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Functional Annex – Debris Management

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1 Purpose

The purpose of this annex is to facilitate and coordinate the management of disaster-generated debris, including clearance and removal, in order to mitigate against any potential threat to the life, health, safety, and welfare of impacted citizens. Additionally, this plan seeks to expedite recovery efforts in the impacted area, and address any threat of significant damage to improved public or private property. This plan describes Washington County's role in the management of disaster-related debris and how regional resources will be integrated into the response and recovery processes.

2 Situation and Assumptions

2.1 Situation

Washington County, Oregon, exists in a region of the U.S. that faces substantial vulnerabilities, both to natural and manmade hazards. Washington County includes mountainous rural and agricultural areas, along with urban areas within the Tualatin Valley. Natural hazards capable of generating debris include earthquakes, floods, wind storms, winter storms, and volcanoes. Human related sources of debris generating incidents include chemical, biological, radiological, nuclear, and explosive. This combination of hazards suggests large-scale disasters are possible which may result in widespread impacts and large volumes of disaster-generated debris.

From a debris generating incident perspective, it is widely believed that the highest risk is posed by the Cascadia Subduction Zone, an off-shore seismically active fault zone capable of unleashing a massive magnitude 9.0 or greater earthquake, which would generate catastrophic impacts resulting in enormous quantities of debris. Smaller fault zones local in the Portland metropolitan area are capable of producing earthquakes of lesser magnitudes; however, these faults may still cause violent ground motions resulting in a large-scale debris generating incident.

2.2 Assumptions

The Washington County hazard profile suggests that large-scale catastrophic disasters are possible, which are capable of generating overwhelming volumes of debris. The following assumptions shape the current needs and capabilities for debris management operations:

- A natural disaster that produces debris on public and potentially private lands and waters could occur at any time
- The amount of debris resulting during a disaster could exceed the County's ability to manage
- Assistance may be available from within or outside the county through mutual aid and other existing agreements; however, the scope and magnitude of the

incident may cause these resources to be scarce or unavailable requiring state and federal support

- During a large-scale disaster, the state may request a federal disaster declaration from the Federal Emergency Management Agency (FEMA). During a catastrophic disaster, the county may request Direct Federal Assistance to manage debris operations
- Existing solid waste processing facilities may be impacted by the disaster resulting in diminished operational capacity
- The County and local governments do not have a sufficient quantity of equipment and personnel to appropriately manage the volume of collection, removal, and disposal of debris expected to be generated after a large-scale incident
- Private contractors will likely play a significant role in the debris removal, collection, reduction, and disposal processes during a large-scale incident
- Although private citizens and businesses are expected to remove disaster-related debris from their own properties, both groups are likely to aggressively seek assistance from local government
- Non-profit, volunteer organizations, and convergent volunteers often provide assistance with debris removal from private property

3 Concept of Operations

3.1 Definitions

Washington County utilizes debris definitions consistent with federal guidance as outlined in FEMA 325: Public Assistance, Debris Management Guide. These definitions are provided in Tab 2.

3.2 General

Washington County's approach to disaster debris management aligns with County and industry standards and principals. The goals of disaster debris management operations are to:

- Protect the life, health, safety, and welfare of impacted citizens through removal and remediation of potentially hazardous debris.
- Ensure that debris clearance and removal efforts are coordinated, efficient, effective, and environmentally sound, and are conducted in a cost effective and safe manner.
- Expedite economic and community recovery efforts in the impacted area.
- Minimize any threat of significant damage to improved public or private property.

The primary objectives during a debris management effort are to:

- Clear debris from transportation routes that hinder emergency response operations (typically beginning with ETR's). Once transportation routes fully allow emergency response operations, clear debris from high volume / critical routes to promote ingress / egress to critical facilities / infrastructure and essential governmental facilities.
- Ensure efficient infrastructure restoration efforts and reinstatement of essential government services by prioritizing debris removal operations that support disaster recovery objectives identified by the County and incident command.
- Conduct debris removal operations in a manner that aligns with the waste management hierarchy: reuse, recycle, compost, energy recovery, and disposal. The County will utilize the current waste management infrastructure whenever possible.
- Promote safety for all debris management personnel through regular inspections and oversight of work sites.
- Ensure efficient and cost effective debris management operations with a comprehensive monitoring program.

Debris management operations during the response phase will be managed by the Washington County Department of Land Use and Transportation's (DLUT) Department Operations Center (DOC). This may require support from the Washington County Emergency Operations Center (EOC). When operations transition fully to the recovery phase, a Washington County Debris Management Task Force (DMTF) will be formed to oversee operations. The DMTF will be led by DLUT and comprised of representatives of organizations who are managing elements of the debris recovery effort that may include state, federal, private-sector and non-profit organizations.

3.3 Disaster Response Operations – Debris Clearance

DLUT is responsible for conducting and managing debris clearance missions on County roads. The most critical aspect of any disaster is that of life safety operations – actions taken to save lives and minimize threats to the public. Therefore, debris clearance missions will first occur on routes needed to support life safety and first response operations. Subsequent debris clearance missions will focus on supporting incident stabilization and preservation of property using the following priorities:

Priority 1: Access for emergency vehicles and personnel conducting life safety operations (police, fire, EMS, and hospitals).

Priority 2: Access for crews repairing / installing critical infrastructure (natural gas and fuel, electrical, communication, water, and sewer services).

Priority 3: Access to facilities where mission-essential services are performed (including governmental services).

Priority 4: Access to allow resumption of wet household garbage service to mitigate public health hazards.

The tactical approach to clearing a route will depend on the specific requirements of the incident and resources available. The following sequence of debris clearance may be used:

1. Make available one lane of traversable road surface to allow the passage of life-safety vehicles, leaving debris on the public right-of-way, beginning with mission-critical routes and then Emergency Transportation Routes (ETR).
2. Make available remaining lanes of traversable road surface to allow two-lane functionality of the road segment, leaving debris on the public right-of-way.
3. Clear debris from the public right-of-way.

After mission-critical routes and ETRs are cleared, high traffic volume routes will be cleared followed by low volume routes.

Once debris clearance missions are complete, the transition from response to recovery occurs, which includes picking up debris and hauling it to temporary or final disposal sites. Debris response and recovery operations may overlap depending on the availability of resources and areas of operations.

3.4 Debris Recovery Operations – Debris Removal, Reduction, and Disposal

3.4.1 Debris Removal, Reduction, and Disposal Strategy

Debris recovery operations involve processes and procedures for collecting disaster-generated debris from impact sites and transferring it to temporary or final disposal locations. The goals of debris recovery operations are to eliminate threats to public health and property, support the community recovery process, and minimize debris operations costs.

There are various debris collection strategies that meet these goals, and each should be evaluated when a debris incident occurs to determine which would be most efficient and effective. To support community recovery, the following strategies are options:

- Curbside collection, with mixed debris collection. Debris is piled on the public right-of-way and sorted at a debris management site.
- Curbside collection, with source-segregated debris collection. Debris piled on the public right-of-ways is pre-sorted and segregated by type for efficient collection.
- Public debris collection centers. Locations where citizens bring debris and place it in large roll-off bins. This facilitates debris sorting and minimizes contamination potential, along with reducing costs for debris collection.

Debris on the public rights-of-way or County improved property is the legal responsibility of the County. Debris at these locations will be gathered and hauled to a

debris management site(s) or final disposal site(s). Whenever possible, debris will be hauled from the source / impact site directly to the final disposal site (transfer station, recycle center, etc.) to minimize debris handling and hauling costs. When debris quantities overwhelm the existing waste management infrastructure, or when debris types are mixed in large quantities, Temporary Debris Storage and Reduction (TDSR) sites, holding areas, and / or public debris collection centers may be utilized to support community recovery efforts.

In rare circumstances, debris on private property will be collected and transferred to disposal sites by County resources. Private property debris operations are only considered when they are in the public interest: to eliminate a threat to public safety or when it is necessary for community economic recovery. Debris operations of this nature include collecting debris for hauling to TDSR or final disposal sites, and the demolition of unsafe / dangerous structures.

Debris recovery operations will be conducted using cost-effective and environmentally responsible methods. Costs will be reasonable, accurately documented, and confirmed through a comprehensive monitoring program.

Debris recovery operations will align with the waste management hierarchy: reuse, recycle, compost, energy recovery, and disposal. Whenever possible, all materials that can be reused, recycled, composted, or used for energy recovery, will be captured and processed to avoid placement in landfills. Methods of disposal, recycling or reduction include, but are not limited to: recycling, grinding, chipping, bailing, compacting, and landfilling, dependent upon the specific site and materials. Metals, white goods, vegetative debris, wood, and soils are prime candidates for recycling. Most non-ferrous metals are suitable for recycling. Specialized contractors may be solicited to bid on disposal of debris by recycling if it is well sorted.

Removal and disposal actions should be handled at the lowest level possible based on the magnitude of the incident. It follows the normal chain of responsibility, i.e., local level, state level, and when resources are exceeded at each level of responsibility, federal assistance may be requested according to established procedures.

DLUT or contracted personnel will supervise debris removal actions within unincorporated Washington County using all available qualified resources. When additional debris management resources are needed, the Washington County EOC or if activated, the Washington County DMTF will make requests for state assistance with Oregon Emergency Management (OEM). OEM or the State Coordinating Officer (SCO) will make requests for federal assistance to the FEMA Federal Coordinating Officer (FCO).

3.4.2 Strategy by Debris Type

3.4.2.1 Vegetative Debris

Vegetative debris directly obstructing the public right-of-way will be removed. Vegetative debris that is not directly obstructing a public right-of-way and exists on

improved public property that is within the declared area and is considered hazardous may be collected and removed if the following criteria are observed:

- Condition must be a direct result of the disaster
- Diameter of six inches or greater at breast height
- Greater than 50 percent of the crown is damaged or destroyed
- Trunk is split or broken branches expose the heartwood
- Tree has fallen or been uprooted within a public-use area
- Tree is leaning at an angle of 30 degrees or more

Hazardous limbs are considered to be:

- Greater than two inches in diameter at the point of breakage
- Still hanging in a tree and threatening a public-use area (e.g. trails, sidewalks, golf cart paths, etc.)

Hazardous tree stumps are considered to be:

- 50 percent or more of the root-ball exposed
- Greater than 24-inches in diameter, as measured above the ground

Hazardous stump removal for stumps measuring 24 inches in diameter or less does not require special equipment; therefore, these stumps will be removed on a reasonable unit cost per cubic yard along with other debris. More information regarding hazardous stump removal can be found in *FEMA Public Assistance Program and Policy Guide, FP 104-009-2*.

Vegetative debris is bulky and consumes a significant amount of space if not reduced. If vegetative debris is taken to a TDSR, efforts will be made to reduce the volume of vegetative debris by chipping and grinding, which reduces the debris volume by 75%. Additionally, vegetative debris must be mechanically loaded into trucks and compacted, or the volume will be reduced by half for PA program reimbursement purposes.

The chips / mulch produced by grinding vegetative debris has agricultural value as well as being easily converted to pelletized fuel. Grinding and chipping is the primary vegetative debris reduction method and requires on-site storage and disposal of the chips / mulch. To utilize this approach, the County will need to contract with a grinding contractor.

Once vegetative debris is removed, it will be taken to a currently permitted facility, or if no such facilities are operational, a temporary debris storage and reduction (TDSR) site or a holding site.

Currently permitted facilities that accept vegetative debris in or near Washington County are listed in Tab 8, Table 1.

3.4.2.2 Construction and Demolition (C&D) Debris

C&D debris generated from a large scale incident is likely to be concentrated in the major cities of Beaverton, Hillsboro, and Tigard, as well as highly populated unincorporated areas such as Aloha and Bethany. Structures most vulnerable to large scale incidents include unreinforced masonry buildings (with brick facades or concrete structures lacking internal rebar) and buildings existing on soils vulnerable to liquefaction.

C&D debris is comprised of all types of mixed wastes. Typical materials found in C&D debris include concrete, bricks, bituminous concrete, asphalt paving, untreated or chemically treated wood, glass, masonry, roofing, siding, and plaster; and soils, rock, stumps, boulders, brush, and other similar material – many of which may be recycled if separated.

Certain types of C&D debris are reusable or recyclable. To conserve landfill space, it is prudent to extract recyclable materials. This is typically conducted at a pre-existing disposal site or a TDSR. Metro has adopted an Enhanced Dry Waste Recovery Program (EDWRP) that requires dry waste from construction and demolition to be processed through a dry waste recovery facility to pull out recyclables before the waste is dumped in a landfill. EDWRP requires recovery facilities in the Metro area to process C&D debris delivered in drop boxes and self-tipping trucks to recover cardboard, wood, and metals. Residual materials from these facilities must not contain more than 15 percent, by total combined weight, cardboard or wood pieces greater than 12 inches in any dimension and metal pieces greater than eight inches in any dimension. The requirements of this program may be waived in the event of a disaster; however, separating C&D debris for recovery and recycling can save on disposal costs, generate recycling revenue, and reduce the amount of materials disposed of in a landfill.

C&D debris may include hazardous materials such as asbestos roofing and floor tile, lead pipes, and wood contaminated with lead based paints. All other local, state and federal laws and regulations, including environmental and hazardous waste ordinances must be followed when collecting asbestos containing materials.

It will be assumed that C&D debris taken to a TDSR site will eventually be removed from the temporary site and taken to a recovery facility for sorting and final disposal or to a landfill. Actions taken at the TDSR will be limited to the sorting and removal of very large debris by heavy equipment. Large piles of mixed C&D debris will not be sorted at a TDSR.

Once C&D debris is removed from the public right-of-way, it will be taken to a currently permitted facility, or if no such facilities are operational, a TDSR.

Currently permitted facilities that accept C&D debris in or near Washington County are listed in Tab 8, Table 2.

3.4.2.2.1 Asbestos Containing Material

Any material found to be classified as hazardous or toxic waste, such as lead or asbestos, shall be reported immediately to a site supervisor and subsequently to the coordinating representative (County EOC, Washington County Debris Management Task Force

(DMTF) or debris contractor). At the coordinating agency representative's direction, this material shall be segregated from the remaining debris in such a way as to allow the remaining debris to be loaded and transported. Special handling requirements exist for asbestos containing materials.

Awareness of asbestos is critical for worker safety. If operations at a TDSR may include handling of asbestos-containing waste materials (ACWM), this must be addressed when obtaining the Solid Waste Letter of Authorization (SWLA) from DEQ. DEQ will require that the site operator have someone trained in asbestos awareness who can recognize suspected ACWM and take appropriate steps to isolate and manage any potential ACWM. Any asbestos-containing waste materials that is discovered needs to be immediately segregated.

DEQ solid waste staff in consultation with air quality asbestos staff may consider allowing a temporary site to accept ACWM 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 ACWM waste safely. The site operator will need to prepare a Special Waste Management Plan as part of the SWLA application.

ACWM at collection sites must be included in planning efforts. If houses are being torn down after the disaster, citizens could inadvertently be bringing materials containing asbestos to the public right-of-way, disposal site, or public debris collection site. The Washington County EOC or DMTF will facilitate ACWM planning with DEQ, Metro, and contractors when these materials are identified.

3.4.2.3 Hazardous and Other Special Waste

The County may be required to address widespread hazardous materials contamination. Necessary measures may include retrieval and proper disposal of orphan drums, pumping water contaminated with hazardous materials, control or stabilization of oil or other hazardous material releases, and cleanup and disposal of hazardous materials. Certified hazardous waste technicians will handle, capture, recycle, reuse, and dispose of hazardous waste. The County must comply with local, state, and federal environmental requirements for handling hazardous waste.

Household Hazardous Waste (HHW) or hazardous waste from Conditionally Exempt Generators (CEG) is often generated when hazards affect populated areas. This may include electronic waste as well. The outcome of improper handling of hazardous waste during a disaster response may result in potential contamination of surface water, groundwater, soil and air resulting in exposure to people.

Hazardous materials response or consultation is available from the Regional Hazardous Materials Emergency Response Team (RHMERT), hosted by Tualatin Valley Fire & Rescue. It can be accessed through 9-1-1. Additional assistance may be accessed through the Oregon Emergency Response System (OERS) and potentially the activation of additional RHMERT, through the Office of the State Fire Marshal. For more information about hazardous materials response, see Annex 6 – Hazardous Materials.

Currently permitted facilities that accept hazardous waste in or near Washington County are listed in Tab 8, Table 3.

3.4.2.3.1 Hazardous Waste

Hazardous waste handling and removal will be coordinated by DEQ Solid Waste Program, in consultation with Metro and the Solid Waste & Recycling Program at Washington County, Health and Human Services. The Office of the State Fire Marshal, and state and/or federal Emergency Support Function #10 – Oil and Hazardous Materials Response may provide additional assistance.

Items classified as commercial or industrial hazardous waste WILL NOT be accepted at debris management sites. Individuals with material of this nature will be referred to the DEQ for technical assistance. The DEQ has a list of qualified hazardous waste contractors that will assist individuals with these materials.

ORS 466.635 and Oil and Hazardous Materials Emergency Response Requirements, Chapter 340, Division 142, requires immediate notification to 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 42 gallons.
- Two hundred (200) 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 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, refer to OAR 340-142-0050.

3.4.2.3.2 Household Hazardous Waste

HHW handling and removal will be coordinated by Metro, DEQ Solid Waste Program, and potentially state and / or federal ESF #10 in consultation with the Washington County Health and Human Services Solid Waste & Recycling Program.

HHW may consist of common household chemicals, propane tanks, oxygen bottles, batteries, and industrial and agricultural chemicals. These items may be mixed into the debris stream and will require close attention throughout the debris removal and disposal process.

HHW contractors will accomplish removal of hazardous waste. HHW identification and segregation will be completed before any building demolition begins. Regular demolition contractors / workers cannot remove contaminated debris.

Once debris is removed from the public rights-of-way, it will be taken to a currently permitted facility, or if no such facilities are operational, a specially designated holding area that is permitted to handle HHW.

3.4.2.3.3 Electronics Waste

Certain electronic waste (e-waste) must be managed as a special waste pursuant to the state of Oregon's Electronic Waste disposal ban, which dictates how Covered Electronics Devices are disposed (as defined in ORS 459A.305). E-waste items include: desktop or portable computers, monitors with a viewable area greater than four inches, and televisions, which must be separated from other debris either at the collection site or a TDSR site.

Once debris is removed from the public rights-of-way, it will be taken to a currently permitted facility, or if no such facilities are operational, a TDSR may be permitted to handle and temporarily store e-waste. Currently permitted facilities that accept e-waste can be found on the Oregon E-Cycles website: http://www.deq.state.or.us/ecsearchv2/ or by calling (888) 532-9253. A comprehensive list of sites that accept e-waste sorted by city can be found here: http://www.deq.state.or.us/lq/ecycle/search/OREcyclesAllSitesbyCity.pdf

3.4.2.4 White Goods

Many white goods contain ozone-depleting refrigerants, mercury, or compressor oils, requiring waste handlers to follow all applicable local, state, and federal requirements.

White goods must be kept separate from other disaster related debris because of the hazardous materials they contain. White goods will be hauled directly to a disposal site or to a white goods holding area. Source segregation is the optimal collection strategy when white goods are a common component of the disaster-generated debris; therefore, public information efforts will be made to encourage citizens to segregate white goods from other debris types.

Private contractors will be encouraged to collect white goods, which is common practice due to the value of the scrap metal. Private contractors typically undertake this effort with little or no charge to local jurisdictions.

Currently permitted facilities that accept white goods in or near Washington County are listed in Tab 8, Table 4.

3.4.2.5 Soil, Mud, and Sand

The County has a legal responsibility to remove soil, mud, and sand from public rights-of-way. Unimproved property will not be cleared of soil, mud, and sand. Stream channels may be cleared of soil, mud, and sand if it is necessary for the normal operation of a roadway or the blockage will alter stream flow characteristics, potentially creating a flooding threat.

Removal of soil, mud, and sand will be limited to the quantity that was deposited due to the disaster. Large amounts of soil can be recovered if the material is put through a screen system. The resulting soil can be given back to the agricultural community, returned to its original location, used as fill in reconstruction projects, or used as cover material in landfills. The soil could also be transported to a staging area and reduction site where it could be combined with organic material that will decompose. Soil recycling would

require large earthmoving equipment, potentially dump trucks, conveying equipment, and screening equipment.

In agricultural areas where chemical fertilizers are used heavily, or in the event other hazardous materials have leached into the soil, recovered soil may be too contaminated for use on residential or existing agricultural land. Monitoring and testing of the soil would be necessary depending on where the debris originated and may result in the soil being disposed of in a landfill permitted to accept contaminated soils.

Currently permitted facilities that accept soil, mud, and sand in or near Washington County are listed in Tab 8, Table 5.

3.4.2.6 Vehicles and Vessels

Vehicles and vessels damaged or destroyed during a disaster may become debris that must be managed. Vehicles and vessels considered disaster debris in the context of this plan are ones that were damaged as a result of the disaster and are deemed to be a hazard or obstruction. Hazard is defined by Washington County Code of Ordinances Chapter 8.16 as "a vehicle standing in such a manner as to jeopardize public safety and the efficient movement of pedestrian or motor vehicle traffic." ORS 819.120 refines this definition by identifying situations which make a vehicle a hazard or obstruction. It includes:

- Any vehicle that is parked so that any part of the vehicle extends within the paved portion of the travel lane.
- Any vehicle that is parked so that any part of the vehicle extends within the highway shoulder or bicycle lane:
  - Of any freeway within the city limits of any city in this state at any time if the vehicle has a gross vehicle weight of 26,000 pounds or less.
  - Of any freeway within the city limits of any city in this state during the hours of 7 a.m. to 9 a.m. and 4 p.m. to 6 p.m. if the vehicle has a gross vehicle weight of more than 26,000 pounds.
  - Of any freeway within 1,000 feet of the area where a freeway exit or entrance ramp meets the freeway.
  - Of any highway during or into the period between sunset and sunrise if the vehicle presents a clear danger.

ORS 819.140 gives the Washington County Sheriff's Office the authority to take a vehicle into custody. ORS 819.120 and Washington County Code of Ordinances Chapter 8.16.060 allow the Washington County Sherriff's Office to take immediate custody of and tow the vehicle if it constitutes a hazard or obstruction.

Washington County Code of Ordinances Chapter 8.16.040 allows a law enforcement officer to take a vehicle into custody and that the vehicle "shall be impounded and immediately towed from public right-of-way, public parks, or other public roads, property or premises if:

- No other licensed driver is immediately available to take possession of the vehicle and the officer reasonably believes no other reasonable disposition of the vehicle is available.
- The officer taking the person into custody reasonably believes that the vehicle constitutes a hazard (as defined in 8.16.030).

Vehicle disposal occurs by giving the vehicle to a valid dismantler who holds a certificate under ORC 822.110. To dispose of the vehicle, the Washington County Sherriff's Office must:

- Notify the registered owner and secured parties of the acquisition of the vehicle and intent to dispose.
- Photograph the vehicle.
- Notify ODOT that the vehicle will be disposed of.

When vehicle and vessel debris are generated during a disaster, every effort will be made to utilize the current infrastructure and normal processes and procedures for processing and managing debris. If this isn't possible, a TDSR site will be needed. A TDSR site that will serve solely as a holding area or a vehicles and vessels holding area at a currently operating TDSR site will be utilized to meet surge capacity for vehicles and vessels. Every effort will be made to eliminate or capture the leakage of fluids from vehicles to mitigate the risk of contamination. Additionally, disposal of waste tires will be conducted in a manner that aligns with regulations set forth in ORS 459.705-.730.

Currently permitted facilities that accept vehicles and vessels in or near Washington County are listed in Tab 8, Table 6.

3.4.2.7 Putrescent Debris

Putrescent debris will be kept separate from other non-putrescent debris. Materials containing animal carcasses and remains will be disposed of in coordination with the State of Oregon Department of Agriculture and in accordance with ORS Chapter 601.

All other putrescent disaster-generated debris, for example rotting food items within inoperable refrigeration units, will be kept separate from other non-putrescent debris. Putrescent debris removed from refrigeration units at white goods disposal sites will be disposed of at a currently permitted facility that accepts putrescent waste. Collection and segregation of putrescent waste at a holding area will be conducted through the use of drop-box or roll-off type containers. Material that is removed from refrigeration units will be bagged in clear plastic bags prior to placement in drop-box or roll-off type container.

Currently permitted facilities that accept putrescent debris in or near Washington County are listed in Tab 8, Table 7.

3.4.2.8 Infectious Waste

Infectious waste may include pathological waste, biological waste, sharps, and culture and stocks. Oregon regulations pertaining to infectious waste are provided in ORS 459.386-405. Methods for managing infectious waste vary depending on the type of waste. Handling requirements for each type of infectious waste are included in sections 6.2.8.1 through 6.2.8.4 of this plan.

There are four state agencies in Oregon that regulate various aspects of the management of infectious waste management - the Oregon DEQ, Oregon Health Authority (OHA), Oregon Occupational Safety and Health Administration, and the Oregon Department of Transportation. Prior to handling, transporting or disposing of disaster-generated infectious waste, all of the aforementioned agencies must be consulted.

3.4.2.8.1 Pathological Waste

Pathological waste consists of human tissue from surgery and lab procedures and lab animals. Pathological waste must be contained within a red bag marked bio-hazardous and incinerated.

3.4.2.8.2 Biological Waste

Biological waste consists of blood and other body fluids that cannot go directly into the sanitary sewer system or waste materials that are saturated (dripping) with bodily fluids, not including diapers soiled with urine or feces. Biological waste must be contained within a red bag marked bio-hazardous and either incinerated or sterilized in an autoclave type vessel and transported to a municipal solid waste landfill. Liquids and semi-solids may be discharged into the sanitary sewer system.

3.4.2.8.3 Sharps

Sharps are defined as needles, IV tubing with needles attached, scalpel blades, lancets, glass tubes and syringes out of their original sterile containers. Sharps must be contained within a red box which is puncture proof, be marked bio-hazardous and either incinerated, sterilized in an autoclave type vessel or disposed of in a segregated area of a permitted landfill.

3.4.2.8.4 Culture and Stocks

Cultures and stocks are defined as specimen cultures and dishes, serums and vaccines excluding throat and urine cultures. Cultures and stocks must be contained within red bags marked bio-hazardous and either incinerated or sterilized in an autoclave type vessel and transported to a municipal solid waste landfill.

3.4.2.9 Chemical, Biological, Radiological, Nuclear-Contaminated, and Explosives Debris (CBRNE)

CBRNE-contaminated debris is any debris contaminated by chemical, biological, radiological, nuclear, or explosive device materials as a result of a natural or man-made disaster, such as a weapon of mass destruction incident. The clearance, removal, and

disposal of CBRN-contaminated debris should be performed in accordance with applicable federal statutes, regulations, policies, and other guidance documents.

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

Considerations for monitoring operations:

- Man-made disasters may create debris that is considered evidence as part of a crime scene. Law enforcement officials may need to clear the activities before debris operations can begin. Monitors should ensure the CBRN-contaminated debris is cleared by law enforcement officials before removal so as not to undermine the integrity of the crime scene. Debris operations may also proceed concurrently with incident investigations.
- Be aware of the types of evidentiary material being sought in case CBRN contaminated debris is encountered outside of the identified crime scene area.
- CBRN-contaminated debris may be either disposed of or taken to a special collection area for further processing. Verify and document that separation, processing, and disposal follow the prescribed procedures.

3.4.2.9.1 Garbage

The Washington County, Health and Human Services, Solid Waste & Recycling Program will coordinate the restoration of garbage and recycling collection services during response operations if they were disrupted by the incident. Residents will be informed when debris operations will take place in their neighborhoods and of any debris-related health issues though public information efforts.

The collection, hauling, and disposal of garbage is not reimbursable by the FEMA PA program, as it is not considered disaster-generated debris. Because of the health hazard garbage poses, every effort will be made to restore normal garbage and recycling operations as quickly as possible.

3.4.3 Temporary Debris Storage and Reduction Site Operations

Washington County's overarching debris management strategy seeks to utilize the pre-existing debris management infrastructure to process and dispose of disaster-generated debris. If the current infrastructure's operational capacity is diminished or incapacitated, or the incident has generated quantities of debris that cannot be processed by the current infrastructure without posing a threat to public health and safety, threatens to pollute the environment, or hinder community economic recovery efforts, a TDSR site may be required.

TDSR site operations require careful planning and site preparation efforts. The goal is to maintain a pre-identified site portfolio so TDSR site operations may be initiated with minimal preparation time – this is critical due to the complexities of land use compliance, site assessment, and potential leasing requirements. Pre-incident site assessment

procedures require reviewing the site for land use compliance, potential impacts to the environment, and site access. Ideally, sites would be owned by Washington County, which minimizes potential liability concerns.

When a debris-generating incident unfolds that requires TDSR site operations, the County should seek to locate a TDSR site in proximity to debris locations without posing a threat to the environment, the community, or economic recovery efforts. For the scope of this plan, TDSR site location will only occur in unincorporated areas of Washington County. When a site is identified, there are site permitting requirements that must be met.

TDSR site operations require a variety of personnel and equipment. Site operations require a site manager, debris monitors, safety personnel, and equipment operators. Equipment needs depend on the type and quantity of debris anticipated at the site.

TDSR site operations conclude when the debris infrastructure is capable of receiving and processing the remaining debris.

Detailed information about TDSRs is provided in Tab 7.

3.4.4 Public Debris Collection Sites

Public debris collection sites are a debris collection strategy that supports community recovery by providing the public with a location to drop off disaster-generated debris. These sites typically have large roll off bins where the public can dispose of debris by debris type. This collection strategy is a good option for debris impacts in rural areas where county-sponsored collection would be expensive. This collection strategy is more cost effective for the county because it reduces sorting and hauling costs. However, this collection strategy is not typically reimbursed by FEMA, and is therefore a better option for non-declared disasters.

More information about operating a Public Debris Collection Site may be found in Tab 10.

3.5 Debris Monitoring Operations

Debris monitoring is an essential component of operations, particularly during a federally declared disaster when the PA program is providing funding. The purpose of debris monitoring is to promote efficient and safe operations, reduce the potential for fraudulent activity, and ensure compliance with PA program eligibility criteria. Monitoring debris removal operations achieves two objectives:

- Verification that the work completed by the County / contractor is within the scope of work
- Provides the required documentation for PA program reimbursements

Monitoring debris removal operations requires comprehensive observation and documentation of debris removal work performed from the point of debris collection to final disposal.

The Washington County DMTF will manage debris monitoring operations. Debris monitoring may be performed by DLUT force account personnel, a contracted organization, or by personnel provided in response to a request for federal assistance.

3.5.1 Field Debris Monitoring Staff

Debris monitors serve as Washington County's field representatives. They ensure contract terms and specific monitoring and documentation requirements of debris removal staff are adhered to and met. This process is required to substantiate Washington County's requests for PA program reimbursements.

Monitoring operations will be necessary for all aspects of the debris management operations: loading, staging, and disposal sites. Debris monitors need to understand FEMA PA program policies and guidelines, including eligibility issues specifically relating to debris. The final determination of any PA debris eligibility issue will be made by FEMA PA management personnel.

Detailed information about field monitoring staff positions is included in Tab 4.

3.5.2 Debris Monitoring Documentation Requirements

Proper documentation is required by the PA program to fully account for debris clearance and removal activities, which supports eligibility of claims for reimbursements. Documentation of activities and costs should be supplied to FEMA PA staff for inclusion in Project Worksheets (PW).

Summaries of the information included in the load tickets are typically provided in support of Washington County's PA funding request in a PW. FEMA and OEM may also request to see all backup supporting documentation and reports used to substantiate costs claimed in the PW.

The EOC or the Emergency Field Office is responsible for proper documentation of debris removal, recycling, processing, and disposal activities to ensure FEMA reimbursement. Documentation is a critical component in support of contractor invoices and in justifying FEMA's reimbursement policy. Load ticket disposition and debris monitoring activities are the major tools that the county must employ in order to adequately document debris management activities for FEMA reimbursement.

An overview of the documentation and related forms are included in Tab 4.

3.6 Private Property Debris Removal and Demolition

Debris removal operations on private property are rare during disaster recovery operations. Debris removal on private property is the responsibility of the property owner and is normally covered by property insurance. Additionally, debris removal activities on private property may pose potential liability issues, and is not typically a reimbursable activity under the FEMA PA Program.

Washington County will only conduct debris removal activities on private property when it is in the public interest to do so, which is defined as:

1. An immediate threat to life, public health, and safety
2. An immediate threat of significant damage to improved public or private property
3. Vital to the economic recovery of the affected community and to the benefit of the community-at-large

Should it be deemed necessary to conduct debris removal activities on private property, the County must acquire indemnification and an unconditional authorization for removal of debris from the property owner. This is achieved by having the property owner sign a Permit of Entry (Tab 5, Attachment 1). The Permit of Entry grants property access and includes a hold harmless agreement.

Once debris removal activities are completed on private property, the County will seek reimbursement of costs from the property owner. This process will require participation and action by County Counsel.

3.7 Debris Contracting and Procurement Procedures

Large-scale, widespread, or complex debris generating incidents will require the acquisition of resources from sources external to Washington County. Efforts will be made to utilize mutual aid contracts and agreements, and regional resources. When resource requirements exhaust regional availability or are unavailable due to the capability required, the County will seek resources through contracting with private-sector organizations. Contracted resources may include debris hauling services, debris monitoring services, TDSR site operations, and specialized debris processing equipment (chipping and grinding machinery, incinerators, etc.).

There are three types of contracts the County can enter into for debris clearance and removal services. These contract types are described below and include fixed-price, cost-reimbursement, and, to a limited extent, Time and Materials.

More detailed information about contract types and contracting procedures is found in Tab 6.

3.8 Debris Management Operations Supplemental Funding

3.8.1 Federal Disaster Declaration – Public Assistance Program

Federal major disaster declarations are possible when impacts to publicly-owned facilities and uninsured losses exceed both a state and county threshold established annually by FEMA. For federal fiscal year 2015, the county threshold was $3.56 per capita ($1.8 million total) and the state threshold $1.41 ($5.4 million total).

Reimbursement for debris removal activities during a major disaster declaration is made possible by the FEMA PA Program, Category A: Debris Removal, and Category B: Emergency Protective Measures (for demolition activities). For more information on PA program eligibility, see Public Assistance Program and Policy Guide.

3.8.2 Federal Highway Administration – Emergency Relief Program

Congress authorized in 23 U.S.C. 125 the Emergency Relief Program (ERP) for the repair or reconstruction of federal-aid highways (arterial, urban collectors and major rural collectors) which have suffered serious damage as a result of natural disasters or catastrophic failures from an external cause. Damage to highways must be severe, occur over a wide area, and result in unusually high expenses to Washington County.

The U.S. DOT Federal Highway Administration (FHWA) administers the ERP to assist state and local governments with the repair of federal-aid roads damaged during disasters and for debris removal activities under specified conditions. Disaster-related debris removal from federal-aid highways is eligible for ERP funds when:

- The Governor issues a formal proclamation of the existence of a disaster. A Presidential declaration, or the Governor's request for this declaration, can serve the same purpose. Oregon then files a letter of intent to apply for Emergency Relief (ER) funding with the FHWA Division Office, and the Division Office acknowledges the letter. The President declares an emergency or a major disaster but FEMA determines that debris removal is not eligible under the Stafford Act.
- The Governor's declaration covers counties that are not included in the President's declaration.

Only debris deposited as a direct result of a disaster is eligible for ER funding. ERP funds may be used for:

- Debris removal costs on eligible sites on federal-aid highways that FEMA determines to be ineligible under the PA program.
- Debris on the roadway, unless placed there by adjacent property-owners.
- Debris removal for the purpose of restoration of stream channels outside the highway right-of-way, if it is the responsibility of DLUT or other jurisdictions in Washington County, for maintenance and proper operation of the stream channel, and the work is necessary for satisfactory operation of the highway system.
- The cost of stockpiling and disposing of debris or of removing and transporting marketable timber from the acceptable clearing limits to adjacent sites. Hauling costs to locations outside the general proximity of the damaged highway are not eligible.

Normally, eligible work must be within the right-of-way limits of the damaged federal-aid highway facility. A minimum $5,000 in repair costs per site should be used to determine if the extent of repair work at a site is beyond the scope of heavy maintenance. Title 23 Code of Federal Regulations (23 CFR) Part 668, Subpart A includes a $700,000 (federal share) disaster eligibility threshold to distinguish between heavy maintenance or routine emergency repair and serious damage eligible under the ER program.

The ERP provides funding for 100% federal share for emergency repair work – work to restore essential travel, minimize the extent of damage, or protect the remaining facilities – that is accomplished in the first 180 days after the disaster occurs. FHWA may extend this time period based on delay in the ability to access damaged areas.

The ERP provides funding up to 90% federal share for eligible permanent repairs to restore damaged facilities if the total eligible expenses that a state incurs, due to natural disasters or catastrophic failures in a federal fiscal year exceeds, the state's apportionments under 23 U.S.C. 104 for the fiscal year in which the event occurred.

The eligibility of debris removal, including downed timber, is limited to the traveled way (23 CFR 668.109 specifically states the right-of-way) and cut and fill slopes, and clearing needed for full functioning of the pavement, drainage ditches, structures, and the safety clear zone. Clearing the remainder of the right-of-way outside these areas is not eligible for ERP funding unless it is required to minimize damage, protect facilities, and restore essential traffic.

3.9 Historic Considerations for Debris Management Operations

The National Historic Preservation Act (NHPA) Section 106 requires that the effects of federally funded projects, such as the removal of debris under the FEMA PA program, have on historic resources are considered and that the Advisory Council on Historic Preservation (ACHP) has the opportunity to comment on any such project. Historic resources may include districts, structures, objects, landscapes, archaeological sites, and traditional cultural properties included on, or eligible for inclusion on, the National Register of Historic Places.

The demolition and removal of debris from historic structures requires NHPA compliance. The county will evaluate the effects of proposed debris removal and demolition operations on historic properties by consulting with the State Historic Preservation Officer (SHPO), and providing the ACHP and other interested parties the opportunity to comment on proposed activities. Only after completing the aforementioned historic review process can debris removal and demolition operations continue on or near historic sites.

The State of Oregon State Historic Preservation Office
Oregon Heritage, Oregon Parks & Recreation Department
725 Summer St NE, Suite C
Salem, OR 97301
Phone: 503-986-0690
Fax: 503-986-0793
E-Mail: Heritage.Programs@state.or.us
Website: www.oregon.gov/oprd/HCD/Pages/index.aspx

Following contact with the Oregon SHPO, the County will provide the ACHP a reasonable opportunity to comment on the projects.

Advisory Council on Historic Preservation

1100 Pennsylvania Avenue NW, Suite 803
Old Post Office Building
Washington, DC 20004
Phone: 202-606-8503
E-Mail: achp@achp.gov
Website: www.achp.gov

The County will provide public notice of the activities potentially affecting sites listed on the Oregon Historic Sites Database at least five days prior to the commencement of activities. Notice will be posted in at least two conspicuous locations in the vicinity of the affected sites. The notice will contain the date of the proposed activities, a brief description of the activities, and the phone number of a person to contact for additional information or to provide comment.

3.10 Public Information Strategy

The goal for public information efforts during a disaster that generates debris is to provide the public with timely and accurate information on debris management operations (debris collection schedules by location, TDSR site or public debris collection site locations, source or mixed debris collection methods). Information provided to the public will focus on:

- Debris cleanup and waste instructions to facilitate safe handling of debris and waste, as well as identification and safe handling instructions for hazardous debris and waste
- Locations of disaster impacts / debris-related hazardous conditions including areas to avoid due to ongoing debris management operations or road closures
- Information on operational capacity of existing debris management infrastructure (garbage service, landfill sites, composting facilities, recycling centers) to support public debris recycling and disposal efforts
- Locations of County-sponsored public debris collection sites, debris types and quantities accepted, and hours of operation
- Information about an active county Public Inquiry Center where citizens can provide information about debris impacts in their communities
- Information on how to place debris on the public rights-of-way during County-sponsored debris collection efforts to include:
  - The collection strategy being used (source segregation or mixed debris)
  - Types of debris being collected
  - Collection schedules by location
- Locations and dates when normal garbage service will be restored for impacted garbage collection service areas

- Status of recovery / cleanup efforts
- Information pertaining to illegal dumping, including means for reporting illegal dumping, crime, and fraud

Public information efforts will be coordinated with all involved jurisdictions through the Washington County Joint Information Center (JIC) or Regional JIC, and distributed using traditional media channels, community groups / volunteer organizations, and possibly FEMA Community Relations Teams.

To support debris collection efforts in residential areas, Tab 10 contains a Household Debris Separation Guide which may be distributed to the pubic via media distribution channels.

4 Organization and Assignment of Responsibilities

4.1 General

In many cases, debris clearance, removal, and disposal actions can be accomplished quickly using municipal and potentially regional or state resources. In other cases, however, disaster-generated debris is so extensive that it can only be successfully managed through adequate pre-planning and the coordinated efforts of local, state, and federal governments and non-profit and volunteer organizations, and by potentially leveraging contracts with private-sector organizations.

4.2 Cities

Cities have debris management responsibilities within their own boundaries. In support of disaster debris operations, the cities may:

- Collect and recycle or dispose of debris within their jurisdictional boundaries and serve as PA program sub-applicants for reimbursement of debris-related costs (during a federally declared disaster).
- Administer franchise-hauling activities.
- Identify resource shortfalls and request resources from the county EOC, Logistics Section.
- Coordinate public information efforts with the county JIC.
- Develop emergency debris removal contracts.
- Designate emergency drop-off points and TDSR site locations.
- Perform damage assessments and report debris quantities, locations, and types to the county EOC, Planning Section, SitStat Unit.
- Designate a city official to manage debris operations and participate on the Washington County DMTF.

4.3 Washington County

Washington County is responsible for managing debris operations in unincorporated areas, and areas within incorporated cities for which specific departments have responsibility (such as county roads within city limits). The county will manage debris incidents on public improved lands and in rare circumstances, on private property, when it is in the public interest to do so. Individual organizations will manage debris within their areas of responsibility, unless quantities overwhelm their capacity to do so, at which time the Washington County EOC will provide support.

4.3.1 Emergency Management

In support of pre-disaster debris preparation efforts, Washington County Emergency Management (WCEM) will:

- Maintain and regularly update this plan.
- Identify TDSR sites and maintain a TDSR site inventory.
- Participate in regional debris management planning and related efforts such as the RDPO Public Works Working Group.
- Coordinate efforts with emergency management programs countywide.

4.3.2 Emergency Operations Center

In support of disaster debris operations, the EOC may:

- Conduct information collection, logging, tracking, assessment, verification, display, and dissemination (to all debris management stakeholders) to promote situational awareness pertaining to debris types and location (Planning Section, Situation Status Unit).
- Manage the Initial Damage Assessment (IDA)/Preliminary Damage Assessment (PDA) process (Planning Section, Situation Status Unit).
- Identify local equipment shortfalls and request resources from mutual aid sources and / or from the state ECC (Operations Section, Public Works Branch, Debris Management Group).
- Manage critical resource procurement and allocation, and establish priorities (Washington County Multiagency Coordination [MAC] Group or Regional MAC Group).
- Conduct strategic and tactical planning for debris management operations (Operations Section, Public Works Branch, Debris Management Group).
- Calculate debris volumes by type and location to support the damage assessment process and provide estimates to Incident / Unified Command (Operations Section, Public Works Branch, Debris Management Group).

- Manage strategic debris removal missions on public improved lands. Prioritize debris removal missions to align with incident objectives as identified by the Incident / Unified Command (Operations Section).
- Resolve policy issues pertaining to management of debris on private property in order to protect citizens from debris-related hazards, to support community recovery in residential areas, and/or to support community economic recovery in financial districts where commerce is necessary to restore essential community services (Policy Group).
- Assess preexisting debris management facility operational status and capacity to support disposal operations (Operations Section, Public Works Branch, Debris Management Group) with support from Metro.
- Identify the need for TDSR sites, identify TDSR site locations, and initiate TDSR site operations (Operations Section, Public Works Branch, Debris Management Group).
- Request that DEQ waive requirements for TDSR site Land Use Compatibility Statement (LUCS) and SWLA fee. Request expedited SWLA to initiate TDSR site operations (Operations Section, Public Works Branch, Debris Management Group).
- When Washington County declares a local state of emergency, use emergency procurement rules (Procurement Rule 20-020 - Emergency Contracts ORS 279B.080) to expedite private sector contracting to support debris management operations (Finance Section, Procurement Unit and Logistics Section, Supply Unit).
- Manage private sector debris management contracting efforts (Finance Section and Operations Section).
- Coordinate with Incident / Unified Command and Policy Group to identify debris clearance missions on private property to support economic recovery (Operations Section, Public Works Branch, Debris Management Group).
- Participate on the Washington County DMTF when activated (Operations Section Chief / Public Works Branch Director / Debris Management Group Supervisor).
- Coordinate with the JIC to promote public information about debris management practices and public disposal site locations (Operations Section, Public Works Branch, Debris Management Group).
- Coordinate transition of debris recovery operations from the EOC and DLUT DOC to the Emergency Field Office (EFO) when activated. Delegate debris management responsibilities to the Washington County DMTF (Operations Section, Public Works Branch, Debris Management Group).

4.3.3 Department of Assessment and Taxation

In support of disaster debris operations, the Department of Assessment and Taxation may:

- Assign staff to conduct damage assessments of residential, commercial businesses, and non-profit organizations and report information on damages, to the County EOC, Planning Section, Situation Status Unit.
- Following damage assessments, share information related to debris quantities and types that exist on or may threaten the public right-of-way or public improved property with the County EOC, Operations Section, Public Works Branch, Debris Management Group or Washington County DMTF.

4.3.4 Department of Health and Human Services

In support of disaster debris operations, the Department of Health and Human Services, Solid Waste & Recycling Program may:

- Pre-identify potential sites for the temporary staging of debris and potential locations for a regional TDSR site, in coordination with DLUT.
- Assist in inspecting and approving TDSR sites based on the interests of public health.
- Coordinate with Metro and Oregon DEQ for permit compliance for TDSR site operations.
- Evaluate the enforcement of public health regulations to hasten debris response and recovery operations.
- Assist in the development of best practices to dispose of debris.
- Provide technical advice regarding health risks and safety procedures to the Washington County DMTF and JIC.

4.3.5 Department of Housing Services

In support of disaster debris operations, the Department of Housing Services may:

- Assign staff to conduct damage assessments of county-owned housing units and report information on damages to the County EOC, Planning Section, Situation Status Unit.
- Following damage assessments, share information related to debris quantities and types that exist on or may threaten the public right-of-way or public improved property with the County EOC, Operations Section, Public Works Branch, Debris Management Group or Washington County DMTF.

4.3.6 Department of Land Use and Transportation

DLUT is responsible for maintaining County roads in all of Washington County and inspecting public and private structures in unincorporated Washington County and some

of its cities for code compliance and structural integrity. In support of pre-disaster debris preparation efforts, DLUT will:

- Collect debris from public rights-of-way on county roads and ensure proper recovery of recyclable material and disposal of non-recyclable materials.
- Support requests for debris management assistance through the Cooperative Public Agencies of Washington County (CPAWC) and other regional equipment sharing agreements.
- Support debris-related planning functions including development and maintenance of this plan.
- Support the identification of TDSR site locations.
- Participate as a member of the RDPO Public Works Working Group.

When a debris incident occurs that overwhelms normal debris management capabilities, the DLUT activates the DOC. The DLUT DOC may:

- Conduct information collection, logging, tracking, assessment, verification, display, and dissemination to promote situational awareness pertaining to debris types and locations (Planning Section, Damage Assessment Branch, Road and Bridge Inspection Unit / Building Inspection Unit / Situation Status Unit).
- Manage tactical debris clearance and removal missions on county public rights-of-way. Prioritize debris clearance and removal missions to align with incident objectives as identified by the EOC and DOC Incident / Unified Command (Operations Section).
- Identify equipment shortfalls and procure resources through use of mutual-aid agreements in the following order: CPAWC Intergovernmental Agreement (IGA), Managing Oregon Resources Efficiently (MORE) IGA, and Oregon Public Works Emergency Response Cooperative Assistance Agreement (Operations Section and Logistics Section).
- Manage private sector debris management contracting efforts during a DLUT response or support contracting efforts when the EOC is operational (Finance Section and Operations Section).
- Support the provision of personnel and equipment or contracts for resources to support TDSR site operations (Operations Section).
- Identify sites for temporary storage of soil, sand, and mud debris and provide a Grading Permit for land use compliance (Operations Section).
- Conduct building inspections of public and private structures to identify unsafe and hazardous buildings (Planning Section, Damage Assessment Branch, Building Inspection Unit).

- Support the IDA / PDA process (Planning Section, Damage Assessment Branch).
- Serve as the lead agency for the Washington County DMTF (Incident Command).

4.3.7 Office of County Counsel

In support of disaster debris operations, the Office of County Counsel may:

- Develop and review all debris management contracts and private property land leases for TDSR site operations.
- Ensure compliance with all local, state, and federal, environmental, historical preservation and other applicable laws, regulations, and policies.
- Review rights-of-entry and hold harmless agreements and identify any potential liabilities.
- Provide support to the Washington County DMTF.

4.3.8 Support Services

In support of disaster debris operations, Support Services may:

- Assist with the development and review of all debris management contracts.
- Secure authorizations necessary for debris removal activities
- Identify and secure office space to support an EFO and / or DMTF management operations
- Oversee leasing of property to support the TDSR site operations
- Report damage assessments of County-owned buildings and parks and report information on damages, debris quantities, and debris type to the Support Services DOC Planning Section. They will compile the information and submit to the County EOC, Planning Section, Situation Status Unit.
- Coordinate debris removal operations with the County EOC, Operations Section, Public Works Branch, Debris Management Group.
- Provide support to the Washington County DMTF.

4.3.9 Washington County Debris Management Task Force

The Washington County DMTF assumes oversight of debris operations at the transition to disaster recovery. In support of disaster debris operations, the DMTF may:

- Establish local work assignments and debris removal priorities.

- Report on debris removal and disposal progress, and prepare status briefings for the Incident / Unified Command and other local, state, and federal officials.
- Provide public information guidance to the Washington County JIC on debris removal and disposal activities.
- Coordinate debris management operations amongst all involved jurisdictions, contractors, and volunteer organizations in Washington County.
- Establish controls to prevent or minimize illegal dumping.
- Coordinate with OEM and FEMA on PA program activities and reimbursements.
- Oversee a robust debris monitoring program.
- Coordinate regional debris operations with the Washington County or Regional MAC Groups and any Regional DMTF.

4.4 Regional Governments and Special Districts

4.4.1 Metro Regional Government

Metro's solid waste regulatory authority is established under the Constitution of the State of Oregon, ORS Chapter 268, and the Metro Charter. This includes the authority to regulate solid waste generated or disposed of within the metro governance area and all solid waste facilities located within that area (*Metro Code, 5.01.020*).

Metro's authority to develop a Regional Disaster Debris Management Plan (DMP) is derived from ORS Chapter 459 as well as Oregon Executive Order 78-16. Conditions for Metro Regional Disaster Debris Disposal Assistance are authorized by Executive Order No. 67 (28 March 1997).

In support of disaster debris operations in Washington County, Metro may:

- Support pre-incident TDSR site identification.
- Support public information efforts with the Washington County JIC.
- Provide guidance on the operational status of preexisting material reception and regional disposal sites.
- Provide guidance on legal compliance with state and regional laws and regulations.
- Organize and manage HHW neighborhood collection events immediately following debris incidents affecting residential areas to minimize the potential for mixed debris contamination.
- Participate in regional coordination efforts.

Temporary transfer stations or processing centers established and operated by a government for 60 days or less to temporarily receive, store or process solid waste are exempt from solid waste facility regulations if Metro finds an emergency situation exists (*Metro Code, 5.01.040[a][9]*). Additionally, the Metro Council can grant specific variances from the requirements of its solid waste provisions "upon such conditions as the [Metro Council] may deem necessary to protect public health, safety and welfare…"

4.4.2 Tualatin Valley Water District

In support of disaster debris operations in Washington County, TVWD may:

- Support requests for debris management assistance through the CPAWC agreement.
- Identify potential TDSR sites.

4.4.3 Clean Water Services

In support of disaster debris operations in Washington County, Clean Water Services (CWS) may:

- Support requests for debris management assistance through the CPAWC agreement.
- Identify potential TDSR sites.

4.5 State of Oregon

Many state agencies have roles and responsibilities for disaster debris management operations, including: DEQ, ODOT, the Oregon National Guard, ODA-NRD, OHA, the Oregon Department of Fish and Wildlife, and the Oregon Department of State Lands.

4.5.1 Office of Emergency Management

OEM is responsible for state-level disaster response operations as well as serving as the conduit for federal response integration. The Oregon ECC is the single point of contact for an integrated state response to a major emergency or disaster. When activated, the ECC is considered an operational extension of the Governor's Office.

During a debris incident, OEM is responsible for coordinating and facilitating emergency planning, preparedness, response and recovery activities with the state and local and organizations, and shall:

- Serve as the Governor's Authorized Representative for coordination of certain response activities and managing the recovery process.
- Coordinate the activities of all public and private organizations specifically related to providing emergency services within Oregon.
- Enforce compliance requirements of federal and state agencies for receiving funds and conducting designated emergency functions.

- Serve as the PA program applicant during a federally declared disaster and provide oversight of sub-applicants (Washington County).
- Perform as a core agency in the Oregon DMTF.
- Activate the State ECC to include emergency support functions that participate in debris management operations:
  - ESF #1 – Transportation
  - ESF #3 – Public Works and Engineering
  - ESF #8 – Public Health and Medical Services
  - ESF #10 – Oil and Hazardous Materials
  - ESF #14 – Long Term Community Recovery
- Coordinate the provision of state resources.
- Coordinate emergency debris clearing and urgent removal prioritization on priority transportation routes and state-owned / managed waterways (ESF #3).
- Identify the need for and initiate use of state temporary debris storage sites and debris management sites (ESF #3).
- Coordinate the removal, temporary storage, sorting and processing, and final disposal of disaster debris from state lands (ESF #3, ESF #8, and ESF #10).
- Collect information critical to response through characterization of the waste through modeling and estimates of quantities from direct damage assessments and check in with critical physical resources [equipment, disposal facilities, etc.] (ESF #3).
- Promote situational awareness through use of the RAPTOR (ESF #5).
- Facilitate and conduct the IDA and if necessary, the joint PDA process (ESF #5).
- Support ODOT in seeking assistance from FHWA for the ERP and coordinate with Washington County on this process (ESF #3).

4.5.2 Department of Environmental Quality

DEQ has the authority to manage and permit disposal of disaster-related debris via ORS 459 and OAR 340, Divisions 093 through 097. In the event of a disaster, DEQ would consult with the OHA and coordinate closely and communicate with OEM at the ECC. DEQ is a supporting agency for ESF #3, and as a primary agency for ESF #10.

In support of ESF #3 and ESF #10, DEQ may:

- Participate as a member of the Oregon DMTF.
- Provide emergency response coordination staff and environmental expertise to support response to environmental aspects of emergencies.
- Contribute to situational awareness by assessing solid waste infrastructure in conjunction with Metro.
- Expedite environmental permitting and/or authorizations, including providing air and water quality permitting, and expedited SWLA for TDSR site operations (including suspension of the permitting fees) in conjunction with the Oregon Department of Justice and the Governor's Office.
- Modify permits for existing debris sites to allow acceptance of debris types not permitted if no environmental impacts will result, or write SWLAs to allow non-permitted debris types or to increase allowable amounts at currently operated disposal sites.
- Provide 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 incident requiring the removal and disposal of HHW debris.
- Identify spill contractors for the collection, sorting, and handling of hazardous materials, including household hazardous waste.
- Coordinate with OHA on debris contaminated with radioactive materials to protect the public and responders.
- Authorize the opening of a previously closed landfill(s) to allow for the disposal of debris.
- Provide communications and outreach staff to prepare fact sheets and news releases for public outreach in conjunction with the JIC.
- Provide coordination with EPA for responses which exceed the state's capacity to respond.
- Provide laboratory services and chemists to assess potentially contaminated debris.

4.5.3 Department of Transportation

Under the State of Oregon EOP, and as identified in the State of Oregon DMP, ODOT is the primary agency for ESF #3 responsible for coordinating disaster debris response and management.

In support of ESF #3, ODOT may:

- Establish the Oregon DMTF and serve as the primary agency.

- Provide situational awareness through characterization of the waste, modeling and estimates of quantities, and direct damage.
- Identify locations for and establish temporary disposal sites.
- Conduct a prioritized and coordinated response while protecting worker and public health and providing needed communication within the response and to the public.
- Coordinate and manage state-level debris management activities.
- Provide heavy equipment and engineering resources.
- Provide contracting assistance and maintain an emergency contractor registry (database of contractors interested in emergency work) for public works.
- Coordinate with the USACE on federal public works and engineering support.

4.5.4 Oregon National Guard

The Oregon National Guard mission statement indicates the Oregon National Guard will provide the citizens of the state of Oregon and the United States with a ready force of citizen soldiers and airmen, equipped and trained to respond to any contingency, natural or man-made.

In support of ESF #3, the Oregon National Guard may:

- Perform aerial surveillance of disaster areas to provide situational awareness of damage locations and disaster-generated debris.
- Coordinate with ODOT to assist in emergency roadway and public right-of-way clearance operations.
- Serve as a support agency in the Oregon DMTF.

4.5.5 Oregon Department of Agriculture – Natural Resources Division (ODA-NRD)

Farm Service Agency (FSA) programs, discussed under the federal portion of this plan, are administered through the ODA-NRD. The FSA has local offices throughout the state that are often co-located with the Oregon State University Extension Service, Natural Resources Conservation Service (NRCS), and/or the local soil and water conservation district office. The ODA-NRD can provide guidance on disposing of putrescent debris.

In support of ESF #8, the ODA-NRD may:

- Provide representative(s) to the ECC as required to serve as liaisons to other state agencies.
- Provide technical expertise on the disposal of animal carcasses.

4.5.6 Oregon Health Authority

In support of ESF #8, OHA may:

- Provide technical assistance on public health concerns associated with debris management including radioactive waste, asbestos containing waste, infectious, pathological, biological, and other medical wastes, and /or putrescent debris.
- Provide support as requested through the State ECC.

4.5.7 Department of Fish and Wildlife

In support of debris operations, the Oregon Department of Fish and Wildlife may provide technical support on maintaining beneficial debris in stream channels.

4.5.8 Department of State Lands

In support of ESF #3, the Oregon Department of State Lands may:

- Administer the state's removal-fill law, which protects Oregon's waterways.
- Serve as the lead state agency for protection and maintenance of state wetlands.
- Manage environmental waivers and clearances as they relate to state lands.

4.6 Federal

The legal authority for federal assistance during disasters comes from the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288) as amended (Stafford Act), which sets forth federal disaster relief responsibilities, procedures, and conditions for federal assistance. The Stafford Act authorizes debris removal in "the public interest…from publicly and privately owned lands and water." The Governor may request a federal disaster declaration, and the President makes the final decision to declare an area a major disaster and therefore make it eligible for federal assistance.

On February 28, 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). Under the authority of the NRF, disaster debris actions are guided by ESF #3 – Public Works and Engineering, ESF #8 – Public Health and Medical Services, ESF #10 – Oil and Hazardous Materials Response, and ESF #14 – Long-Term Community Recovery.

4.6.1 Federal Emergency Management Agency

Under the Stafford Act, FEMA is the lead federal agency responsible for supporting local and state disaster debris management operations. During a federally declared disaster, FEMA integrates regional and national resources using the National Response Coordination Center (NRCC)/Regional Response Coordination Center (RRCC)/Joint Field Office (JFO) ESF #3. ESF #3 actions include:

- Coordination and support of infrastructure risk and vulnerability assessments
- Participation in post-incident assessments of public works and infrastructure to help determine critical needs and potential workloads
- Support for the restoration of critical navigation, flood control, and other water infrastructure systems including drinking water distribution and wastewater collection systems
- Provide assistance in the monitoring and stabilization of damaged structures and the demolition of structures designated as immediate hazards to public health and safety. (For chemical, biological, and radiological weapons of mass destruction incidents, demolition is coordinated with ESF #10).
- Manage, monitor, and/or provide technical advice in the clearance, removal, and disposal of debris from public property and the reestablishment of ground and water routes into impacted areas. The scope of actions related to debris may include waste sampling, classification, packaging, transportation, treatment, demolition, and disposal. The actions may also include the collection and segregation of hazardous materials and transport to an appropriate staging or disposal site … that are incidental to building demolition debris, such as household hazardous waste and oil and gas from small motorized equipment; removing and disposing of Freon from appliances; and removing, recycling, and disposing of electronic goods. (The removal of hazardous material containers that may have become intermingled with construction debris, such as drums, tanks, and cylinders containing oil and hazardous materials, is managed under ESF #10).
- The management of contaminated debris (e.g., chemical, biological, radiological, or nuclear contamination) through a joint effort with ESF #10. The scope of actions related to contaminated debris may include waste sampling, classification, packaging, transportation, treatment, demolition, and disposal of contaminated debris and soil.
- Manage, monitor, and/or provide technical advice in the demolition and subsequent removal and disposal of buildings and structures contaminated with CBRN elements, in consultation with ESF #10. The scope of actions may include air monitoring and sampling, waste sampling, classification, packaging, transportation, treatment (onsite and offsite), demolition, and disposal (onsite and offsite). Except where necessary to address structural stability or other imminent threats, such demolition actions are taken after incident decision makers have had an opportunity to evaluate options for site cleanup and have selected demolition as the desired cleanup approach. (ESF #10 leads the identification, analysis, selection, and implementation of cleanup actions for incidents where federal assistance is requested for hazardous materials environmental cleanup (except for certain facilities and materials owned, operated, or regulated by other federal departments and agencies). Decontamination of buildings or infrastructure would be led by ESF #10.).

- Provide coordination and technical assistance (to include vessel removal, significant marine debris removal, and hydrographic survey) to effect the rapid recovery and reconstitution of critical waterways, channels, and ports.

4.6.2 United States Army Corps of Engineers

Under the NRF, USACE supports debris management operations by serving as the ESF #3 Coordinator and as a Primary Agency. During a federally declared disaster in Oregon, USACE Division Command (Northwestern Division, Portland District) would be the lead federal agency receiving debris-related mission assignments from FEMA, through ESF #3. Generally, mission assignments to USACE from FEMA would fall into one of three categories:

- **Direct Federal Assistance**. The USACE undertakes the debris management mission, as assigned by FEMA. When FEMA directs USACE to accomplish debris clearance and/or removal, FEMA will provide a 100% federal share of the cost of actual debris clearance and/or removal work accomplished, not mission assignment task orders initiated, during the designated period. This work includes whatever clearance, pick-up, hauling, processing, and disposal activities FEMA authorizes but only during the designated period. After the designated period, if further direct federal assistance for debris clearance or removal is necessary, it will be provided at the prevailing federal cost share rate for the particular disaster. The duration of mission assignments for debris removal will be limited to 60 days from the disaster declaration date. The Federal Coordinating Officer may approve extensions for up to an additional 60 days if a state or local government demonstrates a continued lack of capability to assume oversight of the debris removal mission.

- **Technical Assistance.** USACE provides assistance to local governments in developing debris removal contracts and assisting with environmental issues, as well as training and coordination of FEMA and local government debris monitors.

- **Federal Operations Support.** USACE provides oversight for FEMA for state and local debris operations.

When USACE receives a mission assignment for Direct Federal Assistance for debris management operations, a Recovery Field Office (RFO) is established. The RFO provides USACE with a forward command, and is typically located in proximity to the JFO, or in proximity to the disaster area. The RFO utilizes an ICS structure, along with staff from a USACE mission-specific (debris management operations) Planning and Response Team (PRT). PRT staff also integrate with the JFO ESF #3 staff – specifically, a PRT Action Officer provides direct support and coordination for the ESF #3 Team Lead at the JFO.

4.6.3 Department of Homeland Security, U.S. Coast Guard

In support of ESF #3, the USCG may conduct the following marine-based incident actions:

- Mark debris and coordinate with USACE and EPA for the removal of obstructions declared to be hazards to navigation
- Aid in vessel salvage and removal of waterborne vessel debris
- Respond to marine debris contaminated with oil or hazardous substances as outlined in NRF ESF #10

4.6.4 Environmental Protection Agency

In support of ESF #3, the EPA is responsible for conducting the following incident actions:

- Administer the Resource Conservation and Recovery Act (RCRA), including issuing regulations and guidelines, and providing technical assistance to states and local governments to properly manage solid and hazardous waste
- Provide support and technical assistance on appropriate solid waste management practices
- Administer the Recycling Electronics and Asset Disposition services contract, which provides recycling and asset disposition services on a government-wide basis for the recycling of electronic equipment and the disposal of excess or obsolete electronic equipment in an environmentally responsible manner.
- Support HHW collection
- Monitor debris disposal
- Monitor water quality
- Conduct air quality sampling and monitoring
- For chemical, biological, and radiological weapons of mass destruction incidents, provide management of contaminated debris and demolition

The EPA may be able to provide support to state and local governments even when disasters are not federally declared due to provisions within the Comprehensive Environmental Response, Compensation, and Liability Act and the National Contingency Plan.

4.6.5 Department of Agriculture – Natural Resources Conservation Service and Farm Services Agency

In support of ESF #3, the USDA-NRCS is authorized to:

- Conduct debris management activities in proximity to a waterway via the Emergency Watershed Protection Program. Activities include runoff retardation or soil erosion prevention in response to a sudden impairment in the watershed which creates an imminent threat to life or property. USDA manages these operations during a federally declared disaster as primary agency for NRF ESF #14.

- Provide leadership, technical expertise, and assistance for the management of animal carcasses (putrescent debris) in support of the NRF ESF #8
- Provide engineering and contracting / procurement personnel and equipment to assist in emergency removal of debris
- Utilize biomass produced from disasters in accordance with the Woody Biomass Utilization Group

The USDA-FSA Emergency Conservation Program provides emergency funding and technical assistance for farmers and ranchers to rehabilitate farmland damaged by natural disasters, including removal of debris and restoration of fences and conservation structures. Since these programs address private property, the public will be made aware of this program (if applicable) through public awareness efforts.

4.6.6 Department of Transportation - Federal Highway Administration

The DOT-FHWA primarily provides support for debris operations through participation in ESF #3. Activities within ESF #3 include the following:

- Provide technical expertise and assistance for repair and restoration of transportation infrastructure (e.g., highways, bridges, tunnels, transit systems, port facilities, and railways) and provides advice and assistance on the transportation of contaminated materials
- Provide engineering personnel and support to assist in damage assessment, structural inspections, debris clearing, and restoration of the Nation's transportation infrastructure
- Administer special funding (Emergency Relief Program [ERP]) that can be used for repair or reconstruction of major highway facilities as well as grant programs for transit systems and railroads that could be used for repair and rehabilitation of damaged infrastructure

4.7 Volunteer Organizations

Volunteer organizations play an integral role in assisting governmental organizations and private citizens with responding to a debris incident. Volunteer organizations primarily provide support to affected citizens (private property debris removal), but may also participate in a coordinated response managed by the city and county EOCs.

There are numerous volunteer organizations that participate in response and recovery efforts including (but not limited to): American Red Cross, church organizations, Citizen Corps including Community Emergency Response Teams (CERT), civic clubs, Salvation Army, student organizations, and Voluntary Organizations Active in Disaster (VOAD) including Oregon VOAD, Washington County Community Organizations Active in Disaster (COAD), and Washington County Woodcutters, Inc.

Additionally, citizens often become spontaneous volunteers known as emergent volunteers. Annex J: Emergent Volunteer Management provides policies and procedures

for the use and management of emergency volunteers during a disaster. Emergent volunteers are actively coordinated by the county EOC Logistics Section, Support Branch, Supply Unit, Emergent Volunteers Coordinator. Washington County organized volunteer efforts are managed by the county EOC Operations Section, Community Services Branch, COAD Coordinator.

5 Direction and Control

5.1 Local Coordination Structure

5.1.1 Department of Land Use and Transportation Department Operations Center

DLUT has operational responsibility for responding to debris incidents that affect County-responsible roads and bridges. DLUT will first manage tactical operations of response resources using the daily organizational structure within the Operations and Maintenance Division. When the incident begins outpacing management capacity, DLUT will activate the Department Operations Center (DOC).

5.1.2 Washington County Emergency Operations Center

Any incident that generates disaster debris in Washington County will initiate a county-level response. In accordance with the National Incident Management System (NIMS), all incidents will be managed at their lowest jurisdictional level, with the minimal scale of staffing and operations necessary for effective management.

When an incident necessitates a multi-jurisdictional response, an Incident Command Post (ICP) in proximity to the incident will be activated. Should resource needs begin to outpace operational capacity, all neessary county DOCs will become operational to support incident demands.

The Washington County EOC, Operations Section, Public Works Branch, Debris Management Group manages debris operations. The Debris Management Group will coordinate with the DLUT DOC and SS DOC for strategic and tactical debris management operations during the response phase. If debris operations management continues into the recovery phase and / or as the Washington County EOC deactivates, the Debris Management Group will transition to Washington County DMTF.

The Washington County EOC will exhaust all available resources prior to making requests to OEM, which may initiate its Emergency Coordination Center (ECC) to provide support for the incident.

5.1.3 Washington County Debris Management Task Force

During a federally declared disaster, FEMA guidance suggests that during large-scale debris management operations, the PA program sub-applicant (Washington County) should "…establish a disaster debris management team, which convenes as a working group to facilitate successful coordination following a disaster incident." Adhering to this guidance, Washington County will initiate the Washington County DMTF.

The Washington County DMTF will be comprised of representatives from organizations supporting or managing debris operations in Washington County. DMTF participants may include the County, incorporated municipalities, special districts, and certain Private Non-Profit (PNP) organizations. Other potential members of the DMTF include contractors/subcontractors, volunteer organizations, and state and federal organizations supporting debris operations.

The Washington County EOC (Operations Section, Public Works Branch, Debris Management Group) will delegate operational oversight of debris management operations to the Washington County DMTF when the Washington County EOC deactivates.

5.2 Oregon Coordination Structure

5.2.1 State Emergency Coordination Center

OEM has developed and is responsible for the Oregon Emergency Response System (OERS). The purpose of the OERS is to coordinate and manage state resources in response to natural and technological emergencies including widespread debris management incidents. OEM manages disasters requiring state-level support through use of the state ECC, which utilizes an ICS structure supported by Emergency Support Functions (ESF).

When a large scale debris generating incident occurs that requires state-level support, OEM will activate the ECC including ESF #3 – Public Works and Engineering, ESF #8 – Public Health and Medical Services, ESF #10 – Oil and Hazardous Materials, ESF #14 – Long-Term Community Recovery, and the Oregon DMTF. When requests for assistance directed to OEM by the counties are beyond the scope of resources within Oregon, the ECC will request resources from other states via the Emergency Management Assistance Compact (EMAC), then from the FEMA Region 10 Regional Response Coordination Center (RRCC).

When the scale of incident reaches a potential federal disaster declaration, the Governor of Oregon, supported by OEM, will make a request for an emergency or major disaster declaration. For an incident that includes the need for debris management operations, this would include a request for the PA program including Category A: Debris Removal, and potentially Category B: Emergency Protective Measures (which would support demolition activities). Oregon would be a PA program applicant, with counties as sub-applicants.

If an emergency or major disaster declaration is granted to Oregon, a federal Joint Field Office (JFO) will be initiated in proximity to the impacted area to coordinate recovery operations.

5.3 Federal Coordination Structure

5.2.2 National and Regional Response Coordination Centers

When a threat or incident appears to have large-scale impacts that may potentially trigger a federal disaster declaration, FEMA activates all necessary Regional Response Coordination Centers (RRCC) and potentially the National Response Coordination Center (NRCC). Each of FEMA's 10 regions has an RRCC, which supports the states within its respective region, along with providing backup support for other designated FEMA regions. FEMA Region 10 in Seattle, WA, supports incidents in Alaska, Idaho, Oregon, and Washington.

The NRCC and RRCCs utilize an ICS structure supported by ESFs. At the federal level, ESF #3 – Public Works and Engineering is responsible for supporting local and state debris management operations. USACE is the Primary Agency with ESF #3 for debris management operations, and is supported by the Department of Homeland Security, U.S. Coast Guard (USCG), the EPA, the Department of Agriculture (USDA) – Natural Resources Conservation Service (NRCS) and Farm Services Agency (FSA), and the Department of Transportation (DOT) - Federal Highway Administration (FHWA).

5.2.3 Joint Field Office

When an incident is of such severity, magnitude, and/or complexity that it requires coordinated federal assistance, the Secretary of Homeland Security, in coordination with other federal departments and agencies, initiates actions to respond to and recover from the incident, including the establishment of the JFO. Within the JFO, senior federal representatives, collectively known as the JFO Coordination Group, form a multiagency coordination entity and direct their staff in the JFO to share information, aid in establishing priorities among incidents and associated resource allocation, and provide strategic coordination of various federal incident management activities.

The JFO is a temporary federal multiagency coordination center established locally to facilitate field-level domestic incident management activities related to prevention, preparedness, response and recovery when activated by the Secretary. The JFO provides a central location for coordination of federal, state, local, tribal, nongovernmental and private-sector organizations with primary responsibility for activities associated with threat response and incident support.

Federal disaster response operations transition seamlessly from the NCRR / RRCC to the JFO to continue response and recovery operations. The JFO utilizes an ICS structure supported by ESFs. ESF #3 will continue to facilitate debris management operations during the recovery phase.

5.2.4 USACE Operations Center

The USACE Operations Center (UOC) at the USACE headquarters manages the activation and deployment of national Department of Defense (DOD) / USACE team and resources. The UOC also designates and deploys an ESF #3 Team Lead for the National Response Coordination Center (NRCC) and the Regional Response Coordination Center (RRCC) or the Joint Field Office (JFO).

5.2.5 USACE Recovery Field Office

A USACE RFO is established once FEMA mission assigns the USACE to provide Direct Federal Assistance for debris management operations. The RFO provides the USACE with a base to establish Forward Command. The RFO uses an ICS structure with integration of a USACE Debris Planning and Response Team (PRT). The PRT is a self-contained project delivery team for debris removal missions. The PRT structure is designed to ensure the team is capable of performing the basic engineering, contracting, construction and project management functions necessary for mission execution immediately upon deployment. The team is designed to staff the primary management positions within the JFO, RFO, and two Emergency Field Offices (EFO).

The RFO:

- Allows the USACE to provide support for ESF #3 missions
- In-process and out-process USACE staff
- Conduct Resource Staging and Onward Integration (RSOI) functions

5.3 Field Debris Management Coordination

5.3.1 Emergency Field Office

During a federally declared disaster with Direct Federal Assistance from the USACE, widespread debris impacts may cause the RFO to be established at a location not in proximity to Washington County. In this scenario, the USACE may choose to establish an Emergency Field Office (EFO) in Washington County. The purpose of the EFO is to provide a base of operations for local, state, federal, and organizations involved in the debris management efforts (contracted debris management companies and volunteer or nonprofit organizations), to coordinate operations. Operations conducted at the EFO may include:

- Project scoping
- Contract development and bid review
- Coordination among organizations conducting or managing debris operations
- Data entry
- Information sharing and command briefings
- Meeting venue for the Washington County DMTF

6 Administration and Logistics

6.1 Administration

- During incidents when there are no emergency operations center activations, or when the DLUT DOC is solely activated to respond to a debris incident,

DLUT staff or the DOC, Finance Section, Documentation Unit will maintain cost records. DLUT staff or the DOC Planning Section, SitStat Unit using the Department Emergency Management System (DEMS) will track locations, quantities, and types of debris.

- During incidents when the DLUT DOC and the County EOC are activated, the DLUT DOC will track, record, and submit to the County EOC, Planning Section, SitStat Unit, information related to locations, quantities, and types of debris. Additionally, the County EOC will share equivalent information with the DLUT DOC Planning Section, SitStat Unit, along with mission tasking and priorities for debris removal activities. Documentation of DLUT costs will be managed by the DLUT DOC Finance Section, Documentation Unit. The County EOC will do similarly for equivalent information.

6.1 Logistics

6.1.1 Staffing

Each organization participating in debris management operations will provide staff to support functional responsibilities assumed by the source organization. Staffing shortfalls will be addressed through resource requests made to the County EOC, or through contracting with private-sector organizations.

6.1.2 Facilities and Equipment

Each organization participating in debris management operations will provide resources needed to carry out debris management functions. When equipment shortfalls are identified by DLUT, procurement will be made using the CPAWC, MORE, and ODOT mutual aid agreements, and then through contracting efforts. Remaining equipment shortfalls will be addressed by submitting resource requests to the County EOC, Logistics Section.

Facilities to support debris management operations during response operations include the County EOC, and the DLUT DOC, in addition to facilities owned and operated by other participating organizations. During recovery operations, it is anticipated the County EOC and DLUT DOC will deactivate and transition to coordination efforts using normal operations facilities. The Washington County DMTF or regional DMTF will require a facility in proximity to debris recovery operations. The DMTF will manage facility procurement and support activities.

7 Annex Development and Maintenance

Washington County Emergency Management is responsible for updating this annex. Changes to the annex will be implemented after county emergency managers and organizations impacted by the changes reach agreement regarding the proposed changes and designated someone to implement the changes and disseminate the information.

This plan was developed jointly by Washington County Emergency Management and Washington County Health and Human Services, Solid Waste Program. Plan

development partners include Washington County Department of Land Use and Transportation, Portland District of the United States Army Corps of Engineers, Metro, and the Oregon Department of Environmental Quality.

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Tab 1: Acronyms

ACHP – Advisory Council on Historic Preservation

ACWM – Asbestos Containing Waste Material

C&D – Construction and Demolition

CBRNE – Chemical, Biological, Radiological, Nuclear-contaminated, and Explosives

CDC – Washington County Community Development Code

CEG – Conditionally Exempt Generator

CERT – Community Emergency Response Team

CFR – Code of Federal Regulations

COAD – Community Organizations Active in Disaster

CPAWC – Cooperative Public Agencies of Washington County

CWS – Clean Water Services

DEMS – (DLUT) Department Emergency Management System

DEQ – Oregon Department of Environmental Quality

DLUT – Department of Land Use and Transportation

DMP – Debris Management Plan

DMTF – Debris Management Task Force

DOC – Department Operations Center

DOT – U.S. Department of Transportation

E-Waste – Electronics Waste

ECC – Emergency Coordination Center

EDWRP – Enhanced Dry Waste Recovery Program

EFO – Emergency Field Office

EHP – Washington County Health and Human Services, Environmental Health Program

EMAC – Emergency Management Assistance Compact

EMC – Washington County Emergency Management Cooperative

EMS – Emergency Medical Services

EOC – Emergency Operations Center

EOP – Emergency Operations Plan

EPA – U.S. Environmental Protection Agency

ER – Emergency Relief

ERP – Emergency Relief Program

ESF – Emergency Support Function

ETR – Emergency Transportation Route

FCO – Federal Coordinating Officer

FEMA – Federal Emergency Management Agency

FHWA – Federal Highway Administration

FSA – Farm Service Agency

GIS – Geospatial Information System

GPS – Global Positioning System

HAZMAT – Hazardous Materials

HHS – Washington County Health and Human Services

HHW – Household Hazardous Waste

HSPD – Homeland Security Presidential Directive

IDA – Initial Damage Assessment

ICP – Incident Command Post

IGA – Intergovernmental Agreement

IDA – Initial Damage Assessment

JIC – Joint Information Center

JFO – Joint Field Office

LUCS – Land Use Compatibility Statement

MAC – Multiagency Coordination

MORE - Managing Oregon Resources Efficiently

NEPA – National Environmental Policy Act

NHPA – National Historic Preservation Act

NIMS – National Incident Management System

NRCC – National Response Coordination Center

NRCS – Natural Resources Conservation Service

NRF – National Response Framework

OAR – Oregon Administrative Rules

ODA-NRD – Oregon Department of Agriculture – Natural Resources Division

ODOT – Oregon Department of Transportation

OEM – Oregon Office of Emergency Management

OERS – Oregon Emergency Response System

OHA – Oregon Health Authority

ORS – Oregon Revised Statutes

PA – Public Assistance

PAPPG – FEMA Public Assistance Program and Policy Guide

PDA – Preliminary Damage Assessment

PIO – Public Information Officer

PNP – Private Non-Profit

PRT – Planning and Response Team

PW – Project Worksheet

RAPTOR – Real Time Assessment and Planning Tool for Oregon

RCRA – Resource Conservation Recovery Act

RDPO – Regional Disaster Preparedness Organization

RFO – Recovery Field Office

RHMERT – Regional Hazardous Materials Emergency Response Team

RRCC – Regional Response Coordination Center

RSOI – Resource Staging and Onward Integration

SCO – State Coordinating Officer

SHPO – State Historic Preservation Officer

SWLA – Solid Waste Letter of Authorization

T&M – Time and Materials

TDSR – Temporary Debris Storage and Reduction Site

TVWD – Tualatin Valley Water District

UOC – U.S. Army Corps of Engineers Operations Center

USACE – U.S. Army Corps of Engineers

USCG – U.S. Coast Guard

USDA – U.S. Department of Agriculture

VOAD – Voluntary Organizations Active in Disaster

WCEM – Washington County Emergency Management

Tab 2: Debris Definitions

1 Debris Type Definitions

The FEMA Public Assistance Program and Policy Guide (FEMA FP 104-009-2, January 2016), categorizes disaster-generated debris into 10 types: vegetative debris; construction and demolition debris; hazardous waste; white goods; soil, mud, and sand; vehicles and vessels; putrescent debris; infectious waste; chemical, biological, radiological, and nuclear-contaminated debris; and garbage. More detailed debris descriptions are included below.

1.1 Vegetative Debris

Vegetative debris typically consists of whole trees, tree stumps, tree branches, tree trunks, and other leafy material. Hazardous vegetative debris falls into three categories: hazardous trees, hazardous limbs, and hazardous stumps. Most vegetative debris consists of large piles of tree limbs and branches that are piled on the public rights-of-way by residents. Guidance on handling and removing hazardous vegetative debris is included in Section 3.4.2.1 of this plan.

1.2 Construction and Demolition Debris

Construction and demolition (C&D) debris is defined by FEMA as damaged components of buildings and structures such as lumber and wood, gypsum wallboard, glass, metal, roofing material, tile, carpeting and floor coverings, window coverings, pipe, concrete, fully cured asphalt, equipment, furnishings, and fixtures. To be eligible for reimbursement under the FEMA Public Assistance (PA) grant program, the debris must be the result of the hazards that caused the disaster.

C&D debris, as defined by the state of Oregon, includes solid waste resulting from the construction, repair, or demolition of buildings, roads and other structures, and debris from the clearing of land, but not including clean fill when separated from other construction and demolition wastes and used as fill materials or otherwise land-disposed. Such waste typically consists of materials such as concrete, bricks, bituminous concrete, asphalt paving, untreated or chemically treated wood, glass, masonry, roofing, siding, and plaster; and soils, rock, stumps, boulders, brush, and other similar material (Oregon Administrative Rules [OAR] 340-93-030).

A special consideration for all C&D debris is the potential for asbestos to be present. Asbestos was widely used in construction materials until 1987, disaster debris originating from a house or building built before then is very likely to contain asbestos. Special handling is required for asbestos containing debris. More information on handling requirements can be found in Sections 3.4.2.2.1 of this plan.

1.3 Hazardous and Other Special Wastes

Hazardous and other special wastes are wastes that have physical properties, other than being infectious, biological, radiological, and nuclear-contaminated that pose a threat to human health and the environment thus requiring that such wastes are handled in a specific manner.

1.3.1 Hazardous Waste

The U.S. Environmental Protection Agency (EPA) defines hazardous waste as waste that is dangerous or potentially harmful to health or the environment. Hazardous wastes can be liquids, solids, gases, or sludges. They can be discarded commercial products, like cleaning fluids or pesticides, or the by-products of manufacturing processes. EPA's regulations establish two ways of identifying solid wastes as hazardous under the Resource Conservation and Recovery Act, P.L. 94-580, 90 Stat. 2795, 42 U.S.C. § 6901 et seq., October 21, 1976 (RCRA). A waste may be considered hazardous if it exhibits certain hazardous properties ("characteristics") or if it is included on a specific list of wastes EPA has determined are hazardous ("listing" a waste as hazardous) because EPA found them to pose substantial present or potential hazards to human health or the environment. EPA's regulations in 40 CFR define four hazardous waste characteristic properties: ignitability, corrosivity, reactivity, and toxicity (see 40 CFR 261.21-261.24). For a list of hazardous wastes, see the Hazardous Waste Listing provided by the EPA. Hazardous waste is regulated under RCRA and ORS Chapters 459, 465, and 466.

1.3.2 Household Hazardous Waste

Household Hazardous Waste (HHW) refers to hazardous products and materials that are used and disposed of by residential, rather than commercial or industrial consumers. Examples include pesticides, herbicides, poisons, corrosives, solvents, fuels, paints, motor oil, antifreeze, and 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.

1.3.3 Electronic Waste

Electronic waste, or e-waste, is regulated by Oregon Revised Statue (ORS) 459A.300-356, and refers to electronics that contain hazardous materials such as cathode ray tubes. Examples include: monitors, televisions, cell phones, printers, and computers. Electronic wastes may contain chemicals and metals that are hazardous to human health and the environment. The state of Oregon has imposed a ban on landfilling certain electronic waste (computers, monitors, and televisions) due to its hazardous nature.

1.4 White Goods

White goods include discarded household appliances such as refrigerators, freezers, air conditioners, heat pumps, ovens, ranges, washing machines, clothes dryers, and water heaters. Many white goods contain ozone-depleting refrigerants, mercury, or compressor oils that are hazardous if released into the environment.

1.5 Soil, Mud, and Sand

Floods and landslides often deposit soil, mud, and sand on improved public property and public rights-of-way. Special consideration must be taken when excavating and disposing of soil, mud or sand that has been contaminated by petroleum or other hazardous substances.

1.6 Vehicles and Vessels

Vehicles and vessels include abandoned and/or damaged vehicles or vessels that present a hazard and immediate threat or that block ingress/egress in the public right-of-way or waterways.

1.7 Putrescent Debris

Putrescent debris is any organic matter that will decompose or rot such as animal carcasses. Disposal of putrescent debris must be in compliance with applicable local, state, and federal requirements.

1.8 Infectious Waste

Infectious waste is waste capable of causing infections to humans, including contaminated animal waste, human blood and blood products, isolation waste, pathological waste, and discarded sharps (needles, scalpels, or broken medical instruments). Infectious waste is often referred to as "regulated medical waste," "biomedical waste," "biohazardous waste," "special waste," or "hazardous materials." Oregon regulations pertaining to infectious waste are provided in ORS 459.386-405.

1.9 Chemical, Biological, Radiological, and Nuclear-Contaminated Debris

Chemical, biological, radiological, and nuclear-contaminated (CBRN) debris is debris contaminated by chemical, biological, radiological, and nuclear materials as a result of a natural or man-made disaster.

1.10 Garbage

Garbage is waste that is regularly picked up from households and businesses during normal operations. Common examples include food, packaging, plastics, and paper. Garbage is normally collected through solid waste collection certificate holders in Washington County. Because garbage collection and disposal operations already exist, it is not considered an eligible debris management activity under the PA program.

Tab 3: Debris Quantity Forecasting

1 Types of Debris Generating Incidents in Washington County

Natural disasters such as earthquakes, volcanic eruptions, wind storms, ice storms, and floods have the ability to produce large amounts of debris. The quantity and types of debris generated are a result of the location and type of hazard, as well as the hazard's magnitude, duration, and intensity. The quantity and type of debris generated, its location, and the size of the area over which it is dispersed directly impacts the type of collection and disposal methods used during debris operations, associated costs incurred, and the speed with which the recovery process occurs.

A discussion of the various types of hazards, along with a description of the debris associated with each is provided below.

1.1 Earthquakes

Disaster Potential: The Pacific Northwest is a very seismically active area. While not all fault zones are known and studied, the most active and likely to generate impacts to people and property include:

1) The Cascadia Subduction Zone, which is a north-south offshore fault zone that is roughly 800 miles long, roughly 200 miles offshore of the Oregon coast, and capable of generating a magnitude 9.0 or larger earthquake with sustained high levels of shaking in excess of four minutes. The Cascadia Subduction Zone has a documented history of mega-thrust earthquakes with 9.0 events happening on average every 500 to 600 years, with some events happening as frequently as every 100 to 300 years. The most recent 9.0 earthquake occurred on January 26, 1700.

2) Over the past 150 years, the Portland-Vancouver Seismic Region has been the most seismically active area in Oregon with six earthquakes registering magnitude 5.0 or greater including the magnitude 5.5 Portland earthquake of 1962 and the magnitude 5.6 Scott Mills earthquake of 1993. This area of seismicity includes faults running roughly parallel to Forest Park and includes the Oatfield Fault, Portland Hills Fault, Willamette River Fault, and the East Bank Fault. Recent studies have suggested these faults are capable of generating damaging earthquakes up to a magnitude 6.8.

Types of Debris Generated: Post-earthquake debris composition evolves with time, and is a function of location. Structures in urban areas when subjected to prolonged severe shaking will be damaged or collapse producing C&D debris, white goods debris, and HHW debris including household chemicals, and electronic waste. Vehicles are likely to be damaged or destroyed by falling debris leading to a vehicle debris issue.

It is likely that debris in urban environments will fall into roadways blocking them requiring a debris clearing mission. Damaged or collapsed structures are likely to contain personal belongings.

Urban areas in Washington County exist over soils prone to liquefaction. Prolonged shaking will cause sand boils which will lead to sand, soil, and mud debris. Vehicles on soils that severely liquefy may sink and become trapped in deep mud leading to a vehicles debris issue. Infrastructure, particularly buried infrastructure, is particularly prone to damage from liquefaction leading to C&D debris, and potentially hazardous materials.

Rural Washington County, particularly areas in the Coast Range, northern Washington County, and areas in / bordering Forest Park are prone to debris flows (landslides), particularly when soils are saturated by a rain event. Debris flows generate enormous volumes of soil, sand, and mud debris. The Snohomish County, WA, mudslide of 2014 demonstrated that mudslides affecting residential areas produce severely contaminated soils, with C&D debris from destroyed structures including HHW debris (white goods, electronics, and household chemicals), putrescent debris including human and animal remains, vehicles, and vegetative debris. Debris flow incidents with contaminated soils are particularly challenging to manage requiring a multijurisdictional response. Additionally, debris flows often destroy transportation infrastructure (roads and bridges) which may isolate remote communities or impact commodity transportation routes to the coast.

1.2 Floods

Disaster Potential: According to the Washington County Hazard Analysis, floods and winter storms are the most frequently occurring hazards. Flooding along the Tualatin River and its tributaries tends to be the most frequent mode of flooding, although some urban flooding occurs as well.

During a catastrophic earthquake, the potential for a breach of Scoggins Dam exists, which is classified as a High Hazard Dam by the U.S. Bureau of Reclamation. Scoggins Dam contains Henry Hagg Lake, which holds over 53,000 acre feet of water at full pool. Failure of the dam can have many destructive effects such as loss of life, damage to structures, roads, utilities, and crops.

Types of Debris Generated: In rural areas, floods are capable of generating enormous volumes of vegetative and sand, soil, and mud debris. Impacts to transportation infrastructure can cause C&D debris as well. While not common, flood incidents have impacted agricultural livestock resulting in putrescent debris.

In urban areas, floods are capable of causing significant damage to buildings and built structures. Impacts to structures can cause large quantities of C&D debris, including HHW debris (household chemicals, electronics, and white goods).

1.3 Severe Local Storms

Washington County is vulnerable to a variety of severe storm hazards. Ice, snow, and wind storms all have the ability to severely impact the county. Severe local storms seldom cause death and serious property damage, but they can cause major utility and transportation disruptions.

1.3.1 Ice Storms

Disaster Potential: Ice storms and freezing rain conditions pose a threat to citizens and infrastructure in Washington County. During an ice storm, ice accumulates on exposed surfaces including trees and power lines. Significant ice accumulations can topple trees or weakened tree limbs posing a significant threat to nearby citizens. Falling trees can also collapse over roads causing blockages, or onto nearby power lines leading to power outages. Additionally, ice accumulations on power lines can also lead to power outages. Widespread ice storms are capable of damaging countless trees leading to a vegetative debris incident.

1.3.2 Wind Storms

Disaster Potential: Mid-latitude cyclones and decaying tropical cyclones (typically remnant typhoon circulations) are capable of generating widespread high wind incidents, with prolonged sustained straight-line winds exceeding 100 mph. Sustained winds of this magnitude are capable of damaging weakened structures and toppling trees or severing weakened tree limbs.

Types of Debris Generated: Wind, snow, and ice storms generate similar debris types from damages: primarily vegetative debris. Secondary impacts from fallen trees can result in road blockages, downed power lines, and impacts to structures. Damaged structures from exposure to high winds, fallen trees, or snow loading can generate C&D debris.

1.4 Volcanic Eruptions

Disaster Potential: Volcanoes in the Cascade Mountain Range have historically produced impacts in northwest Oregon, with the 1980 Mt. St. Helens eruption being the most recent. Of the 20 volcanoes that exist in the Cascades, only mounts Hood, St. Helens, and Adams pose a threat of volcanic hazards to Washington County.

Mt. St. Helens is by far the most active volcano in the Cascades, with four major explosive eruptions in the last 515 years, and it presents the greatest threat to northwest Oregon. However, according to the USGS "The chance of another catastrophic landslide and blast comparable to that of May 18, 1980, is exceedingly low…" In a 1995 hazard study, the USGS asserts that "…the next eruption will be explosive and as large or larger than the May 18, 1980 eruption."

Types of Debris Generated: Volcanic ash is highly disruptive to economic activity because it covers everything and infiltrates most openings. Highly abrasive ash can be widespread and produce enormous volumes of earthen debris. The volume of ash possible in Washington County depends on the scale of the eruption, the source volcano, and the predominant wind patterns, which largely dictate where ash falls.

Debris forecasting models for Washington County, including incorporated areas, estimate that a large scale Cascadia Subduction Zone earthquake incident would generate approximately one million cubic yards of debris. The estimate for unincorporated Washington County is about a half million cubic yards. Estimates are based on U.S. Army Corps of Engineers (USACE) Emergency Management modeling methodology.

Modeling of other hazard incidents has not yet been conducted for Washington County. See paragraph 2 for debris forecasting model.

2 Forecasting Debris Estimates

The modeling methodology described below was developed by the USACE Emergency Management staff using actual data from hurricanes Fredrick, Hugo, and Andrew. The estimates produced by the model are predicted to have an accuracy of + or – 30% (accuracy is limited due to the many variables inherent to the debris removal process). This model has been selected due to the lack of forecasting techniques based on the types of incidents likely to occur within the region. Hurricanes often result in total devastation of structures; a similar effect is predicted to occur as a result of a worst-case large Cascadia Subduction Zone earthquake.

The formula created by the USACE requires five variables: **P**, the population of the affected area (2010 census data for Washington County is 554,996); **H**, the number of persons per household (three is used for this model) or **H = P / 3**; **C**, the category of the hurricane from the Saffir-Simpson Hurricane Wind Scale; **V**, vegetation characteristic multiplier; **B**, is a commercial / business / industrial multiplie; and **S**, is a storm precipitation characteristic multiplier. The formula for the quantity [**Q**] of debris in cubic yards [yd^3] is:

$$\mathbf{Q = H * C * V * B * S}$$

Storm Category Factor (C): It expresses debris quantity in cubic yards [yd^3] per household by hurricane category and includes the house and its contents, and land foliage.

Hurricane Category	Value of C Factor
1	2 [yd^3]
2	8 [yd^3]
3	26 [yd^3]
4	50 [yd^3]
5	80 [yd^3]

Vegetation Multiplier (V): It acts to increase the quantity of debris by adding vegetation including shrubbery and trees on public rights-of-way.

Vegetative Cover	Value of V Multiplier
1	1.1
2	1.3
3	1.5

Business / Commercial / Industrial Multiplier (B): It takes into account areas which are not solely single-family residential, but includes small retail stores, schools, apartments, shopping centers, and light industrial and manufacturing facilities. Built into this multiplier is the offsetting commercial insurance requirement for owner/operator salvage operations.

Business Density	Value of Multiplier
Light	1.0
Medium	1.2
Heavy	1.3

Precipitation Multiplier (S): It takes into account either a "wet" or "dry" storm. With a "wet" storm, trees will up-root generating a larger volume of storm generated debris (for Category 3 or greater storms only).

Precipitation Characteristics	Value of Multiplier
None to light	1.0
Medium to heavy	1.3

Assumptions: Q = Quantity of predicted debris in cubic yards
H = Population / 3 (three persons per household)
C = 8 cubic yards per household (Category 2 hurricane)
V = 1.3 (Medium Vegetative Coverage)
B = 1.2 (Medium Commercial Density)
S = 1.3 (Medium to Heavy Precipitation)

These assumptions yield the following equation:

Q = H * C * V * B * S

Q = (Population / 3) * (8) * (1.3) * (1.2) * (1.3)

Washington County Debris Modeling Estimates

City	Population*	Debris Quantity Q = cubic yards [yd^3]
Banks	2,026	10,957
Beaverton	98,962	535,186
Cornelius	12,724	68,811
Durham	1,931	10,443
Forest Grove	24,624	133,167
Hillsboro	108,389	586,168
King City	3,955	21,389
North Plains	2,195	11,871
Sherwood	19,679	106,424
Tigard	54,758	296,131
Tualatin	27,602	149,272
Unincorporated Washington County	240,850	1,302,517
Total	597,695	3,232,335

* Bureau of the Census 2018 population estimates of the total resident populations. https://factfinder.census.gov/

Debris removed from large scale incidents primarily consists of two broad categories, clean woody and construction and demolition debris (C&D). The clean debris will come early in the removal process as yards and rights-of-ways are cleared.

The most commonly generated debris will consist of the following:

- 30% clean woody debris
- 70% mixed C&D. This can be broken down as follows:
  - 42% burnable but requires sorting
  - 5% soil
  - 15% metals
  - 38% landfill

Based on the example above, 3,232,335 [y^3] countywide and 1,302,507 [y^3] in unincorporated Washington County would break down as follows:

Generated Debris by Debris Type and Area

Debris Type	Countywide 3,232,335 [yd^3]	Unincorporated Areas 1,302,507 [yd^3]	Incorporated Cities 1,929,828 [yd^3]
Clean woody debris (30%)	969,700	390,752	578,948
Mixed C&D (70%)	2,262,634	911,755	1,350,879
Burnable (42%)	950,306	382,937	567,369
Soil (5%)	113,132	45,588	67,544
Metals (15%)	339,395	136,763	202,632
Landfill (38%)	859,801	346,467	513,334

The debris estimates above are the result of the USACE hurricane debris prediction model and represent a Category 2 hurricane. These debris estimates will serve as a proxy for a large-scale incident in Washington County such as a strong earthquake. FEMA offers a geospatial information systems (GIS) based debris prediction model called HAZUS-MH; however, at this time, no modeling has been conducted for Washington County. The Oregon Resilience Plan (February 2013) suggests that a Cascadia Subduction Zone earthquake could potentially generate 10 million tons of debris; however, no county-specific estimates are presented.

Tab 4: Debris Monitoring Operations

1 Debris Monitoring Job Positions

1.1 Field Debris Monitoring

Debris monitors serve as Washington County's field representatives. They ensure the terms and specific monitoring and documentation requirements of debris removal staff / contracts are adhered to and met. This process is required to substantiate Washington County's requests for PA program reimbursements. Monitors may be Washington County staff or contracted labor.

Monitoring operations will be necessary for all aspects of debris removal operations: loading, staging, and disposal sites.

Debris monitors need to understand FEMA PA policies and guidelines, including eligibility issues specifically relating to debris. The final determination of any PA debris eligibility issue will be made by FEMA PA management personnel.

Debris monitors should have a complete understanding of their responsibilities and:

- Fully understand their responsibilities in accordance with the terms of the debris removal contract and other specific guidance provided by the applicant
- Possess the ability to estimate debris quantities accurately and objectively
- Understand all phases of debris management operations, including loading sites, TDSR sites, and final disposition locations
- Be able to differentiate between debris types
- Be able to fill out load tickets properly
- Understand site safety procedures
- Communicate effectively and efficiently
- Possess previous construction site experience (preferred)
- Have general knowledge pertaining to the operation of large construction machinery (preferred)

1.1 Field Supervisor

The field supervisor is responsible for scheduling and deploying debris monitors and overseeing their daily activities at loading, TDSR, and disposal sites. The field supervisor resolves field operational, eligibility, and safety issues and communicates these issues to the Washington County / regional DMTF or contractor. Communication and coordination of daily activities with FEMA, state, and applicant field personnel is required. The field supervisor also conducts or oversees truck certifications, load measurements, and photo-documentation as required. The field supervisor collects daily logs from the debris monitors and tabulates truck load data for the daily report.

In addition to the general qualifications for debris monitors detailed above, field supervisors need to:

- Possess the ability to communicate with field staff as well as management
- Be able to resolve conflicts and issues in the field
- Understand when to elevate issues to management

Field supervisor duties include, but are not limited to:

- Ensure only eligible debris is collected for loading and hauling
- Ensure only debris from approved public areas is loaded for removal
- Make unannounced visits to all loading and disposal sites within an assigned area
- Assist the disposal site monitor in the measuring of all debris hauling trucks and trailers with the appropriate contractor representatives, if applicable
- Take photographs of all trucks and trailers used in the debris operations to establish a baseline inventory of equipment, or delegating this to the disposal site monitor
- Serve as the first-line of management for the debris monitors and assist as necessary with any questions or conflicts that arise in the field
- Prepare a daily written report (Field Supervisor / Roving Monitor Daily Report) of all activities observed including photographs

The PA program allows for reimbursement of costs associated with the field supervisor when multiple TDSR / disposal sites have debris monitors; one field supervisor is allowed per 10 debris monitors.

The Field Supervisor / Roving Monitor Daily Report is provided in Attachment 5.

1.2 Loading Site Monitor

The loading site monitor performs on-site, street-level debris monitoring at all loading sites to verify debris eligibility based on contract / PA program eligibility requirements, and conducts debris removal documentation via filling out load tickets (Attachment 1). Loading site monitor primary responsibilities are to:

- Estimate load volumes and issue load tickets at the load sites, retaining a copy of the ticket.
- Maintain logs of daily subcontractor performance, eligibility, or other activities as required (Daily Issue Log, Attachment 4).
- Determine whether each load is to be claimed for reimbursement based upon PA eligibility criteria and marking load tickets if ineligible for FEMA

reimbursement, and not issuing tickets for trucks arriving at pick-up sites that are already loaded or partially loaded.

- Ensure that debris is picked up from eligible areas only (private-property debris removal must be specifically authorized for a particular site).
- Document any damages that occur during debris pick-up operations (Daily Issue Log, Attachment 4), particularly from non-debris removal entities (ex. utility crews, private citizens).
- Support documentation requirements by filling out the following daily reports:
  - Load tickets (Attachment 1).
  - Loading Site Monitor Log (Attachment 2).
  - Daily Issue Log (Attachment 4).

1.3 Disposal Site Monitor

The disposal site monitor, also known as a tower / site monitor, will perform on-site debris monitoring functions at TDSR sites and final disposal site locations. Disposal site monitor primary responsibilities are to:

- Check the area for safety considerations, such as downed power lines, children playing in the area, traffic control needs, and safe operation of trucks and equipment.
- Identify and understand the requirements outlined in all debris removal and disposal contracts, to ensure the contract requirements are implemented correctly.
- Verify calibration of scales (if tonnage contract is used for debris removal).
- Accurately measure and document on Truck Certification Forms (Attachment 6), with support from the field supervisor and possibly roving monitors, load hauling compartments for trucks and trailers to compute volume capacity in cubic yards for each truck and trailer prior to its commencement of debris hauling operations. Recertify truck capacities on a regular basis.
- Estimate the percentage of full capacity for each truck or trailer load that arrives at a TDSR / disposal site, fill out Section 2 of Load Tickets (Attachment 1), and provide to the field supervisor for documentation and daily reporting requirements.
- Ensure that trucks are not artificially loaded (e.g., debris is wetted, debris is fluffed or not compacted).
- Ensure that hazardous wastes are not mixed with debris loads.

- Record equipment details for time and materials contracts including the type of equipment, the hours each piece of equipment was used along with operator name and downtime of each piece of equipment by day.
- Report debris removal work that does not comply with all local ordinances, as well as state and federal regulations (i.e., proper disposal of hazardous wastes) to the field supervisor.

Disposal site monitors will provide all load tickets, the daily issue log, and the disposal site monitor log to the field supervisor for documentation and daily reporting requirements.

1.4 Roving Monitor

Once assigned, roving monitors will make unannounced visits to loading, TDSR, and final disposal sites. Roving monitors report to the field supervisor. Roving monitor responsibilities are especially important when multiple contractors are conducting debris management operations. Roving monitor primary responsibilities are to:

- Assist the disposal site monitor and field supervisor in the measuring of all contractor trucks and trailers with the contractor's representative.
- Obtain and become familiar with all debris removal and disposal contracts for which they are providing oversight.
- Drive around their assigned area of responsibility to observe debris management operations. Take photographs and / or video of operations and concerns observed (reported in the Field Supervisor / Roving Monitor Daily Report, Attachment 5). Observations of debris management operator activities should include safety concerns and general operations.
- Determine if Load Tickets are being filled out properly by loading site and disposal site monitors and correct if necessary. Determine if weight tickets are being attached to load tickets (if applicable).
- Fill out Loading Site and Disposal Site Monitoring Checklists, which are intended to determine if loading site and TDSR site operations are safe, and operating in accordance with contract requirements. Any safety issues should be reported as soon as possible.

2 Debris Monitoring Documentation and Forms

2.1 Debris Monitoring Documentation Requirements

Proper documentation is required by the PA program to fully account for debris clearance and removal activities, to support eligibility claims, and for reimbursements. Documentation of activities and costs should be supplied to FEMA PA staff for inclusion in the PWs.

Summaries of the information included in the load tickets are typically provided in support of Washington County's PA funding request in a PW. FEMA and OEM may also

request to see all backup supporting documentation and reports used to substantiate costs claimed in the PW.

The EOC or Emergency Field Office personnel are responsible for proper documentation of debris removal, recycling, processing, recycling, and disposal activities to ensure FEMA reimbursement. Documentation is a critical component in support of contractor invoices and in justifying FEMA's reimbursement policy. Load ticket disposition and debris monitoring activities are the major tools that the county must employ in order to adequately document debris management activities for FEMA reimbursement.

2.2 Force Account Resources Documentation

When Washington County uses its own force account resources to perform debris removal and disposal work, requests for reimbursement should be supported by documentation of the labor and equipment charges incurred in the operation. This documentation includes:

- Payroll records of full-time and temporary employees who worked on the debris removal operation
- Records of applicant-owned equipment used in the debris removal operation, including documentation of equipment hours in service, associated equipment rates, and operator name
- Invoices for rental equipment used in the debris removal operation
- Documentation from permitted final disposal locations including:
  - Invoices for disposal tipping fees
  - Load tickets
  - Loading Site Monitor Logs
  - Disposal Site Monitor Logs
- Documentation of the location of the debris removal activities demonstrating FEMA debris eligibility and/or documentation certifying that FEMA-eligible debris work was performed

2.3 Contracted Resources Documentation

When Washington County chooses to hire a contractor to perform debris removal work, documentation should correspond with the invoiced costs and line item prices of the debris removal contract. This documentation will be provided on monitoring forms and reports, including Load Tickets, Loading Site Monitor Logs, and Disposal Site Monitor Logs, which will provide information on:

- Locations and types of debris removal
- FEMA debris removal eligibility determination
- Debris quantities (volume or weight, determined at inspection site)

- Identification of debris hauling truck / trailer and contractor
- Location of permitted final debris disposal site
- Documentation of labor, equipment, and materials charges including hours of service, and associated charges (for time and materials contracts)
- Documentation of quantities of debris reduced or recycled at TDSR sites and associated detailed charges
- Invoices for disposal tipping fees

2.4 Load Tickets

Proper documentation will enable Washington County to fully account for debris clearance and removal costs. The load ticket provides the most comprehensive information and a paper trail for FEMA PA Program reimbursement. Essential elements of information inputted on a load ticket and the individual responsible for providing the information include:

- Loading site monitor's name (Section 1: Loading Site Monitor)
- Loading date and time (Section 1: Loading Site Monitor)
- Loading site location (using addresses, mile-markers, or GPS readings) (Section 1: Loading Site Monitor)
- Contract number or contractor's name (Section 1: Loading Site Monitor)
- Truck number and driver's name (Section 1: Loading Site Monitor)
- Type of debris (Section 1: Loading Site Monitor)
- Disposal site monitor's name and signature (Section 2: Disposal Site Monitor)
- Unloading date and time (Section 2: Disposal Site Monitor)
- Unloading location (Section 2: Disposal Site Monitor)
- Truck capacity in cubic yards (Section 2: Disposal Site Monitor)
- Estimated load size, either in cubic yards or tons – if scales are used, the Weight Ticket should be attached to the Load Ticket (Section 2: Disposal Site Monitor)

The loading site monitor is responsible for filling out the Load Ticket at the debris collection site. The Load Ticket is on a triplicate form. The original copy and the yellow copy are provided to the vehicle operator, while the pink copy is retained by the loading site monitor. The loading site monitor submits all load tickets to the field supervisor daily.

Upon arrival at a TDSR or a disposal site, the vehicle operator will provide the copies of the Load Yicket to the disposal site monitor, who will fill out Section 2 of the Load

Ticket. The original copy will be returned to the driver, who will submit the Load Ticket to their source organization for tracking, while the yellow copy will be retained by the disposal site monitor for PA program cost tracking purposes. The disposal site monitor will provide the yellow copies of the Load Ticket to the field supervisor daily.

Load Tickets will arrive at the EOC or Emergency Field Office, or the facility where debris management operations are being managed, to be entered and tracked by a data entry specialist.

The Load Ticket is presented as Attachment 1.

2.5 Loading Site Monitor Log

The Loading Site Monitor Log is used by the FEMA / Washington County / contracted loading site monitor to collect data at the debris pick-up sites. The purpose of the log is to provide documentation to support claims that debris removal activities are eligible for reimbursement under the PA program. Essential elements of information to be recorded include:

- Time and Date
- Load Ticket number
- Truck number (or license plate number)
- Loading site monitor name and affiliation
- Site location (using addresses, mile-markers, or GPS readings)
- Debris type
- Issues / comments / pictures taken

The Loading Site Monitor Log is presented as Attachment 2.

2.6 Disposal Site Monitor Log

The Disposal Site Monitor Log is used by the disposal site monitor to record debris load tracking information for debris arriving or leaving a TDSR or disposal site. This is sometimes called a Tower Log because the disposal site monitor is typically located in an entrance / exit inspection tower, which facilitates the observational process. Essential elements of information to be recorded include:

- Time and date
- Load Ticket number
- Truck number (or license plate number)
- Full truck rated capacity (in cubic yards)
- Disposal site monitor name and affiliation
- Site location (using addresses, mile-markers, or GPS readings)

- Truck observed debris capacity (in cubic yards) or weight (in tons)
- FEMA eligible debris capacity (in cubic yards) or weight (in tons)
- Debris type
- Issues / comments / pictures taken

The Disposal Site Monitor Log is presented as Attachment 3.

2.7 Loading Site and Disposal Site Monitoring Checklists

The roving monitor is responsible for making unannounced visits to loading sites and TDSR sites. The purpose of these visits is to monitor site operations and to support the loading and disposal site monitors. The roving monitor is responsible for assessing the Load Ticket process, determining if environmental remediation efforts have been undertaken, identifying debris eligibility issues, and reporting safety concerns. The roving monitor will fill out a loading site / TDSR site monitoring checklists during each visit.

The Loading Site Monitoring Checklist and Debris Management Site Monitoring Checklist are under development.

2.8 Field Supervisor Daily Report

The Field Supervisor is responsible for managing all monitors (Loading Site, Disposal Site, and Roving) during debris operations involving more than one debris management site. The Field Supervisor will visit debris management sites as needed and document daily activities on a Field Supervisor Daily Report. The report will include information on observations of field operations, including identified issues (safety, compliance, PA Program eligibility), and updates on debris operations including debris quantities received at TDSR sites and final disposal sites. The report will also include mention of issues documented in a Daily Issue Log (Attachment 5).

- Field Supervisor name and affiliation
- Time and date
- Site locations visited (using addresses, mile-markers, or GPS readings)
- General description and observations of field operations, including any issues identified, and action(s) taken to address the issues
- Quantities of debris received at TDSR and final disposal sites

Reports will be submitted to data entry supervisor and to the Washington County / regional DMTF.

2.9 Roving Monitor Daily Report

Roving Monitors will submit their written daily reports at the end of each day to the Field Supervisor. The report will outline their observations with respect to the following:

- Operational flow with respect to site layout
- Environmental considerations including impermeable liners where hazardous materials spills are possible (fuel holding areas, HHW holding area, white goods holding areas, under generators)
- Public health concerns regarding vector control measures
- Areas where illegal dumping is occurring
- Have the following issues been mitigated:
  - Dust – Are water trucks employed to keep the dust down?
  - Noise – Have berms or other noise abatement procedures been employed?
- Traffic – Does the TDSR site have a suitable layout for ingress and egress to help traffic flow?

Reports will be submitted daily to the field supervisor.

The Field Supervisor / Roving Monitor Daily Report is presented as Attachment 5.

2.10 Daily Issue Log

The Daily Issue Log is used by all monitoring personnel to collect data regarding any issue of significance. When documenting information on the Daily Issue Log, the location, monitoring personnel, truck identification data, and details of the issue being resolved should be recorded. For any eligibility or capacity issues, photographs (identified by corresponding numbers on the log sheet) should accompany this log. Significant issues need to be reported to the field supervisor as soon as possible. Elements of essential information that should be recorded in the Daily Issue Log includes:

- An issue number
- Time and date for each issue
- Truck number (or license plate number)
- Load Ticket number
- Site location or location of issue (GPS or address or mile marker)
- The contractor / subcontractor / organization associated with the issue
- Photos / video taken of the issue
- Any remediation / resolution actions taken
- Name and affiliation of the monitor

The Daily Issue Log is presented as Attachment 4.

2.11 Truck Certification Form

Washington County will need to ensure that every truck and trailer used in debris removal operations is measured and documented on a truck certification form. Knowing the hauling capacity of each truck is necessary because debris, specifically vegetative debris, is often hauled and billed by volume. Accurately capturing all the truck capacity information and driver profile information is important; having a FEMA PA representative present when certifying debris trucks is recommended.

Truck documentation should include all trucks to be used, including city / county / special districts / mutual aid-derived trucks and trailers. A truck certification form allows the debris monitor to identify the truck itself and its hauling capacity in a standardized manner. The following information should be documented:

- Brief physical description of the truck
- License plate number
- Capacity of hauling bed (in cubic yards)
- Truck identification number assigned by the owner
- Photographs

Determining truck capacities is the responsibility of the Disposal Site Monitor, with support from the Field Supervisor and / or a Roving Monitor, along with a FEMA PA representative. Recertification of the hauling trucks on a random and periodic basis should be implemented for contract compliance and reimbursement considerations.

Truck certification form data should be entered into a database by a data entry specialist at the Emergency Field Office / debris management coordination center. The information will be compiled into a truck certification report, and distributed to all debris monitors.

The Truck Certification Form is presented as Attachment 6.

2.12 Debris Collection Summary Spreadsheet

The debris collection summary spreadsheet is used to capture the total amount and types of debris removed and disposed of, as well as the cost for each. This information may also be helpful to FEMA to validate any debris prediction models that are run, as well as establishing reasonable costs for debris removal.

Debris collection summary spreadsheets will be updated daily by a data entry specialist at the Emergency Field Office or at the debris management operations facility.

Tab 4, Attachment 1: Load Ticket

Debris Monitoring Load Ticket			Ticket No. (Auto Number)
Municipality (Applicant)			Prime Contractor
			Sub-Contractor
Truck Information			
Truck No			Capacity
Truck Driver (print legibly)			
Loading Information			
Loading	Time	Date	Inspector/Monitor
Location (Address or Cross Streets)			
Mechanically Loaded? Yes ☐ No ☐		Percent Full Capacity	
When Using GPS Coordinates use Decimal Degrees (N xx.xxxxx)			
N		**W**	
Unloading Information			
Debris Classification		Estimated %, CY's, or Actual Weight	
☐ Vegetation ☐ C&D ☐ White Goods ☐ HHW ☐ Other* See Below			
Unloading	Time	Date	Inspector/Monitor
TDSR / Disposal Site Name and Location			
*Other Debris Explanation		Original: Applicant Copy 1: _____ Copy 2: _____ Copy 3: _____	

Tab 4, Attachment 2: Loading Site Monitor Log

Loading Site MonitorLog Date: _____

Date	Time	Ticket No.	Truck No.	Full Truck Rated Capacity (CY)	Pick-Up Location	Debris Type (Veg, C&D, White Good / Metals, Other)	Pictures	Issues or Comments

Tab 4, Attachment 3: Disposal Site Monitor Log

Disposal Site Monitor Log Date: _____

Date	Time	Ticket No.	Truck No.	Full Truck Rated Capacity (CY)	Applicant QA Eligible Capacity (% CY/Wt)	FEMA Eligible Capacity (% CY/Wt)	Debris Type (Veg, C&D, White Good / Metals, Other)	Pictures	Issues or Comments

Tab 4, Attachment 4: Daily Debris Issue Log

Daily Issue Log

Date: _____

Monitor Name: _____

Issue No.	Date	Time	Truck No.	Load Ticket	Pick-Up Location	Contractor/ Sub-contractor	Pictures	Issue/ Resolution

Tab 4, Attachment 5: Field Supervisor / Roving Monitor Daily Report

Field Supervisor / Roving Monitor Name	Employed by
Date	Time
Site Locations Visited (use addresses, mile markers or GPS readings) 1. _____ 2. _____ 3. _____	
Description & Observations of Field Operations (include any issues identified and the action(s) taken to address the issues)	

Tab 4, Attachment 6: Truck Certification Form

Make	Year	Color	License

Truck Measurements

Performed By: _____ Date: _____

Volume Calculated by: _____ Date: _____

Both Checked By: _____ Date: _____

Driver Information

Name: _____

Address: _____

Phone Number: _____

Owner Information

Name: _____

Address: _____

Phone Number: _____

Truck Identification: _____

Truck Capacity:

Photo:

Tab 5: Private Property Demolition

1 Private Property Debris Removal Strategy

Following the FEMA Public Program and Policy Guide (PAPPG), Washington County seeks to remove debris from private property only when it is in the public interest, as defined in Sections 403 and 407 of the Stafford Act at 44 CFR 206.224. Debris removal from private property is typically not reimbursable under the FEMA PA program. Debris removal from private property is the responsibility of the individual property owner, aided by insurance settlements and assistance from volunteer agencies.

The primary strategy for debris removal from private property is to utilize public information channels to educate the public to place debris on the public right-of-way for collection by government entities, which is a FEMA endorsed strategy. The alternate strategy is to enter private property to remove debris when it is in the public interest or is a public nuisance.

1.1 Authority and Public Assistance Program Eligibility

The authority for debris removal from private property is vested in the Stafford Act sections 403(a)(3)(A), 407, and 502; 42 U.S.C. 5170b; 42 U.S.C. 5173; 44 CFR 206.244; and Washington County Code of Ordinances Title 8, Chapter 8.20.

During a federally declared disaster, the PA program, Category A: Debris Removal allows for reimbursement of debris removal on private property when it is in the public interest. This requires that state and local governments arrange an unconditional authorization for removal of debris and the property owner agrees to indemnify the government against any claim arising from the removal. Unconditional authorization for removal of debris and indemnification from liability for all government entities and their designees is achieved through a Permit of Entry (Attachment 1) which must be signed by the property owner. The Permit of Entry grants access to the property for the purpose of removing debris and contains a hold harmless clause which indemnifies the entities accessing the property.

Debris removal is only allowed when it is in the public interest. “Public interest” is defined as being necessary to:

1. Eliminate immediate threats to life, public health, and safety; or
2. Eliminate immediate threats of significant damage to improved public or private property; or
3. Ensure economic recovery of the affected community to the benefit of the community-at-large.

The determinations for public interest are offered in the PAPPG and pertain to PA program reimbursements. An immediate threat to life, public health, and safety is a determination vested in the Washington County Department of Health and Human Services (HHS), Environmental Health Program (EHP), as determined by a health official.

The determination of a threat to improved property, which is any structure, facility, or equipment that was built, constructed, or manufactured, requires an estimate of the costs to remove the debris or threat versus the cost of damages and repair due to the threat posed by the debris. To be eligible for reimbursement under the PA program, the debris removal costs must be less than the cost of incurred damages.

Washington County officials, potentially the Board of Commissioners, will need to assess the value of debris removal from private property for economic recovery and community benefit. Generally, commercial enterprises are not eligible for debris removal.

If Washington County seeks to conduct debris removal operations on private property during a federally declared disaster, a written request must be submitted to the Federal Coordinating Officer (FCO), who is typically located at the Joint Field Office (JFO). This written request must include all of the following:

1. Public interest determination, as defined above or in 44 CFR 206.224(a)
2. Documentation of legal responsibility, as defined in 44 CFR 206.233(a)(3) and Washington County Code of Ordinances Title 8, Chapter 8.08 and 8.20 – right of entry is granted under 8.20.070-.080, and a Permit of Entry may be signed by the property owner or their authorized designee
3. Authorization for debris removal from private property, as defined in 44 CFR 206.223(a)(3), with authority granted under Washington County Code of Ordinances Title 8, Chapter 8.20.090-100 with documented confirmation that a health official has declared the presence of disaster-generated debris to be a public nuisance under 8.20.030
4. Indemnification, as defined in 44 CFR 206.6, identified as the hold harmless agreement, a clause found in the Permit of Entry, which must be signed by the property owner, or their authorized designee.

FEMA regulations require that no duplication of benefits occur (44 CFR 206.191). FEMA is prohibited by Section 312 of the Stafford Act from approving funds for work that is covered by any other source of funding. Therefore, Washington County must take reasonable steps to prevent such occurrences, and verify that insurance coverage or any other source of funding does not exist for the debris removal work accomplished on each piece of private property.

Independent of a federal disaster declaration and the potential for reimbursement for debris removal activities through the PA program, Washington County has the authority to seek debris removal from private property when it is deemed a public nuisance and poses a threat to health, safety, and public welfare, under Washington County Code or Ordinances Title 8, Chapter 8.08 and 8.20. Under these ordinances, it is unlawful for any owner or person in charge of a property to maintain or allow to exist, any accumulation of solid waste, which may be deemed a public nuisance by a public health official. This pertains to the following debris types (as outlined in 8.20.030): construction and demolition debris; hazardous or other special waste; white goods (specifically any container which has an airtight door or lid, snap-lock, or other locking device which prevents opening from the inside); soil, mud, and sand; putrescent debris (animal

carcasses not buried within 24 hours of death); vegetative debris (if it poses a fire hazard); and garbage.

If private property has disaster-generated debris that has been deemed a public nuisance by a public health official, the health official may require the property owner to eliminate the nuisance within 15 days (8.20.090), or order immediate abatement if the nuisance poses an extreme hazard to public health or safety (8.20.100). If the nuisance has not been abated by the owner or person in charge of the property within the time allowed by this county ordinance, the Board of County Commissioners may, at the request of the health official, cause the nuisance to be abated. Accurate records of the direct expense incurred by the county to abate the nuisance shall be kept and shall include a surcharge of twenty-five percent of the cost of the abatement for administrative overhead.

2 Private Property Demolition Strategy

Following FEMA PAPPG, Washington County only seeks to demolish structures on private property that pose immediate threats to life and property and which are deemed dangerous and uninhabitable. The threat must have resulted from the major disaster and the property owners must be unable to remediate or demolish the structures.

2.1 Authority and Public Assistance Program Eligibility

Section 403(a)(3)(E) of the Stafford Act provides FEMA authority to fund the demolition of unsafe structures which endanger the pubic on public and private property (44 CFR 206.225). Section 406 of the Stafford Act provides FEMA authority to fund the demolition, repair, restoration, reconstruction, or replacement of eligible public and private nonprofit facilities (44 CFR 206.226). FEMA PAPPG, along with 44 CFR 206.221, defines private nonprofit facilities eligible for PA program funding. FEMA funding for demolition is through the PA Program, Category B: Emergency Protective Measures.

During a federally declared disaster, demolition of privately owned structures and subsequent removal of debris may be eligible for PA program funding under Section 403 of the Stafford Act if the following conditions are met:

1. The structures was damaged and made unsafe by the declared disaster, and is located in the area of the declared disaster (44 CFR 206.223(a)(1) and (2));
2. The Washington County Building Official (DLUT), or their designee, must declare the structure unsafe / dangerous and uninhabitable, and that it poses an immediate threat to the public (44 CFR 206.225(a)), as identified under Washington County Code of Ordinances Title 14 Chapter 14.04.080 and 14.04.330;
3. The Washington County Building Official (DLUT), or their designee (including the Fire Marshal or Health Official), legally entered the structure on private property in accordance with Washington County Code of Ordinances Title 14 Chapter 14.04.080 and 14.04.330, which grants them right-of-entry, and authority to enforce hazard abatement by repair, rehabilitation, demolition or removal;
4. Washington County, the State of Oregon, FEMA, and its employees, agents, and contractors have been indemnified from claims arising from the demolition of the

unsafe private structure and removal of debris from private property by having the property owner, or their designee, sign a Permit of Entry; and

5. The work is completed within the completion deadlines outlined in 44 CFR 206.204(c) (i.e., six months from the date of the major disaster declaration).

To undertake demolition of a private structure, Washington County must make a written request to the Public Assistance Group Supervisor (JFO, Operations Section, Public Assistance Infrastructure Branch). The written request must provide a detailed explanation documenting the legal responsibility to enter private property to demolish the unsafe structure (Washington County Code of Ordinances Title 14 Chapter 14.04.330) and indicate that the Building Official followed procedures specified in Chapters 4 through 9 of the Uniform Code for the Abatement of Dangerous Buildings published by the International Conference of Building Officials (which is adopted by reference in 14.04.330).

When circumstances arise that preclude the property owner from remediating or demolishing a structure that has been deemed a public nuisance, or dangerous / unsafe, the Washington County Office of County Consel will take legal actions leading to county-contracted remediation or demolition of the structure, with the goal of eliminating the threat to public property or citizens and recouping costs incurred by the County.

Tab 5, Attachment 1:Permit of Entry

Washington County
Permit of Entry
Private Property Debris Removal

Debris Removal from Private Property

The Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288) as amended (Stafford Act) authorizes the Federal Emergency Management Agency (FEMA) to fund debris removal from private properties under certain conditions. Regulations implementing the Stafford Act establish the requirement that debris removal be in the "public interest" in order to be eligible for reimbursement. "Public Interest" is defined as being necessary to:

- eliminate immediate threats to life, public health, and safety, or
- eliminate immediate threats of significant damage to improved public or private property; or
- ensure economic recovery of the affected community to the benefit of the community-at-large.

Debris removal from private property following a disaster is generally the responsibility of the owner; however, disasters that deposit large quantities of debris on private property might require the state or local government to provide debris removal services in order to protect the public's health and welfare.

Washington County is working in partnership with the state of Oregon and FEMA to support property owners with their recovery efforts to clear private properties of disaster-related debris. Reimbursement of the costs Washington County incurs to perform these activities is made available through the FEMA Public Assistance Grant Program. In order for costs to be reimbursable, Washington County must assess and determine if properties are eligible prior to work commencing.

Authorities

Sections 403(a)(3)(A), 407, and 502 of the Stafford Act; 42 U.S.C. 5173; 42 U.S.C. 5192; 44 CFR 206.224; and Washington County, Oregon, Code of Ordinances, Title 8, Chapter 8.20.

Washington County
Permit of Entry

Property Description:

Owner Name: File No:
Street Address: Project No:
Assessor's Map Number: Tax Lot: ,Washington County, Oregon.
(Subject area outlined in yellow on the attached map.)

Permit of Entry on Private Property

I certify that I am the owner, or an owner's authorized agent, of the property described above. I grant, freely and without coercion, the right of access and entry to said property to the United States Government, including but not limited to the U.S. Army Corps of Engineers and the Federal Emergency Management Agency (FEMA), the state of Oregon, Washington County, and each of their agencies, agents, contractors and subcontractors, for the purpose of removing and/or clearing any or all disaster-generated debris from the above-described property.

Hold Harmless

I understand this permit is not an obligation upon the government to perform debris removal. I agree to indemnify and hold harmless the United States Government, the U.S. Army Corps of Engineers, FEMA, the state of Oregon, Washington County, and any of their agencies, agents, contractors and subcontractors for any damages of any type whatsoever, either to the above-described property or to persons situated thereon. I release, discharge and waive any action, either legal or equitable, that might arise by reason of any action of the above entities. I will mark any sewer lines, septic tanks, water lines and utilities located on the described property.

Duplication of Benefits

Most homeowner's insurance policies have coverage to pay for removal of storm-generated debris and/or demolition. I understand that federal law (42 United States Code 5155 et seq.) requires me to reimburse the Federal Government, through Washington County, the cost of removing the storm-generated debris to the extent covered in my insurance policy. I also understand that I must provide a copy of the proof/statement of loss from my insurance company to Washington County. If I have received payment, or when I receive payment, for debris removal from my insurance company, or any other source, I agree to notify and send payment and the proof/statement of loss to Washington County for final recovery by FEMA. I understand that all disaster related funding, including that for debris removal from private property, is subject to audit. (I/We) acknowledge that information submitted will be shared with other government agencies, federal and nonfederal, and contractors, their subcontractors and employees for purposes of disaster relief management and for the objectives of this Permit of Entry.

Initials of Property Owner_____

By signing this document, (I/we) certify that (I/we) (am/are) the owner of this property and/or that (I/we) (am/are) authorized to sign this Permit of Entry. NOTE: All property owners must sign a Permit of Entry form; attach additional signature forms with witnesses as needed.

For the consideration and purposes set forth herein, I hereby acknowledge this agreement by my dated signature below.

Signed this _____ day of _____, 20XX.

_____

Signature of Owner

_____

Print Name

_____

Mailing Address (if different from property address listed above)

_____

Telephone Number

_____

Name of Insurance Company

_____

Insurance Company

WITNESS

_____

Signature of Witness

_____

Print Name

_____

Telephone Number

Initials of Property Owner_____

Tab 6: Debris Contracting and Procurement Procedures

1 Debris Contracting and Procurement Guidance

For debris management activities to be eligible for reimbursement under the FEMA PA program, contracts for debris removal must meet rules for federal grants and contracting as provided for in 2 C.F.R. Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (particularly 2 C.F.R §200.317-326, Procurement Standards). Washington County will comply with its own procurement procedures in accordance with applicable local and state laws and regulations, provided they conform to applicable federal laws and standards identified in 2 C.F.R. Part 200.

The Washington County EOC or the DMTF, along with County Counsel and Support Services, Procurement Division, will collaborate on the development of proposals and management of debris contracts from project inception to completion. FEMA also offers Technical Assistance for reviewing debris contracts.

2 Contracting Process

Washington County has established and follows formal procurement rules which are based on the Oregon Revised Statutes (ORS). The primary purpose of this public procurement policy is to ensure that all publicly funded acquisitions are obtained through a full and open competitive process and that honest and ethical procedures are consistently followed. Washington County may use an abbreviated emergency procurement process that includes a full and open competitive bid process only if time does not allow for more stringent procedures.

Washington County utilizes a "partially decentralized" purchasing program. Generally, the individual departments develop material specifications and scopes of work, obtain pricing quotations, act as contract administrator, and perform contract oversight functions; however, all processes are monitored and reviewed by Washington County Support Services, Purchasing Division (Purchasing) to insure rule compliance. With a few exceptions, formal bidding, proposal processes (need determined by project dollar amount), are handled by / through Purchasing in close cooperation with the initiating department. Purchasing is responsible for posting and publishing current solicitation opportunities such as Request for Quotes, Invitation to Bids, and Request for Proposals.

In general, contracts are awarded to a responsible contractor possessing the ability to perform successfully under the terms and conditions of the proposed procurement, giving consideration to such matters as contractor integrity, compliance with public policy, record of past performance, and financial and technical resources. The procurement process avoids acquisition of unnecessary or duplicative items. Procurements may be broken out when more economical options are identified, which may include leasing versus purchasing.

Federal regulations require PA program applicants to take the necessary steps to ensure there are opportunities to award contracts to minority businesses, women's business enterprises, and labor surplus area firms whenever possible. This includes placing

qualified small and minority businesses and women's business enterprises on solicitation lists; assuring that small and minority businesses and women's business enterprises are solicited whenever possible; when economically feasible, dividing total requirements into smaller tasks or quantities to permit maximum participation; and requiring prime contractors, if subcontracts are to be let, to take the affirmative steps listed above.

County Counsel should review procurement processes and any contract to be awarded to ensure they are in compliance with all local, state, and federal requirements. Procurement policies must include procedures to handle protests and disputes related to contracts awarded. FEMA will, when requested by applicants, assist in the review of debris removal contracts; however, such a review does not constitute approval.

FEMA will only reimburse reasonable costs for disaster debris removal activities. FEMA defines "reasonable" as a cost that is both fair and equitable for the type of work being performed. The reasonable cost requirement applies to all labor, materials, equipment, and contract costs awarded for the performance of eligible work.

3 General Contract Provisions

General elements of the procurement process for contracting includes:

- A clear and definitive scope of work
- Use of qualified bidders (documented by licenses, financial records, proof of insurance, and bonding, as applicable)
- Regular submission of invoices
- A subcontract plan including a clear description of the percentage of the work the contractor may subcontract out and a list of the subcontractors the contractor plans to use
- A requirement that contractors provide a safe working environment
- A requirement that all contract amendments and modifications will be in writing
- A requirement that contractors must obtain adequate payment and performance bonds and insurance coverage
- Clear documentation of the process / rationale followed in making procurement decisions, selection of contract type, contractor selection or rejection, and basis for the contract price
- Compliance with all relevant local, state, and federal requirements, laws and policies including 2 C.F.R. Part 200
- Suspension and Debarment clause
- For contract amounts that exceed $10,000, address termination for cause and for convenience, including the manner by which it will be effected and the basis for settlement

- For contract amounts that exceed $150,000 (Simplified Acquisition Threshold):
  - Address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms which include sanctions and penalties

Essential elements of the contracting process specific to debris removal and monitoring include:

- All payment provisions must be based on unit prices (volume or weight) except during the first 70 hours following a disaster declaration when Time and Materials contracts are allowed
- A provision that states that only FEMA eligible debris will receive payment
- A requirement that the contractor use mechanical equipment to load and reasonably compact debris into trucks and trailers
- A requirement that contractors provide scales if the TDSR site does not have this capability
- For time and materials contracts awarded for debris monitoring services, contracts must contain a not-to-exceed clause
- Encourage contractors to make maximum use of recovered / recycled materials

4 Contracting Avoidances

FEMA will not provide funding for the following types of contracts:

- Contracts awarded on a sole-source basis
- Cost-plus-percentage of cost contracts
- Contracts contingent upon receipt of local government or federal disaster assistance funding
- Contracts awarded to debarred contractors
- Contracts awarded to develop and manage a TDSR site that is not pre-identified in this plan without contacting OEM and FEMA to request technical assistance
- "Piggyback" contracts
- Contracts that include a state or local geographic preference for local contractors

FEMA will not provide funding for the following types of costs:

- Mobilizations costs

- Miscellaneous items or items listed as "unknown"
- Markups in calculations due to errors in debris volume calculations
- Costs where the contractor made the debris eligibility determination – only FEMA can make an eligibility determination

5 Specific Types of Debris Removal Contracts

There are three types of contracts that the county can enter into for debris clearance and removal services. These contract types are described below and include fixed-price, cost-reimbursement, and, to a limited extent, Time and Materials.

5.1 Fixed-Price and Cost-Reimbursement Contracts

Fixed-price contracts provide the contractor with full responsibility for the performance costs and resulting profit (or loss). Fixed price contracts provide for a firm price or, in appropriate cases, an adjustable price. The risk of performing the required work, at the fixed price, is borne by the contractor. Firm-fixed price contracts are generally appropriate where the requirement (such as, scope of work) is well defined and of a commercial nature

Cost-reimbursement contracts are structured such that the contractor has minimal responsibility for the performance costs and the negotiated fee (profit) is fixed. Cost-reimbursement types of contracts provide for payment of certain incurred costs to the extent provided in the contract. They normally provide for the reimbursement of the contractor for its reasonable, allocable, actual, and allowable costs, with an agreed-upon fee. There is a limit to the costs that a contractor may incur at the time of contract award, and the contractor may not exceed those costs without the grantee's or subgrantee's approval or at the contractor's own risk. In a cost-reimbursement contract, the grantee / subgrantee bears more risk than in a firm-fixed price contract. A cost-reimbursement contract is appropriate when the details of the required scope of work are not well-defined. There are many varieties of cost-reimbursement contracts, such as cost-plus-fixed-fee, cost-plus-incentive-fee, and cost-plus-award-fee contracts.

In between these two ends of the spectrum, there are various incentive contracts in which the contractor's responsibilities for the performance costs and the profit or fee incentives offered are tailored to the uncertainties involved in contract performance.

5.2 Time and Materials Contracts

A time and materials (T&M) type contract means a contract whose cost to a non-Federal entity is the sum of: (i) The actual cost of materials; and (ii) Direct labor hours charged at fixed hourly rates that reflect wages, general and administrative expenses, and profit. A T&M contract is generally used when it is not possible at the time of awarding the contract to estimate accurately the extent or duration of the work or to anticipate costs with any reasonable degree of confidence.

T&M contracts are neither fixed-price nor cost-reimbursement contracts, but constitute their own unique contract type. A labor-rate contract is a type of T&M contract.

A time and materials type contract may be used only after a determination that no other contract is suitable and if the contract includes a ceiling price that the contractor exceeds at its own risk. T&M contracts may be used for a reasonable period of time based on a standard provided in the FEMA Public Assistance Guide. When this type of contract is used, 2 C.F.R §200.318(j) requires the rational for this contract type be documented if reimbursement under the FEMA PA program is sought.

T&M contacts must state that:

- The price for equipment applies only when equipment is operating
- The hourly rate includes operator, fuel, maintenance, and repair
- The county reserves the right to terminate the contract at its convenience
- The county does not guarantee a minimum number of hours

Tab 6: Attachment 1: Pre-Qualified Contractors for Debris Management

1 Request for Qualifications

In June, 2016, Washington County issued RFQ# 2016.040 seeking contractors capable of expeditiously responding to a disaster that generated large volumes of debris. Qualifications identified in the RFQ included:

- Ability to mobilize and be on-site with no less than 50 percent of needed resources within 72 hours.
- Capable of managing a debris clearance and removal mission containing between 50,000 and 1,000,000 cubic yards.
- Must be registered to do business within the state of Oregon.
- Required to document licenses, financial records, proof of insurance, and surety.
- Shall not be debarred on the federal System for Award Management status list.

Once the decision to solicit and award a contract is made, Washington County may issue the solicitation directly to the contractors on the pre-qualified list. In agreement with 2 C.F.R. Part 200, Washington County must also allow any interested contractor (not on the pre-qualified list) to submit its qualifications, and if deemed qualified, allow that contractor to submit a bid or proposal in response to the solicitation. Contract award will then be made to one of the contractors submitting a bid or proposal, based upon the evaluation/award criteria identified in the solicitation.

2 Pre-qualified Contractors (updated June 28, 2017)

AshBritt
Rob Ray
565 E. Hillsboro Blvd.
Deerfield Beach, FL 33441
Phone: 954-725-6992
Phone: 800-244-5094
24-Hour Cell: 954-868-9502
Fax: 954-725-6991
Email: response@ashbritt.com
Email: rray@ashbritt.com

Ceres Environmental Services Inc.
Suzan Dunlop
Contracts Administrator
6968 Professional Parkway E
Sarasota, Florida 34240
Phone: 1-800-218-4424
Cell#: 941-661-8730
Direct: 941-358-6362
Fax: 866-228-5636
Email: Suzan.Dunlop@ceresenv.com
For Operations please contact Matt Sharpe: Cell: 813-333-3033

In case of an Emergency, please contact any of the four (4) people noted below.

Contact Name	Title	Phone	Cell No	Fax No	Email Address
Tia Laurie	Director of Administration	800-218-4424	813-333-8254	866-228-5636	tia.laurie@ceresenv.com
Karl Dix	Director of Client Services	800-218-4424	813-508-5839	866-228-5636	karl.dix@ceresenv.com
David Preus	Sr. Vice President	800-218-4424	763-954-0394	866-228-5636	david.preus@ceresenv.com
Matt Sharpe	Director of Operations	800-218-4424	813-333-3033	866-228-5636	matt.sharpe@ceresenv.com

CrowderGulf LLC
Disaster Administration Office
5435 Business Parkway
Theodore, Al 36582
Phone: 800-992-6207
Fax: 251-459-7433
Buddy Young, Regional
Email: byoung@crowdergulf.com
Phone: 940-597-4252
Official notices: 800-992-6207 or jramsay@crowdergulf.com

DRC Environmental Services, LLC
Kurt Thormahlen
110 Veterans Memorial Blvd. Suite 515
Metairie, LA. 70005
Phone (504) 482-2848
Fax (504) 482-2852
Email: KThormahlen@slsco.com

Tab 7: Temporary Debris Storage and Reduction Site Operations

1 Introduction

TDSR site operations are necessary when the volume of disaster debris ready for disposal exceeds the capacity of the solid waste infrastructure to receive it, or when specific debris management operations require temporary storage or processing. The establishment and operation of a TDSR site requires permits from both Oregon DEQ and LUT. Site selection involves a coordinated evaluation process that is best conducted pre-incident. Site operations will likely require contractor support and expertise to supplement county personnel and resources.

2 Purpose

The purposes of a TDSR site are to:

- Conduct material recovery operations
- Isolate recyclable materials
- Isolate materials that may be used for energy recovery purposes
- Isolate solid waste for final disposal at a landfill
- Temporarily store various debris types to be hauled to and processed at specialty processing facilities (e.g., discarded or abandoned vehicles, HHW, and white goods)

Bulk disaster debris received at a TDSR site that is not pre-segregated, will be segregated into homogeneous debris types. Once segregated, materials that can be used for energy or material recovery will be hauled to facilities where they can be processed. The solid waste remaining will be processed and reduced if possible, then hauled to final disposal locations.

When the city and county EOCs and DOCs become operational, an assessment of the debris quantities and types, locations, and operational capacity of existing debris management infrastructure will be made. Following the assessment, the EOC Debris Management Group (Operations Section, Public Works Branch) and / or the EOC Policy Group will determine if a TDSR site is necessary and should be established.

3 Site Identification and Preparation

3.1 Washington County Land Use Criteria and Considerations

Within the Urban Growth Boundary (UGB), TDSR site operations may occur as a temporary use within a number of different land use designations. The facility would be permitted as a Type I Temporary Use under CDC Section 430-135.1.C(8). The Type I temporary use permit may require 1-2 weeks for review, but operations may begin prior to receiving a permit under the emergency provision identified in CDC Section 201-2.5.

Outside the UGB, a TDSR site currently would not be permitted as a temporary use. The County CDC could potentially be amended to allow a TDSR as a temporary use in certain non-resource districts, such as R-IND and R-COM. A land use ordinance would be required to make this change.

3.2 Site Selection Criteria

If it is determined a TDSR site is necessary, a baseline study will be conducted to determine if site operations will cause environmental impacts to sensitive areas or historical sites. The baseline study data will be collected by a site selection team comprised of staff representing Washington County Emergency Management, HHS SWR Program, DLUT, Metro, DEQ, and the property owner.

Generalized site selection criteria include:

- Close proximity to debris locations to minimize costs associated with materials hauling
- Relatively flat and minimally covered by vegetation to facilitate hauling and sorting activities - hardstand sites are preferred to unpaved areas
- Good ingress that supports heavy truck traffic with separate ingress and egress to the site
- Free from obstructions such as power lines or pipelines
- Does not impede the flow of traffic along major transportation corridors
- Already includes a vehicle / large vehicle scale
- Facilitates material segregation, recycling, and reduction of debris
- Facilitates heavy equipment storage
- County- or publically-owned land preferred to privately-owned land
- Does not create a public nuisance by disrupting business operations or by causing dangerous conditions in residential neighborhoods or schools (should not be in proximity to residential areas, schools, churches, hospitals, or other sensitive areas)
- Should not be predominantly located in low-income or minority areas
- Be able to be restored to original conditions
- National Environmental Policy Act (NEPA) and OAR 340-095-0010 compliance:
  - Not within the floodplain or flood prone areas
  - Not cause any water quality impacts
  - Not on a wetlands or critical animal or plant habitats

- Not on sole source aquifers or freshwater well fields
- Not on a superfund site
- Compliance with local and state environmental and historic preservation requirements is required

The baseline data collection during the site evaluation should include:

- Video or photos of the site
- Documentation of the physical features of the site
- An investigation of historic significance
- Soil and water samples

3.3 Site Size Requirements

Current USACE guidance for TDSR sites is to estimate debris stack heights of 10 feet with 60% usage of TDSR site land area designated for roads, safety buffers, burn pits, HHW areas, etc.

The total volume of debris per acre is calculated below (assuming a debris pile height of 10 feet):

$$\frac{43{,}560\ \left[\frac{ft^2}{ac}\right] \times 10[ft]}{27\ \left[\frac{ft^3}{yd^3}\right]} = 16{,}133\ \left[\frac{yd^3}{ac}\right]$$

1 [ac] = 43,560 [ft^2] 1 [y^3] = 27 [ft^3]

acre = [ac] square feet = [ft^2] cubic feet = [ft^3] cubic yard = [yd^3]

Based on the forecasting in Tab 2, the acreage required for countywide (including the cities) debris storage is:

$$\frac{1{,}095{,}951\ [yd^3]}{16{,}133\ \left[\frac{yd^3}{ac}\right]} = 68\ [\text{ac}]$$

Acreage required for management of unincorporated Washington County debris is estimated to be approximately 28 acres and incorporated cities is 40 acres.

USACE suggests that typical TDSR site operations have 40% of the area allocated for debris storage and 60% designated for roads, buffers, burn pits, HHW disposal areas, etc. To calculate the total acreage needed, we use the debris acreage requirements above:

Total TDSR Site Acreage Calculations

Debris Storage Requirements	Total TDSR Site Acreage Needed
Countywide: 68 [ac]	68 [ac] ÷ 0.4 = 170 [ac]
Unincorporated areas: 28 [ac]	28 [ac] ÷ 0.4 = 70 [ac]
Incorporated cities: 40 [ac]	40 [ac] ÷ 0.4 = 100 [ac]

Assuming no more than a 100 acre reduction site can be cycled every 45 to 60 days or one time during the recovery period, then three 60 acre sites, six 30 acre sites, or twelve 15 acre sites would be required countywide for TDSR site operations.

The number of sites varies with size, distance from source, speed of reduction (mixed debris is slower than clean woody debris) and removal urgency. If existing landfill space is not readily available to start reduction site volumes immediately, additional sites will be required.

3.4 Site Preparation

Before activities begin, a baseline study is conducted documenting the original condition of the site. The baseline study must include:

- Photos (on-site and aerial, if possible) and video
- Drawing of the site including notable, environmentally sensitive, or historical features (fences, structures, culverts, landscaping features, fences, lakes / streams / creeks, water wells, historical structures, archeological features)
- Anticipated locations of site features (debris pile, waste holding areas, fuel storage area, on-site management / office, roads, watch / disposal site monitor towers, equipment (scale, incinerators, grinding / chipping)
- Environmental monitoring including soil samples in random location (to be taken during operations randomly as well) and water samples (if any water sources exist on site)

Additional considerations for site preparation include:

- Site security (to prevent theft of scrap metal and other materials and prevent illegal dumping)
- On-site record keeping (type and amount of waste accepted, rejected, processed, etc.)
- Ground liners for hazardous waste holding areas or fuel storage area (to prevent ground contamination in the event of a spill)
- Site safety personnel and adequate availability of personal protective equipment (PPE)
- Fencing to prevent access to equipment or hazardous materials
- Mitigation measures for:

- Dust abatement (water trucks, watering of debris pile)
- Noise (perimeter berms)
- Traffic (separate ingress and egress)
- Vectors (bug and rodent infestations)

4 Site Initialization and Management

4.1 Permitting

4.1.1 Washington County Permitting

A TDSR site is considered a development by CDC 106-57, and therefore requires a Development Permit (CDC 201), which is issued by DLUT and authorized under CDC 203-1.1. The development permit required by DLUT for a TDSR site is a temporary use permit, pursuant to County CDC Section 430-135.1C. This CDC Section provides for a temporary use permit to be issued through a Type I procedure for a period not to exceed one year. While a TDSR is not specifically listed as an allowed use for a temporary permit, other similar uses such as temporary storage of structures or equipment and relocated dwelling structures are allowed. CDC Section 430-135.1C (8) allows "Other similar uses of a temporary nature," and DLUT staff has indicated that a TDSR would be allowable under this subsection.

County CDC Section 201-2.5 allows TDSR site operations to be initiated prior to making a development application as "an emergency measure necessary for immediate safety of persons or protection of property…" The same section requires that a permit application "…shall be promptly filed if the measure otherwise would require such a permit but for the emergency."

A TDSR would not currently be allowed as a temporary use outside the UGB.

4.1.2 Metro Permitting

Temporary transfer stations or processing centers established and operated by a government for 60 days or less within the UGB to temporarily receive, store or process solid waste, are exempt from solid waste facility regulations if Metro finds an emergency situation exists (*Metro Code, 5.01.040[a][6]*). Additionally, the Metro Council can grant specific variances from the requirements of its solid waste provisions "upon such conditions as the [Metro Council] may deem necessary to protect public health, safety and welfare…"

4.1.3 Oregon Permitting

The DEQ Solid Waste Program has a debris management plan: Managing and Permitting Disaster Debris. This plan describes the actions and roles the DEQ solid waste staff will perform during a disaster to assist with swift and appropriate removal and disposal of disaster-related debris. The DEQ has identified assisting with and approving the use of temporary site(s) to manage disaster debris and other wastes as a top priority.

The establishment of a TDSR site will likely require the issuance of a SWLA from DEQ. The SWLA 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 – this supplants normal disposal site permits / permitting processes. If the site only contains non-putrescent debris (clean wood waste, recyclables) and if materials are stored for no more than 24 hours, it may not require a SWLA. For purposes of this plan, it is assumed all TDSR sites will require a SWLA from DEQ.

The SWLA application requirements are identified in OAR 340-093-0060, and fees are identified in OAR 340-097. Generally, an application for a SWLA should include (refer to OAR 340-093-0060) a narrative discussion of:

- The need and justification for the proposed project
- The quantity, types and nature of material to be disposed of
- The location and size of the proposed disposal area
- Temporary disposal site schedule, including projected start and end dates
- The proposed methods to be used for handling, processing and disposing of debris to ensure safe and proper disposal including:
  - Specific information that describes the project and how it will be conducted
  - 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
  - Information on how the site will be operated (who is operating it, hours of operation, fees that may be charged, security, signage, and emergency/ spill response)
  - Actions that will 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
  - Any recycling efforts to be taken depending on the type of debris, if appropriate
- Materials that will not be accepted at the site
- Steps taken to minimize contamination of runoff and storm water and other environmental concerns

The SWLA application should also include the following attachments:

- Map or drawing of the site showing:
  - Location and configuration of the property, disposal area, and protections constructed to prevent water and other types of pollution

- All roads and road conditions leading to and from the site
- The distance to surface water including wetlands and proximity to drains or streams
- Approximate elevations
- Paved/non-paved areas
- The locations of equipment and separations of debris
- Structures, roads, material stockpiles, sorting areas, etc.

- Photos of the 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 closure of the site and, if a spill occurs, who will be responsible for testing/sampling and removing contaminated soil – the landowner, site operator or the local government
- Recommendation from DEQ / Metro that the proposal is compatible with the local solid waste management plan. DEQ staff may consider waiving this requirement for a temporary site
- A 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
- Application processing fee of $500 unless the governor waives this permit requirement through an executive order
- Further information as needed

DEQ solid waste staff may provide technical assistance to Washington County in the development and operation of a TDSR site to assist in disaster debris processing and management. DEQ solid waste staff can continue providing guidance on DEQ rules and regulations to TDSR site operators so the site remains in compliance with DEQ requirements and does not create environmental concerns. Technical assistance may include guidance on site operations, recycling and appropriate site closure.

4.2 Site Initialization

The responsibility for identifying the need for a TDSR site resides with the Washington County EOC (Operations Section, Public Works Branch, Debris Management Group), or if initiated, the Washington County / regional DMTF (Task Force Leader). Once a site has been selected, either from a pre-identified site, or from the site selection criteria, a baseline study of the site is required (see site preparation in 3.4 above). When the site closes, it must be returned to pre-operational condition so the baseline study documents the pre-operational conditions, which informs the site closeout process.

Site ownership dictates how operations commence at a TDSR site. The optimal scenario involves use of county-owned land, which minimizes liability and potential site remediation issues. Operations may commence upon completion of the baseline study for county-owned property. For privately-owned property, a leasing agreement must be created and signed by both the county and the landowner. The leasing agreement should outline the costs of use, length of time of use, anticipated site operations, and any special considerations. The lease agreement process must include Washington County Support Services and County Counsel.

4.3 Site Layout

The efficiency and the overall success of TDSR site operations are determined by how the site is designed. Debris should be constantly flowing to incinerators and grinders, or recycled, with the residue and mixed construction and demolition materials going to a landfill. Significant accumulation of debris should not be allowed to occur due to environmental and safety concerns, such as the risk of fire.

The size of the site is dependent on the quantity of debris that is stored and processed. The site should be large enough to safely accommodate processing of various debris materials, storing heavy equipment, and maneuvering trucks and large processing equipment. USACE has found that approximately 60% of the area will be used for roads, buffers, burn pits, holding areas, etc.

Common operational uses are:

- Reduction
- Recycling
- Tipping areas (unloading)
- Loading areas for processed debris to go to its final disposition
- Drop-off centers for the general public (this may include vegetative, recycling, or construction and demolition debris)
- Holding areas
- Monitoring tower locations at both the ingress and egress points
- Equipment, fuel, and water storage
- Public debris collection areas

Separation of the areas listed above should be clearly delineated and defined. Maximum separation helps to reduce conflicts in use. As operations proceed, these areas may change with the various types of debris. The reduction, recycling, tipping, and loading areas need ample room for large equipment operations. The design should consider the possibility of multiple pieces of equipment engaging in the same activity at one time. Depending on the scale of operations, each debris stream may have its own tipping area and should be designed accordingly.

Household hazardous waste storage should be located in a safe location close to the scale and offices, and access should be restricted. The design staff will need to construct an impermeable lining and containment barrier to contain spills and prevent surface water runoff from leaving the area.

Equipment and fuel should have a designated storage area and signs posted appropriately. The fuel storage areas need to be designed to contain spills. For dust and fire suppression, water should be readily available throughout the site at all times and must be identified appropriately.

Monitoring towers should be located at ingress and egress points. Monitoring towers should be constructed of durable structural materials. The structures should be designed to withstand active and static loads. A stepladder is not an acceptable monitoring tower.

General public drop-off areas for recycling, reduction, and construction and demolition debris may be included within the TDSR site. These public use areas should be carefully designed for passenger vehicle traffic and public safety. Separate ingress and egress points need to be established for public use. The public will not be allowed to operate in the same location of commercial activities. Account for all weight or volume of materials received from public drop-off to ensure accurate and complete records for all debris received at the site by source. It may be preferable to develop a separate TDSR site dedicated solely to public use.

Operational boundaries should be established to both delineate separate processing areas and to eliminate access to sensitive areas, such as hazardous waste / HHW holding areas. In establishing the operational boundaries, the TDSR site design staff should consider using earthen berms, temporary barriers, or other physical restrictions. This aids traffic circulation and keeps the backlog of debris to a minimum.

Traffic circulation should be well defined throughout the entire TDSR site. Traffic signs and barricades should aid in directing traffic. The designed traffic pattern should, if feasible, allow trucks to enter and exit through different access points with each point monitored.

Debris removal contractors are typically paid by the volume or weight of a load. The load is evaluated when entering the site based on a percentage of the full capacity of the truck or weight. Disposal monitors at ingress and egress points ensure that every truck releases the entire load prior to leaving the site. This prevents debris left in a truck from a previous load being counted again in a subsequent load.

Empty trucks that enter the site to remove processed (reduced, sorted) debris should enter and exit through an access point separate from all other traffic. This reduces site management and debris monitor confusion regarding debris being deposited or removed from the site.

If public access is provided for collection areas, adequate signage, site access / ADA compliance, and parking areas should be considered, with public safety addressed.

A sample TDSR site layout is presented in Attachment 2.

4.4 Site Management

TDSR site management responsibilities reside with the county. County or contracted personnel are both suitable options for conducting management responsibilities. County staff will likely have exemplary local knowledge key to conducting managerial functions while contracted staff may have more extensive debris management experience. In either situation, a site manager, debris monitors, and safety personnel are needed to ensure safe and efficient operations. Debris monitors report to the field supervisor. All other site staff report to the site manager.

4.4.1 Site Manager

The site manager is responsible for supervising the overall day-to-day operations, maintaining daily logs, preparing site progress reports, and enforcing safety and permitting requirements during site operations. The site manager is also responsible for scheduling environmental monitoring and updating the site layout. The site manager has oversight for monitoring the activities of the debris removal contractors and the onsite debris processing contractors to ensure they comply with the terms of their contracts.

4.4.2 Debris Monitors

Debris monitors are a critical component of site management operations. Debris monitors are discussed in Tab 3.

4.4.3 Safety Personnel

Safety personnel are responsible for traffic control and ensuring that site operations are in compliance with state and federal occupational safety regulations.

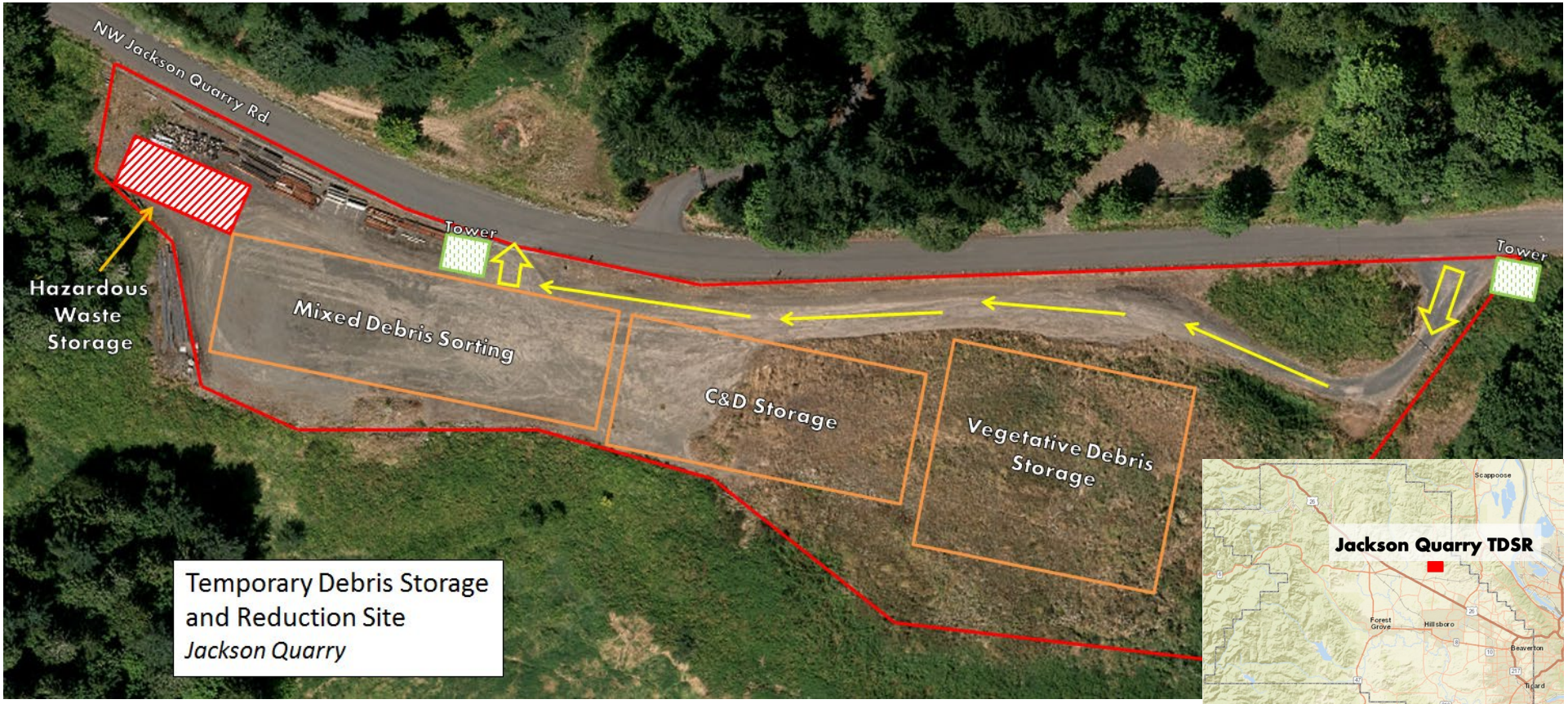
5 Site Closeout

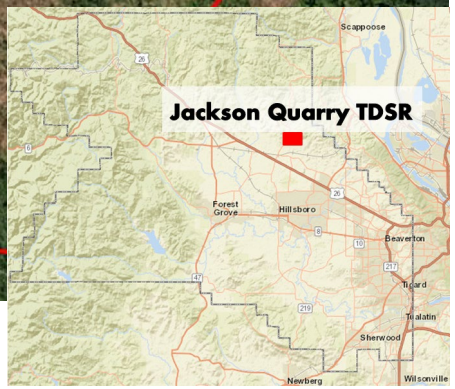
Each temporary debris storage and reduction site must be cleared and restored to pre-disaster conditions and uses, with the exception of DEQ-authorized vegetative debris, and sites where DEQ agrees to exempt the land-application of ash from its solid waste permitting requirements. Closure requirements 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 SWLA. 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.

The final environmental site evaluation is an extension of the environmental monitoring program. Testing similar to that completed in the baseline study will be conducted to confirm the site has been returned to its pre-activity state. Test samples should be taken at the same locations as those of the initial assessment and monitoring program. However, if warranted, additional test samples may need to be taken at other locations on or adjacent to the site. Based on the results of the testing, additional remediation may be required before the owner takes final acceptance of the site. The lease agreement should have provisions to release the applicant from future damages when the site is returned in its original condition or final acceptance is received from the owner.

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 solid waste 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.

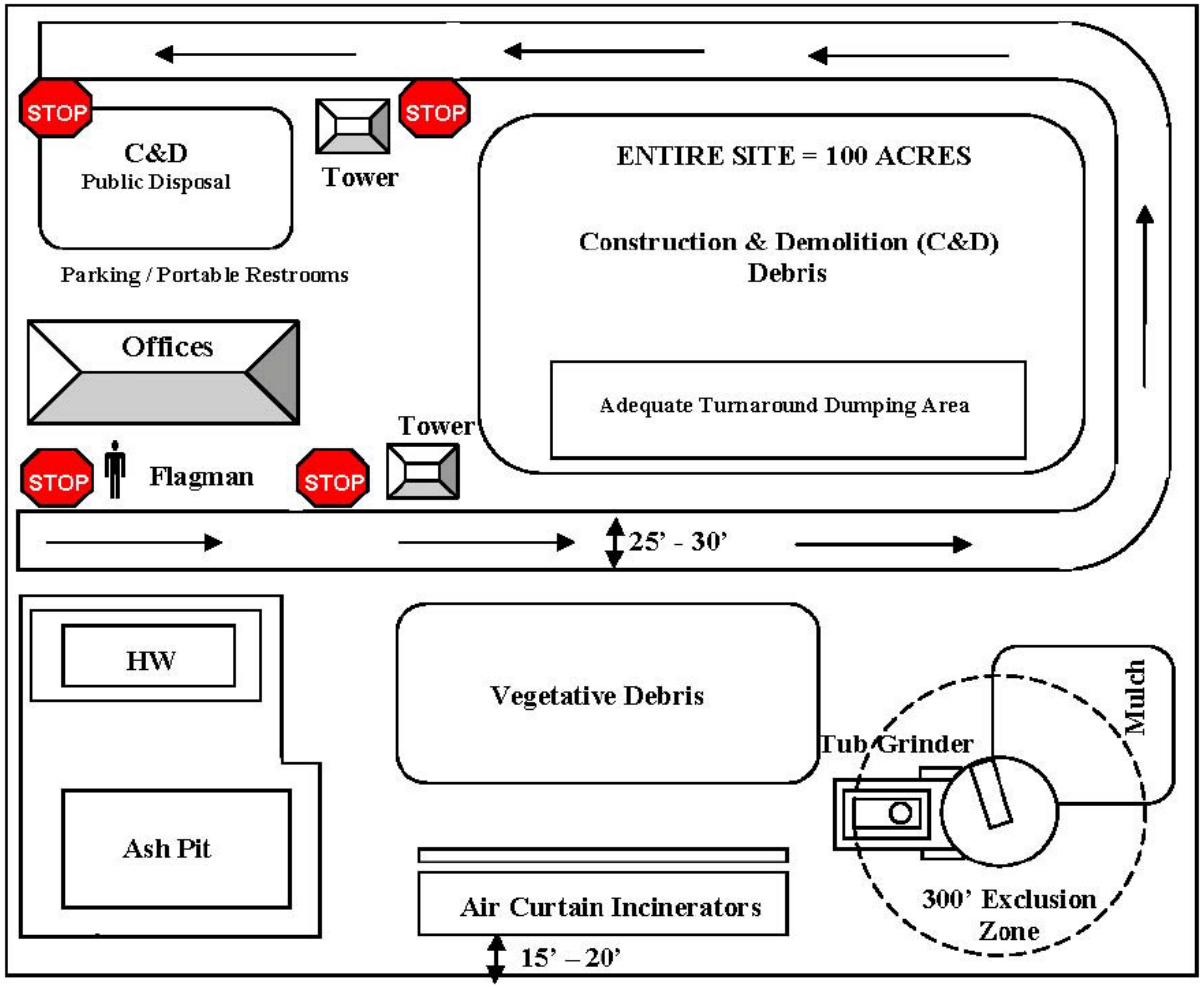
Tab 7, Attachment 1: Temporary Debris Storage and Reduction Site Location





TDSR Site Name: Jackson Quarry
Site Ownership: Washington County
Location: 45.61872N, -122.94202W
Address: 13250 NW Jackson Quarry Rd.
Site Size: ~4 acres

Tab 7, Attachment 2:Sample Temporary Debris Storage and Reduction Site Layout



Courtesy FEMA 325 – Debris Management Guide

Tab 8: Debris Disposal Sites by Debris Type

Final disposition of disaster-generated debris is highly dependent on the type and nature of the debris that is being disposed. Following are sites that accept debris based on debris type, with further information on subtypes of debris accepted. Debris subtypes are not comprehensive and each site should be contacted to validate debris subtypes not listed. This list is not exhaustive; rather, it offers a broad spectrum of sites that exist in and around Washington County. For a current and complete list of sites, visit the Metro Regional Government website: http://www.oregonmetro.gov/tools-for-living/garbage-and-recycling/find-a-recycler/

Table 1: Vegetative Debris Disposal Sites

Organization	Address	Phone
Allwood Recyclers	23001 NE Marine Drive, Fairview, OR 97024	503-667-5497
Best Buy in Town Co.	2200 NW Cornelius Pass Rd., Hillsboro, OR 97124	503-645-6665
Clackamas Compost Products	11620 SE Capps Rd., Clackamas, OR 97015	503-557-1028
E.C.R.	12409 NE San Rafael St., Portland, OR 97230	503-253-0867
Grimms Fuel Company	18850 SW Cipole Rd., Tualatin, OR 97062	503-636-3623
H & H Wood Recyclers	8401 NE 117th Ave., Vancouver, WA 98662	360-892-2805
Lakeside Reclamation / Grabhorn Inc.	14930 SW Vandermost Road, Beaverton, OR 97007	503-628-1866
McFarlanes Bark Milwaukie	13345 SE Johnson Rd., Milwaukie, OR 97222	503-659-4240
McFarlanes Bark Vancouver	8806 NE 117th Ave., Vancouver, WA 98662	360-892-6125
Metro Central Transfer Station	6161 NW 61st Ave., Portland, OR 97210	503-234-3000
Metro South Transfer Station	2001 Washington Street, Oregon City, OR 97045	503-234-3000
Newberg Transfer and Recycling Center	2904 Wynooski Rd., Newberg, OR 97132-7053	503-538-1388
North Marion County Disposal Facility	17827 Whitney Lane NE, Woodburn, OR 97071	503-981-4117
Recology Nature's Needs	9570 NW 307th Ave., North Plains, OR 97133	503-647-9489
Recology Suttle Rd	4044 N. Suttle Rd., Portland, OR 97217	503-285-8777

S & H Cornelius Cornelius	1045 N. 4th Ave., Cornelius, OR 97113	503-357-6090
S & H Landscape Products & Supply Tualatin	20200 SW Stafford Rd., Tualatin, OR 97062	503-638-1011
S & H Landscape Products & Supply Hillsboro	1748 NE 25th Ave., Hillsboro, OR 97124	503-846-0881
SP Fiber Technologies	1301 South Wynooski Rd., Newberg, OR 97132	503-537-6347
Tualatin Valley Waste Recovery, Hillsboro Landfill	3205 SW Minter Bridge Rd., Hillsboro, OR	503-640-9427 ext. 0
Wood Waste Management	7315 NE 47th Ave., Portland, OR 97218	503-493-3370
Woodco	3011 SW 170th Ave., Aloha, OR 97006	503-649-5430

Table 2: Construction and Demolition Debris Disposal Sites

Organization	Address	Phone	Accepted Debris
Allwood Recyclers	23001 NE Marine Drive, Fairview, OR 97024	503-667-5497	Brick concrete, wood (untreated)
Aurora Mills Architectural Salvage	14971 First St. NE, Aurora, OR 97002	503-678-6083	Salvaged and used building material
Best Buy in Town Co.	2200 NW Cornelius Pass Rd., Hillsboro, OR 97124	503-645-6665	Brick, concrete, wood (engineered, untreated and pressure treated)
City of Portland - Sunderland Yard	9325 NE Sunderland Rd., Portland, OR 97211	503-823-3500	Concrete
Clackamas Compost Products	11620 SE Capps Rd., Clackamas, OR 97015	503-557-1028	Brick, concrete, wood (engineered, untreated and pressure treated)
Decrepad	2335 N. Clark Ave., Portland, OR 97227	503-284-7601	Carpet pad
E.C.R.	12409 NE San Rafael St., Portland, OR 97230	503-253-0867	Carpet, carpet pad, concrete, construction and dry waste, plate glass, wood (untreated, engineered, creosote treated, and pressure treated)
Farmington Landfill	21630 SW Farmington Rd., Aloha, OR	503-591-1444	Brick and concrete

Fazio Landfill and Recycling	8433 NE 13th Ave., Portland, OR 97211	503-247-3478	Brick and concrete
Grimms Fuel Company	18850 SW Cipole Rd., Tualatin, OR 97062	503-636-3623	Brick, concrete, wood (untreated, engineered, and pressure treated)
H & H Wood Recyclers	8401 NE 117th Ave., Vancouver, WA 98662	360-892-2805	Brick, concrete, roofing-composition, and wood (untreated, engineered, and pressure treated)
KB Recycling	1600 SE 4th Ave., Canby, OR 97013	503-266-7903	Plate glass
Lakeside Reclamation / Grabhorn Inc.	14930 SW Vandermost Road, Beaverton, OR 97007	503-628-1866	Brick, concrete, and wood (untreated)
McFarlanes Bark Milwaukie	13345 SE Johnson Rd., Milwaukie, OR 97222	503-659-4240	Brick, concrete and wood (engineered, untreated and pressure treated)
McFarlanes Bark Vancouver	8806 NE 117th Ave., Vancouver, WA 98662	360-892-6125	Wood (engineered, untreated and pressure treated)
Meadows Rock	1096 N. Schmeer Rd., Portland, OR 97217	503-285-0295	Concrete
Metro Central Transfer Station	6161 NW 61st Ave., Portland, OR 97210	503-234-3000	Carpet pad, concrete, construction and dry waste, plate glass, and wood (untreated, engineered, creosote treated and pressure treated)
Metro South Transfer Station	2001 Washington Street, Oregon City, OR 97045	503-234-3000	Carpet pad, concrete, construction and dry waste, plate glass, and wood (untreated, engineered, creosote treated and pressure treated)
Newberg Transfer and Recycling Center	2904 Wynooski Rd., Newberg, OR 97132-7053	503-538-1388	Wood (untreated)
Northwest Shingle Recyclers SE Portland	6110 SE 111th Ave., Portland, OR 97266	503-760-7032	Roofing-composition

Northwest Shingle Recyclers Tigard	12700 SW Hall Blvd. Bldg G., Tigard, OR 97223	503-475-9110	Roofing-composition
NW Salvage	7402 NE St. Johns Road, Vancouver, WA 98665	360-694-0662	Salvaged and used building material
Porter Yett Co.	5949 NE Cully Blvd., Portland, OR 97218	503-282-3251	Brick and concrete
Portland Sand & Gravel	10717 SE Division St., Portland, OR 97266	503-252-3497	Brick and concrete
Ralph Miles Liquidators	7639 SE Foster Rd., Portland, OR 97206	503-775-1030	Salvaged and used building material
Recology Suttle Rd	4044 N. Suttle Rd., Portland, OR 97217	503-285-8777	Brick, carpet pad, concrete, construction and dry waste, roofing-composition, and wood (untreated, engineered, and pressure treated)
Recology Nature's Needs	9570 NW 307th Ave., North Plains, OR 97133	503-647-9489	Wood (untreated)
S & H Cornelius Cornelius	1045 N. 4th Ave., Cornelius, OR 97113	503-357-6090	Brick, concrete (no wire or rebar), and wood (engineered and untreated)
S & H Landscape Products & Supply Hillsboro	1748 NE 25th Ave., Hillsboro, OR 97124	503-846-0881	Brick, concrete (no wire or rebar), and wood (engineered, untreated and pressure treated)
S & H Landscape Products & Supply Tualatin	20200 SW Stafford Rd., Tualatin, OR 97062	503-638-1011	Brick, concrete (no wire or rebar), and wood (engineered, untreated and pressure treated)
SP Fiber Technologies	1301 South Wynooski Rd., Newberg, OR 97132	503-537-6347	Wood (engineered and untreated)
Tualatin Valley Waste Recovery/Hillsboro Landfill	3205 SE Minter Bridge Rd., Hillsboro, OR 97123	503-640-9427	Brick, concrete, construction and dry waste, and wood (engineered, untreated, creosote treated, pressure treated)

Wood Waste Management	7315 NE 47th Ave., Portland, OR 97218	503-493-3370	Brick, concrete, and wood (engineered, untreated and pressure treated)
Woodco	3011 SW 170th Ave., Aloha, OR 97006	503-649-5430	Concrete and wood (untreated)

Table 3: Hazardous Waste Debris Disposal Sites

Organization	Address	Phone	Debris Type
Aloha Garbage & Recycling	20525 SW Blanton St., Suite A, Aloha, OR 97007	503-649-6727	Batteries (household, lead acid, rechargable), cell phones, computer peripherals, computers and monitors, electronics, fluorescent lights, and televisions
Best Buy	many locations		Computers and monitors
E.C.R.	12409 NE San Rafael St., Portland, OR 97230	503-253-0867	Computer peripherals, computers and monitors, and electronics
Far West Fibers	many locations		Computer peripherals, computers and monitors, and electronics
Forest Grove Transfer Station	1525 B St., Forest Grove, OR 97116	503-249-8078	Computer peripherals, computers and monitors, motor oil, televisions, and tires
Goodwill	many locations		Computer peripherals, and computers and monitors
Gresham Sanitary	2131 NW Birdsdale Ave., Gresham, OR 97030	503-665-2424	Computers and monitors, and televisions
KB Recycling	1600 SE 4th Ave., Canby, OR 97013	503-266-7903	Computer peripherals, computers and monitors, and electronics
Metro Central Hazardous Waste Facility	6161 NW 61st Ave., Portland, OR 97210	503-234-3000	Antifreeze, asbestos, batteries (household, lead acid, rechargable), fluorescent lights, hazardous waste, heating oil, motor oil, oil filters, paint (architectural),and pressurized cylinders
Metro Central Transfer Station	6161 NW 61st Ave., Portland, OR 97210	503-234-3000	Computers and monitors

Metro Metals Northwest	5611 NE Columbia Blvd., Portland, OR	503-287-8861	Electronics
Metro South Hazardous Waste Facility	2001 Washington Street, Oregon City, OR 97045	503-234-3000	Asbestos, batteries (household, lead acid, rechargable), fluorescent lights, hazardous waste, and heating oil
Metro South Transfer Station	2001 Washington Street, Oregon City, OR 97045	503-234-3000	Computers and monitors
Newberg Transfer and Recycling Center	2904 Wynooski Rd., Newberg, OR 97132-7053	503-538-1388	Computers and monitors
Oil Re-Refining	4150 N. Suttle Rd., Portland, OR 97217	503-286-8352	Antifreeze, hazardous waste, heating oil, motor oil, oil filters, and petroleum-contaminated soil
Pape Kenworth Inc.	550 NE Columbia Blvd., Portland, OR 97211	503-240-6282	Hazardous waste, motor oil, and oil filters
Recology Suttle Rd	4044 N. Suttle Rd., Portland, OR 97217	503-285-8777	Computers and monitors, televisions, and tires
Salvation Army	many locations		Computers and monitors
Tualatin Valley Waste Recovery/Hillsboro Landfill	3205 SE Minter Bridge Rd., Hillsboro, OR 97123	503-640-9427	Computers and monitors
WasteXpress Environmental Services	PO BOX 31100, Portland, OR 97231	503-224-3206	Asbestos, batteries (household, lead acid, rechargable), fluorescent lights, hazardous waste, motor oil, paint (architectural), and petroleum-contaminated soil

Table 4: White Goods Debris Disposal Sites

Organization	Address	Phone	Debris Type
Aloha Garbage & Recycling	20525 SW Blanton St., Suite A, Aloha, OR 97007	503-649-6727	Microwave ovens
E.C.R.	12409 NE San Rafael St., Portland, OR 97230	503-253-0867	Appliances (small and large)
Far West Fibers	many locations		Appliances (small and large)

Forest Grove Transfer Station	1525 B St., Forest Grove, OR 97116	503-249-8078	Appliances (large)
Gresham Sanitary	2131 NW Birdsdale Ave., Gresham, OR 97030	503-665-2424	Appliances (large and coolant containing) and microwave ovens
KB Recycling	1600 SE 4th Ave., Canby, OR 97013	503-266-7903	Appliances (small, large, coolant containing)
Metro Central Transfer Station	6161 NW 61st Ave., Portland, OR	503-234-3000	Appliances (large and coolant containing)
Metro Metals Northwest	5611 NE Columbia Blvd., Portland, OR	503-287-8861	Appliances (small, large, coolant containing)
Metro South Transfer Station	2001 Washington St., Oregon City, OR	503-234-3000	Appliances (large and coolant containing)
Orient Auto Parts and Recycling	28425 SE Orient Dr., Gresham, OR 97080	503-663-1909	Appliances (large and coolant containing)
Pride Recycling Depot	13910 SW Tualatin-Sherwood Rd., Sherwood, OR	503-625-0725	Appliances (small, large, coolant containing)
Recology Suttle Rd	4044 N. Suttle Rd., Portland, OR 97217	503-285-8777	Appliances (large and coolant containing)
Total Reclaim & EcoLights Northwest	6427 NE 90th Pl., Portland, OR	503-281-1899	Appliances (small, large, coolant containing)
Tualatin Valley Waste Recovery/Hillsboro Landfill	3205 SE Minter Bridge Rd., Hillsboro, OR 97123	503-640-9427	Appliances (large and coolant containing)
Willamette Resources	10295 SW Ridder Rd., Wilsonville, OR	503-570-0626	Appliances (large and coolant containing)

Table 5: Sand, Soil, and Mud Debris Disposal Sites

Organization	Address	Phone	Debris Type
Allwood Recyclers	23001 NE Marine Drive, Fairview, OR 97024	503-667-5497	Dirt
Best Buy in Town Co.	2200 NW Cornelius Pass Rd., Hillsboro, OR 97124	503-645-6665	Dirt, rock, rubble, and sand
City of Portland - Sunderland Yard	9325 NE Sunderland Rd., Portland, OR 97211	503-823-3500	Rock
Clackamas Compost Products	11620 SE Capps Rd., Clackamas, OR	503-557-1028	Dirt, rock, rubble, and sand

	97015		
E.C.R.	12409 NE San Rafael St., Portland, OR 97230	503-253-0867	Dirt, rock, and rubble
Farmington Landfill	21630 SW Farmington Rd., Aloha, OR	503-591-1444	Dirt, rubble, and sand
Fazio Landfill and Recycling	8433 NE 13th Ave., Portland, OR 97211	503-247-3478	Dirt, rock, rubble, and sand
Grimms Fuel Company	18850 SW Cipole Rd., Tualatin, OR 97062	503-636-3623	Dirt, rock, rubble, and sand
H & H Wood Recyclers	8401 NE 117th Ave., Vancouver, WA 98662	360-892-2805	Dirt, rock, rubble, and sand
Lakeside Reclamation / Grabhorn Inc.	14930 SW Vandermost Road, Beaverton, OR 97007	503-628-1866	Dirt, rock, rubble, and sand
McFarlanes Bark Milwaukie	13345 SE Johnson Rd., Milwaukie, OR 97222	503-659-4240	Rock
McFarlanes Bark Vancouver	8806 NE 117th Ave., Vancouver, WA 98662	360-892-6125	Dirt
Meadows Rock	1096 N. Schmeer Rd., Portland, OR 97217	503-285-0295	Dirt, rock, and rubble
Porter Yett Co.	5949 NE Cully Blvd., Portland, OR 97218	503-282-3251	Rock and sand
Portland Sand & Gravel	10717 SE Division St., Portland, OR 97266	503-252-3497	Dirt, rock, rubble, and sand
Recology Suttle Rd	4044 N. Suttle Rd., Portland, OR 97217	503-285-8777	Dirt, rock, and sand
S & H Landscape Products & Supply Hillsboro	1748 NE 25th Ave., Hillsboro, OR 97124	503-846-0881	Dirt, rock, rubble, and sand
S & H Landscape Products & Supply Tualatin	20200 SW Stafford Rd., Tualatin, OR 97062	503-638-1011	Dirt, rock, rubble, and sand
SP Fiber Technologies	1301 South Wynooski Rd., Newberg, OR 97132	503-537-6347	Dirt, rock, and rubble

Tualatin Valley Waste Recovery/Hillsboro Landfill	3205 SE Minter Bridge Rd., Hillsboro, OR 97123	503-640-9427	Dirt, rock, and rubble
Wood Waste Management	7315 NE 47th Ave., Portland, OR 97218	503-493-3370	Dirt, rock, and sand
Woodco	3011 SW 170th Ave., Aloha, OR 97006	503-649-5430	Dirt

Table 6: Vehicles and Vessels Disposal Sites

Organization	Address	Phone
C & M Recyclers	21175 SW 108th Ave., Tualatin, OR 97062	503-380-4180
E.C.R. Environmentally Conscious Recycling	12409 NE San Rafael St., Portland, OR 97230	503-253-0867
Metro Metals Northwest	5611 NE Columbia Blvd., Portland, OR 97218	503-287-8861
Orient Auto Parts and Recycling	28425 SE Orient Dr., Gresham, OR 97080	503-663-1909
Pacific Coast Shredding	900 Port Way, Vancouver, WA 98660	800-549-3111
Rivergate Scrap Metals	9645 N. Columbia Blvd., Portland, OR 97203	503-283-3324
RS Davis Recycling	10105 SE Mather Rd., Clackamas, OR 97015	503-655-5433
SJ Nudelman and Son	2707 NW Nela St., Portland, OR 97210	503-226-4051

Table 7: Putrescent Debris Disposal Sites

Organization	Address	Phone	Debris Type
Gresham Sanitary	2131 NW Birdsdale Ave., Gresham, OR 97030	503-665-2424	Biodazardous waste
Metro Central Transfer Station	6161 NW 61st Ave., Portland, OR 97210	503-234-3000	Food composting
Metro South Transfer Station	2001 Washington Street, Oregon City, OR 97045	503-234-3000	Food composting
Recology Nature's Needs	9570 NW 307th Ave., North Plains, OR 97133	503-647-9489	Food composting
SERVPRO	547 N. 4th Ave., Cornelius, OR 97113	503-648-8513	Biohazardous waste
WasteXpress Environmental Services	PO BOX 31100, Portland, OR 97231	503-224-3206	Biohazardous waste

Table 8: Infectious Debris Disposal Sites

Organization	Address	Phone	Debris Type
Aloha Garbage & Recycling	20525 SW Blanton St., Suite A, Aloha, OR 97007	503-649-6727	Medical sharps
Gresham Sanitary	2131 NW Birdsdale Ave., Gresham, OR 97030	503-665-2424	Medical sharps
Metro Central Hazardous Waste Facility	6161 NW 61st Ave., Portland, OR 97210	503-234-3000	Pharmaceuticals and medical sharps
Metro South Hazardous Waste Facility	2001 Washington Street, Oregon City, OR 97045	503-234-3000	Medical sharps
SERVPRO	547 N. 4th Ave., Cornelius, OR 97113	503-648-8513	Medical sharps

Table 9: Chemical, Biological, Radiological, Nuclear, and Explosive Debris Disposal Sites

Sites not yet identified.

Tab 9: Regional Debris Haulers

Temporary debris storage and reduction (TDSR) sites and public debris drop-off sites require drop boxes to receive sorted debris. Drop boxes come in various sizes and have certain restrictions for the types of debris accepted. The following waste management organizations provide service within Washington County.

Organization	Address	Phone
Aloha Garbage & Recycling	20525 SW Blanton St., Suite A, Aloha, OR 97007	503-649-6727
Garbarino Disposal Service	30966 NW Hillcrest, North Plains, OR 97133	503-807-8640
Hillsboro Garbage Disposal	4945 SW Minter Bridge Road	503-648-4214
Pride Disposal Company	13980 SW Tualatin-Sherwood Road, Sherwood, OR 97140	503-625-6177
Republic Services	10295 SW Ridder Road, Wilsonville, OR 97070	503-404-2135
Swatco Sanitary Service	15945 NW Sellers Road, Banks, OR 97106	503-324-0230
Valley West Refuse Disposal	5405 SE Alexander, Suite A, Hillsboro, OR 97123	503-649-5252
Waste Management of Oregon	1525 B Street, Forest Grove, OR 97166	503-249-8078
Washington County Drop Box	21435 NW Nicholas Court, Hillsboro, OR 97124	503-531-8843

Tab 10: Public Debris Collection Site Operations

Pubic debris collection sites are locations where the public can take disaster-generated debris for disposal purposes. These sites contain large roll-off bins that accept singular debris type, therefore promoting debris segregation.

Large roll-off bins may be placed on public rights-of-way or public property for the public to bring their debris for collection. This is well suited for rural, sparsely populated areas or logistically difficult conditions (i.e., hilly neighborhoods) where curbside collection is not practical. The associated costs are generally low since the public essentially accomplishes the material collection and separation themselves.

A collection site would be staffed and managed by a disposal site monitor. Site staff would need to be present anytime the site is accessible by the public to ensure only acceptable debris types are received and are placed in their correct bins. For this reason, 24-hour staffing or restricted site access would be needed. Disposal site monitors are also needed to facilitate the bin exchange process and ensure safety and accessibility for the public.

The site characteristics are important for efficient operations. The site should have separate ingress and egress and good traffic flow to facilitate collection bin exchanges. The site should also have ample parking for the public.

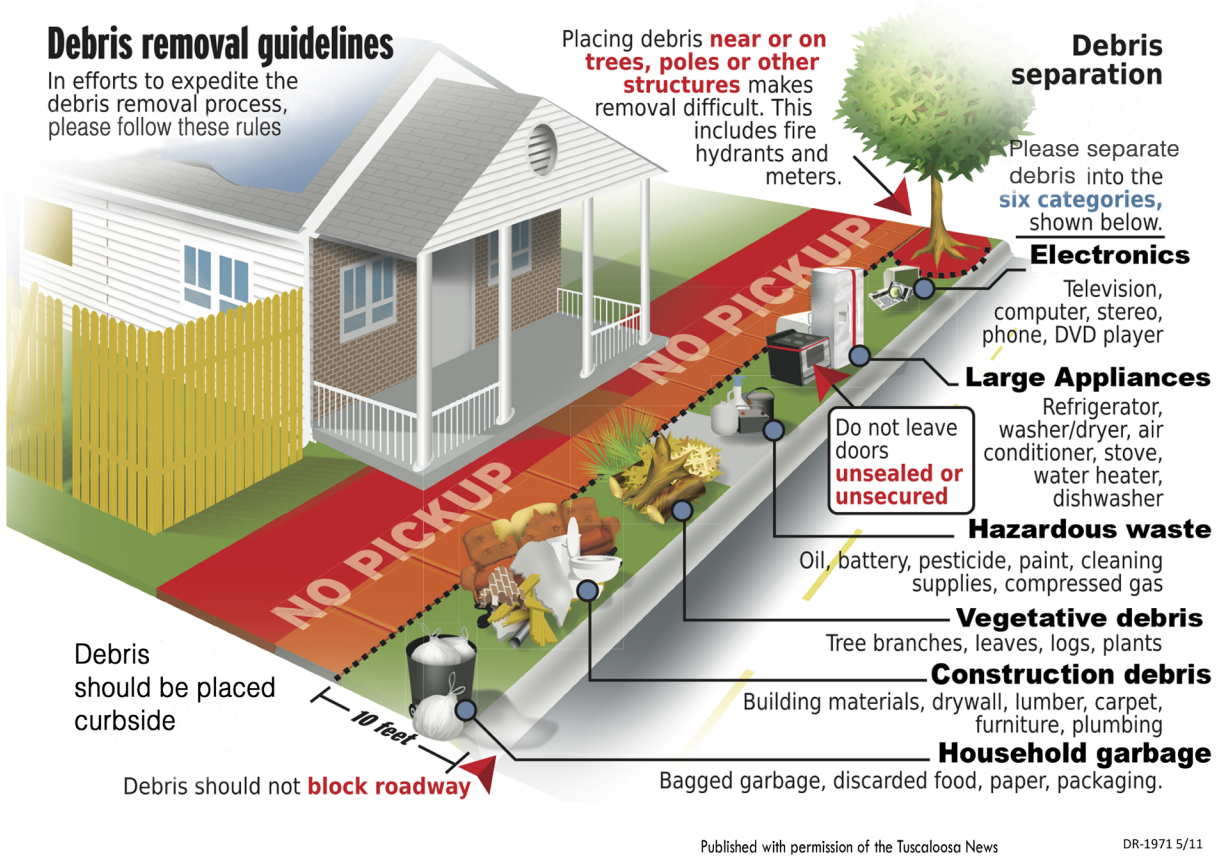
Involvement by County Counsel is important when considering a public debris collection site due to potential liability issues.

Public debris collection sites are a means to reduce costs associated with debris collection and hauling activities. However, costs associated with public debris collection sites may not be eligible for reimbursement under the PA program due to the fact that the following debris eligibility criteria may not be met:

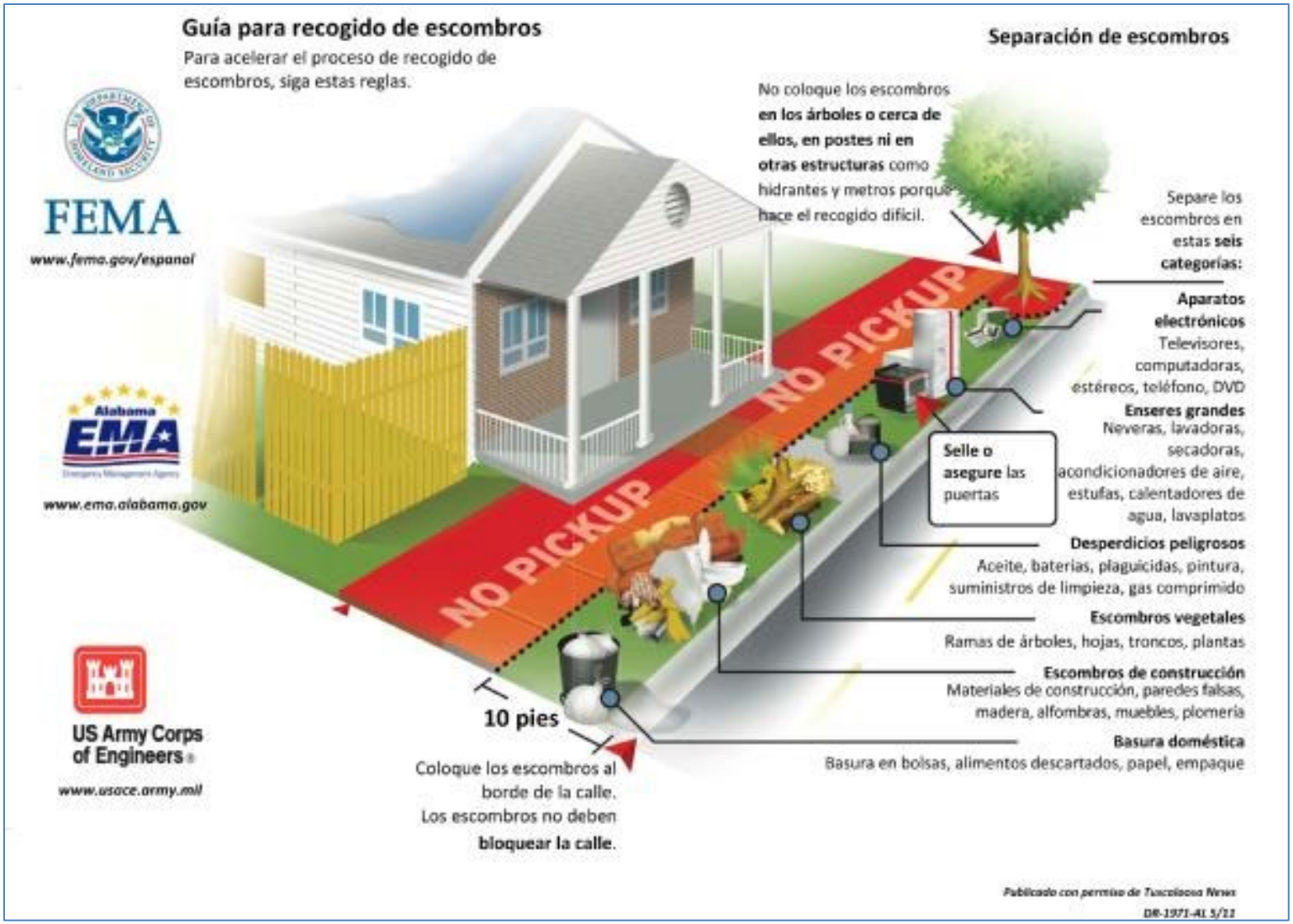
- The debris was generated by the major disaster
- The debris was located within a designated disaster area on Washington County improved property or public rights-of-way
- The debris removal is the legal responsibility of Washington County

The decision to set up a public debris collection site should reside with the Washington County EOC Policy Group or the Washington County / regional DMTF along with Washington County Counsel, Washington County Board of Commissioners, and, if applicable, with FEMA PA program staff and the USACE.

Tab 11: Household Debris Separation Guide



Recovery managers provide this diagram to assist survivors in their cleanup effort. Cleaning up the mounds of tornado debris is a critical task that recovery officials are approaching as a team effort from several angles.


Guía para recogido de escombros
Para acelerar el proceso de recogido de escombros, siga estas reglas.
FEMA
www.fema.gov/espanol
Alabama EMA
www.ema.alabama.gov
US Army Corps of Engineers
www.usace.army.mil
Separación de escombros
No coloque los escombros en los árboles o cerca de ellos, en postes ni en otras estructuras como hidrantes y metros porque hace el recogido difícil.
Separe los escombros en estas seis categorías:
Aparatos electrónicos
Televisores, computadoras, estéreos, teléfono, DVD
Enseres grandes
Neveras, lavadoras, secadoras, acondicionadores de aire, estufas, calentadores de agua, lavaplatos
Selle o asegure las puertas
Desperdicios peligrosos
Aceite, baterias, plaguicidas, pintura, suministros de limpieza, gas comprimido
Escombros vegetales
Ramas de árboles, hojas, troncos, plantas
Escombros de construcción
Materiales de construcción, paredes falsas, madera, alfombras, muebles, plomería
Basura doméstica
Basura en bolsas, alimentos descartados, papel, empaque
NO PICKUP
NO PICKUP
10 pies
Coloque los escombros al borde de la calle. Los escombros no deben bloquear la calle.
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