



NATURAL DISASTER DEBRIS MANAGEMENT SITE PLANNING

Considerations for York County coastal communities

May 2016

Southern Maine Planning and Development Commission (with the
York County Emergency Management Agency)

www.smpdc.org



New Jersey after Superstorm Sandy, photo at left Peter Ackerman, Asbury Park Press, at right by Patsy Lynch/FEMA

We'd like to thank the following people who contributed time and perspective to this project:

Mark Hyland, Maine Emergency Management Agency

Randy McMullin, Maine Department of Environmental Protection

David Francoeur, York County Emergency Management Agency

Patrick Fox, Public Works Director, City of Saco

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“A disaster whether natural or manmade is inevitable –helping to bring this home.”

Hazards Planning and Resilience – The Elected Officials View

Natural Disaster Debris Management Sites

SMPDC in partnership with YCEMA

May 2016

Introduction

In July of 2015, Southern Maine Planning and Development Commission (SMPDC) and York County Emergency Management Agency (YCEMA) agreed to partner on two projects approved through the Maine Department of Agriculture, Conservation and Forestry's Coastal Work Plan program which is funded by the National Oceanic and Atmospheric Administration. This report represents the work done for one of those projects.

Fortunately, Maine has not recently experienced a natural disaster of the proportions of Superstorm Sandy in New York/New Jersey or Hurricane Katrina in Louisiana, but the State does have some history with tropical storms/hurricanes and ice storms. Climate change may well exacerbate the frequency and intensity of these storms. Both types of storm events tend to produce debris and depending on the severity of the event, possibly large amounts of debris. This report will address how coastal communities in York County can prepare for managing debris generated by a natural disaster through identification of potential debris management sites (DMS) and understanding the process involved with choosing and using the site.

Background

SMPDC presented the Natural Disaster Debris Management Sites project concept to two meetings of Local EMA Directors in November 2015 and again to local Public Works Directors at their meeting in December. A small steering committee was formed and a meeting was scheduled in January at YCEMA's offices in Alfred. Unfortunately, YCEMA staff became unavailable and likewise the meeting location so the meeting was rescheduled for February at SMPDC's office in Saco. SMPDC took advantage of the extra time to reach out to MEMA and DEP and secured assurances that staff from each agency would attend the February meeting. A winter storm prevented the full steering committee from attending but Mark Hyland from MEMA, Randy McMullin from DEP, Dave Francoeur from YCEMA, and Pat Fox, Public Works Director for the City of Saco attended while Joy Grahn from the American Red Cross called in on a conference line (Joy was primarily interested in the second topic of the meeting). Kathy Connor, Senior Planner with SMPDC, chaired the meeting.

Research, discussion during the meeting, and conversations with MEMA, DEP and YCEMA via phone calls and emails before and since the meeting have all informed this report.

Guidance

Research on natural disaster debris management yielded a large amount of information but the following documents were particularly useful. The State of Maine's Debris Management Plan was completed in February of 2014. Mark Hyland of MEMA and Randy McMullin from DEP were both involved with the State's Plan so their assistance with the findings that make up this report was particularly valuable.

- State of Maine Debris Management Plan, 2014 (MEMA)
- Planning for Natural Disaster Debris, 2008 (US DEP)
- Public Assistance Debris Management Guide, 2007 (FEMA)

All the documents above are included in the appendices of this report.

This report is not intended to be a complete instruction manual on how York County’s coastal communities should identify and manage a temporary debris management site. Rather it can serve as an overview on identifying potential debris management sites and understanding the logistics that surround choosing these sites. Specific suggestions and observations from SMPDC and the Committee are included at the end of this report as well as a more extensive list of helpful materials.

Planning for Disaster

“Not normal business –how do you plan and build [resilience] for a crisis when your every day is a challenge to get daily work done.”

The quote above from a recent Planning and Information Exchange presentation, *Hazards Planning and Resilience – The Elected Officials View*, also characterizes the challenges that Maine’s coastal communities face in planning for natural disasters. A part of hazard mitigation planning, natural disaster recovery includes removal of debris generated by the disaster event. Following a coastal disaster event, coastal communities may be tasked with removal of debris to temporary staging locations where it can be sorted, processed and then sent on to the appropriate destination – such as a landfill, recycling center, energy producer or composting facility.

In the aftermath of a natural disaster that focuses on the coast, State and federal resources may be available to assist but according to the Maine Debris Management Plan, counties and local municipalities will have much of the responsibility:

The Constitution of Maine enacted through MRSA Title 30-A, Chapter 111, grants home rule powers to the municipalities and, as such, the base assumption of the Plan is that emergency response is handled at the local level to the extent possible. The Plan discusses the role of county and municipal government in debris operations and; in the event that local resources become exhausted, discusses the mechanisms in place to request additional Federal and State resources for support

And

Disaster management is best accomplished at the local level and Counties and Municipalities are responsible for all debris removal operations conducted within their boundaries or areas of responsibility.

To make more clear what York County coastal communities need to plan for in the event of a coastal natural disaster that generates debris, it makes sense to discuss how responsibilities are allocated. For brevity, please note that MEMA and FEMA refer to temporary debris management sites as Debris Management Sites (DMS) and this document will occasionally refer to such sites in the same way. In its Debris Management Plan, Maine has identified a State Debris Management Team consisting of Maine’s Department of Environmental Protection (DEP), Maine Department of Transportation (DOT), Maine Emergency Management Agency (MEMA), The Department of Agriculture, Conservation and Forestry DACF (DACF), Maine Turnpike Authority (MTA) staffers (please see the appendices for the chart – it is part of Maine’s Debris Management Plan). So given there is a State team, who is responsible for what portion of debris removal and management?

Responsibilities and Priorities for Debris Removal and Management

Responsibilities for debris cleanup are divided amongst state and federal agencies, municipalities and individual property owners. These responsibilities can sometimes be allocated on a case by case basis, for instance, the Coast Guard can and has been in the past, tasked with debris removal in waterways. State and federal organizations involved with debris removal include MEMA, DOT, DEP, MTA, the Coast Guard, the U.S. Army Corps of Engineers (USACE), and DACF. Please see the Maine Debris Management Plan for details on each organization’s particular roles.

In general, state and federal highways and bridges along with state parks and historic sites are the responsibility of the State to remove debris from. Local roads are, as might be expected, the responsibility of the municipality.

A large part of debris removal and management falls to the individual towns/cities. Towns may want to partner with other towns, for instance, a smaller coastal community might want to partner with a larger community that has more debris storage capacity. Coastal communities may want to look to their inland neighbors for partnering since inland communities may offer better opportunities and access in the event of coastal destruction and flooding.

Individual property owners and businesses are responsible for removing debris from their own properties but in the event of a large-scale disaster where enormous amounts of debris are deposited on private property, the local or State government will step in to eliminate threats to and maintain public health and safety. In these situations, debris removal from private property can be considered as in the public interest and can be eligible for reimbursement under the FEMA Public Assistance Program.

Debris removal must be prioritized in order to facilitate the fastest recovery from a natural disaster. The State of Maine has deemed that debris removal tasks be done in this order:

- Support to Search and Rescue activities
- Major flood drainage ways
- Egress for fire, police, and emergency medical services
- Ingress to hospitals, jails, and special care units
- Major traffic routes/evacuation routes
- Access for utility restoration crews
- Supply distribution points and mutual aid assembly areas
- Government facilities
- Public Safety communication towers
- American Red Cross shelters
- Secondary roads to neighborhood collection points
- Neighborhood streets
- Private property adversely affecting public welfare

DEP's particular responsibilities:

Maine's DEP has the responsibility for authorizing disaster debris management sites and establishing siting guidelines and operational criteria. DEP has developed a three tiered approach to authorization of debris management sites as follows:

- Level One, Authorization: This authorization includes the currently permitted, permanent landfills (there are none operating in York County although there are many former landfills) and transfer stations, and the adjacent parking lots and/or vacant land associated with that facility. The sites are located throughout the State and provide access for a majority of State agencies, Counties, and Municipalities.

- Level Two, Pre-Authorization: This pre-authorization option allows State agencies, municipalities, and counties to request approval for existing public or private lands to site a temporary debris management site (DMS). These sites shall meet the environmental criteria established by DEP and be re-authorized each year. When the site is opened, notification is submitted to DEP which includes the location and GPS coordinates of the site, the date the site opened, the types of materials that will be accepted, and whether processing (grinding/mulching/sorting) will occur. Notification of the site's closure shall be submitted to DEP.
- Level Three, Emergency Authorization: The emergency authorization allows a governmental entity to establish a temporary debris management site on existing public or private lands. The site shall meet the environmental criteria established by DEP and an authorization request is required to be submitted at the earliest time possible prior to or immediately following the disaster. The authorization request must include the location and GPS coordinates of the site, the types of materials that will be accepted, and whether processing (grinding/mulching/sorting) will occur.

Siting a Temporary Debris Storage Management Area

The first step in debris management planning is to select the site or sites that will be pressed into service when the need arises. While Maine does not have Temporary Debris Management Area regulations/permitting (like New Jersey and New York do, for instance), emergency permitting will occur when circumstances dictate through DEP's three tier authorization system as noted in the section above. DEP offers the pre-authorization option which allows communities the opportunity to choose sites with DEP's assistance prior to a disaster occurring. York County coastal communities should consider the sizes and locations of potential debris storage sites and choose additional sites for pre-authorization as needed.

Transfer stations are at the top of the site selection list as all coastal York County communities have one or access to one (see Transfer Station table at the end of this section). However, some coastal communities may not have transfer stations of a size large enough to store debris and allow access to it for sorting and processing. Some transfer stations are sited where former and now closed landfills were located and those former landfill areas could be pressed into service under the right circumstances. They might be used for vegetative debris while more environmentally volatile debris is kept on sites with pavement. Some coastal communities' transfer stations may be affected by storm surge –either the location itself or the access to it. Please see the maps included with this report which show transfer station locations for York County towns, as well as evacuation routes and storm surge areas.

It is important to keep in mind that towns are discouraged from locating debris storage sites near natural resources (for instance, wetlands, lakes, ponds, rivers, streams etc.). Gravel pits often jump to the forefront when communities consider additional temporary debris storage beyond their local transfer station. There are a number of gravel pits in and around coastal York County. While they may be useful for storing vegetative debris for short periods of time, they are not good sites for e-waste, household hazardous waste, white goods or putrescent matter such as the contents of refrigerators. This is because gravel pits are often located above aquifers and/or near waterways and by their nature have very well-drained soils which could allow contaminants into ground water.

Stump grinding operations also often have ample capacity for woody/vegetative storage. DEP has licensed at least 15 such operators in York County. Chippers and grinders are portable and can be brought to temporary storage sites to process brush, tree branches etc. into chips or mulch. Logs can be taken to saw mills.

Another alternative for siting temporary debris storage is underutilized parking lots. While publicly owned parking lots are best, private lots may be viable choices too - for example, the back parking lot of an entertainment venue or the parking area of an underutilized industrial park. A lease would need to be negotiated and if an agreement is reached and put in place prior to an emergency, could definitely expedite recovery efforts.

Each coastal community will need to consider its own options and circumstances. Large open sites that are paved or have firm gravel areas, have access off a main road that is not vulnerable to extreme weather events and that can stand up to heavy truck traffic are preferred.

In general, the best places for temporary debris storage include:

- Transfer stations and their surrounding environs, buildings, pavement etc.
- Large paved areas such as parking lots (publicly owned parking areas are preferable, use of private parking lots is more complicated but may be necessary)
- Larger facilities that may include pavement such as closed landfills, stump grinding operations or underutilized industrial areas (again likely privately owned)
- Large open areas (parks, fields) with preference for publicly owned

Still another option for coastal communities is to consider selecting a site on which to place roll away containers. In one past instance, rollaway containers designated for different types of debris were placed in the beach parking areas of York's Long and Short Sands Beaches for nearby property owners to fill. The Town picked up the full containers and replaced them with empty ones as needed.

According to DEP and MEMA, the following criteria should be used in the selection of a debris management site:

- Ownership: Public lands should be considered first in order to reduce the need for a private land lease expense. Options may include existing landfill facilities, vacant parcels of public lands, parks, and/or sports facilities. If no public lands are available, the use of private property leasing agreements shall be reviewed by the MEMA's legal staff.
- Size: The site must be large enough to accommodate the volume of incoming debris and types of debris to be stored. Consideration must be given to the space needed for processing the stored debris, the use and storage of heavy equipment, inbound and outbound trucks and turning radius. The USACE estimates that approximately 60% of a site will be used for roads, buffers, household hazardous waste segregation areas, and burn pits (if incineration is allowed).
- Location: The site must have ingress/egress access usable by heavy trucks and preferably an access which does not impact major roadways. A DMS should, if possible, be located away from residential areas, school areas or other sensitive areas such as hospitals or other care facilities.
- Environmental and Historic Concerns: The site will need to comply with State, County, and Municipal environmental requirements. Issues such as proximity to wetlands, sole source aquifers, and critical animal and plant habitats shall be considered in selecting a DMS location. Historic or archeologically sensitive sites shall be avoided and compliance with State, County, and Municipal historic preservation requirements is necessary.

Community Transfer Stations in York County

Name	Address	Acres
Acton Transfer Station	1007 H Road	16
Alfred Transfer Station	79 Sanford Road (Rt 202)	39
Arundel Transfer Station	46 Bergeron Road	60
Berwick Transfer Station	118 Harold Dow Highway (Route 236)	6.6
Biddeford Transfer and Recycling Station	371 Hill Street	14.6
Buxton Transfer Station	183-185 Portland Road	196
Cornish Recycling Facility	92 School Street	-
Dayton Transfer Station	Rumery Road	-
Eliot Transfer Station	468 Harold Dow Highway (Rt 236)	20
Hollis (uses Waterboro facility)	-	-
Kennebunk Transfer Station	36 Sea Road	56.6
Kennebunkport (uses Kennebunk Transfer Station)	-	-
Kittery Resource Recovery Facility	1 MacKensie Lane	27.8
Lebanon Transfer Station	75 Merchants Row	5.4
Limerick Transfer Station	86 Doles Ridge Road	56
Limington Transfer Station	76 Pine Hill Road	18
Lyman Transfer Station	988 South Waterboro Road	-
Newfield Transfer Station	369 Water Street	-
North Berwick Transfer Station	334 Lebanon Road	25
Ogunquit Transfer Station	320 Berwick Road	-
Old Orchard Beach Transfer Station	99 Dirigo Road	-
Parsonsfield	-	-
Saco Transfer Facility	Foss Road	14
Sanford Transfer Station	81 Rushton Street	17
Shapleigh Transfer Station	1081 Shapleigh Corner Road	15.5
South Berwick Transfer Station	111 Agamenticus Road	3.2
Waterboro Transfer Station & Recycling Facility	132 Bennett Hill Road	71
Wells Transfer Station	386 Willey Hill Road	128
York Recycling Facility	65 Witchtrot Road	44.9

Source: Town/city staff and websites

DEP Permitting

As detailed in the Responsibilities section above, Maine’s DEP will expedite temporary permitting in the event of an emergency such as a hurricane, ice storm, storm surges or flooding that generates large amounts of debris. Paperwork will be processed as quickly as possible and in the event of a coastal disaster, MEMA and DEP would bring staff down from other unaffected or less affected areas of Maine to assist.

MEMA and DEP both recommend that communities and counties help themselves by planning ahead and identifying debris management strategies. Once the site or sites are identified, the community can contact DEP for feedback and guidance. Additional documentation from Maine’s DEP is provided as an appendix to this report – the site notification form can be filled out and sent to DEP to provide a starting point for debris management site discussion. The three documents are:

1. An April 2015 draft document entitled “Disaster Debris Management – Planning Ahead”
2. A Temporary Debris Management Site Notification Form for DEP
3. A document entitled “Guidelines for Emergency Debris Management Sites (DMS)”

Type of Debris and Disposal Options

Although York County’s coastal communities have a higher concentration of businesses and homes than many interior County locations, the majority of the debris generated during a coastal disaster event will be vegetative. According to MEMA, during a Category 2 hurricane, 80% of the debris generated (about 1.4 million cubic yards) would be vegetative. This represents a lot of tractor trailer loads because it doesn’t pack down easily (more on this a bit later). However, after processing (chipping or grinding which reduces volume by 75%), the resulting product has a lot of potential uses, including fuel (for power stations such as Schiller in New Hampshire) and landscaping material (mulch). In some cases, incineration may be allowed if the location is suitable and the debris is safe to burn.

While Maine’s Debris Management Plan includes special consideration for removal of vehicles and marine vessels, there is no estimate on how many such vehicles and vessels might be affected. Tropical storms that happen in September or October may not affect as many vehicles and vessels since visitors for the summer may have already left, taking their cars with them and storing their boats for the season. Private owners are responsible for removing their vehicles/vessels but sometime they are blocking major routes, are stranded on beaches or public shorefront property, or appear to be abandoned. In these cases, the community, the County or the State may need to remove the vehicles or vessels to maintain public safety and search for the owner. Documentation, including photos, is important when removing such vehicles or vessels to a temporary location and searching for owners.

According to MEMA staff, the most important thing for communities to remember is not to mix debris. Keep vegetative debris and construction and demolition debris separate. Maine is not only the oldest state in terms of average resident age but also has the oldest housing stock in the U.S., with the majority of the houses built prior to 1945. Older houses and buildings mean lead paint and asbestos will be included in the construction and demolition debris and must be handled correctly. The table below describes the various types of debris and the disposition process typically involved.

Debris Types and Disposition Process

Type of Debris	Storage/Staging	Processing	Re-use/End product
Vegetative (limbs and branches of shrubs and trees or similar woody materials)	Temporary debris management site or permanent disposal site e.g. landfill	Grinding/chipping to reduce volume. Also processed into firewood with some logs sent to sawmills.	Mulch, firewood, compost, lumber, fuel stock for incineration facility such as Schiller in Portsmouth
Construction and Demolition (C & D) (building materials such as aluminum, painted or stained wood, siding, gypsum wallboard, glass, carpet, metals, other non-hazardous materials)	Wood materials that are painted or treated must be processed separately and taken to an authorized facility due to possible presence of lead. Other materials can go to transfer station or landfill. Metal can be sorted separately	None, beyond initial sorting. Painted or treated wood must be transferred to suitable authorized facility.	Metal can be recycled
Asbestos Containing Material (ACM) such as insulation, ceiling tiles, cementitious siding, vinyl and linoleum-type flooring. Sometimes found in buildings constructed prior to 1981.	Must be separated (if possible) and handled in accordance to applicable rules. Disposal must be to a facility licensed to handle it.	None, beyond initial handling and transfer to authorized facility	
Mixed Debris can contain vegetative and construction and demolition debris, household goods etc.	Effort should be made to sort but if not feasible, a permitted transfer station, processing facility or landfill.	Sorting if possible	
Household Goods such as furniture and personal items (may also be categorized as C&D)	Stored temporarily at permitted transfer station, or taken to landfill		
White Goods (refrigerators, freezers, stoves, washing machines, AC units etc.)	Recycling facility, transfer station or landfill. If containing Freon or coolant, additional processing to extract the material is necessary. If contains rotting food wastes, must be transported to landfill.	Freon or coolant must be removed, then unit can be sent to recycling facility. Serial number and description of items must be recorded and maintained.	Many white goods can be recycled.

Type of Debris	Storage/Staging	Processing	Re-use/End product
Metals (aluminum siding from mobile homes, galvanized sheet metals, copper piping etc.)	Stored temporarily at transfer station	Sorting for transfer to recycling facility	Recycling
Electronic Waste aka e-waste (televisions, monitors, printers)	Many municipalities have collection sites. Must be sent to be recycled because of lead and mercury (state law prohibits it being sent to landfills)	Sorting for transfer to recycling facility	Recycling
Household Hazardous Waste aka HHW (pesticides, solvents, cleaners, paint, waste oil, gasoline etc.)	Regulated by the State and EPA. Probably will be handled by a hazardous waste contractor.	Sorting for transfer to a qualified contractor	
Munitions/Ordnance	Must be handled by trained technicians or law enforcement agencies –the State Debris Management Team will coordinate with law enforcement		
Animal Carcasses	State has rules for disposal and approved methods. DACF’s Food and Rural Resources Division can provide technical assistance.	Potential disposal include rendering, burial, incineration, composting and landfilling	Possible compost
Sand and Sediment	Sand will need to be sifted prior to any replacement on shoreline or beaches	Sifting if sand is destined for beach replenishment – must be approved by DEP	Possible beach/shoreline replenishment

Source: State of Maine Debris Management Plan, 2014

Some responsibility for separating debris may fall on individual property owners – communities could arrange for different days to have heavy equipment pick up different types of debris curbside. This method has been used by some communities in New York/New Jersey and elsewhere fairly successfully. As mentioned earlier, another option is to have communities place rollaway containers for different types of debris in neighborhoods.

Debris Estimates for York County

Two natural disaster events likely to occur in Maine which could result in large amounts of debris are tropical storms/hurricanes and ice storms. Both could affect coastal communities. MEMA has calculated the amount of debris that could be generated by a direct hit from a Category 2 hurricane and by an ice storm for each county. The table below arranges the Category 2 hurricane-based debris data by type of debris and also figures in the land area needed to store the debris. This data represents all of York County, not just coastal communities, but coastal communities tend to be larger in population and contain more buildings that could be in harm's way.

Category 2 Hurricane-Generated Debris for York County

	Category 2 Hurricane (based on USACE Debris Model, in cubic yards)
Households (H)	105, 773
Storm Category Factor (C)	8
Vegetative Cover (V)	1
Commercial Density Factor (B)	1
Precipitation Factor (P)	1
Cubic Yards Generated (H*C*Y*B*P)	1,716,061
Total Storage Site Acres Needed	177
Clean woody debris	1,372,849
*Mixed C & D	343,212
Burnable – 42%	144,149
Soil – 6%	17,161
Metals – 15%	51,482
Landfilled – 38%	130,421

*York County is estimated at 80% Vegetative Cover + 20% Mixed Construction & Demolition

Source: State of Maine Debris Management Plan, 2014

According to MEMA, based on the debris calculated above that could be generated from a Category 2 hurricane, it would take 132 18-wheel trucks making 10 trips per day, 6 days a week for three months to haul all the debris.

For comparison, debris generated by an ice storm would be nearly all vegetative material. The State did not track debris generated by past ice storms so the table below represents an estimate based on knowledge of events such as the 1998 ice storm event. In general, 100 acres handles 1,000,000 cubic yards of debris so 81 acres would be required for the storage of ice storm debris estimated below for York County.

Ice Storm-Generated Debris for York County

	Ice Storm (estimates based on past storms)
Total Debris in Cubic Yards	809,455
Total Debris in Tons	202,364

Source: State of Maine Debris Management Plan, 2014

Site Management and Documentation

An important aspect of opening, running and closing a temporary debris management site is the documentation. In order to be reimbursed by FEMA, proper documentation must be submitted (please see the Maine Debris Management Plan for details). In some cases, communities may want to weigh whether or not to document certain debris due to the time and expense of doing so that may be necessary. Documentation is handled at the site as debris comes in with different types of debris having different documentation requirements. Each site must have a site manager and it is their job to document. Site managers can be employees of the town where the site is located (force labor) or can be contractors hired to do that job. Contractors can come from local engineering firms. Coastal communities will want to have a site manager in mind for each potential debris management site prior to a natural disaster event to expedite recovery.

Preparations for Using the Site

The State of Maine plans to provide revisions to operating and site criteria for debris storage and to develop separate stand-alone guidelines and forms. For now the following guidelines on procedures and required improvements to debris storage sites are provided by the Army Corps of Engineers as included in Maine's Debris Management Plan. The sections below provide a general summary.

Baselines

Once a site has been selected, conducting baseline data collection is a critical component prior to usage of the proposed site, especially if it is privately owned. Both public and private lands will need to be restored to their original condition after closure of the debris management site. A baseline of site conditions prior to use; protects the State (which issues the permits) from potential claims of damages, especially in the case of private property sites. Listed below are the minimum activities which are to be completed prior to constructing the debris management site.

- Videotape or photograph the entire site.
- Document all structures, fencing, irrigation systems, landscaping, etc., which are in place at the site.
- Research past use and potential historic or archeological significance. Coordinate with the State Historic Commission, or local Historic Commission. Maine Preservation, a non-profit state-wide historic preservation group is also an excellent resource.
- Soil and water sampling establishes the condition of the site. If the site will store household hazardous waste or fuel / oils for the operating equipment (such as bucket loaders, bulldozers, chippers etc.), additional sampling at the pre-planned storage areas provides the necessary documentation to assist in the post-storm restoration.

Environmental Monitoring Program

Once operations are established, continued monitoring and documentation of site operations are necessary. Monitoring tasks include:

- Documenting through photographs or sketches, the areas where various activities occur such as grinding, burning, hazardous waste areas, and fuel and equipment storage. This allows for additional testing during the site restoration phase.
- Documenting on-site spills of fuel, hydraulic fluids or similar issues for additional testing prior to site closure and restoration is critical.

Guidelines for Site Improvements Required

Certain improvements to the site are required – sites such as transfer stations may have some of these improvements already. In addition, the State’s Debris Management team may require a site layout plan. Such a plan would include but is not limited to: traffic/truck circulation, debris tipping areas for various types of debris sorting/processing areas for mixed debris and recyclables, storage of white goods and other debris destined for recycling and segregated hazardous waste zones. Site improvements include:

- Perimeter fencing to secure the site from illegal dumping.
- Installation of an entrance gate.
- Built-up aggregate access roads.
- Drainage and storm water retention features (if applicable).
- Erosion and sediment control fencing.
- Construction of an inspection tower.
- Safety equipment, such as first aid and eye flush kits and fire extinguishers.
- Berms or secondary containment around fuel storage tanks and hazardous waste areas to prevent runoff of these materials into adjacent ditches and surface waters.
- All other site improvements necessary for the safe, efficient, economical and environmentally sound operation of the site

Site Closure

All temporary debris management sites must be properly closed and restored whether constructed on public lands or private property. In general the debris site manager will oversee the operation while the debris removal contractor will be responsible for removing all materials from the site and restoring the site to its pre-disaster condition. Site closure procedures include:

- Removal of all debris and debris related operations structures.
- Coordination with DEP to discuss requirements for closure.
- Conducting an environmental assessment, including sampling of the soil and groundwater as applicable and comparing results with the pre-operations samples.
- Grading, topsoil replacement, landscaping or other activities, as necessary, to restore the site to pre-operations conditions

Of Special Interest

A component of debris management planning is knowing and understanding what may be eligible for reimbursement from FEMA or when outside aid can be requested. The following are examples for coastal communities to keep in mind:

- Cleaning storm drains may be an eligible expense under the FEMA Public Assistance program if a regular maintenance and inspection program was in place prior to the debris producing event. Storm drains should be inventoried in a permanent log or summary spreadsheet. Each storm drain must be individually documented by assigning an identification number and determining the GPS coordinates. The log should indicate each date when maintenance occurred. All associated documentation supporting past maintenance should be retained, including employee labor and any contract services invoices.
- Debris removal in waterways, channels, and streams may be eligible, if the debris poses a threat to the public health and safety either for imminent danger or future danger of flooding or poses a hazard to navigation. Alternatively, the Coast Guard could be called on to assist in removal.
- As mentioned earlier, while it is the owners' responsibility to remove damaged or derelict boats and cars (for insurance purposes), vehicles and vessels may end up in public thoroughfares etc. and need to be removed immediately. The municipality or the County should remove the vessel or vehicle to a temporary debris storage site and seek the owner. Documentation is essential.
- Private developments with private roads or gated communities are still required to haul debris to a public ROW for pickup although some special considerations may be made.
- As mentioned earlier, private property must be handled by the owner, although in a disaster, huge amounts of debris may end up on private property posing health and safety hazards. In these cases, the municipality or the County may need to be involved in the removal and it may be reimbursable. However, written authorization is needed from FEMA prior to removal in order to be eligible.
- Commercial property is assumed to be covered by insurance so is generally ineligible for FEMA funding but in specific circumstances, debris may need to be removed by the municipality or County.
- A downed tree or portion of a tree can be difficult to peg as either private or public. See the guidelines in the MEMA Debris Management Plan in Chapter 11 for dealing with hazardous stumps, leaning trees, hanging branches and damaged trees for the documentation and eligibility validation requirements for FEMA reimbursement.

Suggestions by SMPDC and the Committee

Accessibility of Information

When this project was begun, neither SMPDC nor YCEMA was aware of MEMA's Debris Management Plan. A search of MEMA's website did not turn up any information that would suggest the plan existed. SMPDC staff received the plan from MEMA after contacting DEP about debris management permitting and learning that DEP had participated in MEMA's debris planning effort in 2014.

- It could be difficult for individual coastal communities, especially smaller towns, to know where to start with debris site planning since the State's debris site planning information is not found online.

- This report recommends that Maine’s Debris Management Plan be placed on MEMA’s website and on YCEMA’s website. It will be placed on SMPDC’s website along with this document.

Communications

Cell phones/smart phones will be an important tool for debris site managers and other involved personnel. Communications between debris sites, town/city staff, contractors, State and federal personnel will be a constant during recovery from a major event. The ability to photograph debris is an integral part of FEMA documentation requirements in many cases (think abandoned vehicles and vessels). Social media may also play a role – especially if communities need to get creative in how they reach out to and engage residents in the removal and sorting of debris after a disaster. It is hard to overestimate the benefits of debris site personnel being able to text, receive/make calls, check information online and take photographs during an intense recovery operation.

York County coastal communities may currently have internet capability at their local transfer stations but depending on the severity of the event, coastal communities might need multiple debris sites. The ability to obtain documentation, such as FEMA forms etc. is essential. Downloading the forms and printing them as necessary (although ideally they could be filled out online –see Documentation below) may be essential. It seems important to have internet capability as quickly as possible at all debris sites, taking into account the amount of infrastructure damage that could delay actually getting that capability.

- Cell phones/smart phones and internet access for debris management site personnel and contractors in the event of a major natural disaster recovery effort seems essential.

Documentation

The documentation required for FEMA reimbursement can be extensive. Setting up and running a debris management site or sites with an aim toward getting reimbursed for as much of the recovery effort as possible is always the goal. Balancing practicality, expediency and the urgent needs of the moment can be tricky. Along with the smartphones and internet access mentioned above, adding the items below could ease debris management efforts.

- It would be useful for communities to have debris documentation electronically for use with smart phones and iPads. Photos are important too for certain types of debris and these devices double as cameras.
- Apps for debris management would be even better.

The Committee also thought these would be worth pursuing:

- Finding out how much FEMA is willing to reimburse a community for leasing a private parking lot for debris storage would be useful information to include in the project report.
- Obtaining any required forms or documents for such a private lease would also be helpful.

SMPDC has reached out to FEMA and awaits a response. Once a response is received, this document will be updated.

Training

While completing this document, SMPDC learned of a debris management training course to be held at YCEMA in mid-May 2016 with instructors from FEMA. It appears that several classes on debris management are being held in May and June throughout the State.

- SMPDC hopes to see additional information on debris management become more readily available to communities as a result of these classes.

On York County Communities

SMPDC sent out an email survey asking all York County communities if their town/city had a temporary debris storage/management site identified and if so, where it was located. All communities were included, since as discussed earlier, inland communities may have a role to play in the event of a coastally based disaster. Four responses were received. Three were coastal communities (out of a total of 11 coastal communities in York County) and the fourth was inland. All said they had informally identified sites. One site is a transfer station, the others are not. One town has reached out to DEP for preauthorization.

- SMPDC recommends that DEP staff work closely with communities that are choosing debris management sites. With the debris management training adding visibility to this subject, DEP has an opportunity to lend valuable assistance.

Further Reading

In addition to the four documents mentioned earlier, the following may also be of interest and are easily found via a web search.

- Disaster Debris Management Planning Toolkit for New Jersey Municipalities, revised 2015 (New Jersey DEP)
- Severe Marine Debris Report: Superstorm Sandy: Report to Congress, August 2013
- Lessons Learned: Social Media and Hurricane Sandy, U.S. Department of Homeland Security, June 2013
- Public Assistance Debris Monitoring Guide, FEMA, October 2010
- Comprehensive Plan for Disaster Clean-up and Debris Management, Louisiana Department of Environmental Quality, Revised April 2015

Appendices

The following documents are included as appendices:

- Transfer Stations in York County
- Transfer Stations in Coastal York County with Storm Surge
- State of Maine Debris Management Plan, 2014 (MEMA)
- Planning for Natural Disaster Debris, 2008 (US DEP)
- Public Assistance Debris Management Guide, 2007 (FEMA)
- Disaster Debris Management – Planning Ahead (Maine DEP, 2015)
- Temporary Debris Management Site Notification Form (Maine DEP)
- Guidelines for Emergency Debris Management Sites (DMS) (Maine DEP)