



State of Oregon
Department of
Environmental
Quality

Managing and Permitting Disaster Debris

**Information for local governments, DEQ staff
and Oregonians**

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Executive Summary

This plan describes actions and roles that Oregon Department of Environmental Quality Solid Waste Program staff will perform during a disaster to assist with swift, appropriate removal and disposal of disaster-related debris. These actions include:

- determining the state of the solid waste infrastructure;
- assisting with and approving use of temporary site(s) to manage disaster debris and other wastes;
- communicating with the public about which facilities are open, what they can take, and the location of temporary disposal sites;
- providing technical assistance to facilities and the public about applicable laws, what conditions can be waived, and where final disposal can take place while encouraging reuse and recycling whenever possible.

DEQ wrote this plan after debriefing and learning from previous disaster-related experiences, especially a December 2007 northwest Oregon flood. During this flood, DEQ SW staff assisted other state agencies, two counties and local governments in handling large amounts of disaster debris. Examples used in **Appendices B and D** are taken from work DEQ did responding to the December 2007 flood.

Intended Audience:

- Solid waste staff and managers at DEQ
- Staff and managers in other DEQ programs/divisions (Office of Communications and Outreach, Air Quality, Water Quality, Hazardous Waste, Emergency Response Program staff and others) that may work with solid waste staff during a disaster.

This plan will be shared with Office of Emergency Management and ODOT, Metro, and available to local governments, other state agencies, federal agencies or the public upon request.

1. Disasters, disaster debris and DEQ's role

This plan applies to most natural disasters and small-scale manmade disasters that result in moderate to large amounts of disaster debris. Natural disasters can include floods, earthquakes, wind storms, tsunamis, wildfires, tornadoes, landslides, volcanoes and other severe weather events. Small-scale manmade disasters can include detonation of a small bomb or other similar-scale disasters. Existing landfills, material recovery facilities or transfer stations may be able to process disaster debris without altering their operations. If they cannot accept and process the debris due to circumstances such as severity of the disaster, type or quantity of debris, accessibility or other reasons, a temporary storage, disposal or transfer station may be needed.

For more global and large-scale disasters, this plan will need to be modified to accommodate handling of larger amounts of disaster debris. In a large-scale disaster, the amount of debris may be so great and the need to remove it so urgent that a temporary transfer station may be unsuitable. In this case, DEQ SW staff could recommend that debris be shipped directly to a landfill where sorting, recycling and disposal can take place on the same site. If needed, DEQ could re-open a closed landfill to receive and process the debris or to serve as a temporary transfer station, like New York State, which re-opened the Fresh Kills Landfill after Sept. 11, 2001.

In the event of a radioactive disaster, DEQ staff should consult with the Oregon Health Division on how to handle the debris so that no one is exposed to radiation. DEQ SW staff could consider permitting a temporary transfer station away from high-density population areas.

In all cases, DEQ staff will need to coordinate closely and communicate with the Incident Command Center and the Office of Emergency Management. DEQ staff should always prioritize human health when advising or assisting local governments and first responders who are processing debris. See **Appendix E** for more information on Oregon's statewide response to disasters.

DEQ has several roles to play in responding to disasters. DEQ's authority to manage and permit disposal of disaster-related debris comes from Oregon Revised Statute 459 and Oregon Administrative Rules 340, Divisions 093 through 097. DEQ SW staff should also follow Oregon's (draft) statewide disaster debris management plan (**Appendix E**).

- DEQ's first role is to assist local governments and a disaster response team or Incident Command System respond to a disaster and manage disaster-related debris in a manner that avoids or minimizes impacts to human health and the environment.
- In the initial stages of responding to a disaster, DEQ SW staff should determine the state of the solid waste infrastructure and authorize temporary disaster debris sites as needed.

DEQ can recommend using currently operating transfer stations, material recovery facilities and landfill sites or can authorize the locations and operations of temporary disposal sites.

DEQ does not operate temporary sites or provide direct pickup of debris. If a disaster results in a spill of hazardous materials or in a situation where there is an immediate risk or threat to the environment or human health, DEQ may be able to use either its spills contractor or household hazardous waste contractor to assist with the collection, sorting and handling of hazardous waste or household hazardous waste. However, this would occur only in rare circumstances. DEQ is not responsible for contacting the Federal Emergency Management Administration or making sure counties and owners and operators of disaster debris storage sites follow correct guidance and rules for FEMA reimbursement.

- After assisting governments in debris removal, DEQ SW staff should assist in providing information to the public.

SW staff should work closely with DEQ communications and outreach staff to prepare fact sheets and news releases or to take other communication measures to help the public deal with debris.
- After providing information to the public, DEQ SW staff should continue providing longer-term technical assistance to owners and operators of temporary debris storage or disposal sites.

Technical assistance includes site visits or inspections, as appropriate. Once sites are operating and managing incoming debris, DEQ SW involvement becomes less vital to the disaster recovery process. As time goes on, technical assistance questions should decrease and questions from the public should be directed to the county or local government.

DEQ's final role is to approve closure and possibly inspect closed temporary debris storage or disposal sites.

2. Determining the state of the solid waste infrastructure

In the event of a disaster, DEQ SW staff should first determine the state of the solid waste infrastructure by calling local solid waste staff. DEQ SW staff should call local solid waste coordinators to determine the state of local communities including Metro, county or city solid waste staff; members of the Oregon and/or local government's Office of Emergency Management ; or local waste hauler companies. Contacting other DEQ staff from other programs that may be in the disaster area may provide useful information also. DEQ SW staff should be sure to coordinate with DEQ spills and OCO staff and the established ICS. By making these contacts, DEQ SW staff will be encouraging effective communication among all parties involved.

DEQ SW staff should ask at least the following:

- Are any communities cut off or isolated?
- How much debris is there?
- Would a temporary site help this community?
- Who could oversee a temporary site?
- Have any important meetings been scheduled that DEQ SW staff may need to attend?
- Other questions specific to the type of disaster and area affected.

DEQ SW staff should also call, fax or email permitted facilities in the affected counties and surrounding areas. Contact information and phone numbers can be found in the permit and DEQ Solid Waste database or in the yellow pages.

DEQ SW staff should ask at least the following:

- Is the transfer station, material recovery facility or landfill open? Has the facility been damaged?
- Are garbage route trucks able to service their regular routes? Can they reach debris through alternative routes?
- Is the facility capacity adequate to receive, process or store increased amounts of waste? If so, how much (twice normal volume, three times, etc.)?
- What are the road conditions surrounding the facility?
- What is the facility's ability to get wastes to final destinations?
- Does the facility have the capacity to handle other waste types than what the facility is currently or normally permitted to accept, such as yard debris, large amounts of construction and demolition wastes, household hazardous wastes or conditionally exempt generator hazardous wastes, or asbestos-containing wastes?

3. Use of temporary sites to manage disaster debris

After gathering information about the state of the solid waste infrastructure, DEQ SW staff can evaluate the need for a temporary transfer station, working with the local government within an incident command structure. An existing permitted facility may be able to safely accept disaster-related debris without environmental impact even if not permitted to accept that specific type of waste. DEQ SW staff may need to modify the facility's SW permit or write a Solid Waste Letter of Authorization for acceptance of specific types of disaster debris waste or to allow larger amounts of wastes. If a landfill has a cleanup plan, DEQ SW staff should check that there are no limits in the plan on types, amounts or origins of waste. DEQ SW staff may also authorize a closed landfill to temporarily re-open to accommodate disposal of disaster debris.

If a permit modification normally would require a public comment period, DEQ SW staff may need to consult with the Oregon Department of Justice. In any case, DEQ SW staff should work closely with DOJ to determine permitting needs and any waivers that may be appropriate.

DEQ should provide feedback to the local government or incident command on possible sites but is not responsible for finding the physical site. Generally, the site should be level, preferably paved and out of any flood zone. Other site selection criteria depend on type and volume of debris to be processed at the site. Criteria for a transfer station site selection are in OAR 340-093-0130 and OAR 340-095-0010. Criteria are also identified in the Oregon Statewide Disaster Debris Management Plan in **Appendix E**.

4.1 Selecting a temporary disposal site

Temporary disaster debris management sites must be designed to protect human health and the environment. They should:

- Be sufficient in size with appropriate topography and soil type to prevent runoff or water quality impacts from storage of debris on the site. Paved surfaces are preferred. DEQ SW staff should work with state/local environmental agencies to determine appropriate topography and soil type to protect water quality.
- Be located an appropriate distance from potable water wells and rivers, lakes and streams. DEQ SW staff should work with other state and local agencies to determine appropriate setback distances.
- Not be located in a floodplain or wetland.
- Have controls in place to mitigate stormwater runoff, erosion, fires, vectors and dust.
- Be free from obstructions, such as power lines and pipelines.
- Have limited access with only certain areas open to the public, such as areas to drop off debris. Be able to have clear entrance and exit signage. Sites should be able to handle anticipated traffic flows.
- Be located close to the affected area but far enough away from residences, infrastructure and businesses that could be affected by site operations.
- Preferably be on public lands because approval for this use is generally easier to obtain. However, private lands may be convenient and logistically necessary for temporary debris storage sites. Local governments could consider entering into agreements with private land owners in advance of a disaster, establishing conditions for use of their land during an emergency.
- Be able to be restored to original conditions after temporary storage use ceases.

4.2 Determine if a Solid Waste Letter of Authorization is needed

Once a site is selected, DEQ should work with the owner, operator and local government to determine if a Solid Waste Letter of Authorization is needed, depending on:

- type and volume of waste collected
- site location
- length of time waste is present on site
- sorting and processing procedures, site security, staff and other site features.

A Solid Waste Letter of Authorization is a one-time letter permit that is good for six months and can be renewed or extended one time for a total of 12 months. It does not require public notice or an opportunity for public comment, so DEQ SW staff must weigh carefully whether the urgency of responding to a disaster outweighs the benefits of public input into a permit decision. DEQ SW staff will consult with incident command, the DOJ's office and Governor's Office when making permitting decisions for a temporary site through a SWLA.

DEQ SW staff should decide on the need for a SWLA after answering the following questions:

- a. **What wastes will be collected?** DEQ should require a SWLA if the temporary site will be collecting:
- HHW or Conditionally Exempt Generator waste
 - Decaying wastes: spoiled food, dead animals, sewage-contaminated wastes
 - Liquids: non-hazardous waste fluids (e.g. latex paint, fuel oil, water and fuel mixtures, animals, feeds, etc.)
 - Flood-damaged materials that can mold
 - Automobiles and other vehicles
 - Asbestos-containing waste materials
 - Petroleum or other contaminated soils. Anything listed below if stored longer than 24 hours.

The disaster may also warrant that the SWLA include special procedures for handling HHW or CEG waste, asbestos-containing waste materials or other wastes that may be potentially dangerous or toxic.

DEQ may determine that the temporary site does not need a SWLA if the facility is collecting only:

- Clean, separated scrap metal
- Source-separated recyclables
- *If the following wastes are removed from the site within 24 hours:*
 - Clean (not flood-damaged) construction and demolition debris (no asbestos)
 - Yard debris (smaller-sized plant materials from residents and landscaping)
 - Woody debris (larger pieces, primarily downed trees—can be from any location).

b. How much and what types of debris will be accepted?

DEQ will determine the facility does not need a SWLA if total storage is limited to a single drop box for each waste where the size of the drop box is limited to the size the transportation vehicle can empty and haul off in one trip.

c. Where will collection of debris waste take place?

DEQ will decide that the facility needs a SWLA if:

- Any features near the site are sensitive to contamination.
- The site is in a high groundwater table or in an area of drinking water wells.
- The site is near surface waters.
- The site is unpaved.
- The property owner requests a SWLA.

DEQ may agree that the facility does not need a SWLA if all work will be done inside a building and the answers to other questions indicate low environmental and human health risk.

d. Will the site be secured when it is not in use?

DEQ will determine that no SWLA is needed if wastes accepted are low risk and the site is secured so that tampering and after-hours dumping cannot happen.

e. Will the site always have a staff person (or staff people) there to oversee use of the site?

DEQ may agree that sites with a single drop box for each waste type that are clearly labeled (if answers to the other questions indicate that the site is a low environmental and human health risk) do not need staffing if the waste is picked up at least once a day and therefore may not need an SWLA.

f. How much sorting will happen on site?

DEQ will require a SWLA if sorting involves moving an unsorted pile of wastes into specific piles or containers for the purpose of better waste management.

DEQ may not require a SWLA if wastes come to the site already pre-sorted and answers to the other questions indicate the site is a low environmental and human health risk.

g. Will wastes be processed on site (e.g. chipped, dismantled, cut)?

DEQ will require a SWLA if wastes are processed on site.

4.3 Solid Waste Letter of Authorization application

If an application is needed, DEQ SW staff will work with the local government and site owner or operator to receive an application that is complete enough to ensure that the establishment, operation and closure of a temporary disaster debris transfer or disposal site protects human health and the environment. DEQ SW staff should avoid a situation in which DEQ needs to deny an application for a temporary disposal site by providing input before a site is selected to assure a selected site can be approved.

SWLA application requirements are in OAR 340-093-0060, and fees are identified in OAR 340-097. DEQ anticipates that an application for a temporary disposal sites in response to a disaster may be incomplete. DEQ SW staff will work with the operator and local government to obtain necessary information over the phone or through other means. DEQ SW staff may waive some of the application requirements or fees if the governor declares an emergency through an executive order that waives requirements identified in rule. Two possible requirements that DEQ may ask the governor to waive include the Land Use Compatibility Statement and permit fees. DEQ SW staff should work closely with DOJ to craft waiver language for an emergency declaration.

Generally, an application for a Solid Waste Letter of Authorization should include (refer to OAR 340-093-0060):

- A narrative discussion of:
 - Need and justification for the proposed project
 - Quantity, types and nature of material to be disposed of
 - Location and size of the proposed disposal area
 - Temporary disposal site schedule, including projected start and end dates
 - Proposed methods to be used for handling, processing and disposing of debris to ensure safe, proper disposal. Provide specific information that describes the project and how it will be conducted. Include an operations plan to describe activities that will be carried out during the period the temporary site will be open, used and closed after debris is removed from the site. This should include information on how the site will be operated; who is operating it; hours of operation; fees that may be charged, if any; security; signage; and emergency/spill response. This should identify actions to be taken to prevent contaminant release to surface and groundwater, to prevent off-site dust and litter, and to assure waste is segregated and managed appropriately to contain hazards or toxicity. The plan may also include any recycling efforts to be taken depending on the type of debris, if appropriate.
 - Materials not be accepted at the site
 - Steps taken to minimize contamination of runoff and stormwater and other environmental concerns.
- Attachments of the following:
 - Map or drawing of site showing:
 - Location and configuration of the property, disposal area, protections constructed to prevent water pollution and other types of contamination
 - Roads and road conditions leading to and from the site
 - Distance to surface water, including wetlands and proximity to drains or streams
 - Approximate elevations
 - Paved/non-paved areas
 - Locations of equipment and separations of debris
 - Structures, roads, material stockpiles, sorting areas, etc.
 - Photos of site, if available
 - Written statement of approval from the property owner or person with long-term control of the property, if other than the applicant. This statement must address who will be responsible for the site's closure and, if a spill occurs, who will be responsible for testing/sampling and removing contaminated soil – land owner, site operator or local government.

- Recommendation from the local solid waste planning authority that the proposal is compatible with the local solid waste management plan. DEQ staff may consider waiving this requirement for a temporary site.
- Land Use Compatibility Statement (LUCS) from the local government unless the governor waives this permit requirement through an executive order.
- Completed Application For a New Solid Waste Disposal Site Permit form
- Application processing fee of \$500 unless the governor waives this permit requirement through an executive order.
- Further information as needed.

After receiving the application, DEQ SW staff will decide whether to approve the Solid Waste Letter of Authorization. If the site location is sensitive and the site cannot be operated in a way that protects human health and the environment, DEQ may need to recommend that another site be used. For this reason, it is critical that DEQ work with the incident command group and local governments up front to provide feedback on site selection and operation. If DEQ finds the site is unlikely to cause a safety or health hazard, air or water pollution or other environmental problem, and the site can be operated appropriately, it will approve the SWLA.

4.4 SWLA Operations Plan

Typically, a Solid Waste Letter of Authorization applicant submits a description of activities to occur at a disposal site and a draft operations plan. However, in a disaster situation when there's a significant urgency to get a temporary disposal site permitted as quickly as possible, DEQ may assist the site operator with preparation of an operations plan including using permit conditions in the SWLA as an operations plan. The operator/owner may be able to describe the operations over the phone while the SW staff person writes the information into a permit condition. The operations section of the permit will then become the official operations plan. If operations change as response to the disaster changes, then DEQ may want to put general operations requirements into the authorization letter and add a requirement that the operator submit a more detailed plan after the letter is issued that would identify how operations will adjust over time to respond to the disaster. DEQ would then approve refined, specific operations requirements afterwards and document approval through follow-up phone calls or emails. In some cases a local government or the incident command system may use a contractor to handle specific types of waste. If a contractor is used, then the contract should specify that the following conditions and recommendations will be followed.

DEQ SW staff should consider adding the following permit conditions to a Solid Waste Letter of Authorization or recommend that an applicant include at least the following in their operations plan:

- Identify needed staff roles and who will fill them (safety staff, spotters, traffic controllers, administrative personnel, etc.). Staff handling HHW and CEG waste must have 24-hour hazardous materials training. Under ORS 459.415, the HHW statute, DEQ requires that staff handling HHW must be trained. Staff handling asbestos must have passed an asbestos worker training course from a DEQ-approved asbestos training provider.
- Identify proper personal protective gear appropriate to the level of exposure (i.e. vest, hard hat, boots, glasses, gloves, etc.).
- Identify needed site security to prevent theft of scrap metal and other materials and prevent illegal dumping.
- Identify needed record keeping to identify the type and amount of waste accepted, rejected, processed, etc.
- Include contracts used to operate and remove waste from the site including how the contracts address types of waste accepted at the site; types of waste to be recycled (if appropriate), removed or disposed; removal schedules; and sites where waste will be taken for further processing, recycling or disposal.
- Identify waste separation and sorting procedures. Include clear entrance and exit signage to control traffic and to check loads for unacceptable waste. Designate areas for public drop-off, commercial drop-off and areas for debris to be sorted.
- Include waste-specific handling, storage and disposal procedures for decaying waste, hazardous waste, household hazardous waste [Note: Under 459.415, DEQ will only approve HHW collection activities if HHW waste will be managed as hazardous waste], non-

- hazardous liquids, bulky wastes, appliances, woody debris, electronics, construction and demolition debris, industrial waste, asbestos-containing waste materials, etc.
- Establish lined temporary storage areas for hazardous waste, HHW, and CEG waste if staff members are appropriately trained to handle hazardous waste, ash, fuels and other materials that can contaminate soils and groundwater. Set up plastic liners when possible under stationary equipment such as generators and mobile lighting plants.
 - If the site is also an equipment staging area, monitor fueling and equipment repair to prevent and mitigate spills of petroleum products, hydraulic fluids, etc. Identify what types of spills would require immediate cleanup and identify cleanup procedures that would need to be followed in the event of this type of spill.
 - Use best management practices to the extent practical. When stockpiling or staging equipment, debris, including hazardous materials with potential runoff from chemicals, oils and other contaminants, use leak-proof collection containers, absorbent pads, straw waddles, kitty litter to intercept and prevent runoff to surrounding areas. Control stormwater runoff.
 - Be aware of and address conditions that will irritate neighbors such as:
 - *Smoke* – Burning will not be allowed if alternatives are available. However, if absolutely necessary, burning must be done using proper construction and operation of burn pits. Don't overload air curtains. Hazardous waste, HHW and CEG waste may not be burned.
 - *Dust* - Employ water trucks.
 - *Noise* - Construct perimeter berms.
 - *Traffic* – Establish proper layout of entering and exiting procedures to help traffic flow.
 - *Vectors* - Provide for proper storage of waste, closed bins
 - Required spills notification: Oregon Revised Statute 466.635 and Oil and Hazardous Materials Emergency Response Requirements, Chapter 340, Division 142, require immediate notification to Oregon Emergency Response System (OERS) after taking any required emergency actions to protect human health and the environment when oil or hazardous materials are spilled. Report the spill immediately to OERS at 1-800-452-0311 if the spill is of a reportable quantity. Reportable quantities include:
 - Any amount of oil spilled to state waters
 - Oil spills greater than 42 gallons on land
 - Two hundred pounds (25 gallons) or more of spilled pesticide residue
 - Spills of hazardous materials that are equal to or greater than the quantity listed in the Code of Federal Regulations, 40 CFR Part 302 (List of Hazardous Substances and Reportable Quantities), and amendments adopted before July 1, 2002. For a complete list of hazardous materials required to be reported, please refer to OAR 340-142-0050.
 - An estimated site closure date (or estimated amount of time site may be kept open).

4.5 Pre-Approval of temporary disposal sites

DEQ solid waste staff may want to work with counties or cities likely to experience a natural disaster to pre-approve temporary disposal sites. The county or local government will need to find the site and, together with the owner of the property or anticipated operator of the temporary disposal site, go through permitting criteria with DEQ solid waste staff and prepare a Solid Waste Letter of Authorization application. Based on this information, DEQ staff should be able to determine if the site is adequate for a temporary transfer station and provide that feedback and pre-approval to the local government. DEQ staff could have on file a permit application, site map showing topography, a description of the location and the surrounding areas, a pre-approved operations plan, a Land Use Compatibility Statement and any other information specific to the site that would ensure protection of human health and the environment when the site is used to temporarily store, manage and transfer disaster debris. DEQ staff may even be able to draft a proposed SWLA that is kept on file. Then, in the event of a disaster, DEQ should be able to issue the letter of authorization for the temporary site within hours of notification.

4.6 Writing the SWLA

The template for writing the letter of authorization is located in DEQ's solid waste shared drive (accessible to DEQ staff only):

<\\deqnwr\SW NWR Disaster-related\Statewide Disaster Debris Plan\DEQ SW Disaster Debris Guidance\SW-Ltr Authorization Disaster Debris 2.dot>

See **Appendix A** for step-by-step instructions on how to write an SWLA.

See **Appendix B** for a sample SWLA.

4.7 Handling household hazardous waste and conditionally exempt generator waste

Small quantities of hazardous materials are common in the homes of most Oregonians. Examples include pesticides, herbicides, poisons, corrosives, solvents, fuels, paints, motor oil, antifreeze, mercury and mercury-containing wastes. Risks from household hazardous wastes stem from improper use, handling, storage and disposal. Some of these can be toxic in small quantities and represent significant hazards to human health and the environment.

Any disaster will most likely result in HHW or conditionally exempt generator (CEG) waste that needs to be disposed of. DEQ solid waste staff should consult with the local government immediately following the disaster to ensure measures are taken to separate HHW and CEG waste and manage the wastes safely. The outcome of improper handling of these wastes during a disaster response can cause contamination of surface water, groundwater, soil and air, resulting in exposure to humans.

- DEQ encourages people to avoid placing HHW and CEG waste in the garbage as accumulated aerosols and other flammable products can ignite or explode when exposed to high heat, flames or pressure, such as in a trash compactor.
- HHW and CEG waste must not be burned, as burning toxic materials produces toxic fumes.
- If a temporary site collects HHW and CEG wastes, those wastes must not be poured down sanitary or storm drains or poured on the ground, as rivers, streams, lakes and groundwater would be polluted.

A Solid Waste Letter of Authorization is required if HHW and CEG wastes are collected at a temporary disaster debris site, unless DEQ's HHW/CEG contractor is performing the cleanup work under the DEQ household hazardous waste contract. See Section 4.4 for details about conditions for handling HHW or CEG wastes.

For more information on household hazardous waste, refer to DEQ's website at:

www.deq.state.or.us/lq/sw/hhw/

For more information about CEG waste, refer to DEQ's website at:

www.deq.state.or.us/lq/pubs/factsheets/hw/HWCollectionOptions.pdf

Some transfer or disposal sites (temporary or established) may not be capable of handling HHW or CEG waste on their own. Refer to the Policy Directions, below, to see when DEQ will and will not help collect household hazardous wastes or conditionally exempt generator wastes.

DEQ does not have funds earmarked for emergency HHW/CEG response needs; therefore it will limit its response efforts to those situations where no other alternative exists for collecting these wastes resulting from a flood or other disaster. Different policies may be warranted for counties depending on whether they have existing household hazardous waste programs.

A. Counties with Existing Household Hazardous Waste Facilities –

DEQ will not provide emergency HHW/CEG cleanup services to counties with existing household hazardous waste programs. If their HHW facility or contractor is not able to meet the emergency response needs, the counties may purchase household hazardous waste contractor services under DEQ's HHW contract.

B. Counties with *No* HHW Facilities or Programs–

If DEQ has funds available, it will evaluate whether DEQ can provide emergency HHW/CEG cleanup services to counties that do not have HHW programs, or assist the county in purchasing household hazardous waste contractor services under DEQ's HHW contract.

4.8 Handling asbestos-containing waste material

Asbestos was widely used in construction materials until 1987, so disaster debris originating from a house or building built before then is very likely to contain asbestos. If people are tearing down their own houses after a disaster, they could be bringing asbestos to the temporary transfer site and not know about it. In the event of a disaster that affects houses and buildings, the site operator will need to have a general awareness and possibly have staff trained to handle asbestos-containing waste materials. Information on DEQ's asbestos requirements can be found at www.deq.state.or.us/aq/asbestos/.

Generally, transfer stations are not allowed to knowingly accept asbestos-containing waste materials. At a permitted transfer station, ACWM that is discovered needs to be immediately segregated with minimal handling (to prevent release of asbestos fibers) and kept hosed and wet until an abatement contractor can properly dispose of the waste. Non-friable asbestos can become friable or breakable when mishandled, damaged, disturbed, worn or ground. The operator must keep non-friable asbestos in the non-friable state. Under most circumstances, a disposal site that accepts demolition debris should require a building survey that documents that the material does not contain asbestos. In a disaster, debris should be evaluated if safe to do so to identify any asbestos-containing waste. A Solid Waste Letter of Authorization for a temporary disposal site will need to require that the operator have someone trained in asbestos awareness that can recognize suspect asbestos-containing waste material and can take appropriate steps to isolate and manage any potential ACWM. DEQ solid waste staff should consult with the appropriate air quality/asbestos staff on what level of asbestos awareness and training is needed. DEQ asbestos staff may be able to ask an asbestos-certified trainer to do emergency training for temporary site operators.

DEQ solid waste in consultation with asbestos staff may consider allowing a temporary site to accept asbestos on a case-by-case basis depending on the need to address asbestos as well as the abilities of the site operator to properly segregate, handle and ultimately dispose of asbestos waste safely. The site operator will need to prepare a Special Waste Management Plan as part of the Solid Waste Letter of Authorization application. See the outline for what needs to be in a waste management plan to handle asbestos waste.

See **Appendix C** for a March 2006 DEQ internal management directive document on "Management of Asbestos Containing Waste Material at Permitted Solid Waste Transfer Stations and Material Recovery Facilities."

For more information on building survey requirements, refer to the DEQ Web page below. Refer to OAR-340-248-0280 and OAR-340-248-0290 for friable and non-friable asbestos disposal rules. More information regarding asbestos, including a list of licensed abatement contractors and landfills permitted to accept asbestos-containing waste material, can be found at: www.deq.state.or.us/aq/asbestos/.

Possible permit conditions or information that DEQ may include in the Solid Waste Letter of Authorization or provide to a temporary transfer station operator for inclusion in the site operations plan:

- Unacceptable Waste: Known asbestos-containing waste materials are not authorized to be collected at this site. These materials should go directly from the place they were generated to an approved facility. Site operators who receive wastes they do not know how to manage should contact DEQ immediately for assistance. DEQ's website has asbestos contact information.
- Unacceptable Waste: Asbestos-containing waste materials are not accepted at this site. If this waste is discovered, the operator of the site must either:
 - 1) Return the waste to the customer with direction to take it to another permitted site such as the local landfill, or
 - 2) If the customer has left, set this waste aside, assure that asbestos the fibers are not released into the environment, and take responsibility to see that the waste is disposed of properly at a facility permitted to accept asbestos-containing waste material..

4.9 Site Closure

Closure requirements are site specific and depend on site characteristics and types of waste processed and handled on site. Site closure requirements should be written into the Solid Waste Letter of Authorization. The site owner/operator must notify DEQ of the closure. The site is expected to be completely clean of any and all wastes that were once present, and these wastes must have been properly disposed of.

If household hazardous waste or conditionally exempt generator materials, hazardous waste, asbestos-containing wastes or other toxic or hazardous materials were ever present on site, additional closure requirements may be required. If a spill occurred, the soil may need to be tested for contaminants. For these types of waste, additional closure requirements should be written into the letter of authorization.

Each temporary debris management site must be cleared and restored to pre-disaster conditions and uses, with the exception of DEQ-authorized vegetative debris, and sites where DEQ agrees to exempt from its solid waste permitting requirements the land-application of ash. DEQ will not allow land application of ash without characterization of the ash demonstrating there will be no environmental impacts from the application and application of the ash and also demonstrating that there will be an agronomic benefit from land application of the ash. Closure must be in accordance with approved DEQ practices. Closure should be accomplished within the time limits established by the DEQ and agreed to by the property owner, DEQ, the local government and the site operator. Samples from potential spill/contaminated areas will need to be collected and tested for contamination and any corrective action carried out to return the site to safe conditions.

DEQ will need information demonstrating that the temporary disposal site was closed properly depending on the nature of the site and material handled. Proof of proper closure may result from a DEQ SW site inspection or as the result of proper documentation submitted to DEQ. These documents may include photos of the closed site, signage at the site indicating where people can now take their debris and a written statement from both the site owner and operator stating the site is closed and has been cleaned up.

5. Communicating with the public

DEQ solid waste will coordinate with the agency's Office of Communications and Outreach and the Incident Command structure when communicating with the public. Because information about the disaster and resulting debris will be constantly changing, SW staff must continuously communicate with OCO staff. SW staff should compile information that needs to be relayed to the public. This information includes: possible hazards caused by different types of debris generated, what they need to do to protect themselves when handling the debris, local government debris pick-up schedules, disposal methods, information on how to identify or characterize debris, how to handle and separate disaster debris, which facilities are open, what the facilities can take, and where temporary disposal sites are located. Information on disposal procedures, including assistance for independent contractors as well as penalties for illegal dumping, should be provided to ensure compliance with state and federal regulations. The SW staff will give this and other important information to OCO staff, who will produce news advisories, news releases, fact sheets, emails, posters or other communication tools to reach affected people. The communications office will send advisories and releases to the news media and will post these communications onto DEQ website. Calls and questions from the news media should be directed to staff listed on the advisory or news release. In many cases, the news releases will have a program staff person as a contact, but in cases of disasters, a public affairs person could well be the main contact person.

See **Appendix D** for sample news release, fact sheets and web announcements.

6. Providing technical assistance to facilities and the public

DEQ solid waste staff will provide technical assistance to local governments and owners trying to establish and get a permit for a temporary disposal. Emphasis is on environmental concerns through clear and open communication rather than through enforcement. DEQ SW staff may need to be available under an urgent timeframe to help with rule interpretations, how to meet requirements, how to fill out permit applications,

how to properly document waste loads, etc. Each region should identify a point of contact to handle questions during an emergency response where disaster-related debris is involved. DEQ will need to respond to requests from the public, other state agencies, federal agencies and the news media.

Solid waste staff should help provide technical assistance to the public after a disaster. The public will call with many questions and concerns, including some questions that will not be related to solid waste disposal. DEQ SW staff may become the point of contact for all questions, including those not related to solid waste. To correctly answer the public's questions, DEQ staff must work with other programs and agencies including air quality, water quality, hazardous waste, Oregon Department of Agriculture, Oregon OSHA, etc. DEQ can expect to receive such questions as:

- Can I burn my debris?
- What do I do with my dead cow?
- What do I do about my flooded septic system?
- Who is responsible for hazardous waste from businesses?
- Am I safe if I do?
- Who do I contact about...?
- Can I recycle disaster debris?

If one question or topic arises multiple times, SW staff should consider working with OCO to create a fact sheet, Q&A response, and post pertinent information on DEQ's website as soon as possible.

As noted in Section 2 above, DEQ SW staff should provide technical assistance to other disaster debris officials to help local and state governments figure out what they need to do with disaster debris. DEQ should provide assistance in finding a temporary site and applying for a permit or modifying an existing permit to allow for storage and/or disposal of disaster debris. If a temporary site is established without DEQ's knowledge or by an operator who does not work with DEQ, DEQ will need to evaluate each unapproved site to identify any compliance and enforcement issues.

SW staff should provide technical assistance to temporary sites to assist in disaster debris processing and management. DEQ can continue providing guidance to temporary site operators on rules and regulations so the site remains in compliance with state requirements and does not create environmental concerns. Technical assistance may include guidance on site operations, recycling and appropriate site closure. DEQ SW staff should assist site operators in knowing DEQ rules, how to interpret them and how to incorporate those rules into site operations as needed. This assistance can be provided through verbal or written communications, providing examples on how other sites have been managed, site visits or other options.

The need for site visits or inspections will vary depending on the disaster and the particular temporary site. SW staff should visit each site if possible. Due to the urgent need for a temporary site, solid waste staff may not be able to visit or inspect a site before issuing an Solid Waste Letter of Authorization. Depending on the debris accepted and size of the site, the site inspection may occur during operations or after closure. By performing an inspection while the site is operating, DEQ SW staff can provide technical assistance that may prevent creation of environmental concerns. The solid waste staff should also provide technical assistance on site closure procedures to ensure the site will be closed correctly. Staff should conduct a site inspection after site closure to confirm the site has been completely cleaned up and restored.

7. Conclusion

This plan identifies steps DEQ solid waste staff should take in responding to disasters, permitting temporary disposal sites and helping incident command groups and local governments manage disaster debris. This plan should be evaluated, improved and updated periodically to reflect new information or knowledge gained from actual disasters that have occurred in Oregon or elsewhere.

Appendix A. How to Write a Solid Waste Letter of Authorization for Disaster Debris

- Open the SWLA Disaster Debris template, on DEQ's solid waste share drive.

<\\deqnwr1\SWSHARE\SW NWR Disaster Related\Statewide Disaster Debris Plan\DEQ SW Disaster Debris Guidance\SW-Ltr Authorization Disaster Debris 2.dot>

- Under the header OREGON DEQ at the top of the page, change address, city and phone to fit appropriate office.

Example: *2020 SW 4th Ave., Suite 400
Portland, OR 97201-4987
(503) 229-5353*

- Fill in AutoText spaces as indicated for:

ISSUED TO
FACILITY NAME AND LOCATION
OWNER

OPERATOR

ISSUED IN RESPONSE TO

- Fill in the heading at the page's top right corner:

Permit Number: (number)

Expiration Date: (date)

Page (#) of (#)

- Under ISSUED BY THE OREGON DEQ, change manager name, section, and region to fit appropriate office.

Example: *Audrey O'Brien
Environmental Partnerships Section
Northwest Region*

- Under PERMITTED ACTIVITIES, fill in AutoText for SWLA number and expiration date.

- Under PERMITTED ACTIVITIES, address at least nine items:

- LOCATION: This should include a physical description for the site.

Example: *Two paved acres at the Port of Tillamook Bay Industrial Park; Unimproved land near City Hall, See attached map*

- ACCEPTABLE WASTE: State what types of waste this site is approved to accept.

Example: *This site is allowed to collect ...*

- UNACCEPTABLE WASTE: State what types of waste are not allowed. This can be done either through a specific list (...wastes should not be collected at

this site) or by stating “Wastes not specifically listed above as allowed (such as ...) are not acceptable at this site.)

- HOURS OF OPERATION: State the site’s operating hours and its accessibility to the public or specific groups..

Example: *Open to the public and commercial haulers 7a.m. to 5p.m. seven days a week.*

- SIGNAGE: State what types of signs are required on site.

Example: *The facility must have a sign posted stating what is acceptable and unacceptable waste and hours of operation; Use signs to let the public know where to put the waste and /or have staff onsite provide this service; if separate entrance and exit is provided for individual customers and commercial haulers, these must be clearly marked.*

- OPERATIONS: Due to the disaster’s urgency, it is unlikely an operations plan will be written, submitted and approved because of time constraints. This section may take the place of the operations plan. State what the operations on site will consist of, how they’re to be carried out, and who will fulfill certain duties on site. Refer to Section 4.3 SWLA Application and 4.4 SWLA Operations Plan for suggested permit conditions about operations. DEQ solid waste staff may want to include a permit condition requiring recycling and reuse of disaster debris material that is not hazardous, toxic or contains asbestos to ensure as little waste goes to a landfill as possible.
- REPORTING: State the reporting requirements for waste received on site. This generally includes volume of waste accepted and processed.

- CHANGES IN OPERATION: State the policy on Changes in Operation.

Example: *All changes must first be approved by DEQ.*

- SITE CLOSURE: State conditions for the site to be considered closed.

Example: *At the end of operations, before the operator returns the site to the property owner, the site must be cleaned up to the property owner’s satisfaction. A written statement from the operator and property owner stating the site is closed and has been cleaned up must be sent to DEQ to close out this temporary authorization.*

- DEQ solid waste staff should share a draft of the Solid Waste Letter of Authorization with the local government and site operator before signing and discuss how the letter should be used by the operator to make sure DEQ solid waste management requirements are met.

Appendix B. Sample Solid Waste Letter of Authorization



State of Oregon
Department of
Environmental
Quality

SOLID WASTE DISPOSAL SITE PERMIT; LETTER AUTHORIZATION

Permit Number: 1337
Expiration Date: 06/07/08
Page 1 of 2

Oregon Department of Environmental Quality
2020 SW 4th Avenue, Suite 400
Portland, OR 97201-4987
Telephone: (503) 220-5353

Issued in accordance with the provisions of ORS Chapter 459 and subject to the land use compatibility statement referenced below.

ISSUED TO:

Columbia County Solid Waste
Department of General Services
Columbia County
County Courthouse
St. Helens OR 97051

FACILITY NAME AND LOCATION:

Temporary Debris Pile under control of the City of
Vernonia and Columbia County Solid Waste

COUNTY: Columbia

OWNER:

Gordon Smith
Scotty Market, Vernonia OR

OPERATOR:

Bill Potter
Columbia Co Solid Waste

ISSUED IN RESPONSE TO:

- a Solid Waste Letter of Authorization application received 12/11/07
 - Application fee and the Land Use Compatibility Statement from the City of Vernonia or Columbia County is waived
- Pursuant to OAR 340-008-0050(5) the determination to issue this permit is based on findings and technical information included in the permit record.

ISSUED BY THE OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY

Audrey O'Brien
Audrey O'Brien
Regional Environmental Solutions
Northwest Region

December 11, 2007
Date

PERMITTED ACTIVITIES

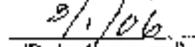
In accordance to EWLA No. 1337, which will expire on 06/07/08, the permittee is hereby authorized in conformance with the requirements, limitations, and conditions set forth in this document including all attachments.

Appendix C. Internal Management Directive - Management of Asbestos Containing Waste Material at Permitted Solid Waste Transfer Stations & Material Recovery Facilities

Directive

Management of Asbestos Containing Waste Material at Permitted Solid Waste Transfer Stations and Material Recovery Facilities


(Approved by)


(Date Approved)

Scope: Describes the management of Asbestos Containing Waste Material (ACWM) to be addressed in Special Waste Management Plans for solid waste transfer stations (TSS) and material recovery facilities (MRFs). (Note: This Management Directive does not address either federal or state regulations for employee workplace safety under OSHA. Furthermore, compliance with the best management practices and any Special Waste Management Plan approved by the department does not necessarily imply that the plan meets OSHA requirements.)

Purpose/Need: Currently, TSS and MRFs are not permitted to accept friable ACWM; nevertheless, ACWM, both friable and nonfriable, sometimes arrives at TSS or MRFs and must be safely managed for transport to a landfill. Special Waste Management Plans for TSS or MRFs do not adequately address ACWM that occasionally arrives at these facilities.

Handling procedures for all ACWM should be included in Special Waste Management Plans to protect human health and the environment from exposure to asbestos fibers and to comply with solid waste permitting rules. This directive provides guidance for evaluating the adequacy of Special Waste Management Plans for ACWM at TSS and MRFs.

Legal Authority:

Solid waste rules at OAR 340-093-0190 (1)(e) require permitted solid waste disposal facilities that handle ACWM to include provisions for special handling of these wastes in Special Waste Management Plans (or obtain other Department approvals). The Department requires these management practices to comply with the practices described in Oregon's asbestos rules, OAR chapter 340, division 248 where applicable.

The asbestos rules in OAR chapter 340, division 248 govern asbestos milling, manufacturing, fabricating, abatement, disposal, and other situations where a potential for exposure to asbestos fibers exists, except as those activities are exempt from regulation. OAR 340-248-0250(5) exempts ACWM handled and disposed of in accordance with a solid waste permit issued under ORS 459 from the prohibition of open accumulation of friable asbestos material or ACWM in OAR 340-248-0205(1).

The following definitions are used in this guidance:

Appendix D. Sample News Release and Fact Sheet

News Release

For release: December 5, 2007

Contacts:

Tiffany Yelton, Solid Waste Program, Portland 503-229-5049 or 503-720-7472. (cell)

Marcia Danah, Communications and Outreach, Portland, 503-229-6488

DEQ Recommends Caution When Disposing of Storm Debris

Avoid burning that will create air pollution health problems; separate hazardous materials for proper disposal

Oregon residents affected by the recent severe winter storm should use proper methods for disposing of storm and flood debris, including separating hazardous materials and not burning garbage, state environmental officials said today.

The Oregon Department of Environmental Quality (DEQ) is coordinating with affected counties to set up storm debris collection sites. The City of Vernonia has set up a collection site for all debris with a separate area for hazardous waste across the street from Vernonia City Hall on Bridge St. Locations of other collection points will be announced soon and posted on the DEQ Web site at www.deq.state.or.us

Separate debris for disposal into separate piles for vegetation (trees, branches, limbs); household trash (garbage, paper, food, etc.); household hazardous wastes (paints, cleaners, pesticides, solvents, oil, etc.); white goods (stoves, refrigerators, appliances); and other materials (trash, building matter, carpets, furniture, etc.).

"Burning storm and flood debris will create air pollution that will only add to the health problems and inconveniences caused by the storms," said DEQ Northwest Region Administrator Nina DeConcini. "Public agencies are making provisions to set up storm debris collection sites so waste materials can be disposed of properly."

Burning certain waste including rubber and plastics is prohibited. DEQ strongly recommends using alternatives to burning to protect human health from harmful fine particles and toxic air pollutants in smoke. Give priority to chipping or grinding wood waste and yard debris for reuse. DEQ will provide assistance to



Bureau of Oregon
Department of
Environmental
Quality

Communications &
Outreach
824 SW 6th Avenue
Portland, OR 97204
Phone: (503) 229-6606
(800) 452-4011
Fax: (503) 229-0762

*DEQ is a leader
in restoring,
maintaining
and enhancing
the quality of
Oregon's air,
land and water.*

Appendix E. Oregon Statewide Disaster Debris Management Plan

Draft

STATE OF OREGON DEBRIS MANAGEMENT PLAN

Annex to the State Emergency Operations Plan

**Developed by Oregon Emergency Management
Oregon Department of Transportation &
Oregon Department of Environmental Quality**

January 2011

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1. PURPOSE

The purpose of this Debris Management Plan is to provide a framework for State agencies and municipalities to facilitate and coordinate the evaluation, removal, collection, and disposal of debris following a disaster. Implementation of the Debris Management Plan will be coordinated through the State's Emergency Coordination Center (ECC), utilizing State agencies working under emergency operations, through State Agency Mission Assignments.

This document defines roles, responsibilities, and procedures, and provides guidance for development and implementation of all elements involved in managing debris removal operations required following a disaster event and in support of ESF#3 of the State of Oregon's Emergency Operations Plan.

2. SITUATION AND ASSUMPTIONS

2.1 Situations

- a) Natural and man-made disasters generate a variety of debris including trees and brush, sand, gravel, building/construction material and other demolition debris, vehicles, appliances, personal property, etc. Some of these materials may contain or be comprised of hazardous substances requiring special handling and/or disposal.
- b) The quantity and type of waste generated from any particular disaster will be a function of the location and kind of event experienced, as well as its magnitude, duration, and intensity.
- c) The quantity and type of waste generated, its location, and size of the area over which it is dispersed, will have a direct impact on the type of collection, recycling and disposal methods utilized to safely manage this waste, associated costs incurred, and how quickly the affected area can be safely cleaned up.
- d) In a major or catastrophic disaster, many state agencies and local governments will have difficulty in locating staff, equipment and funds to devote to debris removal, in short as well as long term. Communication plans and efforts must be part of the early planning.
- e) Characterization of the waste (organic content, toxicity, asbestos containing, hazardous, radioactive, etc.) should be done first as part of any response to the disaster. Segregation and management strategies of the waste removal, storage and disposal will depend on its characteristics and hazards.

2.2 Assumptions

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- a) The amount of waste generated from an event or disaster could exceed the local area's or county's ability to dispose of it within the county or through normal disposal procedures. Many counties, like Clatsop, Curry, Tillamook or Columbia have only transfer stations and transport all waste out of county to permitted landfills for disposal.
- b) Local governments will declare an emergency if the quantity of disaster debris has exceeded their ability to manage and dispose of it.
- c) If required, the Governor would declare a state of emergency that authorizes the use of State resources to assist in the removal and disposal of disaster debris.
- d) In the event Federal resources are required, the Governor would request federal assistance in accordance with standard procedures established in the National Response Framework (NRF).
- e) Private contractors will play a significant role in disaster debris removal, collection, reduction, and disposals.

2.3 Alignment with Other Plans and Documents

Federal Response Framework

In February of 2003, Homeland Security Presidential Directive (HSPD) 5 directed the Secretary of Homeland Security to develop the National Incident Management System (NIMS), and the National Response Framework (NRF) to provide a consistent national approach for federal, state, and local governments to work effectively and efficiently during a domestic incident response. This plan supports the Department of Homeland Security's (DHS) Emergency Support Functions (ESF); Public Works and Engineering Annex, using NIMS organization structure.

State of Oregon Emergency Operations Plan

This supports the Oregon Emergency Operations Plan, by providing a framework to organize disaster debris operations through all levels of government. Each agency should have a debris management operational plan, in which this plan can be referenced to.

Federal Emergency Management

This plan references FEMA Disaster Assistance Policies for eligibility and reimbursement purposes in the event of a Presidentially Declared disaster. All referenced FEMA Public Assistance policies are available on FEMA's website at:

<http://www.fema.gov/government/grant/pa/9500toc.shtm>

3. CONCEPT OF OPERATIONS

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The Oregon Department of Transportation (ODOT), as the Primary Agency responsible for State Support Function #3 (ESF#3) – Public Works and Engineering, will utilize this plan to conduct and coordinate disaster debris response and management. ODOT will draw upon resources from the other ESF#3 supporting and/or adjunct agencies to conduct an efficient, coordinated response following a regional or state-wide disaster.

Primary Agency: Oregon Department of Transportation

Support Agencies: Oregon Military Department
Department of Administrative Services
Oregon Emergency Management
Division of State Lands
Department of Environmental Quality

Department of Geology and Mineral Industries
Department of Public Health
Occupational Safety and Health Division
Oregon Department of Forestry
Department of Agriculture

Adjunct Agencies: U.S. Army Corps of Engineers
U.S. Air Force Auxiliary - Civil Air Patrol
U.S. Environmental Protection Agency
U.S. Federal Emergency Management Agency

In general, disaster debris management will include the following components:

- 1) Organizing the response and establishing the Debris Management Task Force with ODOT as the Primary Agency with the support of the Supporting and Adjunct Agencies;
- 2) Collecting information critical to response through characterization of the waste, modeling and estimates of quantities and direct damage assessments and check in with critical physical resources [equipment, disposal facilities, etc.];
- 3) Planning and prioritizing the response using available information and establishing temporary disposal sites, if needed; and
- 4) Conducting a prioritized and coordinated response while protecting worker and public health and providing needed communication within the response and to the public.

3.1 INITIAL ACTIONS

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a) Emergency Coordination Center Activation and Annex Implementation

When a disaster occurs which generates debris exceeding local governmental waste management resources, the State through Oregon Emergency Management (OEM) will activate the Emergency Coordination Center (ECC) according to standard operating procedures. This Annex to the State of Oregon Emergency Operational Plan will be activated and the Debris Management Task Force (DMTF) will be assembled (from Supporting and/or Adjunct Agencies) to assist ODOT in the coordination and management of disaster debris clearing, removal and disposal. The ECC Operations Manager or his/her designated representative in conjunction with the DMTF will determine if additional federal Emergency Support Functions (ESFs) are required to support these removal and disposal efforts. Also see Organization and Responsibilities of this plan.

b) Estimating the Type and Amounts of Disaster Debris

The amount of debris that will be generated by an event can be estimated by several methods. Forecasts of the amount and types of debris generated during different types and sizes of natural disasters help the planner understand the scope needed to safely manage, recycle and dispose of disaster debris. These estimates can be based on previous experience or can be made using forecast tools. These tools are meant to generate estimates that will help a community understand the possible types and amounts of debris that may be generated.

One tool available from federal agencies, the Hazard U.S. Multi-Hazard (HAZUS-MH) uses Geographic Information System software to map disposal hazard data and estimate the result of damage and economic losses for buildings and infrastructure. It also allows users to estimate the impact of earthquake, hurricane winds, and floods on populations.

Another disaster debris modeling tool is available from the US Army Corps of Engineers (USACE). The model considers five factors: the number of households, vegetation density factor, commercial density factor (non-residential debris), storm wind intensity, and rainfall intensity. The model provides a +/- 30% estimate of possible disaster debris volumes that may be generated by various storms. This USACE modeling methodology is available in **Appendix A** of this plan. There are also equations that will help produce the number and size of temporary disposal sites.

c) Estimating and Characterizing Debris for the Initial Damage Assessment (IDA)

- Estimate quantities by sampling

- Characterize waste material by sampling, analysis (asbestos, lead paint, hazard testing) or other evaluation. For example, if the disaster is a radioactive bomb, then debris will most likely be radioactive or if the disaster is a flood, then waste may include hazardous waste from homes and businesses or construction debris may contain asbestos or lead paint.
- Estimate cost based on force account or contract (consider using US EPA's Illegal Dumping Economic Assessment model for this exercise if not too complex, www.epa.gov)
- Use historical or local area unit costs
- Focus on disaster debris on public property, but include potential debris brought to curb
- Private roads/gated communities and FAS roads may not be eligible for Public Assistance in removing disaster debris
- For flood estimates, assume 15-25 CY of disaster debris will be generated per residence

Example Debris Estimating:

In earthquakes, buildings may totally collapse and require demolition due to the threat they pose to public safety. In such cases, the quantity of material to be hauled away as debris may be estimated using the following formula:

Area of building footprint x building height/3 = volume

In cases where a building changes its footprint or size at higher floors, the volume can be calculated by estimating the different footprint floors separately and adding the volumes together. Some flexibility is built into this calculation in the result to allow for the uneven shapes of the resulting rubble.

Example: A 1930s-era high-rise was severely damaged and must be demolished. It has three footprints stacked on one another, one at 45,000 sf, 30,000 sf, and 18,000 sf, respectively. The lower two sections are five stories at 12 ft high per floor, and the upper section is three stories at 10 ft high per floor. Calculate the debris volume in cubic yards.

Height of the sections: 5 stories x 12 ft/story = 60 ft.

3 stories x 10 ft/story = 30 ft.

$[(45,000 \text{ sf} \times 60 \text{ ft}) + (30,000 \text{ sf} \times 60 \text{ ft}) + (18,000 \text{ sf} \times 30 \text{ ft})] / 3 = 1,680,000 \text{ cf.}$

$1,680,000 \text{ cf} / 27 \text{ cf/cy} = 62,222 \text{ CY (rounded).}$

d) Conduct Initial Damage Assessments (IDA)

Prompt and accurate damage assessments are essential for effective disaster responses. The ultimate responsibility for damage assessment

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lies with the local governing authority. In the case of damage to State property, the heads of each affected department will have this responsibility. Prompt and accurate notification to the ECC is vital. Damage assessments should identify necessary life saving actions, assess the magnitude of damage and hazards of the waste, and determine additional resources that may be needed from other local governments and state agencies. The following are a few of the Initial Damage Assessments that can be used:

- Initial Damage Assessment by local jurisdictions - An Initial Damage Assessment (IDA) is required to identify the type of disaster, jurisdiction and estimated costs. Local government authorities complete the IDA forms and route them to the County Emergency Operation Center (EOC). The EOC compiles the data for the entire county. These IDA Data Collection forms and County Summary Form (located in Appendix B) is then routed to the State ECC. State Agencies also should complete IDAs.

Forms are also available at:

http://www.oregon.gov/OMD/OEM/fin_rec/financial_recovery.shtml

Local damage assessments that have identified a large amount of disaster debris should identify sector boundaries:

- ✓ Types including associated hazards, location and volume of debris
 - ✓ Land uses
 - ✓ Transportation Availability
 - ✓ Location of existing and potential temporary storage sites, and
 - ✓ Location of existing and potential permanent disposal sites
- IDAs also can be accomplished by estimating debris through visual assessments using drive-by windshield surveys.
 - Aerial assessments can also be made using Oregon National Guard (ONG) helicopters, ODF and Civil Air Patrol (CAP) reconnaissance flights. The damaged area can be assessed either visually or by analyzing aerial photographs. Once the area has been assessed, the amount of disaster debris may be estimated using a modeling methodology shown in Appendix A (USACE modeling).
 - Any noted occurrences of hazardous materials or wastes that pose immediate threat to human health and/or the environment should be documented by location, quantity and type, along with identifying marks (trade names, CAS numbers, etc.), condition of containers (if contained) and actual or potential media (land, air or water)

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affected. This information should be promptly directed to the State ECC and the DMTF through OERS.

- Hazardous situations that could impact responder health during the conduct of Phase I activities (gas leaks, downed power lines, asbestos, etc.) should be documented to the extent possible and the information conveyed to the State ECC and the DMTF through OERS.

e) Emergency Debris Clearing and Urgent Removal Prioritization

As information is received about areas with significant debris occurrence or accumulation, presence of hazardous substance releases or potential releases, and needs for emergency access route clearing (using pre-identified high priority transportation routes, if available), prioritization of debris removal to be accomplished during Phase I should be conducted.

Property owners are responsible for cleanup of waterways. For waters of the state, Division of State Lands and possibly the Army Corps of Engineers on federally navigable waters would share responsibilities. DEQ and EPA may be able to work together and use contractors for emergency response to spills or other disasters where debris is hazardous and poses an imminent threat to health or the environment.

f) Temporary Debris Storage Site Selection and Site Priorities

Concurrent with completion of the IDAs, the DMTF should determine the number and location of temporary sites needed for collection and processing of debris. The priority of site location should be determined as follows:

- First Priority: If possible, establish the site within the damaged area
- Second Priority: Pre-determined local, county or state property
- Third priority: Private property

See section 4.1 of this plan for site selection and criteria.

g) Assessing Status of Existing Facilities

Develop an up-to-date list of operating facilities within each county that can accept varying types and amounts of debris. This might include landfills, transfer stations, infectious waste treatment facilities, scrap tire storage and recovery facilities, household hazardous waste facilities, composting facilities, and recycling facilities. Ideally the counties should be aware of companies authorized to transport scrap tires and infectious

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waste. Identify alternative facilities if those used during normal operations have been impacted by the disaster. Information on existing landfills and household hazardous waste facilities throughout the state is available through the

Department of Environmental Quality webpage

<http://www.deq.state.or.us/lq/sw/disposal/permitedfacilities.htm>

It is important to contact these facilities following a disaster to determine site impacts (if any) and current capacity with respect to total capacity and the date of projected site closure. DEQ staff can help with contacting solid waste facilities and determining their status and capabilities.

3.2 Debris Removal

Floods and other natural disasters as well as human caused disasters can generate unprecedented amounts of debris in a few hours or a few minutes. The debris may be equally heavy in both urban and rural areas depending on the magnitude of the tree blow-down and associated structural damage such as homes, businesses, utilities, signs, etc. This section provides guidelines on disaster debris removal issues including emergency clearance of roads, public rights-of-way, private property, navigation hazard, hazardous waste, and household hazardous waste (HHW).

For listing of debris types and the best solutions for management see Appendix C.

The disaster debris management program should be based on an all-hazard approach. A critical component of debris management includes protecting the health and safety of responders. Each employer is responsible for protecting their own workers. Temporary workers are often used to assist with debris cleanup - their safety should also be addressed within these plans. Since disaster debris includes various waste streams, assessing the hazards of each waste type aids the selection of appropriate personal protective equipment (PPE) and training for workers.

In developing a management strategy for a large-scale disaster debris removal operation, the operation should be divided into three phases. Phase I consists of the clearance of debris that hinders immediate life saving actions within the disaster area and clearance of debris which poses an immediate threat to public health and safety. Phase II operations consist of the removal and disposal of debris necessary to ensure the orderly recovery of the community and to eliminate less than immediate threats to health and safety. Phase III occurs once the orderly recovery of the community has occurred and after immediate and less than immediate threats have been addressed. Phase III consists of removing

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remaining debris and cleanup/closure of any temporary transfer stations established during Phases I and II.

3.3 Phase I - Emergency Debris Clearance and Removal

Disaster debris will be pushed to the shoulders of roadways during the emergency opening (Phase I) of key transportation routes. There is little time or concern for sorting debris at that time. The objective during Phase I is to provide for the safe movement of emergency and support vehicles into and out of the disaster area. Responders need to conduct some initial assessment of the disaster debris to determine hazards or toxicity to determine if the disaster debris may be safely moved without causing severe harm to workers or an additional disaster such as an explosion, radioactive exposure, or spill of toxic material from the movement of the disaster debris.

Emergency Access Route Clearance

- a) Phase I response focuses on providing emergency access routes into devastated areas following any type of major disaster. Oregon Department of Transportation (ODOT) and local governments must pre-identify and prioritize routes within their jurisdiction that are vital to emergency operations. If these can be pre-identified, they can be the focus of early phases of damage assessment and planning. This information is essential for directing the efforts of local assets and for identifying areas that State and Federal assistance can target.
- b) Disaster debris could include tree blow-down and broken limbs; household trash such as outdoor furniture, trash cans, etc.; utility poles, power, telephone and cable TV lines, transformers and other electrical devices; building debris such as bricks, roofing, siding and signs; debris from disaster destruction of commercial or industrial operations and facilities; and personal property such as clothing, appliances, boats, cars, trucks and trailers. Identification of hazardous conditions posed by damaged utilities (electrical, natural gas, sewer, etc.) commonly co-located along transportation corridors is essential as road clearing activities are conducted. Preliminary identification of environmental or human health hazards such as asbestos-containing building materials, radioactive waste, and toxic materials, explosive or other hazardous waste from industrial facilities or households is critical during this initial assessment to determine if toxic, hazardous or radioactive debris may be safely moved without immediate impacts to workers or the environment.
- c) Roadway debris clearing involves opening up arterial roads and collector streets by moving debris to road shoulders. There is no attempt to physically remove or dispose of the debris, only to clear key access routes to expedite:

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- Movement of emergency vehicles and law enforcement.
- Resumption of critical services, and
- Assessment of damage to key public facilities and utilities such as schools, hospitals, government buildings, and municipal owned utilities.

d) Oregon Emergency Management and/or the DMTF should be aware of local, state and federal capabilities to provide service for emergency roadway debris removal. Available resources should include:

Local and State Governments:

- Municipal workers and equipment.
- Local and State DOT workers and equipment.
- National Guard.
- Local contractors hired by local and/or state governments (ODOT and DEQ spills response)

Federal Assistance:

- US Dept. of Agriculture (USDA) Forest Service chain saw crews.
- Local US Army Corps of Engineers (USACE) workers and equipment.
- Department of Defense (DOD).
- Regional contractors hired by the Federal Emergency Management Agency (FEMA) or the USACE.
- Environmental Protection Agency (EPA)
- US Coast Guard (USCG)

Also see FEMA Recovery Division Fact Sheet 9580.202 for Debris Removal Authorities of Federal Agencies

- e) Immediate debris removal actions should be supervised by local government personnel using all available resources. Requests for additional assistance and resources should be made to the State ECC through ECC County Liaisons. Requests for federal assistance will be requested through the State Coordinating Officer (SCO) to the FEMA Federal Coordinating Officer (FCO). The request will be directed to the Federal assistance debris coordinator (if on site and operational), or the USACE district authorized to contract services for FEMA.
- f) Special crews equipped with chain saws may be required to cut up downed trees. This activity becomes more hazardous during a disaster response and specified safety considerations (checking for live wires, appropriate safety equipment and other considerations) need to be followed to reduce the chance of injury and possible loss of life. When live electric lines are involved, work crews should coordinate with local utility companies to have power lines de-energized. Also see section 3.5, Health and Safety.

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- g) Front end loaders and bulldozers should be equipped with protective cabs. Driveway cutouts, fire hydrants, valves, and storm water inlets should be left unobstructed. All personnel should wear protective gear such as hard hats, gloves, goggles, and safety shoes appropriate for the work to be conducted.

Identification/Stabilization of Hazardous Substance-Containing Debris

Identification of other environmental or human health hazards such as asbestos-containing building materials, radioactive waste, toxic materials, hazardous waste from industrial facilities or household hazardous waste is also critical during this initial assessment to determine if toxic, hazardous or radioactive debris may be safely moved without impacts to workers or the environment. As occurrences of hazardous substances associated with disaster debris are identified during initial damage assessments or emergency response operations, the DMTF shall collect and track information to facilitate prioritization for response. If hazardous substance releases (or potential releases) are not stable or otherwise require immediate action, removal and/or stabilization operations may be initiated by DEQ under ESF 10 authority. DEQ may utilize State-Authorized contractors to accomplish this work or coordinate with the U.S. EPA if state resources are insufficient due to scale or volume.

Emergency Debris/Hazardous Substance Removal

DEQ is the designated Primary Agency (along with OSFM) for Oil and Hazardous Materials response under ESF 10. Depending on the type of debris, DEQ may be able to help with removal of debris in two ways. One way is through use of a DEQ or EPA contractor authorized to clean up hazardous materials associated with spills and emergency response. The other way may be through use of DEQ's household hazardous waste contractor during Phase II of a disaster response (described in Section 3.3.3 below).

For clean ups authorized under DEQ or EPA spills response contracts:

- DEQ and/or EPA forms a Unified Command
- Reconnaissance surveys are conducted to identify the scope of the project and allocate resources needed
- Recovery operations begin

The DEQ and/or EPA will give instructions to the Cleanup Contractor to prioritize the types of hazardous wastes (i.e. flammables, explosives, chemicals, etc.) identified for removal; wastes which are imminent threats to the general public will have priority. Due to a potentially large volume of hazardous or toxic wastes generated by a disaster, discretionary decisions for removal of smaller, less-invasive items will need to be made to the extent practical.

3.4 Phase II - Non-Emergency Debris Removal

Phase II removal focuses on removing disaster debris and starting to restore access to government services and key operations needed to address less imminent but still urgent responses to the disaster. At this phase, responders will have more time to assess disaster debris for hazards and toxicity as well as

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begin determining best ways to handle, store and safely dispose of or recycle disaster debris. Timing for Phase II may start as soon as roadways are cleared as early as a few hours after the disaster.

Access to Government Services and Public Right-of-Way Debris Removal

- a) The requirement for government services most likely will increase dramatically following a major disaster. Therefore, after emergency access has been provided to hospitals, police, and fire stations, the next priority is to open access to other critical community facilities such as municipal buildings, water treatment plants, wastewater treatment plants, power generation units and airports.
- b) Damaged utility systems, structurally unstable buildings and other damaged public facilities must be expeditiously repaired, deactivated, barricaded, or removed. Activities involving these facilities should be closely coordinated with their owners and/or operators. Demolition of unsafe structures, which constitute a public health and safety threat in most situations, may be deferred if access to the area can be controlled.
- c) As removal operations progress, the initial roadside piles of debris become the dumping location for additional yard waste and other storm generated debris such as construction and demolition (C&D) debris, personal property, trash, white goods (refrigerators, washers, dryers, hot water heaters, etc.), roofing, and even household commercial and agricultural chemicals.
- e) **Public Property/Rights-of-Way Debris Removal:** Disaster debris deposited on public lands including the right-of-way will be the responsibility of local government. In some cases, where a health and/or safety threat exists, private property owners may move such debris to the public right-of-way for removal by government forces. Government forces or volunteers may assist private property owners if necessary to remove disaster debris that poses a health and/or safety threat. For FEMA eligibility see FEMA Disaster Assistance Policy, Debris Removal from Private Property DAP9523.1
- f) Rapid disaster debris removal from public rights-of-way should be a priority. Removal operations will also entail replacement of key utilities located along the public right-of-way.
- g) The local government and/or DMTF will be responsible for coordinating removal of disaster debris that poses a significant health and/or safety risk to the community. Requests for removal of disaster debris will likely come from all sectors of the community to assist residents in putting their lives and property in order.

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- h) Local and State government force account employees will transition from opening roadways to clearing rights-of-way. State DOT forces from other districts and other community work forces (mutual aid agreements) may become available as will locally hired contractors who normally have limited resources. For large scale/catastrophic disaster, direct federal assistance, if required, will be provided by FEMA, USACE, DOD and large regional contractors with resources, experience and short mobilization times. See contracts section of this plan for FEMA eligibility requirements.
- i) Oregon Emergency Management and / or the DMTF will be required to provide accurate information on the magnitude of the debris removal mission. Providing information to the ECC and coordination with other agencies may require an independent means to assess debris removal progress. This need can be filled using local or State personnel to create independent field inspection teams.
- j) DSL –owned property disaster debris frequently ends up in waterways after a disaster. Most of the waterways are owned by the Oregon Division of State Lands. DEQ and EPA may be able to help DSL through use of contractors for removal of hazardous wastes that pose imminent threats to health or the environment. See above Identification/Stabilization of Hazardous Substance-Containing Debris and Emergency Debris/Hazardous Substance Removal under 3.2 Phase I of this plan.

Oregon Emergency Management and/or the DMTF should be prepared to take the following actions:

- a) Coordinate through local agencies the establishment of a contracted work force capable of rapid removal of disaster debris (*this may become an issue with locals bidding on the same contractors, shortage, outside contractors*)
- b) Develop an independent team of local and state personnel to monitor the removal activities
- c) Conduct daily briefings with key debris managers. Ensure that all major disaster debris removal and disposal actions are reviewed and approved by the local debris manager
- d) Coordinate with local and state DOT and law enforcement authorities to ensure that traffic control measures facilitate debris removal activities

Private Property Debris Removal

Debris deposited on private property is the responsibility of the property owner. The plan must include procedures for notifying the public of debris removal schedules. The key is to provide all information regarding pickup times and locations for residential private property owners so that debris

removal activities proceed efficiently. Commercial and industrial property owners should proceed with implementation of company emergency response plans.

- a) The local government should also provide instructions to residential property owners on separation of debris and steps to follow if they are unable to put debris from their property on the curbside for pickup. The local government may utilize volunteers or voluntary groups to assist property owners. A procedure for coordinating, deploying and tracking volunteers is essential for the success of volunteer efforts. The local government or county may assign a Volunteer Coordinator as necessary. DEQ can provide information to the local government on how residential property owners should segregate and package household hazardous wastes and keep them separate from normal wastes.
- b) Major natural disasters may create health and safety concerns with respect to severely damaged private property. Affected structures should be the responsibility of the owner to stabilize or demolish to protect the health and safety of adjacent residents. However, experience has shown that unsafe structures will remain due to lack of insurance, absentee landlords, or under-staffed and under-equipped local governments. Consequently, stabilization or demolition of these structures may become the responsibility of the local government and/or the DMTF.
- c) Disaster debris removal operations will usually include curbside pickup service provided by the local government or a contractor. Contractors operate under contracts described earlier such as time and materials, unit price or lump sum. Public employees and contractors will pick up debris and haul it to either a temporary debris management site that is authorized by DEQ or has received a temporary permit from DEQ, or to a regular DEQ permitted waste management or disposal site.
- d) Helping residential property owners to assess, package, store and properly dispose of disaster debris will require the cooperation of numerous local and State government officials and may require resources from any or all the following: real estate offices, local law and/or code enforcement agencies, State Historic Preservation Office, qualified contractors to remove HHW, asbestos, and lead-based paint, and field teams to photograph the sites before and after demolition.
- e) For consideration of FEMA Public Assistance reimbursement of such locally incurred costs or to undertake debris removal and/or demolition of structures on private property, see Demolition of Private Property checklist and sample Right of Entry/Hold Harmless agreement in **Appendix D** of this plan.

Household Hazardous Waste (HHW) Removal

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- a) HHW may be generated as a result of a major natural disaster. HHW may consist of common household chemicals, propane tanks, oxygen bottles, batteries, and industrial and agricultural chemicals. These hazardous items may be mixed into the debris stream and will require close attention to protect the safety of workers and prevent environmental releases throughout the debris removal and disposal process.
- b) Pre-disaster – the Local government and / or DMTF should be aware of the problems that HHW will have on the overall debris removal and disposal mission. Local governments need to have a plan for how they will respond to HHW from disasters. These plans need to include managing the HHW at a locally operated HHW facility or having a HHW contractor available to manage it. If the local government and local contractors are unable to respond in a timely manner, DEQ may be able to coordinate the initial HHW removal using the services of the DEQ HHW contractor (if DEQ has funds or if it is likely that DEQ may be reimbursed by FEMA). However, after the initial few days of HHW removal, the local government will take over response efforts. DEQ can help coordinate with the Governor’s office, DMTF, and local agencies concerning possible regulatory waivers and other emergency response requirements.
- Some counties already have fixed household hazardous waste collection facilities or already have an HHW contractor on retainer. Every effort will be made to first utilize HHW collection resources available at the county level before using the DEQ HHW contractor. If needed and if resources are available, DEQ will pay for DEQ’s HHW contractor to initially collect HHW, characterize the waste, package and store the waste and properly dispose of HHW. DEQ will seek reimbursement from FEMA if such costs are reimbursable.
 - Removal Operations HHW trained personnel should be present at all or most temporary disaster debris storage sites. DEQ may have a staff person available to monitor HHW disaster debris management. DEQ may ask a local government representative to also be on site to regulate HHW collection, storage and disposal. DEQ will assist with creation and distribution of fact sheets that help the public recognize HHW and other types of hazardous or toxic disaster debris and learn about proper disposal options/locations.
- c) Building Demolition - Complete asbestos, hazardous waste, lead paint or other toxic characteristics should be identified and such wastes should be segregated before building demolition begins. These wastes should be removed by qualified contractors. Uncontaminated debris can be removed by regular demolition contractors. DEQ recommends against moving contaminated building demolition debris to temporary storage sites if possible. Instead, contaminated demolition debris should be removed by qualified contractors directly to permitted disposal sites approved to

handle the identified contamination if possible.

- d) Temporary Disposal sites - DEQ must approve and if needed, issue temporary permits to temporary disposal sites. DEQ can work with local governments to pre-approve temporary disposal sites before a disaster happens.

A separate staging area for hazardous waste, household hazardous waste, asbestos containing materials, contaminated soils, and other contaminated debris should be established at each temporary site. The staging area should be lined with an impermeable material and bermed to prevent contamination of the groundwater and the surrounding area. Wastes should be removed and disposed using qualified trained HHW personnel/contractors in accordance with local, State and Federal regulations. The site should be secured overnight.

The Environmental Protection Agency (EPA) recommends the following safeguards for sites used to segregate and store hazardous waste:

- The area to be used should be covered with two layers of plastic sheeting, tarps, or a concrete pad.
- Fence off the area with T-posts and orange barricade fencing.
- Surround fenced off area with absorbent booms (to absorb any potential leaks) or sandbags (to prevent spills from seeping into the ground).
- Use (wooden) pallets to raise collection bins off the ground (to ascertain potential leaks).
- Provide adequate space for walking/carrying items between pallets.
- Segregate containerized gases, liquids, or solids by material type (e.g. corrosive wastes, reactive wastes), place each material type in a separate bin or barrel, and label the bin or barrel appropriately.
- Cover collection bins or barrels with plastic liners/lids or cover the entire hazardous waste collection site with a tent to prevent water collecting in bins.
- Cylinders containing compressed gas should be placed upright with cap on and secured in place.
- Provide sufficient fire extinguishers for the site in case fire breaks out; four fire extinguishers per 10,000 square feet are recommended, placed at the corners or in easily accessible locations.

If residents are asked to bring debris to temporary collection sites, a community should identify those locations in its pre-incident communication plan. This information needs to be immediately available to the public, especially when electrical outages impede direct communication. Also, plan for sufficient staffing for these sites and consider establishing hours of operation that accommodate the residents. Many communities have found that much residential debris cleanup takes place on weekends or after normal business hours.

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Post-Emergency Assessment of Hazardous Substance Containers Associated with Disaster Debris

Following Phase I and II emergency response, there may be a need to evaluate disaster debris found as part of Phase III final clean up and restoration of the area. If containers or wastes are found during Phase III that require characterization to determine hazards, radioactivity, asbestos content or other toxic evaluation, these will be the responsibility of the local government. Procedures for characterization, segregation and disposal should be similar to those described above. If these wastes pose an imminent threat to human health or the environment, DEQ may be able to work with EPA to assign contractors to assist a local government with identification, characterization and removal. See phase I discussion of DEQ/EPA coordination and removal efforts.

3.5 Health and Safety Issues

Disasters have unique health and safety issues. However, emergency response preparation should include an understanding of disaster debris types, and the health and safety issues associated with them, along with whatever PPE may be necessary.

The debris management program should be based on an all-hazard approach. A critical component of debris management includes protecting the safety and well-being of workers. Temporary workers, who are often used to assist with debris cleanup, should also be addressed in any plan. Since debris includes various waste streams, assessing the hazards associated with each waste type aids the selection of appropriate PPE and training for workers. This planning process will improve disaster debris management practices and keep people safe.

Oregon OSHA regulates worker safety and health. Assistance may be requested by contacting the nearest local Oregon OSHA field office. See www.orosha.org on the internet to obtain contact and resource information.

Personal Hygiene Practices & Decontamination

Make sure personal hygiene procedures are established with appropriate decontamination supplies available. Safe potable water for drinking, hand washing, and decontamination, including situations where emergency showers and eyewashes may be need, is essential. For example, in flood conditions raw sewage and chemicals are often released, leading to contamination of affected areas.

Personal Protective Equipment (PPE), 1910.132

Oregon OSHA requires that a hazard assessment be completed to select, use, and care for PPE that protect the head, eyes, face, hands and feet, with workers trained accordingly. Commonly required PPE includes hard hats, safety glasses with side shields, durable work gloves, and sturdy work boots (steel toes and shanks where foot injury may result). Specialized PPE may be needed to handle

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asbestos containing wastes. Specialized PPE will be needed where chemicals are handled, such as chemical protective clothing or chemically-resistant gloves. Consult manufacturer's recommendations on specific chemicals and protective ensembles.

Respiratory Protection, 1910.134

There are numerous hazards from debris that can cause respiratory irritation and illness. These hazards are generally classified as dust and particulates, or as gases and vapors. A respirator equipped with N95 filter is suitable for most dust and particulates. The single use disposable-type (paper) masks use the fabric that meets N95 specifications. Many chemicals have unique properties (e.g. gases and vapors) that present different kinds of hazards. Selection of the right cartridges and/or canisters is based on knowledge of these hazards. Consult manufacturer's recommendations for specific chemicals and protective ensembles.

Metals present additional hazards, especially when they are heated (fires, welding, etc.).

Hazardous Chemicals

Workers must be trained on the hazards of chemicals and the steps to take for self-protection. This includes recognizing signs and symptoms of exposure. Consult 1910.1200 (1910.1200 or .120?) for more information.

When chemicals are present in disaster debris, these areas need to be cordoned off until qualified workers can identify, separate, and prepare them for disposal. Chemical waste disposal must be done by a qualified hazardous waste management company. See Oregon OSHA's hazardous waste operations and emergency response rules (HAZWOPER, 1910.120) for additional information.

Asbestos, Lead, and Silica

Asbestos containing wastes (1926.62) are regulated by both Oregon OSHA and by DEQ (OAR 340-248). Lead paint is regulated by Oregon Health Division. Careful review and advanced planning of operations where these materials may be encountered is strongly advised. Asbestos and lead were in common use in older structures. Additional protective actions must be implemented where these hazards occur. Once an exposure assessment is made by a competent person, protective actions may be modified once proper controls are in place. These actions must be completed by workers with specialized training and PPE to reduce or eliminate the spread of contamination, and prevent extensive remediation should these materials be mishandled.

Silica is present in many building materials (concrete, sheet rock, etc.) and is released by cutting, grinding and sanding. PPE are needed to reduce silica exposure.

For further information see:

<http://www.osha.gov/SLTC/etools/hurricane/index.html>

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3.6 Public Information

The public should be kept informed of the hazards possible in the type of debris generated by the disaster, what they need to do to protect themselves when handling the debris, local government debris pick-up schedules, disposal method and ongoing actions. Information on disposal procedures, including assistance for independent contractors as well as penalties for illegal dumping should be provided to insure compliance with state and federal regulations. Information should be shared through press releases, e-mail, posters, or whatever communication tools exist that can reach affected people.

- a) Establish a proactive information management plan involving the Governor's Press Secretary, and other agency PIOs. Emphasis should be on actions that the public can take to assist with the cleanup process, such as separating burnable and non-burnable debris; segregating hazardous waste, household hazardous waste, asbestos-containing waste, or other safety concerns; placing debris at the curbside; keeping debris piles away from fire hydrants, valves, etc; reporting illegal dumping and dump sites; and segregating recyclable materials.
- b) Agency PIOs should be prepared to respond to questions from the press and local residents regarding disaster debris removal. If required a Joint Information Center (JIC) may be established to ensure a coordinated response is made to the public and a news desk phone number provided to the media. Local and state government responders may want to consider holding public meetings to share information and answer questions. DEQ can help with creating and distributing fact sheets and providing news releases. The following questions are likely to be asked:
 - *Why isn't the State or FEMA picking this up for me?*
 - *What is the pick-up system?*
 - *Should I separate the different debris material and how?*
 - *How do I handle asbestos containing or household hazardous waste (HHW)?*
 - *Does it cost money?*
 - *What if I can't pay?*
 - *What if I am unable to bring the debris to the curb for pickup?*
 - *What if I am elderly?*
 - *Can I add construction materials and/or demolition debris used to rebuild my home to the pile?*

The public must be well informed on debris removal activities, such as:

- How to characterize waste
- Debris pick-up schedules
- Location and hours of operation of temporary storage & disposal sites
- Disposal methods and compliance with environmental regulations

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- Restrictions and penalties for illegal dumping

4.0 DISASTER DEBRIS COLLECTION AND REDUCTION SITES

- a) Once disaster debris is removed from an affected area, it will be taken to temporary management sites. DEQ staff can temporarily permit these sites using Solid Waste Letter of Authorizations that assure that environmental concerns are addressed and solid waste management and disposal requirements are met. Debris management actions will be handled at the lowest level possible based on the magnitude of the disaster. It follows the normal chain of responsibility, i.e. local level, county level, and state level. When all resources are exceeded at these levels, federal assistance may be requested according to established procedures. Due to limited disaster debris management resources, the establishment and operation of these temporary sites are generally accomplished by contracts.
- b) Emphasis is placed on local government responsibilities for developing debris disposal contracts under Federal and State/local procurement procedures (also see contract section of this plan). Removal and reduction activities may be handled locally or assigned to the USACE by FEMA pursuant to CFR 44 §206.5 and 206.8. Mission assignment may be used instead of Project Worksheets when responding to a catastrophic natural disaster. This allows FEMA and the USACE more flexibility in responding to specific debris removal and disposal tasks.
- c) Local/county and/or state governments may be responsible for developing and implementing these contracts for debris removal and disposal under most disaster conditions that are not catastrophic. The costs associated with preparing, implementing, and monitoring contracts are covered under 44 Code of Federal Regulation, Section 206.22 or FEMA Public Assistance Policies (also see FEMA Disaster Assistance Policy, 9580.201, Applicants Contracting Checklist). The emergency manager and /or the DMFT (based on magnitude of event) should review all debris disposal contracts. There should be a formal means to monitor contractor performance in order to ensure that funds are being used wisely.
- d) Debris monitoring procedures should be established and included, especially if the work has been contracted for any component of the debris removal operation. Monitoring debris removal operations achieves two objectives:
 - Verifying that the work completed by the contractor is within the approved scope of work

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- Providing the required documentation for Public Assistance funding

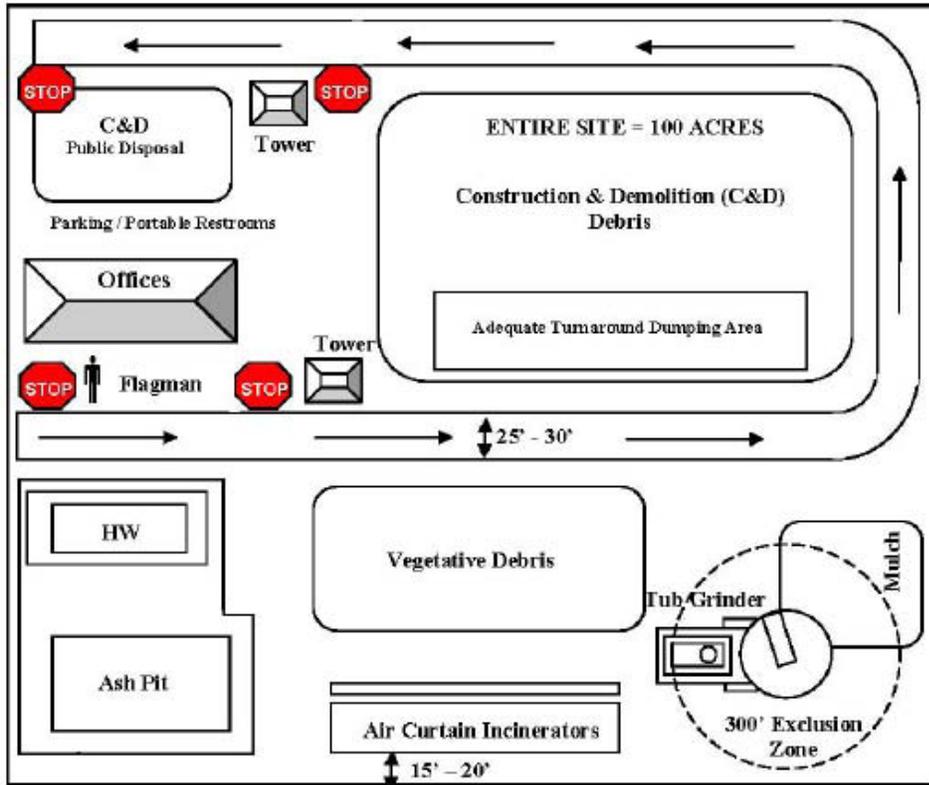
4.1 Site Selection.

Temporary disaster debris management sites should protect human health and the environment when selected. They should:

- a) Be sufficient in size with appropriate topography and soil type (preferably paved) (work with state/local environmental agencies to determine appropriate topography and soil type).
- b) Be located an appropriate distance from potable water wells and rivers, lakes, and streams (work with state/local environmental agencies to determine appropriate setback distances).
- c) Not be located in a floodplain or wetland.
- d) Have controls in place to mitigate storm water runoff, erosion, fires, vectors, and dust.
- e) Be free from obstructions, such as power lines and pipelines.
- f) Have limited access with only certain areas open to the public, such as areas to drop off debris. Post clear entrance and exit signage. Consider traffic flow.
- g) Be located close to the impacted area, but far enough away from residences, infrastructure, and businesses that could be affected by site operations.
- h) Preferably be on public lands because approval for this use is generally easier to obtain, but could also be located on private lands. Private lands may be convenient and logistically necessary for temporary debris storage sites. Consider potential agreements with private land owners in advance to ensure the use of these needed areas.
- i) Be able to be restored to original conditions after temporary use ceases.

Example of a Debris Management Site

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4.2 Site Selection and Temporary Permitting

In general, DMTF will need to determine appropriate sites for storage, sorting and processing disaster debris. Consider access by heavy equipment, protection of environmentally sensitive areas, and logistical efficiency. Investigate possible impact on adjacent housing, because sites can attract vectors such as rodents and other pests, produce noise and odors at levels deemed unacceptable by residents, or put a large burden on normal traffic patterns.

It is important for disaster debris to be managed in a way that protects human health and the environment. Reimbursement by the federal government for costs incurred by public agencies responding to an emergency may be hampered if state and local agencies have not coordinated and communicated with regulatory agencies (DEQ, USACE, and SHPO) on the location and handling of disaster debris.

Finding the Right Location

When selecting a proposed disaster debris management site, the DMTF or local government should also consider the following:

- a) What is the proposed use for this site?
- b) Is it easily accessible?
- c) Is it removed from obstructions such as power lines and pipelines?

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- d) Is the site considered to be a wetland area, as defined by the U.S. Army Corps of Engineers?
- e) Is the general site topography conducive to the activity that will be conducted there?
- f) Are there nearby residences and/or businesses that will be inconvenienced or adversely affected by use of this site?
- g) Is the size sufficient for its intended use?
- h) Is the soil type suitable for its intended use?
- i) Is the site a previously authorized location that is being reactivated for use?
- j) Is the site located near water bodies such as rivers, lakes or streams and their proximity to occupied dwellings?
- k) What is its proximity to the impacted area?
- l) Does the site have historical significance? Contact Oregon State Historical Preservation Office.
- m) Can the site be easily cleaned up after temporary use?

The topography and soil conditions should be evaluated to determine best site layout. Consider ways to make remediation and restoration easier when planning site preparation. Also see, Appendix B USACE Debris model for size requirements.

4.3 Site Approval

DEQ can expedite issuance of Solid Waste Letters of Authorization for temporary facilities. If possible, local governments should identify and obtain pre-approval from DEQ for temporary disposal sites when writing local emergency management plans. The following information will be needed as soon as possible before DEQ can approve the use of the site:

- a. Written statement of permission from the land owner. This statement must address who will be responsible for the closure of the site and if a spill occurs, who will be responsible for the testing and removal of contaminated soil, the land owner, the site operator or the local government.
- b. Land use compatibility statement (LUCS) from the local government unless the Governor waives this permit requirement through executive order.

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- c. Permit application fee unless the Governor waives this permit requirement through executive order.
- d. Indication that the site was used in previous emergencies or is identified in the local government emergency operation plan, as applicable.
- e. Location and size of the site on a map.
- f. Roads and road condition leading to and from the site.
- g. Distance to surface water including wetlands.
- h. Actions that will be taken to prevent contaminant release to surface and ground water, to prevent offsite dust and litter, and to assure waste is segregated appropriately to contain hazards or toxicity.
- i. An operations plan identifying site operator, hours of operations, how various types of disaster related waste will be managed, fees, security, emergency/spill response, signage, etc.
- j. Identify materials that will not be accepted for temporary storage at the site; further information may be needed.
- k. If the site location is sensitive and the site can not be operated in a way that protects the environment, DEQ will not approve the site.
- l. In addition to the above DEQ required information, consultation with the State Historical Preservation Office is also required.

To identify the appropriate DEQ person to approve and permit the temporary site, please contact the appropriate DEQ solid waste manager:

Northwest Region - DEQ's Northwest Region is responsible for carrying out environmental protection in the six northwest counties of Oregon (Clackamas, Clatsop, Columbia, Multnomah, Tillamook, and Washington). Staff also performs some work in Yamhill County. Contact Audrey O'Brien, 503-229-5072

Western Region - DEQ's Western Region encompasses 12 counties (Benton, Coos, Curry, Douglas, Jackson, Josephine, Lane, Lincoln, Linn, Marion, Polk and Yamhill) and has regional offices in Coos Bay, Eugene, Grants Pass, Medford and Salem. Contact Brian Fuller, 541-687-7327

Eastern Region - DEQ's Eastern Region encompasses 18 counties of Central and Eastern Oregon (Baker, Crook, Deschutes, Gilliam, Grant, Harney, Hood River, Jefferson, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, and Wheeler). Contact Lissa Druback, 541-298-7255, ext. 222

4.4 Site Operations

Site preparation and operation are usually left up to the contractor but guidance can help avoid problems with the ultimate closeout. DEQ will provide technical assistance, however DEQ will not physically operate the site.

- a) Staffing – determine what roles are needed and who will fill those roles (safety staff, spotters, traffic controllers, administrative personnel, etc.) DEQ recommends and the permit will require that Hazwoper certified and asbestos trained personnel on site. Proper Personal Protective Equipment appropriate to the level of exposure must be worn (i.e. vest, hard hat, boots, glasses, gloves...) Secure the site to prevent scrap metal and other theft and to prevent illegal dumping.
- b) Set up record keeping (by type and amount of waste accepted, rejected, processed, etc). Set up removal and disposal contracts to establish a removal schedule, communicate with landfills and prioritize waste.
- c) Set up the site to allow for the separation and sorting of wastes. Include clear entrance and exit signage to control traffic and to check loads for unacceptable waste. Designate areas for public drop off, commercial drop off, and areas for debris to be sorted.
- d) Designate waste specific handling and storage procedures for different waste types (putrescible, hazardous waste, household hazardous waste, non-hazardous liquids, bulky wastes, appliances, woody debris, electronics, construction and demolition debris, industrial waste, asbestos containing waste materials, etc.)
- e) Establish lined temporary storage areas for hazardous waste, ash, HHW, fuels, and other materials that can contaminate soils and groundwater. Set up plastic liners when possible under stationary equipment such as generators and mobile lighting plants. Include this as a requirement of the contract scope of work.
- f) If the site is also an equipment staging area, monitor fueling and equipment repair to prevent and mitigate spills of petroleum products, hydraulic fluids, etc. Include clauses in contract scope of work to require immediate cleanup by the contractor.
- g) Use best management practices to the extent practical. When stockpiling or staging equipment, debris, including hazardous materials with potential runoff from chemicals, oils, and other contaminants, use absorbent pads, straw waddles, or kitty litter to intercept and prevent runoff to surrounding areas. Control storm water run off.

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- h) Not In My Back Yard (NIMBY) Concerns. Be aware of and mitigate things that will irritate the neighbors such as:

Smoke - proper construction and operation of burn pits. Don't overload air curtains.

Dust - employ water trucks.

Noise - construct perimeter berms.

Traffic - proper layout of ingress and egress procedures to help traffic flow.

Vectors-proper storage of waste, closed bins.

Spills notification: Oregon Revised Statute 466.635 and Oil and Hazardous Materials Emergency Response Requirements, Chapter 340, Division 142, require immediate notification to Oregon Emergency Response System (OERS) after taking any required emergency actions to protect human health and the environment when oil or hazardous materials are spilled. **The spill must be immediately reported to OERS at 1-800-452-0311 if the spill is of a reportable quantity. Reportable quantities include:**

- Any amount of oil spilled to waters of the state;
- Oil spills on land in excess of forty-two (42) gallons;
- Two hundred (200) pounds (twenty-five (25) gallons) or more of spilled pesticide residue; and
- Spills of hazardous materials that are equal to, or greater than, the quantity listed in the Code of Federal Regulations, 40 CFR Part 302 (List of Hazardous Substances and Reportable Quantities), and amendments adopted before July 1, 2002.

For a complete list of hazardous materials required to be reported, please refer to OAR 340-142-0050.

4.5 Debris Reduction Methods

This section provides guidelines on debris volume reduction methods including recovery and recycling of usable, clean debris; grinding and chipping, and as a last resort burning. The DMTF should have an understanding of each method. All methods must comply with local ordinances and environmental regulations.

Volume Reduction by Recycling

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Table 4 List of materials that have strong recycle or reuse potential

<i>Segregated material</i>	<i>Potential for reuse/recycling/energy recovery</i>
White goods (refrigerators, freezers, stoves, etc.)	1 Metal recovery and recycling
	2 Freon recovery
Electronics (television sets, computers, cell phones, etc.)	1 Reuse of usable computer equipment
	2 Recovery of precious metals
	3 Parts recycling
Concrete	1 Recycling for roadbed use
Structural steel	1 Recycle
Wood/timber (whole trees)*	1 Recover for lumber
	2 Chipping for mulch
	3 Energy recovery
Woody vegetative debris*	1 Chipping for mulch
	2 Energy recovery
Clean (unpainted) structural wood*	1 Reuse for construction
	2 Energy recovery
Automobiles	1 Metal recycling
Tires	1 Crumb rubber for roadways
	2 Energy recovery
	3 Engineering uses
Biomass (also see woody vegetative debris)*	1 Energy recovery

Source: “Waste management policy revisions: lessons learned from the Katrina disaster,” W.E. Roper, Int. J. Environmental Technology and Management, Vol. 8, No.'s 2/3, 2008, p. 282. See this paper for more detail on disaster debris reuse and recycling options.

The above table identifies many disaster debris types that can be recovered, recycled, or as a last resort, burned for energy recovery. DEQ recommends recovering and recycling disaster debris whenever possible. There is economic value in reusing many types of debris such as metal, wood, clean soil and clean concrete. Recovery and recycling also reduces the volume of disaster debris that would otherwise go to a landfill.

Local governments may consider including large-scale recovery and recycling efforts to recover materials from major disasters such as windstorms, floods and earthquakes in their prime contractor agreements. Contractors may be able to segregate and recycle debris as it arrives at the staging and reduction sites. Careful attention to contract language can assure that recovery and recycling disaster debris is bucketful. If disaster debris is well sorted, specialized contractors should be able to bid on recoverable and recyclable materials. Contracts and monitoring procedures should be developed to ensure that those carrying out the recovery and recycling efforts comply with local, State, and Federal environmental regulations.

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Recovery and recycling should be considered early in the debris removal and disposal operation to reduce the overall cost of the operation. In addition to the two tables included, here is more explanation about the recovery and recycling of certain debris types.

- **Metals.** Floods and windstorms may cause extensive damage to mobile homes, sun porches, and greenhouses. Most of the metals are non-ferrous and suitable for recycling. Trailer frames and other ferrous metals are also suitable for recycling. Metals can be separated using an electromagnet. Metals that have been processed for recycling can be sold to metal recycling firms. Disposal sites must be properly secured to prevent scrap metal theft. Metal from electronics or appliances would best be recovered by recycling facilities with expertise in handling these types of materials.
- **Soil.** If large amounts of soil are generated by the disaster, there may be some opportunity to reuse the soil if it is clean. Monitoring and testing of the soil will be necessary to ensure that it is not contaminated with oil, metals or other chemicals. Nearby landfills may be able to use this soil as daily cover.
- **Wood. Clean wood** from demolition, downed trees or other woody debris can be recovered for lumber, ground or chipped into mulch. (See Section 4.1.2 Volume Reduction by Grinding and Chipping) Ground or chipped wood may also be of good enough quality to be used for composting or hog fuel. Chemically treated or painted wood may not be used for composting, but may be usable as hog fuel if testing demonstrates that air emission limits can be maintained.
- **Construction and Demolition (C&D) Debris.** Clean concrete block and other clean building materials can be reused or ground and used for other purposes if untreated or not painted and there is a ready market. Clean concrete may be ground and used as aggregate. Asphalt pavement may be ground and reused to make new asphalt, under DEQ approved conditions.

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Table 5 Disposal options for C&D waste components

<i>Waste component</i>	<i>Reuse</i>	<i>Recycle</i>	<i>Composting</i>	<i>Burning</i>	<i>Landfill</i>
Asphalt/roofing waste	-	X	-	-	X
Carpet/padding	X	X	-	-	X
Concrete	X	X	-	-	X
Dimensional lumber	X	X	X	X	X
Drywall	-	X	X	-	X
Insulation	-	X	-	-	X
Metal	X	X	-	-	-
Corrugated Cardboard	-	X	-	X	X
Plastic	-	X	-	-	X
Masonry/tile	X	X	-	-	X
Wood	X	X	X	X	X

Source: "Waste management policy revisions: lessons learned from the Katrina disaster," W.E. Roper, Int. J. Environmental Technology and Management, Vol. 8, Nos. 2/3, 2008, p. 282. See this paper for more detail on C&D reuse options.

- **Residue Material.** Residue material that cannot be recovered or recycled, such as cloth, rugs, and trash can be sent to a landfill for final disposal.

Volume Reduction by Grinding and Chipping

If recovery and recycling are not options, local governments may consider grinding or chipping clean woody debris from the disaster. Grinding and chipping clean woody debris for use as a mulch may help to stabilize areas where topsoil has been disturbed, blown or washed away. Note: Construction and demolition wastes are not appropriate mulch materials as they may contain possible contaminants such as lead paint, asbestos, or other hazardous wastes. Local governments should check with DEQ to determine if a DEQ permit is needed for grinding or chipping operations. Grinding or chipping must be done in ways that prevent significant dust generation and migration and protect environmentally sensitive areas (waters, wetlands, etc.) Emergency Management and/or the DMTF should work closely with local environmental and agricultural groups to determine if there is a market for clean mulch.

There are numerous makes and models of grinders and chippers on the market. When contracting, the most important item to specify is the size of the mulch. If the grinding operation is strictly for volume reduction, size is not important.

- The average size of wood chips produced should not exceed four inches in length and one half inch in diameter. Production output should average 100 to 150 cubic yards per hour when debris is moderately contaminated and slow feeding operations, and 200 to 250 cubic yards per hour for relatively clean debris. Note, this is not

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machine capability; this is contractor output or performance capabilities.

- Contaminants are all materials other than clean wood products and must be evaluated by DEQ or Department of Agriculture before a mulch containing any contaminants may be land applied. Testing must be done if there are any suspected contaminants such as treated wood, lead paint, oil or petroleum products, or other potentially toxic or hazardous substances. Plastics are a big problem and should be eliminated completely. Clean soil is not considered a contaminant in wood mulch. To help eliminate contaminants, root rake loaders should be used to feed or crowd materials to the grapplers. Bucket-loaders tend to scoop up earth and cause excessive wear on the grinder or chipper. Hand laborers should remove contaminants prior to feeding the grinders. Shaker screens should be used when processing stumps with root balls or when large amounts of soil are present in the woody debris.

Wood chippers are ideal for use in residential areas, orchards, or groves. The numbers of damaged and uprooted trees present significant problems if they are pushed to the right-of-ways for eventual pick-up and transport to staging and reduction sites. The costs associated with chipping are reasonable since the material does not need to be transported twice.

Wood grinders are ideal for use at debris staging and reduction sites due to their high volume reduction capacity. Locating the grinders is critical from a dust, noise and safety point-of-view. Moreover, there is a need for a large area to hold the woody debris and an area to hold the resulting mulch. Ingress and egress to the site is also an important consideration.

Volume Reduction by Burning

DEQ strongly discourages burning to reduce the volume of disaster debris. As a disposal method, burning should be a last resort. Burning creates fine particulate, carbon monoxide and toxic air pollutants that when inhaled can contribute to respiratory illnesses, heart disease and other potential health concerns. Burning also creates carbon dioxide, a greenhouse gas. If burning of any waste is determined to be necessary as an emergency measure to protect human health, the DEQ representative to the DMTF will assist in obtaining needed permits or emergency authorizations from the DEQ Air Quality Program. DEQ may determine that the site, the wastes and need to burn are not warranted and will work with the local governments and state agencies to find alternatives to burning. Local fire departments must also be notified prior to burning.

There are several burning methods available including *uncontrolled open burning*, *controlled open burning*, *air curtain pit burning*, and *refractor lined pit burning*. The DMTF should consider each burning method and obtain

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authorization from DEQ before selection and implementation as part of the overall volume reduction strategy. If burning is determined to be the only acceptable alternative for disposal, DEQ recommends using air curtain pit burning or refractor lined pit burning alternatives as a first choice with uncontrolled open burning as a last resort. Uncontrolled burning creates the most air pollution.

In addition to the criteria listed above, the Oregon Department of Environmental Quality (DEQ) will evaluate proposed burn sites. Burning certain waste including hazardous waste, household hazardous wastes, treated lumber, garbage, asbestos containing wastes, rubber and plastics is prohibited. DEQ recommends that local governments and state agencies look for opportunities to chip or grind wood waste and yard debris before considering burning. DEQ can provide assistance to find locations to use or store this chipped wood waste and yard debris.

Controlled Open Burning: Controlled open burning of clean woody debris may be an acceptable alternative for disposal of a small volume of material (i.e. 3 cubic yards) in a rural community where adjacent neighbors are at least 0.5 mile from the burn location. If considering open burning of any kind, the DMTF or local government should consult with DEQ staff to determine if a DEQ air quality letter permit is needed.

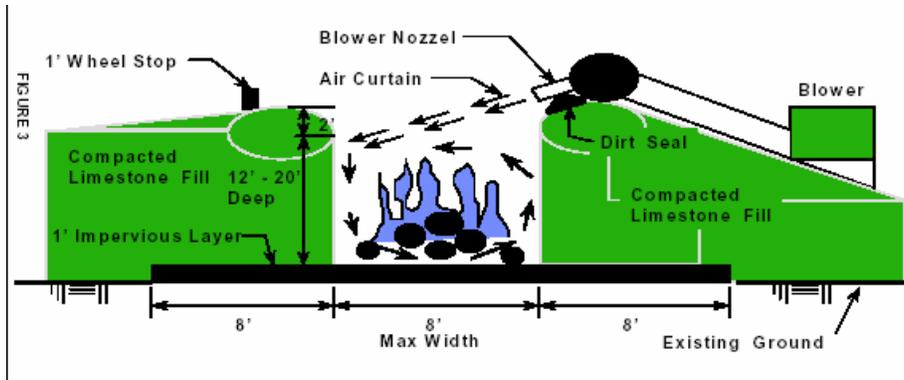
This option is not allowed if there is mixed debris (treated lumber, poles, nails, bolts, tin, aluminum sheeting, creosote treated wood, etc.). Only clean woody debris would be allowed to be burned. Resulting ash would be evaluated to determine if it could be land applied at agronomic rates as a soil additive by the local agricultural community. Land application must be approved by DEQ.

Air Curtain Pit Burning: Should burning be necessary in rural areas, air curtain pit burning reduces volume effectively and reduces air pollution. (See illustration below.) Air curtain pit burning of clean woody debris may be an acceptable alternative for disposal of a limited volume of material in a rural community where adjacent neighbors are at least 0.5 mile from the burn location. The DMTF or local government should consult with DEQ staff to determine if a DEQ air quality letter permit is needed. This option is not allowed if there is mixed debris (treated lumber, poles, nails, bolts, tin, aluminum sheeting, creosote treated wood, etc.). Only clean woody debris would be allowed to be burned. Resulting ash would be evaluated to determine if it could be land applied at agronomic rates as a soil additive by the local agricultural community. Land application must be approved by DEQ.

Specifications and statements of work should be developed to expedite the proper use of the systems since experience has shown that many contractors and subcontractors are not knowledgeable of the system operating

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parameters. Often specialized equipment is necessary to effectively conduct the burning process.



Source: "Waste Management after Katrina: Technical, Economical, and Managerial Issues in New Orleans and the Gulf Coast," Paper A#861, B. Kura, K.L. McManis, K. Wilson, A. Sengupta and M.S. Falk, p.6.

Refractor Lined Pit Burning: In rural areas, pre-manufactured refractory lined pit burners are an alternative to air curtain open pit burning. Pre-manufactured refractory lined pit burning of clean wood debris may be an acceptable alternative for disposal of a limited volume of material in a rural community where adjacent neighbors are at least 0.5 mile from the burn location. The DMTF or local government should consult with DEQ staff to determine if a DEQ air quality letter permit is needed. This option is not allowed if there is mixed debris (treated lumber, poles, nails, bolts, tin, aluminum sheeting, creosote treated wood, etc.). Only clean woody debris would be allowed to be burned. Resulting ash would be evaluated to determine if it could be land applied at agronomic rates as a soil additive by the local agricultural community. Land application must be approved by DEQ.

- a) The units can be erected on site in a minimal amount of time. Some are portable and others must be built in-place. The units are especially suited for locations with high water tables, sandy soil, or where materials are not available to build above ground pits. The engineered features designed into the units allows for a reduction rate of approximately 95 percent with a minimum of air pollution. The units use air curtain blowers that deliver air at predetermined velocities and capacities. A nozzle 20 feet long would have a velocity of over 120 miles per hour and would be delivering over 20,000 cubic feet of air per minute to the fire. The air traps smoke and small particles and recirculates them to enhance combustion that reaches over 2500 degrees Fahrenheit. Manufacturers claim that wastes can be combusted at rates of about 25 tons per hour while still meeting emission standards.

- b) Coastal areas may present contractors with unique problems when they start using the air curtain burner systems. Existing soil conditions and a high water table may prevent pit digging to meet manufacturers' specifications. Pits may not be constructed by pushing up the existing topsoil, because the pit sides will erode. Controls should be implemented to prevent contamination of the ground water. An acceptable solution is to use compacted limestone fill placed over an impervious clay layer.
- c) Local officials, environmental groups, and local citizens should be thoroughly briefed on the type of burning method being considered, how the systems work, environmental standards, health issues, and the risk associated with each type of burning. Public Information Officers should take the initiative to keep the public informed. A proactive public information strategy to include press releases, media broadcasts, etc. should be included in any operation that envisions burning as a primary means of volume reduction.
- d) Environmental controls are essential for all burning methods and should include: 1) check with DEQ to see if an air quality letter permit is needed. Always consult with DEQ and follow the open burning rules (OAR 340-264) that vary depending what part of the state the burning is done. 2) Be cognizant of nuisance conditions and follow nuisance rules (340-208-0300 thru 0450) 3) Be cognizant and sensitive to neighbors, especially ones that have respiratory or heart ailments, children and the elderly. 4) Only burn on good ventilation days when there is good air movement for effective smoke dispersal. 5) Never burn on days when there is already smoke pollution in the air (Check DEQ's AQI at www.deq.state.or.us/aqi.aspx and only burn on green days) 6) Always check with the local fire district before burning. 7) If the community has an air quality advisory, follow the advisory. 8) Never burn during an air stagnation event.

4.6 Site Close-Out Procedures

- a) Each temporary debris staging and reduction site will eventually be emptied of all material and be restored to its previous condition and use. If the size of event required mission tasking from the USACE, then the mission tasking may include requirements to clean up contractor-operated staging and reduction sites. Contractors would be required to remove and dispose of all mixed debris, construction and demolition (C&D) debris, and debris residue to approved landfills. In some cases, soil may need to be tested for contamination if the temporary site was not located on an impermeable surface. Quality Assurance (QA) inspectors should monitor all closeout and disposal activities to ensure that contractors complied with contract specifications. Additional measures may be necessary to meet

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local, state, and federal environmental requirements based on the nature of the staging and reduction operation.

- b) Emergency Management and/or DMTF must be assured by the contractor that all sites are properly remediated. There may be significant costs associated with poorly maintained or improperly operated debris management sites. The need for site remediation may be reduced or eliminated with proper site operation in accordance with established procedures. The local governments, contractors and property owners will need to cover various remediation costs.
- c) Each temporary debris management site must be cleared and restored to pre-disaster conditions and uses, with the exception of DEQ authorized vegetative debris, and sites where DEQ agrees to exempt land-application of ash from DEQ's solid waste permitting requirements. DEQ will not allow land application of ash without characterization of the ash demonstrating that there will be no environmental impacts from land application of the ash and also demonstrating that there will be an agronomic benefit from land application of the ash. Closure must be in accordance with approved DEQ practices. Closure should be accomplished within the time limits established by the DEQ and agreed to by the property owner, DEQ, the local government and the site operator. Samples from potential spill/contaminated areas will need to be collected and tested for contamination and any corrective action carried out to return the site to safe conditions.

5.0 CONTRACT SERVICES

In the event of a large disaster that generates debris on public roads and public property where the removal is beyond the capability of local governments, contractors can be used or Direct Federal Assistance can be requested. Direct Federal Assistance is often carried out by agencies such as the U.S. Corps of Engineers (USACE) under the control and direction of FEMA through a mission assignment. Additional information can be found in a later section, Requesting Direct Federal Assistance for Debris Management Operations.

In addition to the above, FEMA can provide technical assistance to the state or local jurisdictions with disaster debris management and removal issues. Such technical assistance may be provided by FEMA staff, mission-assigned experts, or technical assistance contractors (TAC). FEMA debris specialists may be assigned to each county or jurisdiction having significant debris operations to assist with eligibility issues.

5.1 Contracting for Debris Removal Operations

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In the event of a Presidential disaster declaration, local governments may receive reimbursement, subject to cost-share provisions, for the cost they incur for emergency clearance of debris from roadways and other public access facilities, and for the costs of removal and disposal of debris that poses an immediate threat to life, public health and safety.

To be eligible for reimbursement under the Public Assistance Program, contracts for debris removal must meet rules for Federal grants, which mean they are subject to the Common Rule specifying uniform administrative requirements for grants to states and local governments. FEMA's common rule provisions can be found in 44 CFR Part 13, and specific subsections, such as 13.36, describe procurement and other requirements. Public Assistance applicants should comply with their own procurement procedures in accordance with applicable State and local laws and regulations, provided that they conform to applicable Federal laws and standards identified in Part 13. It is important to remember that if local government contracts for debris removal do not comply with Federal grant requirements, the local government runs the risk of an ineligibility determination for federal reimbursement by FEMA.

Critical points are:

- ✓ Be careful to avoid entering into contracts, whether pre-event or post-event, that bypass or expedite the normal competitive procurement process
- ✓ FEMA may only reimburse for what is reasonable, and sole-source contracts may result in unreasonable pricing or terms
- ✓ Be cautious of contractors that may jeopardize reimbursements due to contract provisions, pricing or practices that are not reasonable and do not conform to Federal, State and local laws

If there is a need to contract for debris services, and a pre-event contract is not in place, consider the following:

- Follow the local government's emergency or regular bid procedures for contracting services
- Develop a specific scope of work
- Identify any special considerations, such as historic sites, environmental issues (i.e. removing debris around areas with endangered species, hazardous waste, etc.) and if any such conditions are present, consult with OEM or DMTF prior to issuing bids or executing contracts
- Identify if the need exists for debris removal on private property and establish guidelines. If debris removal from private property is anticipated, contact OEM or DMTF for assistance. A sample Hold Harmless

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and Right-of Entry Agreements can be found in Appendix D

- Identify whether disaster debris removal is the responsibility of another federal agency, i.e. Federal Highway Administration (FHWA), Natural Resource Conservation Service (NRCS), or the USACE. Costs may not be reimbursed for work that is under the authority of another Federal agency. For example, FHWA has responsibility for debris clearance and some of the debris removal, through the State Department of Transportation, from roads on the Federal-Aid System
- Establish debris monitors that are separate from the contractor's monitors and provide training for these monitors. Monitoring of debris removal operations is the responsibility of the local government contracting for the service or using the applicant's resources. Failure to adequately monitor debris removal operations against contractor fraud, removal and disposal of ineligible debris, contract work in unauthorized areas, overstatement of debris volumes, and other ineligible activities, may result in a loss of Federal funding
- Establish a staff person who will oversee contract activities
- Establish Temporary Debris Reduction and Storage Sites
- Ensure the contract is for reasonable costs
- Submit contracts prior to execution to OEM/FEMA for *review* of eligibility. OEM and FEMA can not approve contracts, but can provide advice on potential contract terms that could possibly jeopardize reimbursement. *No contractor has the authority to determine eligibility*
- Identify Transfer Stations if landfills are a considerable distance from your jurisdiction
- Establish guidelines with local landfills and alternate landfills for types of debris accepted and current vs. maximum capacities

List of Qualified Contractors

A process should be developed that determines contractors eligible to conduct business with government entities to include type of work each contractor can perform with availability of equipment, type of collection, removal, and reduction of debris (capabilities, bonding, insurance, availability).

Upon Request, FEMA will advise State/DMTF and local governments on contracts and provide assistance with respect to issues such as demolition of unsafe structures or in connection with replacement of eligible facilities; debris on private property; removal of tree limbs and leaning trees; removal and disposal of

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hazardous tree stumps and rootballs; removal of sediment from engineered channels; removal and disposal of hazardous materials, etc.

5.2 Emergency Contracting

In some situations, such as clearing road for emergency access (moving debris off the driving surface to the shoulders or rights-of-way), or removal of debris at a specific site, awarding a non-competitive contract for site-specific work may be warranted; however, normally, non-competitive bid awards should not be made several days (or weeks) after the disaster or for long-term debris removal. Obviously, the latter situations do not address a public emergency which "will not permit a delay resulting from competitive solicitation".

*Note: Staff of the Office of General Counsel and the Office of the Inspector General has expressed concern that contracts are being awarded under this section without an understanding of the requirement. Simply stated, non-competitive contracts can be awarded only if the emergency is such that the contract award **cannot be delayed by the amount of time required to obtain competitive bidding.***

Regarding competitive solicitations, local governments (Public Assistance applicants) can use an expedited process for obtaining competitive bids. In the past, applicants have developed a scope-of-work, identified contractor that can do the work, made telephone invitations for bids, and received excellent competitive bids. Again, applicants must comply with State and local bidding requirements.

If warranted, FEMA technical assistance may be used to pre-authorize local governments with proper debris removal contracts.

The contract issuer may be a jurisdiction or regional operational authority. "Piggybacking" by using an existing contract established by another jurisdiction is not recognized by FEMA as an acceptable form of contracting. Cost plus a percentage, contingency contracts, and contracts awarded to debarred contractors are not allowed. Debarred contractors see web link:

<http://www.epls.gov>

5.3 Procurement to be eligible for reimbursement under the Public Assistance program, contracts for debris removal must meet rules for Federal grants, as provided for in 44 CFR Part 13.36 *Procurement*. Local governments should comply with their own procurement procedures in accordance with applicable State and local law and regulations, provided they conform to applicable Federal laws and Standards identified in Part 13. At times emergency contracting procedures will be used, also see FEMA Fact Sheet RP 9580.201 Debris Removal Applicant's Contracting Checklist.

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Types of Contracts: The following types of contracts may be used when conducting debris management operations. **Appendix E** to this document includes samples of these contract types that have been developed by the ODOT Office of Procurement and reviewed by the **Oregon Department of Justice**.

- **Time and Material:** Under a time and material contract, the contractor is paid on the basis of time spent and resources utilized in accomplishing debris management tasks. This method is not recommended unless limited to work performed during the first 70 hours of actual work following a disaster event
- **Unit Price:** A unit price contract is based on weight (tons) or volume (cubic yards) of debris hauled, and should be used when the scope of work is not well defined. It requires close monitoring of collection, transportation, and disposal to ensure that quantities are accurate. A unit price contract may be complicated by the need to segregate debris for disposal
 - Advantages: provides an accurate accounting of quantity of debris removed and is simple to administer
 - Disadvantages: requires trained quality assurance staff to estimate loads, segregation of materials; and trucks used to transport must meet truck transport requirements.
- **Lump Sum:** A lump sum contract establishes a total price using a one item bid from a contractor. It should be used only when a scope of work is clearly defined, with areas of work and quantities of material clearly identified
 - Advantages of lump sum contracts include: minimal labor is required to manage the contracts, contractors shoulder the majority of risk and documenting the quantities is relatively easy
 - Disadvantages include: the statement of work must be very specific and clear; scoping of public rights of way may be a challenge and with lump sums, there is a potential for claims, (for example, dispute over volume estimates, etc)
 - Lump sum contracts can be defined in one of two ways:
 - Area Method, where the scope of work is based on a one time clearance of a specified area, or
 - Pass Method, where the scope of work is based on a certain number of passes through a specified area, such as a given distance along a right of way

In addition, it may be prudent to develop a list of standby contracts.

5.4 Mutual Aid Agreements

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Many State, Tribal, and local governments and private nonprofit organizations enter into mutual aid agreements to provide emergency assistance to each other in the event of disasters or emergencies. These agreements often are written, but occasionally are arranged verbally after a disaster or emergency occurs.

Cooperative Assistance agreement (ORS 401.480) allows state, counties and cities to collaborate with public and private agencies to enter into cooperative assistance agreements for reciprocal emergency aid and resources.

Intergovernmental agreements (ORS 190.010) authorize local governments to enter into agreements with neighboring governmental entities for performance of any and all functions which the parties to the agreement are authorized to perform.

It is the responsibility of each jurisdiction to inventory their current agreements and evaluate their possible use during a debris-producing event.

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Policies, procedures, and rates need to be established to track the lending and borrowing of resources for proper reimbursement to the requesting agency or reimbursement by FEMA.

Existing Agreements

Agreement Type	Participants	Participation Requirement	Service Requirement	How Activated	Types of Resources Available
Oregon Public Works Emergency Response Cooperative Assistance Agreement	Public Works agencies ODOT	Voluntary	Voluntary	Responding agency determines if it can provide support to Requesting agency	Public works equip and staff
Emergency Management Assistance Compact (EMAC)	All 50 states	Voluntary	Assistance is obligatory “provides that it is understood the state rendering aid may withhold resources to the extent necessary to provide Reasonable protection for such State”	Requesting State broadcast request, responding State determines if it can provide support	All types
Oregon State Fire Mobilization Plan	Statewide	Voluntary	Voluntary	In accordance with statute, fire service districts enter into mutual aid agreements for services, including emergencies which have the potential to overwhelm the resource capabilities within a single district. These agreements are integral parts of the Mobilization Plan	Firefighters and equipment needed to manage fires, disasters or other events.

For FEMA reimbursement purposes also see FEMA Disaster Assistance Policy 9523.6. All FEMA Disaster Assistance Policies are available at the following link:

<http://www.fema.gov/government/grant/pa/9500toc.shtm>

5.5 Documentation

Documentation of debris management activities is important for potential reimbursement of costs. In addition, documentation is important to record activities performed and authorizations granted, and to develop a historical record for updating plans. Documentation of activities is the responsibility of those performing work as well as those who provide oversight and direction. At a minimum, documentation needs to address the following:

- ✓ Labor, equipment, rental fees and material costs
- ✓ Mutual-aid agreement expenses
- ✓ Use of volunteered resources, including labor (also see FEMA policy Donated Resources 9525.2)
- ✓ Administrative expenses
- ✓ Disposal costs
- ✓ Types of debris collected and amounts of each type

5.6 Activation of Standby Contracts

Standby contracts are contracts with companies that make the company available for assistance in the event of a debris-generating event. The standby contracts are in place before a disaster occurs. Develop a list of standby contracts that are entered into between the community or county and contractors.

Debris management staff should initiate actions to assess the availability of local, state, federal and other resources to provide immediate and long term assistance.

5.7 Tracking of Resources

Procedures for tracking resources should be available in by each agency. The level of detail in the tracking system will be dependent upon the size and magnitude of the disaster.

5.8 Review of Documentation Process

Evaluate when and why decisions were made to perform certain actions. Examples may include site selection for TDSR sites, debris removal priorities and

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demolition of public/private structures.

5.9 Contract Monitoring

In the event contracts are in place for debris removal, monitoring of contractors is a very important issue. Designate a person or persons for contract monitoring. Contract monitoring verifies that the following actions are taking place:

- Debris being picked up is a direct result of the disaster
 - Trucks hauling debris are fully loaded
 - Debris pick-up areas are being managed properly
 - Trucks are sticking to debris routes
 - Inspection of temporary storage sites to ensure operations are being carried out according to contract
 - Verification of security and control for temporary debris storage and reduction sites

6.0 ORGANIZATION AND RESPONSIBILITIES

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There are a number of federal agencies invested with varying authorities for debris management activities. These agencies include the U.S. Department of Homeland Security, Federal Emergency Management Agency (FEMA), U.S. Army Corps of Engineers (USACE), the Federal Highway Administration, Environmental Protection Agency (EPA), U.S. Coast Guard (USCG), and the Department of Agriculture, Commerce and Transportation.

<http://www.fema.gov/emergency/nrf/>

Federal Emergency Management Agency

The Robert T. Stafford Emergency Relief and Disaster Assistance Act (PL 93-288, as amended, and referred to as *The Stafford Act*) is the federal legislation that created a national program for disaster preparedness, response, recovery, and mitigation. The Act constitutes the statutory authority for most federal disaster response activities, especially as they pertain to FEMA and FEMA programs.

- Provides FEMA Liaison to staff ECC
- At request of Governor conducts Joint Preliminary Damage Assessment (PDA)
- At request of State conducts Rapid Needs Assessment (RNA)
- At request of State facilitates federal mission assignment (see Federal Mission Assignment Process in this section)

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Upon request FEMA may advise State/DMTF and local governments on eligible debris, contracts and issues related to compliance with Federal environmental and historical preservation laws, regulations and executive orders, especially when work is in waterways or when dealing with hazardous materials. Reimbursement requested by a local government for any project that is not in compliance with environmental/historical preservation laws is not eligible. Furthermore, it is the responsibility of the local government applicant to satisfy all necessary permitting and compliance issues before commencing with any federally-funded project.

6.1 State Department and Agencies

State department and agency heads and staff are responsible for developing operational plans, and training to internal policies and procedures to meet response and recovery needs safely.

The Office of the Governor

Emergency Powers and Management

Oregon State's governor can circumvent some normal operating procedures in the event the Governor has declared a state of emergency under Oregon Revised Statute [ORS] 401, Emergency Services and Communication. Under a "declaration," the Governor has the complete authority over all state agencies and has the right to exercise, within the area designated in proclamation, all police powers vested in the state by the Oregon Constitution.

ORS 401.145 (Authority over removal of disaster debris or wreckage; unconditional authorization of community; liability for injury or damage) authorizes the Governor through the use of state department or agencies to clear or remove debris from publicly or privately owned land or water, which may threaten public health or safety. This authority shall not be exercised unless an unconditional authorization and or a hold harmless indemnify the state government against any claim from debris removal is present.

The Governor's Office is responsible for:

- Coordinating state resources and providing the strategic guidance needed to prevent, mitigate, prepare for , respond to and recover from incidents of all types
- Making, amending or suspending certain orders or regulations associated with response in accordance with state law
- Communicating with public to inform, educate, and help people, businesses and organizations cope with the consequences of any type of incident

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- Commanding the State's military forces, this includes National Guard personnel not in federal service or state militias.
- Coordinating assistance from other states through interstate mutual aid and assistance compacts such as EMAC
- Requesting federal assistance including , if appropriate, a Stafford Act Presidential declaration of an emergency or major disaster when it becomes clear that state capabilities will be insufficient or have been exceeded

Oregon Emergency Management Agency

The purpose of the Office of Emergency Management is to execute the Governor's responsibilities to maintain an emergency services system as prescribed in ORS 401 by planning, preparing and providing for the prevention, mitigation and management of emergencies or disasters that present a threat to the lives and property of citizens of and visitors to the State of Oregon.

The agency is responsible for coordinating and facilitating emergency planning, preparedness, response and recovery activities with the state and local emergency services agencies and organizations, and shall:

- Make rules that are necessary and proper for the administration of ORS 401
- Coordinate the activities of all public and private organizations specifically related to providing emergency services within this state
- Maintain a cooperative liaison with emergency management agencies and organization of local governments, other states, and the Federal Government
- Have such additional authority, duties and responsibilities authorized by ORS 401.015 to 401.105, 401.260 to 401.325 and 401.355 to 401.580 or as may be directed by the Governor
- Serve as the Governor's authorized representative for coordination of certain response activities and managing the recovery process
- Enforce compliance requirements of federal and state agencies for receiving funds and conducting designated emergency functions

- Performs as Primary Agency for ESF 5, Information and Planning
- Implements the Damage Assessment Annex, if necessary, to assess and evaluate the damage and debris removal requirements
- Administer the Individual Assistance Program
- Delivers the Public Assistance Program
- Works with volunteer agencies in the delivery of disaster relief

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- Performs as a core agency in the Debris Management Task Force
- Activates the State Emergency Coordination Center (ECC) when necessary using established Standard Operating Procedures (SOP). Partial activation may be necessary during early phases of an event. Full Emergency Support Function (ESF) activation will be required when a catastrophic event is imminent or has occurred in Oregon. ESF representatives responding to the ECC must have the knowledge of their department and their resources and have full authority to commit those resources for response and recovery operations.
- Coordinates State resources through ECC by mission assignments.
 - Counties must demonstrate work beyond capability of resources through situation/damage assessment.
 - County Emergency Management Agency makes request to the State ECC County Liaison
 - State ECC County Liaison submits request to ECC Operations Manager who then assigns to appropriate agencies.
 - State agency accomplishes mission

Department of Environmental Quality

Provides technical assistance in temporary disaster debris site management and/or debris disposal site permitting; hazardous waste, household hazardous waste (HHW) collection/disposal through established contractor when there is no local HHW plan, facility or contractor; spill response, Solid Waste Letter Authorizations or Air Quality Emergency Burn Letter Permits, review of land application proposals; provide services and support as requested through the Office of Emergency Management, Emergency Coordination Center

- Perform as Primary Agency (along with the Oregon State Fire Marshal’s Office) for ESF 10, Oil and Hazardous Materials
- Perform as a supporting agency to ODOT in support of ESF 3 and to the Debris Management Task Force
- Emergency response coordination staff and extended network of environmental expertise (engineers, physical scientists, regulatory specialists, toxicologists, etc.) to support response to environmental aspects of emergencies (Primary Agency along with Oregon State Fire Marshal for ESF #10)
- Expedited environmental permitting and/or authorizations (air quality, water quality, solid waste)
- Technical assistance on waste characterization and minimization, hazardous and solid waste handling/disposal, and related issues
- Develop and follow a plan of action for an event for the removal and disposal of Household hazardous waste debris
- Provide contractors for response to hazardous materials and oil releases (for imminent threat or potential releases) through use of DEQ

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- or EPA spills response contractor if appropriate or through DEQ's HHW contract for removal of HHW or CEG waste
- Provide coordination with U.S. EPA for responses which exceed the State of Oregon's capacity to respond
- Laboratory services and chemists

Oregon Department of Transportation

Implements debris removal along state and federal rights of way; provide support as requested through the Emergency Coordination Center.

- Bridge and highway damage assessment
- Debris clearance
- Communications, mapping, GIS
- Traffic control
- Photo/Video services
- Staging areas
- Expedited over-dimension permits
- Technical advice
- Contractors
- Public information team
- Generators
- Materials for roads (gravel etc.)
- Heavy fleet
- Oregon Public Works Emergency Response Cooperative Assistance Agreement

At the State Level, debris management is an activity under ESF 3.

State Fire Marshal

- Perform as the Primary Agency for ESF 4, Firefighting and ESF 9, Urban Search and Rescue and Co-Primary Agency with DEQ for ESF10, Oil and Hazardous Materials.

Oregon National Guard

Provides support as requested through the Emergency Coordination Center

- Traffic control
- Law enforcement
- Resource distribution
- Potable water distribution
- Establishing communications networks with fixed and mobile radios
- Aerial surveillance of disaster area
- Provisions of limited electric power from portable generators
- Search and rescue, lifesaving, and air ambulance missions

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- Perform as the Primary Agency, Military Support.
- Perform as a core agency in the Debris Management Task Force.
- Coordinate with ODOT to assist in the emergency roadway clearance and public right-of-way clearance operations.

Public Utilities

- Coordinate with ODOT to de-energize downed power lines during emergency roadway clearance and public right-of-way clearance operations.

Oregon Department of Forestry

Provide technical support on timber and management of forest lands, debris flow warning systems; provide support as requested through the Emergency Coordination Center

Oregon Public Health

Provide technical assistance on public health concerns associated with debris management including radioactive waste or asbestos containing waste; provide support as requested through the Emergency Coordination Center

Oregon Occupational Health and Safety

Provide technical assistance on health and safety issues associated with debris management; provide support as requested through the Emergency Coordination Center

Oregon State Police

Provide support as requested through the Emergency Coordination Center

Oregon Department of Corrections

Provide labor as requested through the Emergency Coordination Center

Oregon Department of Fish and Wildlife

Provide technical support on maintaining beneficial debris in stream channels; providing technical support on fish and wildlife issues; provide support as requested through the Emergency Coordination Center

Oregon State Parks and Recreation Department

State Historic Preservation Office responsible for cultural/archaeological impacts associated with site and operation of temporary storage reduction facilities;

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potentially available staging areas for support crews; potential sources of potable water; provide support as requested through the Emergency Coordination Center.

Oregon Department of State Lands

Department of State Lands (DSL) manages over 4.0 million acres of agricultural, grazing, forest, estuaries and tidelands, offshore lands and submerged and submersible lands of the state's navigable waterways.

- Administers state's removal-fill law, which protects Oregon's waterways
- Lead state agency for protection and maintenance of state wetlands
- Environment waivers and clearances

Oregon Department of Administrative Services

Provide representative(s) to the ECC as required to serve as liaison to other state agencies. Provides logistical assistance as requested.

- Management and inspection (limited)
- Executive Division authority
- Light fleet (state motor pool vehicles)
- Purchasing/contracting
- Risk management
- Geographic Information System (GIS)
- Redeployment of state personnel
- Sites for collections and distribution of materials
- Perform as the Primary Agency for ESF 7, Resource Support, and ESF 12, Energy
- Perform as a core agency in the Debris Management Task Force.
- Setting bidding requirements
- Advertising for bids.
- Instructing bidders
- Developing contracts

Oregon Building Codes Division

BCD will participate as a team member at the state's emergency center to provide consultation services. BCD may assist the Emergency Management Division in identifying priority inspection areas.

- Participate in ATC-20 training
- Responsible for elevator and boiler inspections
- Data-base of ATC-20 certified inspectors

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Oregon Department of Geology and Mineral Industries

Will provide a staff member to serve as spokesperson to the media to explain the event. Provides Staff to the State ECC to serve as technical support.

- Geologists and two engineers on staff
- Public education team
- Preliminary HAZUS modeling
- Field assessment-geologic expertise-where and why geologic event is happening and if it will get worse
- Work regularly with local geologist-could help mobilize professionals in local area

Oregon Department of Forestry

(To be developed)

Oregon Department of Agriculture

Provide representative(s) to the ECC as required to serve as liaison to other state agencies. This department addresses emergency responses that affect Oregon domestic livestock and poultry species herein addressed as animals, birds or poultry. Response to a disease outbreak that involves wildlife will be coordinated with the Oregon Department of Fish and Wildlife (ODF&W).

6.2 County and Municipal Government

In the event of a disaster that generates a tremendous amount of debris on public roadways and private property that presents a danger to health and safety, it is first the local government's responsibility to remove debris from public roads to provide access for emergency vehicles. Most local governments have the ability to open roads and remove debris. In the event additional assistance is needed for labor and to use government owned equipment, temporary hires may be used. In addition to temporary hires, if a Mutual Aid agreement is in place with other local governments, aid from these jurisdictions may be used as well. Local governments may also contract for debris removal according to their emergency or regular bid procedures. In the event of a Presidential disaster declaration, federal reimbursement costs will be limited to the reasonable, necessary costs to remove eligible debris.

It is the local governments' responsibility to coordinate with other Federal agencies for debris removal activities that fall under other Federal agencies' respective authorities, such as the Natural Resources Conservation Service (NRCS) for streams and waterways; the U.S. Corps of Engineers (USACE) for flood control works; or the Federal Highway Administration (FHWA) for roads on the Federal-Aid system. In some cases, FEMA may provide assistance for disaster-related emergency work, such as debris removal, when the other Federal agencies will not.

County Emergency Management Agencies:

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- Declares Emergency
- Performs as core agencies in the Debris Management Task Force if their county is involved
- *Request resources through State ECC County Liaison
- Conducts Initial Damage Assessments and submits to ECC
- Provides for collection of HHW

**The declaration of a local emergency can be the first step in requesting state resources from the Governor.*

Local/Municipal Emergency Management Agencies:

- Declares Emergency
- Perform as core agencies in the Debris Management Task Force if their municipality is involved
- Requests resources to County
- Conducts Initial Damage Assessments and submits to County EOC.

6.3 SUPPORTING AGENCIES

Federal Mission Assignments (in accordance with 44CFR, 206.208) Direct Federal Assistance applies only to Emergency Work (debris removal and emergency protective measures) and must meet general Federal Emergency Management Agency eligibility criteria. Debris activities that are eligible for Direct Federal Assistance include:

- Debris removal from critical roadways and facilities
- Debris removal from curbsides or from eligible facilities and hauling to either temporary or permanent sites
- Identification, design, operation, and closeout of the debris management sites
- Monitoring debris contractor’s activities
- Demolition or removal of disaster damaged structures and facilities in accordance with Federal Emergency Management Agency regulations and policies. FEMA will work directly with state and local governments

Technical Assistance applies when a state or county lacks technical knowledge or expertise to accomplish an eligible task. The Federal Emergency Management Agency will then request technical assistance from the appropriate Federal agency in the Federal Response Plan. Eligible technical assistance includes:

- Assistance in developing an overall debris management plan
- Assistance in developing Debris Management Site plans
- Assistance in developing of monitoring plans
- Assistance in developing contract guidelines

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- Assistance in developing and implementing trip tickets processes

Federal Mission Assignment Process

In catastrophic events, direct federal assistance can be provided by FEMA to support the local government. It is important to remember, the response capabilities of both the local and state government must be exceeded before this request is made by the local government to OEM and FEMA. The request is made by OEM to FEMA if circumstances justify the need for Direct Federal Assistance.

- State demonstrates work beyond county and state capabilities
- If the resource is not available, the Operations Manager at ECC will prepare an Action Request Form (ARF), which is a federal form used to request federal resources
- The ARF is sent to the Regional Response Coordination Center (RRCC) FEMA Region Ten, which will “mission assign” one of the federal Emergency Support Functions to fulfill the request
- If the JFO is operational, the ARF will be sent to the JFO directly
- State makes request to Federal Emergency Management Agency for assistance
- Federal Emergency Management Agency provides a Project Monitor
- Federal Agency conducts assignment
- Federal Agency bills the Federal Emergency Management Agency
- State is informed of the cost-share
- State reimburses the Federal Emergency Management Agency for non-federal share

Agencies That May Be Assigned Missions from the Federal Government

(according to 44 CFR 206.208)

- Federal Highway Administration (FHWA)
- United States Department of Agriculture (USDA)
- Environmental Protection Agency (EPA)
- United States Army Corps of Engineers (USACE)
- United States Coast Guard (USCG)
- Bureau of Indian Affairs (BIA)

Also see FEMA Recovery Policy 100% funding for Direct and Grant Assistance 9523.9.

Mutual Aid Agreements

In emergency services, mutual aid is an agreement among emergency responders to lend assistance across jurisdictional boundaries when resources (material, services, human resources, and equipment) are needed. In the broader sense, mutual aid is neighbor helping neighbor. Many State, Tribal, and

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local governments and private nonprofit organizations enter into mutual aid agreements to provide emergency assistance to each other in the event of disasters

or emergencies. These agreements often are written, but occasionally are arranged verbally after a disaster or emergency occurs.

Also see section 5.4 in this plan.

Caution should be applied to Mutual Aid agreements in regards to FEMA reimbursement. See Mutual Aid Agreements for Public Assistance, FEMA Policy#9523.6.

Emergency Management Assistance Compact (EMAC)

EMAC is unique among mutual aid agreements in that it must be coordinated with federal, state, local jurisdictions (county, city) and the multiple disciplines that may be deployed under EMAC. The mission of EMAC is to facilitate the efficient and effective sharing of resources between member states during times of disaster or emergency. This type of interstate mutual aid agreement allows states to assist one another in responding to all kinds of natural and man-made disasters. It is administered by the National Emergency Management Association (NEMA).

The EMAC Authorized Representative (AR) is the person empowered to obligate state resources and expend state funds for EMAC purposes. In a Requesting State, the EMAC AR is the person who is legally empowered under the Compact to initiate a Request for Assistance (REQ-A) under EMAC. The following persons are AR:

Ken Murphy, Director OEM
Abby Kershaw, Division Director OEM
Dave Cassel, Division Director OEM

EMAC Process

- 1) Governor issues state of emergency
- 2) EMAC activated
- 3) State assesses need for resources
- 4) A-Team (in house or from another state) helps to find resources and determine costs and availability.
- 5) State broadcasts request for assistance to member states
- 6) States complete negotiation of costs
- 7) States complete EMAC REQ-A
- 8) Resources are sent to Requesting State from Assisting States(mobilized)
- 9) Resources demobilized
- 10)Assisting State send Requesting State Reimbursement Package
- 11)Requesting State Reimburses Assisting State

This process is repeated as many times as needed to fill open requests.

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Authorities under Oregon Revised Statute, 402- Emergency Mutual Assistance Agreements.

Volunteer Organizations Active in Disaster

Included in the supplemental assistance are volunteer organizations. Volunteer organizations may provide assistance for debris removal from private property. There is a wide range of Volunteer organizations at the local, state, and Federal levels. When utilizing volunteer assistance, it is important to have necessary guidelines in place, such as designated reporting locations and processes. The following is an incomplete list of organizations:

- Civic Clubs
- Student Organizations
- Church Organizations
- Salvation Army
- Mennonite Services
- Catholic Relief Services
- American Red Cross
- Others

Refer to the State of Oregon Emergency Operations Plan for additional information on Volunteer use during disaster response.

For reimbursement credit during a Presidential Disaster Declaration see FEMA Disaster Assistance Policy 9525.2.

Note: Below is the link to the 2009 Oregon Revised Statutes, which cite the current law concerning recent changes to emergency service volunteers. Oregon Emergency Management will be developing over the next few months (as of 02/12/10) specific Oregon Administrative Rules concerning volunteers. The specific citations are found in ORS 401-358 thru 401.378

<http://www.leg.state.or.us/ors/home.htm>

7.0 ADMINISTRATION AND LOGISTICS

- a) All agencies will document personnel and material resources used to comply with this plan. Documentation will be used to support any Federal assistance that may be requested or required.
- b) Requests for support and/or assistance will be up channeled from the local level to the county level EOC and then up to the State ECC. Requests for Federal assistance will be made by the State ECC through established procedures as outlined in the National Response Framework.

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- c) All agencies will ensure 24-hour staffing capability during implementation of this annex if the emergency or disaster requires.
- d) OEM, in coordination with ODOT and DEQ will be responsible to initiate an annual update of this plan. It will be the responsibility of each tasked agency to update their respective portion of the annex and ensure any limitations and shortfalls are identified, documented, and work-around procedures developed if necessary.

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8.0 AUTHORITIES- to be completed

Oregon Revised Statute 401
 Oregon Revised Statute 468, 468A, 459, 466
 Stafford Act Sections 403, 406 and 407
 44 CFR § 206.224

9.0 GLOSSARY AND DEFINITION OF IMPORTANT TERMS/ACRONYMS

CDL	Construction, Demolition, and Land-clearing
CFR	Code of Federal Regulations
DEQ	Department of Environmental Quality
DHS	Department of Homeland Security
DMTF	Debris Management Task Force
ECC	Emergency Coordination Center
EMAC	Emergency Management Assistance Compact
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
ESF	Emergency Support Function
FCO	Federal Coordinating Officer
FEMA	Federal Emergency Management Agency

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HHW	Hazardous Household Waste
ICS	Incident Command System
IDA	Initial Damage Assessment
JFO	Joint Field Office
JIC	Joint Information Center
NEPA	National Environmental Protection Agency
NIMS	National Incident Management System
NRF	National Response Framework
ODOT	Oregon Department of Transportation
OEM	Oregon Emergency Management
ORS	Oregon Revised Statutes
OERS	Oregon Emergency Response System
PDA	Preliminary Damage Assessment
PIO	Public Information Officer
Stafford Act	Robert T. Stafford Disaster Relief and Emergency Assistance Act
TDSRS	Temporary Debris Staging and Reduction Site
USACE	United States Army Corps of Engineers

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