Metro

Disaster Debris Management Plan

Waste Prevention & Environmental Services

December 2022

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We are here to serve the pulic with the highest level of integrity

Excellence
We aspire to achieve exceptional results

Teamwork
We engage others in ways that foster respect and trust

Respect
We encourage and appreciate diversity in people and ideas

Innovation
We take pride in coming up with innovative solutions

Sustainability
We are leaders in demonstrating resource use and protection

Metro's values and purpose
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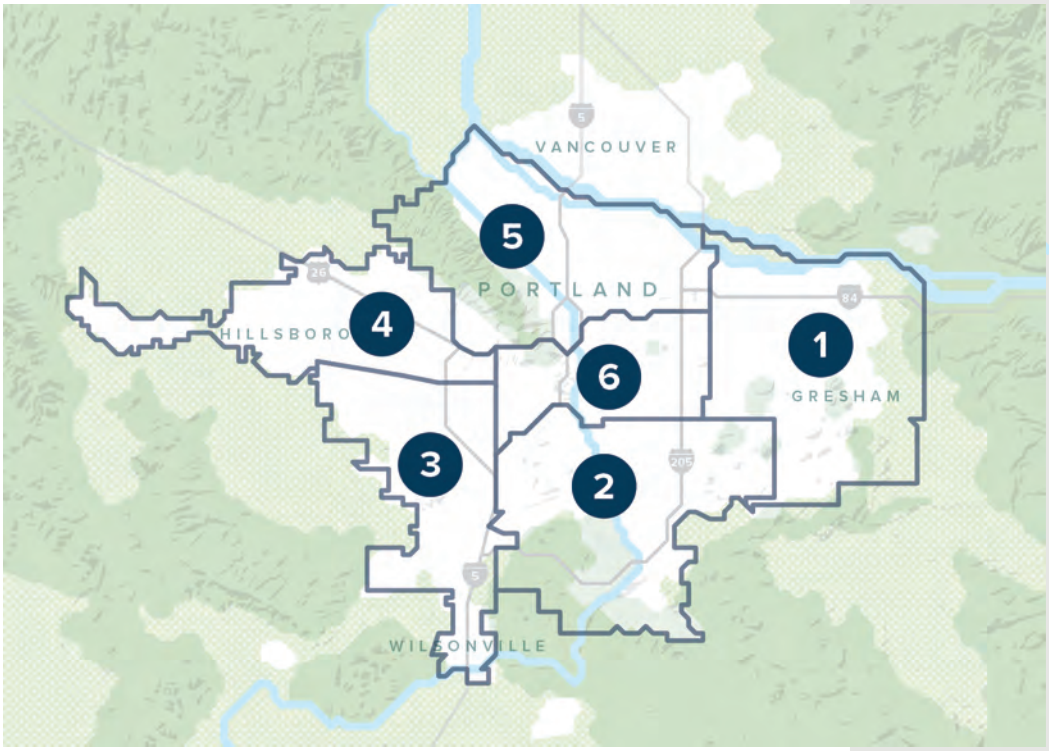

SIGNATURE PAGE

This Disaster Debris Management Plan creates a framework and procedures for Metro debris operations, with elimination of threats to life safety and public health as a primary objective. This plan has been prepared through the Capital Asset Management and Waste Prevention and Environmental Services departments and has been reviewed by key stakeholders in debris operations. This plan will become effective and considered approved upon signing by the Capital Asset Management Director and Waste Prevention and Environmental Services Director. It will be revised and updated as required; all partners and recipients are requested to advise Metro's Emergency Manager of any suggested changes.

1/27/2023

Marta McGuire
Director of Waste Prevention and Environmental Services

Date

Ryan Kinsella

2/8/2023

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Date

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Disaster Debris Management Plan

1. Introduction

1.1 Plan Overview

The primary goal of disaster debris planning is to prepare a community to effectively manage the wide variety and potentially large volume of debris generated by a disaster[1]. This plan creates a framework and procedures for Metro debris operations, with elimination of threats to life safety and public health as a primary objective.

1.2 Goals of this plan

- Establish procedures for disaster debris management operations including procedures for operating temporary debris management sites which include strategies for minimizing greenhouse gas emissions and air pollution. These sites will not be located in areas which would increase hardships for those living in traditionally underserved communities.
- Outline Federal Emergency Management (FEMA) public assistance reimbursement documentation and process requirements.
- Provide a plan for maintaining the health and physical safety of employees, contractors, and the general public during disaster debris operations.
- Describe the disaster debris management priorities and how Metro will coordinate with external agencies to assist with those priorities to ensure all individuals including those with disabilities or other access and functional needs can access sidewalks, public transportation, and other emergency resources.
- Identify the debris management roles and responsibilities of Metro as a whole, internal Metro departments, and external agencies in which Metro may need to coordinate with during and after emergency response.
- Document required procedures, processes, and best practices for debris operations to ensure adherence to federal, state, and local requirements.
- Create public information and preparedness messaging strategies as part of the whole community approach so information is received and understood by all members of the community.
- Model debris volume to compare against existing capacity, determine additional support needs, and estimate debris types in anticipation of a debris generating incident.
- Emphasize that debris management strategies, including management of household hazardous waste, protects employees, contractors, and the public from potentially hazardous materials.
- Align with Sustainable Buildings and Sites Policy and create strategies for using climate mitigation and resilience to inform future siting and design of solid waste facilities.

[1] https://www.epa.gov/homeland-security-waste/waste-management-benefits-planning-and-mitigation-activities-homeland

Large volumes of debris, similar to the ones shown to the left, can potentially be created by a disaster.

1.3. 2030 Regional Waste Plan

This plan is in alignment with the six values of the 2030 Regional Waste Plan[2] which are to:

PROTECT AND RESTORE THE ENVIRONMENT AND PROMEOTE HEALTH FOR ALL

CONSERVE NATURAL RESOURCES

ENSURE OPERATIONAL RESILIENCE, ADAPTABILITY AND SUSTAINABILITY

ADVANCE ENVIRONMENTAL LITERACY

FOSTER ECONOMIC WELL-BEING

PROVIDE EXCELLENT SERVICE AND EQUITABLE SYSTEM ACCESS

This plan also supports the following goals and actions of the 2030 Regional waste plan.

Goal 18: Ensure routine garbage and recycling collection, processing, transport and disposal operations can be restored quickly following a system disruption.

Action 18.1: Implement strategies to maximize access to critical solid waste infrastructure during disruptions.

Action 18.3: Prioritize the use of the current solid waste infrastructure for the processing of normal garbage and recycling, rather than for disaster debris, following a debris generating incident.

Goal 19: Plan disaster debris response operations to expedite the clearance and removal of debris, making the best use of locally-based services and materials and maximizing recovery.

Action 19.4: Develop strategies for the safe reuse, recycling and disposal of materials following a debris-generating incident.

[2] https://www.oregonmetro.gov/sites/default/files/2019/06/06/2030_Regional_Waste_Plan_0.pdf

1.4 Climate change, sustainability and resilience considerations

The frequency and intensity of some disasters[3] is likely to be increased by climate change. Impacts of climate change on debris generating incidents may include:

- Larger quantities of debris resulting from the disaster
- Wider varieties of debris generated at one time, including atypical waste
- Wider areas of impact, often crossing jurisdictional boundaries
- Insufficient debris management capability to handle surges
- Greater chances of Metro's debris management facilities being impacted by the disaster resulting in a reduction in debris management and storage locations.
- Greater risk of releases from facilities that store chemicals and contaminated sites
- Increased greenhouse gas emissions from debris management activities

All debris management operations will prioritize protecting the environment from any undue threats as a result of temporary debris management sites or operations at existing facilities. Recovery efforts also offer opportunities to create more sustainable communities[4]. Metro will leverage disaster preparedness and recovery efforts to implement resilience in our community. This can be accomplished through creating economic opportunities, making smarter choices about energy use and materials in our own capital projects, and maximizing reuse and recovery of debris post disaster. We will also promote planning for resilience in our own facilities which includes siting new facilities outside of hazard areas and will align with Metro's Sustainable Buildings and Sites Policy[5].

1.5 Equity considerations

Metro recognizes that there are individuals in our community who may require additional support to access or utilize emergency services and programs. Metro also recognizes that not everyone needs the same thing to meet life safety or other basic needs after a disaster. Meeting the needs of our whole community may require additional support to achieve equitable access. Debris management strategies will therefore include actions which support the needs of individuals with access or functional needs. Goals which address these actions are:

- Create public information and preparedness messaging strategies as part of the whole community approach so information is received and understood by all members of the community.
  - Materials shall be reflective of the community
  - Materials should be translated into safe harbor languages[6]
  - Materials will be clear, use minimal text and will use graphics and imagery wherever possible to ensure an accessible literacy level[7]
- Establish procedures for disaster debris management operations including procedures for operating temporary debris management sites which include strategies for minimizing greenhouse gas emissions and air pollution. These sites will not be located in areas which would increase hardships for those living in traditionally underserved communities.
- Describe the disaster debris management priorities and how Metro will coordinate with external agencies to assist with those priorities to ensure all individuals including those with disabilities or other access and functional needs can access sidewalks, public transportation, and other emergency resources.

[3] https://nca2014.globalchange.gov/downloads
[4] https://www.fema.gov/sites/default/files/2020-06/national_disaster_recovery_framework_2nd.pdf
[5] This policy is currently in development and is likely to be adopted within the next year.
[6] https://www.portlandoregon.gov/oehr/81538
[7] https://metronet.oregonmetro.gov/services/Documents/Communications/Metro%20inclusive%20language%20style%20guide_test.pdf

1.6 Employee health and safety considerations

All department directors or their designees are responsible for the safety of their employees. During debris operations, all employees are required to receive a daily safety briefing including a list of anticipated hazards such as weather or air quality. Debris contracts will include safety expectations and requirements for contractors to give safety briefs to their staff.

Situation appropriate personal protective equipment (PPE), and any other equipment needed to safely conduct debris management operations will be provided to Metro employees. An incident specific safety plan will be generated for each activation which will describe anticipated hazards, preventative safety measures, and required PPE. As we experience continued increases in impacts from climate change, we will center our employees that have a higher exposure to the elements due to the nature of their work. This will be done in part through including them on policy committees and seeking input on decisions which impact them, as well as consulting the Unions which represent Metro employees.

1.7 Plan activation

When the region's existing solid waste system cannot handle debris generated by an incident, this plan may be activated by the Waste Prevention and Environmental Services (WPES) Director, Chief Operating Officer (COO), or their designee. A partner agency or jurisdiction may also request Metro activate this plan. An emergency declaration is not required to activate this plan, but the WPES director or COO may request that Metro Council declare an emergency[8].

The table on the following page outlines thresholds that will be used to determine the activation and notification needs.

[8] This policy is currently in development and is likely to be adopted within the next year.

Table 1.7: Activation and notification thresholds

Activation Level	Thresholds	Notifications
Enhanced Operations *Does not activate incident management team members.*	• Forecasted severe weather • Forecasted flooding	• Incident notification to Metro leadership procedure followed. • Notification to Debris Incident Manageement Team (DIMT) staff for awareness of situation.
Partial Activation *A small number of incident management team members are activated.*	• Metro Central or Metro South are unable to be accessed by staff or contracted operators for thirty minutes or more. • There is a need for additional information to be collected outside of regular roles that might inform a full activation. • Waste or debris is nearing capacity at either transfer station and is predicted to exceed capacity. • Metro has been asked for assistance by a government partner on activation of their own Emergency Operatons Center (EOC).	Above, plus: • Regional emergency managers[9] and Metro Council
Full Activation *A large number of incident management team members are activated and work priorities are rearranged to support the incident.*	• Above listed thresholds warrant additional staff resources or work prioritization. • Communication lines are down for thirty minutes or more. • A return to normal or manageable quantities of debris and/ or solid waste is more than two weeks from the incident.	Same as above.
Deactivation	• The debris from an incident can be re-integrated into the existing solid waste system.	Notifications are based on originating activation level.

Once this plan has been partially or fully activated, the Emergency Manager or designee will notify the Debris Incident Management Team of the current activation level and provide a situation status report to the identified Debris Incident Manager. As needed, additional notifications will be made.

[9] This contact list can be found in Mail Chimp using the tag "Regional Emergency Manager".

2. Situation & Assumptions

2.1 Overview of the risks in the Portland-Metro region

The greater Portland area is at risk for multiple hazards which have the potential to create debris, which could overwhelm the existing waste management system and could occur at any time. The volume and type of debris generated is dependent on the location, type of hazard, and severity of the debris generating incident. A worst case scenario planning approach will be taken during the preparedness stage because it's expected if the organization is prepared for the largest disaster it will be able to handle all smaller disasters. Metro has identified the following as the most probable and highest debris generating potential hazards for the greater Portland area: earthquakes[10], floods[11], wildfires[12], and wind or winter storms[13].

Debris will be considered within our span of control if any waste inside a load has been declared as having been generated within Metro's service area or is mixed with waste or debris which was generated within Metro's service area[14]. In an emergency, this requirement may be modified to include waste or debris which is brought into the region for management.

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[10] Dormant fault lines may become active at any time. The U.S. Geological Survey (USGS) maintains seismic hazard maps which provide up-to-date information on earthquake hazards (https://earthquake.usgs.gov/hazards/hazmaps/).

[11] Floods are the most common disaster in the U.S. and climate change is expected to intensify flooding (http://nca2014.globalchange.gov/report/sectors/water).

[12] Wildfires can occur anytime and anywhere, especially in areas with little or no rainfall for a prolonged period of time. In recent years, the greater Portland area has experienced more intense droughts and warmer temperatures which increases the risk of larger wildfires and longer fire seasons (http://nca2014.globalchange.gov/highlights/overview/overview).

[13] Any area with below-freezing temperatures is at risk of a winter storm such as an ice storm. Climate change is expected to intensify and increase the frequency of these storms (http://nca2014.globalchange.gov/report/our-changing-climate/changes-storms).

[14] See Metro code 5.02.050 and 5.02.040 for handling regional system fee allocations and declaration of origin disputes.

2.2 Overview of the risks to Metro's debris management facilities

The following table describes the predicted impacts to Metro's debris management facilities which would impact our ability to manage debris for our region.

Table 2.2: Risks to Metro's Solid Waste Facilities[15]

Metro Facility	Risks to Metro Facility	Hazard Risks
Metro Central Transfer Station	Earthquake and Liquefaction	Inoperable for several months due to chemical hazards and oil spills expected around the facility Located in a very high liquefaction zone and therefore severe structural damage is likely.
	Flood	Not located in 1996 flood inundation area or within FEMA 100 Year Flood Plain
	Wildfire	In wildland-urban area interface area due to nearby Forest Park
	Wind or winter storm	Unlikely to cause prolongued interruption
Metro South Transfer Station	Earthquake	Located in a very high liquefaction hazard zone and likely to experience moderate to heavy damage after a Portland Hills or Cascadia Subduction Zone earthquake
	Flood	During the 1996 Willamette River flood the transfer station required repairs and the HHW facility required major clean-up and renovations.
	Wildfire	Not located in wildfire hazard area
	Wind or winter storm	Unlikely to cause prolongued interruption

2.3 Outline of design events used to create the plan

Any of the following incidents could occur at any time and without warning. Some may even compound on each other such as an earthquake causing a wildfire or flooding, or high winds being part of a severe winter storm. All of the below design events have the potential to overwhelm existing solid waste management capacity. As indicated above, existing transfer stations may also be impacted by incidents and may be unable to assist in debris management.

Possible incidents that could overwhelm the existing solid waste system

Earthquake

Flood

Wildfire

Wind or Winter storm

[15] Note that these impacts are outside of the additional needs for the facility, for example we know that all operations would see increased amounts of debris, but we're looking at physical impacts or risks to the facilities.

2.3.1 Earthquake

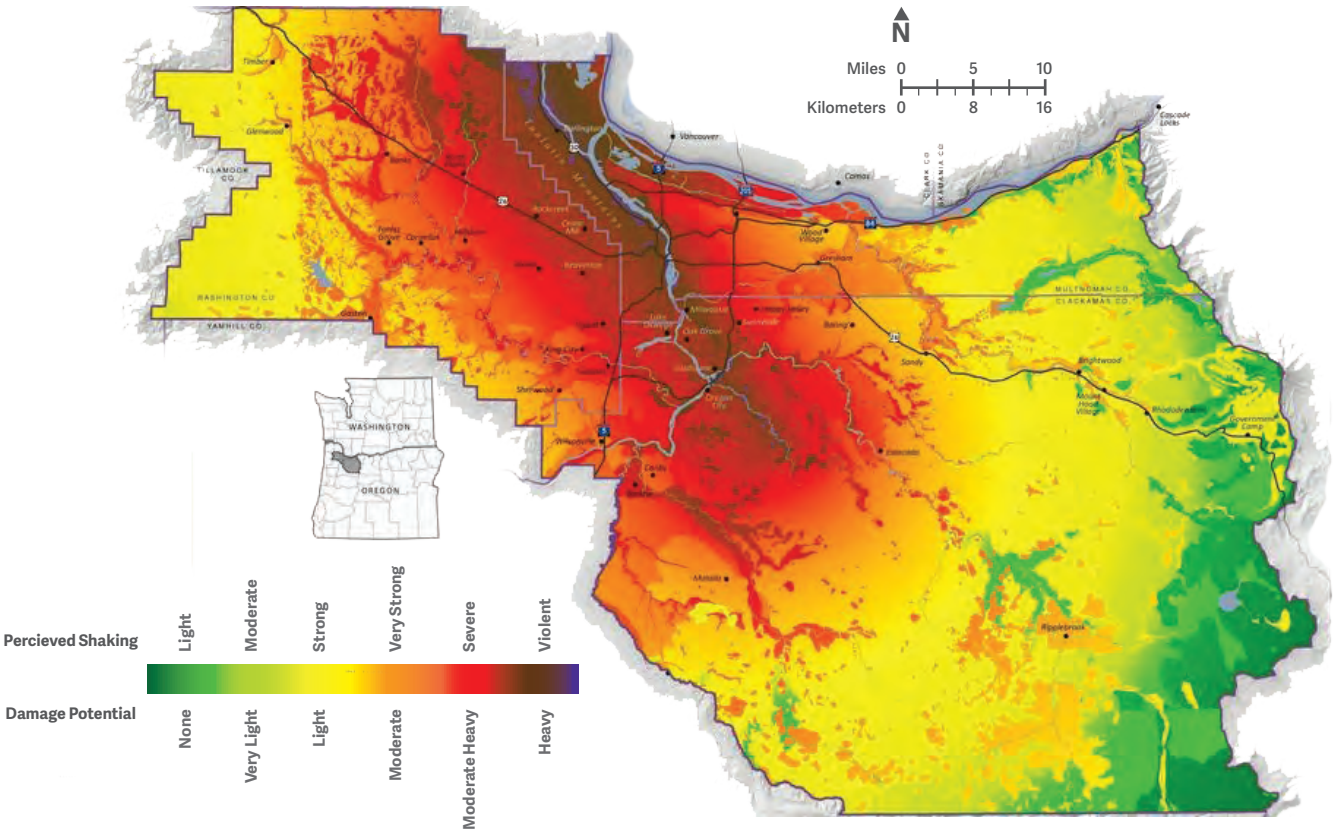
A Cascadia Subduction Zone earthquake of a 8.0 magnitude has a 37% chance of occurring in the next 50 years and is considered a major threat to our region. There is a 10-12% chance that the earthquake would be a magnitude 9.0 or higher. Oregon is also generally one of the most earthquake-prone areas in the continental United States and dormant fault lines can become active at any time. We experience large and small earthquakes, and in the last 30 years, the greater Portland area region experienced more than $30 million dollars in earthquake related damage[16].

The greater Portland area is also at risk[17] of a 7.1 magnitude earthquake along the Portland Hills fault. Unlike a Cascadia Subduction Zone earthquake, this would likely impact only the greater Portland area rather than the entire state of Oregon.

Because we do not have a complete history of Oregon earthquakes due to the short time frame of written history, we cannot fully assess the future risk. In western Oregon, the high rainfall promotes high erosion rates and dense ground cover both of which tend to hide faults.

The following map shows the percieved shaking and damage potential given a 6.8 earthquake for the greater Portland metropolitan area.

Figure 2.3: Percieved shaking and damage potential in Portland region due to 6.8 earthquake



Note: Source data from Oregon Department of Geology and Minerals (2018). This map is intended to provide nontechnical users with an estimate of the geographic distribution of building damage. The damage categories are taken from the Modified Mercali Intensity scale, which is based on observed effects on people, objects, and building. The damage potential categories are derived from the peak ground velocity developed for this map. Further information is available at: https://earthquake.usgs.gov/learn/topics/mercalli.php

[16] https://www.oregon.gov/oem/hazardsprep/Pages/Hazards-in-Oregon.aspx
[17] There is no forecasted percent chance of this earthquake uncorking at this time.

2.3.2 Flood

Floods are one of the most common hazards in Oregon with the potential to occur during any period of sustained rainfall. Heavy rain and flooding can also lead to landslides which would generate large quantities of debris. In recent years, Oregon has experienced drought conditions which increases the risk of flooding because when the ground is too dry, it can't absorb rain fast enough. A 100 year flood has around a 1% annual chance of occurrence and a 500 year flood has around a 0.2% chance of occurrence[18].

2.3.3 Wildfire

Oregon has experienced an increase in devastating wildfires across the state and the greater Portland area in recent years. Wildfires can occur anytime and anywhere, especially in areas with little or no rainfall for a prolonged period of time. In recent years, the greater Portland area has experience more intense droughts and warmer temperatures, which increases the risk of larger wildfires and longer fire seasons.

Clackamas County has heavily forested slopes in the eastern and southern parts of the county and was impacted by wildfires in September 2020.

2.3.4 Wind or winter storm

Greater Portland experiences annual winter and wind storms which generate debris. These storms overwhelm existing system capacity somewhat frequently for varying amounts of time. It's expected that the frequency and severity of these storms will increase due to climate change.

2.4 Overview of the debris situation for each debris generating incident

Debris forecasting ahead of a debris-generating event is crucial for effective debris planning. This will tell us what resources may be needed, the size and quantity of temporary debris management sites that may be needed, and what contractor support may be requested.

Debris forecasts are separate and distinct from debris estimates. Debris estimates will be generated after an incident to identify actual quantities for debris removal.

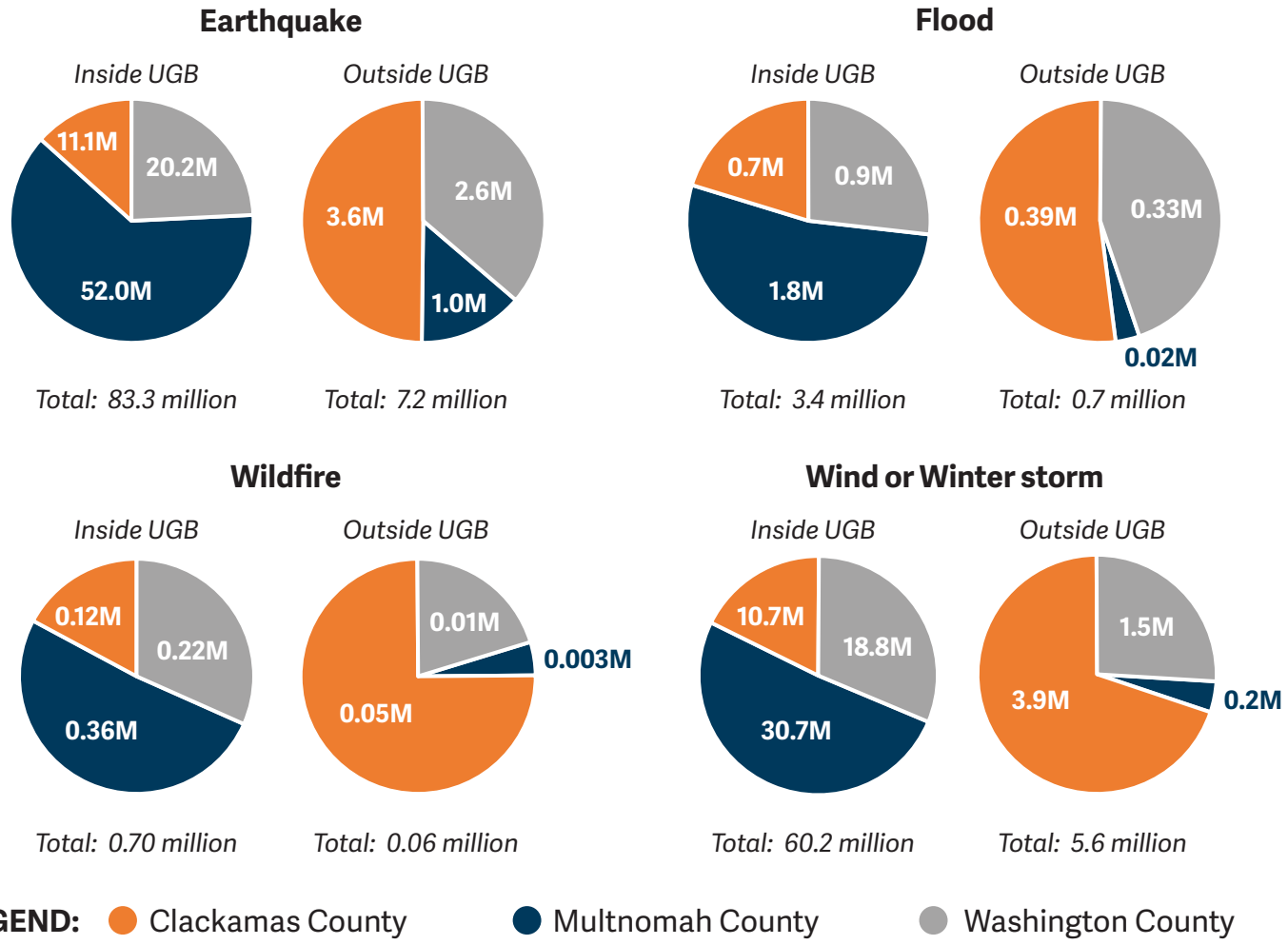
The following table outlines the type of debis generated by each incident, while the charts on the following page estimates the forecasted debris by type of incidnt and regions/areas..

Table 2.4: Definition of debris type by incident

Incident Type	Type of Debris Generated
Earthquake	Construction and demolition debris (C&D), personal property/ household items, household hazardous waste, white goods, soil, mud, rocks, vehicles, and sand
Flood	Vegetative, construction and demolition debris (C&D), personal property/ household items, hazardous waste, household hazardous waste, white goods, soil, mud, rocks, and sand, vehicles and vessels, sand bags, e-waste, and putrescible
Wildfire	Vegetative, personal property/ household items, household hazardous waste, white goods, soil, mud, and sand
Wind or winter storm	Vegetative

[18] https://www.oregongeology.org/pubs/sp/p-SP-50.htm

Figure 2.4: Forecasted debris amount by debris generating incident and sub-area in tons[19]



Source Data: Metro Research Center (2022)

2.5 Situational awareness of existing capabilites

The current weekly throughput capacity for solid waste at existing facilities servicing this region is approximately 60,000 tons (approximately 43,000 cubic yards) per week[20]. Debris generated from any of the above described incidents is therefore likely to overwhelm existing solid waste management capacity. To manage debris exceeding current service thresholds, Metro may take one or more of the following actions:

- Remove or modify processing limits for putrescible waste at Metro licensed transfer stations.
- Extend operating hours at Metro South and Metro Central.
- Activate contract labor to staff extended hours and increase processing capacity at Metro Central and Metro South.
- Coordinate with local jurisdictions to open temporary debris management sites.
- Authorize private facilities to accept more tonnage than the normal operating tonnage authorizations.
- Authorize private facilities to accept different types of waste than they're currently authorized to accept.
- Establish temporary debris management sites.

[19] See Attachment A for a detailed look at the estimated debris amounts by type, location, and incident

[20] This is maximum capacity and many disasters will limit our ability to reach this throughput capacity.

2.6 Assumptions

The following has been assumed in the creation of this plan.

- Metro will be able to coordinate regionally on priority transportation routes for debris clearance.
- Metro will be able to coordinate regionally for fuel resources to meet established regional objectives.
- Metro will be provided with enough resources (such as fuel or funds) in order to meet regional goals.
- Emergency response personnel might be unable or unavailable to report to work.
- Private individuals and businesses will want their debris prioritized for removal and may try and remove it themselves before the system is ready to receive it.

3. Roles and responsibilities

3.1 Overview of Metro's role in our region

Metro licenses and regulates all sites/ facilities which receive, manage, or dispose of solid waste, recyclables, and compostable materials which are generated within its jurisdictional boundary. In addition, Metro operates two regional transfer stations that process garbage, recyclables, and household hazardous waste. Metro therefore has shared responsibility for solid waste disposal and disaster debris management across our three-county service area[21].

Following a debris generating incident Metro may manage the activation, permitting, and operation of temporary debris management sites within the greater Portland area. Metro may provide subject matter expertise about transfer station operations and the overall solid waste system to other jurisdictions on request. Local jurisdictions can request support or resources from Metro.

3.2 Internal roles and responsibilities

The internal roles and responsibilities sections below will be activated as needed, including additional debris specific positions. The tasks listed below may change and adjust to the incident's needs.

3.2.1 Command Staff

- Provide a public information officer to the regional Joint Information Center (JIC), if one is established.
- Respond to public inquiries for debris management information.
- Create and maintain a safety plan for temporary debris management sites to ensure safety of employees, contractors, and the public.
- Coordinate debris management activities with impacted government and non-government partners.

3.2.2 Operations Section

- Accurately document temporary debris management site(s) activities, disposal operations, and all associated costs for FEMA public assistance reimbursement.
- Prioritize regular household garbage and recycling service, provide household hazardous waste events to the community, and support essential operations.
- Activate, obtain permits, and operate temporary debris management sites.
- Develop a management plan for the operation of temporary debris management sites.
- Monitor and document debris contractors' activities.
- For wildfire and flood incidents, collect HHW prior to debris removal in order to protect staff and contractors from potential exposure to hazardous materials.
- Clear debris from Metro-owned properties.

[21] See https://www.oregonmetro.gov/regional-leadership/what-metro/cities-and-counties-region or Attachment B.

3.2.3 Planning Section

- Provide situational awareness on debris management activities.
- Estimate the amount and types of debris generated post disaster.
- Identify recovery and disposal strategies based on debris types and quantities.

3.2.4 Logistics Section

- Order equipment and supplies needed to support the incident including food for staff as needed.

3.2.5 Finance and Administration section

- Establish processes which allow for internal reimbursement, accurate timekeeping, efficient resource requests, informed planning, and community support.
- Solicit and complete contracts for needed operations.

3.2.6 Metro Departments

- Adjust work plans to allow identified employees to staff incident management team before, during, and after a disaster.
- Activate continuity of operations plans
- Allow employees to balance family and personal safety with work responsibilities.

3.2.7 Metro Council and Chief Operating Officer

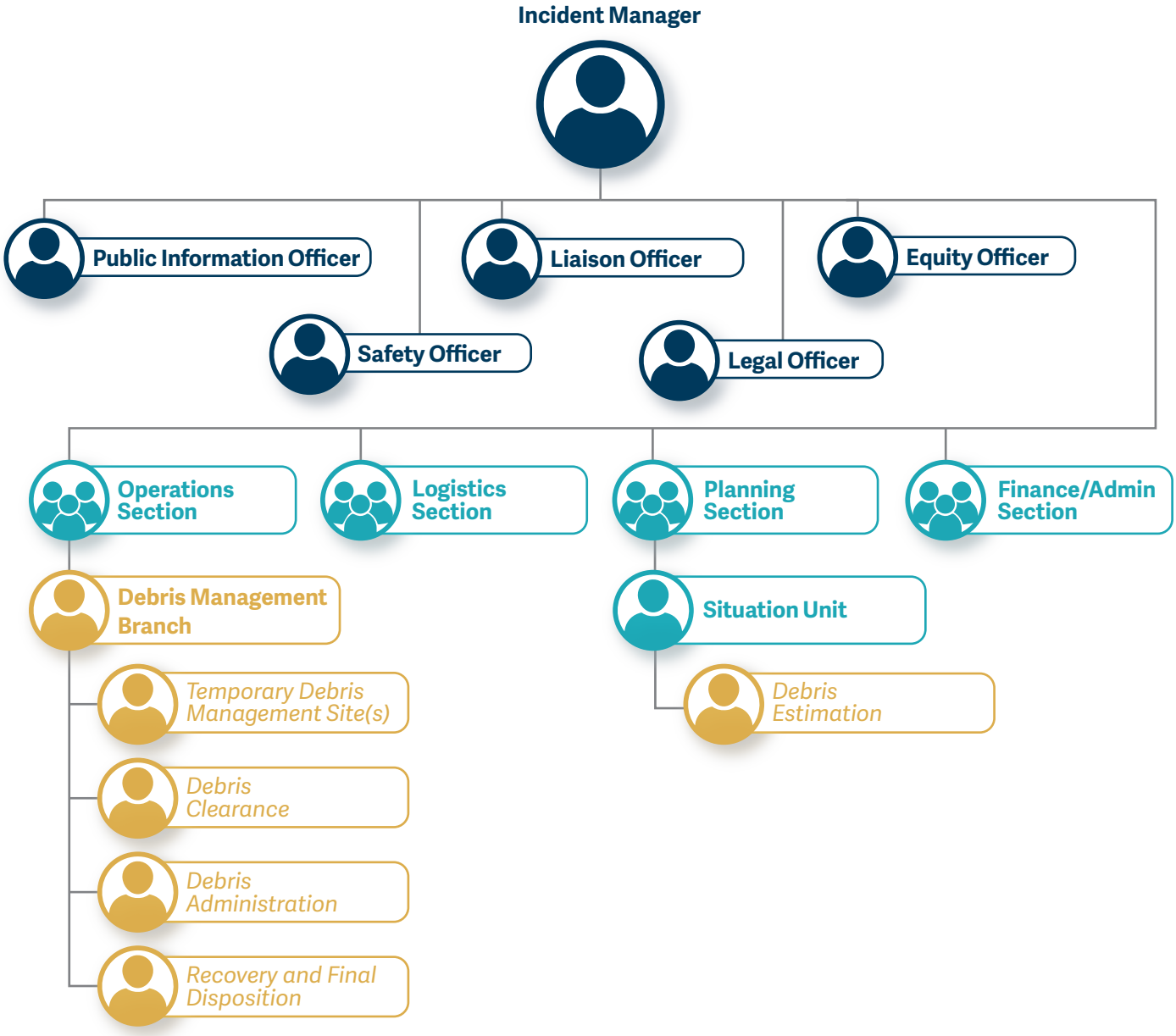
- Support disaster debris management operations through declaration of emergency, modification or suspension of rules on recommendation of the COO and/or Incident Manager, and implementation of authority assigned by this plan.
- Participate in regional policy groups as needed to support coordinated efforts.
- Coordinate public messages, announcements, or statements through the Public Information Officer.

3.2.8 Debris Incident Management Team Structure

The organizational structure for the debris incident Management Team is consistent with National Incident Management System and uses Incident Command System as its framework. The debris incident management team follows traditional management components and is aligned with Metro's Emergency Operation Plan incident management team structure[22]. The next page shows a simplified version of the debris Incident Management Team structure showing the high level management positions in blue and debris specific positions are in orange. Debris specific positions may be activated during any emergency where debris management is a function, even if the emergency does not require a full debris incident management team activation.

[22] https://metronet.oregonmetro.gov/services/Documents/emergency-management/Metro%20EOP%20February%202022.pdftps://metronet.oregonmetro.gov/services/Documents/emergency-management/Metro%20EOP%20February%202022.pdf

Figure 3.2: Debris Incident Management Team Structure



3.3 Multi-jurisdictional debris management task force[23]

If an incident generates debris which overwhelms the existing solid waste system and/or crosses county boundaries, a multi-jurisdictional debris management task force may be convened and facilitated by Metro at the request of the city(s) or county(s) with primary debris clearance responsibility. The multi-jurisdictional debris management task force will be comprised of representatives from organizations supporting debris management within the impacted region. Participants will include Metro, impacted counties and municipalities, and any state or federal organizations supporting debris operations such as Oregon Office of Emergency Management (OEM), Oregon Department of Transportation (ODOT), Oregon Department of Environmental Quality (DEQ), or Federal Emergency Management Agency (FEMA). Metro's debris operations and planning will be guided by decisions made by the multi-jurisdictional debris management task force.

[23] Note that the members of this task force will vary based on the unique incident.

The role of this task force will be to:

- Coordinate on issues which impact the region (Clackamas, Washington, and Multnomah County) as a whole as well as local operations.
- Empower Metro as the task force manager to coordinate with contractors to identify, procure, and provide management of temporary debris management sites. This includes the following:
  - Advise on the requirement to open additional temporary debris management sites.
  - Coordinate with solid waste operators, facilities, and contracted debris resources.
  - Identify final debris disposal alternatives.
- Coordinate closely with damage assessment teams in order to conduct debris estimation activities and to prioritize debris removal from transportation routes. This includes the following:
  - Work together to estimate accurate debris volumes and types generated.
  - Identify existing solid waste facility capacity to manage disaster debris. Adjust allocated tonnage and other Metro authorization conditions as necessary to manage disaster debris.
  - Prioritize clearing of areas which would allow individuals with disabilities or other access and functional needs to access sidewalks, public transit, and other emergency resources.
- Provide input to the Regional Joint Information Center on debris removal and disposal activities for coordinated debris public information. Public information and preparedness messaging strategies will be created so information is received and understood by all members of the community. This information includes the following:
  - Debris clean-up and waste instructions: safe handling of debris and waste, debris collection, and fees. This includes identification and safe handling of hazardous materials.
  - Collection information: information on source-separation of debris and waste, debris collection, and fees. This includes collection of hazardous materials.
  - Status of clean-up: Emergency responders and the public will require information on debris clearance from key transportation routes as well as the status of recovery efforts.
  - Illegal dumping: Information addressing complaints and illegal debris piles.

3.4 External roles and responsibilities

3.4.1 City Responsibilities

- Coordinate with Metro and other jurisdictions.
- Coordinate damage assessment of priority buildings
- Command and conduct debris removal operations within city limits
- Provide land for debris staging at temporary debris management site(s) on request and/ or assist with locating suitable sites
- Clear debris from public property

3.4.2 County Responsibilities

- Coordinate with cities and Metro on debris operations
- Facilitate the disaster declaration and resource ordering process to Oregon Office of Emergency Management (OEM) within their emergency control center (ECC).
- Advise on public health related issues or threats
- Clear debris from county roadways and bridges.
- Support city debris removal efforts, if needed.
- Provide land for debris staging at temporary debris management site(s) on request and/ or assist with locating suitable sites.
- Develop, maintain, and follow debris management plans.

3.4.3 State Responsibilities

- DEQ will approve permits for temporary debris management site(s) and may provide technical assistance, advice or assist on management of household hazardous waste collection, and/or participate in regional messaging on debris management.
- ODOT will perform debris removal along state and federal rights-of-way.
- OEM will coordinate state activities related to debris management and will coordinate a presidential disaster declaration, requests for state resources, and state level activities.

3.4.4 Federal Responsibilities

- FEMA's Public Assistance Program provides supplemental grants to state, tribal, territorial, and local governments, and certain types of private non-profits so that communities can quickly respond to and recover from major disasters or emergencies.

4. Debris management strategies

4.1 Overview

The type and severity of an incident may change the amount and types of debris generated. This section of the plan provides a general framework and strategy for disaster debris management. This section of the plan also outlines general information on how a temporary debris management site would be operated.

4.2 Debris Estimation

Debris estimation after an incident is crucial to debris planning and management. Metro will coordinate debris estimation amounts for the region, but will require local governments to input their information. Metro's estimates will include all debris generated, but additional estimates may be requested as needed such as determining quantities of eligible vs. non-eligible debris for FEMA reimbursement[24]. Types of debris to be estimated include:

- Any debris located in rights-of-way
- Construction and demolition debris from damaged buildings
- Quantities of vehicles or vessels for removal
- Volume of woody debris or yard waste
- Volume of mixed piles of debris on private or public property
- Area of land or mudslides and predicted quantities of mud, sand, or rocks for clearance and management

[24] See "5.2.1 Eligible and ineligible debris" of this plan for more details

Debris estimation may be done through computer modeling, ground measurements, aerial, satellite, or drone photos, or other methods which are useful based on the nature of the incident. FEMA's debris estimation field guide[25] is one tool that may be used to estimate debris.

4.2.1 Ground measurement estimation

The basic steps and things to consider when using ground measurement to estimate debris are:

1. Define debris estimation area.
2. Divide debris estimation area as needed to differentiate between land uses (different areas will have varying amounts based on use).
3. Determine if comprehensive debris measurements or measurements of a representative sample is appropriate for the estimate requirements.
4. Identify the equipment and personnel needed to complete the estimate.
5. Engage other local governments to collect debris estimates.

4.2.2 Aerial, satellite, and drone photography estimation

Metro's un-crewed aerial system (UAS) program will support debris quantity estimation in greater Portland on request of Metro's debris incident management team for small site assessments[26]. The basic steps and things to consider when using aerial or satellite imagery to estimate debris are:

1. Ability to obtain aerial photos from both before and after the disaster event.
2. Select a reference object with known dimensions to establish a dimensional scale.
3. Apply the scale to approximate the debris amount.
   a. Use formulas as needed for demolished homes including the appropriate vegetative cover multiplier.

4.3 Debris clearance priorities and responsibilities

Metro is not responsible for debris clearance except on our own property, removal responsibilities lie with the right of way or property owner. Typically, the first phase of debris clearance and collection focuses on emergency transportation routes, critical facilities, and any debris which poses an immediate threat to public health and safety. Debris disposal priorities will be set by the multi-jurisdictional task force or through a regional coordination group according to the waste hierarchy[27].

Aerial, satellite and drone photography can help assess certain hard to reach sites for debris quantity estimations

[25] https://www.fema.gov/sites/default/files/2020-07/fema_329_debris-estimating_field-guide_9-1-2010.pdf

[26] Such as a landslide, single building collapse, local flooding, or a small fire.

[27] Waste hierarchy means first, reduce the amount of solid waste generated; second, reuse material for its originally intended purpose; third, recycle or compost material that cannot be reduced or reused; fourth, recover energy from material that cannot be reduced, reused, recycled or composted so long as the energy recovery facility preserves the quality of air, water and land resources; and fifth, landfill solid waste that cannot be reduced, reused, recycled, composted or from which energy cannot be recovered.

4.4 Temporary debris management sites

A debris management site is a temporary site most often permitted by DEQ to manage disaster debris which may or may not be identified prior to the disaster. These sites allow for more efficient debris collection and allow the jurisdiction or region to stage debris for volume reduction, reuse, or recycling.
Permits will be obtained by Metro's Finance and Administration Section Chief through the Northwest DEQ office Solid Waste Permit Coordinator at 503-229-5353. See Attachment C: DEQ Permitting Guide for Temporary Sites[28]. DEQ can issue temporary Solid Waste Letters of Authorization for temporary facilities quickly[29]. Having the letter of authorization helps the facility comply with state law which can impact the ability to get FEMA reimbursements. See DEQ Disaster Debris Management[30] for additional information on obtaining letters of authorization. Prior to working with DEQ, a Land Use Compatibility Statement (LUCS) from the local government granting land use for the temporary debris site may be needed. See Attachment X for additional information on permitting[31].

4.4.1 Site Identification Criteria

Selection, authorization, and operation of temporary debris sites will be most often in collaboration with other local governments. Temporary debris management sites will be selected based on the following criteria and exclusions both prior to and in response to a debris-generating incident.

- Be sufficient in size with appropriate topography to prevent runoff or water qualify impacts from debris stored on site.
- For putrescible waste debris storage sites, paved surfaces will be required.
- Not located in a wetland or area subject to additional impacts from the disaster.
- Have the ability to put controls in place to mitigate storm waste runoff, erosion, fires, and pests.
- Be free from obstructions such as powerlines or pipelines.
- Have the ability to be secured from the public to manage safety, such as installing barriers or located in an area with existing fencing.
- Preferably on public land or located next to an existing solid waste facility.
- Ability to be restored to original conditions after temporary storage use ceases.
- Will not be located in areas which would increase hardships for those living in traditionally underserved communities[32] or in areas which further burden impacted communities.
- If possible, not located in a floodplain, dependent on the time of year.

4.4.3 Monitoring and documentation requirements[33]

The following are required documentation per Metro Code in order to keep and maintain complete and accurate records of all transactions:

- Ticket number, which should be included on weight slips
- Account number or business name for incoming haulers on incoming and outgoing transactions for non-self-haul customers
- Material category for all transactions
- Origin of the material collected
- Date and time the material was received, transferred, and/ or transmitted from the facility
- The fee charged to the generator of the load.

[28] https://www.oregon.gov/deq/FilterDocs/ManagPermitDisasterDebris.pdf
[29] https://www.oregon.gov/deq/mm/swpermits/Pages/Solid-Waste-Letter-Authorization.aspx
[30] https://www.oregon.gov/deq/FilterDocs/DisasterDebrisManagement.pdf
[31] See Attachment C on permitting
[32] See Attachment D for a map of overlapping equity variables
[33] https://www.fema.gov/sites/default/files/documents/fema_debris-monitoring-guide_sop_3-01-2021.pdf

When a disaster occurs, FEMA may reimburse eligible agencies for debris management costs associated with the disaster through the public assistance program[34]. To qualify, there are a number of monitoring requirements. Failure to appropriately monitor may result in loss of funding from FEMA and leaves Metro open to fraud. FEMA also requires specific documentation. If contractors are used, oversight must be maintained to ensure actions are performed in accordance with contract terms, conditions, and specifications. Metro will provide daily debris monitors to debris sites even when operated by a contractor. Debris monitoring documentation is critical for Metro and other agencies to be eligible for reimbursement of costs. This includes accurately documenting:

- Debris removal and disposal to appropriate destinations;
- Tracking debris if moved between staging areas to final disposition;
- Disposal or recovery documentation including costs;
- Debris monitoring information (e.g. monitoring log);
- Reasonable costs;
- Debris quantities;
- Compliance with all regulatory requirements.

In addition, the following monitoring activities must be accurately documented and may be eligible for public assistance funding:

- Labor and material costs associated with debris monitoring staff including staff time needed to complete documentation.
- Data compilation of load tickets and field debris monitoring reports to verify eligible work and costs invoiced by any contractors used.
- Training time associated with monitoring of debris operations including on the FEMA eligibility requirements.
- Costs associated with purchased technology for debris monitoring or documentation as long as a cost analysis is provided showing the system is cost effective and reasonable.

[34] This policy is currently in development and is likely to be adopted within the next year.

Based on the type of contract used, additional documentation may be required from FEMA.

Table 4.4: Monitoring requirements by contract type

Contract Type	Scope of Work	Monitoring Required	Comments
Lump Sum	• Defined debris quantities and reasonable costs. • Estimate is basis for contract costs.	• Collection site • Disposal site	• Assess debris eligibility at collection site • Quantities are required to determine reasonable costs and establish change orders • Ensure ONLY debris from within contract limits is processed
Unit Price (CY)	• Based on eligible debris listed on load ticket	• Crew efficiency • Collection site • Debris management site • Disposal site • Compliance	• Assess debris eligibility at collection site • Document debris quantities • Verify debris processing volumes
Unit Price (T)	• Based on actual weight measurements of eligible debris listed on load tickets.	• Crew efficiency • Collection site • Debris management site • Disposal site • Compliance	• Assess debris eligibility at collection site • Document debris quantities • Verify debris processing volumes • Verify calibration of scales
Time & Materials	• Based on labor, equipment, and materials records. • Reasonable costs evaluated by determining costs per unit.	• Crew efficiency • Collection site • Disposal site • Compliance	• Assess debris eligibility at collection site • Typically used for road clearance activities during the Response Phase • Supervising and monitoring every work crew is required • Tracking debris removal quantities is still required to determine reasonable costs

4.4.4 Site set-up and management methods

Temporary debris management site operations must:

- Provide operating staff during all hours of operation qualified and competent to carry out the functions required to operate a temporary debris site
- Provide access roads of sufficient capacity to adequately accommodate all on-site vehicular traffic. These roads shall be maintained to allow egress and ingress of vehicular traffic during operational hours.
- Allow for space as to not block public streets or roads.
- Operate in a manner that is not conducive to the harborage of rodents, birds, insects, or other vectors capable of transmitting infectious disease to humans. This work will be coordinated with Metro's Integrated Pest Manager.
- Post signs at all entrances which should include:
  - Name of the facility;
  - Address of the facility;
  - Emergency telephone number for the facility;
  - Operating hours during which the facility is open for the receipt of authorized waste;
  - Rates and charges;
  - Metro's name and telephone number (503) 234-3000
  - A list of accepted and prohibited debris;
  - Vehicle / traffic flow information or diagram;
  - Covered load requirements; and
  - Directions not to queue on public roadways.

In addition, operations must develop, educate, and maintain an operating plan which will include the following[35]:

- Procedures for fire prevention, protection, and control measures used at the facility.
- Procedures that the facility will follow in case of fire or other emergency.
- Processes for rejecting, managing, reloading and transporting to appropriate facilities or disposal sites any prohibited or unauthorized wastes discovered at the facility including:
  - Hazardous wastes
  - Other prohibited materials (e.g., unauthorized waste, putrescible waste, special waste).
- Guidelines for preventing and controlling nuisances, including noise, vectors, dust, litter, and odors. Including a description of how the facility will encourage delivery of waste in covered loads.
- Procedures for processing, storing, reloading, and transporting to final disposition all accepted debris[36].
- Site plan (maps or drawings) that include:
  - Boundaries of the facility;
  - All buildings on the property (existing and proposed) and other pertinent information with respect to the operation of the facility as applicable, to include:
    - scale and scale house location
    - fencing and gates
    - access road(s)
    - paved area(s)
    - vegetative buffer zones and berms

[35] This page can be used as a reference for considerations: https://www.oregonmetro.gov/tools-working/tools-haulers-and-facility-operators/forms-solid-waste-facilities

[36] These should include properties debris must possess prior to compacting, how materials should be prepared and loaded into trucks including required ratios of weights, procedures for liquid management, sorting procedures especially for the separating of hazardous materials.

- Sorting line and other major materials recovery equipment
- Intake, processing, and product/by-product storage
- All receiving, processing, reload and storage areas, as applicable, for solid waste, source-separated recyclable materials, yard debris, recovered materials, products/by-products, waste residuals, exterior stockpiles, hazardous waste, and other materials.
- Storage areas for the temporary containment of prohibited waste that the facility inadvertently receives, while awaiting proper removal or disposal of the prohibited waste. The facility must cover and enclose the containment areas and construct them in a manner to prevent leaking and contamination.
- Provide the estimated capacity (cubic yards and tons) of the facility storage area(s) for incoming solid waste waiting to be processed, the estimated capacity (cubic yards and tons) for storage of recovered materials, and the estimated capacity (cubic yards and tons) for storage of processing residual.
  - Procedures for maintaining all required records and information.
  - Plans for monitoring the site operations to ensure compliance with all requirements.
  - Procedures for receiving and handling complaints.
  - Procedures for documenting any unusual occurrences including actions taken in response.
  - Closure protocol:
    - Short term: Short-term closure (duration of time that is more than two consecutive business days but less than 30 days in length)
    - Long term: Procedures for returning the site back to pre-use conditions.
  - Identified all debris operations that may trigger compliance with environmental and historic preservation laws[37]:
    - Debris disposal, other than to a permitted landfill.
    - Projects whose footprint differs from pre-disaster conditions.
    - Public assistance projects with hazard mitigation proposals.
    - Projects affecting a historic or potentially historic site or structure.
    - Projects affecting a current or proposed threatened or endangered species.
    - Projects affecting a wetland.
    - Projects affecting a floodplain.
    - Cleanup and/or disposal of oil and hazardous materials.
    - Projects with known or suspected environmental concerns.

Temporary debris management sites may also include locations where the public can self-haul disaster debris for disposal. These locations could include large roll-off bins for mixed or singular debris types. These self-haul locations may also include community household hazardous waste collection (see Appendix G). The decision to include public access sites will depend on the nature of the disaster and ability to staff and maintain safety of the location.

In the event of a debris generating incident, Metro will comply with baseline DEQ requirements as determined by the site's permit. However, due to the sudden onset of disasters and the need to respond quickly, preservation of public health and safety is paramount, which may result in the governor and FEMA invoking exemptions to specific regulations during the response phase of a disaster. When disaster debris operations move from response to recovery, all applicable federal, state, and local regulations must be followed. Metro will work to manage this transition with DEQ and other applicable agencies for any sites which startup during the response phase and seek to continue

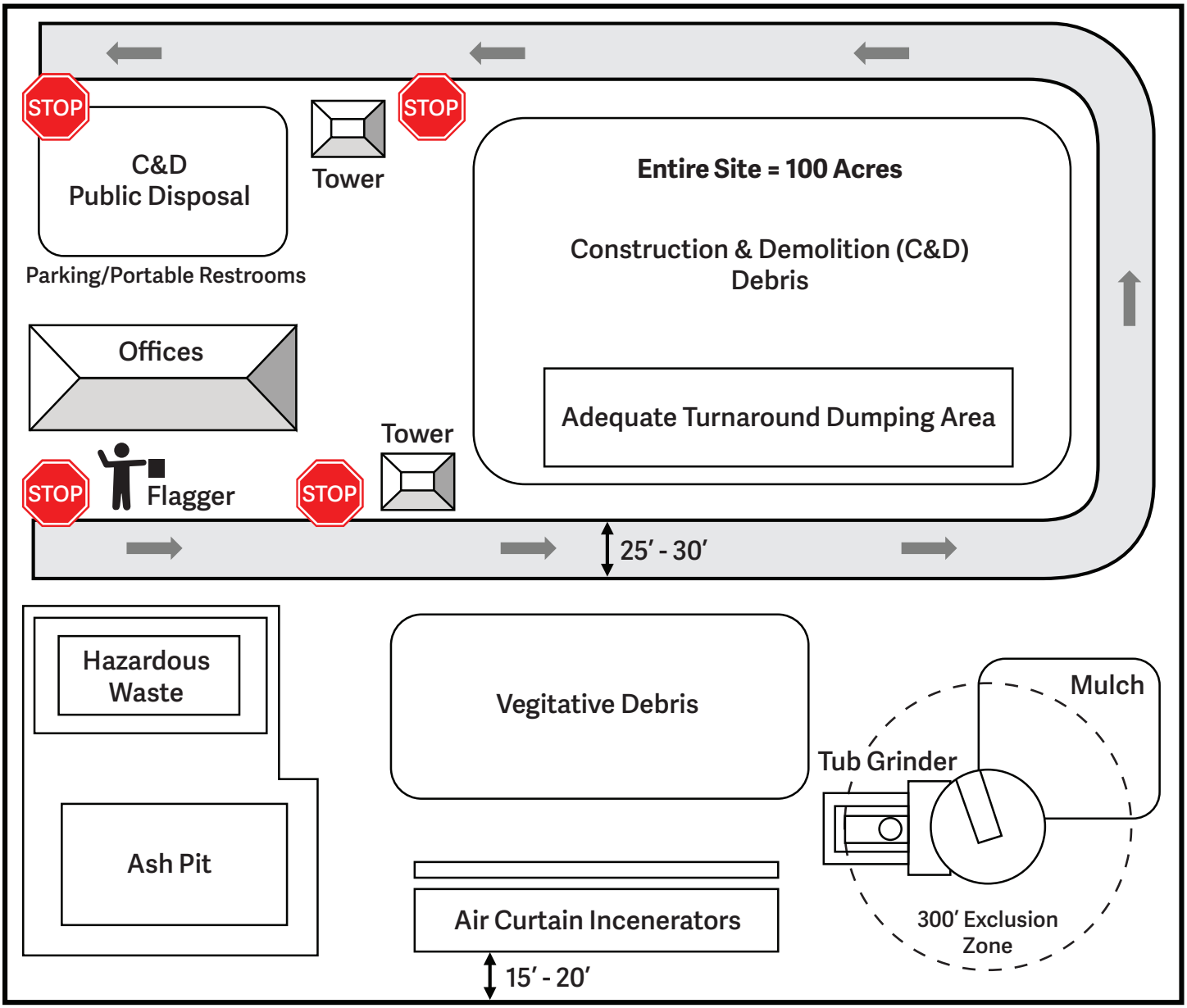
[37] https://www.epa.gov/laws-regulations/laws-and-executive-orders

operation in the recovery phase. Note that while some exemptions may be activated following a disaster, these exemptions have the potential to further harm vulnerable ecosystems and communities.

In the event of a federally proclaimed disaster, and if FEMA provides federal funding, applicants must comply with federal environmental and historic preservation laws. Exemptions to federal environmental laws can occur during the recovery phase and only with specific guidance from FEMA. The following emergency work may be done without triggering federal environmental laws:

- Emergency actions (e.g., search and rescue, emergency care, issues of life and safety).
- Debris clearance (not necessarily disposal or storage/staging).
- Repair and restoration to pre-disaster conditions, provided there is no significant change in the construction footprint (unless the structure is older than 50 years).
- Temporary repairs (unless the structure is older than 50 years)" (Seattle UASI 2010).

Figure 4.4: FEMA Example debris management site layout.



4.4.5 Debris reduction and disposal strategies[38]

All solid waste operations are subject to the authority of all applicable laws, regulations or requirements. Nothing in this section is intended to modify regular or emergency rules enacted by the State of Oregon or Metro which exist in equity, common law, or statute to abate pollution or a nuisance. This section outlines some potential debris management strategies which may be activated by Metro following a disaster and is not a comprehensive list of actions which may be taken or proposed.

All non-putrescible solid waste, including disaster debris, generated within the Metro boundary must be delivered to a Metro-authorized material recovery facility whether it is to be recycled or disposed of. This applies to all haulers and generators in the region[39].

Reduction Strategies

Non-putrescible waste must not be crushed, ground, or otherwise reduced in size except when such size reduction is described in an operating plan and approved in writing by Metro[40]. Metro may provide exemptions and/ or alternatives for this rule in writing following a disaster.

Some materials such as construction and demolition debris cannot be reduced and instead must comply with recovery requirements detailed in facility licenses.

Disposal Strategies

All solid waste, including disaster debris, generated inside Metro's boundary must be taken to a Metro authorized facility[41]. Solid waste and disaster debris must be taken to previously approved locations for final disposition unless given authorization in writing from Metro.

Companies may proceed through the approval process to use the Covanta Waste-to-Energy facility for incineration, unless Metro has determined the waste may be transported for destruction to Covanta in order to assure public safety or public good.

4.5 Debris management by type[42]

4.5.1 Putrescible Waste

All putrescible waste tipping, storage, sorting and reloading activities must occur on an impervious surface (e.g. asphalt or concrete) and inside a roofed building that is enclosed on at least three sides. Unusually large vehicles (i.e., 30-foot tippers) may tip wastes outside, provided the tipped wastes are moved under cover prior to processing within 12-hours of receipt. Putrescible waste and processing residual may not be stored unless it is on an impervious surface (e.g. asphalt or concrete) within a covered building or alternatively, inside water tight covered or tarped containers or within covered or tarped transport trailers.

[38] Considerations: debris must have specific characteristics for compaction; only certain materials can go through compactors; liquid management should be considered; hazardous waste should be sorted out; debris management will vary based on the capabilities of each site and location including temporary debris management sites.

[39] https://www.oregonmetro.gov/tools-working/resources-solid-waste-businesses/construction-waste

[40] See Metro Code 5.01.260(h)

[41] https://www.oregonmetro.gov/tools-working/tools-haulers-and-facility-operators/regional-solid-waste-facilities

[42] Note that following many incidents, debris will be mixed and may not be able to be sorted.

4.5.2 Non-putrescible Waste

All non-putrescible waste generated in the Metro region must be delivered to a material recovery facility (MRF) for processing prior to disposal. In an emergency, Metro's Chief Operating Officer may suspend this requirement but Metro and facilities designated as part of Metro's solid waste system will continue processing and recycling if at all possible following a disaster. In order to maintain processing and recycling operations following an emergency, the following strategies may be implemented:

- Waste and debris will continue to be directed to material recovery facilities to the extent possible.
- Non-putrescible waste will be directed away from facilities authorized to accept putrescible waste.
- Material stockpile limits including storage heights, lengths, and locations may be modified.

4.5.2.1 Wood waste[43]

The wood waste category should be separated into recoverable and non-recoverable wood . This distinction is largely based on market conditions for each sub-category. Facilities should follow regular rules for the sorting and disposal of wood unless given written alternate instructions from Metro.

4.5.2.2 Yard/ woody debris[44]

Woody debris has historically been a challenge due to its volume, though it may be helpful to reduce the volume through chipping. In greater Portland there are a number of facilities authorized to take yard and woody debris. Those can be found by referencing the most current regional solid waste facilities map[45].

4.5.3 Hazardous Materials[46]

4.5.3.1 Household Hazardous Waste[47]

In the recovery period following a disaster Metro will take the lead on providing household hazardous waste services to residents of the Metro region. Metro may also provide services to residents of the three county area outside the Metro boundary. To provide these services Metro may establish temporary collection sites for household hazardous waste collection, either in association with temporary debris collection sites, or at other locations established in collaboration with local government partners.

Yard/ woody debris pile

Wood waste examples

Household hazardous waste and temporary collection site example

[43] https://www.oregonmetro.gov/sites/default/files/2015/12/04/wood_waste_fact_sheet.pdf

[44] Following a disaster, DEQ may set additional or modified rules regarding the management of yard/ woody debris.

[45] https://www.oregonmetro.gov/sites/default/files/2021/07/14/regional-solid-waste-facilities-map-20210714.pdf

[46] https://www.epa.gov/hw/criteria-definition-solid-waste-and-solid-and-hazardous-waste-exclusions

[47] For additional details, refer to Attachment G: Household Hazardous Waste Support

4.5.3.2 Commercial hazardous waste

Metro will not be responsible for management of hazardous waste from commercial sources, but may choose to accept some exempt wastes from commercial sources in conjunction with household hazardous waste services, as detailed in Attachment F.

Table 4.5.4: Recoverable materials

Material	Recoverable	Non-recoverable
Metal	Types of recoverable metal include, but are not limited to; metal connected to incidental quantities of non-metal materials, such as power tools, lighting fixtures and plumbing fixtures.	Material where the metal portion makes up such a small portion of the object's overall mass that it would be rejected by local scrap metal markets. Examples of these materials include unbroken metal frame windows or metal pieces that require hand tools to separate the metal from significant quantities of other non-metal components.
Cardboard	Types of recoverable cardboard include, but are not limited to; corrugated cardboard with tape, staples and other fasteners.	Materials where the cardboard portion makes up such a small portion of the objects overall mass, that it would be rejected by local cardboard recycling markets. Examples of these materials include waxed corrugated cardboard and corrugated cardboard pieces that are securely attached or adhered to non-corrugated cardboard materials such as wood, plastic, glass and other composite materials.
Recyclables	Source-separated recyclable as-defined in Metro Code Chapter 5.00. For the purposes of these administrative rules, acceptable recyclable materials include the following: • Mixed waste paper • Steel cans • Newspaper • Aluminum • Magazines • Scrap metal • Corrugated cardboard • Plastic bottles and jars • Kraft paper • Round plastic containers/tubs • Aseptic containers • Glass bottles and jars • Yard debris • Motor oil For all residential customers, a local government must require that glass is kept separate from all other acceptable recyclable materials in collection receptacles and on collection vehicles.	

4.6 Disaster debris contracting

Metro's preferred method of procurement is pre-established contracts or U.S. General Services Administration (GSA) offered contracts for State and local governments. During an emergency, local contractors may be impacted and therefore unable to operate. A back-up preferred method in this situation would be out-of-state contracts from the GSA schedule.

In the event that we are unable to utilize either of these preferred methods, FEMA eligible contracting and procurement methods will be used as detailed in the most current version of the FEMA Public Assistance Program and Policy Guide (PAPPG)[48]. The following are FEMA's procedures for ensuring contracting and procurement methods are eligible for reimbursement[49]:

- Procurement must use a competitive bidding process.
- Abbreviated emergency procurement procedures which include an expedited competitive bid process should only be used when time does not allow for more stringent procures.
- A clear and definitive scope of work shall be included in the request for proposals/ bids.
- Bidders will be required to provide copies of references, licenses, financial records, and proof of insurance for bonding.
- Debris removal or monitoring contract costs must be reasonable and necessary, as defined in the PAPPG.
- A cost analysis to demonstrate price reasonableness on any contract must be completed and documented.

5. Concept of Operations

5.1 Overview

Debris clearance from Metro properties and regional debris management prioritization[50] will reflect Metro's operational goals which are:

Goal One: Protect health and physical safety of Metro staff, contractors, and the public.

Goal Two: Protect built environment, assets, and infrastructure from further impacts.

Goal Three: Restore or maintain regular solid waste services.

Goal Four: Coordinate debris management with other local governments.

Goal Five: Maintain situational awareness regarding hauling, private, and public facilities.

This section of Metro's disaster debris management plan outlines steps taken during the various debris management phases along with key financial details.

5.2 Finance and public assistance

In the last five years, debris removal operations accounted for approximately 27% of disaster recovery costs[51]. This section provides an overview of FEMA public assistance eligibility criteria including eligible/ ineligible debris, and eligible/ ineligible types of procurement and contracts.

[48] FEMA Public Assistance Program and Policy Guide (note that the most current version should be used): https://www.fema.gov/sites/default/files/documents/fema_pappg-v4-updated-links_policy_6-1-2020.pdf

[49] https://dps.mn.gov/divisions/hsem/disaster-recovery/Documents/dmp-appendix-i.pdf

[50] See Attachment E: Debris prioritization

[51] https://emilms.fema.gov/is_0632a/groups/24.html

5.2.1 Eligible and ineligible debris

FEMA provides public assistance reimbursement for eligible debris operations. To be eligible, the work must meet all of the following criteria[52]. Note that any ineligible work must be completed on a separate contract.

- Be required as a result of the disaster;
- Be located within a designated disaster area (except for sheltering or evacuation activities which may be located outside the disaster area);
- Be the legal responsibility of an eligible applicant; and
- Be considered of reasonable cost per FEMA.

Eligible debris work must be in the public's interest which is defined as work necessary to meet the following needs.

- Eliminate immediate threats to life, public health and safety;
- Eliminate immediate threats of significant damage to improved public or private property;
- Ensure economic recovery of the affected community to the benefit of the community at-large; or
- Mitigate the risk to life and property by removing substantially damaged structures and associated appurtenances as needed to convert property acquired through a FEMA hazard mitigation program to use compatible with open space, recreation, or wetlands management practices.

In addition to the above requirements, FEMA requires that all state and local regulations, laws, and ordinances be addressed and followed for all environmental and historic preservation issues.
The following types of debris are typically considered ineligible.

- Debris removal from an eligible applicant's unimproved property or undeveloped land
- Debris removal from a facility that is not eligible for funding under the Public Assistance Program
- Any debris removal from Federal lands or facilities that are the authority of another Federal agency or department such as I-5, I-84, or Mount Hood National Forest.

5.2.2 Eligible and ineligible methods of procurement and contracting[53]

Metro's preferred method of procurement is pre-established contracts or U.S. General Services Administration (GSA) offered contracts for State and local governments. During an emergency, local contractors may be impacted and therefore unable to operate. A back-up preferred method in this situation would be out-of-state contracts from the GSA schedule. In the event that we are unable to utilize the preferred methods of either, contracting and procurement methods used will be FEMA eligible[54].

5.2.3 Public assistance documentation requirements

FEMA reimbursement is a time intensive process that will take several years to complete, however, it represents a significant amount of money available. The best practice is to document everything with photos and detailed note taking that records date, time, activity, individual, and equipment used. This information needs to then be processed, organized, and stored for the long term.

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[52] Note that these criteria may change based on the most current Public Assistance Program Grant guide which is updated frequently, especially after large disasters.
https://www.fema.gov/sites/default/files/documents/fema_pappg-v4-updated-links_policy_6-1-2020.pdf

[53] Note, a goal is to have pre-negotiated debris contracts and therefore this segment may be informational rather than actionable once those are established.

[54] FEMA Public Assistance Program and Policy Guide (note that the most current version should be used):
https://www.fema.gov/sites/default/files/documents/fema_pappg-v4-updated-links_policy_6-1-2020.pdf

In order to be considered for reimbursement, detailed documentation is required. The following will need to be submitted per FEMA's requirements. Note that this is not an exhaustive list, and FEMA's most current Public Assistance Program and Policy Guide should be referenced before submission.

- Debris photos prior to removal and documenting any risks to public safety
- Detailed activity logs including individuals and equipment used and time activities were completed
- Procurement documents (requests for proposals, bids, selection processes, etc.)
- Cost or price analysis (not always required)
- Contracts, change orders, and summary of invoices
- Dates worked
- Documentation that substantiates a high degree of contractor oversight such as daily or weekly logs and/or records of performance meetings.

5.3 Debris Management Response and Recovery

Debris management crosses the lines of response and recovery. Below are high level actions that may be taken in each phase. This is not a comprehensive list of actions and all actions may be adjusted based on the incident. It is generally expected that debris management outside of clearing essential transportation routes or any removal which presents immediate threats to life, property, or health and safety will not occur until approximately two weeks out from a large disaster.

5.3.1 Response Phase

Response takes place during and immediately after an event, typically between hours 0 and 72, and focuses on high priority debris management such as emergency transportation routes or any removal actions for debris that presents an immediate threat to life, improved property, or public health and safety. The following actions will be taken during this phase:

- Activate the incident management team including an incident manager, safety officer, debris incident management team members and the regional debris management task force as appropriate.
- The legal officer will identify all applicable federal and state environmental laws and regulations[55].
- The finance/ admin section chief will:
  - Locate and become familiar with the most current FEMA Public Assistance Grant Guide.
  - Support an emergency declaration as applicable.
  - Establish timekeeping process for incident management team members.
  - Communicate allowable activities based on available funding and set-up Metro-wide project funds.
  - Monitor for incident specific funding opportunities.
  - Coordinate with Logistics and Planning Section Chiefs on identifying a need for temporary procurement rules.
  - Review relevant mutual aid agreements and any other standing agreements in coordination with the Logistics Section Chief.
  - Calculate daily burn rate of resources and identify resource request process.
  - Forecast budgetary impact and internal billing of Metro employees to support the incident.
  - Set-up billing procedure where community members can bring in debris and we can track and bill by each county (FEMA requirement assuming there is a cost share).

[55] See Attachment F for a full list of potentially applicable laws and regulations.

- Conduct initial debris operations which includes:
  - Coordinate initial damage assessments
  - Estimate debris types and quantities
  - Clear debris from Metro properties
  - Identify potentially hazardous or contaminated debris types which may require state coordination and public messaging.
  - Coordinate messaging with joint information center and Debris Branch Director.
    - Metro may support the activation of a Public Inquiry Center which provides a single point of contact for public inquiries regarding disaster debris management. This would be coordinated through the JIC.
    - Unified messages will be delivered and Metro's PIO will develop drafts to distribute to local governments.
  - Achieve full situational awareness through coordination with public and private facilities and haulers. This is best achieved through meetings where all parties have a representative. This includes gathering, synthesizing, and maintaining current information on:
    - Staffing
    - Hours of operation
    - Route modifications
    - General impacts to operations
- The COO and/ or Council office may authorize one or more of the following adjustments to operations, services, and rules:
  - Modify the disposal fee for solid waste accepted from a non-commercial customer at the Metro Central Station or Metro South Station due to emergency conditions[56]. Moving towards a charge by vehicle type is one suggestion for fee modification.
  - Amend and/ or establish rules, regulations, or standards as needed for the purposes of responding to the emergency situation[57].
    - Remove limitations on putrescible waste collected at private transfer stations.
    - Suspend the requirement for material recovery facilities to sort non-putrescible waste and conduct quarterly sampling of residual waste as required by Metro's Enhanced Dry Waste Recovery Program[58].
    - Suspend the requirement that all mixed non-putrescible waste generated in the Metro region be delivered to a MRF for processing prior to disposal[59].
    - Suspend tonnage allocation limits.
  - Authorize use of emergency contracts and methods of procurement[60].
  - Request landfills extend their operating hours.

5.3.2 Removal Phase

This phase, which typically takes place between 72 hours and 30 days post disaster, addresses major debris disposal operations and involves moving debris to temporary debris management sites or existing solid waste facilities. For severe disasters, this time frame often starts two weeks after the disaster.

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[56] See Metro Code 5.03.130

[57] See Metro Code 5.01.350

[58] As of the writing of this plan, this requirement is currently suspended already as of April 23, 2020

[59] Metro began this requirement on January 1, 2009

[60] See Metro Code 2.20.050/ Ord. 02-942A

For smaller, less impactful disasters that time frame is closer to 72 hours. The IMT must ensure debris is processed in a way which protects human life, safety, and health, and supports the restoration of essential services. The following actions will take place during this phase:

- Coordinate with city and county on damage assessment of Metro properties in priority order.
- Manage regional debris management task force to coordinate public information, debris management priorities, and other regional coordination related functions.
- Refine debris management objectives and strategies based on accumulated information.
- Oversee, monitor, and maintain documentation on contractor activities.
- Deploy debris monitors to observe and maintain records of debris operations in accordance with FEMA public assistance requirements[61].
- Restore near-normal solid waste operations for curbside collection and provide community household hazardous waste services.
- Begin the process to activate temporary debris management sites as needed.
- Modify existing solid waste operations as needed:
  - Divert non-putrescible waste away from sites which can process putrescible waste if able to sort waste and this modified process is determined to be feasible.
  - Curtail self-haul operations or modify hours where self-haul is accepted
- Coordinate public information with the JIC to provide information about strategies, status of operations, public access information to temporary debris management sites, and any other disaster debris related information.
- Assess ability to use local pre-established contracts if contractors are able to operate at this stage.

5.3.3 Recovery phase

This phase deals with the final disposition of disaster debris and continued community restoration. The recovery phase ends when all temporary debris management sites have restored property to pre-disaster conditions and when debris amounts may be processed through permanent solid waste management facilities. The timeline of this phase generally begins at 30 days post disaster and may take more than a year depending on the incident. The following actions will take place during this phase:

- Work with contractors to continue operations at temporary debris management sites until the quantity of incoming debris can be managed through permanent solid waste facilities pre-disaster operations plans.
- Coordinate with county, state, and FEMA representatives to ensure continued compliance with reimbursement eligibility and documentation requirements.
- Resolve issues with difficult to manage debris materials such as automobiles, white goods, and contaminated debris.

5.4 Direction and control

During the response phase the Incident Commander has decision making authority over all immediate response actions.

During Removal phase, tactical direction and control for debris management will be from the Operations Section Chief. Strategic direction and control during this phase will be provided by the Regional Debris Management Task Force.

During recovery phase, debris management will transition back to regular solid waste operations.

[61] See FEMA public assistance debris monitoring guide.

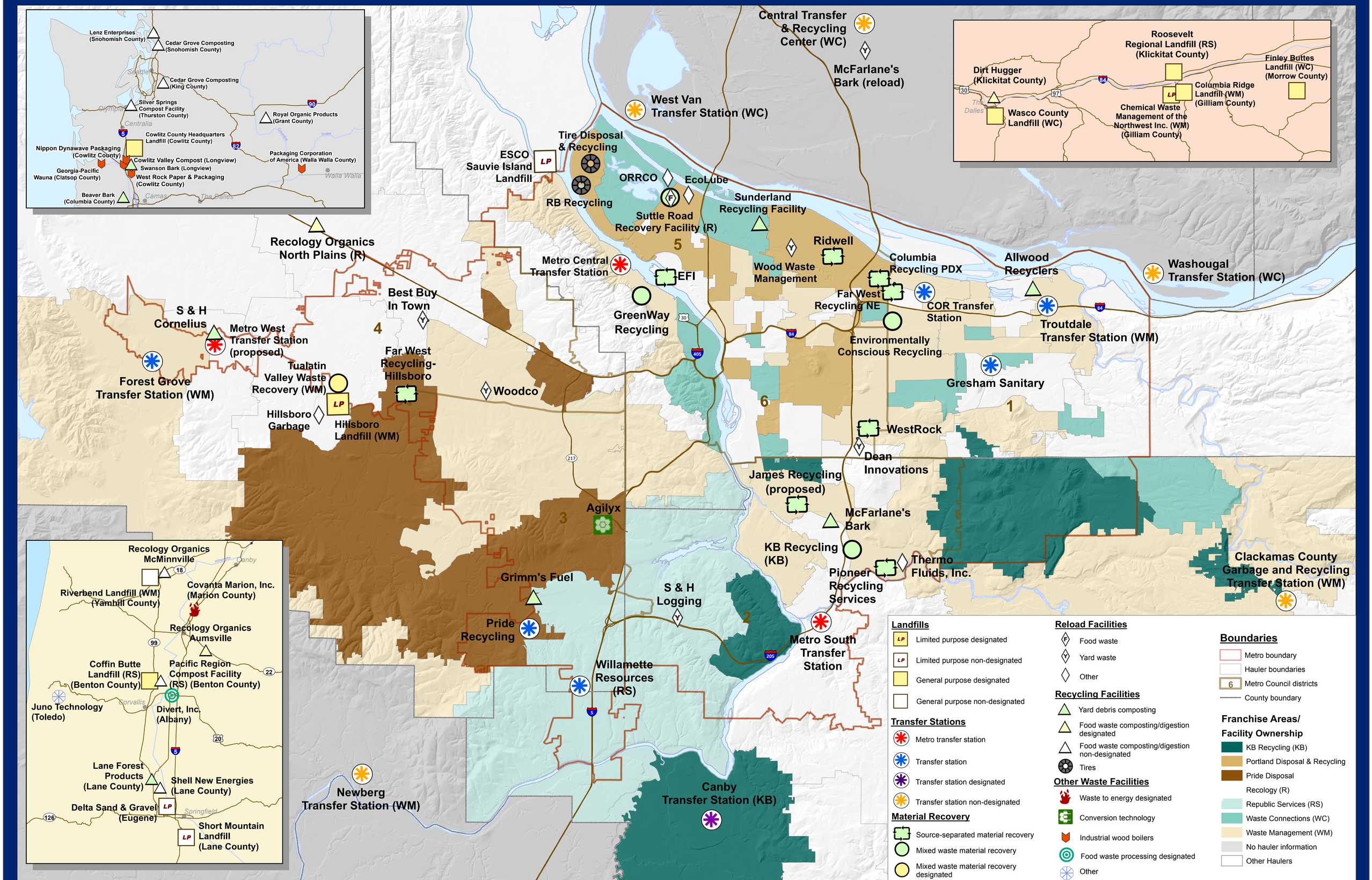
Attachment A: Debris forecasting data

Wildfire Data	Tons of Debris	Cubic Yards of Debris	Truck Loads (FEMA)
Inside UGB Total	**705,407**	**503,862**	**28,216**
Clackamas	121,062	86,472	4,842
Multnomah	360,991	257,850	14,439
Washington	223,354	159,538	8,934
Outside UGB Total	**65,361**	**46,686**	**2,614**
Clackamas	49,033	35,023	1,961
Multnomah	3,004	2,145	120
Washington	13,324	9,517	532
Total Combined	**770,768**	**550,548**	**30,830**

Flood Data	Tons of Debris	Cubic Yards of Debris	Truck Loads (FEMA)
Inside UGB Total	**4,721,289**	**3,372,349**	**188,851**
Clackamas	955,098	682,213	38,203
Multnomah	2,499,612	1,785,437	99,984
Washington	1,266,579	904,699	50,663
Outside UGB Total	**1,042,770**	**744,835**	**41,710**
Clackamas	543,614	388,296	21,744
Multnomah	33,217	23,727	1,328
Washington	465,939	332,814	18,637
Total Combined	**5,764,060**	**4,117,186**	**230,562**

Storm Data (Cat 3)	Tons of Debris	Cubic Yards of Debris	Truck Loads (FEMA)
Inside UGB Total	**60,226,000**	**43,018,571**	**2,409,040**
Clackamas	10,714,000	7,652,857	428,560
Multnomah	30,698,000	21,927,142	1,227,920
Washington	18,814,000	13,438,571	752,560
Outside UGB Total	**5,613,000**	**4,009,285**	**224,520**
Clackamas	3,917,000	2,797,857	156,680
Multnomah	235,000	167,857	9,400
Washington	1,461,000	1,043,571	58,440
Total Combined	**65,839,000**	**47,027,857**	**2,633,560**

Earthquake Data (9.0)	Tons of Debris	Cubic Yards of Debris	Truck Loads (FEMA)
Inside UGB Total	**26,913,182**	**19,223,701**	**1,076,527**
Clackamas	2,462,768	1,759,120	98,510
Multnomah	17,659,768	12,614,120	706,390
Washington	6,790,646	4,850,461	271,625
Outside UGB Total	**3,173,570**	**2,266,835**	126,942
Clackamas	1,304,198	931,570	52,167
Multnomah	460,923	329,230	18,436
Washington	1,408,449	1,006,035	56,337
Total Combined	**30,086,752**	**21,490,537**	**1,203,470**



Regional Solid Waste Facilities

July 2021

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Report

Managing and Permitting Disaster Debris

Information for local governments, DEQ staff and Oregonians

September 2011

State of Oregon
Department of
Environmental
Quality

Last Updated: 09/01/11
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LQ-12-XXX

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This document contains information designed to be helpful to DEQ staff, Oregon local governments, and the public. This document does not change or substitute for any statutory or regulatory provisions. DEQ may revise this document periodically. DEQ welcomes public comments on this document at any time and will consider those comments in any future revisions.

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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 Authortization 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 managenet 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 applicationland 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 ACTIVITES, fill in AutoText for SWLA number and expiration date.

- Under PERMITTED ACTIVITES, 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

Permit Number: 1397
Expiration Date: 06/07/08
Page 1 of 2

SOLID WASTE DISPOSAL SITE PERMIT: LETTER AUTHORIZATION

Oregon Department of Environmental Quality
2020 SW 4th Avenue, Suite 400
Portland, OR 97201-4987
Telephone: (503) 229-5353

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
Gotcha 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 340-093-0050(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
Regional Environmental Solutions
Northwest Region

December 11, 2007
Date

PERMITTED ACTIVITIES

In accordance to SWLA No. 1397, 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) 2/1/06

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

State of Oregon
Department of
Environmental
Quality

Communications &
Outreach
811 SW 6th Avenue
Portland, OR 97204
Phone: (503) 229-5696
(800) 452-4011
Fax: (503) 229-6762

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

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

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

DRAFT

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9. Definition of Important Terms/Acronyms

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B Initial Damage Assessment Forms (IDA)
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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.

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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

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

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- 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

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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 sf x 60 ft) + (30,000 sf x 60 ft) + (18,000 sf x 30 ft)] / 3 = 1,680,000 cf.
1,680,000 cf / 27 cf/cy = 62,222 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

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/permittedfacilities.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 proved 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.

i) 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

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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

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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.

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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

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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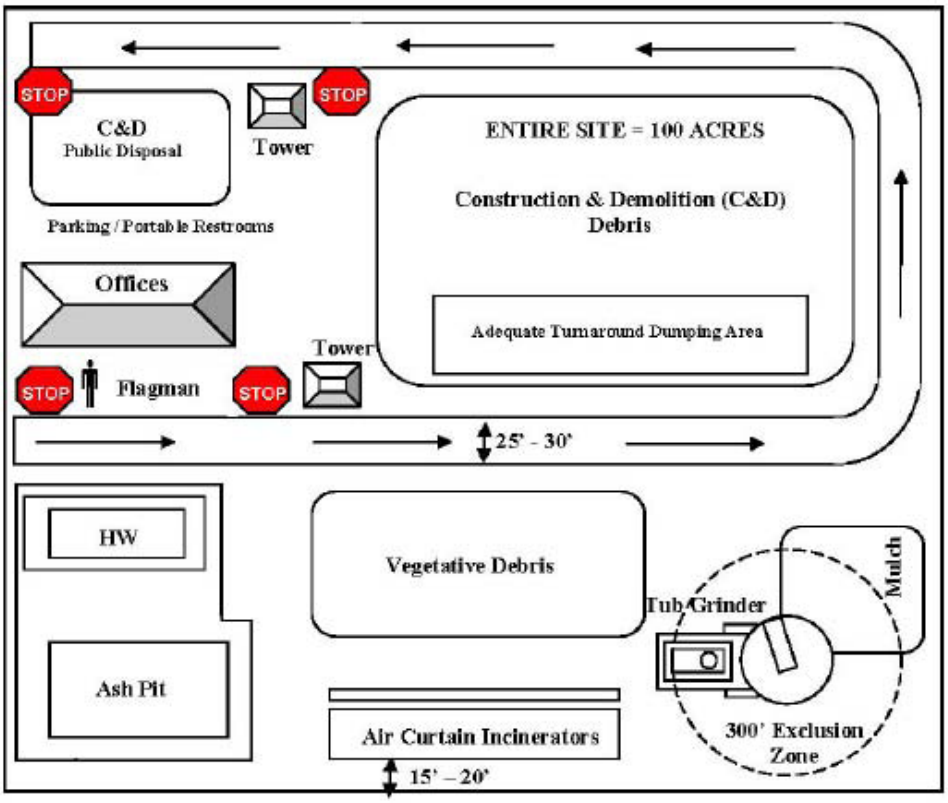

4.2 Site Selection and Temporary Permitting

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

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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

Segregated material	*Potential for reuse/recycling/energy recovery*	
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

Waste component	*Reuse*	*Recycle*	*Composting*	*Burning*	*Landfill*
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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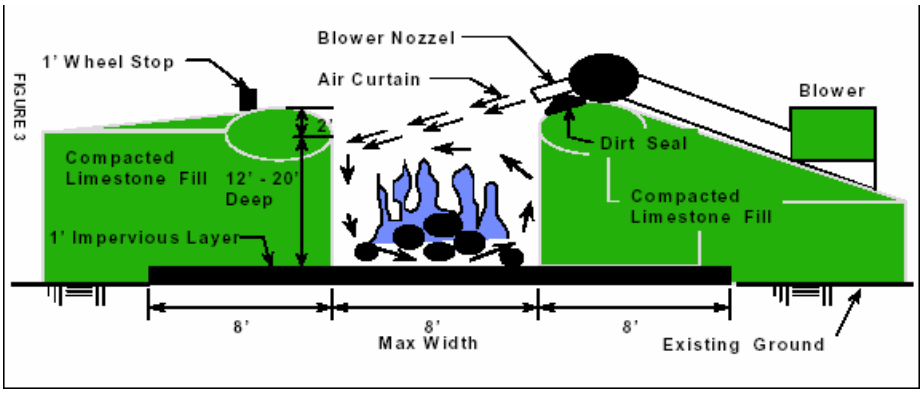
parameters. Often specialized equipment is necessary to effectively conduct the burning process.



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.

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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.

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5.0 CONTRACT SERVICES

In the event of a large disaster that generates debris on pubic 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

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.

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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

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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

FEDERAL

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 intestate 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 Statues, 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.

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	Untied States Army Corps of Engineers

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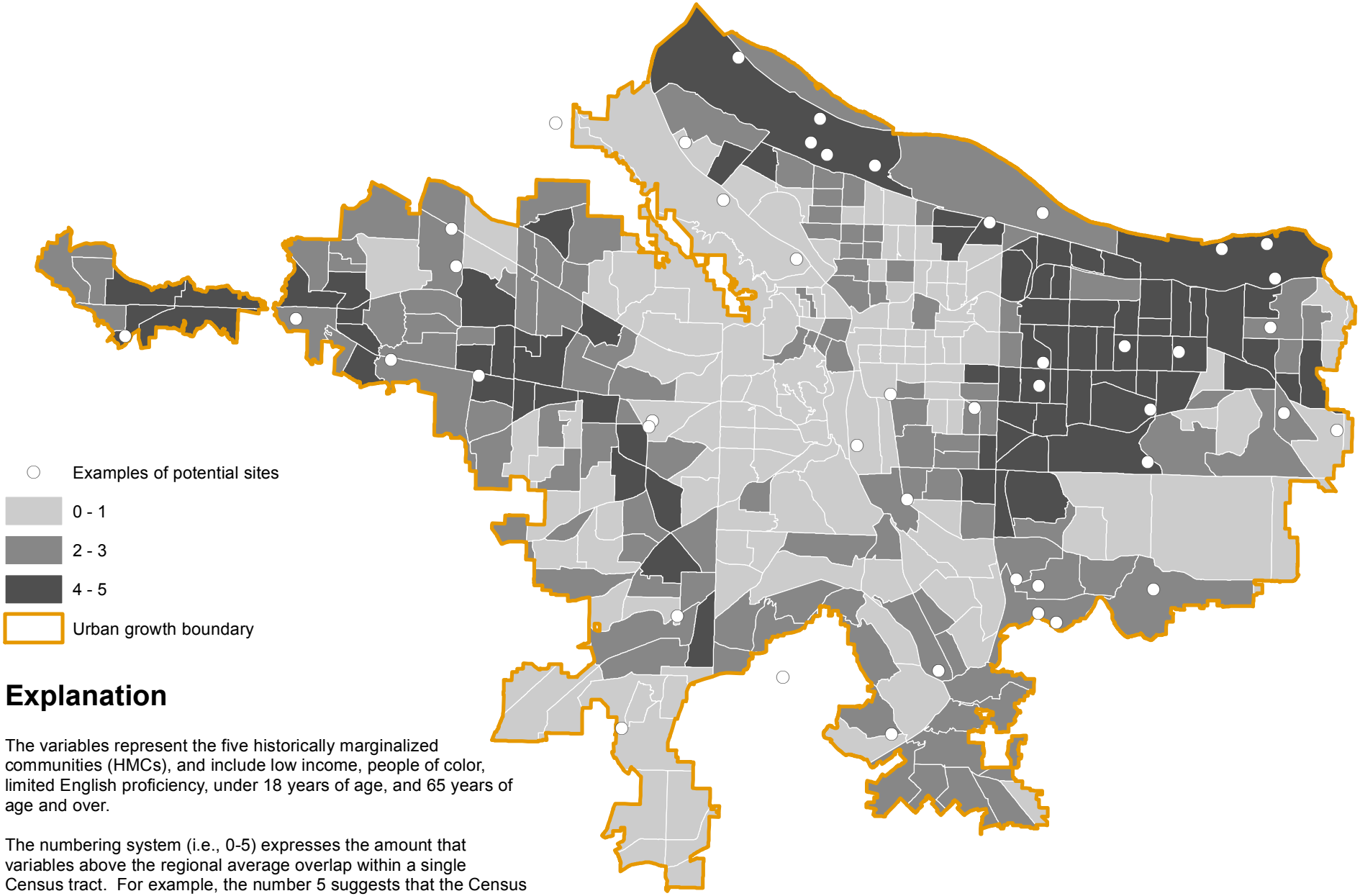
Number of Overlapping Equity Variables



Explanation

The variables represent the five historically marginalized communities (HMCs), and include low income, people of color, limited English proficiency, under 18 years of age, and 65 years of age and over.

The numbering system (i.e., 0-5) expresses the amount that variables above the regional average overlap within a single Census tract. For example, the number 5 suggests that the Census tract is represented by populations that represent greater than the regional average for all five HMC categories.

Data Source:
American Community Survey, 5-Year Average, 2011-2015

Attachment E: Debris Prioritization

Debris clearance from Metro properties and debris management may use the following rating process in order to determine priority. These scoring criteria align with Metro's operational goals for debris management. The table below can be replicated for each debris category or location of debris in need of prioritization.

Debris Category or Specified Location	**Scoring Criteria**	**Score (0-3)** 0: Unlikely to occur 1: Less than 50% probability 2: Higher than 50% probability 3: Immediate or unavoidable threat/ impact
Debris type, category, or location for removal listed here	Poses health or physical safety threat	
	Potential for additional damage to the environment	
	Potential for additional damage to Metro's assets	
	Priority requested by local government	
	Required for solid waste Service restoration	
	Total Score	***Final Score Here***

In addition to the above criteria, the following items may prompt a local government to request debris prioritization:

- Fire, police, and ambulance service routes
- Access routes to hospitals, trauma centers, and critical care units
- Major arterial routes
- Access to critical government facilities such as emergency operations centers and facilities involved in debris operations
- Routes to emergency supply distribution centers
- Communication towers and utility locales
- Routes to shelters, assisted care facilities, etc.
- Population density
- Location of important facilities (schools, nursing communities, etc.)
- Environmental justice issues (predominantly minority neighborhoods, lower income neighborhoods, etc.).
- Other factors such as air quality, noise, traffic patterns, and environmental impacts

Attachment F: Household Hazardous Waste Support

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Assumptions

- Metro will be the lead agency in providing (Household Hazardous Waste) HHW services in the region during the recovery period after a disaster.
- Under some circumstances Metro may provide post-disaster HHW services to portions of the three county wasteshed outside the Metro boundary.
- If Metro's HHW facilities, trained staff, operating supplies, and disposal outlets are all available following a disaster, Metro may provide post-disaster HHW services utilizing the Metro South & Metro Central HHW facilities and/or temporary collection events.
- Temporary collection events, if provided post-disaster, may be co-located at temporary debris management sites, or may be conducted as stand-alone HHW events.
- Temporary post-disaster HHW collection sites will be operated in accordance with Metro's standard operating procedures for conducting HHW collection events, with modifications as necessary.
- In a presidentially-declared disaster, post-disaster HHW services may be reimbursable by FEMA, subject to a variety of requirements. FEMA's requirements may be developed or modified specifically for a given disaster.

- If Metro's facilities, staff, supplies, or disposal outlets are unavailable, or the scope of services needed are beyond Metro's capabilities, Metro may utilize contractors, or request assistance from state or federal authorities. If other entities provide collection services, Metro will serve in an oversight or advisory role.

- Metro's HHW program has capabilities to manage standard household hazardous waste and certain other exempt hazardous wastes, but is not able to manage regulated hazardous waste, debris contaminated with hazardous materials, uncontained asbestos, and other hazardous wastes outside the scope of the program's regular services. In addition, Metro staff may not be trained to safely conduct some kinds of HHW operations, such as house to house sweeps of destroyed structures.

- Forecasting the need for HHW services is very different from other debris forecasting. Rough estimates of expected customer and waste volumes can be developed based on the type, scope, and severity of the disaster and the type of HHW services offered.

- Metro Communications staff will develop informational material for the public about the HHW services available, emphasizing the importance of keeping HHW separate from other disaster-generated wastes.

A. Following a disaster, prior to starting operations:

Coordinate with other agencies.

Early in the recovery phase, Metro should confirm contacts and coordinate HHW efforts with local, state and federal agencies involved with the disaster recovery. Collaboration with local governments in the disaster impacted area will be particularly important, including emergency management and solid waste staff, and potentially public works staff, fire departments, hazmat teams, and others. Depending on the disaster scope there may also be a need for coordination with Oregon DEQ, Oregon Emergency Management (OEM), ODOT, FEMA, US EPA, US Coast Guard, and others. If a multi-jurisdictional debris management task force is convened, HHW operations should coordinate with that body.

Establish management structure

If an Incident Management Team (IMT) is activated under this debris management plan or the Metro Emergency Operations Plan, HHW activities will be managed as part of the IMT Operations Section. If no Metro IMT is activated, HHW activities will be managed under WPES GRO regular management structure.

Determine where to offer services

Any HHW services provided beyond routine HHW facility operations or previously scheduled HHW collection events should be focused on portions of the region where significant numbers of residences are impacted by the disaster and are likely to have disaster-generated HHW to dispose of. Equity considerations are also important- some impacted areas may have historically underserved populations, have challenges to accessing distant HHW services, etc.

Under some circumstances Metro may provide HHW services to portions of the region outside the Metro boundary, in the greater three county wasteshed. Note that current practice at Metro's HHW facilities is to allow residents of these areas to bring their waste to Metro's HHW facilities no differently than Metro residents.

Temporary HHW events located outside the Metro boundary may be authorized under some circumstances, such as:

- Events are conducted as part of an agreement with one of the three counties or other local jurisdiction.
- Costs for operating the events are expected to be eligible for FEMA reimbursement, Metro's disaster debris management reserve, or another funding source.
- Conducting the events is determined to provide a benefit to the Metro region.

Determine what services to offer.

A variety of HHW services may be offered in the recovery period following a disaster. Options include:

- Promoting the availability of Metro's permanent HHW facilities or previously scheduled HHW collection events
- Extending waste acceptance hours at Metro's permanent HHW facilities or previously scheduled HHW collection events
- "Milk runs" to pick up incidental hazardous waste materials left at temporary debris collection sites
- Providing staffed HHW collection at temporary debris collection sites
- Providing stand-alone HHW collection events targeted at impacted areas
- Curbside/door-to-door hazardous waste collection, either by appointment or curbside pickup
- House-to-house sweeps of affected structures

The most appropriate type of service to provide will vary depending on the nature, severity and scope of the disaster, as well as the resources available for HHW management. The availability of Metro's HHW facilities, trained staff, operating supplies, or disposal outlets could be impacted by the disaster, limiting Metro's ability to offer services. The availability of funds to pay for services will also need to be considered. It will be important to confirm whether HHW services will be reimbursable by FEMA for that disaster, and what requirements and limitations will be in place to qualify for reimbursement.

Following relatively minor disasters, simply promoting Metro's permanent hazardous waste facilities and any upcoming regularly-scheduled collection events, or extending the hours that waste is accepted, may be enough to accommodate any increased demand. However if HHW collection needs during the recovery are expected to be greater than can be accommodated by these options, additional services should be considered.

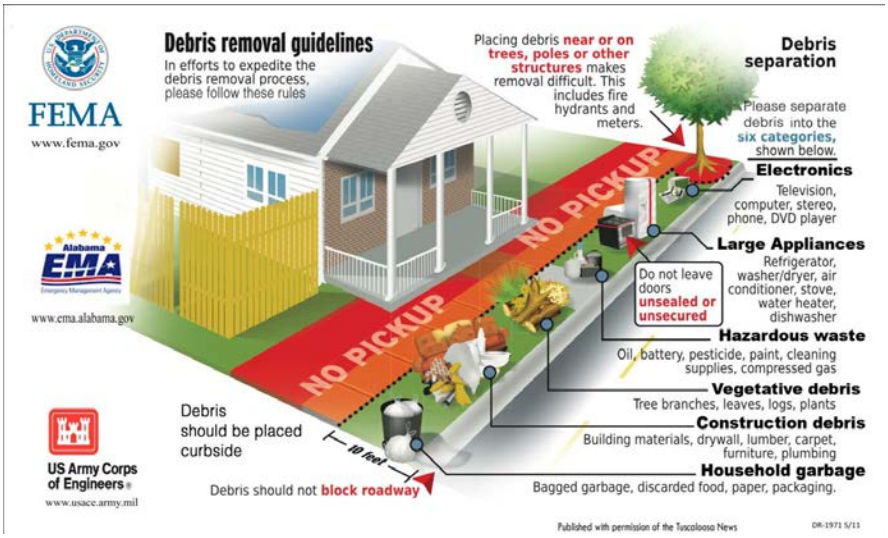
In more severe disasters, temporary debris collection sites will likely be established. Debris collection sites may receive small quantities of HHW, even if they do not officially accept HHW. At these sites, HHW can be handled by **periodic "milk runs",** with waste transport vehicles traveling to multiple sites to have hazardous waste picked up by properly trained and equipped staff. Appropriate secondary containers should be left at these sites for accumulating HHW.

Establishing **HHW collection as part of temporary debris sites**, along with advertising acceptance of HHW at the sites, may be an option. Sites will need to have sufficient paved space to accommodate HHW activities, and operations will need to be closely coordinated with overall debris operations.

Stand-alone HHW collection events targeted at heavily disaster-impacted areas may be an option. Weather is an important consideration- outdoor HHW operations are very difficult to conduct in wintertime weather. Operational considerations for Metro operation of post-disaster events are detailed in section B below.

In the most severe disasters, collection services that require minimal effort from those whose homes have been seriously damaged will be the most effective. These options may be beyond the scope of Metro's hazardous waste program, even if Metro's facilities are operational and staff is available. This includes curbside/door-to-door collection, and full sweeps of affected residential properties.

In some disasters FEMA guidelines call for residents to **place segregated HHW out on the curb**, alongside other waste types, for pickup. An example of informational material for this option is shown below. This does provide the most convenient service for disaster-affected residents, although it is an expensive option. Other disadvantages to this option include exposure of the HHW to weather, and potential exposure to passersby.



This service would typically be beyond the scope of Metro staff to handle, though if it occurs on a small scale it may be feasible for Metro staff to pick up just the HHW portion, leaving the rest for other parties to handle. Similarly, on a small scale Metro staff could conduct an **appointment-based door-to-door service**. Utilizing Metro's government exemption to DOT packaging and labeling rules does provide an advantage over contractors for curbside and door-to-door pickup.

House-to-house sweeps may be appropriate when severe damage has occurred and hazardous materials need to be removed from what remains of homes prior to demolition. Entry and removal of waste from damaged structures poses significant hazards that Metro hazardous waste program staff are not trained for. If Metro is involved with planning or contracting for this type of work, important considerations include:

- Coordination with local building authorities
- Development of detailed safety plans
- Cost: sweeps after California fires averaged ~$1,300 per home
- Management of hazardous items beyond traditional packaged HHW: asbestos, large propane tanks, vehicles, Freon-containing equipment, CRTs
- Coordination with DEQ addressing regulatory issues such as hazardous material that cannot be separated safely from residential ash & contaminated debris
- Approval is required from property owners, so procedures and paperwork for securing right of entry will need to be developed

Determine timing and duration of services

Some residents with post-disaster HHW to deal with may be ready to dispose of their waste within a few days of the disaster. Others will be dealing with more pressing matters, especially after a major disaster, and may not be ready to deal with that aspect of cleanup for several weeks after the event. Depending on the nature of the disaster, transportation routes or other infrastructure impacts may necessitate delaying HHW services until later in the recovery.

Data from collection sites should be monitored as the recovery progresses, and adjustments to service levels made, in consultation with local governments.

In order to be eligible for FEMA reimbursement, debris removal activities, including HHW services, must be completed within 6 months of the declared incident.

Consider what wastes to collect.

Whatever collection services are offered, it is important to ensure that all wastes collected are within Metro's authority to handle. This includes HHW, waste from very small quantity generators (VSQGs), Universal Waste, or RCRA-exempt waste. All staff accepting waste should be familiar with Metro's waste screening procedures, in order to ensure that no fully-regulated hazardous waste or other unacceptable waste is accepted.

Additional waste acceptance considerations:

- Decide whether to impose any limitations on materials or quantities accepted beyond those normally allowed at Metro's facilities or collection events.

- Decide whether waste from VSQGs will be accepted. If so determine whether it will be accepted at no cost, or subject to Metro's standard VSQG fees. It is likely that costs for managing VSQG waste will not be reimburseble by FEMA.

- Determine whether non-disaster related waste will be accepted. When hazardous waste collection services are provided following a disaster, it is likely that inquiries will be received from residents or businesses that have hazardous waste that is not a result of the disaster. To be eligible for FEMA reimbursement, wastes must be disaster-related. If non-disaster waste is accepted it must be tracked accordingly. Promotional materials for collection services should specify whether only disaster-related waste is to be accepted, or other HHW may be accepted. Prior to mobilizing collection services, collection staff should have a plan for handling non disaster-generated waste that is received in spite of the publicity. This may include referring the generator to other services, or accepting the material and tracking it separately.

Plan for load checking.

After a disaster, some residents or businesses may improperly throw hazardous wastes into the trash, or co-mingle it with debris brought to debris collection sites. It may be prudent to enhance load checking of incoming trash loads at Metro's transfer stations, or monitor debris loads at temporary debris collection sites for hazardous waste. This is particularly important for sites that are unpaved or have limited environmental controls such as capture of runoff water.

Prepare for data collection.

In any disaster that is potentially eligible for FEMA reimbursement it is crucial to collect the data needed to qualify for funds. Specific requirements do change from time to time, current requirements can be found in the applicable FEMA Public Assistance Program and Policy Guide (PAPPG). Applicants must be able to document:

- That debris is eligible / disaster generated
- That contracts (if used) are competitively procured
- That contract line item pricing (if used) is fair and reasonable
- That companies have the proper licensing and certifications for collecting, processing, and transporting hazardous waste
- The lawful disposal/recycling of materials (e.g., copies of transport documents, permits, etc.)

For Metro HHW operations, document:

- Costs, including: staffing, waste disposal, disposable supplies, equipment purchased
- Addresses of participants dropping materials off
- Types and quantities of materials dropped off
- Proof of final disposal / recycling

Additional considerations for curbside HHW collection:
- Location of material collected (address or GPS)
- Take pictures

B. Operational considerations

Procedures

If HHW services consist only of Metro's permanent HHW facilities, normal procedures there should be followed, with the expectation that waste received may include a higher proportion of containers that are wet, compromised, or unlabeled.

For temporary HHW collection sites, procedures will generally adhere to Metro's standard operating procedure for HHW collection events, though some modifications may be needed. Site specific health and safety plans and emergency contacts for each site will need to be developed.

Special considerations for post-disaster HHW events

- When conducted in tandem with temporary debris collection sites, HHW procedures will require DEQ approval as part of Solid Waste Letter of Authorization (SWLA) for the debris site
- For stand-alone HHW collection, the DEQ approval process for HHW events will be followed, though with an expedited timetable
- Some temporary debris collection sites may not be paved, HHW collection is only to be conducted at sites with sufficient paved area
- Hazardous waste must be secured if left at a temporary site overnight, with security staff on site

Staffing

Staffing options include:

- Trained Metro staff, regular or variable hour
- Trained staff from Metro's current HHW disposal contractor
- Workers from temporary labor services that are set up to provide 40-hour trained hazardous waste workers
- Trained HHW staff from other agencies in accordance with any mutual aid agreements in place

Personnel that are not trained in hazardous waste handling may assist with some site activities, including greeting arriving customers and taking their information.

Staffed hazardous waste collection sites must include at least two properly trained workers handling waste at any given time.

Contractors

For work that Metro is unable to do, due to out of commission facilities, lack of staff, or options outside of our expertise, contractor options include:

- Metro's regular contractor for transportation and disposal of HHW
- DEQ's current HHW contractor
- A qualified contractor procured by state or federal authorities

PaintCare may be able to play a part in collection site activities, providing staff to handle paint segregated from other incoming waste, and transporting paint directly to management facilities.

In order to be eligible for FEMA reimbursement, contractor services must adhere to a variety of requirements detailed in the applicable Public Assistance Program and Policy Guide (PAPPG). To utilize a pre-existing contract, services must be part of the existing contract Scope of Work. Contracts that Metro intends to use for post-disaster HHW services should be reviewed for possible amendment prior to a disaster. FEMA does also have provisions for emergency contracting.

Regulatory status of wastes

All wastes handled by Metro's hazardous waste program must be one of the following: HHW, VSQG, Universal Waste, or non-regulated waste. As always. It is important that Metro not accept any fully-regulated hazardous waste.

Waste transport

Options for transport of collected HHW from temporary sites:

- Waste may be left at a site overnight, in appropriate secondary containment, if the site has security for the night

- Waste may be brought back to Metro South or Metro Central before the end of the day

- Waste may be picked up by contractors directly from the sites

For more details on waste transportation, see Metro's standard operating procedure for Transporting Hazardous Materials.

Waste tracking

If a disaster is or may be eligible for FEMA reimbursement, it is important to track the disaster-generated HHW received. If a site is accepting only disaster-generated HHW:

- At the end of each active collection day, a tally of the types and quantities of HHW collected that day should be filled out. For wastes stored overnight, a system of marking the fullness of secondary containers, such as drums or skids, should be used, in order to determine that day's collection. A sample of a daily inventory form is below. The categories may be altered to fit the circumstances.

- If any waste is shipped from the site during the day, be sure that it is properly recorded. For transport in Metro vehicles use the transportation from in Metro's SOP for Hazardous Waste Transporting, being sure to designate the site of origin. For contractor pickup waste will be recorded on a manifest or bill of lading.

If a site, or a Metro permanent HHW facility, accepts both disaster-generated and non disaster-generated HHW, and there is a possibility of FEMA reimbursement, there will need to be separate tracking. The best system for doing so will depend on the circumstances. For example, if a permanent facility accepts both disaster-generated and non-disaster-generated, but only a small number of disaster customers are received, with a much larger volume of regular HHW customers, it may be simpler to document each disaster customer's waste. But if significant numbers of both types of customers are handled, it may be preferable to have separate drums or skids for each category of customer, in order to properly track.

If no FEMA reimbursement is expected, waste tracking may be less important, though waste transportation should always be documented per regular procedures.

SAMPLE- Debris collection site daily hazardous waste inventory form

site_____

date_____ person filling out this form_____

Waste type	Quantity
Latex paint	
“G-waste” (water-based glues, etc.)	
Oil-based paint and other flammables	
Pesticides, Acids, Bases, Oxidizers	
Aerosols	
Cleaners	
Oil	
Antifreeze	
Other:	

Total disaster-related HHW customers:_____

Any non-disaster HHW customers?:_____

VSQG customers:_____

C. Forecasting demand for post-disaster HHW services

Forecasting the demand for HHW services after a disaster differs considerably from other debris forecasting. For one thing HHW service capabilities are tied to both customer counts and waste volumes. Also, HHW is handled one container at a time, and measured in pounds rather than tons. It is possible to do approximate forecasting of the need for special HHW collection services following a disaster in the region. Three factors are important to consider in forecasting: the scope of the disaster, the type and severity of the disaster, and the manner in which wastes will be collected. The scope of the disaster will influence the number of homes affected, the type and severity of disaster will influence the amount of waste generated by each home, and the manner in which wastes are collected will influence the total volume that will be handled by the collection program.

Scope of disaster. Following a disaster, HHW planners should obtain details about the area impacted. In particular details regarding the number of single family homes in the affected area should be assessed, as these comprise a large majority of the customers that use Metro's HHW program.

Type and severity of the disaster. Different types of disasters vary in the way they affect homes. Some may completely destroy houses, requiring management of all hazardous materials contained within, some may cause damage to only portions of a home, requiring disposal of damaged containers only, and others may have little effect on hazardous materials storage areas. Homes with modest damage are likely to generate roughly 50 pounds on average, while homes that are destroyed are likely to average closer to 100 pounds of hazardous waste each.

> Ice storm, wind storm. While potentially debilitating to infrastructure such as roadways, power lines, etc., these are unlikely to result in any widespread need for HHW collection services. Regardless of how widespread the damage from one of these disasters is, homes are seldom damaged to the point where proper storage of potential HHW materials is no longer possible.
>
> Flood. A flood such as the one affecting the Portland area in February 1996 tends to cause moderate damage to a number of homes, requiring complete demolition of only a small number of structures. Hazardous waste loads will therefore average closer to 50 pounds each. More severe flooding, as seen in the Missouri River area in the mid-1990s may completely envelope populated areas. Because a large number of homes are destroyed, hazardous waste loads will tend to be closer to the 100 pound figure
>
> Earthquake. Damage to homes may range from minor to moderate to severe, and the size of hazardous waste loads will vary accordingly.
>
> Fire. Wildfires such as those that California has experienced over the last several years tend to have an all-or-nothing effect on structures. Homes often either escape the fire, or are gutted. Loads of hazardous waste are likely to average roughly100 pounds each.

Manner in which wastes are collected. A range of post-disaster hazardous waste service options are available. The type of service offered can have a significant effect on the percentage

of people who utilize the service. The greater the amount of initiative required of the resident with HHW, the smaller the percentage of those that will actually use it. This is true in non-disaster times, but particularly during the recovery period after a disaster there will be many demands on people's time, and some will choose to dispose of waste improperly, or continue to store it in spite of damage.

These service options require the least effort on the part of generators:

- door-to-door hazardous waste collection, either by appointment or curbside pickup of materials throughout an area
- house-to-house sweeps of affected structures

Hazardous waste collections held at designated debris collection sites require some travel, but ideally will be located reasonably close those affected. Transporting waste to the existing permanent facilities obviously requires the most effort on the part of those with hazardous waste to dispose of.

Disaster types, expected waste generation rates, and recommended service options:

Type of disaster	**Expected hazardous waste generation per affected home**	**Recommended service options**
Ice storm, wind storm	minimal	• Promote existing facilities
Flood- moderate (most affected homes reparable)	50 pounds	• Collection sites near affected areas
Flood- severe (many destroyed homes)	50-100 pounds	• Collection sites near affected areas If resources are available: • Door-to-door/curbside collection • House-to-house sweeps
Earthquake	Minimal to 100 pounds	**Minor** • Promote existing facilities **Moderate** • Collection sites near affected areas **Severe** • Collection sites near affected areas If resources are available: • Door-to-door/curbside collection • House-to-house sweeps
Wildfire	100 pounds	• House-to-house sweeps

Estimated percentage of affected residents who will use services:

Service method	Estimated utilization
Collection sites near affected areas	5-10%
Door-to-door/curbside collection	10-50%
House-to-house sweeps	50-75% (percentage in which significant hazardous materials will be found)

Developing a quantitative estimate:

Ballpark total volume of HHW to be managed in a collection program will be:

(# of homes experiencing damage) X (% of homes HHW is collected from) X (# of pounds/home collected on average)

- Focus on single family homes as they generate the majority of HHW

Two examples from past disasters:

- Portland-area flooding February 1996

Scope: approximately 8500 single-family homes were affected by the flooding. Severity: many of the homes that were affected damage were partially damaged and were repairable. The average load was about 50 pounds. Homeowners were allowed to bring wastes to one of several collection points set up in the weeks following the flood. Of the 8500 households affected, about 500, or 6% utilized the hazardous waste collection services offered by Metro. (8500 homes experiencing moderate damage) X (50 pounds/home) X (6% of homes in a door-to-door sweep) = total waste collection, about 25,000 pounds.

- Oakland hills fire, October 1991

Scope: 2,897 dwelling units were affected, of which 2,345 were single-family homes. Severity: homes were generally complete losses; an average of about 100 pounds per home was collected. Wastes were collected by contractors hired to go through the entire affected area. Hazardous materials were removed from about 2,000 homes. (2,897 homes experiencing severe damage) X (100 pounds/home) X (69% of homes with hazardous materials in neighborhood sweep) = total waste collection, about 200,000 pounds.

Sample hypothetical scenario for the Portland area:

Earthquake, doing moderate damage to 5% of region, severe damage to 1%. Structure-to-structure sweeps in half of the severely affected areas, collection points offered for the remainder of the affected areas.

Moderately affected homes: 5% x 300,000= 15,000.
Severely affected homes: 1% X 300,000 = 3,000

Total volume = 15,000 x 50 pounds x 5% participation = 75,000 pounds
+ 1,500 x 100 pounds x 75% with HHW = 112,500 pounds
+ 1,500 x 100pounds x 10% participation = 15,000 pounds

Expected total of about 202,500pounds.

D. Public information

When HHW services are provided in the region following a disaster, Metro Communications staff, in collaboration with other agencies involved with the recovery, will take the lead on developing informational materials for the public. Metro's Recycling Information Center may be tasked with staffing a hotline to answer questions.

Public information should address:

- Where & when services are offered
- What is accepted, how waste should be packaged and segregation, quantity limits. AN important message is not to comingle HHW together, or with any other kind of waste.
- Where to get more information

A sample public information sheet, from the 1996 flood in the region, below.

Flood-related Hazardous Waste
(from February 1996 flood)

Households:
If any hazardous materials are leaking, putting out a strong odor, or otherwise seem to be a health threat, **call 911**

Residents with flood-related hazardous waste may bring it to many of the flood debris collection sites. Household hazardous waste may also be brought to the Metro South and Metro Central Transfer Stations. Residents can call **234-3000** for current information on all of these options.

Products that may be hazardous include paint, solvents, pesticides, automotive fluids, batteries, and aerosols. Look for label warnings such as danger, warning, and caution, toxic, corrosive, flammable, combustible, or poison. Hazardous items should be brought in separately from trash, properly sealed, in a sturdy box. If a product does not have a label and you know what it is, write it on the container. Never mix products together.

Businesses:
If any hazardous material or waste is spilled, leaking, generating fumes, or otherwise releasing or threatening to release to the environment, the Oregon Emergency Response System must be called, at **1-800-452-0311.**

Businesses with moderate amounts of flood-related hazardous waste may bring it to most of the debris collection sites or to Metro South or Metro Central Transfer Station. This includes businesses that generated up to 220 pounds of hazardous waste as a result of the flood. Call **234-3000** for current information on these options.

The following types of business waste **cannot** be taken to the debris collection sites: hazardous waste from businesses that generated more than 220 pounds as a result of the flood, or from business that generate more than 220 pounds per month in the course of their normal operations. For disposal assistance contact DEQ at **229-5263**.

Hazardous Materials washed up by the flood:
Any drums or other hazardous materials that are floating in one of the area's rivers, or were washed up at the high water mark of the rivers will be handled by the Coast Guard. Call **240-9370.**

Attachment G: Major Federal Environmental and Historic Preservation Requirements[1]

- Clean Water Act
- Clean Act
- Endangered Species Act
- Coastal Barrier Resources Act
- Resource Conservation and Recovery Act
- National Historic Preservation Act
- Wild and Scenic Rivers Act
- Executive Orders, e.g., EO 11988, EO 11990 and EO 12898

All state/tribal/territorial and local requirements must also be considered in the planning process.

Clean Water Act

Debris removal activities such as dredging, demolition, and construction and operation of temporary debris management sites must comply with requirements regarding discharges of pollutants into the waters of the United States.

Clean Air Act

Debris removal activities must comply with the air quality standards required by the Federal, State/Tribal/Territorial, or local regulatory agencies.

Endangered Species Act

Prohibits actions that cause unnecessary harm to species listed as threatened or endangered, or the destruction or adverse modification of the habitat for these species. Jurisdictions should consult with the United States Fish and Wildlife Service and the National Marine Fisheries Service.

Coastal Barrier Resources Act

Restricts development of coastal barriers so that damage to property, fish, wildlife, and other natural resources associated with the coastal barrier is minimized.

Resource Conservation and Recovery Act

Requires safe disposal of waste materials, promotes the recycling of waste materials (especially hazardous materials), and encourages cooperation between local, State/Tribal/Territorial, and Federal agencies.

National Historic Preservation Act

Requires assessment of the effects of debris removal projects on historic properties, and identification of ways to avoid, minimize, or treat any adverse effects on historic properties. Jurisdictions should consult with the State Historic Preservation Officer (SHPO) before beginning debris removal work.

Wild and Scenic Rivers Act

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[1] Source: FEMA Independent Study Course IS-633 “Debris Management Plan Development”

Preserves the free-flowing state of rivers that are listed in the National Wild and Scenic Rivers System (System) or are under study for inclusion in the System because of their scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values. If a proposed project is located on a river included in the System, FEMA must review it for compliance with the Wild and Scenic Rivers Act and consult with the managing agency for the affected designated river.

Executive Orders 11988 and 11990

Executive Order 11988, Floodplain Management, requires Federal agencies to minimize or avoid activity that adversely affects floodplains.

Executive Order 11990, Protection of Wetlands, requires Federal agencies to avoid activity that adversely affects wetlands and to encourage the preservation and enhancement of beneficial functions of wetlands.

Executive Order 12898

Executive Order 12898, Environmental Justice, requires Federal agencies to identify and address disproportionately high and adverse human health or environmental effects on minority and low-income populations as a result of their actions.

Application of the Requirements to Debris Operations

The debris management plan should consider the application of environmental and other regulatory requirements to all aspects of debris operations, including collection, temporary debris management sites, reduction, recycling, disposal, and the handling of hazardous materials.

Examples of application of the requirements could include:

Putting appropriate controls in place when conducting debris operations in or near environmentally or historically sensitive areas such as wetlands, critical animal and plant habitats, sole source aquifers, freshwater well fields, historic districts, tribal sites, tribal burial sites, and archeological sites

Ensuring that temporary debris management sites are not established within a floodplain, or at a site that contains hazardous materials which could be disturbed by site activities

Ensuring that temporary debris management site selection criteria take into consideration any disproportionately high or adverse impacts on minority or low income populations

Debris Management Site Environmental Considerations

The debris management plan should include specific processes and procedures for establishing and operating debris management sites in a manner that meets environmental and other regulatory requirements.

- Baseline data collection
- Periodic environmental sampling
- Reporting
- Site closure
- Baseline data collection

By conducting a baseline data collection study, the planning staff is able to further establish the feasibility of potential sites, document any existing sites, and vet potential environmental issues. As soon as a potential site is selected, the designated Debris Project Manager and staff should work closely with local and State/Tribal/Territorial officials to collect the baseline data. Baseline data collection consists of: (1) videotaping and/or photographing the site; (2) documenting physical features; (3) investigating any historical significance; and (4) taking soil, water, and air samples prior to initiating debris operations on the site.

Periodic environmental sampling

The purpose of environmental sampling is to evaluate the environmental condition of the site on a periodic basis. Additional data should be collected throughout the operation of a site, for closeout and quality assurance reasons. This will provide feedback to determine if the operations are adversely affecting the site and the surrounding environment. The data can be compared to previously gathered information in order to determine any necessary remediation measures. Environmental monitoring consists of: (1) taking soil, water, and air samples throughout operations (as required by permits); (2) periodically sketching activity locations within the site for future reference (activity locations may shift over time); and (3) documenting specific incidents that could affect site closeout, e.g., fuel spills.

Reporting

The debris management plan should include a process for documenting on a daily basis hazardous spills, remediation actions, and equipment maintenance. Documenting equipment maintenance is important for preventing accidents that may impact the environment, e.g., spills of hydraulic fluid. This information is also important for site safety, site closure, and for complying with regulatory reporting requirements.

Site closure

When temporary debris management site operations are complete, the site will need to be restored to a suitable state, which requires compliance with the various Federal, State, and local permit requirements. The final environmental study is an extension of the temporary debris management site monitoring. It includes final sampling and testing for contamination in the groundwater, soil, and air (as applicable and required in permits). The results of these tests are compared to the baseline data. Final site documentation should include the initial baseline data and final assessment data, in the event there are future questions regarding the condition of the site prior to the operations and the condition to which it was returned. In situations where land for a temporary debris management site has been leased, the jurisdiction should ensure that there is a process for legally returning the site to the owner.

Permits

Environmental permits and land-use variances may be required to establish a temporary debris management site, conduct reduction and recycling activities, and operate disposal facilities. Several agencies may be involved in issuing permits and granting land-use approvals. The planning process should identify the potential permits that may be required and include procedures for obtaining them. Local regulatory authorities, the State environmental office, and U.S. EPA can be valuable resources in identifying permitting and land-use requirements. Specific permits and approvals that may be required include:

Waste processing and recycling operations permits

- Temporary land-use permits
- Land-use variances
- Transportation permits
- Air and/or water quality permits
- Coastal commission land-use permits
- Household hazardous waste permits
- Fire department permits

Attachment H: Glossary of Terms

Construction & demolition debris (C&D): Materials included in the C&D debris generation estimates are steel, wood products, drywall and plaster, brick and clay tile, asphalt shingles, concrete, and asphalt concrete. These materials are used in buildings, roads and bridges, and other sectors.

Debris management: The collective operations of demolition, clearance, removal, transport, temporary storage, segregation, reduction, and ultimately, disposal of debris whether generated by disaster or terrorist event.

Disaster debris: Generally refers to waste materials created by or in a disaster.

Estimated debris: The actual type and quantity of debris generated from a disaster.

E-waste: Refers to hazardous materials in electronics, such as televisions, computers, cell phones, and batteries.

Forecasted debris: The predicted type and quantity of debris to expect from a disaster.

Household Hazardous Waste (HHW): any discarded, useless or unwanted chemical, material, substance or product that is or may be hazardous or toxic to the public or the environment and is commonly used in or around households and is generated by the household. Household hazardous waste may include but is not limited to some cleaners, solvents, pesticides, and automotive and paint products

Material recovery: A type of resource recovery that is limited to manual or mechanical methods of obtaining material from solid waste that still has useful physical or chemical properties and can be reused, recycled, or composted for some purpose. Material recovery includes obtaining material from solid waste that is used in the preparation of fuel, but excludes the extraction of heat content or other forms of energy from the material.

Non-putrescible: Any waste that contains no more than trivial amounts of putrescible materials or minor amounts of putrescible materials contained in such a way that they can be easily separated from the remainder of the load without causing contamination of the load. This term includes construction and demolition waste. This term does not include cleanup material, source-separated recyclable materials, special waste, and land clearing debris or yard debris.

Putrescible: means rapidly decomposable by microorganisms, which may give rise to foul smelling, offensive products during such decomposition or which is capable of attracting or providing food for birds and potential disease vectors such as rodents and flies.

Safe harbor languages: languages spoken by approximately 1,000 or more Limited English Proficiency (LEP) individuals in the City of Portland service area.

Solid waste: all putrescible and non-putrescible wastes, including without limitation, garbage, rubbish, refuse, ashes, waste paper and cardboard; discarded or abandoned vehicles or parts thereof; sewage sludge, septic tank and cesspool pumping or other sludge; commercial, industrial, demolition and construction waste; discarded home and industrial appliances; asphalt, broken concrete and bricks; manure, vegetable or animal solid and semi-solid wastes, dead animals; infectious waste; and other such wastes, including without limitation cleanup materials, commingled recyclable material, petroleum

contaminated soil, special waste, source-separated recyclable material, land clearing debris and yard debris.

Significant (system) disruption: an event that disrupts access to a transfer station, creates increased risk to human health or the environment, or impacts the normal operations, transportation routes or established system of a waste hauler or a transfer station. A significant disruption event may be caused by system disruptions (such as long term road repair or closures or facility construction) or natural forces (such as severe weather, flood, landslide or earthquake).

Temporary debris management site: A temporary, permitted site to manage disaster debris, ideally identified prior to the disaster event. Disaster temporary debris management sites may allow for more efficient debris collection and allow the jurisdiction to stage debris for volume reduction, reuse, or recycling.

Vegetative debris: Consists of whole trees, tree stumps, tree branches, tree trunks, and other leafy material.

White goods: Include washers, dryers, freezers, clothes dryers, and stoves. Any refrigerants in these materials must be removed by certified technicians.

Whole community approach: a means by which residents, emergency management practitioners, organizational and community leaders, and government officials can collectively understand and assess the needs of their respective communities and determine the best ways to organize and strengthen their assets, capacities, and interests.