplan for FFY13.

3.2.2 Other Animal Diseases

Infectious animal diseases pose unique debris management challenges, with the key issue being the need to reduce the potential for disease transmission while safely managing diseased carcasses and associated materials. Disposal of animal carcasses may also be an issue in other disasters, especially floods.

3.2.3 Human Pandemic Diseases

A human pandemic disease also would create challenging debris management problems, particularly in terms of managing medical waste and other infectious debris. In such an event,

⁸ U.S. Department of the Interior, U.S. Geological Survey. National Landslide Hazards Mitigation Strategy: A Framework for Loss Reduction. 2000.

it would be critical to manage infectious wastes separately from regular trash to limit the amount of material that needs to be managed as infectious waste.

3.3 TERRORIST ATTACKS OR FACILITY-BASED DISASTERS

3.3.1 Terrorist Attacks

The nature and amount of debris from a terrorist attack could vary widely depending on the nature of the attack and the target. A terrorism event is by law a crime and the site is considered a crime scene. Debris operations may come under the direction of Federal law enforcement officials who may have little knowledge or experience in debris management, but rather are focused on investigating the scene and gathering evidence. This will likely result in delays in clearing and managing debris.

3.3.2 Facility-Based Disasters

This could include large fires or chemical spills. Release of hazardous chemicals, either through air releases or release to land or water, could pose health risks to nearby areas. Such a disaster could occur at a fixed facility or while chemicals are being transported along railways or roadways.

3.4 DEBRIS SEPARATION AND DEBRIS TYPES

One key to effective disaster debris management is to separate categories of debris to the maximum extent possible prior to collection. Quick and effective debris separation prior to collection limits the amount of contamination of specific debris types, enabling each category of debris to be managed in the most effective way possible. For example, keeping vegetative debris separate from other types of debris enables it to be chipped for mulch, chipped for use as a fuel for power plants, or made into compost that can be reused. For disasters such as storms that affect large numbers of households and small businesses, debris separation is best achieved at the point of collecting debris at the curb or as close to the source as possible, rather than trying to separate mixed materials after they have been delivered to collection areas. Once different types of debris become mixed together, it is very difficult to separate them into clean, uncontaminated sub-components. Mixed debris cannot be managed easily except by disposal, and disposal capacity in Massachusetts and throughout the Northeast United States is limited. Maximizing separation of debris types:

- Is the most environmentally preferable approach and consistent with the Massachusetts Solid Waste Master Plan
- Limits the amount of material that needs to be disposed of, reducing demand on limited disposal capacity and taking advantage of other capacity for managing debris
- Enables opportunities for more cost-effective diversion of some debris types. Separating debris that has been mixed is extremely difficult and expensive.
- Helps to ensure that hazardous products or infectious wastes in particular do not contaminate other debris streams

MassDEP recognizes that debris separation may not always be possible when different types of debris are mixed together. However, the more that debris can be separated and diverted from the areas limited disposal capacity, this limited capacity can be used for waste that needs to be managed at a landfill or combustion facility, and the capacity can remain available for ongoing waste disposal needs.

3.4.1 Estimating Debris Quantities

Because this plan covers a wide range of potential disaster events that may generate widely different amount and types of debris, the plan does not cover estimating debris quantities for all types of scenarios. However, it is possible to estimate the “worst case” for a major storm event and the amount of space needed to management that debris, given the size of a municipality and relative density of buildings and vegetation. The estimate of the amount of space needed to manage the debris is used to determine the number of Debris Management Sites (DMS) that are needed. The actual number of sites can vary with the size of each DMS, distance from source, the speed of reduction and the removal urgency.

To forecast a rough estimate of the overall amount of debris that might be expected from a hurricane or similar major storm event, either actual data from a previous disaster event in the state or nearby states is used, the generic modeling developed by the United States Army Corps of Engineers (USACE), or a combination of both. The Army Corps model can be found at <http://www.usace.army.mil/Missions/EmergencyOperations/DisasterImpactModels.aspx>. The factors that go into the USACE hurricane debris-estimating model are:

- Households in your jurisdiction
- Storm category factor (1-5)
- Vegetative cover (light, medium, or heavy)
- Commercial density (light, medium, or heavy)
- Precipitation factor (none/light or medium/heavy)

Example: For a municipality with 10,000 households and medium vegetative and commercial density, a worst-case debris estimate based on this model would be:

10,000	x	26 cubic yards	x	1.3	x	1.2	x	1.3	=	527,280
households		cat 3 storm		veg. cover		comm. density		precip. factor		cubic yards

The factors that go into the USACE model for estimating the amount of space needed for managing that debris includes:

- Quantity of debris in cubic yards
- Volume of debris per acre (16,117 cubic yards per acre)
- Factor for area needed for roads and buffers (1.66)

Example: For a municipality with 527,280 cubic yards of debris, the debris management space estimate based on this model would be:

$$\begin{array}{rclcl} 527,280 \text{ cubic yards} & / & 16117 \text{ cubic yards/acre} & \times 1.66 & = 54.31 \text{ acres} \\ \text{amount of debris} & & \text{volume of debris per acre} & \text{factor for roads and buffer} & \end{array}$$

Using the USACE model, Table 3.1 below provides the estimated amount of debris that might be generated and space needed for management of debris from a worst-case scenario (category 3 hurricane) in **INSERT NAME OF MUNICIPALITY**. (See Appendix F for more details on the United State Corps of Engineers (USACE) Debris Modeling Methodology.)

Table 3.1: Debris Estimates for **INSERT NAME OF MUNICIPALITY**

INSERT NAME OF MUNICIPALITY	Population*	Housing units*	Corps of Engineers Debris Model**	
			Debris Estimate (CY)	DMS Required (acres)
Massachusetts Total	6,349,097	2,621,989	138,252,235	14,225

Source: Commonwealth of Massachusetts All Hazards Disaster Debris Management Plan, Revision #4, MEMA, 2012 Final; Appendix B.

*Data are from the 2000 Census, U.S. Bureau of Census. More recent estimates by municipality are not available.

**The US Army Corps of Engineers Debris Modeling Methodology was used to estimate the quantity of debris that can be expected from a worst-case scenario (category 3 hurricane) for each municipality in Massachusetts.

The estimates produced by the USACE model are predicated to have an accuracy of ± 30% (accuracy is limited due to the many variables inherent to the debris removal process). There are additional wastes that are not estimated by this model (i.e. hazardous household waste, white goods, electronic equipment, vehicles, boats, and animal carcasses) that have special management requirements. Therefore, some additional acreage may be needed to that predicted by the USACE model to account for this additional waste.

Even a rough estimate of debris generation will enable municipalities to understand what local resources will be needed to manage disaster debris as well as at what point local resources would likely be overwhelmed and state and/or federal assistance required. In addition to having an estimate of the overall amount of debris that may need to be managed, it also is important to anticipate what types of debris may be generated and what management solutions may be needed for these types of debris. Typical categories of debris and their preferred reduction methods are discussed in the next section.

3.4.2 Characterization of Major Types of Debris

Most debris generated from multiple hazards falls into one of the following categories:

- Vegetative Debris – Trees, stumps, limbs, brush, and leaves – generated from all types of storms and floods
- Building Debris – (also referred to as “construction and demolition” or “C&D debris”) Metal, wood, brick and concrete, roofing materials, wallboard, piping, wiring, and other

construction materials, some materials may have asbestos – generated from all types of storms, floods, earthquakes, and terrorist attacks

- Other Construction Debris – Road and bridge debris such as asphalt and concrete, telephone poles
- Bulky Waste – Furniture, carpets, mattresses – typically generated in large amounts from major storms and floods
- Appliances and Electronics – (also referred to as “white goods”) Refrigerators, stoves, other appliances, and computers, televisions, and electronics – typically generated from major storms, floods, and earthquakes
- Vehicles – Cars, trucks, boats, other vehicles – can be damaged or moved by major storms flooding, may be on roadways or in other less accessible locations
- Household Trash – Household items, spoiled food, packaging – generated in elevated amounts from major storms or floods
- Hazardous Household Products (HHP) – Oil, pesticides, paints, pool chemicals, other hazardous products used and stored in homes – generated in increased volumes following major storms and floods
- Commercial Hazardous Waste – Hazardous or toxic chemicals used in large amounts by industrial or commercial businesses – generated from facility-specific fires or spills or from major storms, floods, or earthquakes
- Soils and Sediments – High bacterial or toxicity levels may contaminate soils and sediments – generated from floods or major storms that result in flooding or storm surges
- Infectious/Medical Waste – Animal carcasses and associated materials due to an animal disease outbreak or trauma, medical wastes in pandemic event, materials contaminated by sewer backups due to heavy flooding

3.5 MANAGEMENT RECOMMENDATIONS FOR MAJOR TYPES OF DEBRIS

Vegetative Debris

In many disasters, this constitutes the largest volume of debris. Fortunately, it can be readily chipped for use as wood chips, mulch, or boiler fuel. Smaller vegetative debris can be sent for composting at a compost site in the Commonwealth. This material should be separated for chipping or composting to the maximum extent possible, rather than being sent for disposal. A list of compost sites in Massachusetts, many of which have equipment to chip or grind tree branches, is available on the MassDEP web site at <http://www.mass.gov/eea/docs/dep/recycle/actcomp.pdf>.

In addition, many companies provide on-site tree chipping services. These can be best found by checking local yellow pages directories. As the number of biomass to electrical energy facilities increase in New England, there will be an increased demand for wood chips for fuel. In some cases, fallen trees may be able to be collected by tree harvesters or lumber mill operators for use as lumber.

Construction & Demolition or Building Debris

Building debris from a disaster can include a wide variety of materials, some of which can be separated for recycling and some of which may need to be sent for disposal. To the extent building debris can be source-separated from other debris types, the best solution is to send it to a construction and demolition debris processing facility. As of the time this plan was written, there are 15 permitted C&D processing facilities in Massachusetts. *(A list of transfer stations and handling facilities, which includes C&D processing facilities for mixed C&D debris, can be found on the MassDEP web site at <http://www.mass.gov/eea/docs/dep/recycle/acthf.pdf>.)* Some building materials such as asphalt, brick, and concrete or roadway materials may be reused at building sites or in road construction, rather than being transported to a processing facility. These materials may be crushed and used for a number of uses, including aggregate sub-base and base material, base of building foundations, fill for utility trenches, and as fill/grading material in large construction projects.

A critical factor in effectively managing large amounts of mixed building debris is determining what materials need to be managed and disposed of as Regulated Asbestos Containing Materials. Most debris does not contain asbestos, many asbestos containing materials can often be readily identified, and disposal options for asbestos containing materials are very limited. As a result, Massachusetts' goal is to clearly identify debris that does not contain asbestos and that can be safely managed by a C&D processing facility and diverted from disposal. However, to avoid exposure to asbestos fibers, it is critical that materials that are known to contain asbestos are managed separately from other building debris as regulated asbestos containing material. Asbestos containing material may require a licensed site professional to manage.

Bulky Waste

Bulky waste, which includes items such as furniture, mattresses, and rugs, will be damaged following a disaster and will typically need to be collected and separated for disposal, either at an in-state disposal facility or sent to a transfer station to be sent for disposal at an out-of-state disposal facility. *(Information on in-state disposal facilities and transfer stations can be found at [List of Active Handling Facilities in Massachusetts](#).)*

Appliances and Electronics

Many damaged appliances and electronics may be generated during a disaster and many can and should be separated for recycling and have refrigerants (i.e., Freon) removed and captured. This includes "white goods", appliances such as refrigerators, dishwashers, stoves, etc., and computers and electronics. *(Information on companies that recycle these items can be found in the web links in Appendix B).*

Vehicles and Vessels

Major storms such as hurricanes, tornados, or floods have the potential to move cars, trucks, boats and other vehicles long distances, creating another debris stream that needs to be managed. Assuming these vehicles are not operable, removing them requires towing equipment or, if located in off-road areas, other equipment such as cranes. Similar issues may exist for boats that are damaged and deposited on land by a storm surge.

In general, abandoned cars in Massachusetts are dealt with by the local government, typically by Municipal Police Departments. A car that is parked on public land, or a public roadway for longer than 72 consecutive hours is considered to be abandoned per Massachusetts General law Chapter 90, Section 22(b) and Chapter 212 of the Acts of 1988. However, if residents have been forced to leave their homes following a disaster event, vehicles should be held for a longer period to enable them to be claimed.

The Massachusetts Environmental Police is the state agency responsible for addressing abandoned or wrecked boats in water, on shore, or in tidal waters. Various Massachusetts General Laws dictate proper protocol to be followed by the Environmental Police in the event that a boat has been abandoned or wrecked. Relevant statutes include MGL Chapter 91, Sections 38- 41.

If a person is found to be the owner of a vessel causing obstruction, the Environmental Police will give them written notice to remove the vessel within a time ‘therein’ specified, which will be deemed sufficient notice. If a vessel that is not abandoned is not removed within the time specified, the Environmental Police may remove this vessel and the costs, when not covered by the owner, shall be paid by the commonwealth as certified by the Environmental Police and approved by the Governor.

Household Trash

Normal trash and recycling service may be disrupted for some time after disasters for multiple reasons, including areas being inaccessible due to debris, flooding damage to collection fleets, and/or personnel absences. At the same time, some disasters will result in peak volumes of trash due to the need to clear out damaged household items, spoiled food, etc. Normal trash service should be resumed as soon as possible. In cases where it is difficult to resume normal trash and recycling collection, communities may need to contract for collection services on an emergency basis. MassDEP may, upon request from a facility, temporarily waive waste bans for certain recyclable waste ban materials that are not recyclable due to contamination. However, MassDEP would be reluctant to waive waste ban requirements, as they help support the goal of maximizing diversion of materials that can be diverted from disposal.

Hazardous Household Products (HHP)

This Plan focuses on the large volume of nonhazardous waste generated by a major disaster. Although MAESF-10 Hazardous Materials addresses hazardous waste response related to industrial hazardous waste, it does not specifically address the relatively small amounts of hazardous waste that are generated by households following a disaster – known as hazardous household products. These wastes may include household chemicals, solvents, paints, pesticides, propane tanks, and petroleum products that can be hazardous to human health and the environment if not handled properly.

HHP should be separated at the source and managed separately to avoid contaminating the non-hazardous debris. HHP collection should be carried out by special collection dedicated specifically to HHP. Many municipalities have existing contracts with companies qualified to collect and safely dispose of hazardous household products. Local Public Works facilities or municipal transfer stations or recycling centers may be able to serve as temporary storage sites

for hazardous products collected from residents until the HHP can be collected by a hazardous waste company. Any sites used for the collection and storage of HPP should be designed to incorporate the necessary environmental controls for hazardous waste, such as liners and berms.

Under MassDEP's regulations (CMR 30.392), collection events may last up to 48 hours, with an additional 24 hours allowed to pack and transport materials off site. However, under 310 CMR 30.1100, MassDEP may waive this requirement in certain cases when it does not pose an environmental or public health risk. In a declared State Emergency, MassDEP would consider issuing a waiver to allow a collection event(s) to continue beyond the 48-hour limit to collect HHP following a disaster. These collection events could also address other difficult to manage wastes such as ammunition. Where possible, materials such as propane tanks, car batteries, paint, and used motor oil with separate recycling outlets, and that do not have to be collected and managed as hazardous waste, should be collected separately from household hazardous waste collections to reduce costs.

MassDEP encourages residents to take advantage of local hazardous product collection programs to clear out hazardous products on a routine basis and reduce use of hazardous products, thereby limiting the amount of hazardous products that need to be dealt with in the wake of a disaster. The **INSERT NAME** Solid Waste Landfill holds a Hazardous Waste Collection day **INSERT INFO ON FREQUENCY AND TIME OF YEAR**. In addition, Massachusetts has an existing Master Service Agreement for hazardous products collection and management that can be used by any state agency or political subdivision to collect and/or dispose of hazardous products. This contract includes three categories:

- Category 1: Hazardous Material Collection and Disposal
- Category 2: Hazardous Material Collection Events
- Category 3: Medical Waste Collection and Disposal

This contract, # FAC36, can be accessed via the state purchasing system CommBUYS at <https://www.commbuys.com/bs/>.

Commercial Hazardous Waste

The Debris Plan focuses on the large volume of non-hazardous waste generated by a major disaster. MAESF-10 Hazardous Materials addresses hazardous waste response related to industrial hazardous waste or oil spills, which would typically be managed under MassDEP's Emergency Response and Site Cleanup Program.

Soils and Sediments

Flooding or heavy winds can result in large amounts of soils and sediments being deposited on transportation corridors or on private property. In some cases, these sediments may have high levels of bacterial contamination or toxic chemicals and may need to be removed and disposed of. These concerns would be addressed under the 21E Waste Site Cleanup program.

Infectious/Medical Waste

In cases of animal disease outbreaks or human pandemic disease, large amounts of infectious and medical waste may be generated. This could also be the case in other disaster events that have

high casualty levels. This waste needs to be separated from other trash, to reduce the amount of waste that needs to be managed as infectious waste. Managing infectious waste is costly and there are a limited number of companies that can provide this service.

Animal Carcasses

Major storms such as hurricanes, tornados, or floods have the potential to negatively impact both domestic animals and wildlife. Specific management protocols for diseased carcasses are subject to approval by MassDEP and MassDPH, in consultation with the Department of Agricultural Resources. Unlike other debris, in some cases, infectious waste may need to be treated on site prior to being transported.

3.6 DEBRIS DISPOSAL AND TRANSFER CAPACITY

The Massachusetts *2010-2020 Solid Waste Master Plan*⁹ presents the Commonwealth's policy framework and strategies for managing solid waste and includes statewide solid waste and waste reduction data and waste management capacity projections..

In 2010, Massachusetts generated 10.6 million tons of waste, of which 9.9 million tons was managed in state through diversion (5.1 million tons) or in-state disposal (4.7 million tons), while 700,000 tons was exported for disposal (on a net basis), about 7 percent of total waste generation and about 15 percent of total annual disposal. In 2005, approximately 1.6million tons were disposed of at in-state landfills and 3.2 million tons were disposed of at combustion facilities.

Combustion facility disposal capacity is expected to remain relatively level; however, landfill capacity in Massachusetts is projected to decrease from 2.0 million tons in 2013 to 700,000 tons in 2020. Depending on recycling progress, disposal capacity projections show projected net export for disposal of between 560,000 and 2.2 million tons by 2020.

Massachusetts does have a large amount of transfer station capacity, with more than 200 transfer stations, including several that can transport waste long distances via rail lines. In the event of a disaster that generates large amounts of debris that would overwhelm in-state disposal capacity, those transfer stations with rail access would be expected to handle a large portion of debris that needs to be sent for disposal. Massachusetts transfer stations annually accept more than three million tons of material and could accept considerably more on an emergency basis. For lists of transfer stations and handling facilities, landfills, and combustion facilities see the Mass DEP web site at <http://www.mass.gov/dep/recycle/solid/swfacil.htm>. The *Solid Waste Master Plan* recognizes that export of waste via transfer stations is a core part of the state's ongoing waste management infrastructure and capacity, as are recycling and composting facilities.

Massachusetts has [waste bans](#) in place prohibiting certain hazardous, recyclable and compostable materials from disposal in Massachusetts. MassDEP does have the ability to temporarily waive waste ban requirements in cases when these materials are not recyclable, and could potentially take this step to expedite debris removal following a disaster. However, given that the need to

⁹ <http://www.mass.gov/eea/docs/dep/recycle/priorities/swmp13f.pdf>

divert materials from disposal becomes even greater following a disaster when disposal capacity may be overwhelmed, MassDEP may choose to maintain waste ban requirements to encourage high levels of diversion of recyclable and compostable materials.

Given this framework, Massachusetts will approach disaster debris management and capacity needs as follows:

- Divert as much material from disposal as possible through recycling, composting and other diversion options. This will limit increased use of valuable limited disposal capacity, preserving it for future use, while ensuring that materials are managed in the most environmentally preferable way. MassDEP anticipates that large amounts of the following materials would be diverted from disposal:
 - vegetative waste (chipped for mulch or fuel for biomass power plants, composted, or, as a last resort, burned by an air curtain burner)
 - building materials (asphalt, brick, and concrete crushed on-site or brought to crushing operation; other C&D brought to C&D processor, unless contaminated by asbestos)
 - appliances and electronics (delivered to recycling companies)
 - vehicles (delivered to metal recyclers)
 - hazardous household products (collected separately and delivered for hazardous waste management)
- Use Massachusetts in-state disposal capacity for disposal of disaster debris, including allowing temporary tonnage increases on an emergency basis. MassDEP regional offices have the authority to temporarily increase permitted tonnage limits in emergency situations. However, given the limited number and size of facilities available in Massachusetts and the importance of preserving this capacity for the future, MassDEP does not anticipate that in-state disposal facilities could or should handle the full volume of debris generated by a major, widespread disaster.
- As a result, MassDEP plans to rely on the approximately 200 transfer stations to transfer waste that cannot be diverted to facilities outside of Massachusetts for disposal. Because other Northeast states also have limited disposal capacity and could also be impacted by the same disaster events that affect Massachusetts, large transfer stations that are equipped to transport waste long distances by rail may play an important role in managing exceptional amounts of debris generated by a disaster. Assuming these facilities are operational, they have the ability to ship waste to states not affected by the same disaster and that have very large landfills that could accommodate large amounts of disaster debris in the short term without eliminating future capacity options.

3.7 USE AND PROCUREMENT OF CONTRACTED SERVICES

Depending on the nature and extent of a hazard event, it may be necessary for one or more municipalities to hire private contractors for debris clearance, especially during the first 70 hours of a disaster event. 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. During the “70-hour push,” 75% of costs are reimbursable by

FEMA and procurement regulations must still be followed; however, contractors can be paid for straight “Time & Materials” during this period rather than by quantity, which is the standard following the first 70-hour critical phase. Federal Highway Administration (FHWA) roads are now eligible for emergency work only under the FEMA Public Assistance program. (See Appendix C for the **INSERT NAME OF MUNICIPALITY** Road Jurisdiction Map.)

For some widespread or particularly damaging events, it may be necessary to use contractors for debris management for the entire length of the recovery period. In addition, it is possible that contractors would need to be hired to handle certain types of debris, such as hazardous materials or medical waste, while municipal employees (also known as “force account labor”) manage the other types of debris generated, such as vegetative and C&D waste.

Municipalities and state agencies have four options for purchasing debris management services:

1. Mutual aid agreements with other municipalities within the designated counties (e.g. for sharing chipping or grinding equipment may be used to assist with debris management costs). The costs would be reimbursed through the municipality using the shared equipment and requesting the reimbursement.
2. Use an existing municipal contractor to provide services (e.g., an existing contract for yard waste collection or chipping and grinding vegetative debris or curbside collection through existing solid waste and recycling contractors) as long as the original contract’s estimated dollar value will not be exceeded.
3. Use an existing state contract to manage debris. State Contracts are administered through the MA Operational Services Division and these contracts are generally open to cities and towns. Billing for these contracts can be based on unit measure as opposed to time and materials, as stated under Section Two of the original RFR.
4. Establish new contracts specifically for the purpose of managing the disaster debris. In order to make available additional resources to manage debris in the event that local and state government resources and existing contracts are overwhelmed, statewide contracts for disaster debris management #HLS03 and debris monitoring #HLS02 may be used by both state agencies and political subdivisions for debris clearing, collecting, transport, monitoring and ensuing debris recycling and disposal. Massachusetts will coordinate with FEMA and USACE to ensure that this contract is consistent with federal public assistance reimbursement requirements.

As a condition of eligibility, FEMA requires that any contracted services must be competitively procured in accordance with federal, state, and local purchasing requirements. Contracts should include a scope of work that clearly designates the specific services requested (e.g. specific areas from which the contractor will collect the debris; what their responsibilities will be - collection only; grinding only; collection, chipping, grinding and final management) and should include a schedule for completion of the requested work. Contracts should be bid and billed for on a unit basis (cost per cubic yard) – contracts paid on an hourly basis are generally not reimbursable by FEMA. Any costs incurred must be fully documented in detail. It also is important that there are procedures in place to monitor and oversee contractor performance.

Contracts let during Phase II Removal should complement and reinforce the separation of debris as outlined in Section 3.5. Separating debris as close to the source of debris generation as possible will greatly facilitate later handling for recycling or burning (only with prior written approval from MassDEP). Collection and hauling contracts need to include terms that encourage debris separation and would penalize contractors for mixing debris. For instance, contract provisions, including payment terms, should reward contractors for collecting separated debris, maintaining debris separation, and delivering separated materials to recycling facilities over disposal facilities.

Contracts for debris site operations should also reinforce debris separation. Provisions should require that different categories of debris are placed in separate piles and/or that the site can reward or penalize a hauler for delivering separated or mixed debris.

Solid waste recycling facility contracts may allow for the rejection of mixed loads; landfill contracts would allow for the rejection of separated loads of recyclable, compostable, or otherwise divertible materials. Variable tipping fees may also be used to reflect properly separated loads from more costly to manage mixed loads.

Any master contract for a single firm to oversee multiple aspects of the clean-up and various sub-contractors should contain performance language relative to debris separation. Along the same lines, tasks assigned to government agencies during Phase II should emphasize debris separation. For cost recovery purposes, contracts should ensure that debris clearance management activities are done in accordance with state and federal regulations and that costs are properly documented.

3.8 IDENTIFICATION OF DEBRIS REMOVAL CONTRACTORS

There are three statewide debris management contracts that can be activated by any eligible entity across the state without the advance approval by or notification to MEMA, at the activating entities' expense. These (and any other debris removal contracts) are based on the quantity of materials removed. Four types of entities are eligible applicants under the FEMA Public Assistance Program:

1. State governments,
2. Local governments,
3. Indian Tribes or authorized Tribal organizations and Alaskan Native Villages, and
4. Private non-profit (PNP) organizations.

Applicants that are successful in obtaining assistance are formally identified as “subgrantees.”

The first two of these contracts are for general debris management and debris management monitoring, each with a single vendor identified. The third contract is for hazardous wastes and has 10 vendors identified to provide services in a total of five categories. The three contracts are as follows (*see Appendix I for copies of the State Contract User Guides for these contracts*):

1. Disaster Debris Monitoring Services (HLS02)—O’Brien’s Response Management, Inc.:
The purpose of this contract is to monitor private firms and force account labor performing disaster debris removal, disposal, and debris site management activities and to provide comprehensive oversight, guidance and documentation of those activities. The

contractor is responsible for ensuring that all firms and personnel engaged in these operational activities perform in an environmentally responsible manner that complies with the Commonwealth of Massachusetts' All Hazards Disaster Debris Management Plan, (the Debris Plan), and conforms with all applicable state and federal laws, regulations, policies and procedures. The Debris Plan and monitoring contract provide for comprehensive observation and documentation of work performed, beginning from the point of debris collection to the delivery at final disposal sites. The Contractor is also responsible for maximizing potential federal reimbursement for disaster debris management expenditures under FEMA Public Assistance (PA) Programs, if applicable. The Statewide Contract for Disaster Debris Monitoring Services may be used simultaneously by all Commonwealth entities, including Cities, Towns and State Agencies. The contract period has been extended to 8/31/17, with options to renew through 5/31/21.

2. Disaster Debris Management Services (HLS03)—Ashbritt, Inc.: This contract is intended for use by a state agency or local government when local and state resources are insufficient to adequately manage disaster debris. Eligible debris will be collected curbside and transported to either temporary Debris Management Sites (DMS) or directly to final recycling, composting, or disposal sites. Eventually all debris will be transported to a final recycling, composting, or disposal facility. No debris management work shall be conducted without the presence of a debris monitoring company available under the contract for Debris Monitoring Services, HLS02 through O'Brien's Response Management, Inc. or state and local agency staff. The contract period has been extended to 8/31/17, with options to renew through 5/31/21.
3. Hazardous./Universal, Medical, and Electronic Waste Disposal and Emergency Response Statewide Contract (FAC82)—multiple vendors: This is a statewide contract that includes the following categories:
 - Category 1 - Hazardous Materials Collection and Disposal
 - Category 2 - Hazardous Waste Collection Events (HHW)
 - Category 3 - Universal Waste (except pesticides): Mercury Waste & Batteries
 - Category 4a - Sharps Collection and Disposal (including Sharps Kiosks)
 - Category 4b - Sharps Mail-In
 - Category 5 - Onsite Medical Waste Treatment Systems
 - Category 6 - Medical Waste Collection and Disposal
 - Category 7 - Electronic Waste
 - Category 8 - Tanks, Above Ground and Underground Storage (AST/UST)
 - Category 9 - Emergency Response

Thirteen different vendors are qualified to provide services in one or more categories on this contract, with each category having its own set of specifications. (*See #4 in Appendix I for the State Contract User Guide for this contract, including a complete list of vendors and their contact information on page I-19.*) The contract period ends 12/31/16, with the potential for three (3) 1-year renewals.

All or part of the service(s) available under these contracts may require the payment of prevailing wages pursuant to M.G.L., c. 149, Sections 26 through 27D (construction); Section 27F (trucks, vehicles and other equipment performing public works functions (non-construction)); Section 27G (moving office furniture) and 27H (state cleaning contracts). Any eligible public entity that uses the contract will be considered the “awarding authority” and must request a prevailing wage schedule from the Department of Labor Standards (DLS) at <http://www.mass.gov/lwd/labor-standards/prevailing-wage-program/> at the time of the engagement of the contractor for specific services, if the municipality does not already have an annual schedule posted. In addition, bidders and proposers must agree to comply with the Prevailing Wage Law, as administered by the DLS. Questions regarding the Prevailing Wage Law may be answered by accessing the above website or by calling the DLS Prevailing Wage Program at 617-626-6975. Contracts must also comply with Federal procurement requirements as outlined in 44 CFR §13.36.

When a major disaster occurs or is imminent, the activating entity may contact the Contractor on one of the state contracts advising them of the entity’s intent to activate the contract. Activating entities may include the following under the statewide contract:

1. Cities, towns, districts, counties and other political subdivisions;
2. Executive, Legislative and Judicial Branches, including all Departments and elected offices therein;
3. Independent public authorities, commissions and quasi-public agencies
4. Local public libraries, public school districts and charter schools;
5. Public Hospitals, owned by the Commonwealth;
6. Public institutions of high education
7. Public purchasing cooperatives;
8. Non-profit, UFR-certified organizations that are doing business with the Commonwealth;
9. Other states and territories with no prior approval by the State Purchasing Agent required; and
10. Other entities when designated in writing by the State Purchasing Agent.

Once the contract is activated, the following general steps will take place:

- The contact person for the activating entity should be identified. This person will be in charge of the debris removal operation and will be responsible for setting the schedule.
- The contractor will begin coordination with the activating entity’s contact person immediately following notification.
- Essential contractor staff with key experience in the "response" phase of disaster events will immediately mobilize in order to participate in initial response actions.
- When additional work is required, the contractor will increase the number of staff and equipment for the activating entity to use as needed.

- Upon completion of assigned tasks, the contractor is responsible for closing out all related operations, including but not limited to, removing equipment, properly closing any DMSs, restoring any property used by the contractor to its original condition prior to the disaster event; and closing out records and documents to support the activating entity's requests for reimbursement for disaster-related expenses.
- The contractor shall be responsible for providing all goods, services, and equipment to support its staff and subcontractors with pre-determined rates.
- The contractor shall also be responsible for the health and safety of its workforce.

Specific requirements for each of the statewide contracts are included in the Contract User Guides (*see Appendix I*).

3.9 USE OF FORCE ACCOUNT LABOR

The most immediate source of help with response and recovery in the event of an emergency is a community's own force account labor, materials, and equipment. An applicant's employees' labor and an applicant's equipment are called "force account labor" and "force account equipment," respectively. These are within the local authority and are immediately available to respond to an emergency situation requiring debris removal, particularly during the initial 70-hour critical phase. Communities are encouraged to utilize force account labor as their first line of defense, until such time as the debris removal needs exceed local capabilities, at which point mutual aid agreements may be activated, and finally, contract services may be used to get the work done.

In a Presidentially declared event, eligible work accomplished with an applicant's own labor, equipment, and materials may be funded under the Public Assistance Program. All work done with force account labor and materials must be closely monitored. It is important for the applicant's staff to document hours worked and equipment used to complete the eligible work. Costs must be thoroughly documented by payroll information, equipment logs or usage records, site or location, and other records, such as materials invoices, receipts, payment vouchers, warrants, or work orders. Final payment is based on documentation of your costs.

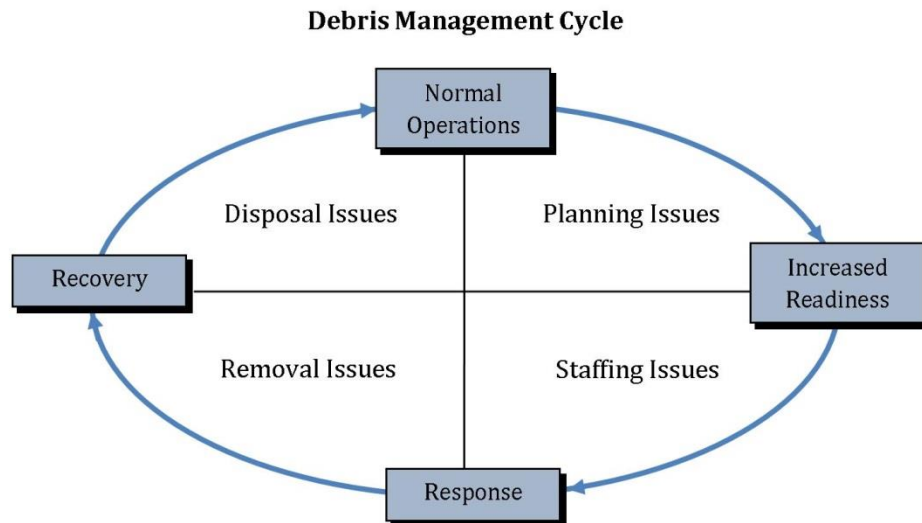
For debris removal work, overtime labor costs (including benefits) are eligible for permanent employees, reassigned employees, temporary employees, and seasonal employees used during the season of anticipated employment. The cost of straight-time labor (including benefits) of an applicant's permanently employed personnel are eligible in calculating the cost of eligible emergency work, which includes debris removal, under the Public Assistance Pilot Program. Straight-time and overtime is determined in accordance with an applicant's pre-disaster policies, which should be applied consistently in both disaster and non-disaster situations. Both straight-time and overtime labor costs are eligible for non-budgeted employees assigned specifically to perform emergency work.

Debris monitoring services and hazardous materials management are tasks that are, in most cases, going to need to be handled by specially trained individuals. Activating entities should use force account labor for these tasks only in the event that such knowledgeable individuals are available to them. If not, these tasks might best be undertaken by the statewide contractors who

have been chosen in a competitive bidding process designed to procure the services of specialists in these aspects of debris management.

SECTION 4.0: LOCAL GOVERNMENT PLANNING AND RESPONSE

This section outlines the local government’s planning and response to all phases of a disaster event in regards to the debris management cycle. 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 is provided below.



4.1 NORMAL OPERATIONS

Normal Operations is the period of time when communities are not in any serious threat of a disaster event. The Normal Operations phase is the ideal time for local officials to review the protocol for activating state contracts for monitoring and debris staging operations, to review MassDEP pre-approved Debris Management Sites (DMS) and propose additional sites, if needed, and to review current local ordinances and bylaws for their potential impact on debris removal operations. The Normal Operations period is the ideal time for local officials to re-evaluate the roles and responsibilities of all emergency preparedness staff and how they should coordinate with their partners at the county and state levels in the event of a widespread hazard event. The purpose of this evaluation is to ensure that all appropriate municipal departments maintain the capacity to fulfill their obligation in a timely and effective manner should a disaster strike. The evaluation should also establish road clearance and debris removal priorities in the event of a disaster.

4.1.1 Normal Operations Checklist

- Review and Update Federal and State Road List
- Review and Update Local, County and State Emergency Contact List
- File “Official Request for Prevailing Wages” with the MA Division of Labor and Workforce Development if Annual List Not Available
- Review and Update Relevant Ordinances/Bylaws, incl. Zoning,

- Review and Update Inter-Municipal Agreements and MOUs
- Review Proposed Debris Management Sites with DEP for Pre-Approval
- Host Communities Enter Into MOUs with DMS Property Owners
- Monitor and Evaluate Debris Management Capacity at Pre-Approved Sites
- Review the **INSERT NAME OF MUNICIPALITY** *Disaster Debris Management Plan* annually, and update as necessary when relevant circumstances have changed
- Train staff and others annually on execution of the **INSERT NAME OF MUNICIPALITY** *Disaster Debris Management Plan*
- Review the Municipality's Comprehensive Emergency Management Plan (CEMP)
- Draft Pre-Disaster Media Press Releases

4.2 INCREASED READINESS

The Increased Readiness phase occurs when there is a high probability that a hazard event may impact local communities. This phase calls for municipalities 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 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 Management 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 statewide and/or other pre-positioned contractors on stand-by and request each contractor provide a representative at the local or regional Emergency Operations Center as soon as practicable.

4.2.1 Increased Readiness Checklist

- Download Most Recent Road List and Relevant Documents to a laptop computer, thumb drive, or other portable format
- Alert Key Personnel
- Review Debris Plan with Key Personnel
- Issue Pre-event Media Press Release
- Alert Debris Contactors and Place on Standby

4.3 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 MassDOT Highway Division 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. During this critical phase, access to these facilities may be accomplished with a “cut and push” approach to debris clearance, with materials to be removed later once access to critical facilities has been provided (*see also Section 5.0 for a discussion of the phases of debris clearance and debris removal*). Plans will need to be activated during this period in order to begin the removal phase. If necessary, time and materials contract services can be employed in the first 70 hours of responding to an emergency.

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, which allows them to spend beyond their budget. Also, by declaring a state of emergency, local officials notify MEMA that the intensity of the event requires assistance. MEMA may respond by dispatching a field official to begin the Initial Damage Assessment that includes an evaluation of damage indicators that are essential for a Presidential Declared Disaster. 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. 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 Mutual Aid Agreements (MAA). Costs are only eligible if municipalities charge for mutual aid on a regular basis. Along with the MMAs, each community also has a Comprehensive Emergency Management Plan (CEMP) that contains, among other things, an inventory of each municipality’s resources that could be available in the event of a disaster. The municipality’s emergency management director has access to the CEMP via a MEMA web-based system and is responsible for initiating and following through with this activity.

If the local emergency leads to a state declaration, then the Governor may request 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. Private residences and businesses have a different and usually parallel damage assessment process through FEMA’s Individuals and Households Program.

4.3.1 Response Phase Checklist

- Activate Action Plan
- Begin tracking all use of municipal resources, including use of force staff, equipment and materials used to respond to the emergency
- Conduct Damage Assessment and take photos and GPS coordinates
- Declare State of Emergency, If Needed
- Activate Debris Removal Contractors
- Begin Emergency Roadway Debris Clearance
- Notify the Massachusetts Emergency Management Agency (MEMA) of Statewide Contractors Activation
- Prepare Debris Management Sites Based on Concentration and Types 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 on Local Government Response
- Work with FEMA's Damage Assessment Team on Project Worksheets, as needed

4.4 RECOVERY

For the purpose of debris management, the Recovery Phase is marked by debris collection and reduction of debris from the public right-of-way (ROW). This work may be done by force account labor or by debris removal contractors, depending on the volume of debris and local capacity. Concurrent to the commencement of ROW debris removal operations, local officials evaluate the need for debris removal on private property, parks, and waterways. They will also confirm that MassDOT Highway Division 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.

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.

A Disaster Specific Guidance (DSG) is a policy statement issued by FEMA 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. Local officials should be aware of any new DSG that are issued by FEMA following an event.

Following is a general checklist of the activities to be undertaken by the local government during this critical phase of the debris management cycle, which can take up to six months to complete from opening the DMS and beginning to collect debris through to the closure of the sites following processing and transfer of all wastes collected. If statewide contractors have been activated, they will be responsible for many of the operational details during the response phase, but local officials will need to continue to be involved in the overall supervision of the effort and coordination with external agencies.

4.4.1 Recovery Phase Checklist

- Continue to track all resources used
- Open Debris Management Sites
- Prioritize Roads/Areas for Debris Clearance
- Issue Press Release About Segregation of Wastes

- Begin ROW Debris Removal
- Establish a system for and initiate continuous monitoring of debris removal operations
- Coordinate with External Agencies such as MassDOT
- Initiate discussions with FEMA Debris Team
- Obtain FEMA Guidance For Private Property Debris Removal
- Issue Press Release(s) About ROW Cleanup
- Maintain and Evaluate Progress of ROW Cleanup
- Work with Contractors to Document All Debris-Related Work and Costs
- Open Additional Debris Staging Sites as Necessary
- Open Residential Drop-off Stations if Needed
- Conduct Regular Meetings with FEMA Debris Team to Ensure Strong Coordination and Address Any Operational Problems
- If Approved, Begin Debris Removal From Private Property
- Begin ROW Leaners/Hangers Program
- Initiate Haul-out of Reduced Debris From Debris Management Sites To Final Disposal Locations
- Complete All Debris Recovery Activities
- Identify Ineligible Debris on ROW
- Finalize the Disposal of Reduced Debris
- Notify MassDEP of Intent to Close Debris Management Sites
- Issue Press Release About Planned Closing of Debris Management Sites
- Closeout and Remediate Debris Management Sites
- Conduct Project Closeout Meetings with FEMA Debris Team and External Agencies
- Obtain Final Written Approval from MassDEP for Site Closure

SECTION 5.0: **INSERT NAME OF MUNICIPALITY** PLAN CONCEPT OF OPERATIONS

Immediately following a major disaster, disaster assessment teams will be active in the impacted area(s) to estimate the quantity and type of debris, and assist in prioritizing debris removal activities. The debris management task can be divided into two major phases that overlap with general emergency planning phases.

Phase I - Debris Clearance

During the first 70 hours after the disaster, debris activities emphasize clearing key roads for emergency access by pushing debris to the edge of the right-of-way, rather than restoring roads to pre-event conditions. (See Appendix C for the **INSERT NAME OF MUNICIPALITY** Road Jurisdiction Map.) This phase is generally concurrent with the response phase of emergency planning. Although Phase I is not the primary focus of the Debris Plan, it is a crucial time for organizing the majority of the tasks outlined in the plan.

Close coordination with utility companies on debris clearance will expedite clearance of utility-impacted debris and restoration of services. Without close coordination with utility companies, debris clearance and utility restoration may work at cross-purposes, adversely affecting both functions. Good coordination will also yield improved damage and debris assessments and more accurate work scheduling. Contact information for the utility companies serving the residents of **INSERT NAME OF MUNICIPALITY** is included below:

Table 5.1: Utility Companies Serving **INSERT NAME OF MUNICIPALITY**

Utility Company	Primary Contact Name	Phone	E-mail Address

Debris clearance should also incorporate up-front debris sorting and separation whenever possible. State contractors are available to assist in the early phase of the debris management process, but local officials may also need to rely more on local force account labor, mutual aid assistance, and/or local contractors during this critical phase depending on the specific conditions immediately following a hazard event.

Phase II - Debris Removal

This phase entails the actual management and removal of accumulated debris. Depending on the severity of the disaster and the amount of debris, Phase II may last just a few weeks or could take up to six months. Although in the past, some debris removal operations have taken a year or more, such a lengthy process is discouraged by state and local officials and could present significant problems for the DMS owners. Phase II may involve reassessment of debris quantities, operations of debris management areas, public education, and debris separation, collection, storage, recycling, and disposal activities. Debris removal may begin during the emergency planning response phase and will constitute a major part of the recovery phase. Debris removal activities may vary widely depending on whether the disaster event impacts a specific location (e.g., a farm with a disease outbreak) or whether it impacts a widespread area (e.g., a hurricane) and will vary widely depending on the types of debris generated.

This Disaster Debris Plan provides an organizational structure and general principles for managing debris operations for both phases of the cleanup. This section describes the basic elements of the Debris Plan. These elements include: debris management coordination; public information and outreach strategies; identification of DMS; recommended practices for debris collection and removal; monitoring of debris operations; and DMS closure.

5.1 DEBRIS MANAGEMENT COORDINATION

Local officials should contact MEMA early in the recovery process as soon as they have determined that the scale and/or scope of the hazard event exceed their capacity to respond and will require help from other communities under Mutual Aid Agreements and from state agencies. MEMA can also assist municipalities in the activation and monitoring of private contractors, including hauling and monitoring firms, through the duration of a debris cleanup process. *(See Section 2.0 for a review of the roles and responsibilities of the various federal, state, county and municipal agencies and officials in the debris management process.)*

5.2 PUBLIC INFORMATION

Communicating with the public in times of emergency is challenging. Public messaging must also be clear, timely and coordinated so that neighboring jurisdictions are not giving contradictory information. There is no one homogenous “public,” rather, communities are composed of diverse populations and demographic groups. Among these groups are:

- Elderly people
- Segments of the population with limited digital access to cable or the internet
- People (often younger demographics) who are accustomed to using social media
- Rural populations
- People living in poverty or with few resources
- People living without support systems
- Immigrants who have limited English speaking ability
- Deaf people who use American Sign Language
- Cultural groups who do not watch or listen to the same media as the general population

There is no one communication tool that can reach all these public stakeholders, so it is necessary to employ multiple different communications modes that are technologically-integrated (“seamless”) for the delivery of emergency warning messages. Following is a list of communication modes that can be used to relay information to the public during emergencies:

- Public alert systems
- Mass media (also known as traditional media—television, radio, newspapers, reverse notification systems, etc.) *(See Appendix G for a list of Media Resources Serving **INSERT NAME OF MUNICIPALITY**)*
- Social media (web- and mobile-based technologies, such as Twitter, Facebook, “ping4alerts!” Hyperlocal Mobile Alert system, and the Massachusetts Alerts mobile system). The Western Mass SMEM (Social Media for Emergency Management) website

sponsored by WRHSAC provides information on the web-based communication sites in Western Massachusetts.¹⁰

The Western Region Homeland Security Advisory Council (WRHSAC) developed the Western Massachusetts Emergency Communication Strategies report in September 2012. This report provides a summary of current emergency communication practices in the Western Massachusetts region, including communication with the public and between response agencies, identifies communication gaps, and provides recommended actions to address those gaps.¹¹ Public alert systems differ from community to community, but in each case would be activated by the local Emergency Management Director in conjunction with the Emergency Operations Center (EOC) team. Under the ICS, a Public Information Officer (PIO) should be designated as part of the EOC team and they should have primary responsibility for compiling and issuing all alerts to the public.

Press releases should be issued by local authorities using some or all of these modes of communication at several key points in the debris management process immediately before, during, and after a hazard event. (*See Appendix G for sample press releases and media contact information.*) The first press release should come during the Increased Readiness Phase, to let the public know of the imminent danger posed by the hazard event and the ongoing preparations to respond to protect the public safety. During the Response Phase immediately after the event occurs and a disaster declaration is issued, another press release should inform the public of the current status of the emergency operations being undertaken by local officials. During the Recovery Phase it may be necessary to issue several press releases, depending on how long the debris collection and management phase continues to operate. At the beginning of the Recovery Phase, the public should be informed of the initiation of the curbside debris collection process and given specific details on what materials can be picked up, where they should be located, how they should be segregated, and when the pick-ups will occur.

As debris collection proceeds, it may be necessary to send out additional press releases informing the public of changes in the protocols being followed in terms of what types of materials can be collected, the schedule for pick-ups, etc. Residents should also be notified via multiple outreach channels of special collection events for specific materials so that these collections can collect as much material as possible and operate as efficiently as possible, including debris removal on private property if that is approved by FEMA. In the event that DMS are to be utilized by the public, public education should also provide details about how these sites will operate and where they are located. If the debris collection and removal process has been ongoing for several months, it might be helpful to provide a status update so the public understands how the project is proceeding. Finally, the Public Information Officer should issue a press release announcing the planned closing of debris management sites when the debris collection and removal process has concluded.

¹⁰ <http://westernmasssmem.wordpress.com/county-web-based-communications/franklin-county/>

¹¹ The Western Massachusetts Emergency Communication Strategies report can be accessed on the WRHSAC website at: <http://wrhsac.org/resources/resource-documents/>.

5.3 DEBRIS MANAGEMENT SITES (DMS)

A debris management site (DMS) is a temporary location for storing, and/or processing (including recycling and volume reduction) of disaster debris prior to consolidating and shipping to a facility for recycling, composting or disposal. Debris management sites are important in supporting initial debris clearance activities, as well as more efficiently coordinating final debris management. Activation of pre-certified regional sites would be coordinated by local Emergency Management Directors (EMD) and other local officials. Debris management sites are only intended for use during a disaster event and State of Emergency and associated debris management activities. In normal circumstances, without a declared State of Emergency, these types of operations would typically require extensive solid waste permitting and site assignment processes. Permits may be required from the following local and state agencies for regular operations of the debris management sites: Board of Health – waste site assignments, transfer stations assignments, waste hauling, burials, condemnation; MassDEP; Building Inspector – demolition permits; Zoning Board of Appeals – special permits or variances; Conservation Commission – emergency permits to work in wetlands/streams; and Fire Department – removal of buried tanks and other gas/oil tanks.

Locating effective debris management sites requires evaluating a wide range of factors, including parcel size, topography, and ownership, in addition to past uses of the land and its proximity to residences, water supplies and wetlands. **INSERT AGENCY NAME(S)** have pre-selected **INSERT #** sites to be used for debris management in the event that a hazard impacts multiple communities and the volume of debris exceeds the local capacity for management. Those sites are: **INSERT SITE NAMES AND LOCATIONS**

The map on the following page shows the location and distribution of these sites in **INSERT NAME OF MUNICIPALITY** as well as critical facilities, evacuation routes, historic districts and environmental constraints. Table 5.2 provides detailed information regarding each of these sites. (See also Appendix H for DMS Site Selection Worksheets and site plans for each of the sites.) The site selection process was conducted using the criteria below from the 2014 Commonwealth of Massachusetts All Hazards Disaster Debris Management Plan.

Where possible sites generally should not be:

- within an identifiable or known floodplain and flood prone areas;
- within 250 feet of a private drinking water supply;
- within 500 feet of a public drinking water supply;
- within 100 feet of a surface water body;
- within 250 feet of a residential dwelling;
- within an Interim Wellhead Protection Area or Zone II;
- within an ACEC, endangered species habitat or historic site; and
- debris storage areas should be at least 100 feet from property lines

Where possible, storage and management sites should be:

- owned or controlled by municipal or state government;
- large enough to accept and store large quantities of debris ;
- have easy access, including being near the area of debris generation, be easy to enter and exit, and be near transportation arteries; and
- be ready to use as management areas without extensive site modifications.

INSERT DMS MAP

While these siting criteria may not always be feasible and should not be viewed as requirements, debris management sites should be chosen with these criteria in mind to prevent public health, nuisance, and environmental impacts. Other issues to take into account when establishing debris management areas include:

- Sites with overhead power transmission lines need careful consideration due to large dump body trucks/trailers used to haul debris, and underground utilities need to be identified due to the potential for site disturbance by truck/equipment traffic and possible site grading.
- It may be necessary to test the soil, groundwater and/or surface water at a proposed management area prior to receipt of debris to know whether contaminants at the site simply represent pre-existing conditions or are due to the operation of the management site.
- Use of inactive or capped landfills as debris sites eliminates the burn option due to explosion potential from methane in landfill gas. Closed landfill sites also may be poor sites due to the potential to damage the landfill cap. MassDEP does not want these sites to turn into default disposal sites operating without a valid site assignment or permit, which is a potential risk when debris is brought to a closed landfill site as a management area.
- DMSs should not be established in environmentally or historically sensitive areas such as wetlands, critical animal and plant habitats, sole source aquifers, freshwater well fields, historic districts, or archeological sites. If an environmental or historic preservation concern is found, the potential site should be ranked lower than others. However, if use of such areas is unavoidable, the State and local environmental and historic preservation requirements must be followed.

Operationally, debris management sites provide a location for trucks to haul to, or the public to self-haul, disaster debris where it can be stored pending transportation to recycling or disposal facilities, or it can be chipped on site into a truck to document/measure quantity, crushed, or burned on site, or some combination of these activities. Debris management sites also will be used to consolidate debris into larger trucks and/or rail cars for shipment to recycling, composting, or disposal facilities. The combination of activities that may occur at a given site will be a function of the type of debris managed (*see Section 3.3*) and the characteristics of the site. The sites should be operated in such a way to maintain separation of pre-sorted debris, control access to the site, and minimize nuisance conditions (i.e., noise, dust, and odor) and other environmental impacts.

Debris management sites may be of different sizes and have different siting criteria depending on the type and volume of materials they are intended to handle. For example, sites that will need to accept large amounts of vegetative waste and building debris (the two largest debris streams in most disaster events) would need to be large sites with flat open areas that could accommodate large amounts of debris. Such sites would likely need to operate for a long period of time before they can be fully cleared out and closed. On the other hand, some sites may be used for smaller volume debris streams such as white goods (appliances), electronics, and hazardous household products and may be able to be operated at smaller sites such as local Departments of Public Works facilities, transfer stations, or recycling centers (*see the map above for the locations of*

these local facilities). In addition, sites can be designated for use primarily as staging areas for the separation and subsequent transfer of wastes to other facilities, and these would only need to be open for the short term during the first 70 hours of debris collection and removal.

Reviewing the specific sites in Table 2, it is important to note that the sites are designated for different uses, depending on their site characteristics. *(See also Appendix H for detailed worksheet, locus maps, and site maps for each of these sites.)* The sites have been assessed for environmental and historic preservation issues and details of any issues identified are included on the maps, data tables, and worksheets for each applicable site *(see the Debris Management Site Map above, Table 5.2, and Appendix H)*. County and site-specific maps include historic points and districts as identified by the Massachusetts Historic Commission (MHC) in their MassGIS datalayer; however, data on archaeological sites is not reported by MHC due to their sensitivity and could not be included in the analysis. Environmental constraints potentially affecting the sites have been assessed using the following information:

- Permanently protected open space
- Prime farmland soils
- Wetlands
- Floodplains
- Zone II recharge areas
- Priority Habitat of Rare Species
- BioMap2 Core Habitat

Sites are under multiple types of ownership, including private, non-profit, municipality, Commonwealth of MA, etc. Regardless of the ownership model, site owners would in every hazard incident be contacted early in the Response phase or Increased Readiness Phase to determine if conditions were appropriate for the site to be used for debris management. The **INSERT #** sites represent a total usable acreage for debris management of approximately **INSERT #** acres. 5. Information and site plans for each identified DMS was submitted to the MassDEP Western Regional Office's Solid Waste Management Section Chief for pre-certification. The sites were approved by MassDEP on **INSERT DATE** *(see MassDEP's pre-certification letter approving the DMS in Appendix M)*.

5.4 DEBRIS COLLECTION AND REMOVAL

This Debris Plan requires the following debris removal and disposal operations be established:

- Divert as much material from disposal as possible through recycling, composting and other legitimate diversion options.
- Utilize volume reduction techniques to improve debris management efficiencies and minimize impacts on landfill capacities.
- Chip debris on site into a truck wherever possible to ensure proper documentation and measurement of debris quantities by municipality
- Consider alternative technologies for managing portions of the debris waste stream, instate or out-of-state (i.e., biomass facilities).
- Use only approved DMS for processing debris for recycling and disposal.

5.4.1 Mobilization/Demobilization

When a major disaster occurs or is imminent, the activating entity will contact the State contractor advising them of the entity's intent to activate the contract. Once the contract is activated, the following steps will take place:

- The contractor will begin coordination with the activating entity immediately following notification.
- Essential contractor staff with key experience in the "response" phase of disaster events will immediately mobilize in order to participate in initial response actions.
- When additional debris clearance and removal work is required, the contractor will increase the number of staff and equipment for the activating entity to use as needed.
- Upon completion of assigned tasks, the contractor is responsible for closing out all related operations, including but not limited to, removing equipment, properly closing any DMSs, and restoring any property used by the Contractor to its original condition prior to the disaster event.

5.4.2 Equipment/Supplies Mobilization

The contractor will prepare key equipment needed for the debris management response and, if needed, transport that equipment to the affected area. The contractor will also contact key vendors (e.g. construction trailer vendors, etc.) to expedite provision of field equipment that will be required for an extended debris management assignment. This shall include all equipment required to support and supply the contractor's staff (including all subcontractors). Equipment should be prepared for mobilization prior to the contract being activated.

5.4.3 Initial Debris Clearance

As requested by the activating entity, the contractor will clear debris from designated roadways, utility corridors, other transportation infrastructure, and any other critical infrastructure. This task shall only include the debris clearance necessary to restore transportation services, utility service, and other critical services and does not include debris removal and disposal. During the first 70 hours following the event, these services are provided at an hourly rate.

5.4.4 Work Scheduling

The activating entity's designated debris manager will schedule and assign priorities for debris management work on a daily basis for the local force account labor and/or debris management and monitoring contractor(s). No debris management work shall be conducted without the presence of a monitor. This monitor can be the monitoring company under contract HLS02, Debris Monitoring Services, or local agency staff.

5.4.5 Right of Way Collection

As requested by the activating entity, the contractor shall collect and transport eligible debris from affected rights of way to temporary DMSs or final disposal sites, as directed by the activating entity. Eligible debris includes all applicable types of debris and disaster related debris placed along the right of way by residents.

5.4.6 Debris Management Site Operation

Following are the requirements of the state contract for Debris Management Services in regard to DMS operation:

- The contractor is responsible for providing all staff and equipment, including scales if requested, to operate the DMS as directed by the activating entity.
- The contractor is responsible for identifying end markets for debris. Where end markets are not available, the contractor is responsible for identifying disposal outlets and associated tipping fees.
- All debris management activities, including end destinations, are subject to the approval of the activating entity.
- All DMS operations must be conducted in accordance with the Massachusetts Debris Plan and the **INSERT NAME OF MUNICIPALITY** *Disaster Debris Management Plan*.
- Unless specifically otherwise requested by the activating entity, no ineligible debris shall be accepted and managed by the contractor.
- The contractor will be required to manage all categories of debris as requested by the activating entity.
- The activating entity will reimburse the contractor for tipping fees at final recycling or disposal facilities. Prior to final disposal, the contractor will provide to the activating entity three bids for final recycling or waste disposal facilities. If the contractor receives a payment for materials, that payment shall be returned to the activating entity.

(See Appendix I for the Contract User Guide for the Disaster Debris Management Services Statewide Contract.)

5.4.7 Health and Safety Requirements

The purpose of the *Disaster Debris Management Plan* and MassDEP and DPH regulations is to protect the health and safety of the public in general, and the workers engaged in debris management in particular. Statewide contracts require that contractors are responsible for the health and safety of their workforce. DMSs are sited so as to separate them from residences and other public uses to minimize public health impacts and all debris collection must be done in accordance with applicable state, federal, and local laws and regulations. Debris is segregated so as to separate out potentially hazardous materials and infectious wastes and only specially trained entities are charged with managing those wastes so as to prevent toxic contamination and transmission of disease agents. Health and safety measures to be included in DMS management may include the use of Personal Protective Equipment (PPE), silt fences, dust control measures, and insect/pest control measures. Careful monitoring ensures that only eligible wastes are stored or processed at DMSs.

To avoid the potential fires affecting public health and safety, mulch and chip piles should not exceed 18 feet in height, 50 feet in width or 350 feet in length, in accordance with the National Fire Protection Association. Piles should be subdivided by fire lanes at least 25 feet wide around each pile. These piles should not be compacted. The local fire department shall be notified upon commencement of debris management site activities.

5.4.8 Environmental Considerations and Other Regulatory Requirements

Similar to the health and safety requirements cited above, the *Disaster Debris Management Plan* and MassDEP and DPH regulations are designed specifically to take environmental and historical preservation considerations into account. DMS are sited so as to separate them from public water supplies, surface water bodies, floodplains, Drinking Water Zone II recharge areas, prime farmland soils, permanently protected open space, and areas of critical environmental concern, to the greatest extent possible. The segregation and separate management of potentially hazardous or infectious debris also minimizes potential environmental and other impacts. Historic points and districts as identified by the Massachusetts Historic Commission (MHC) in their MassGIS datalayer should be avoided or impacts minimized when they are located on or near DMSs. If an environmental or historic preservation concern is present, a potential site should be ranked lower than other available sites. All debris collection must be done in accordance with applicable state, federal, and local laws and regulations and the DMS operations are closely monitored to ensure that appropriate regulations complied with.

5.4.9 Debris Removal on Private Property

In general, debris on private property is the responsibility of the individual property owner aided by insurance settlements and assistance from volunteer agencies. FEMA assistance is not available to reimburse private property owners for the cost of removing debris from their property; however, state or local government collection and management of disaster-related debris placed at the curb by residents may be considered an eligible cost under certain circumstances as outlined below. Municipalities should determine whether private property owners will be permitted to self-haul their debris to a DMS or other drop-off center.

FEMA will issue Disaster Specific Guidance for debris removal on private properties. 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 municipality's financial ability to bear.
- The municipality 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 municipality 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 L.*) Municipalities may execute ROE forms prior to a disaster under the condition that the ROE does not reference a particular event or disaster number.

Municipalities may undertake private property debris removal (PPDR) and demolition in extreme cases where public health, life, safety, and the economic recovery of the community-at-large are at risk based on the outcome of the damage assessment. In a situation where PPDR and/or demolition is necessary, contractors and local officials will work with private property owners in accordance with *FEMA DAP9523.13, Debris Removal from Private Property*

(www.fema.gov/pdf/government/grant/pa/9523_13.pdf) and *FEMA DAP9523.4, Demolition of Private Structures* (www.fema.gov/pdf/government/grant/pa/9523_4.pdf). These documents set forth the FEMA eligibility criteria and requirements for private property debris removal and demolition.

5.5 MONITORING OF DEBRIS OPERATIONS¹²

Monitoring debris removal operations requires comprehensive observation and documentation by the applicant of debris removal work performed from the point of debris collection to final disposal, also known as “cradle to grave” monitoring. Failure to document eligible work and costs may jeopardize Public Assistance grants. In Federally declared disasters, FEMA periodically validates the applicant’s monitoring efforts to ensure that eligible debris is being removed and processed efficiently.

No debris management work shall be conducted without the presence of a debris monitor. Municipalities can use force account resources, contractors, or a combination of both to monitor debris removal operations. FEMA encourages applicants to use their own employees to monitor debris removal operations. The applicant’s employees are the most familiar with the jurisdiction and know the priorities of the applicant’s debris management plan. Force account employee costs are reimbursed based on the Public Assistance Program’s labor cost policies for emergency work.

In some cases the monitoring task is outsourced to a contractor. As with any contractual arrangement, the applicant must ensure that the contractor is meeting the performance requirements of the contract. If a contractor is hired to perform a monitoring task, the applicant is required to ensure that the hired contractor performs satisfactorily. One source of contract services is the statewide contract for Debris Monitoring Services, HLS02, through O’Brien’s Response Management, Inc. The purpose of the state contract is to monitor private firms and force account labor performing disaster debris removal, disposal, and debris site management activities and to provide comprehensive oversight, guidance and documentation of those activities. The contractor is responsible for ensuring that all firms and personnel engaged in these operational activities perform in an environmentally responsible manner that complies with the Commonwealth of Massachusetts’ All Hazards Disaster Debris Management Plan, and conforms with all applicable state and federal laws, regulations, policies and procedures. The contractor is also responsible for maximizing potential federal reimbursement for disaster debris management expenditures under FEMA Public Assistance (PA) Programs, if applicable. When the debris monitoring contract is activated, the debris management contractor must use the load tickets provided by the monitoring contractor. If the debris monitoring contract is not activated, the debris management contractor must use a load ticket that meets FEMA and FHWA requirements in terms of the information collected for each load. (*See Appendix I for the Contract User Guide for the Disaster Debris Monitoring Services Statewide Contract.*)

The primary role for debris monitors is to document the location and amount of debris collected.

¹² Information in this section has been adapted from the Public Assistance Debris Management Guide, FEMA 325, July 2007; Chapter 11, Monitoring Debris Removal.

The key elements of information that are needed to verify the contractor's scope of work and determine eligibility are the:

- Type of debris collected
- Amount of debris collected
- Original collection location

From this information the applicant can document eligible location and work completed. Monitors should be located at the initial collection locations, the DMSs, and the final disposal locations. The debris monitor's roles and responsibilities in the field include:

- Measure and certify truck capacities (recertify on a regular basis).
- Complete and physically control load tickets (in monitoring towers and the field).
- Validate hazardous trees, including hangers, leaners, and stumps (use appropriate documentation forms).
- Ensure that trucks are accurately credited for their load.
- Ensure that trucks are not artificially loaded to maximize reimbursement (e.g., debris is wetted, debris is fluffed - not compacted).
- Ensure that hazardous waste is not mixed in with loads.
- Ensure that all debris is removed from trucks at the DMS.
- Report to project manager if improper equipment is mobilized and used.
- Report to project manager if contractor personnel safety standards are not followed.
- Report to project manager if general public safety standards are not followed.
- Report to project manager if completion schedules are not on target.
- Ensure that only debris specified in the scope of work is collected and identify work as potentially eligible or ineligible.
- Monitor site development and restoration of the DMS.
- Ensure daily loads meet permit requirements.
- Ensure that work stops immediately in an area where human remains or potential archeological deposits are discovered.
- Report to project manager if debris removal work does not comply with all local ordinances as well as State and Federal regulations.

The municipality is responsible for ensuring that debris removal work (either force account or contract) being funded under the Public Assistance Program is eligible in accordance with Public Assistance Program criteria. Additional documentation requirements depend on how the debris is collected and processed. The following describes methods and systems to monitor and document work completed by force account resources and/or contractors.

5.5.1 Debris Monitor Reports

The debris monitoring report is important for monitoring time-and-materials contracts that may be used during the response phase of the operations. Monitoring documentation for time-and-materials contracts includes:

- Actual labor hours worked
- Actual equipment hours operated

- Type and specification of equipment used

Appendix Q, FEMA Forms, includes a list of forms relevant to debris removal operations and a link to FEMA's Interactive Form Library where all of the forms can be found. These include labor and equipment summary records which are often used by applicants as a starting point for their specific documentation needs and contract requirements. Effective June 2012, all Project Worksheets must be entered directly into FEMA's Emergency Management Mission Integrated Environment (EMMIE) grant tracking program by the Project Specialist.

5.5.2 Truck Certification List

A truck certification list allows the monitor to identify the truck itself and its hauling capacity in a standardized manner. It is important to know the truck hauling capacity since debris, specifically vegetative debris, is often hauled and billed by volume. The standard list of requirements includes:

- Size of hauling bed in cubic yards
- License plate number
- Truck identification number assigned by the owner
- Short physical description of the truck

Monitors may need to be trained to measure truck capacities for certification purposes. Recertification of the hauling trucks on a random and periodic basis should be implemented for contract compliance and reimbursement considerations.

5.5.3 Load Ticket System

The term "load ticket" refers to the primary debris-tracking document. A load ticket system tracks the debris from the original collection point to the DMS or landfill. By positioning debris monitors at each point of the operations (collection, DMS, and/or final disposition), the eligible scope of work can be properly documented. This is how the applicant documents and tracks the debris from the initial collection location to the DMS and final disposal location. If the applicant uses a contract hauler, this ticket often verifies hauling activities and is used for billing purposes. Traditionally, load tickets have been carbon paper tickets with at least four copies generated for one load of debris, however, more advanced computer-based systems tracking tools are now being used in the field to reduce human error and expedite funding. Regardless of which type of system is used, the same type of information is gathered. The sample load ticket below illustrates the type of information to be collected and maintained by each monitor, as well as the driver and/or contractor.

The better the field documentation provided in support of an application to FEMA for grant funds under the Public Assistance Pilot Program, the more likely the costs of debris removal will be found to be eligible. Types of documentation that could be provided in addition to the standard logs include photos at each stage of the debris management process, detailed location information, and careful accounting of the chain of custody of the debris from "cradle to grave."

Load Ticket Information	Monitor Ticket Responsibilities	
	Collection Point Monitor	DMS or Landfill Monitor
Preprinted ticket number	NOT APPLICABLE	
Contract number	Contracts may be identified by a number or name	
Prime contractor's name		
Date	X	
Truck number	X	
Truck driver's name	X	
Vegetation	X	
Construction & Demolition	X	
White Goods	X	
Household Hazardous Waste	X	
Other (required to be described applicable)	X	
Load Location	GPS or address preferred	
Loading date/time (departure from collection location)	X	
Loading Site Monitor name/signature	X	
Truck capacity in cubic yards or tons		X
Load Size, either cubic yards (percent of actual) or tons		X
Unloading location		X
Unloading date/time (arrival at disposal site)		X
Unloading site monitor name/signature		X

One resource that would be useful in providing this documentation are the handheld GPS units that were provided by the Western Region Homeland Security Advisory Council (WRHSAC) to the Departments of Public Works in each of the cities and towns in Western Massachusetts, including training on how to use them. These units can be used to document load locations by recording GPS coordinates and taking pictures with the camera included in the unit, among many other functions. Additional GPS units are available from WRHSAC, which were purchased for regional use throughout the Western Massachusetts region and are to first responders and municipalities for use on a first-come, first-served basis for both emergencies and planned events such as exercises. The GPS Unit Caches are located at the Sheriff's Offices in each of the four Western Massachusetts Counties. Each cache includes 10 handheld Garmin Rhino 655T GPS units and is contained in a hard carrying case for easy transport. Within the cache, individual pouches hold a computer cord, an AC cord and a charger for each GPS unit. An entire cache of 10 units can be borrowed, or individual units can be borrowed, as needed. More information on the GPS Unit Caches (and how to borrow them) can be found in the "Resource Guide for Available Emergency Equipment and Supplies in Western Massachusetts," available on the WRHSAC website at www.wrhsac.org. (See also <http://wrhsac.org/resources/interactive-resource-map/> for an interactive map of the locations of these and other WRHSAC emergency resources and supplies in Western Massachusetts.)

5.6 DEBRIS MANAGEMENT SITE CLOSURE

Debris management areas should only be operated as long as it is necessary to store and process disaster debris that cannot be handled by the existing solid waste management infrastructure. These are only intended to operate as temporary management areas, not as ongoing solid waste facilities. Debris is expected to be processed and removed from management areas as quickly as possible so that debris can be safely managed and the site expeditiously returned to its previous use. Once this activity is completed, debris management areas must be properly closed. Otherwise they may be subject to MassDEP enforcement.

Final written approval is required from the MassDEP solid waste section chief in the region the site is located to consider any debris management site to be properly closed. The management site operator should contact the appropriate MassDEP regional office to discuss what is necessary for site closure and should again notify the regional office when closure is deemed complete. Depending on the amount of debris generated by a disaster, closure of processing and recycling sites shall generally be within six (6) months of first receiving waste. If site operations will be necessary beyond this time frame, permitting of the site by the Solid Waste Section may be required.

DMSs should meet the following guidelines to ensure proper closure:

- Within 90 days of completing processing at a chip site, all chips and mulch shall be removed for beneficial uses, unless MassDEP approves storage of these materials at the site for a longer period. All other recyclable materials should be sent to a recycling facility prior to closure.
- Unprocessed wood wastes at a chip site, or other materials that cannot be diverted from disposal, must be removed and sent to an appropriate disposal site prior to closure.
- Prior to closure of the storage site, all remaining debris, equipment, and other materials must be removed and delivered to a proper disposal or recycling facility and the site should be restored to its original condition to the maximum extent possible.
- At close-out, final testing of soil, water, and air quality should be compared to original conditions.
 - Areas that were only used to stage vegetative debris, or ash from burning solely vegetative debris, will not require any environmental sampling after the debris or ash is removed unless there is reason to believe that the area may have become contaminated (e.g., significant visible staining or known contaminant releases in the area).
 - Areas that were used to stage mixed debris, or ash from burning mixed debris, will normally require environmental sampling after the debris or ash is removed unless there is reason to believe that no contamination occurred.
 - When environmental sampling for soils and groundwater is needed, it should typically include at least one soil sample and one groundwater monitoring well in areas showing significant visible staining or areas believed to be impacted by the staged waste or ash. Unless otherwise approved by MassDEP, these samples should normally be analyzed for total RCRA metals, volatile organic compounds and semi-volatile organic compounds using approved EPA methods. MassDEP

may also require other approaches to conducting environmental sampling at management areas on a case-by-case basis.

Following are the requirements of the state contract for Debris Management Services in regard to DMS closure:

- The contractor will be responsible for closing the DMS and returning it to its pre-disaster condition. This shall include removing all debris from the site, cleaning up any contamination from debris management activities, and removing all equipment and temporary structures or site alterations.
- The contractor will prepare and maintain before and after documentation to demonstrate that the DMS was properly closed. This documentation shall include, but is not limited to, photographs, soil sampling, and water sampling.
- The contractor will obtain written approval from the activating entity that the site is properly closed and has been returned to its pre-disaster condition.

