Debris Management Plan Guidebook



A Collaborative Approach to Disaster Recovery in Minnesota

Homeland Security and Emergency Management

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CHAPTER 1 INTRODUCTION

This box will be used to identify the minimum effort that could be undertaken in each of the sections. A thorough plan is best, but don't be overwhelmed and do nothing.

Introduction. The purpose of this document is to provide a step-by-step instruction to allow communities to develop a debris management plan. Debris removal is one of the first critical recovery activities. This activity is started with little time for preplanning. Costly mistakes can be made if an organized plan is not followed. This guide book is designed to walk you through step by step on creating a Debris Management Plan that is right for your community.

Overview. Each section identifies what critical items are to be completed, particularly if time is limited.

The sections include:

- Staff roles and Responsibilities
- Debris Collection Strategy
- Debris Estimating
- Debris Management Site
- Contracted Services
- Debris Removal on Private Property
- Mutual Aid Agreements
- Communications

What this template does not include.

This template for creating a debris management plan does not include details on how to remove debris but rather how to manage the totality of the removal process. There are a number of good resources (included at the end of each chapter) that provide details on how to create an effective debris removal plan.

To be prepared is half the victory.

Miguel de Cervantes
(1547-1616) Spanish novelist

Resources. At the end of each chapter are forms and links to available resources. An example is also included in the appendices as well as a list of available resources.

Personnel involved in preparing a plan. It

is recommended that a committee be formed of 6-8 individuals that can meet monthly to develop a plan. This would include a commitment of 4-8 hours between meetings to work on individual assignments. These individuals could include:

- City staff
- Elected officials
- Fire or police chief
- County emergency manager
- City consultants
- Public works staff
- Department of Solid Waste
- MN Pollution Control
- Local Volunteers

The seven month plan. Below is a typical schedule that could be used to create a debris management plan.

Month 1:

- Council approval to prepare plan
- Identify Team.

Month 2:

- First committee meeting
- Establish monthly meeting times
- Assign sections
- Become familiar with reference materials
- Focus on identifying personnel to be involved and organizational chart.

Month 3:

- Review and confirm organizational chart
- Status reports on other sections.
- Research what ordinances or authorities are in place

Month 4:

- Reach consensus on mutual aid agreements needed
- Reach consensus on debris

- recycling information to include in plan
- Research other debris removal tasks.

Month 5:

- Review pre-qualified debris removal contractors
- Review Mutual Aids for approval

Month 6:

 Complete draft plan for council review.

Month 7:

- Incorporate comments from council
- Finalize plan
- City council approval
- Committee celebration!

Good housing practices. The debris management plan is only as good as its latest update. Good practices include:

- Maintain a distribution list and use it to assure all previous versions are replaced when updated.
- annually. People and phone numbers change. It should be included as a city council agenda item annually to approve the update.
- Commit to incorporating lessons learned after every debris removal event and update all applicable sections as needed.

Resources:

Appendix A: Public Assistance Pilot Program
Debris Management Plan outline.

Appendix B: Debris Management Checklist

CHECKLIST

Chapter 1 Introduction

Council approval to form committee

Identify committee

members

Draft plan

Finalize plan

Council approval

Strategy for updating

plan

CHAPTER 2

EVENTS AND ASSUMPTIONS

If you only have time to do one thing for this section on **Events and Assumptions**, identify the various events that can happen.

Events. We always hear that we were not prepared because this has never happened here before. It is important to list any and all events that might happen in your jurisdiction. The more information gathered during the planning process, the better the recovery efforts will be. After your list is compiled, we will start making assumptions on quantity and types of debris that will be associated with the event.

Tornadoes. Tornadoes usually have a narrow path of debris. Types of debris typically associated with tornadoes

would be vegetative, construction material from damaged or destroyed structures, and personal property.

Floods. Severe thunderstorms, rapid snow melt, and reservoir failure can cause flooding. You can experience inundation or high velocity flooding. Flood debris may consist of sediment, wreckage, personal property, and sometimes hazardous materials.

Lessons Learned:

Just what is a Normalcy Bias? It is a mental state that "causes people to underestimate both the possibility of a disaster occurring and its possible effects." It's sometimes called the "It can't happen here" syndrome. The assumption is that since a particular disaster has never occurred before, it never will. Any disturbing indications that something bad may happen are dismissed or trivialized.

Fires. Wildfires or urban fires can destroy buildings, vehicles, and vegetation. Debris from fire can consist of ash, charred wood, burnt metals, and burnt personal property.

Winter storms. The heavy weight of snow and ice can cause a large debris issue. Debris may consist of electrical lines, power poles, building materials, and vegetative debris. **Assumptions.** Listing the potential debris that events can produce will help you begin to figure out how you will manage your debris removal operations. Determine the level of an event that would be overwhelming for you. This should be identified in your plan what would be the trigger point to ask for County, State or Federal assistance.

CHECKLIST

<u>Chapter 2 – Events and</u> <u>Assumptions</u>

Identify potential events that will create debris

Identify your estimates
on potential debris
from these events

CHAPTER 3

STAFF ROLES AND RESPONSIBILITIES

If you only have time
to do one thing for
this section on **Staff Roles and Responsibilities**,
have your debris
manager clearly
identified as a

primary decision

maker.

Authority. Often times after an event no one is in charge and everyone is in charge. The local level of government is responsible for developing this plan, selecting a debris manager, and a debris management staff. Each local government's organizational structure will look different but it should follow the Incident Command System (ICS) for flexibility during various events.

Staff Development. A staff member should be appointed as a Debris Plan Manager. During any size event, the

manager will be responsible for activating the level of organization that is needed. Deciding who should be responsible during an event should be looked at carefully. For example, the supervisor of public works might be the best person to be the manager, however during a large scale event; they may be overwhelmed with several critical priorities. Maybe the Foreman of solid waste would be a better selection.

Lessons Learned:

Transforming victims into
beneficiaries and producers helps
restore the local economy - debris
removal and recycling is inextricably
linked to getting the community back
onto its feet in the often slow and
painstaking job of returning to normalcy.
Rubble removal projects work best when
they are linked with training and
emergency employment offering cash for
work (or the more efficient 'cash for
production') in support of the affected
communities.

Management Staff Roles. Depending on the local level of government, some management staff roles will need more than one person:

- Administration responsibilities will include funding, accounting, and compiling all disaster related costs.
- Contracting responsibilities would include bidding requirements and contract development.

- Legal responsibilities will include right of entry permits, community liability, condemnation of buildings, insurance, and land acquisition for staging, reduction, and disposal sites.
- Operations supervises government and contract resources and the overall project.
- Engineering responsible for providing a detail damage assessment, prepares estimates, and identify project tasks.
- Public Information Specialist coordinates press releases and public notices.

Force Account labor. After the key management roles have been identified, the debris management plan should address the use of local labor (Force Account labor). It is important to lay out a game plan so employees are not double assigned duties or that normal operations are not covered during the debris removal.

Chapter 3 –

Staff Roles and
Responsibilities

Council identifies a

Debris Plan Manager

Debris Plan Manager

assigns key

management roles

CHAPTER 4

DEBRIS COLLECTION STRATEGY

If you only have time to do one thing for this section on debris collection strategy, identify with the County what your debris collection priorities should be.

Roles and Responsibility. Various departments and agencies have roles in disaster debris removal. Identifying what local department will be responsible for each part of debris collection, will save a lot of time and repeated effort during recovery.

Public Works might be responsible for debris on roadways while Buildings and Grounds might be assigned debris collection on public right of way and buildings.

Roads. After an event debris removal priority is a challenge. Priority should be given to opening roads to provide emergency vehicles and resources access

into the impacted area. When identifying collection routes a systematic method based on clearly defined criteria is important.

Some factors to consider are: population density, location of critical facilities, and environmental justice issues. It is important to remember that the need and the demand for critical facilities will be increased significantly following a disaster. It is also important to remember in your planning that 911 emergency calls will change your plans. You may want to consider having a separate team assigned to removing debris on emergency calls.

Public Health and Safety. Barricading heavily damaged areas are important until debris removal activities can be performed. Downed power lines, roads and entry to public buildings blocked by trees will need to be addressed as soon as the area is secured. Any action to eliminate the threat to public health and safety must be closely coordinated with the owner or responsible party.

Lessons Learned:

"DOT and its partners are doing everything possible to accelerate the removal of hazardous debris. We urge the public to cooperate and follow the process we have employed. Together we can get this job done quickly.

Recycling. A successful debris collection strategy will look at how to recycle the debris collected. Before you can determine how you will collect the debris, you need to determine if you can recycle it and repurpose the collection. This decision will affect your collection method.

- Vegetative debris can be chipped into mulch. Will you chip in place or haul it to a debris management site for recycling? Bricks and concrete can be crushed to gravel. It can be used for a road base or gravel roads.
- Metals from siding, appliances, and homes can also be recycled.

Collecting the remaining debris. How will you collect the debris that has now appeared on public right of ways? There are several methods that local government can use to collect disaster debris. The most common collection methods include curbside collection, drop-off bins, hazardous waste round-ups, and white goods pick up.

Resources. Link:

 Minnesota Pollution Control Agency Toolbox

Toolbox for Local Units of Government

CHECKLIST

Chapter 4

<u>Debris Collection</u> <u>Strategy</u>

Create a collection removal priorities list

Determine the roles and responsibilities of various departments

Create a recycling strategy for all hazards debris

Determine the collection method

CHAPTER 5

DEBRIS ESTIMATING

If you only have time
to do one thing for
this section on
estimating, know
where to find the
conversion table
easily.

Debris Quantities. Determination of the quantity of debris is critical in debris management. The quantity of debris will effect whether you have a debris management site, using in place contracts and equipment, and if you will need to activate mutual aid agreements. There are two methods to determine the quantity of debris, forecasting or estimating.

Forecasting. Debris forecasting is a preevent technique used to predict debris quantities. If your jurisdiction has had a tornado, wind event, or a flood, you will be able to analyze the amount of debris that was generated. Commonly, a community based risk analysis is completed to determine the types and quantities of debris generated by various events. Historical analysis should include key staff members from previous events, land use changes, population changes, current landfill capacity, and the current staff level available to facilitate the recovery. Please refer to some of the links for more in-depth detail on forecasting. Below are a few guidelines you can use in forecasting:

- One story house= volume in cubic yards times 0.33
- Personal property from a flooded home with a basement= sq footage of structure times 0.02
- Single-wide mobile home= 290 cy.

Lessons Learned:

The ability to provide accurate and comprehensive information about impacts only becomes more important the further along the in recovery. – Iowa Disaster Recovery Lessons Learned 2008

Estimating. Debris estimating is normally used in a post-event situation to establish a reasonable estimate of the actual debris quantities and mix. These estimates will be used to determine a community's capability to recover and if there is a need for a debris management site, mutual aid, and contracts. The first thing to determine is the types of debris the event produced and what the handling requirements will be.

Debris estimating can be expedited by dividing the community into sectors based on type of debris, location of debris, and land use. Remember that however you define your area; you must be consistent in your estimating. Things to remember in estimating, wet storms will produce more personal property debris. Also, make sure to include hanging debris such as broken limbs. Remember to treat all debris piles as cubes and not cones.

Below are some fact sheets and conversion tables to learn how to estimate.

Resources.

Appendix D: Estimating Debris Quantities

Appendix E: USACE Debris Estimating Model

Links.

FEMA Debris Estimating Field Guide 329

USACE Disaster Impact Models

CHECKLIST

Chapter 5 – Debris
Estimating

Forecasting debris include in plan

Method to Estimate debris

List all estimating formulas

CHAPTER 6

DEBRIS MANAGEMENT SITE

If you only have time to
do one thing for this
section on **Debris Management Site**,
create a site selection
team to identify sites.

Site Selection Team. This team should consist of solid waste, transportation, public works, emergency services, and a list of local, State, and Federal contacts that can expedite the site selection and approval process. Remember removal and disposal actions should be handled at the lowest level possible.

Site Selection. One of the most important items to have is a current list of the site selection. Whether you choose to use a preexisting landfill or compost site or establish a temporary disposal site the amount of debris will determine which option to use. Several factors should be assessed in the selection criteria. First, who owns the debris management site? Use of public lands would avoid additional costs and fees. Consider the impacts of noise, traffic, dust, good ingress and egress routes, and environmentally sensitive areas when selecting your sites.

Another important factor to consider is, will the site be able to store, segregate, or reduce volume of the debris quantities you have. Experience has shown that it takes 100 acres to process 1 million cubic yards of debris. An average site should be 50-200 acres.

Lessons Learned:

"Include debris management sites and temporary debris staging areas in your plan. Be sure to incorporate site selection, selection preparation, operations, and closeout" — Analysis of State Disaster Debris Management 8-1-2000

Separation of debris. Debris coming into the management site needs to be separated. The best method of separation would be by disposal methods. Vegetative debris will be separated from household hazardous debris. Vegetative debris can be chipped or reduced to ash. Household hazardous waste will need to be disposed of separately according to your Counties disposal plan. By separating debris, it will become easier to keep track of quantities and keep nonevent debris out.

Debris that should be separated includes, but is not limited to:

- Vegetative
- Construction and demolition
- Soil, mud, and sand
- White goods
- Household hazardous waste

Volume reduction. Volume reduction is often one of the major tasks that is accomplished at a debris management site. Vegetative debris can be reduced up to 75% by chipping and 90% if burned. Burning debris can be accomplished through controlled open burning, air curtain burning, and portable air curtain incinerators.

Resulting ash may be used by the agricultural community. If grinding and chipping is the method you choose to use, wood chips could be used for landfill cover, fuel for heating, and agricultural mulch.

Site operations. The site manager is responsible for the entire debris management site and monitoring the debris removal efforts. This person should be identified in your plan. They will ensure a buffer zone is created and maintained and nonevent debris is not integrated. Other responsibilities include debris monitoring, environmental monitoring, permitting and maintaining site layout.

Debris Monitoring. Debris operations will need to be monitored from "cradle to grave". Staff should monitor the collection activities of contractors at collection sites. The debris management site needs to have monitors recording the amounts and types of debris that are entering the site. Final monitoring will be the reduction and final disposal of the debris. Monitoring is an important part to ensure that the debris is being handled by the applicable laws and permits.

Environmental Monitoring. Environmental monitoring at a debris management site will begin with the onset of operations. This initial set of tests will be the baseline for closing the site.

Monitoring of the groundwater, surface water, air quality, ash and soil testing should be conducted on a scheduled basis until the closure of the site. Photographs and documentation of the testing should be kept as official files.

Closure of site. Ensure all debris removal and reduction activities are complete. A final environmental monitoring should be performed to determine if the site is back to the baseline it was at when opened.

Resources:

Appendix F: Identified Debris Management Sites

Appendix G: TDM Site Preparation

Appendix H: FEMA Fact Sheet 9580.203
Debris Monitoring

CHECKLIST

Chapter 6 -

Debris Management
Site

Site selection team

Sites identified

Plan for separation

Site managers identified

Reduction methods identified

CHAPTER 7

CONTRACTED SERVICES

If you only have time to
do one thing for this
section on contracting,
become familiar with
your procurement
processes and
prequalify at least one
debris removal
contractor

Contracting Procedures. Contracting for labor and equipment may be necessary if the magnitude of the emergency debris clearance, removal, and disposal operations are beyond the capabilities of the local force account resources. To best respond to disaster events you may rely on standby contracts that are pre-awarded and ready for implementation or a pre-drafted contract that is ready for advertising and awarding. The Debris Manager should be familiar with the contracting procedures and will provide the specific debris removal tasks. They will also be the person who recommends specific contract type based on magnitude of the

event. Remember it is important to document the entire contracting process.

Contract Requirements. There are some general requirements that all contracts should have. Through competitive bidding identify criteria for responding time, scope of response, and the performance period. The scope of work must be well defined and each task specifically addressed. Finally make sure your contract has a termination for convenience clause. This will allow you to terminate the contract for any reason.

Lessons Learned:

"Require licensing of contractors-including bonding, criminal and background checks- to help safeguard people from "fly- by-night" operations." – Grand Forks 1997 Flood Recovery

Contracting Issues. Be aware of a few issues that can come up in contracting. The first being bond and insurance requirements. Is the contractor bonded and insured? You should verify that the bid has included mobilization and demobilization of equipment. This expense should be captured during the bidding process. The contractor should also address any safety and environmental issues in their bid.

Time and Materials Contracts. Contracts may be used for short periods of time immediately after the event to mobilize contractors for emergency removal efforts. They must have a dollar ceiling or a not-to-exceed limit for hours.

Such contracts will be limited to the first 70 hours of actual work. The contract should state the price for equipment applies only when equipment is in use. The hourly rate includes the operator, fuel, maintenance, and repair.

Unit Price Contracts. Contracts are based on weights (tons) or volume (cubic yards) of debris hauled, and may be used when scope of work is not well defined. Unit price contracts require close monitoring of pick-up, hauling, and dumping to ensure that quantities are accurate.

Lump Sum Contracts. Using a one-time bid from a contractor the total price will be established. This contract should only be used when the scope of work is clearly defined. Contracts can be defined by one time clearance of a specific area or where the scope of work is based on a specific number of passes through a specified area..

Contracts to Avoid. Avoid sole source contracts. Always follow your normal procurement procedures. Never word a contract where payment is contingent on other funding. For example, the city will pay the contract \$25 if the State reimburses and if not the contractor will be paid \$15. Avoid piggy-back contracts. Those are contracts that another entity has bid and you just join them on the contract. Finally, avoid cost plus a percentage of cost. These contracts are for a rate and quantity then add on a percentage over that billed amount.

CHECKLIST

<u>Chapter 7 – Contracted</u>

Services

Review your procurement policy Prequalify at least one debris removal contractor

Resources:

- Appendix I: FEMA Fact Sheet
 RP9580.201 Debris Contracting
 Guidance
- Appendix J: FEMA Fact Sheet RP9580.201 – Debris Removal Contract Cost Analysis

CHAPTER 8 PRIVATE

PROPERTY DEMOLITION AND DEBRIS REMOVAL

If you only have time to do one thing for this section on private property demolition and debris removal,

have all legal
documents in place that
support inspections,
permitting, and
condemnation.

Authority. Who is assigned to inspect structures after an event? It is important to know what authority you have as a jurisdiction. Ordinances should be in place to detail what the legal process is to right of entry, condemn, and perform private property demolition. These ordinances should spell out what actions the local government will take when there is an immediate threat to public health and safety or to improved property.

Lessons Learned:

"Double dipping on clean-up by insurance companies on private property debris removal was a huge problem. Recommend an area on the right of entry form for each owner to input their insurance number."

-Excerpt from 2011 Alabama Tornado Response Mission Briefing

Debris relocated to right of way. After an event, a determination should be made on private property debris. If the decision is made that private property debris can be placed on the right of way for pick up, this message should be clear and concise. The public should be informed what kind of debris will be picked up and how to sort the various types of debris. Your debris management plan should clearly state that only event related debris will be accepted. There should be a set start and cut off time for the debris clean up.

Debris on Private Property. Debris on private property is the legal responsibility of the owner. Owners should check with their insurance companies for coverage.

However, sometimes the property has been abandoned or the owner has evacuated the area. The local government may need to enter the private property to remove debris considered to be an immediate threat to the lives, health, and safety of its residents. The first thing to remember is to document. The following documentation process should be followed before beginning debris removal.

- Authority to remove debris
- Right of entry signed, or authority to enter property
- Photos of the threat before work begins
- Complete documented scope of work to be performed

Demolition of Private Property. Dangerous structures after an event are also the responsibility of the owner. However, if an unsafe structure remains because of lack of insurance, absentee landlord, demolition of these structures may become your responsibility. You will need to certify that the structure is unsafe and poses an immediate threat to the public. The Debris manager should be responsible for taking any appropriate action regarding dangerous structure demolition. The same documentation as removal of debris on private property should be followed.

Resources:

- Appendix K: 19 point demolition checklist
- Appendix L: FEMA DAP 9523.4 Demolition of Private Property

Links:

FEMA Debris Management Guide 325

CHECKLIST

Chapter 8 - Tasks

Established authority
for private property
debris removal

Have a right of entry form preapproved

CHAPTER 9

MUTUAL AID AGREEMENTS

If you only have time to
do one thing for this
section on mutual aid
agreements, talk to
the County about what
mutual aid agreements
may already be in place.

The Need for Mutual Aid Agreements. A

debris mission can quickly overwhelm the limited staff of a small community, especially when search and rescue operations are concurrently being performed. Although adrenaline can take people far, lack of sleep will quickly impair judgment. You might decide the current crisis is worth staying up all night for, not knowing that tomorrow, when you are utterly exhausted, costly mistakes can happen.

What are Mutual Aid Agreements?

Agreements between communities, or just about any agencies or organizations for that matter, that provide for the sharing of labor, equipment, and resources during an emergency.

This allows for the quick response from a near-by location and has the added benefit of likely being someone familiar with the area and similar conditions. Fire Departments have successfully implemented mutual aid agreements for years. Mutual Aid Agreements should be in place prior to an emergency.

Lessons Learned:

"Mutual aid – help among neighbors – is an integral part of emergency response. Mutual aid becomes more important and more complicated as the magnitude of emergency incidents increases and the size of individual community budgets decreases. Given the current economic and social climate, it is simply unrealistic to assume that a single community has all the resources required to cope with any and all emergencies it may face." -Carolyn Perroni, Special Report: Multiple Aid: Lessons Learned from the California System

Areas Covered by Mutual Aid

Agreements. Any area where a potential shortfall has been identified can be covered

by a mutual aid agreement. For instance, if the township supervisor oversees the debris collection and removal in the entire township, it would be very disruptive if they needed to respond to road washouts.

The agreement should address how the cost of labor, materials, and equipment, will be covered. Some areas that should be considered include:

- Fire and police
- Engineering
- Surveying
- Water treatment and wastewater plant operators
- Emergency Operation Center support, especially the night shift
- Financial managers
- Equipment such as trucks, chipping machines, chainsaws and front end loaders.

Financial Considerations. Another reason for having mutual aid agreements in place prior to an event is financial. If there is a declaration and recovery expenses can be submitted to the State or FEMA, mutual aid agreements will provide needed documentation of costs. If a near-by town "helped out" at the last minute with no agreement in place, reimbursement for their expenses will not be available.

Resources.

 Mutual Aid Lessons Learned from California

CHECKLIST

Chapter 9 – Mutual Aid

Discuss Mutual Aid
Agreements with
Partners

Determine which agreements would be desirable

Contact neighboring communities

Mutual Aid
Agreements approved
by responsible parties

- League of MN cities model agreement
- EPA Mutual Aid Information
- MN Counties Insurance Trust model agreement

CHAPTER 10

COMMUNICATIONS

If you only have time to
do one thing for
communications,
decide who will be the
designated
spokesperson and
commit to frequent
communications with
the public.

Communications during an event. It is

important to have a single source person identified to handle all out going public communications. At the time of an event, situations change rapidly and several decisions are made quickly. Having several people communicate different messages will cause a second disaster. Misinformation and rumors will need to be dealt with immediately. A person should be designated that will handle press releases, coordinate information being released, and be the point of contact for reporters and media requests. A small community that is already short staffed should request assistance if they have no one to serve this role. The person would be in addition to the Mayor who will be speaking at press conferences and assuring

the public that they are being provided with the most current and accurate information.

Lessons Learned: "When bandwidth is limited, text messaging may be your only means of communication.

Know how to send texts to employees, staff, vendors and customers. Consider implementing a system for sending mass texts or email- to-text messages"-Disaster Recovery from Superstorm Sandy

Methods of communicating. Below are several means of communicating with the public.

- Press releases. Press releases should include links where people can find additional information. Sample press releases are attached.
- Radio and Television. Local radio and television have been instrumental in keeping the public informed in the past, but need to be provided with upto-date information.
- Reverse 911. This system allows for pre-recorded messages to be sent to all phones in a specified geographic area. Unlisted numbers and cell phones can be registered as part of the system.

- Since many households, particularly of the younger generation, no longer maintain a hard line telephone it is important to encourage people to register ahead of time.
- Social Media. Social media use has increased exponentially in the past few years. Posting information on your local Facebook account can be valuable.

What should be communicated?

Information should be communicated in clear understandable guidelines for the public. Information should include the following:

- How the debris will be collected
- Who will be collecting the debris
- Where is the debris collection areas
- What type of debris will be accepted
- Daily hours of operation
- How long the collection period will be

Resources.

- Appendix M: Sample press release Links.
 - Social Media and Hurricane Sandy:
 Lessons learned

CHECKLIST

Chapter 10 -Communications

Designated spokesperson

Sample press releases

Plan on how to use social media