



Oregon Department of Transportation

Hazard Tree and Debris Removal Operations Plan

for the

Oregon Wildfires And Straight-Line Winds (DR-4562-OR)

VERSION 1.1

December 30, 2020

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1 Introduction

Background

A culmination of a multi-day high winds, a cold front, a critically dry ecosystem and large amounts of underbrush in state forests has resulted in over 30 active fires, over 1 million acres burned in Oregon - which is twice the annual average - and while 500,000 Oregonians were or are currently under an evacuation notice (Level 1, 2 or 3), more than 40,000 have had to evacuate their homes.

Beginning on Monday, September 7, 2020, pre-existing fires in Oregon were exponentially aggravated by a high-wind event that and have continued through Wednesday, September 9, 2020. The weather continued to be unpredictable over several days as firefighters worked to execute evacuations from locations throughout Oregon.

Fires along the Santiam, McKenzie and Rogue rivers were pushed by up to 50-mile-per-hour sustained winds. Wind pushed flames as much as 55 miles west from the crest of the Cascades in two days, the fires stopping just short of the suburbs on the east side of Interstate 5 near Salem and Eugene.

Oregon's Governor Brown stated that the 2020 Oregon wildfire events could be "the greatest loss of human lives and property due to wildfire in our state".

The wildfires caused substantial structure destruction to road systems due to fire and debris. Several major state highways remain closed or greatly impeded due to ongoing fire and hazardous conditions including rock falls, landslides, and hundreds of thousands of hazardous trees.

Multiple cities and towns closer to the fires and not under an evacuation order also experienced substantial smoke and hazardous air quality. Air quality measurements in affected counties were at times worse than the most hazardous air classifications currently available, often exceeding an Air Quality Index of 400.

Governor Brown Issues Executive Orders

[Executive Order 20-60 Proclamation of State of Emergency to support ongoing recovery from catastrophic wildfires](#)

Beginning on September 7, 2020, Oregon Governor Kate Brown issued the first of several Executive Orders. Governor Brown issued the following Executive Orders:

- [Executive Order 20-39](#), Beachie Creek and Lionhead Fires in Marion County
- [Executive Order 20-40](#), Holiday Farm Fire in Lane County
- [Executive Order 20-41](#), Invocation of Emergency Conflagration Act Statewide
- [Executive Order 20-42](#), Abnormal Disruption of the Market Due to Wildfires
- [Executive Order 20-43](#), Powerline Fire in Washington County
- [Executive Order 20-44](#), Almeda Fire in Jackson County
- [Executive Order 20-45](#), Slater Fire in Josephine County
- [Executive Order 20-47](#), North Cascade Complex Fire in Clackamas County
- [Executive Order 20-48](#), Brattain Fire in Lake County
- [Executive Order 20-49](#), Archie Creek Fire in Douglas County
- [Executive Order 20-50](#), Riverside Fire in Clackamas County

- [Executive Order 20-51](#), South Obenchain Fire in Jackson County
- [Executive Order 20-52](#), Two Four Two Fire in Klamath County
- [Executive Order 20-53](#), North Cascades Complex Fire

In each of these Executive Orders, Governor Brown acted in accordance with ORS 476.510476-610 and stating a determination was made that a threat to life, safety, and property exists due to fires named in each Executive Orders and the threat exceeds the firefighting capabilities of local firefighting personnel and equipment. Accordingly, Governor Brown invoked Oregon's Emergency Conflagration Act.

Presidential Disaster Declaration

On September 10, 2020, President Donald J. Trump declared that an emergency existed in the State of Oregon and ordered Federal assistance to supplement State, tribal, and local response efforts due to the emergency conditions resulting from wildfires beginning on September 8, 2020. The President's action authorized the Department of Homeland Security, Federal Emergency Management Agency ("FEMA"), to coordinate all disaster relief efforts which have the purpose of alleviating the hardship and suffering caused by the emergency on the local population, and to provide appropriate assistance for required emergency measures, authorized under Title V of the Stafford Act, to save lives and to protect property and public health and safety, and to lessen or avert the threat of a catastrophe in the counties of Clackamas, Douglas, Jackson, Jefferson, Klamath, Lane, Linn, Lincoln, Marion, Tillamook, and Washington.

Specifically, FEMA was authorized to identify, mobilize, and provide at its discretion, equipment, and resources necessary to alleviate the impacts of the emergency. Emergency protective measures, including direct Federal assistance, will be provided at 75 percent Federal funding.

Pete Gaynor, Administrator, FEMA, Department of Homeland Security, named Dolph A. Diemont as the Federal Coordinating Officer for Federal recovery operations in the affected areas.

<https://www.fema.gov/disaster/4562>

1.1 Purpose

The purpose of this Debris Removal Operations Plan (DROP) is to provide the approach for managing the removal of debris, waste and hazardous material as a result of the 2020 Wildfires of Oregon (DR-4562-OR) which identifies the procedures and best management practices for undertaking the removal of hazard tree and debris and to protect response personnel, the surrounding community, public health, and the environment. This plan was created by Oregon Department of Transportation (ODOT) in coordination with Office of Emergency Management (OEM) and Oregon Department of Environmental Quality (DEQ). This document is a living document and will be revised as the operations progress. As the DROP is revised, the most recent version at the time will control work under this Agreement and work orders may reflect those revisions.

Without the proper identification, handling and removal of structural ash and debris (including asbestos), the public will continue to be at risk of exposure and property owners will be unable to rebuild. Until debris are removed the safety of the public will be compromised. To reduce these exposures, Oregon Governor Kate Brown has authorized coordinated emergency debris and hazard tree removal for the devastating 2020 Oregon wildfires.

1.2 Objective

The objective of this plan is to detail the processes and procedures for the hazard tree and debris removal operations and will be provided to the Contractors as guidance to mitigate known hazards and conditions to limit the impacts to the public, the surrounding environment, and the State of Oregon.

Table 1. Project Participants and Responsibilities

Agency/Company	Contact	Responsibility/Assistance
Oregon Department of Transportation	Frank Reading, Area Commander	Overall management, compliance, public relations, and state approval and oversight.
Oregon Department of Transportation	Joe Squire, Deputy Area Commander	Overall management, compliance, public relations, and state approval and oversight.
Oregon Department of Transportation	Anna Henson, Operations Chief North Command	North Command - Overall management, compliance, public relations, and state approval and oversight.
Oregon Department of Transportation	Jerry Marmon, Operations Chief South Command	South Command - Overall management, compliance, public relations, and state approval and oversight.
Oregon Department of Transportation	John Raasch, Environmental Unit Leader	Environmental and Historic Preservation compliance.
Oregon Office of Emergency Management	Julie Slevin, State Public Assistance Officer	FEMA Public Assistance Coordinator.
Oregon Department of Environmental Quality	Brian Fuller and Chris Richardson	Environmental compliance and technical assistance on environmental regulations.
AC Disaster Consulting	Alyssa Carrier, Principal	Owner's Representative responsible for providing FEMA Public Assistance Program technical assistance and compliance monitoring.
CDR Maguire, Inc.	Frank Day, P.E., Project Manager	Monitoring Services prime consultant responsible for supporting Incident Command and providing arborist/forester consultation on identification of hazard trees, field documentation, environmental compliance, sediment and erosion control, foundation verification, ash footprint, confirmation sampling, invoice review and approval, and preparing final reports.
Mason, Bruce & Girard, Inc.	Erin VanDehey	Monitoring Services consultant team member responsible for supporting

Agency/Company	Contact	Responsibility/Assistance
		Incident Command and providing arborist/forester consultation on identification of hazard trees, field documentation, environmental compliance, sediment and erosion control, foundation verification, ash footprint, confirmation sampling, invoice review and approval, and preparing final reports.
Turner & Townsend Gov, LLC	Jim Murphy, P.E. / Henry Palancar	Monitroing Services consultant team member responsible for supporting Incident Command and providing arborist/forester consultation on identification of hazard trees, field documentation, environmental compliance, sediment and erosion control, foundation verification, ash footprint, confirmation sampling, invoice review and approval, and preparing final reports.
Maul Foster Alongi	Kyle Roslund	Monitroing services consultant team member responsible for providing field documentation, environmental compliance, air quality monitoring, ash footprint, confirmation sampling, and preparing final reports.
Historical Research Associates, Inc.	Kelly Derr, PhD	Monitroing services consultant team member responsible for providing field documentation, archaeological and cultural resources compliance, and preparing final reports.
Suulutaaq, Inc.	Joel Zeni	Prime contractor responsible for Hazard Tree Removal Services for Operational Branch 3.
ECC Constructors, LLC	Matt Long	Prime contractor responsible for Hazard Tree Removal Services for Operational Branches 2 and 4.
Ceres Environmental Services, Inc.	Tia Laurie, Corporate Secretary	Prime contractor responsible for Hazard Tree Removal Services for Operational Branches 1, 5, and 6.
AshBritt, Inc.	Rob Ray	Prime contractor responsible for Hazard Debris Removal Services for Bundle 3,

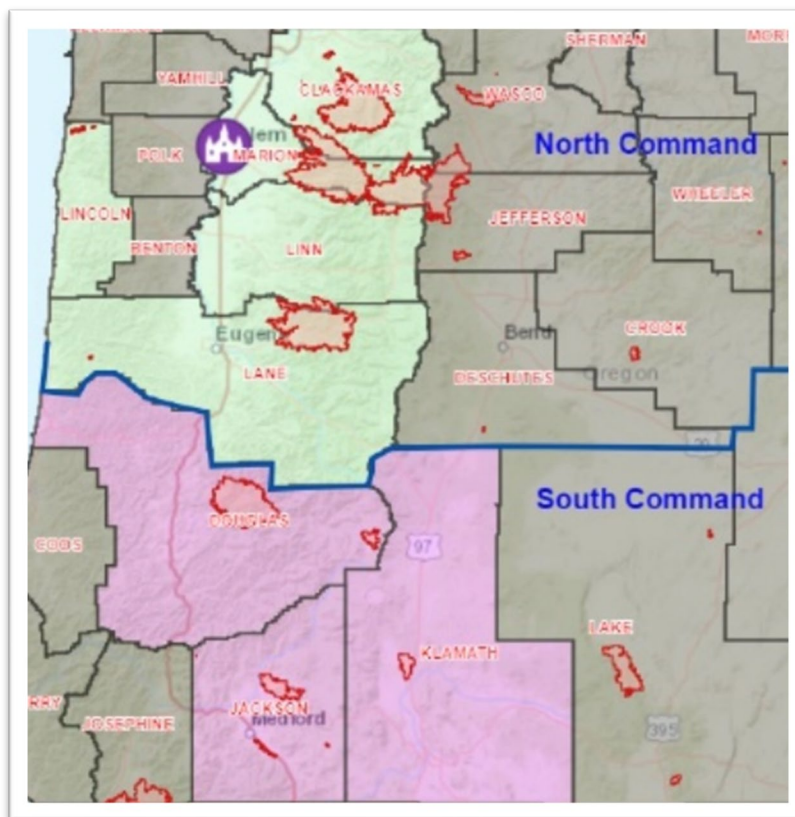
Agency/Company	Contact	Responsibility/Assistance
		Operational Branch 3, and Bundle 5, Operational Branch 9.
K&E Excavating, Inc.	Kerri Kuenzi, President	Prime contractor responsible for Hazard Debris Removal Services for Bundle 1, Operational Branch 7, Bundle 4, Operational Branches 1 and 6.
ECC	Matt Long	Prime contractor responsible for Hazard Debris Removal Services for Bundle 2, Operational Branches 2 and 4.

2 Site

2.1 Site Description

The State of Oregon was impacted by 19 separate wildfires which impacted 972,012 acres as shown in Figure 1. The wildfires caused substantial structure destruction to road systems due to fire and debris. Several major state highways remain closed or greatly impeded due to ongoing fire and hazardous conditions including rock falls, landslides, and hundreds of thousands of hazardous trees. Two Complex Commands were identified for the debris removal project. The Northern Command includes the counties of Clackamas, Lane, Lincoln, Linn, and Marion. The Southern Command includes the counties of Douglas, Jackson, and Klamath.

Figure 1. Complex Commands



The fire destroyed many homes and other structures that varied in composition. Some contain just foundations, ash, and metal debris, while others are partially burned.

The Operations Plan will cover the removal of all structural debris, waste, ash, metals, and hazard trees from the areas affected by the fire, as indicated in the site maps contained in Section 2.3. The ODOT Incident Commander will maintain the authority to make any necessary decisions regarding debris removal.

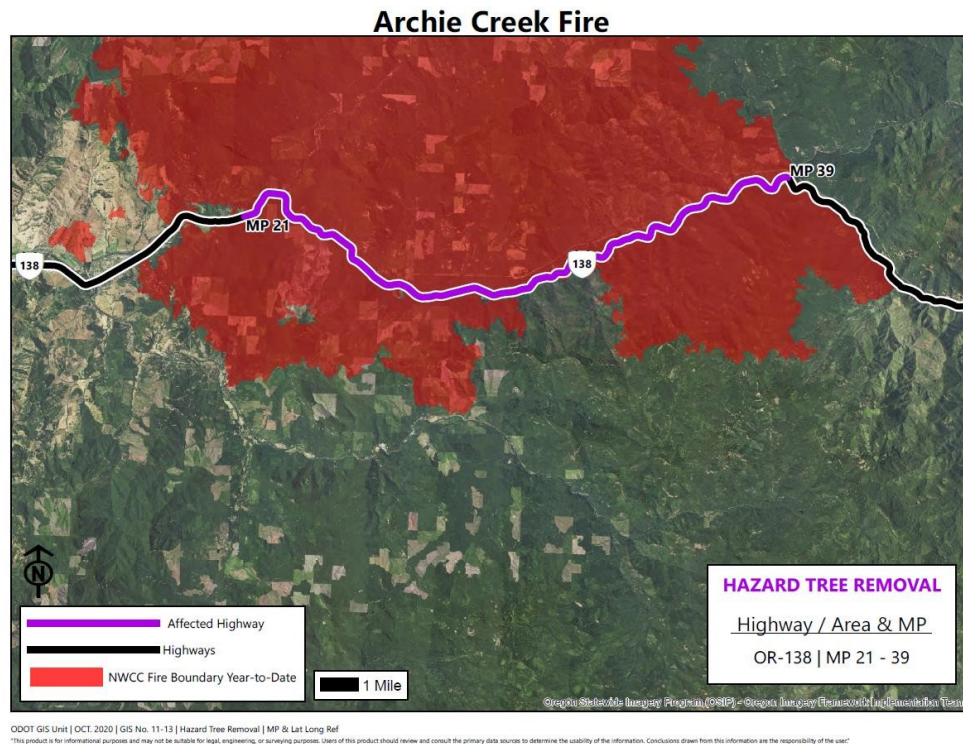
2.2 Site Ownership

The owner of each affected site will be identified by the ODOT's Owner's Representative. ODOT's Owner's Representative will work with each owner to obtain legal authority to enter the property by obtaining an executed Right-of-Entry Permit (ROE). A sample of the ROE is provided in Appendix E. ODOT's Consultant and Contractors may not perform work until provided with a copy of the executed ROE.

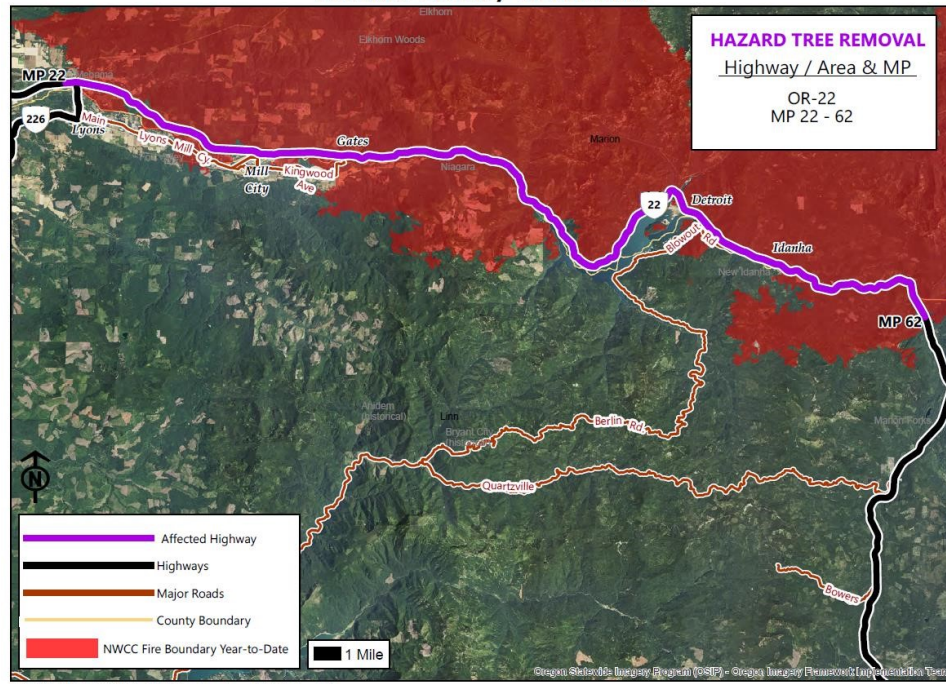
2.3 Vicinity and Site Maps

The work zones for debris removal activities will be initial divided into two Complex Commands with multiple Branches. Figures 1 through 7 show the project area and within each Branch.

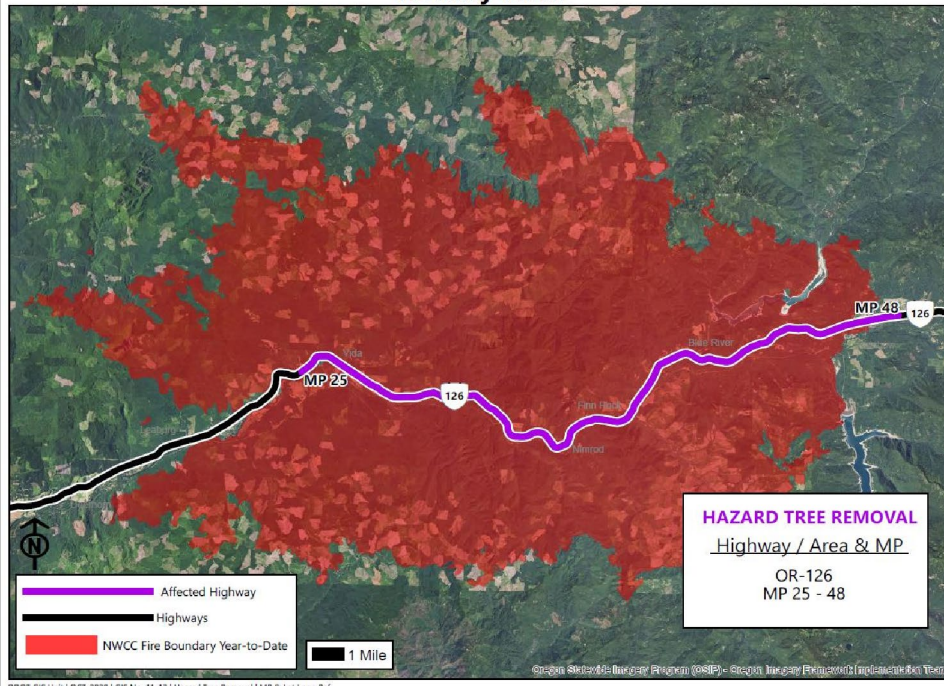
Figure 2. General Location Map



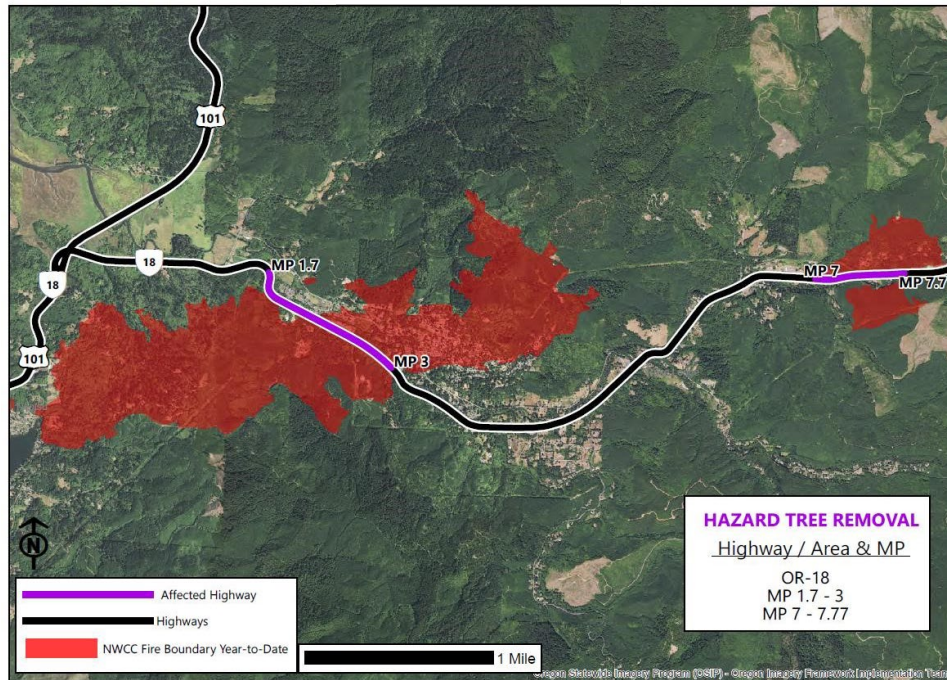
Beachie Creek / Lionshead



Holiday Farm

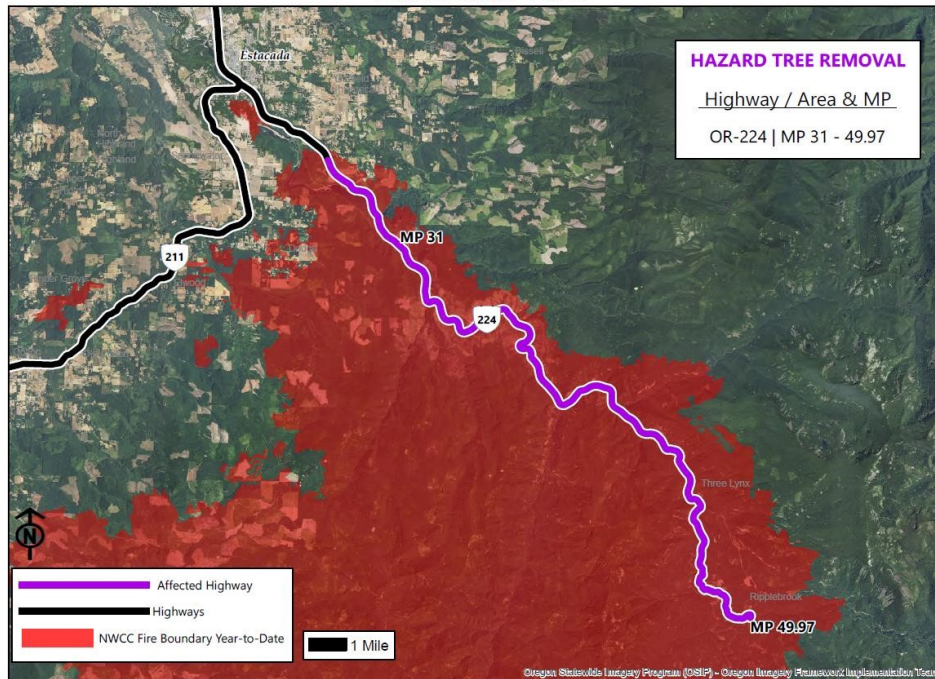


Echo Mountain Fire



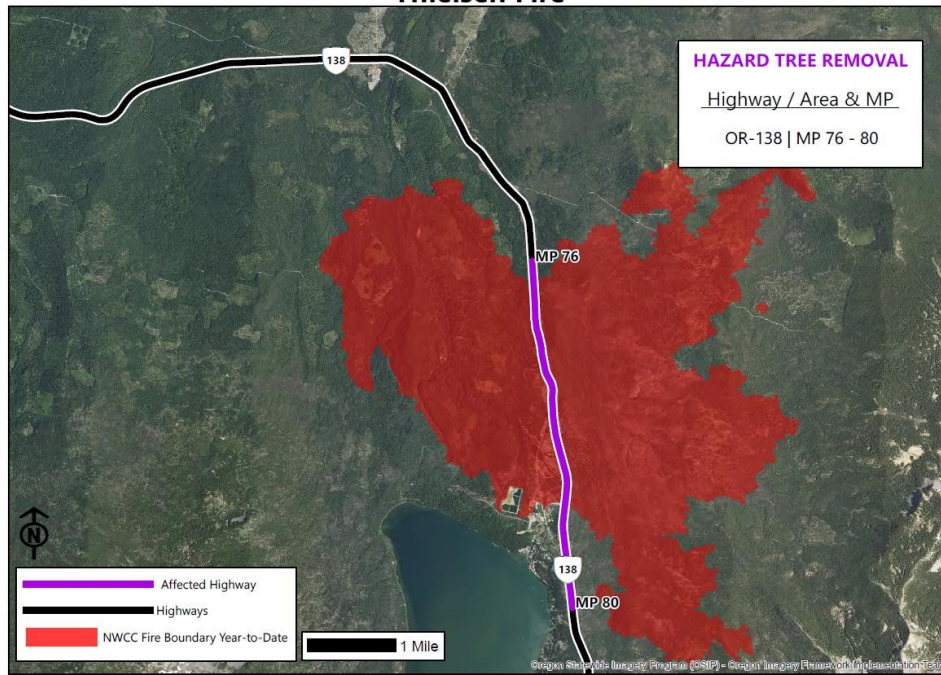
ODOT GIS Unit | OCT, 2020 | GIS No. 11-13 | Hazard Tree Removal | MP & Lat Long Ref
 "This product is for informational purposes and may not be suitable for legal, engineering, or surveying purposes. Users of this product should review and consult the primary data sources to determine the usability of the information. Conclusions drawn from this information are the responsibility of the user."

Riverside Fire



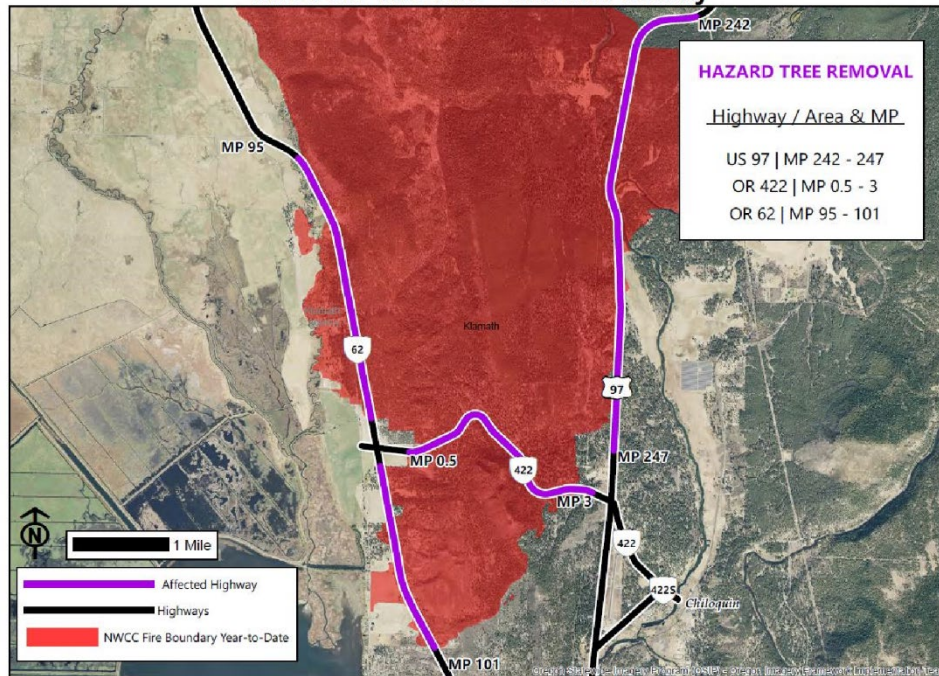
ODOT GIS Unit | OCT, 2020 | GIS No. 11-13 | Hazard Tree Removal | MP & Lat Long Ref
 "This product is for informational purposes and may not be suitable for legal, engineering, or surveying purposes. Users of this product should review and consult the primary data sources to determine the usability of the information. Conclusions drawn from this information are the responsibility of the user."

Thielsens Fire



ODOT GIS Unit | OCT. 2020 | GIS No. 11-13 | Hazard Tree Removal | MP & Lat Long Ref
 *This product is for informational purposes and may not be suitable for legal, engineering, or surveying purposes. Users of this product should review and consult the primary data sources to determine the usability of the information. Conclusions drawn from this information are the responsibility of the user.

Two Four Two Fire - Klamath County



ODOT GIS Unit | OCT. 2020 | GIS No. 11-13 | Hazard Tree Removal | MP & Lat Long Ref
 *This product is for informational purposes and may not be suitable for legal, engineering, or surveying purposes. Users of this product should review and consult the primary data sources to determine the usability of the information. Conclusions drawn from this information are the responsibility of the user.

2.4 Site Characterization

Ash and debris from structures burned by fires can contain asbestos-containing materials and heavy metals, such as antimony, arsenic, cadmium, copper, lead, and zinc. Building materials, such as stucco, roofing, floor tile, linoleum, fireplaces, furnaces, mastic, sheetrock and joint compound, cement pipe, exterior cement siding, thermal system insulation, etc., may all contain asbestos. In addition to asbestos-containing materials, properties may also contain other chemicals of concern. Sampling for each type of media may be required before removal activities can begin.

2.5 Removal Costs

Initial estimates assume debris cleanup costs in Oregon at about \$622 million total; this estimate includes \$326 million for structural ash and debris removal and \$296 million for hazard tree removal. These cost estimates do not include other work essential to long-term recovery (e.g. infrastructure rebuilding, housing) or other response and recovery needs.

Project costs that can be directly attributed to each residential and commercial properties in the Step 2 ash and debris removal and will be tracked on a per site basis. Other costs that cannot be directly attributed to a site but is necessary such as dust control (watering), street sweeping, and project management will be shared by each site. Any costs for community health and safety or monitoring, activities associated with removal of structures, trees, debris or other features on public property will be estimated and approved by ODOT's Owner's Representatives and Consultant and will not be borne by property owners.

2.6 Known Hazards

The type and number of known hazards will depend on each site's specific conditions such as how much of the structure is remaining, the age of the structure, the building materials used, and status of trees. If only ash and debris are present, the property is expected to contain elevated levels of heavy metals. Asbestos-containing materials are likely present in commercial buildings and in residential buildings constructed prior to January 1, 2004.

The State of Oregon Department of Environmental Quality (DEQ) has regulations and guidelines for the proper handling of Asbestos-Containing Materials (ACM). As such, **all responders should be aware that ACM may be present, and that asbestos is a human carcinogen with no known safe level of exposure.** For further guidance, please visit the DEQ Wildfire Response and Asbestos Information page <https://www.oregon.gov/deq/wildfires/Pages/default.aspx>; <https://www.oregon.gov/deq/Hazards-and-Cleanup/Pages/Asbestos-for-Businesses.aspx>.

Fall hazards are also present on sites with chimneys, partially remaining structures, and burned trees. Physical hazards (i.e., slips, trips, and falls) are also present from exposed foundations, glass, metals, and debris. Additional hazards may be present if hazardous material or medical wastes are discovered during the removal. Utilities, such as electrical, gas, cable, telephone, and sewer, are also present and must be identified during debris removal. The weather may also pose potential hazards from fog, rain and high winds.

2.7 Asbestos Hazards

The Oregon Department of Environmental Quality regulates the handling, removal and disposal of asbestos-containing material to protect public health and the environment.

Asbestos is a naturally occurring mineral that has been used extensively in a variety of construction materials in the U.S. When asbestos-containing material is disturbed, tiny hazardous asbestos fibers are released into the air and may cause lung cancer and other illnesses. There is no known safe level of exposure to asbestos.

All residential buildings constructed before Jan. 1, 2004 must have an asbestos survey conducted by an accredited inspector prior to the commencement of debris removal operations from the parcel.

ODOT, in coordination with OEM and DEQ, is working to consistently interpret policies and regulations for conducting emergency debris removal actions throughout state. The primary objective is to determine if the structural ash and debris from a wildland fire or other large-scale disaster should be treated as asbestos-containing material (ACM) according to Oregon Administrative Rules for asbestos (Chapter 340, Division 248), due to the assumption that the ash and debris may contain asbestos. DEQ requires an accredited inspector conduct an asbestos survey of the following prior to the commencement of the debris removal activities:

- Residential structures constructed before Jan. 1, 2004.
- All commercial structures regardless of construction date.

Please refer to Oregon's Updated Asbestos Rules fact sheet. Link provided below:

<https://www.oregon.gov/deq/FilterDocs/asb-HomeFS.pdf>

To be protective of public health and the surrounding community, ODOT has elected to have accredited inspectors perform an asbestos survey and evaluate each site with structural debris to identify asbestos-containing materials (ACM) before removal.

3 Debris Removal Operations Management

3.1 Incident Command System

This debris removal operation will utilize the Incident Command System (ICS) management structure and system. ICS is the model management tool used in disaster response scenarios for the command, control and coordination of all agencies and/or private companies working on an incident. ICS will be used as a management tool for all agencies and private contractors as they work toward the common goal of removing the debris and protecting the environment and public health.

Employing the ICS structure, the TBD will serve as Incident Commander. ODOT's Consultants will dedicate an Operations Team to manage the operations and provide the necessary contractors, resources and management including an Operations Chief, Planning Chief, Logistics Chief, Finance and Administration Chief, and supporting Branch and Division Supervisors. The Operations Team Chiefs and Supervisors will have a phone or radio available at all times while on-site.

Link to forms: <C:\Users\John.Scott3\OneDrive - CDR Maguire Inc\~Smartbook\Go Kit\ICS Forms>

3.2 Debris Removal Operations Center

The Contractors will be responsible for establishing and maintaining a debris removal operations center (DROC) for the project for managing day-to-day activities and storing field supplies. The Contractor will supply the necessary office supplies, fax machines, copiers, drinking water, electrolyte fluids, electricity, and other services to maintain the DROC.

A DROC is currently provided for the Area Command and North Complex Command by the Consultant and is located at the Salem Convention Center, 200 Commercial St SE, Salem, OR 97301. The Consultant is also providing a DROC for the South Complex Command located at 1000 Welcome Way, Medford, OR 07504. Additional DROCs will be established in the North and South Complex Commands by the Contractors.

4 Health and Safety

Contractors shall at all times operate equipment and perform labor in a safe manner to ensure the safety of its employees and the public. Contractors must pay particular attention to operations around local roads and take the necessary precautions. Contractors must note the number of power lines crossing the site, dead trees, chimneys, and all underground utilities.

The Consultant's Health and Safety Officer will develop a *Health and Safety Plan* for this project. The Health and Safety Officer will provide field oversight to ensure compliance with the Health and Safety Plan for the duration of the project. The Health and Safety Officer, in coordination with the AHERA inspector, will also prepare an air monitoring plan and a final report summarizing the air monitoring data.

Contractors will designate eating areas and supply hand and eye washing stations and portable restrooms for each project site.

See **APPENDIX C**

4.1 Worker Safety

Given that ash may contain elevated levels of heavy metals and/or asbestos, an exclusion zone will be set up around each property during removal. All personnel entering and leaving this area will be required to wear level "C" protective attire or level "D" with N95 masks and coverall depending on the work zone and hazard level. **All workers should be aware that asbestos is a human carcinogen with no known safe level of exposure.**

4.2 Industrial and Community Air Monitoring

A plan to monitor air in the community and work sites for asbestos, heavy metals, and dust will be developed and approved by a certified industrial hygienist (CIH) for the project. The air monitoring plan will establish action levels, sampling/analytical methods, and provide criteria for placement and number of samples at specific sites. Air sampling and monitoring will be completed by field staff in direct communication with the CIH. Changes to the plan during the project will be reviewed and approved by the CIH.

The methods for the air monitoring are as follows:

- Fugitive Dust – Use direct-reading instrument for real time analysis of particulate matter 2.5 microns or greater in diameter (PM-2.5) and/or particulate matter 10 microns or greater in diameter (PM-10) ;
- Heavy Metals - National Institute for Occupational Safety and NIOSH 7303 when the detection limits allow comparison with background and/or RBCs and use dust monitoring as a surrogate when metal-specific analysis isn't feasible. Our primary evidence for protecting people will be proof that we controlled dust emissions. We can reference this approach in the community health and safety plan.
- Asbestos - NIOSH Method 740. Samples that exceed action levels defined in the air monitoring plan may be re-analyzed by NIOSH Method 7402.

4.3 Community Health and Safety

The air monitoring plan will include provisions to evaluate community exposure to site contaminants. The plan will include appropriate action levels and specify controls to protect the surrounding community. Monitoring may be for particulate matter alone or in combination with asbestos or other suspected contaminants. Particulate matter can serve as a proxy for the migration of other particulate-type airborne contaminants, such as metals. ODOT will provide additional support and communication to the affected community.

If the site requires asbestos abatement, DEQ's asbestos rules require abatement activities be performed within a regulated area demarcated by asbestos tape and signage. The asbestos rules also require materials be adequately wetted during removal, packaging, transport and disposal to mitigate dust.

COVID Protocols

All parties will take proactive steps to protect the workplace in the event of an infectious disease outbreak. It is the goal of the Consultant during any such period to strive to operate effectively and ensure that all essential services are continuously provided and that employees are safe within the workplace. Please note, all Contractors performing work shall develop and implement their own corporate COVID protection plan. Contractor shall prepare a site-specific Safe Work plan for Contractor's and subcontractors' field staff in coordination with ODOT's Consultant Health and Safety professional(s). The Safe Work plan must include Coronavirus ("COVID-19") protocol and procedures in accordance with Oregon Governor Executive Orders, Oregon Occupational Safety and Health Administration ("OSHA"), the Oregon Health Authority ("OHA"), and the Center for Disease Control ("CDC").

4.4 Permits

Table 3 lists the permits anticipated for the project.

Table 3. Summary of Permit Requirements

Permit and Agency	Responsibility	Contact/Comments
Site Authorization Right-of-Entry	Owner's Representative	Executed forms are required by owners before work can begin on their property.
Traffic Control	Contractors	Contractors will supply necessary signage as appropriate. Additional control devices may be necessary based on site conditions
Asbestos Notification	Contractors	Notification fees *have* been waived by DEQ for all properties affected by the wildfires. Notifications are still required (with no payment) for commercial properties and residential properties with more than 4 dwelling units.
Water Permit	Contractors	Contractors shall obtain the necessary Oregon Water Resources Division permit to be used for dust suppression
Hazardous Waste	Contractors	Contractors shall use the appropriate hauler and disposal facility

See EPP (Appendix A) for additional environmental regulatory permits.

5 Proposed Cleanup

5.1 Scope of Work

Major items of work anticipated in this project include, but are not limited to:

DEBRIS REMOVAL SERVICES

Overview of Operations

The Debris Removal and Recovery Services shall follow a systematic approach to removing debris from the property, as described herein, with responsibilities of the parties noted below. The overall operations for Personal Property Debris Removal Operations (PPDRs) include:

1. Initial Site Reconnaissance (**Performed by ODOT's Consultant**)
 - Install address and project signs.
 - Identify water and electrical sources.
 - Identify environmental stewardship concerns such as erosion control requirements.
 - Identify equipment and material staging area.
 - Identify disposal and recycling options.
2. Individual Site / Location Assessments (**Performed by ODOT's Monitoring Consultant**)
 - Check for underground utilities by alerting [Oregon Utility Notification Center – Call Before You Dig](#) for placement of street number signs, as necessary.
 - Identify septic tank and leach field locations on each property, if feasible.
 - Home Heating Oil tank and UST identification, including unregulated USTs, if feasible.
 - Identify water wells, springs, other water sources and water storage tanks on properties not serviced by the local water agency, if feasible.
 - ISA Certified Arborist to identify Hazard Trees.
 - Mark, GPS, photograph, place unique identification numbers on each Hazard Tree for each property or location.
 - Conduct asbestos survey, if applicable.
 - As determined by the Arborist or designee, document each tree's species, height, and diameter at 4.5 feet above local ground level.
 - Install necessary erosion and sediment controls as identified in accordance with the EPP and Sections 6.10 - 6.14 of this document prior to beginning work; these controls must be in place before beginning Debris Removal in next step (such as staked wattles, berms, check dams, storm drain protections, etc.)
3. Debris Removal (**Performed by Contractor**)
 - Remove vehicles and RVs for recycling or disposal. Note: RVs will need to have asbestos surveys and potential abatement as they are classified as a commercial property. This could possibly be done off site at disposal location.
 - Asbestos survey and abatement
 - Soil Sampling
 - Collect, consolidate, and remove metals for recycling. Metals should be rinsed using

a light mist to remove any ash. Avoid mist rinse water leaving the site.

- Collect, consolidate, and remove concrete for recycling. Concrete should be rinsed using a light mist to remove any ash. Avoid mist rinse water leaving the site.
 - Collect, and remove ash (if applicable), debris and soil (if applicable) for disposal.
 - Collect, consolidate, and remove hazardous trees for recycling or disposal. Contractor are encouraged to drop trees away from the debris site. If by chance the tree falls in the debris site then you leave it until the asbestos hazard has been addressed.
 - Finish grading/smoothing ground surface (if applicable).
 - Monitor all erosion controls and take corrective actions as necessary in accordance with the EPP.
 - Prepare Daily Summary Reports which summarize the daily work including the Lot Address or Designation, GPS coordinates, the Appraiser's Parcel Number (APN) where debris within a lot was removed, and a list of the debris removed and location(s) of disposal for that day including and documentation of ODOT's Consultant Arborist signature for all hazard trees cut and or removed. Much of this required information may be provided by ODOT's Monitoring Consultant. In addition, we are to track Heating Oil Tanks and Underground Storage Tanks (HOTS and USTs) when found on properties.
 - Conduct air monitoring consistent with the air monitoring plan.
4. Additional major items of work anticipated in this project include, but are not limited to **(Performed by Contractor)**:
- Coordination of all Contractor resources;
 - Enforcing and ensuring traffic control plans; and
 - Individual property Cost tracking and community Cost tracking.
- A. Additionally, the Contractor shall prepare a site-specific Safe Work plan for Contractor's and subcontractors' field staff in coordination with ODOT's Consultant Health and Safety professional(s). The Safe Work plan must include Coronavirus ("COVID-19") protocol and procedures in accordance with Oregon Occupational Safety and Health Administration ("OSHA"), the Oregon Health Authority ("OHA") and the Center for Disease Control ("CDC").
- B. The Contractor shall provide ongoing estimates of work to the IMT and the CM to inform decisions on individual Debris Removal Crews and overall Debris Removal team efficiencies and overall costs to date.
- C. There may be a need for the Contractor to provide additional, presently unanticipated services in support of the Debris Removal Program, if requested by ODOT. Any additional services must be approved by the CM in writing and in accordance with the Change Order provisions in the General Conditions. Change Orders are the only mechanism by which the Contractor shall be paid for any costs not included on the Bid Schedule. If the Contractor is directed to perform any additional, unanticipated work, the Contractor shall begin the Change Order process with the CM before commencing the additional work. The Contractor may not be compensated for additional work if the Change Order and

work authorization processes are not adhered to.

Description of Work to Be Performed

The work to be performed primarily involves the removal and disposal of burned debris, burn ash, asbestos, recyclable metals, concrete, and contaminated soil, recycling materials that can be recycled, as well as related support services, such as dust control, installation of erosion control, and the removal of hazard trees. Burned debris, burn ash, asbestos, recyclable metals, concrete and contaminated soil will be handled separately, and will be tracked separately (material quantities and costs) to meet the overall objectives of this project and to track costs.

The Contractor shall perform all Debris processing, removal, and transport to IMT nearest designated disposal locations identified in work orders and provide all supporting services, as required by these specifications, in support of the IMT, and as directed by the ODOT OC and ODOT CM.

Transportation mileage will be paid in accordance with the Transportation Bid Items specification. Please note, landfills may have different acceptance criteria, contractors should confirm with each disposal site for final approval. For informational purposes only, the designed disposal locations include:

Operational Branch	County	Fire Name	Landfill Name				
			Dry Creek	Roseburg	Short Mountain	Coffin Butte	Hillsboro Landfill
1	Douglas	Archie Creek		24			
2	Marion/Linn	Beachie Creek				44	
2	Marion	Lionshead				76	
3	Lincoln	Echo Mountain				57	
4	Lane	Holiday Farm			43		
5	Clackamas	Riverside					53
6	Jackson	Obenchain	16				
7	Douglas	Thielson	75				
8	Klamath	Two Four Two	71				
9	Jackson	Almeda (Phoenix/Talent)	32				

Note: Any hazardous waste must be disposed of at a Subtitle C landfill (Arlington), which is not listed in this table. Consider if it needs to be added.

Fire Name	Fire Location Starting Point to nearest Landfill
Archie Creek	From Idleyld Park, Glide, OR.
Beachie Creek	From Mehama city center.
Lionshead	From Detroit city center.
Echo Mountain	From intersection of N North Bank Rd and N Yodel Lane, Otis, OR.
Holiday Farm	From Nimrod city center.
Riverside	From Dodge city center.
Obenchain	From 3330 Butte Falls Hwy.
Thielson	From Diamond Lake
Two Four Two	From intersection of Crater Lake Hwy (Hwy 62) and Kirk Rd, Chiloquin, OR.
Almeda (Phoenix/Talent)	From Phoenix city center.

The IMT will operate under the ICS. Through Work Orders, ODOT will direct the Contractor when and where these services are necessary. Typical tasks to be performed under this Agreement shall include, but are not limited to:

1. Follow Federal National Environmental Policy Act (NEPA) and Oregon requirements

for the protection of the environment including surface water, endangered species, and cultural resources as required in the Environmental Protection Plan (EPP), see Appendix 5.

2. Each Debris Removal Crew's Superintendent shall inspect the locations assigned to that crew in the Incident Commander's (see definitions) twice-weekly incident action plan and as updated and/or directed by the PC and ODOT OC. If assigned properties are determined to require extra precautions due to type, size of any hazard trees, proximity to utilities, proximity to waterways, waterway crossings, endangered species habitats, known cultural resources, or other concerns, then the superintendent shall notify the ODOT OC or designee. Upon ODOT's OC or designee approval the superintendent shall make preparations for the Contractor's crews to proceed. If the Contractor's Superintendent agrees that the debris need(s) special considerations for removal, that Superintendent can inform ODOT OC or designee for processing and approval of a work order/change order for the out of scope work.
3. Ensure that structural debris has been surveyed by an AHERA accredited building inspector. Asbestos-containing material must be abated by a licensed asbestos abatement contractor. Ensure the work is conducted consistent with best management practices (see Section 6.5).
4. Debris Removal Crews shall, once arriving at a work location, review the Debris assessment report prepared for that location, with the Assessment and Monitoring Consultant's Task Force Leader (TFL), to determine if there are any specific issues (access, existing infrastructure, utilities, waterways, species or cultural resources, etc.) to be considered, prior to commencing with the work.
5. The Debris Crew hazard tree falling staff shall decide how the tree falling, processing and removing shall be accomplished (as described in these specifications) and inform the TFL, prior to commencing work. The Debris Removal Crew shall then commence felling, delimbing, topping, removing, processing, and transporting as needed. The Debris Removal Crew shall also process all related felled tree slash into hog fuel or similar then place the resultant hog fuel or similar for erosion control as described in the bid item descriptions.
6. All hazard tree to be felled within the power company prescribed distances from a utility power pole or power line must be brought to the immediate attention of the ODOT Consultant Arborist for a determination on how to proceed.
7. No Debris Removal Crew shall remove stumps and roots, unless authorized by the ODOT OC and the IC.
8. Contractors may select their own staging areas for their operations. The consultant must ensure that contractors are providing their proposed staging areas prior to mobilization to ensure no impacts to cultural resources, wetlands or ESA issues. Staging areas shall not to be used for sorting or storing any debris materials. However, these staging areas may not be located on private properties unless the Contractor has procured an agreement with the property owner. Contractors must take into consideration that these sites must comply with federally endangered species and endangered species habitats or other applicable environmental or Historic Preservation protection criteria required by FEMA, and erosion controls in accordance with the EPP and Sections 6.10 - 6.14 of this document to be protective of water quality Contractor is responsible for any and all permit and compliance

issues related to their staging areas. Contractor will ensure that water quality controls are in place prior to work commencing.

9. Provide related support services, such as dust control, air monitoring consistent with the air monitoring plan, installation of erosion control, and other environmental stewardship BMPs and AMMs for Hazard Trees located on public, commercial, or private properties and that threaten public rights-of-way public owned property, or near public structures (i.e., buildings, bicycle or walking trails, parks, schools, etc.).
10. Contractor shall minimize ground surface disturbances as part of its operation. No access roads shall be built unless authorized by the IC, ODOT OC, and the CM in a change order, prior to its construction.
11. Staked wattles shall be installed in areas of soils disturbed before Debris Removal operations on steep slopes and/or near streams. Wattles shall be constructed of natural materials with no-monofilament netting used in their construction. Wattle material fillers shall also be made of natural materials with no-monofilament netting used in their construction. Straw wattles shall be certified weed free. Please note, in some instances, stake wattles may not be sufficient as an erosion control measure. Please refer to Section 11 of the EPP for other acceptable methods.
12. Roads and shoulders used as part of the Debris Removal Operation shall be maintained as needed. Excessive damage to existing roads, trails or other improvements, determined to be caused by Contractor actions, shall be repaired by Contractor at Contractor's expense within ten (10) working days of notification by the IMT. Excessive damage may be caused by overweight haul trucks, blocking or impeding drainage features, and turning tracked equipment with metal grousers on paved surfaces, among others.
13. Damage to private property or public non-roadway features for which the Contractor or a subcontractor is responsible, as part of the Operation, shall be repaired by the Contractor at no cost to ODOT.
14. Contractor shall prepare and provide Daily, Weekly, Monthly and Quarterly Summary Reports of the Hazard Tree removal operational activities and status.
15. Quarterly Reports shall be delivered on or before January 5th, April 5th, July 6th, October 5th, and January 4, 2021. The Quarterly Reports shall detail the quantities of each Bid Item, the work completed, unanticipated events, safety issues, schedule and progress updates, and staffing levels.
16. Monthly Summary Reports shall serve as the Cover Memo to Contractor's Monthly Progress Invoices. Monthly Summary Reports shall summarize the quantity of bid items completed and support the itemized invoice for the work completed within the Operational Branch for the month, the subtotal of each Bid Item.
17. Weekly Summary Reports shall summarize quantities of each Bid Item, the work completed, unanticipated events, safety issues, schedule and progress updates, and staffing levels of the previous seven (7) days. For the Weekly Summary Reports, the work week shall start on a Sunday and end on a Saturday.
18. Daily Summary Reports shall summarize the daily work including the Lot Address or Designation, GPS coordinates, the Appraiser's Parcel Number (APN) where debris within a lot was removed, and a list of the debris removed for that day including and documentation of ODOT's Consultant Arborist signature for all hazard trees cut and or removed. Much of this required information may be provided by ODOT's

Monitoring Consultant.

All of these activities shall be included in the unit costs Contractor provided in its Bid. However, all debris types shall still be tracked by ODOT's Monitoring Consultant from the individual property or public Right of Way (R/W) from which it was taken, to the processing site (if any) and from there to the final location of the debris to meet the overall objectives of this project.

This “cradle to grave” tracking methodology of debris along with the Contractor costs is required by FEMA. Where debris is found to straddle R/W lines and/or multiple property lines, costs shall be allocated proportionally to the respective property owners (i.e., individual properties, community ownership).

The Contractor is advised that the work is in a Wildland Fire Area and during the summer months the fire hazard is EXTREME. Fire safety conduct by the Contractor and Contractor's employees is to be observed at all times. Each Debris Removal Crew must have a properly serviced fire extinguisher and a minimum of one fire tool per cutting crew member and five gallons of water. Vehicles and motorized equipment must utilize effective manufacturer-certified spark arresters and muffler systems.

All issues and concerns of adjacent property owners and others shall be referred to the IMT. Boundary fences must not be damaged and hog fuel or similar or debris must not be propelled onto the neighboring lands. No woody material is to be left on or piled up against boundary fences. Work may need to be completed by Contractor by hand near property boundaries in order to meet this standard.

Division of Work

Counties are responsible for soliciting, obtaining and processing ROE forms from each property owner that wants to participate in the ODOT Debris Removal Program as related to trees threatening roadway safety. The property owners are obliged to remove their debris threatening public safety or remove a hazard tree threatening a public roadway but not to necessarily join the State operated program. They can choose to contract separately for debris removal or remove these hazard tree themselves.

The IMT and PC, after receipt of signed and vetted property owner ROE forms obtained from the County and subsequent Assessment by the ODOT's Monitoring Consultant will distribute the workload to Contractor Debris Removal Crews (Task Forces), with the general goal of assuring operational efficiency and keeping each Crew or Task Force in a focused location. Assignment of properties to specific Task Forces, placed in specific Branches and Divisions within each Working Area shall be solely at the discretion of the PC, with Contractor input. The IMT reserves the right to assign properties based on operational needs, overall operational progress, specific experience of particular crews, or any other relevant operational details as determined by the IMT.

Environmental Considerations

The IMT team has completed an Environmental Protection Plan developed to ensure that the debris removal operations are compliant with the Oregon Forest Practice Rules and the Federal National Environmental Policy Act (NEPA) Section 7 and Section 106 requirements.

ODOT's Monitoring Consultant will provide ISA certified arborists as well as biologists and archaeologists to monitor Contractor work to insure protection of environmental and cultural resources.

FEMA and ODOT are coordinating with local tribal nations to provide tribal monitors to assess for native artifacts that may be unearthed by Contractor's ground disturbing activities.

The following lists the expected duties of ODOT's Consultant that will be providing the

necessary arborists, environmental staff, and archaeologists to assist in meeting these requirements. The Contractor shall follow the direction of the Consultant in protecting the natural and cultural resources.

Consultant's ISA Certified Arborist(s)

The Consultant's arborist will prepare Hazard Tree removal guidance documents for each operational area. They will also oversee, monitor, and make final Hazard Tree determinations regarding any questions about the Hazard Tree determinations and/or the need to use cranes or other specialized equipment for Hazard Tree removal.

Consultant's Environmental Staff

The Consultant is providing experienced environmental staff members to assist the arborists in preparing and overseeing and managing the implementation. These environmental staff members will also follow the requirements set out by the IMT directed and included in the EPP requirements, for protection of endangered and impacted species and their habitats under emergency operations. These environmental staff members will preview locations prior to Debris Removal Crews mobilizing to them. The environmental staff will monitor, as necessary, the known cultural and natural resources in locations for which the Debris Removal Crews have been cleared to work on, to inform the contractor crews of areas to protect, avoid, or advise necessary BMPs and Approved Mitigation Measures (AMMs).

Erosion and Sediment Control

Erosion control is different from sediment control and is addressed by different methods. Erosion control protects soil from being dislodged and transported. Sediment control captures and retains dislodged sediment. Sediment, once it enters waterways, is considered a pollutant. Erosion control is more effective and less expensive than sediment control.

Contractor shall have on staff either a Certified Erosion and Sediment Control Professional (CPESC) or Certified Erosion and Sediment Control Lead (CESCL) to conduct monitoring, inspections. This person shall be empowered to direct the installation, maintenance and repair of erosion and Sediment Control BMPs and have the authority to mobilize crews to make immediate repair or to add additional BMP during work or non-work hours when erosion and sediment control facilities are not providing effective functioning.

Consultant's Archaeologists and Tribal Monitors

The Consultant will also provide archeologists, whose role is triggered by the possibility of ground disturbing activities that could unearth or impact cultural artifacts during the debris removal operations. The archaeologists will work in conjunction with Contractor in support of Contractor's activities to comply with the National Historic Preservation Act.

Additionally, Native American tribal monitors may be present to monitor the Contractor's activities that may impact their ancestral areas of concern.

Cost Tracking and Invoicing

Bid item unit prices must also include, as incidental to the work, the effort to break down costs by unit and provide the invoicing and accounting of all costs broken down into one of two (2) categories:

1. To an individual work unit, work order, property, or other designation provided prior to the work commencing.
2. To the overall project, called community costs.

Invoices are required to have costs attributable to one of these two (2) categories or the invoices may be subject to rejection. All invoices must first be reviewed by ODOT's Monitoring

Consultant (“the Consultant”) prior to submitting to ODOT. The Consultant is working under a different contract for ODOT. The Consultant will be required to submit a payment recommendation report prepared and signed by the Consultant, with each complete invoice package submitted by the Contractor for services rendered to ODOT. Only reconciled ticket data for the invoiced period noted within the Contractor invoice package will be approved within this recommendation for payment. The signed payment recommendation report serves as an acknowledgment that the Consultant has performed a full reconciliation over the invoice submitted by the applicable Contractor and that the Contractor’s invoice has been validated and the Consultant believes the Contractor’s invoice package is complete. Payment will be made in accordance with and within the time specified.

The Contractor agrees to have ODOT’s Consultant Finance & Administration staff provide quality assurance and examination services for all of the Contractor’s invoices prior to submission to ODOT. The Contractor shall resolve all deficiencies identified by ODOT’s Consultant Finance & Administration staff in the Contractor’s invoice packages prior to submission to ODOT. Each complete invoice package submitted to ODOT must include the below information. ODOT will not process incomplete invoice packages:

1. Contractor’s company name and address
2. Date invoice was submitted
3. Billing Period
4. Contract Number and Incident Name
5. Specified invoice number containing a unique ID sequence. If there is a revision due to a dispute, a new invoice number will be required upon resubmission to ODOT, including a reference to the original invoice number.
6. Overall total of invoice, including amounts withheld if applicable. Invoices must reference invoice numbers for which payment was withheld.
7. Contract line item number/ID
8. Contract line item description
9. Work Order No. for which the cost is authorized.
10. Change Order No., if applicable, for which the cost is authorized.
11. Quantity of contract line item
12. Rate of contract line item
13. Overall total of contract line item (for services billed within invoice period)
14. Clear, scanned, copies of all tickets and other supporting documents relating to costs billed. Optical Character Recognition, (OCR) is preferred for all PDF formatted documents
15. One invoice copy in an MS Excel format and one invoice copy in an PDF format
16. Invoice Payment Request Form, supplied by ODOT’s Consultant
17. Payment Recommendation Report by ODOT’s Finance & Administration Consultant
18. Invoice Certification Statement signed under penalty of perjury by a duly authorized contractor representative. This statement will be provided by ODOT’s Consultant.

Any ODOT approved Change Orders to the Contract shall be tracked and invoiced separately

by the Contractor. If Change Order work is performed, a cumulative total of charges billed in relation to the Not to Exceed Price will be required.

Hazard Tree Removal Services

Overview of Operations

The Hazard Tree Removal and Recovery Services shall follow a systematic approach to removing Hazard Trees with responsibilities of the Contractor noted below. This systematic approach is summarized below:

1. Initial Site Reconnaissance (**Performed by ODOT's Consultant**)
 - Verify and mark property lines, as necessary, with an Oregon licensed surveyor.
 - Install address and project signs.
 - Identify water and electrical sources.
 - Identify environmental stewardship concerns such as erosion control requirements
2. Individual Site / Location Assessments (**Performed by ODOT's Consultant**)
 - Check for underground utilities by alerting Underground Service Alert (USA) for placement of street number signs, as necessary.
 - Identify septic tank and leach field locations on each property, if feasible.
 - Identify water wells, springs, other water sources and water storage tanks on properties not serviced by the local water agency, if feasible.
 - ISA Certified Arborist to identify Hazard Trees.
 - Mark, GPS, photograph, place unique identification numbers on each Hazard Tree for each property or location,
 - Prepare a site assessment map for each work area depicting the location and number trees to be removed,
 - As determined by the Arborist or designee, document each tree's species, height, diameter at 4.5 feet above local ground level
 - Install required erosion and sediment controls in accordance with the EPP and Sections 6.10 - 6.14 of this document (such as staked wattles, diversion berms, silt fencing, check dams, etc.) prior to commencement of work.
3. Hazard Tree Removal (**Performed by Contractor**)
 - Pre-determine how Hazard Trees shall be felled and provide plans with TFL prior to commencing with the tree felling.
 - Fell Hazard Trees.
 - Process, collect, consolidate, load and transport Hazard Trees to designated log decking locations.
 - Apply selected BMPs for erosion control purposes in accordance with the EPP and Sections 6.10 - 6.14 of this document, as approved by the ODOT OC or designee. Ensure that water quality controls are in place before debris removal begins.

- Monitor the effectiveness of the erosion controls per the frequency in the EPP, and take necessary corrective actions to correct or install new controls when turbid or other unacceptable discharges are discovered, in accordance with the EPP
 - If the current implemented erosion control measure is not working, the contract shall be responsible for fixing/installing new controls to prevent erosion/turbid discharges. These controls will be monitored, and corrective actions will be implemented by the contractor.
 - All work must be in compliance with the EPP, which may be subject to change at ODOT's discretion.
 - Prepare Daily Summary Reports which summarize the daily work including the Road Name, the beginning and ending post mile marker location of the work performed during that day as well as the GPS coordinates of each tree removed, the Appraiser's Parcel Number (APN) where trees within private property were removed, and a list of the trees felled for that day including the tree assessment information as follows: property APN, tree site identification number, GPS location, species, diameter, height, photographs of tree (pre- cut and of marked stump), and documentation of ODOT's Consultant Arborist signature for Hazard Tree. Much of this required information may be provided by ODOT's Consultant.
4. Additional major items of work anticipated in this project include, but are not limited to **(Performed by Contractor)**:
- Coordination of all Contractor resources;
 - Enforcing and ensuring traffic control plans; and
 - Individual property Cost tracking and community Cost tracking.
- A. Additionally, the Contractor shall prepare a site-specific Safe Work plan for Contractor's and subcontractors' field staff in coordination with ODOT's Consultant Health and Safety professional(s). The Safe Work plan must include Coronavirus ("COVID-19") protocol and procedures in accordance with Oregon Occupational Safety and Health Administration ("OSHA"), the Oregon Health Authority ("OHA") and the Center for Disease Control ("CDC").
 - B. The Contractor shall provide ongoing estimates of work to the IMT and the CM to inform decisions on individual Hazard Tree Removal Crews and overall Hazard Tree removal team efficiencies and overall costs to date.
 - C. There may be a need for the Contractor to provide additional, presently unanticipated services in support of the Hazard Tree Removal Program, if requested by ODOT. Any additional services must be approved by the CM in writing and in accordance with the Change Order provisions in the General Conditions. Change Orders are the only mechanism by which the Contractor will be paid for any costs not included on the Bid Schedule. If the Contractor is directed to perform any additional, unanticipated work, the Contractor shall begin the Change Order process with the CM before commencing the additional work. The Contractor may not be compensated for additional work if the Change Order and work authorization processes are not adhered to.

Description of Work to Be Performed

The Contractor shall perform all Hazard Tree felling, processing, and transport to designated locations and provide all supporting services, as required by these specifications, in support of

the IMT, and as directed by the ODOT OC and ODOT CM. The IMT will operate under the ICS. Through Work Orders, ODOT will direct the Contractor when and where these services are necessary. Typical tasks to be performed under this Agreement shall include, but are not limited to:

1. Follow Federal National Environmental Policy Act (NEPA) and Oregon requirements for the protection of the environment including surface water, endangered species, and cultural resources as required in the Environmental Protection Plan.
2. Each Hazard Tree Removal Crew's Superintendent shall inspect the locations assigned to that crew in the Incident Commander's (see definitions) twice-weekly incident action plan and as updated and/or directed by the PC and ODOT OC. If assigned properties are determined to require extra precautions due to type, size of tree, proximity to utilities, proximity to waterways, waterway crossings, endangered species habitats, known cultural resources, or other concerns, then the superintendent shall notify the ODOT OC or designee. Upon ODOT's OC or designee approval the superintendent shall make preparations for the Contractor's crews to proceed. If the Contractor's Superintendent agrees that the Hazard Tree/trees need(s) special considerations for removal, that Superintendent can inform ODOT OC or designee for processing and approval of a work order/change order for the out of scope work.
3. Hazard Tree Removal Crews shall, once arriving at a work location, review the Hazard Tree assessment report prepared for that location, with the Assessment and Monitoring Consultant's Task Force Leader (TFL), to determine if there are any specific issues (access, existing infrastructure, utilities, waterways, species or cultural resources, etc.) to be considered, prior to commencing with the work. If the Contractor's Superintendent believes that a property has a Hazard Tree that was not marked by the Assessment and Monitoring Contractor's Arborist, then the Contractor shall inform the Arborist in that Operational Branch of this concern. If agreement is not reached, then ODOT's Arborist will make the final determination.
4. The Hazard Tree falling crew lead shall decide how the tree falling, processing and removing shall be accomplished (as described in these specifications) and inform the TFL, prior to commencing work.
5. The Hazard Tree Removal Crew shall then commence felling, delimbing, topping, removing, processing, and trucking to a log deck for off-loading.
6. The Hazard Tree Removal Crew shall also chip all related slash the place chipped slash for erosion control as described in the bid item descriptions.
7. Trees to be felled within the power company prescribed distances from a utility power pole or power line must be brought to the immediate attention of the ODOT Consultant Arborist for a determination on how to proceed.
8. No Hazard Tree Removal Crew shall remove stumps and roots, unless authorized by the ODOT OC and the IC. Cut stumps flush within 7-inches to existing terrain surface.
9. Accumulation of flammable material is prohibited (i.e., slash, chipped woody material, etc. greater than 3-inches thick.).
10. Contractors may select their own staging areas for their operations. The Consultant must ensure that contractors are providing their proposed staging areas prior to mobilization to ensure no impacts to cultural resources, wetlands, or ESA issues. Staging areas must be reviewed and approved by the Consultant prior to the commencement of work. However, these staging areas may not be located on private

properties unless the Contractor has procured an agreement with the property owner. Contractors must take into consideration that these sites must comply with federally endangered species and endangered species habitats or other applicable environmental or Historic Preservation protection criteria required by FEMA and erosion controls in accordance with the EPP and Sections 6.10 - 6.14 of this document to be protective of water quality. Contractor is responsible for all permit and compliance issues related to their staging areas in addition to ensuring that water quality controls are in place prior to work commencing.

11. Provide related support services, such as dust control, installation of erosion control, and other environmental stewardship BMPs and AMMs for Hazard Trees located on public, commercial, or private properties and that threaten public rights-of-way public owned property, or near public structures (i.e., buildings, bicycle or walking trails, parks, schools, etc.).
12. Contractor shall minimize ground surface disturbances as part of its operation. No tree access roads shall be built unless authorized by the IC, ODOT OC, and the CM in a change order, prior to its construction.
13. The Contractor place up to three (3) inches of chipped slash on areas where the soil has been disturbed by the Contractor's Hazard Tree removal operation, in accordance with the descriptions in the EPP and Sections 6.10 - 6.14 of this document. The wood mulch shall be a maximum of ½ to 3 inches in length and an average thickness of 1/16 to 3/8 inches in any direction. Contractor will ensure and be monitored that water quality controls are in place before debris removal begins. As discussed in the EPP, a CPESC/CESCL certified professional will help inform these types of decisions.
14. Staked wattles shall be installed in areas of soils disturbed before tree removal operations on steep slopes and/or near streams. Straw wattles should be weed free. Wattles shall be constructed of natural materials with no-monofilament netting used in their construction. Wattle material fillers shall also be made of natural materials with no-monofilament netting used in their construction. Wattle material fillers shall also be made of natural materials. **Please note, stake wattles are not the only viable method to ensure proper erosion controls are in place. Please refer to Section 11 of the EPP which defines viable alternatives for implanting proper erosion controls.**
15. Roads and shoulders used as part of the Hazard Tree Removal Operation shall be maintained as needed. Excessive damage to existing roads, trails or other improvements, determined to be caused by Contractor actions, shall be repaired by Contractor at Contractor's expense within ten (10) working days of notification by the IMT. Excessive damage may be caused by overweight haul trucks, blocking or impeding drainage features, and turning tracked equipment with metal grousers on paved surfaces, among others.
16. Damage to private property or public non-roadway features for which the Contractor or a subcontractor is responsible, as part of the Operation, shall be repaired by the Contractor at no cost to ODOT.
17. Contractor shall prepare and provide Daily, Weekly, Monthly and Quarterly Summary Reports of the Hazard Tree removal operational activities and status.
18. Quarterly Reports shall be delivered on or before January 5th, April 5th, July 6th, October 5th, and January 4, 2021. The Quarterly Reports shall detail the quantities of each Bid Item, the work completed, unanticipated events, safety issues, schedule and progress updates, and staffing levels.

19. Monthly Summary Reports shall serve as the Cover Memo to Contractor's Monthly Progress Invoices. Monthly Summary Reports shall summarize the quantity of bid items completed and support the itemized invoice for the work completed within the Operational Branch for the month, the subtotal of each Bid Item.
20. Weekly Summary Reports shall summarize quantities of each Bid Item, the work completed, unanticipated events, safety issues, schedule and progress updates, and staffing levels of the previous seven (7) days. For the Weekly Summary Reports, the work week shall start on a Sunday and end on a Saturday.
21. Daily Summary Reports shall summarize the daily work including the Road Name, the beginning and ending post mile marker location of the work performed during that day as well as the GPS coordinates of each tree removed, the Appraiser's Parcel Number (APN) where trees within private property were removed, and a list of the trees felled for that day including the tree assessment information as follows: property APN, tree site identification number, GPS location, species, diameter, height, photographs of tree (pre-cut and of marked stump), and documentation of ODOT's Consultant Arborist signature for Hazard Tree. Much of this required information may be provided by ODOT's Consultant.

All of these activities shall be included in the unit costs Contractor provided in its Bid. However, each tree (log) or chipped slash shall still be tracked by the Consultant from the individual property or public Right of Way (R/W) from which it was taken, to the processing site (if any) and from there to the final location of the tree (log) to meet the overall objectives of this project. **This "cradle to grave" tracking methodology of each tree (log) and slash along with the Contractor costs is required by FEMA.** Where Hazard Trees are found to straddle R/W lines and/or multiple property lines, costs shall be allocated proportionally to the respective property owners (i.e., individual properties, community ownership).

The Contractor is advised that the work is in a Wildland Fire Area and during the summer months the fire hazard is EXTREME. Fire safe conduct by the Contractor and Contractor's employees is to be observed at all times. Each Hazard Tree Removal Crew must have a properly serviced fire extinguisher and a minimum of one fire tool per cutting crew member and five gallons of water. Vehicles and motorized equipment must utilize effective manufacturer-certified spark arresters and muffler systems.

All issues and concerns of adjacent property owners and others shall be referred to the IMT. Boundary fences must not be damaged, and chips or debris must not be propelled onto the neighboring lands. No woody material is to be left on or piled up against boundary fences. Work may need to be completed by Contractor by hand near property boundaries in order to meet this standard.

Division of Work

Counties are responsible for soliciting, obtaining, and processing ROE forms from each property owner that wants to participate in the ODOT Hazard Tree Removal Program as related to trees threatening roadway safety. The property owners are obliged to remove their Hazard Trees threatening roadway safety but not to necessarily join the State operated program. They can choose to contract separately for tree removal or remove these Hazard Trees themselves.

The IMT and PC, after receipt of signed and vetted property owner ROE forms obtained from the County and subsequent Assessment by the Consultant Arborists will distribute the workload to Contractor Hazard Tree Removal Crews (Task Forces), with the general goal of assuring operational efficiency and keeping each Crew or Task Force in a focused location. Assignment of properties to specific Task Forces, placed in specific Branches and Divisions within each

Working Area shall be solely at the discretion of the PC, with Contractor input. The IMT reserves the right to assign properties based on operational needs, overall operational progress, specific experience of particular crews, or any other relevant operational details as determined by the IMT.

Environmental Considerations

The IMT team has completed an Environmental Protection Plan developed to ensure that the Hazard Tree removal operations are compliant with the Oregon Forest Practice Rules and the Federal National Environmental Policy Act (NEPA), Endangered Species Act Section 7 and Section 106 of the National Historic Preservation Act requirements.

ODOT's Consultant will provide ISA certified arborists as well as biologists and archaeologists to monitor Contractor work to insure protection of environmental and cultural resources.

FEMA and ODOT are coordinating with local tribal nations to provide tribal monitors to assess for native artifacts that may be unearthed by Contractors' ground disturbing activities.

The following lists the expected duties of ODOT's Consultant that will be providing the necessary arborists, environmental staff, and archaeologists to assist in meeting these requirements. The Contractor shall follow the direction of the Consultant in protecting the natural and cultural resources.

Consultant's ISA Certified Arborist(s)

The Consultant's arborist will prepare Hazard Tree removal guidance documents for each operational area. They will also oversee, monitor, and make final Hazard Tree determinations regarding any questions about the Hazard Tree determinations and/or the need to use cranes or other specialized equipment for Hazard Tree removal.

Consultant's Environmental Staff

The Consultant is providing experienced environmental staff members to assist the arborists in preparing and overseeing and managing the implementation. These environmental staff members will also follow the requirements set out by the IMT directed and included in the EPP requirements, for protection of endangered and impacted species and their habitats under emergency operations. These environmental staff members will preview locations prior to Hazard Tree Removal Crews mobilizing to them. The environmental staff will monitor, as necessary, the known cultural and natural resources in locations for which the Hazard Tree Removal Crews have been cleared to work on, to inform the contractor crews of areas to protect, avoid, or advise necessary BMPs and Approved Mitigation Measures (AMMs).

As displayed in the EPP, a CPESC/CESCL certified professional will advise the monitor and take corrective actions with the contractor when erosion control measures need maintenance or change. The CPESC/CSL professionals will immediately call out failed measures in order to prevent erosion and/or turbid discharges. The contracts will be responsible for immediate correction of the controls fail.

Consultant's Archaeologists and Tribal Monitors

The Consultant will also provide archeologists, whose role is triggered by the possibility of ground disturbing activities that could unearth or impact cultural artifacts during the Hazard Tree removal operations. The archaeologists will work in conjunction with Contractor in support of Contractor's activities to comply with the National Historic Preservation Act. Additionally, Native American tribal monitors may be present to monitor the Contractor's activities that may impact their ancestral areas of concern.

Cost Tracking and Invoicing

Bid item unit prices must also include, as incidental to the work, the effort to break down costs

by unit and provide the invoicing and accounting of all costs broken down into one of two (2) categories:

1. To an individual work unit, work order, property, or other designation provided prior to the work commencing.
2. To the overall project, called community costs.

Invoices are required to have costs attributable to one of these two (2) categories or the invoices may be subject to rejection. All invoices must first be reviewed by ODOT's Hazard Tree Monitoring Consultant ("the Consultant") prior to submitting to ODOT. The Consultant is working under a different contract for ODOT. The Consultant will be required to submit a payment recommendation report prepared and signed by the Consultant, with each complete invoice package submitted by the Contractor for services rendered to ODOT. Only reconciled ticket data for the invoiced period noted within the Contractor invoice package will be approved within this recommendation for payment. The signed payment recommendation report serves as an acknowledgment that the Consultant has performed a full reconciliation over the invoice submitted by the applicable Contractor and that the Contractor's invoice has been validated and the Consultant believes the Contractor's invoice package is complete. Payment will be made in accordance with and within the time specified.

The Contractor agrees to have ODOT's Consultant Finance & Administration staff provide quality assurance and examination services for all of the Contractor's invoices prior to submission to ODOT. The Contractor shall resolve all deficiencies identified by ODOT's Consultant Finance & Administration staff in the Contractor's invoice packages prior to submission to ODOT. Each complete invoice package submitted to ODOT must include the below information. ODOT will not process incomplete invoice packages:

1. Contractor's company name and address
2. Date invoice was submitted
3. Billing Period
4. Contract Number and Incident Name
5. Specified invoice number containing a unique ID sequence. If there is a revision due to a dispute, a new invoice number will be required upon resubmission to ODOT, including a reference to the original invoice number.
6. Overall total of invoice, including amounts withheld if applicable. Invoices must reference invoice numbers for which payment was withheld.
7. Contract line item number/ID
8. Contract line item description
9. Work Order No. for which the cost is authorized.
10. Change Order No., if applicable, for which the cost is authorized.
11. Quantity of contract line item
12. Rate of contract line item
13. Overall total of contract line item (for services billed within invoice period)
14. Clear, scanned, copies of all tickets and other supporting documents relating to costs billed. Optical Character Recognition, (OCR) is preferred for all PDF formatted documents

15. One invoice copy in an MS Excel format and one invoice copy in an PDF format
16. Invoice Payment Request Form, supplied by ODOT's Consultant
17. Payment Recommendation Report by ODOT's Finance & Administration Consultant
18. Invoice Certification Statement, signed under penalty of perjury by a duly authorized contractor representative. This statement will be provided by ODOT's Consultant.

Any ODOT approved Change Orders to the Contract shall be tracked and invoiced separately by the Contractor. If Change Order work is performed, a cumulative total of charges billed in relation to the Not to Exceed Price will be required.

5.2 Work Plan

The specific tasks for the project include the following tasks which are further described in Section 6. Inspect all structures at each site and evaluate hazards.

- Coordinate with local agencies and resources to determine what materials and tasks are required.
- Provide and install the site project signs, and address signs if needed.
- Prepare for emergency erosion control to prevent issues with runoff associated with significant rain events.
- Perform the necessary site documentation and an asbestos survey by an AHERA accredited inspector. Please refer to the following link for addition asbestos information: <https://www.oregon.gov/deq/Hazards-and-Cleanup/Pages/Asbestos-Information.aspx>
- Coordinate air monitoring consistent with the air monitoring plan.
- Ready site for debris removal by adding any appropriate safety or erosion control measures prior to work commencing and monitoring those controls for effectiveness. in accordance with the EPP and Sections 6.10 - 6.14 of this document.
- Flagging to keep unauthorized people out or adding silt fence/strawbales around the site (if appropriate) to reduce the likelihood of potential contaminants washing into regulated natural resources.
- Remove the ash and debris, metals, concrete, and wood waste from the site. These debris will need to be rinsed on site prior to removal if covered in ash.
- Recycle all recyclable materials, transport, and dispose of all materials properly.
- Segregate hazardous wastes discovered during removal. Remove hazardous wastes except for household hazardous wastes. Commercial properties will need a Hazardous Waste determination. Residential properties are considered Household hazardous waste exempt and will be segregated on-site and hauled to a final disposal site by the Contractor.
- After all the appropriate debris is removed from the site, remove not less than 3 and not more than 6 inches of soil from the impacted area. The removal of soil in excess of 6 inches must be authorized in advance in a work order amendment.
- Confirm through sampling that residual contamination has been removed. A soil confirmation sampling plan will be developed prior to debris removal activities. The sampling plan shall consider both fixed lab analysis for confirmation samples and the use of field portable x-ray fluorescence (XRF) to guide excavation activities and

potentially for confirmation analysis. DEQ will provide additional scoping, for both XRF and for confirmation analysis by fixed lab, as needed.

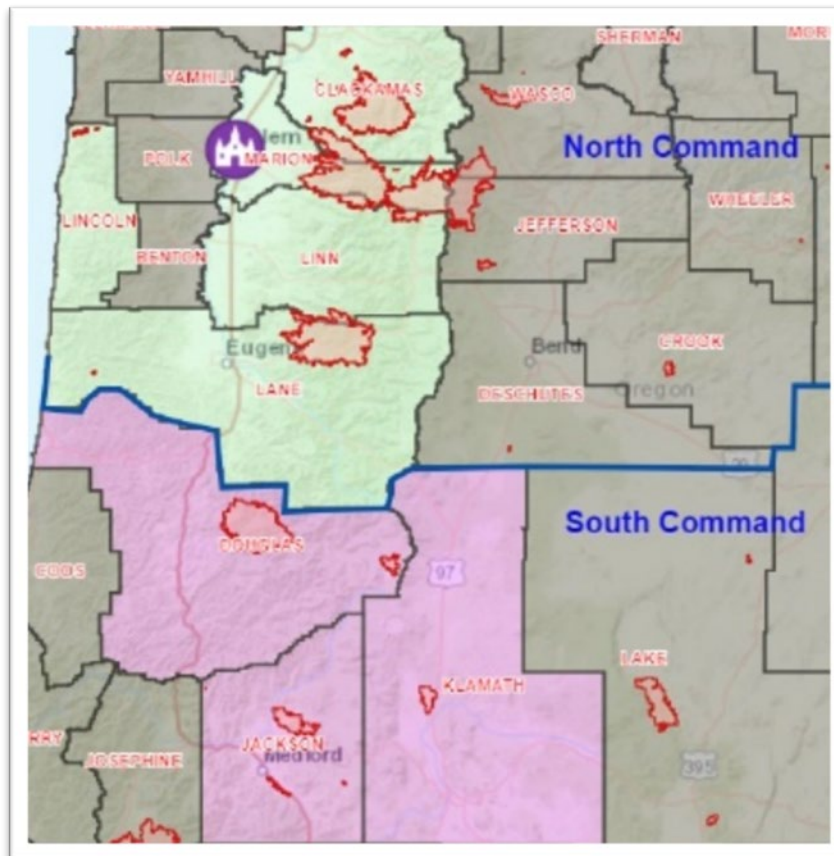
- Assess trees in the projects area, identify and remove all trees that require removal for the protection of public health and safety and the environment.
- After all debris is removed complete the erosion control measures in accordance with the EPP.
- Confirm final approval of each site and obtain County approval of site readiness for building permit issuance.

5.3 Schedule

Prior to beginning work, Contractors shall submit a proposed schedule of operation. All work shall be performed between the hours of 7:00 A.M. to 6:00 P.M., Monday through Saturday, unless authorized by ODOT's Area Incident Commander or designee. Every fifth (5) Saturday will be a safety / stand down day. A daily briefing will commence at the staging area at 7:00 AM every day of operation.

Scheduling and coordination of construction activity shall be the sole responsibility of Contractors within the following limitations:

- ODOT's Consultant in coordination with ODOT's Area Incident Commander or designee will determine in which Operational Branch the Contractors will begin work. Two Complex Commands (North and South) have been identified as shown below.



- Contractors shall employ the sequence of removal activity designed by the Area Incident Commander and described within this document.

- Contractors will verify appropriate rights to enter have been obtained and all necessary testing and documentation have been completed prior to implementing any phase of removal activity.

5.4 Debris Types and Disposal Facilities

ODOT's Consultant and local agencies will work to identify disposal facilities capable of handling the waste generated from the debris removal activities. The appendix provides disposal information to assist the Contractor in the removal of the debris from the Oregon Wildfire Incident per fire. The Consultant is responsible for verifying that all disposal and recycling sites utilized in the completion of this project have all required permits and licenses.

5.5 Special Provisions

5.5.1 Appliance and Vehicle Recycling

Contractors or their subcontractors shall provide for removal and disposal of material that may require special handling, such as various automobile or appliance components.

Materials that must be removed from appliances and vehicles prior to crushing, baling, or shredding for recycling include, but are not limited to:

- Chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), and hydrochlorofluorocarbons (HCFCs) used as refrigerants.
- Polychlorinated biphenyls (PCBs) known to be contained within motor capacitors and fluorescent light ballasts.
- Used oils as defined in Article 13 of Chapter 6.5 of the Health and Safety Code (includes lubricating fluids, compressor oils, and transmission oils).
- Sodium azide canisters in unspent automobile air bags.
- Antifreeze in coolant systems.
- Mercury that may be found in thermometers, thermostats, barometers, electrical switches, and batteries.

The Contractors shall maintain accurate records detailing the removal and disposal operations involving all such materials and shall provide the Operations Chief with all manifests and/or documentation pertaining to the work. Vehicles and appliances that were completely consumed by the fire will probably not contain any of the above items. The vehicles and appliances will be treated as metal debris and removed accordingly.

5.5.2 Household Hazardous Waste (HHW) Handling

Colors, Stakes, and Symbols

- White stake and signage: Site has been cleared of HHW and High Hazard and is completed
- Orange mark: Empty HHW container or cylinder to be left in place
- White MT mark: Fuel tank contents were transferred, and tank left in place
- Pink paint: Suspect ACM that would take > .5 hours and will be left in place
- Orange paint: Septic system location, damaged transformer, or any item left for high hazard team to complete

5.5.3 Old Hand-dug Groundwater Wells

Old hand-dug groundwater wells may be encountered throughout the project work area when removing debris from the home sites. These structures can vary in diameter and depth.

5.6 Hazard Marking

After wildfires structural debris can blend in with potentially hazardous substances. In an attempt to visually communicate the hazards in the field the following guide will be used to indicate if a hazard is or is not visually present. Each task force leader will determine if any member has color perception issues.

Debris or Potential Hazard	Spray Paint Color
HHW, Battery, Tank, Cylinder	Bright Orange
Suspect Asbestos Containing Material	Bright Pink
Material Safe for Normal Disposal	Bright Green

5.7 Project Signs

Signage shall be posted at all work areas. This will include appropriate signage to ensure safe traffic flow through the project area as well as signs at the debris worksites and project site barricades at tree removal locations. All project signage will be clearly posted to notify the community for potential dangers, and the necessary safety measures for themselves and on-site crews in order to maintain a safe work site.

5.7.1 Address Signs

Each parcel identified for PPDR will be identified with reflective aluminum address signs. The background will be a reflective green and all the text will be a reflective white. The numbering for the address will be at minimum of 4 inches in height.

5.8 Background Assessments

The Contractors shall be responsible for assessing background soil conditions of the impacted areas. Oregon DEQ has established background metals statewide and regional concentrations for 16 metals to help direct decision making at cleanup sites (<https://www.oregon.gov/deq/FilterDocs/DebORbackgroundMetal.pdf>). Additionally, Oregon DEQ has established residential risk-based concentrations for individual chemicals including some of the 16 metals where background concentrations have been established (<https://www.oregon.gov/deq/FilterDocs/RBDMTable.pdf>). The Contractors will sample soils to establish the metal concentrations around the impacted area. All samples shall be analyzed for Resource Conservation and Recovery Act (RCRA) 8 metals (arsenic, barium, cadmium, chromium, lead, mercury, , selenium, and silver). Please refer to the information fact sheet for proper guidance for recommended soil sampling methods: <https://www.oregon.gov/deq/wildfires/Documents/DIYCleanupfires2020.pdf>. A soil sampling plan will be developed by the Consultant with DEQ support. Results from these samples will be used to establish cleanup goals as described in Section 6.6.

6 Debris Removal Operation Components

The following summarizes the tasks in order that the Contractors, or an approved subcontractor, will undertake during structural debris removal activities. Prior to any activities being conducted on a property, a properly executed Right-of Entry (ROE) will be obtained by the County. Included in the ROE, each property owner will be able to identify specific requests for the removal of materials and potential location of items that might be recovered. **(Note: No work by ODOT's Consultants or its subcontractor(s), including inspection of structures and/or evaluation of hazards, will occur on private property until the property owner signs the Right-of Entry, no exceptions).**

6.1 Training

Monitors / Contractors / Vendors Onboarding

All monitors and contractors will be required to receive mandatory program training that will cover all items within this DROP and the EPP. Once training is completed, monitors and contractor will sign off that training was provided. In addition, contractors will acknowledge in writing that they will follow all protocols presented in this DROP and the EPP (Attached). This document will be signed and uploaded to the 2020 ODOT Wildfire Debris Monitoring SharePoint site.

The monitor will produce all training materials in coordination with ODOT. Final sign-off and approval will be provided by ODOT to ensure all pertinent material are implemented in the training modules.

6.2 Licenses / Certificates

Prior to commencing work, contractors are to furnish the Monitor and ODOT with all pertinent licenses that will be required to clear specific parcels. The following list are potential licenses that may be needed to clear specific site:

- Professional Herbicides License
- Erosion and Sediment Control (CPESC) Certification
- Sediment Control Lead (CESCL) Certification
- Asbestos / Lead Certification

Please refer to the EPP for more specific details on required licenses.

6.3 Site Assessment

To prepare each property for cleanup, the Consultant will perform a site documentation on all the impacted lots. Site documentation will include photographic records as described in 4.6.3.1 and foundation verification as described in 4.6.3.2 and additional data as determined necessary by the Operations Chief. Please refer to the Program's Air Monitoring plan for additional information.

6.3.1 Site Photo Logs

The Consultant will take photographs from all sides of the impacted structure. Additional photos should also be collected of other structures and vehicle if not shown in the original photos. The Consultant will collect photos showing the location of the soil confirmation samples post removal and air sampling pre-disturbance samples, if applicable. The Consultant will document all sample locations with photographs.

6.3.2 Radiological Monitoring

While unlikely to be an issue, a consultant shall perform a radiological survey around the impacted structures, not previously surveyed by EPA during Step 1 work. The survey equipment should be designed for general radiological surveying such as a Ludlum 192 or equivalent. The Contractor will provide the calibrated radiological equipment to the consultant for the duration of the project. The contractor performing the survey should also wear a personal alarming dosimeter set to a threshold consistent with the safety protocols for radiation workers not to exceed worker dose rate regulations. The contractor must be a vendor licensed by the State of Oregon to be a radiation services provider (www.healthoregon.org/RML).

The action level for this project is set at three times background. Should a level of 3x background be detected, the surveyor will isolate (i.e., cordon off) the area and notify the On-Site Incident Commander (ODOT) and Consultant's Environmental Unit Supervisor. The elevated reading(s) will be traced until the source can be determined to be due natural sources such as brick or geological formations. Should the reading not be from natural sources the Operations Chief will determine the location and rate and develop an action plan to secure the

source as long as the reading does not exceed 2mR/hr at one foot, the contractor should notify OHA Radiation Protection Services.

“Grandpa’s Watch Provision”: “Antiquities intended for use by the general public” are exempted from licensing in Oregon and may be kept by the property owner if they prefer. Examples may include time pieces, some pottery containing NORM, etc. If an item is damaged or if the landowner prefers the item to be disposed, it must be disposed out of state at a facility licensed to accept low level radioactive waste. The crew should call a low level waste broker (e.g., Thomas Gray, PermaFix) to assist in facilitating disposal. Items from multiple sites should be staged together and disposed as a batch to improve efficiency of operations and reduce cost.

If the material is not a small personal item or naturally occurring source or formation, additional investigation is needed to determine whether the waste is legal to dispose within the State of Oregon. This would likely involve identifying the specific isotopic concentrations of radionuclides and consultation with RPS and ODOE. We recommend that on-site crews have equipment capable of identifying specific radionuclides and concentrations.

If the contractor identifies the item to be a sealed source, the contractor should notify OHA Radiation Protection Services (971-673-0490).

Notes:

1. Property screening is a slow and involved effort. The state (RPS) does not have the staff availability to conduct large scale surveying. We assume the contractor is performing 100% of the survey work.
2. We recommend that due to the very low likelihood to encounter radioactive materials on private properties, a self-reporting survey from property owners to pre-identify sites where radioactive materials may be present, then only survey those properties. Additionally, please consult with RPS to identify whether any radioactive material licensees are located in the affected area, and make sure to survey those locations.

Relevant regulations:

OAR 333 Division 102 Exemptions for Unimportant Quantities of Source Material:

<https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=60095>

OAR 345 Division 50 rules defining “radioactive waste” prohibited from disposal within the state of Oregon:

https://secure.sos.state.or.us/oard/displayDivisionRules.action%3BJSESSIONID_OARD=cEvI4-1cwJkYFPai2eKxcwHAUj20YEiO_RiPf4ZhVo_kY-DY712%211243901809?selectedDivision=1588

Link to Tables 1-3 referenced in OAR 345 Division 50: <https://www.oregon.gov/energy/facilities-safety/Documents/Siting/Rules/div50t.pdf>

ORS 469.525 prohibits the disposal of radioactive material within the state.

6.3.3 Foundation Verification

The Consultant will be responsible for providing the measurements of the foundation, piers, sheds, or other structures to ODOT. The Consultant will measure and record the dimensions of the burned structure footprint at each property, measure and record the dimensions of the ash area footprint at each property, and monitor the ash at each property for radioactivity with field monitoring equipment provided by the Consultant.

6.4 Asbestos Survey

To be protective of public health and the surrounding community, ODOT has elected to perform a site assessment and evaluate each site for asbestos-containing materials (ACM) before debris removal.

Prior to the removal of ash and debris, an AHERA accredited building inspector will assess and sample all structures and all ash and debris generated from structures to identify the presence of ACM. DEQ has prepared guidance for accredited inspectors conducting asbestos surveys on wildfire ash and debris. (<https://www.oregon.gov/deq/wildfires/Documents/wfSurveyFS.pdf>) In lieu of an asbestos survey, all ash and debris may be presumed asbestos-containing.

6.5 Asbestos-Containing Materials Requirements & Best Management Practices

The following requirements and BMPs should be used when undertaking removal actions pursuant to a declared State of Emergency. These BMPs should be undertaken to address the removal of ash and debris that contain asbestos-containing materials (ACMs), and air monitoring and sampling from the disaster or incident site (Please refer to the State air monitoring plan for additional information). Use of BMPs will also ensure the proper management and removal of asbestos-containing waste materials in a manner that ensures protection of public health and the environment, as well as, ensuring the health and safety of on-site personnel.

As required by Oregon's asbestos rules for abatement of friable asbestos-containing materials, only DEQ-licensed asbestos abatement contractors may perform removal activities of ACMs. On Oct. 9, 2020, the Environmental Quality Commission approved temporary variances from certain asbestos regulations related to the cleanup of ash and debris following catastrophic wildfires across Oregon in August and September 2020. More information regarding the temporary rule suspensions may be reviewed on the Wildfire Cleanup page. (<https://www.oregon.gov/deq/wildfires/Pages/Temporary-rule-suspensions.aspx>)

The Contractors shall comply with the following:

- For non-residential properties (greater than 4 dwelling units), 10-day notification to DEQ is required on appropriate DEQ form. (<https://www.oregon.gov/deq/FilterDocs/ASN1form.pdf>)
 - DEQ may waive the required 10-day notification period to facilitate immediate cleanup activities upon notice. Requests must be made in writing to the appropriate DEQ regional staff. Fees for non-residential asbestos abatement projects have been waived by DEQ.
- Notification to DEQ is not required for residential properties (four or fewer dwelling units)
- All applicable work practices and procedures in OAR 340-248-0270 that were not waived by the temporary rule suspension must be followed.
- All packaging, labeling, transport, and disposal rules in OAR 340-248-0280 remain in effect.

At a minimum, the Contractors shall follow the following BMPs for undertaking debris removal activities:

- As required by Oregon's asbestos rules for abatement of friable asbestos-containing materials, only DEQ-licensed asbestos abatement contractors may perform removal activities of ACMs. On Oct. 9, 2020, the Environmental Quality Commission approved temporary variances from certain asbestos regulations related to the cleanup of ash and debris following catastrophic wildfires across Oregon in August and September 2020. More information regarding the temporary rule suspensions may be reviewed on the

Wildfire Cleanup page. (<https://www.oregon.gov/deq/wildfires/Pages/Temporary-rule-suspensions.aspx>)

- All on-site personnel removing ACM debris must be an “accredited inspector” as defined by OAR-304-248-0130. This individual must have completed training, received accreditation, and maintains valid accreditation under 40 C.F.R Part 763 Subpart E, appendix C.
- All on-site cleanup personnel must be 40-hour HAZWOPER trained Under 29 CFR 1910.120 when a potential site hazard has been identified.
- All ACWM that is removed from the site must be adequately wetted prior to being bagged or burrito wrapped to meet the asbestos rule for leak-tight packaging. The following form is required to be completed:
<https://www.oregon.gov/deq/FilterDocs/ASN4.pdf>
- If bulk loading of ACM is utilized, the bin or container used for transport (e.g. end-dump trailer or roll-off box) shall be double-lined with 10-mil poly in such a way that once loaded both layers can be sealed up independently.
- Conduct on-site and off-site air monitoring consistent with the air monitoring plan and sampling for asbestos and heavy metals during ACM and debris removal operations to demonstrate the effectiveness of engineering controls to protect cleanup personnel and the surrounding community (Please reference the Programs Air Monitoring Plan for additional information).
- Visible emissions are not allowed during an asbestos abatement project. Use of engineering controls to mitigate dust and fiber release during removal is required. Use wet methods to control dust/fibers. The equipment used for delivering water must be designed properly. For large areas, it is recommended that cleanup contractors will use fire grade firefighting nozzles with shut off valves for dust control. The fire nozzle shall have sufficient water pressure to generate a high mist fog stream. The fire nozzle should have an adjustable flow rate, preferably 20 to 60 gallons per minute, and constructed of hard coated aluminum with brass and stainless steel internal components. **Plastic nozzles should not be used for large areas.** While the costs of metal firefighting nozzles are significantly more than plastic nozzles, metal nozzles are only able to generate a sufficient fog to control dust.
- All burn ash and debris must be sufficiently wetted 48 to 72 hours in advance of initiating removal of the material. The water shall be applied in a manner so not to generate any runoff (Fine Mist Only). Engineering controls for storm water discharges must be in place prior to dust control operations.
- All waste material that is not loaded out at the end of each workday must be stockpiled, sufficiently wetted, and covered to prevent the offsite migration of contaminants.
- All hazardous waste haulers who observe loading operations must stay within their vehicle to avoid any exposure to the hazardous material. If drivers must step out outside of the vehicle cab, and/or covering (e.g. tarping) the trailer or container he/she must wear N95 masks and coveralls.
- All approved landfill operators that may come in contact with the waste during off-loading operations should follow their facilities protocols for wearing PPE and respiratory protection.

- All ACM and debris removed from the property, site or area must be manifested and transported for disposal to a permitted treatment, storage, and disposal facility in good standing with local, state, and federal agencies. An Asbestos Waste Shipment Report form (<https://www.oregon.gov/deq/FilterDocs/ASN4.pdf>) must accompany the asbestos-containing waste material from point of generation to disposal.

6.6 X-ray fluorescence spectroscopy (XRF)

Handheld XRF analyzers have become the instrument of choice for soils analysis when characterizing, remediating and monitoring contaminated soil sites. Metals in soil will be assessed using EPA Method 6200. In this process, the soil is removed from the ground and mixed in a thin-walled plastic bag or bowl. The material is homogenized and large rocks and debris are removed. The material is sieved and the XRF measurement is collected. According to EPA Method 6200, moisture content between 5 and 20 percent will produce minimal error in XRF readings. For samples with moisture content above 20 percent or if a sample is saturated at the time of collection, the sample will be dried prior to analyzing with the XRF, and a minimum of 10 percent of XRF measurements are confirmed by laboratory analysis. The complete scope for soil sampling, laboratory analysis, and XRF analysis will be outlined in a quality assurance project plan prepared by the Contractor.

6.7 Debris removal

Debris removal will be conducted on each site following a specific, prescribed process and order as follows:

- Install all required stormwater and erosion controls in accordance with the EPP and Sections 6.10 - 6.14 of this document prior to debris removal (such as staked wattles, berms, check dams, storm drain inlet protections, etc.). Water quality controls will be in place prior to debris removal.
- Identify and remove ACM;
- Segregate and remove all metals; Washing of metal is allowed but with a fine mist and scrubbing with a broom is preferred to avoid further contamination during transport.
- Remove ash and commingled debris from the site. Dust emissions during all phases of the removal will be controlled via a water spray from a firefighting grade nozzle;
- Drop chimneys down to ground level and remove chimneys and foundation. Remove all chimneys and foundations. CDR Maguire's engineer has determined that all chimneys pose a health and safety risk to the removal team. All chimneys will be taken down with proper dust control. If feasible, the chimney and concrete foundation or slab will be recycled. The slab or foundation may have to be washed down to ensure the concrete is not contaminated;
- Remove additional ash and commingled debris as needed; and
- Remove a minimum of 3 to a maximum of 6 inches of soil from debris site.

6.8 Confirmation Sampling

Ash and debris may include various hazardous materials. Toxic metals, such as arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver, are most often present following a fire. These and other substances may contaminate the soil beneath the ash and debris impacted area.

DEQ recommends contractors have a licensed professional to conduct soil sampling immediately following the completion of wildfire debris removal activities. At a minimum, impacted areas should be sampled and analyzed for the Resource Conservation and Recovery

Act (RCRA) 8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver).

See refer to section 6.8 for cleanup goals. Where sample results indicate that concentrations of one or more metals exceed the cleanup goals, DEQ recommends that an additional six inches of surface soil be removed within that space area (referenced by pin flags placed during sampling).

For parcels that have been determined to contain hazardous materials, the contractor will develop a sampling plan with DEQ guidance to remediate deficiencies. DEQ prepared an XRF scope that can be built upon in a sampling plan.

In addition, DEQ requires an accredited inspector conduct an asbestos survey prior to demolition and renovation activities on: Residential renovation and demolition projects on buildings constructed before Jan. 1, 2004. All commercial renovation and demolition projects regardless of construction date.

By Jan. 1, 2021, asbestos survey bulk samples must be analyzed by a laboratory that participates in a nationally recognized accreditation or testing program. This new requirement establishes a common level of competency and reliability in analysis to properly identify asbestos content. DEQ will maintain a public list of accredited laboratories on its website beginning Jan. 1, 2021.

Asbestos survey reports Asbestos survey reports must now meet standard requirements. This requirement ensures all asbestos surveys evaluate and report consistent information. Learn more about asbestos survey requirements at: <https://go.usa.gov/xdFAg>

Asbestos abatement project notification: The owner, operator or contractor for the facility must submit notifications to DEQ prior to beginning asbestos abatement work. Required notifications include:

- ASN-1 Project Notification for abatement of friable asbestos-containing material
- ASN-6 Project Notification for nonfriable asbestos abatement

6.9 Cleanup Goals

The cleanup goals for this project are based on Oregon risk-based concentrations and regional background concentrations of metals in soil established by Oregon DEQ. For each individual metal, if the background concentration is below the screening level, then the cleanup goal is the screening level. If the background concentration exceeds the screening level, then the cleanup goal is valued at two times the background concentration.

Confirmation sampling results will be compared to the project established cleanup goals to assess the effectiveness of the ash and debris removal. If any of the confirmation sampling results exceeds the cleanup goals, then the parcel will be further excavated at the direction of the Operations Chief. The parcel will be sampled again after the excavation is complete. Table 5 provides the cleanup goals for this project.

Tables: Soil Testing and Screening Criteria

Initial Health Screening Criteria for Soil		
Metal	Health Screening Level mg/Kg	Cleanup Level
Arsenic	19	Background
Barium	15,000	Health Screen
Cadmium	71	Health Screen
Chromium	120,000	Health Screen
Lead	400	Health Screen
Mercury	23	Health Screen
Selenium	390	Health Screen
Silver	390	Health Screen

Estimated Square Footage of Ash Footprint	Number of Samples
0 to 100 square feet	1
101 to 1,000 square feet	2
1,001 to 1,500 square feet	3
1,501 to 2,000 square feet	4
2,001 to 5,000 square feet	5
Greater than 5,000 square feet	Consult with DEQ

Please note, levels are for soils that remain in place. Any soil that is removed, will require some sampling for waste characterization to determine disposal options.

6.10 Hazard Tree Identification and Removal

A certified arborist or professional forester will perform an assessment of all trees in the impacted area and identify those trees which pose a hazard and must be removed. The objectives of the tree assessment and inventory will include:

- Identification of all trees damaged by the incident,
- Assessment of the damage and survivability to each tree,
- Assessment of each tree against established indicators of hazardous tree criterion, and
- Determination which trees should be removed during recovery efforts conducted by the Consultant.

6.11 Tree Removal

Following identification and marking of hazardous trees and only after removal activities are complete and confirmation sampling has been taken, the Contractor, or an approved subcontractor, will remove trees employing all engineering controls to mitigate dust generation and ensure site safety protocols. All wastes generated from the removal of trees will be hauled

to an appropriate waste or recycling facility. The exception will be chipped wood that will be used for erosion control, as appropriate.

6.12 Debris and Tree Removal in Public Areas

The public areas (playground and park) adjacent to home sites may fall within various land ownership which could include city, county, Tribe, state, or federal agency. These stakeholders may request debris and tree removal within these areas be included in the project. If approved, the Contractor will conduct debris removal consistent with the process for private property sites. All erosion control, including design, monitoring, and maintenance, will be conducted by the Contractor.

6.13 Pre Debris and Tree Removal Erosion Control

One of the most prevalent water pollution threats from burn sites is the discharge of ash and other burn related debris into storm drains or natural receiving waters. Sites where debris and ash have been removed are often graded and have soils prepared similar to those of construction projects. Debris removal and site clearing activities increase the exposure of soils to wind, rain, and concentrated flows that cause erosion and adversely impact storm water quality with high levels of total suspended solids and many other pollutants, which subsequently impacts surface waters.

The main objective of erosion control is to stabilize disturbed soil and reduce sediment transport caused by erosion from entering a storm drain system or receiving water body during debris removal after a disaster. BMPs for storm water controls may include the use of fiber rolls/staked wattles, silt fences, erosion control blankets, hydroseeding, soil binders, and other devices to reduce sediments. These controls must be installed prior to debris removal, tree removal, or land disturbance activities begin. Effort should be made to preserve existing vegetation, if practicable. Once the removal has been completed, operation and maintenance of storm water control measures must be maintained by the property owner or the local government.

Erosion control is critical for the success of this project. Erosion control shall be installed before debris removal occurs per the EPP, and the final controls shall be installed after each lot has met the cleanup goals per the EPP. Prior to the removal of the structure, some erosion control will be necessary to prevent the migration of contaminants off site. Work may consist of installing silt fences, fiber rolls, erosion control blankets and other erosion control BMPs necessary for improving site stability. These measures are to be implemented prior to work beginning so that no runoff from wetting during removal or from storms during the removal are present.

The pre and post erosion controls will be monitored for effectiveness by the erosion control professionals in accordance with the EPP. When the controls are found to require maintenance or are found to be inadequate to be protection of water quality, the contractors shall follow the required corrective actions in accordance with the EPP, such as correcting a failed control measure, or designing and installing new control measures, etc. If the erosion control measures fail to retain sediment, the contractor shall employ corrective measures, and notify the erosion and sediment control monitor immediately. Please see the EPP APPENDIX A for additional guidance.

After all debris is removed, the Contractors will complete the final erosion control measures. The erosion control devices shall be installed using the erosion control guidelines established by this Operations Plan, in the EPP, and as directed by the Operations Chief, ODOT's Environmental Lead, DEQ, or appropriate local agency.

6.14 Post Debris and Tree Removal Erosion Control Methods

The methods for final (post-debris removal) erosion control were based on the slope of each lot, proximity and contribution to stormwater, and the proximity of a local waterbody. Each residential parcel will receive one of the following BMP treatments from a CEPSC/CESLs professional:

- Level 1: Mulch or Hydroseeding. Mulch shall be between 4 to 6 inches in depth and cover over 90% of the lot impacted by the structural debris. Specifications for hydroseeding can be found in the Oregon Department of Transportation's Erosion Control Field Manual.
- Level 2: Mulch or Hydroseeding and Fiber Log and/or Silt Fence. Fiber Logs shall be a minimum of 8 to 12" in diameter and shall be staked and keyed in. Silt Fences shall be wire-backed in snow zones and used in areas on slopes greater than 7%.
- Level 3: Mulch or Hydroseeding, Fiber Log and/or Silt Fence and Erosion Control Blanket.
- Level 4: Site Specific Treatment – consult with local agencies.

Additional erosion control methods may be developed after consultation with local agencies.

6.15 Erosion Control Materials and Specifications

Materials used for erosion control shall be placed in accordance with this Operations Plan, the EPP, or as directed by the Operations Chief, ODOT's Environmental Lead, DEQ, or appropriate local agency.

The following materials have been identified for the project as needed (Please reference the EPP for additional material list):

- Hydroseed
- Fiber bundles (are these different from "staked wattles" this document references elsewhere?)
- Erosion Control Blankets
- Silt Fence
- Class II road base or equivalent
- Rock and/or cobble for erosion control
- Wood Chips?

Quantities and location of the materials will be determined in the field by the erosion control lead and/or Operations Chief.

Hydroseeding – Hydroseeding (or hydraulic mulch seeding, hydro-mulching, hydroseeding) is a planting process that uses a slurry of seed and mulch. The slurry is transported in a tank, either truck or trailer-mounted and sprayed on prepared ground. Material specifications can be found in the Oregon Department of Transportation's Erosion Control Field Manual.

Fiber Roll Barriers– Fiber roll barriers (also called sediment logs or straw wattles) are commercially manufactured and usually consist of milled wood or other natural fibers sewn into a circular weave fabric. Fiber rolls are good perimeter protection, designed to slow stormwater runoff and trap small amounts of sediment. Fiber rolls shall be 8" to 12" in diameter. Slash and small woody debris may be chipped during the debris removal process and stockpiled. These

wood chips would be available on-site and used as an erosion control measure, as directed by ODOT. Appendix D provides chipping protocols.

Erosion Control Blanket – Erosion control blanket is a manufactured blanket or mat that is designed to hold soil and seed in place on slopes. It consists of organic, biodegradable materials such as wood fiber, coconut fiber, or a combination of these materials. It is commercially manufactured and delivered to the site in rolls.

Erosion control blankets shall be 100% organic biodegradable (including parent material, stitching, and netting). The minimum thickness shall be 3/8" (9mm). The netting shall be stitched to prevent separation of the net from the parent material. The netting shall be capable of withstanding moderate foot traffic without tearing or puncturing. Neither the netting, nor the installation, shall pose a safety risk to people walking on/crossing over it. Neither shall the blanket or netting pose a hazard to wildlife such as birds, reptiles and amphibians.

Appropriate products include, but may not be limited to:

- Curlex I Fibernet (American Excelsior)
- Curlex II Fibernet (American Excelsior)
- AEC Premier Straw Fibernet (American Excelsior)
- S 75 BD (North American Green)
- S 150 BN (North American Green)
- SC 150 BN (North American Green)
- C125 BN (North American Green)
- Excel S-2 All Natural (Western Excelsior)
- Excel SS-2 All Natural (Western Excelsior)
- Excel CS-3 All Natural (Western Excelsior)
- Excel CC-4 All Natural (Western Excelsior)

Silt Fence – Silt fence consists of a permeable filter fabric that is keyed into the ground and staked beyond the toe of a slope. The fabric pools runoff, causing entrained sediment to settle out behind the fence while water slowly filters through the fabric.

Anchors – Anchors are devices that secure erosion control materials such as fiber roll barriers, erosion control blankets, and silt fence in place.

For erosion control blankets, anchors shall be completely biodegradable, environmentally safe, and shall have no potential for soil and/or water contamination. Steel wire pins or staples will not be approved. Petroleum based plastics or composites containing petroleum-based plastics will not be approved. Materials deemed to present a hazard from splintering or spearing will not be approved. Wood stakes or stakes manufactured from wood byproducts may be approved.

Appropriate products include, but may not be limited to:

- E-Staple (American Excelsior)
- CF Bio Staple (CFM Corp)
- Green Stake (Green Stake)
- Bio-Stake (North American Green)

- Enviro-Stake (ODC Inc)

For silt fence, anchor posts shall be at least 36" long. Steel posts should weigh no less than one pound per linear foot.

For fiber roll barriers, stakes shall be wooden and at least 18" long.

Netting – Netting is a manufactured product intended to secure wood chips or pine needle mulch to the soil surface.

Netting shall be 100% organic biodegradable and may consist of paper, jute, or cotton netting. Netting material shall be approved by CDR Maguire staff prior to installation.

Gravel Bags – Gravel bags are intended to slow stormwater flows and trap sediment on paved surfaces.

Gravel bags shall be filled with $\frac{3}{4}$ " to $1\frac{1}{2}$ " *washed* rock. Bags filled with sand will not be approved.

6.15 Installation Standards

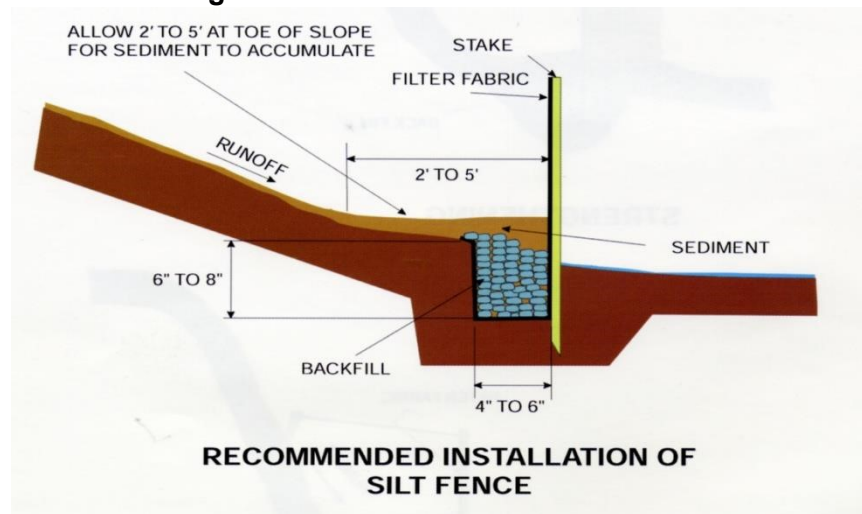
Erosion control BMPs installation shall consist of furnishing and applying erosion control materials. The work includes proper material handling, area preparation, proper application of the erosion control materials and structures, and stand maintenance for the areas shown on the Plans.

Area Management – Construction/demolition materials shall be stored to the maximum extent possible on paved surfaces. When this is not possible, construction/demolition materials shall be stored on areas where a future structure or other hard impervious surface will be constructed, such as a future building foundation or driveway.

Construction/demolition vehicles shall remain on paved surfaces to the maximum extent possible. When this is not possible, construction/demolition vehicles shall be used in areas where rebuild of impervious surfaces will occur, such as building foundation or driveway locations.

Silt Fence – Install silt fences as directed by the Operations Chief. Six inches of the fence shall be buried in a trench along the base of the fence. The posts shall be spaced a maximum of 10 feet apart and driven 18" into the soil or to refusal. Sediment shall be removed from the up-slope side of the fence when it reaches $\frac{1}{3}$ the height of the fence. Refer to standard detail "Silt Fence" below.

Figure 6. Silt Fence Detail Drawing



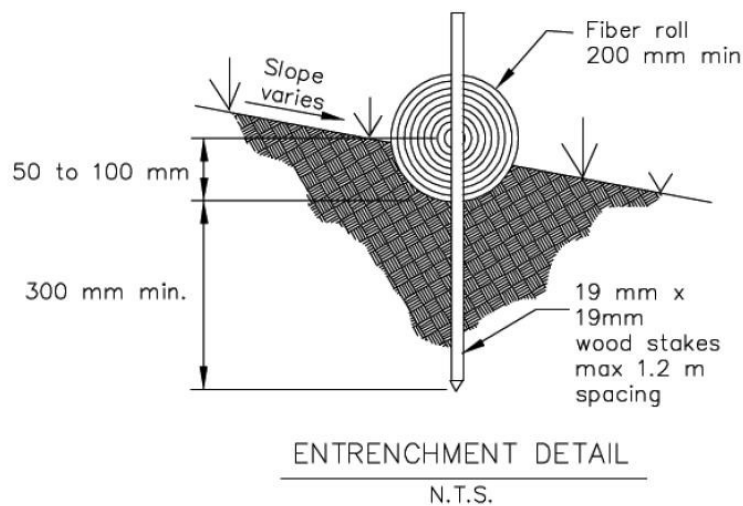
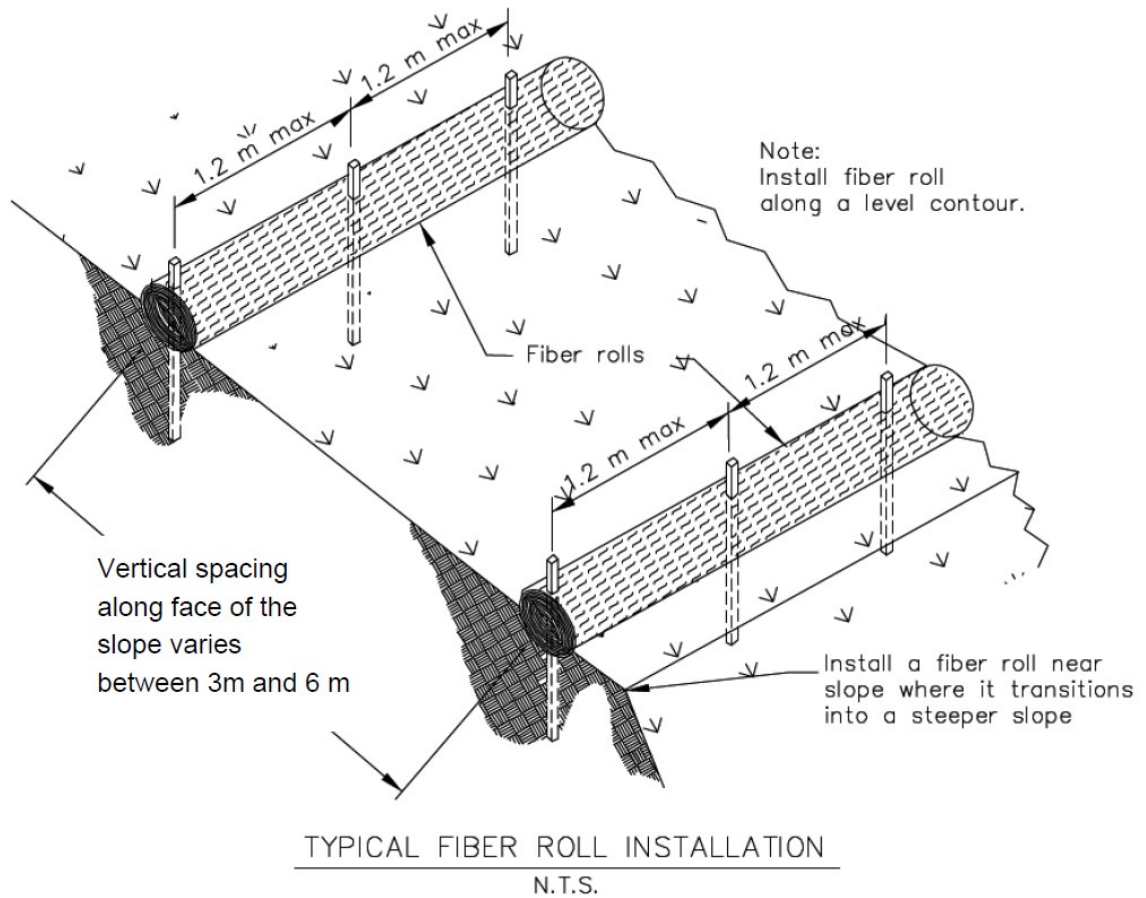
Erosion Control Blanket – Install erosion control blankets as directed by the Operations Chief. Starting at the top of the slope, anchor the blanket in a 6-inch trench, backfill, and securely tamp the backfilled soil. Unroll blanket downslope overlapping parallel and subsequent blankets a minimum of 4 inches. Secure blankets with anchors along the overlaps and place a minimum of 3 anchors per square yard. Contractors shall determine if more anchors are required and shall be responsible for installing the erosion control blanket so that it will stay in place.

Fiber Roll Barriers – Install 8 or 12-inch fiber roll barriers as directed by Operations Chief. Place the fiber roll barrier in a 2 to 4-inch trench perpendicular to the flow path of storm water. Drive stakes in perpendicular to the ground. If required on steep slopes drive stakes on either side of the roll and bind together with bailing wire. Weighted rolls may be used as appropriate, especially on driveways. Refer to detail “Fiber Roll” below. Typical installation spacing for the fiber rolls will be as follows:

- 10 feet apart for slopes steeper than 2:1 (horizontal:vertical)
- 15 feet apart for slopes from 2:1 to 4:1 (horizontal:vertical)
- 20 feet apart for slopes from 4:1 to 10:1 (horizontal:vertical)
- 50 feet apart for slopes flatter than 10:1 (horizontal:vertical)

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Figure 7. Fiber Roll Detail Drawings for Steep Slopes



Gravel Bags – Gravel bags or weighted fiber rolls shall be placed on the downslope edge of impervious surfaces, such as driveways. Place gravel bags in double row in a “U” shape.

6.16 Site Approval

Following placement of the final erosion control, the Consultant will approve each site’s debris removal as complete. Contractors will remove temporary BMPs (silt fences, wattles, check dams) for proper disposal, and properly dispose of the removed sediments once site is deemed stable. Only the final erosion controls are to be left in place.

6.17 Final Reports

The Consultant will prepare and submit a report for each property to ODOT summarizing the data evaluation, a final project report and develop a cost analysis formula to assist with the cost recovery of insurance and/or other funds.

7 General Operation and Site Controls

7.1 Notices

The following notices, at a minimum, will apply to the project:

- The Contractors shall notify Oregon Utility Notification Center (Oregon 811) at least 48 hours prior to any excavation.
- The Contractor shall notify Oregon DEQ of any friable asbestos abatement at least 10 days prior to the start of abatement activities. Notification is required prior to renovation, demolition related to cleanup of any commercial property, or any property with more than four dwelling units. No fees are required. Contractors may submit a written request to DEQ to waive the 10-day notification requirement for wildfire-related asbestos abatement activities.
- The Contractors shall notify the local fire department and applicable Division Supervisor prior to commencement of work.
- The Contractors shall notify the local power provider and applicable Division Supervisor prior to removal of any damaged structure to ensure the electrical power has been shut off.
- The Contractors shall contact all local utilities and acquire their shut off plans for utilities at the destroyed structures via 811 (<https://digsafelyoregon.com/resources/locate-requests/>).
- The Contractors shall notify ODOT’s Consultant at least 48 hours prior to commencement of the cleanup project.
- The Contractors will use caution around all trees. Only trees identified and marked by a registered forester or certified arborist may be removed.
- If Contractors discover household hazardous materials, the material will be segregated by the Contractors to a temporary on-site storage. As necessary the Contractors will collect and transport HHW to the approved final disposal site. Consultant will identify disposal sites in work orders.

7.2 Dust Controls

The Contractors shall provide water or dust palliative, or both, to prevent dust nuisance at each site. **Dust resulting from Contractor's performance of the work shall be controlled at all times during this project.** The Contractor will provide fire grade firefighting nozzles with shut off valves for dust control. Each removal crew will be provided at least one fire nozzle. These types of fire nozzles in past projects have proven successful in applying the appropriate amount of water to control dust.

7.3 Pre-Watering

Appropriate water runoff controls such as diversion berms coupled with storm drain inlet protections must be in place before any pre-watering activities may commence.

The Contractors shall pre-water each impacted lot 48 to 72 hours in advance of the removal. The water shall be applied in a manner so not to generate any runoff. Water may be applied using side spray from a water tender, hose line, or other method approved by ODOT's Consultants.

7.4 Waste Load Controls

All loads shall have a tracking system to indicate material leaving the site.

All loads shall be wetted down before leaving the site. All loads shall be covered with a tarp. Ash and debris loads will be placed in a plastic liner and seal before covering with a tarp. Concrete loads are exempt from a tarp provided the loads are wetted prior to leaving. If concrete loads generate dust, then the loads must be wetted and covered.

7.5 Traffic Control

The Contractors will provide for all traffic controls established in the health and safety plan and the community health and safety plan. Consultant shall assist the hazard tree removal contractor(s) in arranging for efficient coordination of hazard tree removal trucks, water trucks for dust control, and traffic control in accordance with ODOT traffic standards.

A traffic control plan for the project areas will be submitted prior to work being performed and will be reviewed for approval prior to work. Traffic plans will be updated as needed to adjust for changing conditions on site and in the community. Updated traffic plans will be reviewed and update through the Daily Incident Action Plan.

The Contractors will also establish additional traffic controls as needed to control site vehicle traffic during specific site activities such as equipment movement, press events or visits by dignitaries.

7.6 Equipment Controls

All removal equipment supplied by the Contractors should have glass enclosures and weigh less than 80,000 lb. The goal is to use equipment that minimizes the impact to the local roadway while completing the removal. For example, excavators should be smaller than or equal to a 330 Caterpillar or equivalent and front end loaders should be small than or equal to a 950 Caterpillar or equivalent.

7.7 Pavement and Drainage Protections

At all times, the Contractors shall protect the edge of pavement and county drainage features to the extent feasibly possible.

7.8 Trackout Management

Contractors will implement procedures to prevent or cleanup carryout and trackout as specified below. The use of blower devices, or dry rotary brushes or brooms, for removal of carryout and trackout on public roads is expressly prohibited. The removal of carryout and trackout from paved public roads does not exempt an owner/operator from obtaining state or local agency permits which may be required for the cleanup of mud and dirt on paved public roads.

The Contractors shall prevent carryout and trackout, or immediately remove carryout and trackout when it extends 50 feet or more from the nearest unpaved surface exit point of a site and at the minimum remove all other visible carryout and trackout at the end of each workday.

Cleanup of carryout and trackout shall be accomplished by:

- Manually sweeping and picking up; or
- Operating a rotary brush or broom accompanied or preceded by sufficient wetting; or
- Operating a PM10-efficient street sweeper

7.9 Cost Controls

ODOT's Consultant Finance and Administration Section Chief shall update cost tracking of the removal weekly. The Consultant in coordination with the Contractors will be responsible for establishing a cost tracking spread sheet and system. For each property, unless allowed to be comingled, the Consultant and Contractors will track all direct labor, equipment, disposal, transportation, and erosion costs.

7.10 Potential Earthwork

No more than 50 cubic yards of clean soil will be placed on any one site without written authorization from the on-site Incident Commander and Consultant. If more than 50 cubic yards of material are necessary, the Consultant will apply for a grading permit. If fill material is necessary, the soil shall be placed in thin lifts. Lifts shall not exceed 8 inches uncompacted and shall be applied within 3 percent of optimum moisture content or as directed by the on-site Incident Commander. The lift shall be compacted with a target compaction of 90 percent of the maximum dry density as determined by ASTM D 1557.

8 Project Completion

The project will be considered complete after each lot has been compared to cleanup goals and approved by the Complex Command and Consultant, erosion control placed, final observations are documented, and the invoicing and final reports are provided to the property owners. Hazard tree removal progress completion is recorded in the AGOL Viewer by milepost. Checklists are completed and will address all items listed above before work is accepted as being complete.

8.1 Field Documentation

Documentation shall be maintained and reconciled weekly by the Contractor and Consultant for purposes of payment and applying to FEMA for reimbursement of emergency-related expenses by the Contractor and Consultant. The Consultant and Contractor must track the debris to completion.

8.2 Documentation

Accurate record keeping is crucial to the successful management of funded activities. Insufficient documentation could lead to monitoring findings and repayment of funds. All required documentation associated with a project or activity should tell a complete story of

project eligibility from application to closeout. Consultant will report all required data into the approved system of record as instructed. The Consultant must also maintain a full and current set of all program related documents at their primary office location and available upon request.

- Maintenance and QA/QC of all project field data
- Reconcile data in the ADMS
- Create and management of the ADMS system
- Ensure load ticket reconciliation is being performed accurately and timely
- Creating and assisting with the creation of reports and invoices
- Create and maintain necessary trackers and documents related to data and invoice reconciliation activities
- Reconciling Debris Contractor Invoices, including tipping fees
- Drafting letters of recommendation for payment for invoices
- Ensuring photo and ticket data is uploaded in the SharePoint or other document storage site
- Maintain and keep organized SharePoint or another document storage site. This includes sharing and providing permissions to applicable staff.
- Addressing all data inconsistencies and support issues needed by the field personnel with ADMS system
- Maintain “Fixed Ticket Log”
- Create and provide field data reports (both internal and external) as requested
- Review contracts to adhere to reporting requirements
- Provide data to Finance Manager for invoicing
- Request any missing data including scale tickets, load tickets, daily logs, etc.

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APPENDIX A

ENVIRONMENTAL PROTECTION PLAN



ENVIRONMENTAL PROTECTION PLAN

SUPPLEMENT TO DEBRIS REMOVAL AND OPERATIONS PLAN

FOR

HAZARD TREE AND DEBRIS REMOVAL PROJECT FOLLOWING THE 2020 OREGON FIRES

December 28, 2020

Version 1

Prepared By:

ODOT Environmental and Oregon DEQ

INTRODUCTION

During a local or state declaration of a State of Emergency, rapid response action is necessary to protect response personnel and the public from potential exposure to uncontrolled road hazards, debris flows, hazardous materials, and toxic substances. Previous wildfire disasters have demonstrated exposures to response personnel and have shown that residents returning to their communities have encountered toxic substances within the dust and debris. In addition, wildfires have left danger trees within reach of roadways.

Without the proper identification, handling, and removal of structural ash and debris (including asbestos), the public will continue to be at risk of exposure and homeowners will be unable to rebuild; until danger trees resulting from the fire are removed from along affected highways, the safety of the travelling public will be compromised. To reduce these exposures from structural ash and debris and to restore highway safety, Oregon Governor Kate Brown has authorized (citations in DROP) coordinated emergency debris and hazard tree removal for the devastating 2020 Oregon wildfires. This is referred to as the Hazard Tree and Debris Removal Project (Project).

This Environmental Protection Plan's (Plan) purpose is to provide protections that accelerate the Project's cleanup and recovery, while at the same time protecting public safety, health and the environment. This Plan serves as guidelines to protect aquatic, wildlife and cultural resources as the need develops. This plan is a living document and may be amended as necessary.

Prior to the contractor's commencement of work, contractors will be required to attend a training session to review all environmental requirements presented in this document and the DROP. The contractor will acknowledge by signature that all environmental regulation presented in this document are understood and will be followed during the performance of work.

ROLES AND RESPONSIBILITIES

The lead ODOT environmental position assigned to this Project is the State Natural and Cultural Resources Manager (Environmental Manager), who reports to the Deputy Area Commander and the Area Commander. Four ODOT Region Environmental Coordinators (REC's) are assigned to this Project and report to their respective On Scene Incident Commanders and the North and South Operational Chiefs. The Environmental Manager supports the REC's and the REC's are supported by ODOT's statewide team of technical specialists and program leads. The REC's are first point of contact for the Monitoring Consultant Team and Contractors when issues arise or this Plan requires that they be contacted (e.g., cultural site may be impacted, stream crossings other than a temporary bridge). The Oregon Department of Environmental Quality (DEQ) co-manages this Project with the Oregon Office of Emergency Management and ODOT. DEQ has assigned managers and technical staff to support this Project.

The Monitoring Consultant team and Contractors are responsible for ensuring compliance with this Plan, all Project regulatory permits, and all applicable State and Federal environmental and historic preservation laws and regulations.

LEGAL FRAMEWORK

Laws potentially applicable to the Project include:

Oregon Environmental Laws

- Under state law ORS 496.171 - 496.192, the Fish and Wildlife Commission through the Oregon Department of Fish and Wildlife (ODFW) maintains the list of protected native wildlife species in Oregon that have been determined to be either “threatened” or “endangered” according to criteria set forth by rule OAR 635-100-0105.
- Under state law ORS 564, the Oregon Department of Agriculture maintains the list of “threatened” or “endangered” native plant species that are protected on all non-federal public lands.
- Under Oregon’s Removal-Fill Law (ORS 196.795-990), those who plan to remove or fill material in wetlands or waterway are required to obtain a permit from the Department of State Lands
- Under Oregon’s Environmental Protection Act ensures that the federal environmental standards of the Clean Air and Clean Water Acts that were in place and effective as of January 19, 2017 shall remain in effect and be enforceable under state law even if the federal government rolls back these standards. (HB2250, 2019)
- Under state law ORS 468B waters of the state are protected from pollution to protect, maintain and improve the quality of the waters of the state for public water supplies, for propagation of wildlife, fish and aquatic life and for domestic, agricultural industrial, municipal recreational and other legitimate beneficial uses.
- Under state law ORS 509.580 – 509.910, and OAR 635 Division 412, the Fish and Wildlife Commission through ODFW maintains enforcement authority of fish passage criteria for Native Migratory Fish, including fish passage trigger events pertaining to instream or channel work.
- Under ORS192.501, archaeologist site information is exempt from public disclosure and treated as sensitive and confidential information.
- Under ORS 97.745 Indian Graves and Objects are protected and no one shall damage or destroy a burial, cairn, funerary objects or human remains.
- Under ORS 358.653 all state agencies, and any political subdivisions therein (i.e. county government, school districts, etc.) must conserve and manage their historic resources and insure they do not substantially alter them in a manner that is inconsistent with their historic significance, allow them to deteriorate, demolish them, etc.
- Under ORS 358.905-961 “Archaeological sites are acknowledged to be a finite, irreplaceable and non-renewable cultural resource, and are an intrinsic part of the cultural heritage of the people of Oregon”.....and “A person may not excavate, injure, destroy, or alter an archaeological site or object or remove an archaeological object located on public or private lands in Oregon unless....authorized by a permit”.
- Under ORS 390.235 which reaffirms the permitting process and requirements for excavation of an archaeological site but it also sets the stage for curation and consultation under the law.
- Under state law ORS 468A.700 through ORS 468A.760 and OAR 340 Division 248, the Department of Environmental Quality establishes rules to reduce exposure to asbestos

caused by improperly performed asbestos abatement projects through the upgrading of contractor and worker knowledge, skill and competence.

- Under ORS 459, 465, 466, and 468 and OAR 340-101, the state establishes rules to manage solid waste and hazardous waste.
- Under ORS 390.826 the State designates certain river segments as Scenic Waterways and declares that the highest and best uses of the waters within scenic waterways are recreation, fish and wildlife uses. The free-flowing character of these waters shall be maintained in quantities necessary for recreation, fish and wildlife uses. Scenic values are protected.

Federal Environmental Laws

- The Clean Water Act (33 U.S.C. §1251 et seq.) regulates the discharge of pollutants into the nation's surface waters, including lakes, rivers, streams, wetlands and coastal areas. The lead federal agency for implementing the CWA is EPA.
- The Endangered Species Act (16 U.S.C. §1531 et seq.) provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found. The lead federal agencies for implementing ESA are USFWS and NOAA Fisheries Service.
- The Magnuson Stevens Fishery Conservation and Management Act (16 U.S.C. ch. 38 § 1801 et seq.) is the primary law governing marine fisheries management in United States federal waters. The lead federal agency for implementing The Magnuson Stevens Act is the NOAA Fisheries Service.
- The Migratory Bird Treaty Act (16 U.S.C. 703-712) implements four international conservation treaties and is intended to ensure the sustainability of populations of all protected migratory bird species. The lead federal agency for implementing MBTA is USFWS.
- The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c) prohibits anyone without a permit from taking bald or golden eagles, including their parts, nests or eggs. The lead federal agency for implementing BGEPA is USFWS.
- The Wild and Scenic Rivers Act (Public Law 90-542; 16 U.S.C. 1271 et seq.) was created to preserve certain rivers with outstanding natural, cultural and recreational values in a free-flowing condition. To the degree practicable, implement BLM/USFS recommendations for work occurring in a designated Wild and Scenic River highway corridor.
- Section 106 of National Historic Preservation Act (1966) states that any agency funded in full or in part with federal dollars, working on federal land or doing work that requires a federal permit, will take into account the effects of an undertaking on "any district, site, building, structure or object that is included in or eligible for inclusion on the National Register of Historic Places." Coordinate with the ODOT REC for compliance with Section 106.
- Archaeological Resources Protection Act (APRA) – requires that all archaeological investigations on federal lands must be conducted under a permit, issued by the Federal Land Managers.

- Forest Service-specific - The National Forest Management Act (16 U.S.C. 1600(note)) assures that among other goals, to serve the national interest, the renewable resource program must be based on a comprehensive assessment of present and anticipated uses, demand for, and supply of renewable resources from the Nation's public and private forests and rangelands, through analysis of environmental and economic impacts, coordination of multiple use and sustained yield opportunities as provided in the Multiple-Use, Sustained-Yield Act of 1960 (74 Stat. 215; 16 U.S.C. 528-531), and public participation in the development of the program. Note that on Federal ground – both BLM and Forest Service the standards and guidelines from the Northwest Forest Plan are applicable as well as the local Forest Plan/Resource Management Plan.
- The National Environmental Policy Act (42 U.S.C. §4321 et seq.) Assures that all branches of Federal government give proper consideration to the environment prior to undertaking any major federal action that significantly affects the environment.
- Section 6(f)(3) of the Land and Water Conservation Fund Act (LWCA) requires that property acquired or developed with LWCA funds not be converted wholly or partially from outdoor public recreation use without approval of National Park Service (NPS). Prohibits conversion by temporary occupancy of more than 180 days. Oregon State Parks administers this program on behalf of NPS.

The laws identified above should not be considered an exhaustive list and the Project may or may not need additional environmental permits or compliance based on scope of work and site-specific environmental requirements.

COVERED ACTIVITIES

This Plan supplements the Debris Removal Operations Plan (DROP). The Plan identifies Best Management Practices (BMPs) for undertaking the removal of hazard trees from public highway corridors, and household debris from residential and commercial structures after a significant wildfire. Hazardous materials testing, removal, legal requirements, authorities, documentation, etc. are included in the DROP, the Monitoring Consultant Scope of Work, and the Prime Contractor Requests for Proposal. Hazardous materials BMP's in this Plan are limited to fuels, grease, hydraulic fluid, etc. required to support equipment and vehicles conducting the hazard tree removal and household debris cleanup work.

Below are examples of Project activities that may impact the environment and that will be conducted subject to these BMPs:

- 1) Hazard tree and debris removal with heavy equipment and/or hand work. This would include the removal of:
 - a) Hazard trees, limbs and associated brush.
 - b) Burned vehicles, storage containers, heavy equipment, RVs, trailers, etc.
 - c) Destroyed structures, sheds, residential homes, garages, etc.

- d) Foundations, footings, and some retaining walls
 - e) Driveways and/or other pads
 - f) Burned landscaping material such as railroad ties, pressure treated lumber, and other toxic materials
 - g) Other burned debris and metal
- 2) Existing crossings
 - 3) Minor temporary culvert installation/modification in watercourses where flowing water is present to access debris sites
 - 4) Removal of debris near nesting birds
 - 5) Sediment deposition from clean-up activities
 - 6) Removal of chimneys
 - 7) Establishment of staging and disposal sites (includes base camp facilities)

(A) EMERGENCY BEST MANAGEMENT PRACTICES FOR ENVIRONMENTAL AND CULTURAL RESOURCES

Deviations to the requirements of this Plan may be approved at the discretion of the ODOT Environmental Manager and ODOT Area Operations Chief, in consultation with DEQ.

Consultant/Contractor are responsible for obtaining any additional regulatory permits, permit modifications, authorizations, or approvals necessary for this Project.

Consultant/Contractor are responsible for full compliance with this Plan and all applicable State and Federal regulatory permits and requirements.

Every effort should be made to protect and avoid known cultural resources (which include archaeological and historic built resources) during wildfire recovery efforts. ODOT has identified areas of concern which should be noted for monitoring and resource protection measures. A list of known cultural resource sites will be provided to the Consultant archaeologists for use in identify locations for avoidance. If any known sites cannot be fully avoided, contact the ODOT REC and consultant archaeologist prior to initiating any work and the REC will coordinate with FEMA/ODOT/SHPO/Tribes to determine an appropriate path forward. USFS and BLM cultural resource specialists will also be consulted as applicable.

Archaeological monitoring will be required at specific sites (which will be discussed with archaeological consultants) and must be performed by a professional/qualified archaeologist during hazard tree and debris removal work. Historic Built Resource monitoring may also be required during debris removal. All reporting for cultural resources will follow guidelines and standards established by the Oregon State Historic Preservation Office (SHPO). The ODOT

REC is the point of contact for any cultural resources identification efforts, emergencies or inadvertent discoveries and any questions regarding Tribal relations and damages to cultural resources due to proposed operations. A detailed monitoring Scope of Work is located in Appendix A.

Contractors/Consultants are responsible for obtaining all necessary archaeological permits which include Oregon's archaeological permits through SHPO for public and private lands and Archaeological Resources Protection Act (ARPA) permits for survey, recordation, and monitoring as needed through the BLM Oregon State Office, USFS and any additional federal agencies as necessary. Note that the qualifications required to obtain an archaeological permit on non-federal public and private land are different than those required on federal property. Refer to SHPO Archaeology Bulletin 2 for details.

Qualifications required to obtain permits on BLM lands:

- (a) The contractor must be able to qualify for a BLM Oregon/Washington survey and recordation permit for western Oregon. Time and experience necessary for individuals to be listed on a BLM permit as a Principle Investigator include an M.A. or Ph.D. in Anthropology or Archaeology plus 16 months of experience performing duties responsible for planning and generally overseeing field projects, including overall supervision of staff and overall responsibility for the professional quality of resource evaluations and recommendations. Four months of this experience shall be in a cultural area and environmental zone equivalent to Western Oregon and can include experience within Western Oregon, Western Washington, Northern California or a combination of these areas.
- (b) Time and experience necessary for individuals to be listed on a BLM permit as a Field Director/Crew Chief include an B.A. in Anthropology or Archaeology plus 12 months of experience performing duties responsible for carrying out field projects, for technical quality of fieldwork through direct on-the-ground supervision of all aspects of fieldwork and data gathering, for proposing resource evaluations and recommendations for further treatment, and for preparing field records and descriptive reports. A Field Director/Crew Chief without a degree requires 30 months of experience performing the duties listed above. Four (4) months of each individual's experience shall be in a cultural area and environmental zone equivalent to Western Oregon and can include experience within Western Oregon, Western Washington, Northern California or a combination of these areas.

Contractors/Consultants are responsible for obtaining all necessary BLM Fieldwork Authorizations from appropriate BLM District Offices before fieldwork begins (additional information on Fieldwork Authorizations and District contacts will be provided as part of the BLM Cultural Resource Use Permit).

Coordinating tribal consultation is the responsibility of FEMA. All cultural resource monitoring for archaeological and historic built resources, must be coordinated through the ODOT REC to ensure that proper Tribal consultation is coordinated through FEMA.

Any work on Tribal lands, Tribal Trust properties, etc., must be coordinated through the ODOT REC to ensure that FEMA as the lead federal agency can conduct the appropriate Tribal Consultation. FEMA's Programmatic Agreement with the Oregon SHPO does not apply on Tribal Lands.

Sites containing structural debris must be surveyed for asbestos by an AHERA-accredited building inspector to determine if the removal must be conducted by an Oregon licensed asbestos abatement contractor. Debris from commercial structures (regardless of age) and debris from residential structures constructed before 2004 should be presumed asbestos-containing material (ACM) unless a survey has demonstrated otherwise. Debris from **residential** structures constructed after 2004 can be considered non-asbestos containing without a survey (disposal sites may require documentation on this if no survey is performed).. The site should be assessed for the presence of other hazardous materials to help properly characterize the waste for disposal and inform the required safe work practices during cleanup.

The following guidelines for hazard tree removal and debris removal must be used to ensure cultural resource protections. In addition, an Inadvertent Discovery Plan (Appendix B) must be used and followed for all hazard tree and debris removal work.

A brief cultural resources awareness training must be provided to crews conducting hazard tree removal work, prior to initiating work activities. The awareness training may be delivered by the archaeological consultant, Agency archaeologist, or a Tribal Cultural Resources representative. Regular cultural resources awareness reminders must be provided to field crews throughout the duration of the project to ensure that new staff receive training and that crews are continuously aware of cultural resources protection measures.

Cultural resources consultants must verify site information using all available records and maps. Cultural resources consultants must verify all land ownership to ensure that proper regulations are followed and the consultation with land managers, Tribes, etc., occurs in a timely fashion via ODOT RECs.

Wild and Scenic Rivers Act and National Scenic Byway Coordination. Prior to initiating hazard tree removal, Coordinate with the ODOT On Scene Incident Commander, ODOT Operations Chief, U.S. Forest Service (USFS) POC, Bureau of Land Management (BLM) POC and ODOT REC for hazard tree removal work occurring within a designated Wild and Scenic River Corridor or a National Scenic Byway. A template set of unified USFS and BLM best management practices (BMP's) for work within these corridors has been developed and is provided in **Section 17**. Based on the local coordination (Individual fire corridor) meeting discussions, Implement USFS and BLM recommendations where feasible and to the extent practicable.

State Scenic Waterways Coordination and permitting. A temporary emergency authorization for work in State Scenic Waterway corridors has been obtained for this Project. Apply for and obtain a Scenic Waterways permit for the overall Project (one permit) from Oregon Parks and Recreation Department (OPRD) by following the normal (or standard) application process. Implement any mitigation measures contained in the permit, in coordination with ODOT and USFS/BLM as applicable.

Wilderness Areas. Any work that will require incursion into a designated USFS Wilderness Area must be coordinated with ODOT and the appropriate USFS District Ranger prior to initiation. Contact the REC and On-Scene Incident Commander. GIS Shapefiles will be provided showing locations of wilderness boundaries on Mt. Hood Ranger District.

Section 6(f)(3) of the LWCA. LWCA encumbered properties exist within the Project highway Corridors. These properties include multiple parks, recreation facilities and campgrounds. Staging of vehicles, equipment, logs or debris (etc.) on these properties requires prior approval of OPRD and NPS.

Erosion and Sediment Control. The requirements of **Section 11** apply to all aspects of this Project.

(1) Site Layout and Flagging

Before any significant ground disturbance or entry of mechanized equipment or vehicles into the construction area, clearly mark with flagging or survey marking paint the following areas:

- Sensitive areas, e.g., wetlands, water bodies, fish spawning areas (which must be identified and flagged by a qualified biologist)
- Equipment entry and exit points
- Road and stream crossing alignments
- Staging, storage and stockpile areas
- Recorded cultural resource sites. Mark cultural resources sites in the field with lath and flagging or orange mesh fencing in advance of hazard tree and debris removal work; this must be done by a professional/qualified archaeologist. Cultural Resources Consultant will add a buffer to the site boundary based on their assessment of available site record data. Install cultural resources flagging three (3) days prior to tree removal and remove within three (3) days of tree removal activities. Take photos before and after tree removal activities to document condition of cultural resource site(s).

(2) Staging, Storage, and Stockpile Areas

Designate and use staging areas to store hazardous materials, or to store, fuel or service heavy equipment, vehicles and other power equipment with tanks larger than five (5) gallons, that are at least 150 feet from any natural water body or wetland, or on an established paved area, such that sediment and other contaminants from the staging area cannot be deposited in the floodplain or stream.

Examine all proposed staging and disposal locations for cultural resources prior to use. This work must be coordinated with the ODOT REC. REC will verify if staging and disposal is proposed for existing graveled, hard topped, or improved surfaces. If these conditions are met and no cultural sites exist then work may proceed.

Development of temporary shelter or housing for first responders (base camp, offices, etc.) is limited to less than 10 acres (cumulative for the Project) of new ground disturbance, in previously developed or disturbed areas and that follow best management practices for pollution control. Examples of areas that are previously disturbed are established campgrounds, municipal airports, parking lots, fairgrounds, timber mill yards, etc. If temporary housing or shelter locations are chosen outside of previously disturbed areas then these locations should be coordinated with the ODOT REC to ensure resource protection measures are addressed.

Natural materials that are displaced by construction and reserved for restoration, e.g., large wood, gravel, and boulders, may be stockpiled within the 100-year floodplain and covered to avoid runoff of sediment and natural materials due to precipitation.

Dispose of any material not used in restoration and not native to the floodplain outside of the functional floodplain.

After the Project is complete, obliterate all staging, storage or stockpile areas, stabilize the soil, and revegetate the area. For areas where vegetation has been temporarily removed, revegetate with trees, brush and grasses native to the watershed. See section **14. Revegetation** below.

Staging and disposal sites including log deck sites, require pre-clearance for cultural resources, wetlands and ESA species. Monitoring Consultant shall provide this assessment to the ODOT REC prior to initiating site use. Erosion and sediment control measures are required for all staging and disposal sites.

(3) Equipment, Vehicles and Power Tools

Select, operate and maintain all heavy equipment, vehicles and power tools to minimize damage to natural vegetation and permeable soils, e.g., low pressure tires, minimal hard-turn paths for track vehicles, use of temporary mats (no treated or coated lumber) or plates to protect wet soils.

Before entering wetlands or working within 150 feet of a water body:

- Avoid working within the bed or banks of any Designated Wild and Scenic River Act (WSRA) Corridor. Contact the ODOT REC and wait for authorization prior to conducting any work within the beds and banks of a designated WSRA corridor. The REC and Monitoring Consultant will coordinate with BLM and USFS as applicable. A Section 7 of the WSRA permit will be required prior to any work within the beds and banks.

- Power wash all heavy equipment, vehicles and power tools; allow them to fully dry before inspecting for fluid leaks and to make certain that no plants, soil or other organic material are adhering to the surface.
- Ensure that all equipment to be operated below ordinary high water (OHW) is leak free or operating with biodegradable products.
- Repeat cleaning as often as necessary during operation to keep all equipment, vehicles and power tools free of external fluids, grease or ash, and to prevent a leak or spill from entering the water.
- Avoid use of heavy equipment, vehicles or power tools below OHW for riverine systems or below the Highest Astronomical Tide (HAT) for marine systems unless project specialists determine such work is necessary, or if it is a temporary stream crossing or would result in less risk of sedimentation or other ecological damage than work above that elevation.
- Before entering the water, inspect any watercraft, waders, boots or other gear/equipment to be used in or near water and remove any plants, soil or other organic material adhering to the surface.
- Ensure that any generator, crane or other stationary heavy equipment that is operated, maintained or stored within 150 feet of any water body is also protected as necessary to prevent any leak or spill from entering the water.
- Do not use treated or coated lumber within any stream or wetland, or in areas where coatings will leech into streams or wetlands.

(4) Pollution Control

Operating Equipment and Vehicle Leaks. For any equipment or vehicles used on the project, check and maintain daily to prevent leaks of materials that could be deleterious to aquatic and terrestrial life or riparian habitat. Special care should be taken to ensure no leaks are occurring with any equipment operating within 150' of a stream, waterway or wetland.

Stationary Equipment Leaks. For stationary equipment such as motors, pumps, generators and welders, located within or adjacent to a waterbody or wetland, provide secondary containment such as drip pans, plastic wading pools, barrels, etc. Stationary heavy equipment shall have suitable containment to handle a catastrophic spill/leak.

Equipment Maintenance and Fueling. Do not maintain, fuel or store equipment within or near any stream channel, lake margin, or wetland where petroleum products or other pollutants from the equipment may enter these areas.

No Dumping. Pick up and remove all debris and waste daily. Do not deposit litter or construction debris within a stream, lake or wetland or where it may pass into a stream, lake or wetland.

(5) Hazardous Materials

Following a wildfire, fire related materials such as debris, soil, silt, bark, slash, asbestos, lead, sawdust, rubbish, creosote-treated wood, raw cement/concrete or washings thereof, asphalt,

paint or other coating material, oil or other petroleum products, or any other substances could be hazardous to people, aquatic life, wildlife, or riparian habitat. During Project related activities, prevent these materials from contaminating the soil and/or entering any watercourse or wetland. If significant soils (deeper than 3"-6") must be removed to facilitate cleanup of a hazardous material spill, contact the ODOT REC and the Archaeological monitor to assess any impacts to cultural resources

Hazardous materials safety at the Project:

- Post written procedures for notifying environmental response agencies, including an inventory and description of all hazardous materials present, and the storage and handling procedures for their use.
- Maintain a spill containment kit, with supplies and instructions for cleanup and disposal, adequate for the types and quantity of hazardous materials present.
- Train workers in spill containment procedures, including the location and use of the spill containment kits.
- Temporarily contain any waste liquids generated under an impervious cover, such as a tarpaulin, in the staging area until the wastes can be properly transported to, and disposed of, at an appropriate receiving facility.

Asbestos

Prior to the removal of ash and debris, an AHERA accredited building inspector will assess and sample all structures and all ash and debris generated from structures to identify the presence of ACM. DEQ has prepared guidance for accredited inspectors conducting asbestos surveys on wildfire ash and debris. (<https://www.oregon.gov/deq/wildfires/Documents/wfSurveyFS.pdf>) In lieu of an asbestos survey, all ash and debris may be presumed asbestos-containing and managed accordingly. Please note that some landfills may require an asbestos survey of all structural debris regardless of construction date.

As required by Oregon's asbestos rules for abatement of friable asbestos-containing materials, only DEQ-licensed asbestos abatement contractors may perform removal activities of ACMs. On Oct. 9, 2020, the Environmental Quality Commission approved temporary variances from certain asbestos regulations related to the cleanup of ash and debris following catastrophic wildfires across Oregon in August and September 2020. More information regarding the temporary rule suspensions may be reviewed on the Wildfire Cleanup page. (<https://www.oregon.gov/deq/wildfires/Pages/Temporary-rule-suspensions.aspx>)

The Contractors shall comply with the following:

- For non-residential properties (greater than 4 dwelling units), 10-day notification to DEQ is required on appropriate DEQ form. (<https://www.oregon.gov/deq/FilterDocs/ASN1form.pdf>)
 - DEQ may waive the required 10-day notification period to facilitate immediate cleanup activities upon notice. Requests must be made in writing to the appropriate DEQ regional staff. Fees for non-residential asbestos abatement projects have been waived by DEQ.
- Notification to DEQ is not required for residential properties (four or fewer dwelling units)
- All applicable work practices and procedures in OAR 340-248-0270 that were not waived by the temporary rule suspension must be followed.

- All packaging, labeling, transport and disposal rules in OAR 340-248-0280 remain in effect.
- DEQ asbestos rule waivers expire Oct. 1, 2021

The following requirements and BMPs should be used when undertaking removal actions pursuant to a declared State of Emergency. These BMPs should be undertaken to address the removal of ash and debris that contain asbestos-containing materials (ACMs), and air monitoring and sampling from the disaster or incident site. Use of BMPs will also ensure the proper management and removal of asbestos-containing waste materials in a manner that ensures protection of public health and the environment, as well as, ensuring the health and safety of on-site personnel.

- Employees who work in areas with potential ACM shall be trained to recognize suspected ACM so that they may cease activities which could disturb suspected asbestos and allow sampling and/or abatement. A two-hour asbestos training will satisfy this requirement. This training will be consistent with OR-OSHA 1926.1101(k)(9)(vi), Asbestos Hazard Emergency Response Act (AHERA) requirements in 40 CFR 763.92(a)(1), and OR-OSHA hazard communication requirements in OAR 1910.1200.
- Employees who disturb and/or remove ACM shall complete 8 hours of training consistent with OR-OSHA requirements in OAR 1926.1101(k)(9)(iv), and such workers must be trained, licensed, and certified in accordance with DEQ requirements in OAR 340-248-0100 through OAR 340-248-0180, which requires five days of training for supervisors and four days of training for workers.
- Workers will be required to wear Level C PPE when working in the exclusion zone.
- All on-site personnel conducting surveys of ACM debris must be an “accredited inspector” as defined by OAR-340-248-010(1). This individual must have completed training, received accreditation, and maintains valid accreditation under 40 C.F.R Part 763 Subpart E, appendix C.
- Site workers who may come into contact with hazardous materials must complete training consistent with the HAZWOPER provisions set forth by OAR 1910.120(e)(3)(i). Employees shall have received a minimum of 40 hours of initial instruction offsite and a minimum of three days of actual field experience under direct supervision of a trained, experienced supervisor. Employees shall have received the initial 40-hour HAZWOPER training or eight hours of refresher training no more than 12 months before beginning work on the Site.
- Ash and soil that tested positive for asbestos containing materials (ACM) must be wetted down and wrapped in two layers of 6 mil plastic. 6 mil bags should be wrapped with a 10 mil scrim reinforced plastic liner (burrito style) if material can puncture or tear the 6 mil bags. Each layer must be sealed separately. An ASN 4 form must be completed and accompany the material for transport and disposal.
(<https://www.oregon.gov/deq/FilterDocs/ASN4.pdf>)
- Conduct on-site and off-site air monitoring consistent with the air monitoring plan and sampling for asbestos and heavy metals during ACM and debris removal operations to demonstrate the effectiveness of engineering controls to protect cleanup personnel and the surrounding community.

- Visible emissions are not allowed during an asbestos abatement project. Use of engineering controls to mitigate dust and fiber release during removal is required. Use wet methods to control dust/fibers. The equipment used for delivering water must be designed properly. For large areas, it is recommended that cleanup contractors will use fire grade firefighting nozzles with shut off valves for dust control. The fire nozzle shall have sufficient water pressure to generate a high mist fog stream. The fire nozzle should have an adjustable flow rate, preferably 20 to 60 gallons per minute, and constructed of hard coated aluminum with brass and stainless steel internal components. **Plastic nozzles should not be used for large areas.** While the costs of metal firefighting nozzles are significantly more than plastic nozzles, metal nozzles are only able to generate a sufficient fog to control dust.
- All burn ash and debris must be sufficiently wetted 48 to 72 hours in advance of initiating removal of the material. The water shall be applied in a manner so not to generate significant runoff (Fine Mist Only). Engineering controls for storm water discharges must be in place prior to dust control operations. If there is excess water from the abatement process, it must be collected. The water can either be filtered prior to disposal into the sanitary sewer or the water must be disposed of as asbestos-containing waste material.
- All waste material that is not loaded out at the end of each workday must be stockpiled, sufficiently wetted, and covered to prevent the offsite migration of contaminants.
- All hazardous waste haulers who observe loading operations must stay within their vehicle to avoid any exposure to the hazardous material. If drivers must step out outside of the vehicle cab, and/or covering (e.g. tarping) the trailer or container he/she must wear N95 masks and coveralls.
- All approved landfill operators that may come in contact with the waste during off-loading operations should follow their facilities protocols for wearing PPE and respiratory protection.
- All ACM and debris removed from the property, site or area must transported for disposal to a permitted disposal facility in good standing with local, state, and federal agencies. An Asbestos Waste Shipment Report form (<https://www.oregon.gov/deq/FilterDocs/ASN4.pdf>) must accompany the asbestos-containing waste material from point of generation to disposal.

Heavy Metals

Oregon's Department of Environmental Quality (ODEQ) prepared a pilot study scope of work designed to assess the value and applicability of using field portable x-ray fluorescence (XRF) during and after cleanup of ash and debris. ODEQ believes that XRF can be useful for guiding field decisions during cleanup and possibly to support cleanup confirmation. The intent of XRF testing is to identify heavy metals in the soil. The State of Oregon does not require a survey to be completed for lead prior to debris removal.

Handheld XRF analyzers have become the instrument of choice for soils analysis when characterizing, remediating and monitoring contaminated soil sites. Metals in soil will be assessed using EPA Method 6200. In this process, the soil is removed from the ground and mixed in a thin-walled plastic bag or bowl. The material is homogenized and large rocks and debris are removed. The material is sieved and the XRF measurement is collected. According to EPA Method 6200, moisture content between 5 and 20 percent will produce minimal error in XRF readings. For samples with moisture content above 20 percent or if a sample is saturated

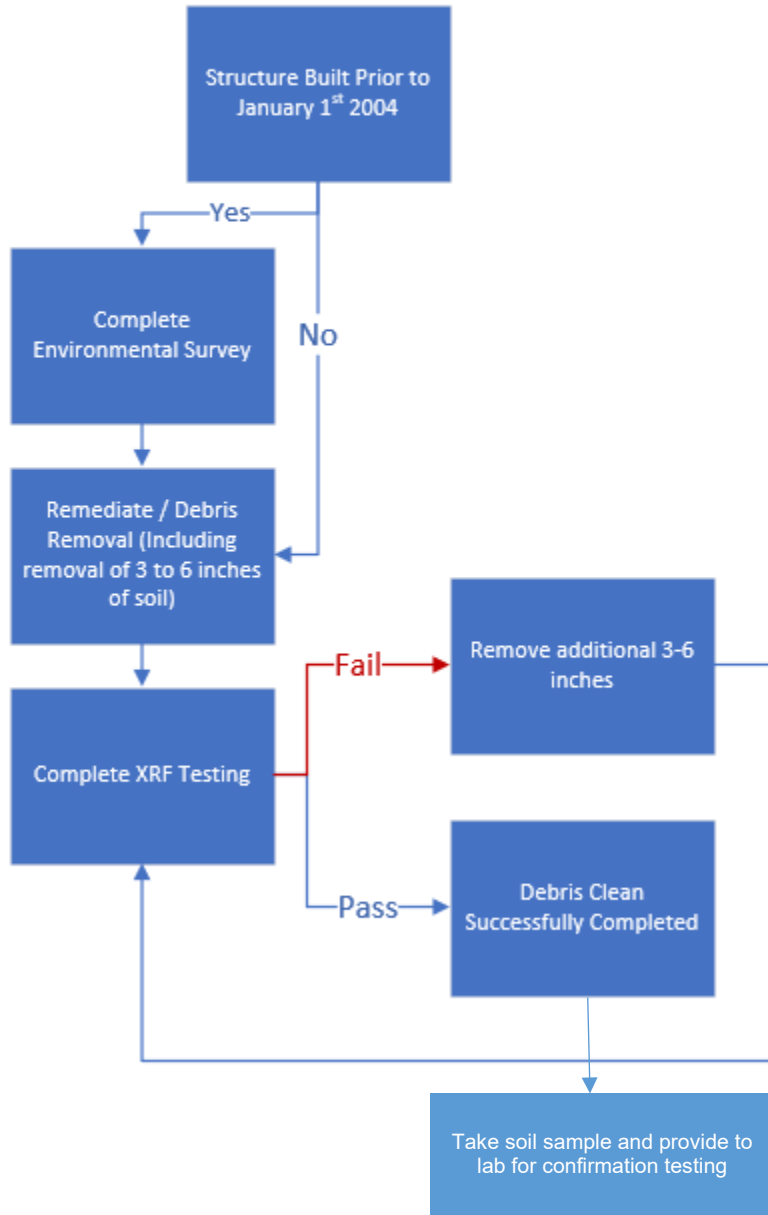
at the time of collection, the sample will be dried prior to analyzing with the XRF, and a minimum of 10 percent of XRF measurements are confirmed by laboratory analysis. The complete scope for soil sampling, laboratory analysis, and XRF analysis will be outlined in a quality assurance project plan prepared by the Contractor.

Other Hazardous Materials

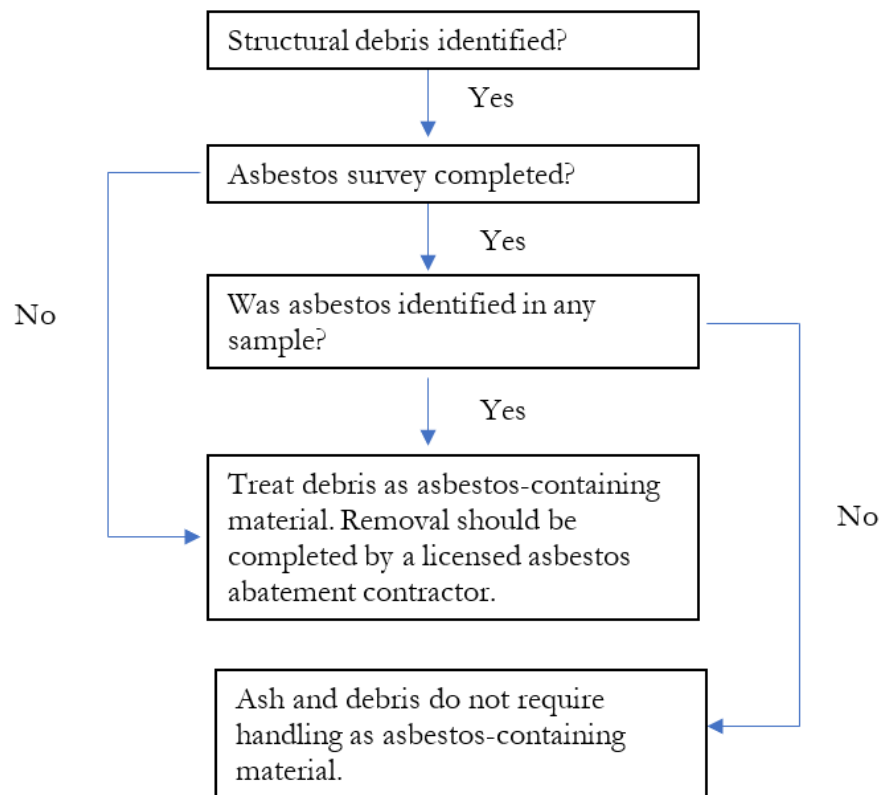
The state and EPA cleared hazardous waste dangerous to the public. The work was completed in early December 2020. Anyone who discovers evidence of unanticipated hazardous materials will coordinate efforts to characterize the materials and develop a plan to safely address the conditions.

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(DRAFT) – Asbestos Hazardous Waste Procedure



Please note: We are wanting a soil sample to be taken after final soil scraping. i.e. scrape 3-6", use XRF < if "hot" scrape 3-6" , XRF , if below levels take confirmation samples for fixed lab analysis.



(6) Waters of the US or State, Including Wetlands

Use available GIS and GPS data for identification and avoidance of waters of the US or State, including wetlands. Available GIS data includes the ODOT Hydrography dataset, National Wetlands Inventory, Oregon State Wetlands Inventory, Essential Salmonid Habitat, and USGS Mapping. Use a maximum practicable buffer width when working near waters and wetlands. Flag wetland boundaries in the field prior to initiating work. Where avoidance is not practicable, minimize impacts to waters and wetlands by following the 2020 ODOT Maintenance Blue Book BMP's and using Wetland Mats for access. Follow to the extent practicable USFS and BLM BMP's when working in Wild and Scenic River Corridors or National Scenic Byways.

Ensure that field crews are aware of waters and wetlands locations and avoidance procedures. Any entry into wetlands or streams requires a 2 working day advance notice to the ODOT REC, Oregon Department of Fish and Wildlife (ODFW) District, Department of State Lands (DSL) and U.S. Army Corps of Engineers (Corps).

This Project currently holds emergency authorization temporary State fill/removal permits from DSL that expire March 5th, 2021. Consultant/Contractor are responsible for obtaining standard Project fill/removal permits from DSL prior to expiration of the temporary permits.

This project currently holds an emergency authorization Section 404 permit from the Corps. Site specific impacts may require additional 404 permitting (culverts, temporary fill. Etc.). Consultant/Contractor are responsible for obtaining any additional Section 404 permits needed.

Felled hazard trees that fall into a stream, wetland or waterway will be left in place and not removed. Track and record the number and location of hazard trees that fall into any stream (includes ephemeral and intermittent streams), wetland or waterway. Record location using GPS coordinates and maintain a summary list and maps.

Should temporary impacts to waters and/or wetlands be unavoidable, document the location of the temporary impact by mile point and Latitude/Longitude. Provide location information to the ODOT REC to evaluate the site for retro-active permitting, site restoration needs, and evaluate the potential for cultural resources impacts. Consultant/Contractor are responsible to complete retro-active permitting (Corps/DSL) and site restoration if REC determines it is necessary.

(a) Buffer Zones. Implement a maximum practicable buffer when possible. The intent of the buffer is to reduce or eliminate the likelihood of ground disturbance from heavy equipment that may result in ruts, erosion and direct sediment delivery to the waters and wetlands. Limit heavy equipment and vehicles within the buffer unless removal of woody debris is approved by the On Scene Incident Commander as necessary for safety.

If an existing or new crossing must be used, inspect the crossing site for fish and wildlife species prior to entering the buffer. If an Oregon or Federal Endangered Species Act (ESA) listed species is found within the crossing location, flag and avoid the site until consultation with a biological monitor and ODOT REC occurs.

(b) Project Design. To the extent feasible, use site design to retain natural vegetation and permeable soils, limit compaction, and otherwise minimize the extent and duration of earthwork. Assess whether the project area is contaminated by chemical substances that may cause harm if released by the project. The assessment will be commensurate with site history and may include the following:

- Review available records, e.g., the history of existing structures and contamination events.
- If the project area was used for industrial processes, inspect to determine the environmental condition of the property.
- Interview people who are knowledgeable about the site, e.g., site owners, operators, and occupants, neighbors, or local government officials.
- If contamination is found or suspected, consult with a suitably qualified and experienced contamination professional and NMFS before carrying out ground disturbing activities.

(c) Debris Removal. When removing fallen trees, organic, mineral and anthropogenic debris, the following conditions apply:

- Fallen Trees. Large wood should be made available for habitat restoration projects above and below the project area. Large wood that can be relied on to provide streambank stability or redirect flows must be intact, hard and undecayed to partly decaying, and should have untrimmed root wads to provide functional refugia habitat for fish. The use of decayed or fragmented wood found lying on the ground or partially sunken in the ground is not acceptable. Coordinate with local ODFW District and USFS/BLM (as applicable) for trees to be utilized in aquatic habitat restoration.

Use appropriately sized equipment to prevent dragging logs through the boundaries of flagged cultural resources during removal. If downed within the boundaries of a cultural resources site, leave in place and do not remove. No skidding of logs is allowed in archaeological sites.

- Organic Debris. Organic debris consists of twigs, leaves, bushes, tree trunks, root wads, and branches that are removed from culverts, bridges, road/trailside ditches, levee systems, boat ramps, constructed and maintained channels, or other eligible facilities. To the extent practicable, remove and place plant and organic debris material above mean higher high water (MHHW), downstream of the in-water structure or stockpiled for use as a habitat-forming feature for a future project outside the boundaries of any flagged cultural resources sites.
- Anthropogenic Debris. Anthropogenic debris includes material created by humans (cars, garbage, and construction material), or animals (waste and carcasses) that collect in culverts, road/trail surfaces, road/trailside ditches, levee systems, boat ramps, constructed and maintained sediment collection basins and channels, and/or other facilities. Separate, haul and dispose of anthropogenic debris at an appropriate facility based on debris classification. Work during or following the disaster event when turbidity levels are still high. Occasionally road maintenance or solid waste units are tasked with removing animal carcasses from rivers and floodplains and hauling to acceptable disposal facilities.

(7) Vegetation Clearing

- (a) Vegetation Removal. Keep disturbance or removal of vegetation to the minimum necessary to complete project related activities. Consult the GIS map layer for ODOT Special Management Areas (SMA) to assess SMA overlap with the vegetation removal area. If not possible, consult with a biological monitor before proceeding. Non-hazardous debris clearing activity on public right-of ways (ROW), public areas, or private property is limited to the surface and ground disturbance is minimal. If non-hazardous debris clearing activities results in more than minor sub-surface disturbance provide the location to the ODOT REC and archaeological monitor to evaluate the site for any cultural resources concerns.

Use appropriately sized equipment to prevent dragging logs through the boundaries of flagged cultural resources sites during log removal. If downed within the boundaries of a

cultural resources site, leave log in place and do not remove. No skidding of logs is allowed in cultural resource sites.

- (b) Snags. On USFS property only, where feasible and as practicable, medium sized or larger trees (> 12inch dbh) which are declared as hazard trees should be evaluated by the contractor and/or biological monitor as a potential candidate for high topping. **If safe to do so and suitable** (main trunk is still in good condition), cut away hazard portion leaving approximately 20ft to 25ft tall snag. Snags must pose no future threat to highways or recreational trails.

When possible aim for 5 snags per acre, if there are numerous candidates, preference should be to the largest dbh available.

- (c) Downed Wood. On USFS property only, where feasible and as practicable, retain approximately 6 logs per acre 20-44" DBH and 40' in length, for downed wood wildlife habitat.

- (d) Fallen Trees. Leave in place trees that have fallen in streams or in riparian zones; they provide future large wood onsite and downstream. They also serve as sediment traps from upslope conditions. The impacts associated with retrieval of these trees are greater than the benefits of retrieving them.

If downed trees are not useful for habitat restoration or sale, leave them perpendicular to the slope face to assist in erosion control and decrease sedimentation downslope into the riparian zone. If downed trees are in good condition (not bucked or at least left long) with root wads, retain them for stream habitat restoration where possible. Habitat restoration projects have a shortage of this wood and anything available is valuable. Use appropriately sized equipment to prevent dragging logs through the boundaries of flagged cultural resources during removal. If downed within the boundaries of a cultural resources site, leave in place and do not remove. No skidding of logs is allowed in cultural resources sites.

- (e) Cleared Vegetation. If trimmed or cleared vegetation will not be moved offsite, deposit the material in uplands outside the boundaries of any flagged cultural resources sites.

- (f) Invasive and Non-Native Plant Control

Non-herbicide methods. Limit vegetation removal and soil disturbance within the riparian zone by limiting the number of workers there to the minimum necessary to complete manual, mechanical, or hydro-mechanical plant control (e.g., hand pulling, bending,¹ clipping, stabbing, digging, brush-cutting, mulching, radiant heat, portable flame burner, super-heated steam, pressurized hot water, or hot foam (Arsenault *et al.* 2008; Donohoe *et al.* 2010).² Do not allow cut, mowed, or pulled vegetation to enter waterways.

¹ Knotweed treatment pre-treatment; See Nickelson (2013).

² See University of California-Davis, Advanced Highway Maintenance & Construction Technology Research Center Toolbox for Vegetation Control.

- Herbicide Label. Herbicide applicators will comply with all label instructions.
- Power equipment. Refuel gas-powered equipment with tanks larger than 5 gallons in a vehicle staging area placed 150 feet or more from any natural water body, or in an isolated hazard zone such as a paved parking lot.
- Maximum herbicide treatment area. Do not exceed treating 1.0% of the acres of riparian habitat within a 6th-field Hydrologic Unit Code (HUC) with herbicides per year.
- Herbicide applicator qualifications. Herbicides may only be applied by an appropriately licensed applicator using an herbicide specifically targeted for a particular plant species that will cause the least impact. The applicator will be responsible for preparing and carrying out the herbicide transportation and safely plan, as follows.
- Herbicide transportation and safety plan. The applicator will prepare and carry out an herbicide safety/spill response plan to reduce the likelihood of spills or misapplication, to take remedial actions in the event of spills, and to fully report the event.
- Herbicides. The only herbicides proposed for use under this Plan are (some common trade names are shown in parentheses):³
 - i. aquatic imazapyr (e.g., Habitat)
 - ii. aquatic glyphosate (e.g., AquaMaster, AquaPro, Rodeo)
 - iii. aquatic triclopyr-TEA (e.g., Renovate 3)
 - iv. chlorsulfuron (e.g., Telar, Glean, Corsair)
 - v. clopyralid (e.g., Transline) (**See restrictions in OAR 603-057-0378**)
 - vi. imazapic (e.g., Plateau)
 - vii. imazapyr (e.g., Arsenal, Chopper)
 - viii. metsulfuron-methyl (e.g., Escort)
 - ix. picloram (e.g., Tordon)
 - x. sethoxydim (e.g., Poast, Vantage)
 - xi. sulfometuron-methyl (e.g., Oust, Oust XP)
- Herbicide adjuvants. When recommended by the label, an aquatic surfactant or drift retardant can be used to improve herbicidal activity or application characteristics. Adjuvants that contain alkyl amine ethoxylates, *i.e.*, polyethoxylated tallow amine, alkylphenol ethoxylates (including alkyl phenol ethoxylate phosphate esters), or herbicides that contain these compounds are **not** allowed by this Plan. The following product names are covered by this Plan:

- | | |
|-----------------------|-----------------|
| 1. Agri-Dex | 2. AquaSurf |
| 3. Bond | 4. Bronc Max |
| 5. Bronc Plus Dry-EDT | 6. Class Act NG |
| 7. Competitor | 8. Cut Rate |
| 9. Cygnet Plus | 10. Destiny HC |
| 11. Exciter | 12. Fraction |
| 13. InterLock | 14. Kinetic |

³ The use of trade, firm, or corporation names in this opinion is for the information and convenience of the action agency and grantees and does not constitute an official endorsement or approval by the U.S. Department of Commerce or NMFS of any product or service to the exclusion of others that may be suitable.

15. Level 7	16. Liberate
17. Magnify	18. One-AP XL
19. Pro AMS Plus	20. Spray-Rite
21. Superb HC	22. Tactic
23. Tronic	

- Herbicide carriers. Herbicide carriers (solvents) are limited to water or specifically labeled vegetable oil. Use of diesel oil as an herbicide carrier is not covered by this Plan.
- Dyes. Use a non-hazardous indicator dye (e.g., Hi-Light or Dynamark™) with herbicides within 100 feet of water. The presence of dye makes it easier to see where the herbicide has been applied and where or whether it has dripped, spilled, or leaked. Dye also makes it easier to detect missed spots, avoid spraying a plant or area more than once, and minimize over-spraying (SERA 1997).
- Herbicide mixing. Mix herbicides and adjuvants, carriers, and/or dyes more than 150 feet from any perennial or intermittent water body to minimize the risk of an accidental discharge.
- Tank Mixtures. The potential interactive relationships that exist among most active ingredient combinations have not been defined and are uncertain. Therefore, combinations of herbicides in a tank mix are not covered by this Plan.
- Spill Cleanup Kit. Provide a spill cleanup kit whenever herbicides are used, transported, or stored. At a minimum, cleanup kits will include material safety data sheets, the herbicide label, emergency phone numbers, and absorbent material such as cat litter to contain spills.
- Herbicide application rates. Apply herbicides at the lowest effective label rates.
- Herbicide application methods. Apply liquid or granular forms of herbicides as follows:
 - i. Hand/selective – wicking and wiping, basal bark, fill (“hack and squirt”), stem injection, cut-stump.
 - ii. Spot spraying – hand held nozzles attached to back pack tanks or vehicles, hand-pumped spray, or squirt bottles to spray herbicide directly onto small patches or individual plants.
 - iii. Broadcast spraying – hand held nozzles attached to back pack tanks or vehicles, or by using vehicle mounted booms. Do not apply Triclopyr by broadcast spraying.
 - iv. Keep the spray nozzle within four (4) feet of the ground when applying herbicide. If spot or patch spraying tall vegetation more than 15 feet away from the high water mark, keep the spray nozzle within six (6) feet of the ground.
 - v. Apply spray in swaths parallel towards the project area, away from the waterbody and desirable vegetation, *i.e.*, the person applying the spray will generally have their back to the creek or other sensitive resource.
 - vi. Avoid unnecessary run off during cut surface, basal bark, and hack-squirt/injection applications.
- Washing spray tanks. Wash spray tanks 300 feet or more away from any surface water.
- Minimization of herbicide drift and leaching. Minimize herbicide drift and leaching as follows:

- i. Do not spray when wind speeds exceed 10 miles per hour, or are less than two (2) miles per hour.
 - ii. Be aware of wind directions and potential for herbicides to affect aquatic habitat area downwind.
 - iii. Keep boom or spray as low as possible to reduce wind effects.
 - iv. Increase spray droplet size whenever possible by decreasing spray pressure, using high flow rate nozzles, using water diluents instead of oil, and adding thickening agents.
 - v. Do not apply herbicides during temperature inversions, or when air temperature exceeds 80 degrees Fahrenheit.
 - vi. Wind and other weather data will be monitored and reported for all broadcast applications.
- Rain. Do not apply herbicides when the soil is saturated or when a precipitation event likely to produce direct runoff to salmon bearing waters from the treated area is forecasted by the NOAA National Weather Service or other similar forecasting service within 48 hours following application. Soil-activated herbicides may follow label instructions. Do not conduct hack-squirt/injection applications during periods of heavy rainfall.
 - Herbicide buffer distances. Observe the following no-application buffer-widths, measured in feet, as map distance perpendicular to the bankfull elevation for streams, the upland boundary for wetlands, or the upper bank for roadside ditches. Widths are based on herbicide formula, stream type, and application method, during herbicide applications (Table 2). Before herbicide application begins, flag or mark the upland boundary of each applicable herbicide buffer to ensure that all buffers are in place and functional during treatment.

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Table 2. Herbicide buffer distances by herbicide formula, stream type, and application method.

Herbicide	No Application Buffer Width (feet)					
	Streams and Roadside Ditches with flowing or standing water present and Wetlands			Dry Streams, Roadside Ditches, and Wetlands		
	Broadcast Spraying	Spot Spraying	Hand Selective	Broadcast Spraying	Spot Spraying	Hand Selective
Labeled for Aquatic Use						
Aquatic Glyphosate	100	waterline	waterline	50	None	none
Aquatic Imazapyr	100	15	waterline	50	None	none
Aquatic Triclopyr-TEA	Not Allowed	15	waterline	Not Allowed	None	none
Low Risk to Aquatic Organisms						
Imazapic	100	15	bankfull elevation	50	None	none
Clopyralid	100	15	bankfull elevation	50	None	none
Metsulfuron-methyl	100	15	bankfull elevation	50	None	none
Moderate Risk to Aquatic Organisms						
Imazapyr	100	50	bankfull elevation	50	15	bankfull elevation
Sulfometuron-methyl	100	50	5	50	15	bankfull elevation
Chlorsulfuron	100	50	bankfull elevation	50	15	bankfull elevation
High Risk to Aquatic Organisms						
Picloram	100	50	50	100	50	50
Sethoxydim	100	50	50	100	50	50

*waterline is defined as the ordinary high water.

*bankfull elevation is defined as the elevation point at a given location along a river which is intended to represent the maximum water level that will not overflow the river banks or cause any significant damages from flooding.

(8) Temporary Access Roads

Whenever reasonable, use existing access roads and paths preferentially. When there is a need to build access roads, strive to do this without breaking ground as much as possible. Minimize the number and length of temporary access roads and paths through riparian areas and floodplains. Eliminate the need for stream crossings unless absolutely needed. If a crossing is needed to retrieve logs, leave the wood in place and avoid stream impacts. If new temporary access roads are needed on USFS or BLM lands, contact land manager POC to coordinate location and any specific BMP's.

Additional considerations for temporary access roads:

- Avoid constructing any temporary access roads within a Designated Wild and Scenic River Act (WSRA) Corridor. Contact the ODOT REC and wait for authorization prior to constructing temporary access roads in a designated WSRA corridor. A Section 7 of the WSRA permit will be required prior to constructing any access roads.
- Avoid constructing any temporary access roads within the boundaries of flagged cultural resources sites. If unavoidable, any activities must be coordinated through the ODOT REC and consultant archaeologist prior to construction to ensure cultural resources protections and/or archaeological monitoring. Consultation with the appropriate Tribe(s), SHPO and USFS or BLM (as applicable) cultural resources POC's will occur prior to working within the boundaries of a cultural resources site.
- Do not build temporary access roads or paths where grade, soil, or other features suggest slope instability.
- Have a civil engineer with experience in designing steep roads design any roads on a slope steeper than 30%.
- Minimize removal of riparian vegetation.
- When it is necessary to remove vegetation, cut at ground level (no grubbing).
- Follow all applicable erosion and sediment control BMP's while constructing and removing temporary access roads (**Section 11**)

Removal of temporary access roads:

- After work is complete, obliterate all temporary access roads and paths, stabilize the soil, and revegetate the area.
- By the end of the Project, obliterate temporary roads and paths in wet areas or areas prone to flooding.
- Decompact road surfaces and drainage areas, pull fill material onto the running surface, and reshape to match the original contours.

(9) Fisheries Resources and Temporary Water Crossings

Stream crossings other than a temporary bridge must be evaluated by a fisheries biologist experienced with salmonid (salmon, trout, steelhead) biology and conducting stream habitat and redd surveys. No stream crossing may occur at active spawning sites when adult ESA protected fish are present or when eggs or alevins are in the gravel. Contractor shall have on staff fisheries biologists experienced with salmonid (salmon, trout, steelhead) life history, biology and habitat requirements.

If stream crossing activities do not involve the installation of a temporary (Bailey-type) bridge over an existing structure or at a demonstrably disturbed location, such as a former bridge location, the ODOT REC, ODFW and the consultant archaeologist must be consulted prior to the start of work to ensure fisheries and cultural resources protections. A fish salvage and relocation effort may be required, and should be coordinated with the Monitoring Biologist and the ODOT REC.

Required BMP's for stream or wetland crossings include:

- All stream crossings other than by temporary bridge require notification of the ODOT REC and two (2) working days advance notice to the local ODFW District, DSL and Corps. ODFW, DSL and Corps may require additional bmp's or measures.
- Do not place temporary crossings in areas that may increase the risk of channel re-routing or avulsion, or in potential spawning habitat, e.g., riffles, pools and pool tailouts.
- Installation of temporary culverts may require isolating the work area from the flowing stream and safely salvaging and relocating fish from the in-stream construction site.
- Any fish salvage and relocation effort shall be coordinated with the ODOT REC and must provide at least two (2) working days advance notice to the appropriate ODFW District.
- Minimize the number of temporary stream crossings; use existing stream crossings whenever possible.
- Equipment entering the stream will use non-toxic, biodegradable hydraulic fluid.
- Install temporary bridges and culverts to allow for both volitional fish passage up and downstream, and equipment and vehicle crossing over perennial streams during Project work.
- Wherever possible, ensure that vehicles and machinery cross streams at right angles to the main channel.
- If a stream ford is needed use crane pads or some other device to ensure that there is no compaction of stream substrate or stream banks.
- Equipment and vehicles may cross the stream in the wet only where the streambed is bedrock, or where mats or off-site logs are placed in the stream and used as a crossing.
- Obliterate all temporary stream crossings as soon as they are no longer needed, and restore any damage to affected stream banks or channel.
- Do not impair water flow. Install bridges, culverts or other structures such that water flow is not impaired and upstream or downstream passage of fish and all aquatic life-forms is assured at all times. If structures and associated materials are not designed to withstand high seasonal flows, remove them before such flows occur. Provide location information and documentation of all new crossings to the REC.
- Fill Materials. Materials and methods used for temporary crossings should cause minimal turbidity or siltation. Include two- (2) to six- (6) inch pit run rock, screened river gravels, clean washed two- (2) inch plus rock or gravel, and/or logs in fill materials. Bridge abutments below the high-water mark shall be rock or logs. When fill material is removed from the crossing, return the channel shape and gradient to pre-project conditions to the extent feasible, and stabilize any adjacent bare soil with mulch or other effective method. Provide location information and documentation to the REC.
- Recreate Channel Grade. During crossing removal, excavate all fill material in a manner that recreates the natural channel grade and orientation, with a channel bed that is as wide as or slightly wider than the original. Provide location information and documentation to the REC.
- Stabilize Crossing Sites. Treat all bare mineral soil exposed in conjunction with crossing construction, deconstruction, maintenance or repair, for erosion immediately upon

completion of work on the crossing, and prior to the onset of precipitation capable of generating runoff. Erosion control should consist of packed slash or weed-free straw mulch in a mosaic of depths of ½ to three (3) inches. Other erosion control measures described in Section 10 – Erosion and Sediment Control are acceptable. If the site is seeded, planting and seeding with native species, or a sterile seed mix and mulching is acceptable. Provide location information and documentation to the REC.

- Stabilize and Inspect Decommissioned and Abandoned Road Crossings. Stabilize decommissioned/abandoned road crossings and inspect following the first storm event producing bankfull stage flows and again prior to filing the completion report. Inspections should verify the effectiveness of the stabilization measures in preventing sediment discharges to waters and wetlands and to ensure that the measures are functioning to restore natural drainage and hillslope stability. Inspections should also verify that volitional up and downstream fish passage is provided within the stream crossing footprint. If stabilization measures are found to be ineffective, apply further stabilization measures, unless reentering the site would cause greater damage than leaving the ineffective stabilization measures. Provide location information and documentation to the REC.
- Access Prevention Barricades. Construct barricades at all points of access to the decommissioned or abandoned road to effectively prevent use by any passenger vehicle or equipment.
- Stream Crossing Type Hierarchy:
 - Temporary bridge - no ODFW/DSL/Corps notification necessary
 - Stream ford - Two (2) working day advance notification to ODFW District/DSL/Corps
 - Temporary culvert - Two (2) working day advance notification to ODFW District/DSL/Corps

(10) Cultural Resources BMPs

Hazard Tree Removal

- As noted previously, flag all known cultural sites in the field in advance of hazard tree removal operations. Cultural Resources Consultant will add a buffer to the site boundary based on their assessment of available site record data. Install flagging three (3) days prior to tree removal and remove within three (3) days of tree removal activities.
- Photograph all cultural sites prior to and following tree removal work to document conditions. This should be done during the flagging task, and before flagging removal.
- Archaeological monitoring is required for tree falling operations near specific archaeological sites which at a minimum are either eligible, listed on the **National Register of Historic Places (NRHP)** or contain human remains. However, additional “unevaluated” sites may also require monitoring. The cultural resources consultant is required to review all cultural resources site specific information and coordinate with the ODOT REC and ODOT Archaeologist, to ensure a path forward. Maps and lists of known resources will be made available only to qualified cultural resources consultant staff to ensure confidentiality of sensitive data.

- For hazard trees located outside of archaeological site boundaries, directionally fell trees away from archaeological sites.
- Remove limbs from trees prior to falling to help protect archaeological sites.
- Leave fallen trees in place and/or buck and remove trees with chainsaws and hand crews.
- Prevent heavy equipment from leaving the roadway. If heavy equipment must leave the roadway, place slash under the tires/tracks to prevent damage to the archaeological site. Equipment must only enter the archaeological site during mission critical aspects of the operation. Rubber tires are preferred to equipment with tracks if equipment must leave the roadway.
- Use appropriately sized equipment to prevent dragging logs through sites. If full-length harvest or dangle processing is the method used, fully suspend trees and remove them from the cultural resource site before they are processed and cut to length.
- Use contour felling methods to prevent future erosion of sites.
- Use shovel-type logging equipment which can site on the road and pluck logs from the surface once they are cut with minimal disturbance and no dragging.
- No skidding of logs is allowed in archaeological sites.
- No logging slash material may be placed on cultural resource sites.
- Examine all proposed staging and disposal locations for cultural resources prior to use. This work must be coordinated with the ODOT REC. REC will verify if staging and disposal is proposed for existing graveled, hard topped, or improved surfaces. If these conditions are met and no cultural sites exist then work may proceed.
- Examine any newly proposed access roads for cultural resources prior to use. This work must be coordinated with the ODOT REC.
- Culturally modified trees shall remain on site, if feasible. If not, culturally modified trees shall be stored at a temporary location, separate from non-culturally modified trees, until final disposition can be determined. Avoid marking trees with paint (using flagging instead) and avoid cutting trees through the “peel”.
- If it is determined that trees must be removed from the location within an archaeological site, contact the ODOT REC. Cultural Resources Consultant will be required to conduct a cultural resources condition assessment for all such locations once tree removal is complete.

Debris Removal

- If debris removal must occur within an archaeological site, monitoring is required.
- Limit ground disturbance if possible.
- If new stream crossings (which require ground disturbance) are necessary, archaeological monitoring is required.
- For any historic built resource listed on the NRHP or found eligible for listing on the NRHP and have been approved for removal, document with an address and photograph(s) before removal. This includes contributing and significant features of the historic built property. In the event that potentially eligible historic built resources are encountered, notify the ODOT REC, who will ensure that ODOT consults with the

SHPO, the appropriate Tribes, and federal agencies to determine the next course of action.

- Examine all proposed staging and disposal locations for cultural resources prior to use. This work must be coordinated with the ODOT REC. REC will verify if staging and disposal is proposed for existing graveled, hard topped, or improved surfaces, if these conditions are met and no cultural sites exist then work may proceed.
- Examine any newly proposed access roads for cultural resources prior to use. This work must be coordinated with the ODOT REC.

Monitoring

Monitoring (archaeological and/or historic) may be proposed at the following locations (all estimates on acreage and number of cultural resource sites are subject to change):

- Two Four Two Fire – an estimated 7938 acres may require monitoring with over 165 known resources present.
- Echo Fire – zero (0) acres will require monitoring.
- Thielsen Fire – an estimated 1273 acres may require monitoring with nine (9) known resources present.
- Holiday Farm Fire – an estimated 8195 acres may require monitoring with 110 known resources present.
- Beachie Creek Fire – an estimated 27,000 acres may require monitoring with 223 known resources present.
- Lionshead Fire – an estimated 27,000 acres may require monitoring with 307 known resources present.
- Riverside Fire – an estimated 29,000 acres may require monitoring with 235 known resources present.
- Slater Fire – an estimated 4600 acres may require monitoring with 43 known resources present.
- Archie Creek Fire – an estimated 13,000 acres may require monitoring with 232 known resources present.
- Alameda Fire – an estimated 979 acres may require monitoring with several known resources present.

Cultural Resources Consultants are responsible for complying with the full scope of Work for Archaeological Monitoring and the Inadvertent Discovery Plan (Appendix A). A separate Inadvertent Discovery Plan for Cultural Resources or Human Remains must be used for all work where monitors will not be present (Appendix B). A Built Environment Monitoring Scope is provided (Appendix C) and must be utilized when Built Environment monitoring is required.

(10) Aboveground and Underground Storage Tanks

An underground storage tank system (UST) is a tank and any underground piping connected to the tank that has at least 10 percent of its combined volume underground. The federal UST regulations apply only to UST systems storing either petroleum or certain hazardous substances.

Until the mid-1980s, most USTs were made of bare steel, which is likely to corrode over time and allow UST contents to leak into the environment. Faulty abandonment procedures can cause USTs to release their contents into the environment.

The greatest potential hazard from a leaking UST is that the petroleum or other hazardous substance can seep into the soil and contaminate groundwater and wetlands. A leaking UST can present other health and environmental risks, including the potential for fire and explosion.

The contractors shall comply with all laws, regulations, and industry standards applicable to aboveground and underground storage tanks abandonments. Contractors shall ensure that the parcel is not contaminated by an onsite commercial or residential petroleum storage tank.

If a storage tank is present on the site, the contractors shall remove oil from the tank and follow all state/federal regulations and proper permitting procedures for partial or complete tank decommissioning, including soil sampling and reporting. If an underground oil tank is not removed the surface features (fill or vent piping) will be labeled and protected from damage.

(11) Septic Tanks Abandonment

Contractors are to implement protective fencing or pumping out and removing a damaged septic tank or backfilling a septic tank excavation. These items will only be conducted at the direction of ODOT or ODOT's Monitoring Consultant. The contractor shall be responsible for any and all damage caused to a septic tank that has been identified and marked at a work location caused by the contractor or their subcontractors.

Contractor to provide protective fencing and includes the installation of connected 6-foot tall x 12-foot wide chain link fence panels free-standing around an identified septic tank location prior to debris removal. No fence posts or similar support shall be driven into the ground. Fence panels shall be new and constructed of at minimum of industry standard materials including 1-3/8"x 16 gauge frame, 11.5-gauge wire with 2-1/4" diamonds, and hot dipped galvanized. This item will only be conducted at the direction of ODOT or ODOT's Monitoring Consultant.

The septage shall be pumped and disposed of by a DEQ licensed septage handling contractor. All labor, equipment, materials, mobilization, and disposal costs, among other costs are incidental to the bid price. This item will only be conducted at the direction of ODOT or ODOT's Monitoring Consultant.

If contractors are to remove a septic tank the septic tank excavation shall be filled to ground level with a two-cement sack sand slurry (flowable fill).

(11) Erosion and Sediment Control

Erosion control is different from sediment control and is addressed by different methods. Erosion control protects soil from being dislodged and transported. Sediment control captures and retains dislodged sediment. Sediment, once it enters waterways, is considered a pollutant. Erosion control is more effective and less expensive than sediment control.

A subset of erosion control is runoff control. Control stormwater entering work areas from upslope with stabilized diversions, piping, plastic sheeting flumes or other methods that diverts runoff to stable areas with little erosion potential or that slows stormwater velocity, controls runoff volume and protects at-risk soils from erosion. Stabilize the outfall of stormwater runoff control BMPs so that discharge does not result in erosion.

Employ both erosion control and sediment control to the fullest extent practicable with the understanding that both are necessary for preventing sediment pollution from entering waterways.

Erosion and sediment control BMPs are temporary and serve to stabilize soils until permanent stabilization is provided by vegetation. Correct installation and use of BMPs is shown in ODOT's Standard Drawings, RD1000 Series.

Contractor shall have on staff either a Certified Erosion and Sediment Control Professional (CPESC) or Certified Erosion and Sediment Control Lead (CESCL) to conduct monitoring, inspections. This person shall be empowered to direct the installation, maintenance and repair of erosion and Sediment Control BMPs and have the authority to mobilize crews to make immediate repair or to add additional BMP during work or non-work hours when erosion and sediment control facilities are not providing effective functioning.

Work on this Project will employ multiple layers of protection to prevent sediment discharges and include monitoring and maintenance to minimize sediment from leaving the work areas. Every effort practicable shall be made to prevent sediment or turbid water from leaving work areas. In the event that a 10% increase in receiving water body turbidity above background level, as assessed visually, or a release of sediment associated with contracted work occurs, the following steps to address the discharge shall be undertaken:

- Contact ODOT REC
- Locate source of erosion and sediment.
- Control sediment discharge to prevent continued or additional discharge.
- Immediately (within 4 hours) take corrective actions or implement additional effective BMPs until the significant amounts of sediment or turbidity are no longer visually detectable.
- Document the discharge event and the remediation steps taken to resolve the issue. Photo documentation is recommended. Identify in the documentation compliance points at extents of work areas.
- Continue to monitor problem areas until they are accepted as stabilized.
- Stop work and coordinate with DEQ if all practicable turbidity BMP's have been employed and are ineffective at reducing turbidity to 10% above background.

(a) Erosion and Sediment Control Materials. Prior to any ground disturbing work at a project site, stockpile erosion control materials on site. Use control measures on disturbed soils (including staging and stockpile areas) within the Project site during and following

construction until work areas are accepted as stabilized. Employ the following BMPs to minimize erosion and control sedimentation until the site is accepted as stabilized by the On Scene Incident Commander. The BMPs are listed in the anticipated order of use on the Project. Seed and mulch or otherwise cover all disturbed soils as the final BMP installation. Continue monitoring and maintenance of BMPs until site is accepted as stabilized.

(b) Erosion and Sediment Control Best Management Practices:

- On slopes with disturbed soils, eliminate furrows that are perpendicular to contours (as caused by dragging logs or other activities).
- Texture surfaces of disturbed soils so that indents or furrows are parallel to contours. Do not compact soils.
- Ensure erosion control material is certified weed free.
- Enter and exit work areas using the same route to minimize ground disturbance.
- Use every means practicable to prevent ash, dirt and mud from tracking onto pavement. Either wash equipment tires/tracks prior to entering paved roads, or install construction entrance of coarse, open graded, aggregate, on an access route, or at the Project entrance where it will be capable to shake mud and dirt off of equipment tires or tracks. Use of pre-fabricated, reusable, construction entrance mats is acceptable.
- Sweep and remove mud and sediment tracked onto pavement. Washing sediment off pavement is not allowed.
- Plan and construct access routes (when used) into work areas to minimize disturbance. Unless access routes are free draining to shed flow perpendicular to alignment, construct diversion ditch/berm water bars at interval frequency to prevent stormwater flows from causing erosion. Construct water bars angled 30-40 degrees off perpendicular to road.
- Upon completion of work in each area, remove aggregate to native soils, decompact soil and pull fill material moved during construction of access route, onto the running surface, and reshape to match the original contours. Seed and mulch access routes at completion of work at each site.
- Avoid disturbance to streams, wetlands, cultural resources, or other identified sensitive areas. Removing trees cut adjacent to these areas can negatively impact the sites and leaving felled trees in place should be considered as a BMP.
- When working in wet weather, select sites that are not susceptible to erosion or discharges of sediment when practicable.
- Where practicable, leave downed trees in place parallel to contours where they will act as sediment barriers.
- Construct check dams in ditches, swales and areas where potentially turbid stormwater runoff is concentrated and conveyed. Such construction activities must be coordinated with the Cultural Resources Monitors to ensure protection measures are followed.

- Construct check dams perpendicular to flow so that the center of the dam, the channel center, is six (6) inches lower than the wings of the dam and at a height that does not impede the ditch's hydraulic function or cause the ditch to spill out of its banks at high flows.
- Construct check dams knowing that they must be removed once the site is stabilized.
- Materials for check dam construction include sand bags, biofilter bags, aggregate, straw wattles, or compost filter socks. Biofilter bags and straw wattles need to be staked and/or weighted in place. Compost socks must be staked in place.
- Pre-filled compost socks are recommended for check dam construction because of ease of installation, effective function and ease of removal.
- Inspect check dams weekly and after 1/2 inch of rainfall in 24 hours.
- Remove sediment behind check dams when it reaches 1/2 the storage depth and place removed sediment in location where it will not reenter ditch or become an erosion risk.
- Construct check dams at heights and spacing intervals according to the table below:

MAXIMUM CHECK DAM SPACING "L"				
Ditch Grade				
	H=8"	H=12"	H=18"	H=24"
10%	**	**	15'	20'
9%	**	**	16'	22'
8%	**	**	18'	25'
7%	**	**	21'	28'
6%	**	16'	25'	33'
5%	**	20'	30'	40'
4%	16'	25'	37'	50'
3%	22'	33'	50'	66'
2%	33'	50'	75'	100'

**** Not Allowed**

H = Min. dam height

- Remove check dams and trapped sediment after site has been accepted as stabilized.
- For ditches with longitudinal slopes 5% or greater, stabilize channels with rock or erosion control matting on ditch bottoms and not less than 1/2 way up side slopes. Where water quality facility was impacted, seed with water quality seeding and install fully biodegradable matting.
- Install perimeter control at toe of slopes or back slope of ditch consisting of sediment fence, straw wattles or compost socks.
- Install fully biodegradable straw wattles on long slopes as intermediate sediment barriers. Fully biodegradable (not photo-degradable) products do not require removal after site has been accepted as stabilized.
- Install sediment barriers as follows:
 - Install sediment barrier perimeter control at toe of slopes of disturbed soils.

- When sediment fence is used, install sediment fence parallel to contours with bottom six (6) inches of fabric embedded into soil
- When straw wattles are used, install straw wattles parallel to contours nested into trench three (3) inches in depth and staked in place with stakes four (4) feet O.C.
- Install compost socks parallel to contours and staked in place with stakes four (4) feet O.C.
- Install sediment barriers on slopes according to the table below:

BARRIER SPACING		
INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS		
<i>% SLOPE</i>	<i>% SLOPE</i>	<i>MAXIMUM SPACING ON SLOPE</i>
<i>10% Flatter</i>	<i>1:10 or Flatter</i>	<i>300'</i>
<i>10 > % ≥ 15</i>	<i>10 > X ≥ 7.5</i>	<i>150'</i>
<i>15 > % ≥ 20</i>	<i>7.5 > X ≥ 5</i>	<i>100'</i>
<i>20 > % ≥ 30</i>	<i>5 > X ≥ 3</i>	<i>50'</i>
<i>Steeper than 30%</i>	<i>Steeper than 1:3</i>	<i>25'</i>

- Remove all sediment barrier products that are not fully biodegradable once the site is accepted as stabilized. ***Materials used in the sediment barrier should not pose an entanglement risk to fish or wildlife.***
- Wood Chip Mulch. Wood chip mulch derived from logging slash can provide durable soil cover to prevent erosion or it can provide cover for seed germination. The characteristics of mulch for these different functions are different. For either function do not apply wood chip mulch in ditches, swales, ephemeral water courses, or other areas where moving water could displace wood chip mulch. Do not apply wood chip mulch to slopes greater than 1V:2H.
 - Mulch for erosion control consists of wood pieces no larger than four (4) inches in the long direction and not larger than two (2) inches in any other direction, with smaller pieces making up more than 50% of the wood chips. This wood chip mulch applied at a thickness of not more than three (3) inches will cover the soil, prevent rain splash erosion, and reduce runoff velocity. This material and application method will inhibit plant seed germination and seedling growth both for existing seeds and living roots in the soil and for seeding applied to the burned areas. Erosion control mulch is appropriate for use where revegetation is not a goal.
 - Shredded Wood Mulch for seeding consists of long strand pieces that are long and thin sized as follows:

Length: 95-100% ≤ 3 in., no more than 5% at 3-5 in., and 0% > 5 in

Width: 95-100% ≤ ½ in., no more than 5% at 1 in., and 0% > 1 in

Shredded wood fiber or wood processed in this form, like pick-up-sticks, lays over the soil with large void spaces that shade the soil, retain soil moisture and moderate temperatures, while inter-linking to provide an erosion resistant surface that is resistant to displacement. Long fiber mulch averaging length less than two (2) inches or wood shaving should be installed with tackifier. Conditions provided

by long fiber wood are ideal for seed germination and growth. Seed prior to installation of shredded wood mulch and apply shredded wood mulch, with the characteristics noted above, at a thickness not more than three (3) in depth.

- Straw. Straw is an acceptable erosion prevention BMP for slopes with grades less than 1V:2H. Straw must be certified weed free. Application of straw mulch by mechanical means or broadcasting should be at a rate of between one (1) and two (2) tons per acre. Secure straw in place with guar or plantain based tackifiers at the application rate shown below for compost or crimp in place.
- Compost. Compost is an acceptable erosion prevention BMP for slopes with grades less than 1V:1H. Compost must meet the requirements of the US Composting Council and its Seal of Testing Assurance Program. Compost is applied at a depth of 2 inches and fixed in place with a guar or plantain based tackifier. Seeding can be installed concurrently with compost. Application rates of tackifier with compost is as follows:

Dry Powder Tackifier Rates per Slope (H:V):

Slope	<5:1	4:1	3:1	2:1	1:1
Lb/Acre	50-60	60-80	80-100	120-150	150-220

- Matting. Where highly erodible conditions exist, matting, such as coconut fiber matting, should be used for such stabilization. Use only fully biodegradable mattings that contain no plastic or “photo-degradable” parts. Where matting is used, seed prior to installation of matting. Fix matting in place with top and toe anchor trenches and staple field of matting to soil with landscape staples at five (5) feet O.C. each direction.
 - Soil Tests. Conduct soils tests prior to seeding that are representative of site conditions. Severity and heat of burns varied and impacts to soils and resultant conditions of soils will vary also. Soil tests should evaluate nutrients, and organic matter content. Evaluate soils for hydrophobic conditions.
 - Fertilizer. Provide slow release organic fertilizer with seeding as recommended by soils tests. If evaluation of soils show them to have hydrophobic conditions, include wetting agent with hydromulch.
- (c) Seeding for Erosion and Sediment Control. Seed all disturbed soil impacted by tree removal activities. Apply recommended seed mix shown in table below at application rate shown in the column: PLS Rate. Due to high demand, availability of species in recommended mix is subject to change without notice. Substitutions of seed species or application rate must be approved by ODOT technical expert. This seed mix has been developed jointly with the USFS.

Botanical Name	Common Name	Seeds per SF	PLS % by Composi	Seeds per Acre	Seeds per	PLS Rate (lbs/ac)
<i>Bromus marginatus</i>	mountain brome	20	22.2	871,200	90,000	9.68
<i>Deschampsia elongata</i>	slender hairgrass	40	44.3	1,742,400	1,950,000	0.89
<i>Lupinus rivularis</i>	riverbank lupine	0.2	0.2	8,712	28,700	0.30
<i>Achillea millefolium</i>	western yarrow	5	5.5	217,800	2,800,000	0.08
<i>Triticale Quickguard</i> ©	<i>Quickguard</i> © sterile					
	wheat grass	5	5.5	217,800	12,000	18.15
<i>Elymus Glaucus</i>	Blue wildrye	20	22.2	871,200	110,000	7.92
Total		90.2	100.0			37.02

Apply seeding with mulch and tackifier with hydroseeding equipment. During seeding include a soil bio-amendment comprised of not fewer than nine (9) species of Endomycorrhizae (including several Glomus species), not fewer than five (5) Ectomycorrhizae species (including rhizopogon and Sclerodema species), not fewer than five (5) beneficial bacteria of the Bacillus genus, and also include a high quality slow release organic fertilizer. Use Bonded Fiber Matrix (BFM) as mulch for all seeding applications. BFM shall include in its components weed and seed free fiber derived from wood or straw, a tackifier, and a tracer dye. BFMs using wood fiber mulch and coconut fiber mulch (coir) have a longer functional life than BFMs using straw fiber. Some acceptable wood fiber BFMs are:

- Rainier Fiber With Tackifier
- FibraMulch Flex Guard
- FibraMulch Coco Flex ET FGM
- FibraMulch Spray Flex
- Profile Flexterra FGM
- Profile Pro Matrix EFM
- Profile Hydro Blanket

Some acceptable straw fiber BFMs are:

- HydroStra
- Hydrostraw Guar Plus

Apply the BFMs listed above with seed and soil bio-amendment at the following rates:

Slope	Application Rate	
< 1V:3H	3000 Lb/Ac	
1V:3H – 1V:2H	3500 Lb/Ac	
1V:2H – 1V:1H	4000 Lb/Ac	
1V :1H	4500 Lb/Ac	

Areas where anthropogenic debris (debris of human origin) removal is conducted **do not get seeding**. Provide erosion prevention in these areas by hydromulching with bonded fiber matrix, at the rates provided in the table above, that contains no seed.

- (d) Sediment and Erosion Control Measures. Utilize sediment and erosion control measures, as noted above, throughout all phases of operation where erosion will strip sites of seeding and surface soil, and sediment runoff from exposed slopes threatens to enter a river, stream or lake. Monitor erosion and sediment control measures on a regular basis. Evaluate the effective functioning of each BMP not less than weekly during active work and monitor each BMP after each rain event of 1/2 inch in 24 hours. Maintain BMPs in good operating condition until the site is accepted as stabilized. Maintenance includes, but is not limited to, removal of accumulated sediment and/or replacement of sediment control BMPs. Make modifications, repairs and improvements to the sediment and erosion control measures whenever it is needed. If the sediment barrier fails to retain sediment, employ corrective measures, and notify the erosion and sediment control monitor immediately.
- (e) Sediment Barriers. If work or vehicle crossings must occur within a wetted stream or lake area, take precautions to minimize turbidity and sedimentation; this may require the placement of coir logs, coir rolls, compost socks, or other sedimentation barriers so that silt and/or other deleterious materials are not allowed to pass to downstream reaches. *Materials used in the silt barrier should not pose an entanglement risk to fish or wildlife.*
- (f) Trenching/Excavation Spoils. Do not place castings or spoils from the trenching/excavation operations on the stream side of the trenching/excavation site.
- (g) Removal of Sediment from Barriers. Sediment collected behind sediment barriers should be removed on an 'as needed' basis to prevent turbid water from flowing around the sediment barriers during storm events. Remove sediment barriers when temporary stream crossings have been taken out and after all flowing water is cleared of turbidity in a manner that will not introduce silt to the stream. The stream should then be restored to a clean and natural condition.
- (h) Remove sediment from erosion controls if it reaches one-third of the exposed height of the control.
- (i) Stabilize all disturbed soils following any break in work unless construction will resume within four days.
- (j) Remove temporary erosion controls after construction is complete and the site is fully stabilized.

(12) Wildlife Protection

Leave Wildlife Unharmd. If any wildlife is encountered during the course of construction, said wildlife should be allowed to leave the construction area unharmed. If any Oregon ESA listed wildlife is encountered, contact the REC.

Trees/Vegetation with Active Bird Nests. Prevent disturbance of trees/vegetation that contain active bird nests. If an active nest is encountered, contact the ODOT REC to discuss avoidance.

If avoidance isn't feasible, take will be covered under the ODOT MBTA permit with possible take modifications, if this becomes necessary. ODOT will also have APHIS Wildlife Services on-call to assist with take if needed. ODOT will regularly report take to the Migratory Bird Office.

Northern Spotted Owl Protection. Several northern spotted owl (NSO) nests have been detected along the highway segments where hazard tree removal will occur, and within U.S. Fish and Wildlife Disturbance zone (0.25 miles). Removal of hazard trees 0.5 miles in either direction from the approximate center point coordinates provided below should be prioritized for completion by February 28th, 2020. The NSO nesting window starts March 1 and detection of an active nest can affect schedule for tree removal in the nest vicinity.

NSO Detections within 0.25 miles of Project Hazard Tree Removal Highway Segments

Fire Name	Road Segment	NSO detections within 0.25mi	NSO DCH*
242	US-97/OR -62/ OR-422	0	0 miles
Almeda Drive- Phoenix	I-5/OR-99	0	0 miles
Archie Creek – Mount Hood National Forest	OR-138	4	12.85 miles
Beachie Creek	OR-22	2	0 miles
Echo Mountain	OR-18	0	0 miles
Holiday Farm	OR-126	1	0.7 miles
Lionshead	OR-22	3	0 miles
Riverside	OR-224	4	5.5 miles
Thielsen	OR-138	0	0 miles

*Designated Critical Habitat (DCH)

Archie Creek Fire

43.30427 -122.955481
 43.316827 -122.974727
 43.300339 -122.871215
 43.318201 -122.826926

Beachie Creek Fire

44.71153 -122.195555
 44.757869 -122.368418

Holiday Farm Fire

44.122588 -122.392318

Lionshead Fire

44.681203 -121.967081
 44.69536 -122.054628

44.707561 -122.099603

Riverside Fire

45.199496 -122.226793

45.194052 -122.193147

45.156297 -122.113153

45.121787 -122.071783

Northern Spotted Owl Designated Critical Habitat. Track and report where hazard tree removal occurred within Northern Spotted Owl Designated Critical Habitat (DCH). Provide polygons showing treatment areas and description of intensity of treatment. Include a summary of snags and downed wood left in treated areas of NSO DCH.

Historic Golden Eagle Nest. A golden eagle historically nests approximately 1000 ft. from OR62 near MP 96; it is upslope approximately 600 ft. higher in elevation than the highway. Although this location is outside the tree removal area, strive to cut and remove trees in this area prior to February 1 or at a time that the nest is unoccupied to avoid noise disturbance. If it is not possible to conduct work near this site prior to February 1, and the nest is occupied when work is planned, contact the REC. Do not initiate work in this area until directed to do so by the REC because ODOT may need to apply for an incidental eagle take permit from the Migratory Bird Office.

Other Eagle Nests. If an eagle nest is encountered in a hazard tree, contact the ODOT REC to assist with determining the status of the nest. Nest status may be determined by ground observation, climbing the tree, or drone camera footage, depending on the circumstances. If the nest (regardless of status) must be removed for human health and safety issues, ODOT will contact the Migratory Bird Office and apply for a nest removal permit. If the nest in question is thought to be occupied, delay removal of the tree containing the active eagle nest until after fledging if possible. Additionally, minimize disturbance around the nest tree to the extent possible. If a nest is active and it is necessary to remove the hazard tree for safety reasons, ODOT will contact the Migratory Bird Office to acquire a BGEPA take permit to remove the nest occupants (if nestlings are present) and foster them in another eagle nest. If fostering nestlings isn't possible, arrangements will be made to transport them to an appropriate rehabilitation center. APHIS Wildlife Services will be on-call to assist.

Aquatic Species Surveys. If work or other activities are proposed within a water of the US or State, including wetlands, a person who is knowledgeable in the identification of listed fish and amphibian species, should survey the work area prior to initiating operations within or immediately adjacent to the waters. If a listed species or evidence of their presence are found, the site should be flagged and all water drafting, vegetation and ground disturbing operations at that location site should cease until consultation with a biological monitor occurs to identify measures to minimize and avoid impacts where feasible.

Any in-stream work or vehicle/equipment crossings other than by temporary bridge requires that the ODOT REC be contacted and 48 hours of advance notice be provided to the appropriate ODFW District. Do not initiate work without REC approval.

(13) Protected Plants

To the extent possible, avoid or minimize ground disturbance to limit impacts to potential unknown populations of listed plants. Consult the GIS map layer for ODOT Special Management Areas (SMA) to assess SMA overlap with work activity locations. In the event that a listed plant species is encountered, halt work that could impact the plant and contact the ODOT REC. If the plant(s) cannot be protected on site without compromising human health and safety, ODOT will coordinate with the Oregon Department of Agriculture (ODA).

(14) Revegetation

The long-term goal of revegetation is to mimic the diversity and stocking levels of nearby undisturbed plant communities, while also incorporating those plants needed to minimize erosion in the near- and medium-term future. The seed mix shown in Section 10 – Erosion and Sediment Control, satisfies this criteria while protecting the soil and allowing existing vegetation and seed in the soil to reestablish. Revegetation efforts require monitoring that incorporates metrics that may trigger additional planting to achieve the desired future condition that is defined in the revegetation plan.

The stocking levels for planted trees and shrubs shall include consideration of possible future mortality rates. Revegetation efforts require monitoring that incorporates metrics that may trigger additional planting to achieve the desired future condition that is defined in the revegetation plan.

Revegetation will occur by means of hydro-seeding using a native seed mix and limited to broadcast in areas that are not known to be in or affect tribal plant gathering/harvesting sites. Prior to the start of seeding, coordinate with Tribes, FEMA, ODOT to identify tribal gathering/harvest sites within the project area and ensure seed mix compatibility in these locations.

Best management practices for revegetation include the following:

- Plant and seed disturbed areas before or at the beginning of the first growing season after construction.
- Use a diverse assemblage of vegetation species native to the action area or region, including trees, shrubs and herbaceous species. Vegetation such as willow, sedge and rush mats may be gathered from abandoned floodplains, stream channels, etc. When feasible, use vegetation salvaged from local areas scheduled for clearing due to development.
- For long-term revegetation use only species native to the project area or region that will achieve shade and erosion control objectives, including forb, grass, shrub or tree species that are appropriate for the site.

- For short-term stabilization measures it may be suitable to use a non-native sterile seed mix if native seeds are not available, weed-free certified straw, jute matting, and similar methods.
 - Do not apply surface fertilizer within 50 feet of any wetland or water body.
 - Install fencing as necessary to prevent access to revegetated sites by livestock or unauthorized persons.
 - Do not use invasive or non-native species for site restoration.
- Conduct post-construction monitoring and treatment to remove or control invasive plants until native plant species are well-established.

Revegetate riparian areas with a seed mix that includes trees, shrubs grasses and forbs. Riparian areas are defined as the strip of land on both sides of both perennial and ephemeral watercourses. The strip of land twenty five (25) feet wide, on both sides of watercourse and land within steepened banks of watercourse channel shall be considered the riparian area. Seed riparian area using all directives regarding seeding identified in Section 10 – Erosion and Sediment Control with the exception that no fertilizer will be used. Do not use Riparian Area Seed Mix within thirty feet of roadway shoulder.

For riparian areas seed with the riparian seed mix listed below:

Botanical Name	Common Name	Seeds per SF	PLS %	Seeds per Acre	Seeds per Pound	PLS Rate (lbs/ac)
<i>Alnus rubra</i>	red alder	0.5	0.6	21,780	667,000	0.03
<i>Bromus carinatus</i>	California brome	20	22.9	871,200	100,000	8.71
<i>Deschampsia elongata</i>	slender hairgrass	20	22.9	871,200	1,950,000	0.45
<i>Elymus Glaucus</i>	Blue wildrye	10	11.4	435,600	110,000	3.96
<i>Festuca roemerii</i>	Roemer's fescue	20	22.9	871,200	450,000	1.94
<i>Holodiscus discolor</i>	oceanspray	10	11.4	435,600	6,800,000	0.06
<i>Oemleria cerasiformis</i>	indian plum	0.1	0.1	4,356	4,000	1.09
<i>Lupinus rivularis</i>	riverbank lupine	0.4	0.5	17,424	28,700	0.61
<i>Triticale Quickguard®</i>	Quickguard sterile wheatgrass	5	5.7	217,800	13,000	16.75
<i>Rosa gymnocarpa</i>	baldhip rose	0.5	0.6	21,780	28,000	0.78
<i>Rubus spectabilis</i>	salmonberry	1	1.1	43,560	143,000	0.30
Total		87.5	100.0			34.68

(15) Site Restoration

Although no single criterion is sufficient to measure restoration success, the intent is that the following features should be present in the upland parts of the project area, within reasonable limits of natural and management variation:

- Human and livestock disturbance, if any, are confined to small areas necessary for access or other special management situations.
- Areas with signs of significant past erosion are completely stabilized and healed; bare soil spaces are small and well-dispersed.

- Soil movement, such as active rills and soil deposition around plants or in small basins, is absent or slight and local.
- Native woody and herbaceous vegetation, and germination microsites, are present and well distributed across the site; invasive plants are absent.
- Plants have normal, vigorous growth form and a high probability of remaining vigorous, healthy and dominant over undesired competing vegetation.
- Plant litter is well distributed and effective in protecting the soil with little or no litter accumulated against vegetation as a result of active sheet erosion ("litter dams").
- A continuous corridor of shrubs and trees appropriate to the site are present to provide shade and other habitat functions for the entire streambank.

Loosen compacted areas of soil when necessary for revegetation or infiltration. In many cases tillage will be necessary to decompact soils and restore infiltration ability and soil productivity. A variety of implements/methods are available to decompact soils, including: winged subsoilers, rock ripper, excavators with brush rakes, mulching heads, or custom attachments such as the subsoiling grapple rake and subsoiling excavating bucket (e.g., ripping soils with an excavator bucket mounted with teeth). The depth of needed tillage can be estimated by referring to the rooting depth of nearby native vegetation. In areas of dispersed soil disturbance consider spot tillage.

Restore any significant disturbance of riparian vegetation, soils, stream banks or stream channel.

Care should be taken during site restoration efforts to ensure cultural resource protections and avoid cultural resources site damage. Some restoration efforts may require an archaeological monitor.

Obliterate all temporary access roads, crossings and staging areas.

Remove all project related waste, e.g., pick up trash, sweep roadways in the project area to avoid runoff-containing sediment.

(16) Resource Site Damage

It is possible that hazard tree work and debris removal might damage known or unknown cultural resources. Should this occur, immediately stop work in the vicinity of the site. The consulting archaeologist/cultural resources specialist must record the damage using the SHPO guidelines and standards, and contact the ODOT REC. ODOT will then work with FEMA, SHPO, Tribes and USFS/BLM to address any additional work needed. Work in the vicinity of the site can resume with approval of the ODOT REC. NOTE: damages to cultural resources from fire itself does not require a damage assessment or mitigation.

(17) Wild and Scenic Rivers, National Scenic Byways, State Scenic Waterways

Each corridor along the major wildfires in Oregon in 2020 occurred along both state and nationally designated scenic byways (Rogue Umpqua NSB, West Cascades NSB). National Scenic Byways are to be managed to protect those intrinsic qualities for which the byways were

designated. Both the BLM and Forest Service include visual quality standards as part of their respective Land and Resource Management Plans to help protect, restore and enhance scenic qualities along the byway. Vegetation is a significant natural feature contributing to the scenic quality along these corridors. Every effort should be made to employ best practices in the removal of hazard trees in order to mitigate visual impacts and protect the inherent scenic character.

The following list of recommended BMP's were developed jointly by the USFS and BLM and applies to all work occurring within the boundaries of a designated Wild and Scenic River, National Scenic Byway, or State Scenic Waterway. A local coordination meeting will be held for each highway corridor prior to the initiation of tree removal to determine which BMP's are practicable and feasible in specific locations. These meetings will include the ODOT Operations Chief, On-Scene Incident Commander, USFS and/or BLM POC (as applicable), and the ODOT REC.

Table 1: Wild and scenic rivers (WSR) and national scenic byways within fire perimeters

Fire	WSR or national scenic byway	Values	Regional/State Office Contact	Forest/District Contact
Archie	Rogue Umpqua National Scenic Byway	Scenic and Recreation	USFS: Brad Cownover, Regional Landscape Architect (earl.cownover@usda.gov)	Umpqua National Forest: Vern Shumway vern.shumway@usda.gov
Beachie Creek	West Cascade National Scenic Byway	Scenic and Recreation	USFS: Brad Cownover, Regional Landscape Architect (earl.cownover@usda.gov)	Willamette National Forest: Matt Peterson matt.peterson@usda.gov
Riverside	West Cascade National Scenic Byway	Scenic and Recreation	USFS: Brad Cownover, Regional Landscape Architect (earl.cownover@usda.gov)	Mt. Hood National Forest: Jenn Watts jennifer.watts@usda.gov
Lionshead	West Cascade National Scenic Byway	Scenic and Recreation	USFS: Brad Cownover, Regional Landscape Architect (earl.cownover@usda.gov)	Willamette/Mt. Hood National Forest: Matt Peterson/ Jenn Watts
Archie	Rogue-Umpqua National Scenic Byway	Scenic	USFS: Brad Cownover, Regional Landscape Architect (earl.cownover@usda.gov)	Umpqua National Forest: Vern Shumway
Archie	North Umpqua WSR	Free flow, water quality and quantity,	USFS: Nancy Taylor (nancy.taylor@usda.gov)	Umpqua National Forest:

		cultural, fisheries, recreation, scenic	BLM: Lauren Pidot (lpidot@blm.gov)	Roseburg District: Suzanne Shelp (sshhelp@blm.gov) and Cheyne Rossbach (crossbac@blm.gov)
Beachie Creek	Molalla WSR	Free flow, water quality, cultural, scenic, fish, recreation, geology	BLM: Lauren Pidot	Northwest Oregon District: Amanda Deeds (adeeds@blm.gov)
Beachie Creek	Elkhorn Creek WSR*	Free flow, water quality, fisheries and wildlife, scenic	USFS: Nancy Taylor BLM: Lauren Pidot	Willamette National Forest: Matt Peterson matt.peterson@usda.gov Northwest Oregon District: Amanda Deeds (adeeds@blm.gov)
Riverside	Clackamas WSR†	Free flow, water quality, botanic and ecologic, cultural and historic, fisheries, recreational, wildlife	USFS: Nancy Taylor BLM: Lauren Pidot	Mt. Hood National Forest: Ben Watts (benjamin.watts@usda.gov) Northwest Oregon District: Amanda Deeds (adeeds@blm.gov)
Riverside	South Fork Clackamas WSR†	Free flow, water quality, fisheries, recreational	USFS: Nancy Taylor BLM: Lauren Pidot	Mt. Hood National Forest: Ben Watts (benjamin.watts@usda.gov) Northwest Oregon District: Amanda Deeds (adeeds@blm.gov)

*
†The USFS administers these WSR; the BLM has jurisdiction over less than a mile of the designated portion of each river.

Prior to initiating work, coordinate with local USFS and BLM points of contact (POC), REC and ODOT On-Scene Incident Commander for the following best practices:

- Identification of imminent danger trees should generally follow the Field Guide for Danger-Tree Identification and Response along Forest Roads and Work Sites in Oregon and Washington (Filip et al. 2016) for both agencies and as indicated in the MOU between the Forest Service and the Oregon Department of Transportation.
- Tree removal and stump management for visual resources:
 - Maximum height of stumps should be no more than 7 inches, as measured from the uphill side of the stump.
 - Where feasible, flush cutting stumps is preferred.

- Minimize exposure of the cut face of the stump to the road/drivers; cut should be horizontal or face away from the highway.
 - Where practical place soil over the stumps that are visible from the highway.
 - Minimize damage to residual trees and vegetation when falling and yarding.
- In areas of high fire severity/mortality feather the edge of cut/uncut vegetation. Do not clear the corridor in such a way that it leaves a uniform straight line. See Figure 1. Edges should:
 - Appear natural.
 - Where feasible, leave clumps and single trees, alive and dead, of uncut vegetation along the boundary of the cleared area.
 - Cleared area boundaries should follow the contours and natural drainage patterns where feasible.
 - It is often better to have a wider cleared area and then leave clumps or single trees, alive and dead, uncut just inside the cleared area.
 - Avoid straight line cuts
- Downed wood and standing dead trees for natural resource and scenic values:
 - Do not cut trees that are not hazards.
 - Retain a minimum of 6 of the largest down trees per acre (minimum of 13-44 inches DBH inches and minimum of 40 feet length); coordinate with local contacts on the number of trees beyond the minimum that should be left on the ground or when working in, or adjacent to, developed recreation sites. They shall be generally left on contour and/or gently sloping downhill to prevent soil erosion. The trees should be left in a manner that provides visual variety vs uniformity when feasible; leave varying diameters of trees scattered throughout the impacted area.
 - **On BLM lands**, retain trees that are greater than 40 inch DBH whenever possible. If such trees need to be cut for safety or operational reasons, retain cut trees as logs on site.
 - Where it does not compromise health and safety along the highway, leave the largest standing 10-12 dead trees (minimum 9-39 inches DBH) preferably in clumps. Standing snags that do not pose a hazard and may fall partially into the river but not block the channel should be left when possible.
 - Avoid leaving large tree rounds, especially if the cut face will be visible to travelers.
 - Do NOT leave root wads in view of the highway. Where possible leave root wads in areas where they will not cause future hazards to highway, preferably on riverside of highway where they may enhance fish habitat.
 - **On USFS Lands Only (Do not apply to BLM Lands)** - Remove all logs except for large trees that are both ≥ 40 inches DBH and were established prior to 1850, then the following applies in all Land Use Allocations (NCO RMP, pp. 62, 65, and 68):
 - If trees are determined to not be a hazard (e.g., leaning away from the road) maintain as standing snag.
 - If determined to be a road hazard, fell and leave as down wood where feasible (e.g., based on topography, so that log will not become a future hazard by rolling into the road).
- Marking (Removal) Guidelines for Fire-Injured Trees in hazard areas:

- Any marking/painting of trees should not be visible to travelers along the road.
- **Slash**
 - Scenic corridor plans require retention of natural settings without evidence of human activity. Large numbers of danger trees exist in the burned areas, which, if left on site as cut and piled slash, would show significant human management activity on the landscape. To maintain scenic integrity and meet plan objectives, cut trees and slash must be removed from the project area and decked safely for appropriate disposal as per Forest Service and BLM procedures.
 - Avoid leaving piles of slash that are visible from the highway.
 - Any scattered slash left on site shall not protrude more than 2 feet above the ground. Slash and cull for grinding/chipping may be stockpiled at locations specified by local office contacts (see table at top of document for local office contacts).
- **Logs**
 - Contact local offices for locations for hauling and decking logs.
 - Merchantability specifications:
 - Min. 10-inch DBH; Min 6-inch tops.
 - Preferred lengths in feet on BLM lands: 41, 37, 27, 19, 18.
 - Minimum 33% sound wood.
- **Riparian Area**
 - Avoid falling hazard trees into mainstem rivers if they will block the channel or pose a threat to recreational navigation. Notify Oregon Marine Board, ODFW, USFS/BLM, and the REC if hazard trees fall into mainstem rivers and block the channel or pose a threat to recreational navigation. Standing snags that may fall partially into the river but not block the channel should be left standing when possible.
 - On tributary streams, hazard trees that must be felled should be dropped towards the stream channel.
 - Do not remove trees that fall into streams and wetlands. Leave in place for fish and wildlife habitat.
 - No removal of trees within 25 feet of the North Umpqua River and its tributaries unless it poses a risk to the highway.
 - When possible, keep equipment off soils within 100 feet of larger streams or designated wild and scenic rivers. Do not refuel equipment within 100 feet of streams or rivers
 - Retain some trees for aquatic restoration. The size of these logs would need to be a minimum of 24 inches in diameter and at least 55 feet in length. Trees would be cooperatively identified between ODOT, ODFW and Forest Service or BLM Fisheries personnel.

GIS Mapping Requirement

To ensure compliance of this plan, GIS mapping containing following layers will be developed to visualize and manage all branches and their environmental requirements. The consultant shall use GIS mapping to document removal actions completed or residual condition remaining (e.g. tanks removed or located).

- Right of Entry (APN: Assessor's Parcel Number)
- Archeological Monitoring Locations

- Culturally Sensitive Locations
- State Historic Preservation Sites
- North Umpqua River Location
- Structure Built Prior to 1978 (Lead)
- Structures built prior to 01/01/2004 (Asbestos)
- Wetlands Map
- Underground / Above Ground Storage Tanks
- Septic Tanks
- Wild and Scenic Rivers Act Designations
- National Scenic Byway Designations
- State Scenic Waterway Designations
- Wilderness Area Designations
- Endangered Species Act Critical Habitat Designations

This project holds an emergency authorization from OPRD for work in Scenic Waterway corridors. Consultant/Contractor are responsible for obtaining a standard Scenic Waterways permit from OPRD once on board.

The Oregon Parks and Recreation Department (OPRD) will conduct a line-of-sight view analysis for Scenic Waterways following completion of hazard tree removal. Viewshed mitigation may be required in the Scenic Waterways permit from OPRD and will likely consist of tree planting to speed recovery of scenic values. In coordination with OPRD, USFS, BLM and ODOT, design and implement any required viewshed mitigation measures. Plantings must not pose a threat to the highway or clear zone when trees mature.

APPENDIX A
ARCHAEOLOGICAL MONITORING SCOPE AND INADVERTANT DISCOVERY PLAN
Oregon Department of Transportation
ODOT Hazardous Tree (and Debris) Removal
FEMA 4562-DR-OR

The following Archaeological Monitoring Scope and Inadvertent Discovery Plan is to be implemented by the Oregon Department of Transportation (ODOT), and followed by any contractor or subcontractor working for or on behalf of ODOT, as procedure to expeditiously address inadvertent discoveries of cultural resources or human remains during ground disturbing activities conducted as part of the hazardous tree and debris removal in the Oregon areas impacted by the Archie Creek Fire, Beachie Creek/Lions Head Fire, Holiday Farm Fire, Echo Mountain Fire, Riverside Fire, Thielsen Fire, and Two Four Two Fire – Klamath County.

The purpose for archaeological monitoring of project activities is to prevent damage to cultural materials and/or human remains. Specified herein are procedures for addressing significant cultural deposit and/or human skeletal remains discoveries during ground disturbing activities. This plan provides guidance to ODOT and contractors so they can: comply with applicable laws and regulations, particularly Section 106 of the National Historic Preservation Act (as amended);

1. describe to regulatory and review agencies the procedures ODOT will follow to prepare for and address unanticipated discoveries; and,
2. provide direction and guidance to project personnel in the procedures to be followed in the event of unanticipated cultural materials and/or human remains discovery. The *Guidelines for Conducting Field Archaeology in Oregon* can be found here:
https://www.oregon.gov/oprd/HCD/ARCH/docs/draft_field_guidelines.pdf

Archaeological monitoring for this project has three objectives:

1. Along with the Project Manager, the Archaeological Monitor shall ensure that ground disturbance is limited to the areas necessary to remove hazardous trees and structural debris, especially within or adjacent to the boundaries of known archaeological sites. The Archaeological Monitor shall document activities required to remove hazardous trees and structural debris with photographs recording progress, with special attention to the status of known/identified/previously recorded structures, archaeological, or cultural resources.
2. Archaeological Monitor will ensure that care is taken that extant resources are not damaged by hazard tree removal activities.
3. The Archaeological Monitor shall examine excavated volume and exposed surfaces and profiles for evidence of archaeological features and deposits. Prehistoric/and or historic cultural resources that might be discovered during monitoring activities could include, but may not be limited to (see Oregon Revised Statutes 358.905, Definitions):
 - areas of charcoal or charcoal-stained soil with artifacts;
 - shell middens of modified shell and/or bone, and trade items such as metal and glass objects and beads;
 - stone tools or waste flakes (i.e. an arrowhead, or stone chips);
 - bones, burned rocks, accumulation of shells or other food related materials in association with stone tools or flakes;
 - culturally modified trees;

- a cluster of tin cans, ceramics, or bottles; logging or agricultural equipment that appears to be historic and older than 50 years;
- foundations and/or walls or cisterns made from wood, brick, or cement;
- abandoned railroad tracks, decking, or other industrial materials that are suspected to be over 50 years old.

A. QUALIFICATIONS.

The ODOT Archaeological Monitor shall meet the Secretary of the Interior's Professional Standards for Archaeology (36 CFR 61, Appendix A) and Oregon Qualified Archaeologist Standards [ORS 390.235(6)(b)] as well all qualifications necessary to work on BLM lands in Oregon, which include cultural resources experience in the Pacific Northwest.

B. PRIOR TO CONSTRUCTION.

Prior to construction, the Archaeological Monitor would be expected to:

- Review cultural resource reports for previous projects within one square mile of the APE, and correspondence with FEMA and SHPO, project plans, project description, and commentary from consulting parties.
- Flag the boundaries of known sites identified by ODOT prior to hazardous tree and debris removal using red and white striped flagging. A buffer must be added to the site boundary.
- Attend a pre-construction (activities) meeting with field personnel and their supervisors. The objective of this meeting will be to review the procedures for the archaeological monitoring and the procedures for coordination and notification of discoveries.
 - The meeting will establish the communication protocols for the project. A list of contacts is provided at the end of this document.
 - The responsibilities of the field personnel and their supervisors will be identified.
 - The Archaeological Monitor should be identified, the field personnel and their supervisors should be informed that the archaeological monitor has a responsibility to fulfill the three objectives above, and has the authority to temporarily stop work to evaluate possible finds, collect samples, make measurements, and take photos.
 - Scheduling procedures for the construction work and monitoring will be outlined.
 - Safety procedures that need to be followed while on site, as well as the necessary personal protective equipment, will be reviewed. The Archaeological Monitor will work in close proximity to the excavation, and subject to safety constraints, will be allowed to be at the edge and inside project areas. Both the monitor and equipment operator need to be aware of the monitor's safety.
 - The Archaeological Monitor will provide brief cultural resources awareness training for project staff. The cultural awareness training will equip the field personnel and their supervisors with the appropriate level of training and protocol to follow should such material be uncovered.
- Determine, in coordination with FEMA and ODOT's Archaeological consultant, if the project's potential to affect historic properties has been clarified and make

recommendations based on professional judgement for how the project should proceed.

C. DURING HAZARDOUS TREE and DEBRIS REMOVAL.

Ground-disturbing activities will be archaeologically monitored - including, activities which extend beyond the limits of ground disturbance related to the hazard tree and debris removal.

The Project Manager is responsible for providing the Archaeological Monitor with ample notice of any changes to the established construction schedule. The definition of “ample notice” may be defined by the Project Manager and the Archaeological Monitor, and should be communicated via email to the ODOT REC as well as the FEMA Environmental and Historic Preservation point of contact.

The Archaeological Monitor will need to inspect sediments during hazardous tree and debris removal activities. If sediments will be removed from the project area, the monitor will be allowed to examine the sediments prior to their removal.

D. INADVERTENT ARCHAEOLOGICAL RESOURCES DISCOVERY

1. If any ODOT employee, its contractors or subcontractors believes that archaeological materials have been disturbed by project activities, at any time during the project, all work adjacent to the discovery will cease and the Archaeological Monitor and the appropriate ODOT Regional Environmental Coordinator (REC) will be notified (see contact information on last page). The ODOT REC will then notify the ODOT Region Archaeologist & Tribal Liaison. ODOT will then notify, FEMA, the SHPO, Tribes, appropriate federal agencies, as well as any other consulting parties that may have an interest in the discovered cultural resources.
2. If the Archaeological Monitor believes the discovery is cultural, appropriate steps will be taken to protect the discovery site. At a minimum, the immediate area of the discovery will be secured to a distance of 100 feet. Vehicles, equipment, and unauthorized personnel will not be permitted to traverse the discovery site. Work in the immediate area will not resume until treatment has been completed following provisions for treating archaeological/cultural material set forth in this “Archaeological Monitoring Scope and Inadvertent Discovery Plan.”
3. If human remains are discovered, the on-site manager will notify the appropriate ODOT REC who will notify the ODOT Archaeologist. The ODOT Archaeologist will notify Oregon State Police (OSP) (**NOT 911**) and the Legislative Commission on Indian Services (LCIS) (see contact information on last page) in accordance with Oregon Revised Statutes 97.740-760. Discoveries of human remains on Federal or Tribal lands may be subject to the Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C. §3001-3013, 18 U.S.C. § 1170) and the Archeological Resources Protection Act.
4. In the event that human remains with or without associated cultural resources are discovered within the project area, or at locations associated with the project, or planned for use on the project; work within 100 feet of the human remains will cease and the area will be cleared of all unnecessary personnel other than one (1) or two (2) individuals who will stay with the human remains until the OSP arrive to provide for the security, protection, and integrity of the archaeological discovery.

5. Human remains will be completely covered with a tarp or plain piece of cloth such as a rug, towel, or blanket. No new ground disturbance should occur if at all avoidable and the source of the soil must be noted.
6. The human remains will not be touched, moved, or in any way caused to change position from that noted upon discovery.
7. No photography of human remains is allowed. This applies to cameras, cell phones, or any other device(s) having photo capabilities.
8. The ODOT REC will immediately notify the ODOT Region Archaeologist & Tribal Liaison who will contact FEMA, who will subsequently notify the SHPO and/or THPO as appropriate.
9. Pursuant to Oregon Revised Statutes 97.745(4), in cases where human remains are determined to be Native American, FEMA shall consult with the THPO or appropriate Tribal representatives and SHPO, LCIS, and appropriate federal agencies. In addition, ODOT shall follow the guidelines outlined in the Advisory Council on Historic Preservation's *Policy Statement Regarding the Treatment of Burial Sites, Human Remains, and Funerary Objects* (2007) and any state-specific policies that may be in force.
10. All information related to the discovery known to construction personnel or staff will be provided to the OSP, local law enforcement office, the coroner/medical examiner, ODOT, FEMA, LCIS, the SHPO and THPO, and federal agencies, as appropriate.
11. Information related to the discovery will be held in strictest confidence amongst project stakeholders, i.e., need to know only.
12. If it is determined by the Archaeological Monitor that the discovery is not an archeological resource or human remains, the stop-work order will be lifted immediately.

E. PROCEEDING WITH HAZARDOUS TREE and DEBRIS REMOVAL ACTIVITIES

1. All inadvertent discoveries must be documented, per pertinent Oregon SHPO standards and guidance. This may include archaeological site forms submitted to the SHPO, cultural resource evaluation reports, recommendations on findings of effect, testing, monitoring and mitigation reports. ODOT shall consult with the FEMA, SHPO and/or THPO, Tribe(s), appropriate state and federal agencies, and other consulting parties to develop a mutually agreeable action plan with timeframes to evaluate the discovery, take into account the effects of the Project, resolve adverse effects if necessary, and ensure compliance with applicable Federal, State, and local statutes.
2. Expedited review to prevent an undue threat to the site shall be undertaken in accordance with state and federal law. ODOT shall coordinate with FEMA, SHPO, appropriate Tribes, appropriate federal agencies, as well as any other consulting parties that may have an interest in the discovered cultural resources with the goal of securing responses within forty-eight (48) hours of notification. ODOT shall not proceed with any ground disturbing activities until concurrence is received from FEMA, the SHPO, and any other consulting agencies identified as needing review by state or federal law. If a participating Tribe objects (in writing) to an expedited review, an expedited review will not proceed, and review will proceed in accordance with state and federal laws. Please reference Expedited Review for Emergency Undertakings (Stipulation II.B of the FEMA PA).
3. FEMA shall coordinate with the OEM and ODOT regarding any needed modification to the scope of work for the Project necessary to implement recommendations of the consultation and facilitate proceeding with the Project.

F. MONITORING LOG.

The Archaeological Monitor shall maintain a log that records, at a minimum:

- Monitor's name.
- Weather and light conditions during monitoring.
- Dates/Hours worked.
- Brief description of the activity being monitored and machinery being used.
- Observations of observed soils and degree of past disturbance.
- Notes about archaeological materials, as well as any other features or artifacts that may be found.
- A list of work stoppages other than cursory examinations, with a brief description of the reason for the stoppage and summary of the find, if any.
- Photographic log.

G. NO ARCHAEOLOGICAL MATERIALS IDENTIFIED.

If monitoring does not result in the identification of archaeological materials or human remains, within 30 days following the completion of monitoring, ODOT and FEMA shall be provided a draft report for review and approval. Reporting must meet the Oregon SHPO guidelines for reporting. Please see http://www.oregon.gov/oprd/HCD/ARCH/docs/Reporting_Guidelines_FINAL.pdf

H. IF ARCHAEOLOGICAL MATERIALS ARE IDENTIFIED.

If monitoring results in the identification of archaeological materials or human remains, within 60 days following the resolution of the discovery process and completion of monitoring, ODOT and FEMA shall be provided a draft report for review and approval. Reporting must meet the Oregon SHPO guidelines for reporting. Please see:

http://www.oregon.gov/oprd/HCD/ARCH/docs/Reporting_Guidelines_FINAL.pdf

Note: ODOT's Archaeologist will be responsible for coordinating with FEMA for any necessary letters to SHPO and for obtaining necessary clearance documents from SHPO.

Contact Information

Oregon Department of Transportation (ODOT)

ODOT Regional Environmental Coordinators (REC) for Wildfire Recovery Effort:

Region 1- Mary Young, (503) 731-8436

Region 2- Adam Roberts, (541) 757-4165

Region 3- Jerry Vogt, (541) 846-8823

Region 4- Teresa Brasfield, (541) 388-6041

ODOT Cultural Resources Program Team Lead & Tribal Liaison:

Carolyn Holthoff, (503) 302-7294, carolyn.p.holthoff@odot.state.or.us

ODOT Project Manager and Alternative Contact

John Raasch, Environmental Compliance Manager, (503) 986-3370,

john.raasch@odot.state.or.us

FEMA:

Jessica Stewart, Environmental/Historic Preservation (425) 420-8040,
jessica.stewart2@fema.dhs.gov

Philip Fisher, Archaeologist, (425) 471-9018, philip.fisher@fema.dhs.gov

State Historic Preservation Office (SHPO):

Christine Curran, Deputy State Historic Preservation Officer, (503) 986-0684,
chrissy.curran@oregon.gov

Oregon State Police (OSP):

Craig A Heuberger (503) 508-0779

Legislative Commission On Indian Services (LCIS):

Danny Santos, Interim Director, (503) 986-1067

Oregon Office Of Emergency Management (OEM):

Julie Slevin, State Public Assistance Officer (503) 378-2235, julie.slevin@mil.state.or.us

APPENDIX B
INADVERTENT DISCOVERY PLAN (IDP)
FOR CULTURAL RESOURCES OR HUMAN REMAINS

Subrecipient: Oregon Department of Transportation (ODOT)

Project: 4562-DR-OR ODOT Hazardous Tree & Debris Removal

Date Received/Acknowledgement of IDP:

The protocols in this Inadvertent Discovery Plan (IDP) must be followed in the event of an unexpected discovery where cultural resources (artifacts or archaeological features older than 50 years old) and/or human remains are encountered during ground disturbing activities, or if it appears that project work has affected (or will affect) a known historic property or cultural resources in an unanticipated manner as per Stipulation III.B of the Programmatic Agreement among the Federal Emergency Management Agency (FEMA), the Oregon State Historic Preservation Office (SHPO), and the Oregon State Office of Emergency Management (OEM). When a grant has been awarded, or in anticipation of such an award, it is the responsibility of the Oregon Department of Transportation's (ODOT) staff or contractor to ensure the IDP is reviewed and understood by onsite staff prior to the start of hazardous tree and debris removal and/or ground disturbing work. Prior to the start of hazardous tree removal and/or ground disturbing work, the short video entitled "Preserving Cultural Resources While Fighting Fires" produced by the Oregon Department of Forestry will also be viewed by onsite staff. This video is available at https://www.youtube.com/watch?v=DEwOJW_7Fn0&feature=youtu.be.

All items that could potentially be cultural resources and/or human remains are to be treated as if they are until ODOT has made a clear determination in consultation with FEMA, the Oregon SHPO, Tribes, and appropriate state and/or federal agencies.

A cultural resource discovery could be prehistoric or historic and consist of, but may not be limited to:

- Flaked stone tools or waste flakes (i.e., arrowheads or knives, or stone chips).
- Ground stone tools (mortars and pestles).
- Bones or bone fragments, burned rocks, shell middens or accumulation of food related materials.
- Areas of charcoal or charcoal-stained soil that could have been created by human use with or without artifacts associated.
- Stacked rock features such as cairns and placed rocks.
- Culturally-modified vegetation such as cambia peeled, carved, or blazed trees, historic orchards, or landscaped vegetation.
- **Human skeletal remains**
- A cluster of tin cans, ceramics, beads, glass bottles, nails, and bricks; and industrial, logging, or agricultural equipment that appears to be historic and older than 50 years.
- Foundations and/or walls or cisterns made from wood, brick, or cement.
- Abandoned railroad tracks, decking, or other industrial materials that are suspected to be over 50 years old.

**For photographic examples of artifacts, please see the section following the Contact list.*

CULTURAL RESOURCES PROTOCOLS

- Upon a discovery in the project area, or at locations associated with the project, or planned for use on the project; all work within 100 feet of the discovery in all directions will cease and the

area will be cleared of all unnecessary personnel. The ODOT staff or contractor will secure the area.

- The on-site manager will immediately contact the appropriate ODOT Region Environmental Coordinator (REC) (see contact information on last page) who shall notify the ODOT Region Archaeologist & Tribal Liaison. ODOT will then notify, FEMA, the SHPO, Tribes, appropriate federal agencies, as well as any other consulting parties that may have an interest in the discovered cultural resources.

HUMAN REMAINS PROTOCOLS

- If human remains are discovered, the on-site manager will notify the appropriate ODOT REC who will notify the Oregon State Police (OSP) (***NOT 911***) and the Legislative Commission on Indian Services (LCIS) (see contact information on last page) in accordance with Oregon Revised Statutes 97.740-760. Discoveries of human remains on Federal or Tribal lands may be subject to the Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C. §3001-3013, 18 U.S.C. § 1170) and the Archeological Resources Protection Act.
- In the event that human remains with or without associated cultural resources are discovered within the project area, or at locations associated with the project, or planned for use on the project; work within 100 feet of the human remains, will cease and the area will be cleared of all unnecessary personnel other than one (1) or two (2) individuals who will stay with the human remains until the OSP arrive.
- Human remains will be completely covered with a tarp or plain piece of cloth such as a rug, towel, or blanket. No new ground disturbance should occur if at all avoidable and the source of the soil must be noted.
- The human remains will not be touched, moved, or in any way caused to change position from that noted upon discovery.
- No photography of human remains is allowed. This applies to cameras, cell phones, or any other device(s) having photo capabilities.
- The ODOT REC will immediately notify Carolyn Holthoff who will contact FEMA, who will subsequently notify the SHPO and/or THPO as appropriate.
- Pursuant to Oregon Revised Statutes 97.745(4), in cases where human remains are determined to be Native American, ODOT and FEMA shall consult with the THPO or appropriate Tribal representatives and SHPO, LCIS, and appropriate federal agencies. In addition, ODOT shall follow the guidelines outlined in the Advisory Council on Historic Preservation's *Policy Statement Regarding the Treatment of Burial Sites, Human Remains, and Funerary Objects* (2007) and any state-specific policies that may be in force.
- All information related to the discovery known to construction personnel or staff will be provided to the OSP, local law enforcement office, the coroner/medical examiner, ODOT, FEMA, LCIS, the SHPO and THPO, and federal agencies, as appropriate.
- Information related to the discovery will be held in strictest confidence amongst project stakeholders, i.e., need to know only.

PROCEEDING WITH HAZARDOUS TREE and DEBRIS REMOVAL ACTIVITIES

- ODOT shall consult with the FEMA, SHPO, Tribes, appropriate state and federal agencies, and other consulting parties to develop a mutually agreeable action plan with timeframes to evaluate the discovery, take into account the effects of the Project, resolve adverse effects if necessary, and ensure compliance with applicable Federal, State, and local statutes.
- FEMA shall coordinate with the OEM and ODOT regarding any needed modification to the scope of work for the Project necessary to implement recommendations of the consultation and facilitate proceeding with the Project.

Contact Information

Oregon Department of Transportation (ODOT)

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Region 1- Mary Young, (503) 731-8436

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ODOT Cultural Resources Program Team Lead & Tribal Liaison:

Carolyn Holthoff, (503) 302-7294, carolyn.p.holthoff@odot.state.or.us

ODOT Project Manager and Alternative Contact

John Raasch, Environmental Compliance Manager, (503) 986-3370,

john.raasch@odot.state.or.us

FEMA:

Jessica Stewart, Environmental/Historic Preservation (425) 420-8040,

jessica.stewart2@fema.dhs.gov

Philip Fisher, Archaeologist, (425) 471-9018, philip.fisher@fema.dhs.gov

State Historic Preservation Office (SHPO):

Christine Curran, Deputy State Historic Preservation Officer, (503) 986-0684,

chrissy.curran@oregon.gov

Oregon State Police (OSP):

Craig A Heuberger (503) 508-0779

Legislative Commission On Indian Services (LCIS):

Danny Santos, Interim Director, (503) 986-1067

Oregon Office Of Emergency Management (OEM):

Julie Slevin, State Public Assistance Officer (503) 378-2235, julie.slevin@mil.state.or.us

VISUAL REFERENCE GUIDE TO ENCOUNTERING ARCHAEOLOGY



Figure 1: Stone flakes



Figure 2: Stone tool fragments



Figure 3: Cordage



Figure 4: Shell midden



Figure 5: Historic glass artifacts

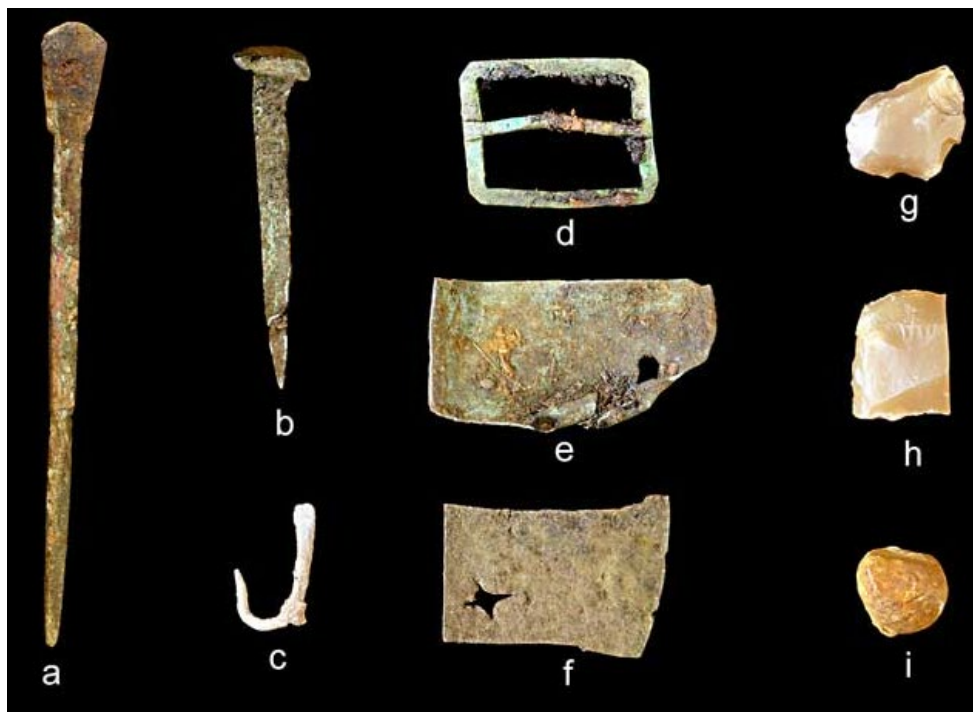


Figure 6: Historic metal artifacts



Figure 7: Historic building foundations

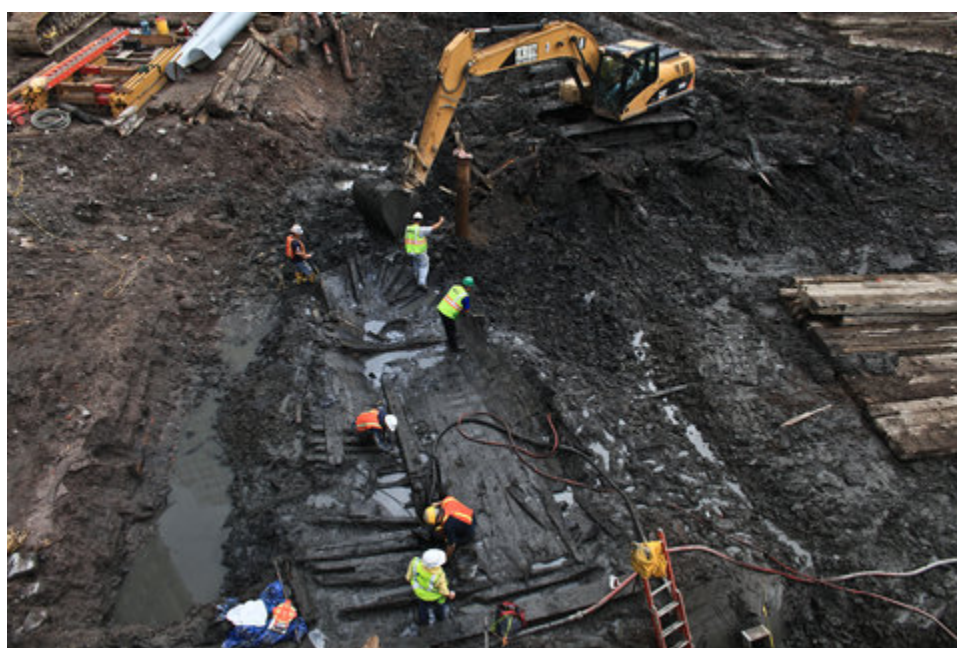


Figure 8: 18th Century ship



Figure 9. Peeled cedar tree

APPENDIX C
BUILT ENVIRONMENT MONITORING SCOPE AND DISCOVERY PLAN
Oregon Department of Transportation
ODOT Hazardous Tree (and Debris) Removal
FEMA 4562-DR-OR

The following Built Environment Monitoring Scope and Discovery Plan is to be implemented by the Oregon Department of Transportation (ODOT) in concert with the Archaeological Monitoring and Inadvertent Discovery Plan, and followed by any contractor or subcontractor working for or on behalf of ODOT, as procedure to expeditiously address the built environment, including associated outbuildings, as part of the hazardous tree and debris removal the Oregon areas impacted by the Archie Creek Fire, Beachie Creek/Lions Head Fire, Holiday Farm Fire, Echo Mountain Fire, Riverside Fire, Thielsen Fire, and Two Four Two Fire – Klamath County.

The purpose for built environment monitoring of project activities is to prevent damage to known built environment resources that are listed in, or eligible for, the National Register of Historic Places (NRHP), or built resources that may be otherwise considered significant at the State or local level. Specified herein are procedures for addressing any built environment resources encountered, specifically during private property debris removal (PPDR) activities. This plan provides guidance to ODOT and their contractors so they can:

1. comply with applicable laws and regulations, particularly Section 106 of the National Historic Preservation Act (as amended);
2. describe to regulatory and review agencies the procedures ODOT will follow to prepare for and address how to proceed with built environment resources;
3. comply with Goal 5 (OAR 660-023-0200) within the wildfire affected areas by identifying Goal 5 resources before any property modification or demolition occurs. Any adverse effect to Goal 5 resources are required to be coordinated with the local government so that essential coordination responsibilities by the local government can occur; and
4. provide direction and guidance to project personnel in the procedures to be followed as extant built environment resources are identified, or as known listed, or eligible, resources are determined to be destroyed. The *Guidelines for Historic Resource Surveys in Oregon* can be found here:

https://www.oregon.gov/oprd/OH/Documents/guidelines_for_historic_resource_surveys.pdf

Built Environment monitoring for this project has three objectives:

1. Along with the Project Manager, the Built Environment Monitor shall ensure that extant built environment resources are evaluated and recorded prior to demolition. The Built Environment Monitor shall document activities required to remove hazards trees and structural debris with photographs taken throughout the process;
2. Built Environment Monitor will ensure that care is taken that extant built environment resources not slated for removal are not demolished; and
3. Built Environment Monitor shall record post-fire condition of known built environment resources listed, or eligible for, the NRHP that have been destroyed by fire:
 - foundations and/or walls, chimneys, cisterns made from wood, brick, or cement;
 - abandoned railroad tracks, decking, bridges, or other industrial materials that are suspected to be over 50 years old.

A. QUALIFICATIONS.

The ODOT Built Environment Monitor shall meet the Secretary of the Interior's Professional Standards for Architecture, Architectural History, or History (36 CFR 61, Appendix A) as well as all qualifications necessary to work on BLM lands in Oregon, which include cultural resources experience in the Pacific Northwest.

B. PRIOR TO CONSTRUCTION.

Prior to construction, the Built Environment Monitor would be expected to:

- Review data of built resources including those listed as Goal 5 resources, listed in, or eligible for listing, in the NRHP within each tax lot where the PPDR undertaking is to occur (APE), any correspondence with FEMA and SHPO, project plans, project description, and commentary from consulting parties.
- If extant built environment resources are not intended to be removed, flag the boundaries of those resources identified by ODOT prior to hazardous tree and debris removal using red and white color flagging. An appropriate buffer must be added to the site boundary to protect the resource from accidental damage.
- Attend a pre-construction (activities) meeting with field personnel and their supervisors. The objective of this meeting will be to review the procedures for the built environment monitoring and the procedures for coordination and notification of extant resources and/or discoveries.
 - The meeting will establish the communication protocols for the project. A list of contacts is provided at the end of this document.
 - The responsibilities of the field personnel and their supervisors will be identified.
 - The Built Environment Monitor should be identified, the field personnel and their supervisors should be informed that the Built Environment Monitor has a responsibility to fulfill the three objectives above, and has the authority to temporarily stop work to evaluate extant built environment resources, document destroyed listed/eligible built resources, and take photos.
 - Scheduling procedures for the construction work and monitoring will be outlined.
 - Safety procedures that need to be followed while on site, as well as the necessary personal protective equipment, will be reviewed. The Built Environment Monitor may be in close proximity to the work being done, and subject to safety constraints, will be allowed to be at the edge and inside project areas. Both the monitor and equipment operator need to be aware of the monitor's safety.
 - The Built Environment Monitor will provide a brief on built environment presentation as part of the cultural resources awareness training for project staff. The cultural awareness training will equip the field personnel and their supervisors with the appropriate level of training and protocol to follow should such resources be identified.
- Determine, in coordination with FEMA and ODOT's Built Environment consultant, if the project's potential to affect historic properties has been clarified and make recommendations based on professional judgement for how the project should proceed.

C. DURING HAZARDOUS TREE and DEBRIS REMOVAL.

The Project Manager is responsible for providing the Built Environment Monitor with ample notice of any changes to the established construction schedule. The definition of “ample notice” may be defined by the Project Manager and the Built Environment Monitor, and should be communicated via email to the ODOT Regional Environmental Coordinator (REC) as well as the FEMA Environmental and Historic Preservation point of contact.

The Built Environment Monitor will need to inspect extant structures during hazardous tree and debris removal activities. If extant built environment resources will be removed from the project area, the monitor will be allowed to record and consult with FEMA, ODOT, and SHPO prior to their removal.

D. BUILT ENVIRONMENT RESOURCE DISCOVERY

1. If any ODOT employee, its contractors or subcontractors believes that an extant previously unidentified or unrecorded built environment resource 50 years or older is slated for removal, all work adjacent to the built resource, and associated outbuildings, will cease and the Built Environment Monitor and the appropriate ODOT REC will be notified (see contact information on last page). The ODOT REC will then notify the ODOT Architectural Historian. ODOT will then notify, FEMA, the SHPO, Tribes, appropriate federal agencies, as well as any other consulting parties that may have an interest in the built resource.
2. The Built Environment Monitor will record the building and associated outbuildings per Oregon SHPO guidelines and provide ODOT and FEMA their recommendation on if the built resource retains sufficient integrity for listing in the NRHP. ODOT and FEMA will make a formal determination of eligibility and seek concurrence from SHPO and other consulting parties. For built environment resources needing formal evaluation appropriate steps will be taken to protect the resource. At a minimum, the immediate area of the resource will be secured to a distance of 100 feet. Work in the immediate area will not resume until treatment has been completed following provisions for treating built environment material set forth in this “Built Environment Monitoring Scope and Discovery Plan” and approval to restart work from the ODOT REC.

E. PROCEEDING WITH HAZARDOUS TREE and DEBRIS REMOVAL ACTIVITIES

1. All discoveries must be documented, per pertinent Oregon SHPO standards and guidance. This may include built environment site forms submitted to the SHPO, recommendations on findings of effect, monitoring and mitigation reports. ODOT shall consult with the FEMA, SHPO and/or THPO, Tribe(s), appropriate state and federal agencies, and other consulting parties to develop a mutually agreeable action plan with timeframes to evaluate the discovery, take into account the effects of the project, resolve adverse effects if necessary, and ensure compliance with applicable Federal, State, and local statutes.
2. Expedited review to prevent an undue threat to the resource shall be undertaken in accordance with state and federal law. ODOT shall coordinate with FEMA, SHPO, appropriate Tribes, appropriate federal agencies, as well as other consulting parties that may have an interest in the resources with the goal of securing responses within forty-

eight (48) hours of notification. ODOT shall not proceed with any ground structural debris removal or demolition activities until concurrence is received from FEMA, the SHPO, and other consulting agencies identified as needing review by state or federal law. If a participating Tribe objects (in writing) to an expedited review, the expedited review will not proceed, and review will proceed in accordance with state and federal laws. Please reference Expedited Review for Emergency Undertakings (Stipulation II.B of the FEMA Programmatic Agreement with the Oregon SHPO and the Oregon Office of Emergency Management [OEM]).

3. FEMA shall coordinate with the OEM and ODOT regarding needed modification to the scope of work for the project necessary to implement recommendations of the consultation and facilitate proceeding with the project.

F. MONITORING LOG.

The Built Environment Monitor shall maintain a log that records, at a minimum:

- Monitor's name
- Dates/Hours worked
- Brief description of the activity being monitored and machinery being used
- Notes about post-fire condition of built environment resources/materials, as well as any other features that may be found
- A list of work stoppages other than cursory examinations, with a brief description of the reason for the stoppage and summary of the find, if any
- Photographic log

G. NO BUILT ENVIRONMENT RESOURCES IDENTIFIED.

If monitoring does not result in the identification of extant Built Environment resources, within 30 days following the completion of monitoring, ODOT and FEMA shall be provided a draft report for review and approval. Reporting must meet the Oregon SHPO guidelines for reporting a Reconnaissance Level Survey. Please see

https://www.oregon.gov/oprd/OH/Documents/guidelines_for_historic_resource_surveys.pdf

H. IF BUILT ENVIRONMENT RESOURCES ARE IDENTIFIED.

If monitoring results in the identification of extant built environment resources, within 60 days following the resolution of the evaluation process and completion of monitoring, ODOT and FEMA shall be provided a draft report for review and approval. Reporting must meet the Oregon SHPO guidelines for reporting a Reconnaissance Level Survey, including completed built environment recordation forms. Please see:

https://www.oregon.gov/oprd/OH/Documents/guidelines_for_historic_resource_surveys.pdf

Note: ODOT's Architectural Historian will be responsible for coordinating with FEMA for any necessary letters to SHPO and for obtaining necessary clearance documents from SHPO.

Contact Information

Oregon Department of Transportation (ODOT)

ODOT Regional Environmental Coordinators (REC) for Wildfire Recovery Effort:

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APPENDIX B

AIRBORNE EMISSIONS MONITORING PLAN

HAZARDOUS TREE AND DEBRIS REMOVAL PROJECT
FOLLOWING THE 2020 OREGON FIRES



State of Oregon
Department of
Environmental
Quality



Prepared for
CDR MAGUIRE
Version 1.0
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ACRONYMS AND ABBREVIATIONS

ACM	asbestos-containing material
AEMP	airborne emissions monitoring plan
AIHA	American Industrial Hygiene Association
MFA	Maul Foster & Alongi, Inc.
f/cc	fiber per cubic centimeter
mg/m ³	milligrams per cubic meter
NIOSH	National Institute for Occupational Safety and Health
OAR	Oregon Administrative Rules
OR-OSHA	Oregon Occupational Safety and Health Administration
PDM	photometer dust monitor
TEM	transmission electron microscopy
μm	micron

1 INTRODUCTION

The purpose of this Airborne Emissions Monitoring Plan (AEMP) is to provide procedures for monitoring airborne constituents of concern during the removal of structural debris, waste, and hazardous material as a result of the 2020 Wildfires of Oregon (DR-4562-OR). This plan describes the methods to assess potential worker and public exposures throughout the project and improve controls if results exceed action levels. Monitoring conducted during previous clean-up operations^{1,2} indicates that using water to control dust and implementing other safe work practices can effectively control airborne emissions.

This plan includes personal exposure monitoring of site workers to help assess compliance with occupational exposure limits, such as permissible exposure limits established by the Oregon Occupational Safety and Health Administration (OR-OSHA). The need for additional personal exposure monitoring should be assessed by each employer. If necessary, each employer is responsible to conduct the additional exposure monitoring required to comply with applicable OR-OSHA requirements.

This plan has been developed in coordination with the Oregon Department of Transportation and the Oregon Department of Environmental Quality. This document is a living document and will be revised as the operations progress.

2 CONSTITUENTS OF CONCERN

Ash and debris from structures burned by fires can contain asbestos, respirable crystalline silica (typically quartz) from demolished concrete and other building materials, polycyclic aromatic hydrocarbons, and heavy metals, such as antimony, arsenic, cadmium, copper, lead, and zinc. Removal of structural debris must be conducted in a controlled way to prevent workers and people in the surrounding community from being overexposed to these constituents.

¹ NIOSH [2019]. Evaluation of fire debris cleanup employees' exposure to silica, asbestos, metals, and polyaromatic hydrocarbons. By Beaucham C, Eisenberg J. Cincinnati, OH: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, Health Hazard Evaluation Report 2018-0094-3355, <https://www.cdc.gov/niosh/hhe/reports/pdfs/2018-0094-3355.pdf>.

² Tetra Tech [2019]. Air quality consolidated report for the Butte County Air Quality Management District camp fire debris removal operations Paradise, California. <https://bcaqmd.org/wp-content/uploads/Consolidated-Report-for-BCAQMD-08012019-08182019.pdf>

3 MONITORING AND METHODS

The AEMP is focused on assessing and controlling emissions at the sources of dust-generating activities, which are the site where structural debris is disturbed and/or removed. Supplemental monitoring may be considered in nearby populated areas to provide supporting evidence that dust management controls are effective. Visual dust monitoring and measurements with real-time dust monitors are prioritized because these methods provide immediate results and allow for prompt corrective actions, and particulate matter can serve as a proxy for other constituents of concern. Samples collected for laboratory analysis provide more detailed information about airborne constituents, but results are not available until several days after sample collection. Therefore, laboratory samples primarily serve as quality assurance to help validate the basis of dust action levels and effectiveness of control measures observed during visual monitoring.

3.1 Visual Dust Monitoring

Visual dust monitoring will be conducted on all sites while structural debris is disturbed. The monitoring will be completed by the removal contractor and/or the air monitoring consultant. On asbestos abatement sites, visible emissions from the regulated area are not allowed, and must be controlled using wet methods. Asbestos-containing materials must be adequately wetted during abatement activities to prevent visible emissions from the regulated area.

Non-asbestos sites should be managed using similar controls as asbestos abatement sites. If visible dust conditions are sustained for more than one minute within the active work zone (or fugitive dust leaving the work zone), the contractor will implement additional dust suppression methods such as those described in Section 3.6.

3.2 Direct-Reading Dust Monitoring

Direct-reading measurements of airborne dust levels will be conducted using a real time instrument, such as a personal dust monitor (PDM) that uses light scattering photometry sensing technology to measure particulate matter in the size range of 0.1 to 10 micrometers (μm) at concentrations between 0.001 and 400 milligrams per cubic meter (mg/m^3). The PDM on debris removal sites will be configured to provide size fraction cut points for PM_{10} (airborne particles with diameters that are generally 10 μm and smaller).

The air monitoring consultant will conduct direct-reading dust monitoring at representative sites (up to 20% of active work sites involving structural debris), prioritizing sites that are located near offsite receptors such as residences, schools, and hospitals. The debris removal contractor may also choose to perform direct-reading dust monitoring on sites not monitored by the air monitoring consultant.

Monitoring locations may vary based on site activities, prevailing winds, and other relevant site-specific conditions. Monitoring locations will be representative of the exclusion zone boundary and occupied areas outside of the exclusion zone. PDM measurements will be made routinely throughout the work

shift and during unusual conditions (e.g., visible dust generation). Real-time dust monitoring will continue throughout removal operations, unless a significant precipitation event occurs, at which time dust monitoring may be suspended.

Weather conditions, including ambient temperature, wind direction, and approximate wind velocity will be recorded to assist in evaluating the monitoring results. Monitoring results will be recorded and archived with the project data for reporting purposes.

If measured dust conditions exceed the action level in Section 5, the contractor will implement additional dust suppression methods such as those described in Section 3.6.

3.3 Airborne Fiber (Asbestos) Sampling

Airborne fiber (asbestos) concentrations will be monitored during debris removal activities involving asbestos-containing or presumed asbestos-containing material. The air monitoring consultant will conduct sampling at representative sites (up to 20% of active work sites involving structural debris), prioritizing sites that are located near offsite receptors such as residences, schools, and hospitals.

Samples will be collected using 25-millimeter, 0.8- μ m, mixed cellulose ester filter cassettes and high- or medium-volume pumps. The sampling time will be sufficiently long to accurately represent normal work activities on the site (e.g., four to seven hours, or the entire duration of the removal activities).

Sampling locations may vary based on site activities, prevailing winds, and other relevant site-specific conditions. The air monitoring consultant will attempt to select at least one upwind and at least two downwind sampling locations in a triangular configuration around the immediate debris removal area. Sampling locations will be intended to assess airborne concentrations at the exclusion zone boundary and occupied areas outside of the exclusion zone. Sample cassettes will be periodically inspected throughout the shift to prevent an excessive buildup of dust on the filters. If this is observed, the sample cassette will be removed, and a new sample cassette installed. Sampling may be suspended during a significant precipitation event.

Weather conditions, including ambient temperature, wind direction, and approximate wind velocity will be recorded to assist in evaluating the monitoring results.

The samples will be analyzed by phase contrast microscopy (PCM) on a two-day turnaround basis in accordance with National Institute for Occupational Safety and Health (NIOSH) Method 7400. Samples that exceed the action level in Section 5 may be reanalyzed by transmission electron microscopy (TEM) in accordance with NIOSH Method 7402. Re-analysis by TEM may not be warranted for every sample that exceeds the action level if the cause of the PCM action level exceedance is well understood and well-characterized. Additional samples may be reanalyzed by TEM upon request of the CDR project manager. The confirmed presence of asbestos structures above the action level in Section 5 will prompt reinforcement of best management practices and, if necessary, modification of future work practices.

3.4 Dust and Metals Sampling

The air monitoring consultant will conduct sampling for airborne dust and metals at representative sites (up to 20% of active work sites involving structural debris), prioritizing sites that are located near offsite receptors such as residences, schools, and hospitals. The frequency of sampling for metals and dust may be reduced based on historical results at the discretion of the Certified Industrial Hygienist in consultation with the CDR project manager and the agency.

Samples will be collected using pre-weighed 37-millimeter, 0.8- μ m, mixed cellulose ester filter cassettes and sampling pumps. The sampling time will be sufficiently long to accurately represent normal work activities on the site (e.g., four to seven hours, or the entire duration of the removal activities).

Sampling locations may vary based on site activities, prevailing winds, and other relevant site-specific conditions. Sampling locations will be intended to assess airborne concentrations at the exclusion zone boundary and occupied areas outside of the exclusion zone. The air monitoring consultant will attempt to select at least one upwind and at least two downwind sampling locations in a triangular configuration around the immediate debris removal area. Sampling may be suspended during a significant precipitation event.

Weather conditions, including ambient temperature, wind direction, and approximate wind velocity will be recorded to assist in evaluating the monitoring results.

The samples will be analyzed for metals by inductively coupled plasma spectroscopy consistent with NIOSH Method 7300 following a gravimetric analysis for dust consistent with NIOSH Method 0500. The metals analysis will include antimony, arsenic, beryllium, cadmium, chromium, lead, manganese, nickel, and selenium.

Results that exceed the action level in Section 5 will prompt reinforcement of best management practices and, if necessary, modification of future work practices.

3.5 Community Monitoring

Air monitoring stations may be placed in population centers near structural debris removal sites. The decision to conduct community monitoring will be made by the CDR project manager and the agency in consultation with the Certified Industrial Hygienist considering factors such as proximity to the site, historical sampling results at the site perimeter, planned work activities, wind direction, level of public concern, and the availability of appropriate community sampling locations. Coordination with the Oregon Health Authority or other appropriate public health agency is preferred to help facilitate communications. Community air monitoring stations will typically consist of a datalogging real-time dust monitor configured to measure PM₁₀ and/or PM_{2.5} (airborne particles with diameters that are generally 2.5 μ m and smaller), and pumps to measure airborne fibers consistent with the methodology described in Section 3.3. TEM analysis of asbestos samples collected from community monitoring stations will be performed consistent the AHERA protocol (40 CFR Part 763 Appendix A subpart E).

If feasible, the air monitoring consultant will place one or more community monitoring stations downwind of removal activities and one or more community monitoring stations upwind of removal

activities. Upwind sampling results will be used to establish background concentrations, which will be used to help evaluate downwind sampling results.

3.6 Personal Exposure Monitoring

The air monitoring consultant will supplement worksite area monitoring with personnel air sampling of task force leaders and others in the Hazardous Waste Operations and Emergency Response (“HAZWOPER”) exclusion zone (i.e., area of contamination) on at least 10 representative sites. Personal exposure monitoring, when conducted on a site, will include up to three people who work on up to 10 representative sites. Personal exposure monitoring, when conducted on a site, will include up to three people who work in the exclusion zone. The scope of personal exposure monitoring will include asbestos, dust, metals, and respirable crystalline silica. The air monitoring consultant will avoid placing more than one sampling device on an individual at the same time. Asbestos, metals, and dust samples will be analyzed consistent with the methodology described in Sections 3.3 and 3.4. Respirable crystalline silica samples will be collected and analyzed for crystalline quartz consistent with NIOSH Method 7500 following a gravimetric analysis for respirable dust consistent with NIOSH Method 0600.

3.7 Dust Controls

The following engineering, work practice, and/or environmental controls may be implemented to control dust. As noted below, some of the listed controls are project requirements:

- Use of tarps to cover soil or debris stockpiles.
- Use of long-duration, emission-control foam or equivalent material to stabilize and cover excavation areas not actively being excavated.
- Use of wet methods, such as water spray, to control dust emissions during excavation, stockpiling, material handling, hauling, and disposal operations. Asbestos-containing material must be adequately wetted during removal activities.
- Reducing vehicle speeds.
- During truck loading the drop height will be controlled to minimize fugitive emissions.
- Limiting fill/soil handling during unfavorable weather conditions (i.e., high winds).
- Load of debris must be covered when they are transported to reduce emissions along routes of travel.
- Cleaning vehicle tires to prevent track-out from worksites.
- Street cleaning using wet methods if visible trackout is observed from worksites.

- A combination of these controls may be used to reduce airborne emissions to meet the action levels.

4 QUALITY ASSURANCE

4.1 Direct-Reading Dust Monitoring

The direct reading instruments described in this AEMP will be calibrated before initial use consistent with the manufacturers' instructions, and then at the frequency recommended by the manufacturer. Instrument calibration records shall be maintained with the project records.

4.2 Airborne Fiber (Asbestos) Sampling

A calibrated precision rotameter will be used to measure the airflow through the sampling devices before and after each sampling event.

The airborne fiber samples and quality control blanks will be submitted via normal chain-of-custody procedures for PCM analysis to a laboratory that participates in a proficiency testing program, such as the American Industrial Hygiene Association (AIHA) Proficiency Analytical Testing rounds. TEM samples will be analyzed by a laboratory accredited by the National Institute of Standards and Technology National Voluntary Laboratory Accreditation Program.

4.3 Dust, Metals, and Respirable Crystalline Silica Sampling

A calibrated precision rotameter will be used to measure the airflow through the sampling devices before and after each sampling event. The cassettes will be periodically inspected throughout the shift to prevent an excessive buildup of dust on the filter. If this is observed, the sample cassette will be removed, and a new sample cassette installed.

Samples and quality control blanks will be submitted via normal chain-of-custody procedures to a laboratory that is accredited through the AIHA Laboratory Accreditation Program.

5 EVALUATION AND REPORTING OF MONITORING AND SAMPLE RESULTS

Table
Air Monitoring Action Levels

Parameter	Monitoring Method	Action Level	Initial Action	Follow-up Action
Dust	Visual monitoring	On asbestos abatement sites, visible emissions from the regulated area are prohibited. On non-asbestos sites, visible dust conditions sustained for more than one minute.	Dust suppression, e.g., misting. Measure concentrations with the dust meter, if available.	Adjust operations.
	Dust meter: At debris removal site	PM ₁₀ : 0.15 mg/m ³ sustained for more than one minute.	Dust suppression, e.g., misting.	Adjust operations.
	Dust meter: At community monitoring station	PM ₁₀ : 0.15 mg/m ³ (1-hour time-weighted average) PM _{2.5} : 0.035 mg/m ³ (1-hour time-weighted average)	Evaluate upwind sampling data, if available. If results suggest impacts from debris removal activities, communicate with contractors to reinforce proper dust suppression procedures, e.g., misting. Communicate with local public health agency.	Adjust operations.
	NIOSH 0500: At debris removal site	0.5 mg/m ³	Evaluate upwind sampling data, if available. If results suggest impacts from debris removal activities, communicate with contractors to reinforce proper dust suppression procedures, e.g., misting.	Adjust operations.
Asbestos	NIOSH 7400 (PCM): At debris removal site	0.01 f/cc	Reinforce compliance with approved work methods and engineering controls.	Re-analyze by TEM.
	NIOSH 7402 (TEM): At debris removal site	0.01 f/cc	Stop operations and evaluate work practices.	Adjust operations.
	NIOSH 7400 (PCM): At community monitoring station	0.01 f/cc	Evaluate upwind sampling data, if available. If results suggest impacts from debris removal activities, communicate with contractors to reinforce proper dust suppression procedures, e.g., misting. Communicate with local public health agency.	Re-analyze by TEM.

Parameter	Monitoring Method	Action Level	Initial Action	Follow-up Action
Asbestos (cont.)	AHERA Protocol (TEM): At community monitoring station	0.01 f/cc	Evaluate upwind sampling data, if available. If results suggest impacts from debris removal activities, communicate with contractors to reinforce proper dust suppression procedures, e.g., misting. Communicate with local public health agency.	Adjust operations.
Metals	NIOSH 7300: At debris removal area and personal exposure monitoring	Antimony: 0.5 mg/m ³ Arsenic: 0.01 mg/m ³ Beryllium: 0.00005 mg/m ³ Cadmium: 0.01 mg/m ³ Chromium: 0.5 mg/m ³ Lead: 0.03 mg/m ³ Manganese: 0.1 mg/m ³ Nickel: 1.5 mg/m ³ Selenium: 0.2 mg/m ³	Evaluate upwind sampling data, if available. If results suggest impacts from debris removal activities, communicate with contractors to reinforce proper dust suppression procedures, e.g., misting.	Adjust operations.
Respirable Crystalline Silica (Quartz)	NIOSH 7500: Personal exposure monitoring at debris removal site	0.025 mg/m ³	Reinforce compliance with approved work methods and engineering controls. Ensure employer implements applicable provisions of the OR-OSHA silica standard (OAR 437-002-1053).	Adjust operations.

NOTES:

f/cc = fibers per cubic centimeter
mg/m³ = milligrams per cubic meter.
NIOSH = The National Institute for Occupational Safety and Health
OAR = Oregon Administrative Rules
OR-OSHA = Oregon Occupational Safety and Health Administration
PCM = phase contrast microscopy.
TEM = transmission electron microscopy.

Asbestos and metals action level exceedances will be communicated within 24 hours to the CDR project manager. Personal exposure monitoring results will be communicated to the applicable employer within three working days upon receipt of the final laboratory report. A summary of personal exposure monitoring results (with personal information redacted) will be provided with all air monitoring results in a written weekly summary report.

LIMITATIONS

The services undertaken in completing this plan were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This plan is solely for the use and information of our client unless otherwise noted. Any reliance on this plan by a third party is at such party's sole risk.

Opinions and recommendations contained in this plan apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this plan.

REVISION HISTORY

This document was originally issued as Revision 1.0 dated December 29, 2020. It has been revised as follows:

Date	Revision Details	Revision Number	Revised By

OREGON WILDFIRES (DR-4562-OR)

Appendix C - Health & Safety Plan

Safety Policy Statement

Safety is not just a priority, but a core value. It requires a personal commitment at all levels of the organization. Incident Command leadership and all other staff share the responsibility for a safe and healthy workplace.

Leadership is accountable for preventing workplace injury and illnesses. Leadership will consider all staff suggestions for achieving a safer healthier operation, keep informed about safety and health hazards and conduct regular reviews the safety program.

All staff are expected to participate in their appropriate site safety programs and activities, including immediately reporting hazards, unsafe work practices and accidents to Safety Officers, wear required personal protective equipment and participate in safety briefings. No employee will be required to do a job that they consider unsafe.

A positive safety culture is promoted by:

- Communication, making safety information readily available, electronically and on paper that communicate best practices and expectations
- Provide training
- Lead by example
- Develop and implementation of a positive reporting process

Safety Compliance

To ensure compliance with federal and state regulations, fulltime Safety Officers with the required knowledge, skills, and abilities to perform the function of safeguarding personnel have been appointed at the Area Command and Complex Command sites.

The Safety Officer maintains awareness of active and developing situations. They are responsible for monitoring and assessing hazardous and unsafe conditions and developing measures for assuring staff safety. This information is reported in each site's Incident Action Plan and ICS Form 208 (Safety Message). The IAP and Safety Message are updated for every operational period and is available for all personnel to review.

Unsafe acts or conditions are generally corrected by the Safety Officer through the regular line of authority to stop or prevent injury and accidents. However, all personnel may exercise emergency authority to stop or prevent unsafe acts when immediate action is required. Any crews or individuals that are not compliant shall be suspended from debris removal activities until the situation is remedied. Frequent offenders of safety policies and procedures will be dismissed from the project entirely.

Hazard Analysis/Risk Management

Disaster debris collection and management sites pose a multitude of health and safety concerns. Hazards and exposures are a function of the unstable nature of the site, the potential of hazardous substances being present, and the type of work being performed. This hazard analysis serves as general guidance. Each site will have its own unique hazards, all of which cannot be anticipated.

The listed hazards, risks, and accompanying general recommendations represent suggested site hazard assessment and may not represent actual field hazards present at all debris collection and management sites. It is incumbent upon the Safety Officer responsible to perform and manage this work to ensure a comprehensive site-specific hazard analysis is performed and that resulting recommendations are implemented.

Safety Officers will conduct ongoing specific site hazard assessments to identify hazards, assess risks, and develop controls based on situations that have potential to cause injury or harm. This information will be recorded on the Incident Action Plan Safety Analysis ICS Form 215A. Mitigation measures will be monitored to ensure their effectiveness.

Site Safety Checklist

- Conduct a job hazard analysis to identify hazards prior to beginning site work.
- Assign key personnel and alternative representative responsible for site safety.
- Describe risks associated with each operation conducted.
- Confirm that personnel are adequately trained to perform jobs.
- Describe the protective clothing and equipment to be worn by personnel during site operations.
- Describe needed air monitoring, personnel monitoring, and environmental sampling.
- Describe actions to be taken to mitigate existing hazards to make work environment less hazardous.

POTENTIAL HAZARDS and GENERAL RECOMMENDATIONS

HAZARD 1: Massive piles of woody debris and other types of debris; unstable work surfaces.

Risks: Traumatic, serious, or fatal injuries or illness can occur due to slips, trips, falls, or collapsing materials.

- **General Recommendations:**

- Ensure that surfaces are as stable as possible.
- Ensure scaffolding is erected on a stable surface; anchor scaffolding to a structure capable of withstanding the lateral forces generated.
- Ensure workers have appropriate safety footwear with slip resistant soles.
- Site personnel to be observant of changes in walking surfaces.

HAZARD 2: Hazardous noise

Risks: Communication and possible noise induced hearing loss.

- **General Recommendations:**

- Monitor noise levels. If 8-hour time weighted average exposures are 85 decibels or more, a Hearing Conservation Plan is needed.
- Consider hearing protection devices are used whenever noisy equipment (e.g., large trucks, grinding equipment, loaders, generators, etc.) is used.

HAZARD 3: Breathing dust containing fine airborne particles and gases generated through diesel exhaust fumes, smoke, ash, and road dust

Risks: Irritation of eye, nose, throat, and lung.

- **General Recommendations:**

- Workers should be protected from breathing airborne contaminants as determined through the site's analysis of respiratory hazards.
- Respiratory protection: determine respirator type, as needed, through site specific hazard analysis.
- Respirators must fit properly to protect workers.
- Dust concentrations in the air should be appropriately monitored.
- Stay upwind of dust generating activities.
- Maintain low vehicle speeds to keep dust down.
- Airborne dust may be suppressed by application of water-based mist.

HAZARD 4: Heat stress from working in a hot, humid climate

Risks: Significant fluid loss can progress to clinical dehydration, raised core body temperature, impaired judgment, disorientation, fatigue, muscle cramping, resulting in heat stroke.

- **General Recommendations:**

- Adjust work schedules, rotate personnel, and add additional personnel if needed.
- Replenish fluids (e.g.- water, electrolytes) as needed.
- Consider personnel and environmental monitoring plans.
- Know the warning signs of heat related illnesses.
- Provide shelter for personnel in shaded areas.
- Where possible, block out sun or other direct sources of heat from fixed work locations.
- Prevent sun related exposure to skin by using a sunscreen lotion with a significant sun protection factor (SPF) of 15 or greater.

HAZARD 5: Cold stress from working in a cold, wet climate

Risks: This allows exposed skin and the extremities to cool rapidly and increase the risk of frostbite and hypothermia.

- **General Recommendations:**

- Get into heated shelter as necessary to maintain body temperature.
- Replace wet clothing immediately.
- Drink warm fluids often.
- Wear adequate clothing to reduce threat of cold stress.
- Know the signs of cold stress.

HAZARD 6: Work zone traffic hazards

Risks: Traumatic or fatal injuries due to failure of or improper use of equipment or workers being struck by moving equipment.

- **General Recommendations:**

- Establish a traffic control plan for motorists and pedestrians.
- Use standard highway signs and control devices to instruct drivers.
- High visibility safety garments should be provided for those providing temporary traffic control (class 2 or 3) and workers on foot (class 1, 2 or 3).
- Workers on foot, equipment operators, and drivers in internal work zones need to know the routes construction vehicles will use.
- Be mindful of limited visibility (e.g.- blind spots) which heavy machine operators have while driving machines at work sites.
- Maintain safe driving distance, avoid using cell phones while driving and obey all traffic laws.

HAZARD 7: Eye, face, hand, and head injuries from flying debris; wood particles

Risks: Traumatic injuries, ranging from minor injuries regarding first aid to serious eye injuries, even disabling or fatal traumatic injuries.

- **General Recommendations:**

- Only use protective eyewear (e.g.- goggles or safety glasses) and protective headwear that are ANSI approved.
- Provide workers with a full array of personal protective equipment, including hard hats, and work gloves.
- Ensure that workers do not walk under or through areas where cranes and other heavy equipment are being used to lift objects.
- As a minimum requirement use safety glasses with side shields by all site workers.
- Use safety goggles for protection from fine dust particles.
- Choose hand protection to fit the hazards determined through the hazard assessment (e.g.- laceration hazards, need for gripping, need for dexterity, etc.) Stay outside the 300-foot safety zone while a chipper is an operation.

HAZARD 8: Isolated work areas and sanitation

Risks: Remote locations delay response times from emergency providers. Precaution can reduce the severity of the event.

- **General recommendations:**

- Waterborne disease:
 - Always wash your hands.
 - Use hand sanitizers frequently.
 - Exercise Good Housekeeping.
 - Only drink from proven potable water sources.
- Blood borne disease:
 - Use latex or similar type gloves when handling remains.
 - Replace gloves if punctured or torn.
 - Receive appropriate vaccinations (Hepatitis A, B, Tetanus, Diphtheria, etc.).
 - Avoid standing water.
 - Observe universal precautions.
- Foodborne disease:
 - Identify & dispose of food that may not be safe to eat.
 - Handle food properly.
 - Keep a supply of water and food on hand.
 - Rest when off duty.
- Emergencies:
 - Know nearest crossroad of worksite location and phone numbers of nearest hospital.
 - Carry a first aid kit.

Hazard 9: Insects, animals, reptiles, and plants

Risks: Traumatic, serious, or fatal injuries or illness can occur due to insect or animal bites.

- **General recommendations:**
 - Protection from plants:
 - Be alert of poisonous plants.
 - Use barrier creams if available.
 - Wash affected area after contact.
 - Protection from wild or stray animals:
 - Avoid animal habitats (infested areas, rodent burrows, and nests).
 - Avoid wild or stray animals. Assume all animals are rabid. Call local authorities to handle animals.
 - Protection from insects (mosquitoes, bees, spiders, fire ants etc.):
 - Wear appropriate clothing (long pants, socks, long sleeve shirts etc.).
 - Avoid infested areas.
 - Use insect repellents that contain DEET or Picaridin, when necessary.
 - Protection from snakes:
 - Assume all snakes are poisonous. Be on alert for snakes that may be hiding in unusual places.
 - Seek immediate medical attention if you are bitten.
 - Try to identify the snakes so that if it is a poisonous you can be given the correct anti venom.

HAZARD 10: Power lines and gas lines

Risks: Traumatic, serious, or fatal injuries or illness can occur due to electrocution.

- **General Recommendations:**
 - Treat all power lines in cables as energized until proven otherwise the energized lines can be energized by a secondary power source such as a backup generator.
 - Use appropriately grounded low voltage equipment.
 - Do not approach, detected gas leaks.
 - Stay at least 10 feet away from live overhead power lines.
 - Use nonconductive wood or fiberglass ladders when working near power lines.
 - Keep area burning piles, observation areas, and areas where heavy equipment is used away from power lines and other electrical equipment.

HAZARD 11: Debris towers

Risks: Traumatic, serious, or fatal injuries or illnesses can occur due to falls from elevated surfaces.

- **General Recommendations:**

- Inspect scaffolds and scaffold components for defects before each work shift and after any incident which could affect structural integrity.
- Provide adequate buffer zones around the tower.
- Anchor the scaffold to prevent displacements from wind with guide wires .
- Do not exceed load capacity of the scaffold.
- Footing of the tower must be level, sound, rigid, and capable of supporting the load without settling or displacement.
- A standard guardrail (top, mid, toe) and handrail system must be installed along all open sides.
- Provide appropriate ventilation if a heating system is present.
- No smoking.
- Use established construction guidance (e.g., US Army Corp of Engineers).

HAZARD 12: Aerial lifts and scissor lifts

Risks: Traumatic, serious, or fatal injuries or illnesses can occur due to falls, tip overs, and pinch points.

- **General Recommendations:**

- Only trained and authorized people may operate the lift.
- Check for overhead objects before use.
- Stay away from debris piles, drop offs, and floor openings.
- Never use equipment near electric lines unless the lines are de-energized or adequate clearance is maintained.
- Refuel tanks only when the machine is off.
- Elevate the lift only when it is on a firm and level surface.
- Never drive the lift when it is in the extended position.

HAZARD 13: Severe Weather

Risks: Traumatic, serious, or fatal injuries or illnesses can occur due to hypothermia, hyperthermia, and lightning strikes.

- **General Recommendations:**

- Monitor local weather conditions regularly
- Recognize the signs of an oncoming thunder and lightning storm and seek shelter.
- Avoid small sheds, wooded areas, metal fences and open areas.

COVID-19

To minimize spread of the COVID-19, all staff must understand Oregon's health and safety guidelines specific to the virus and follow all appropriate measures:

- Frequent and thorough hand washing.
- If soap and running water are not immediately available, alcohol-based hand rubs containing at least 60% alcohol should be used.
- Wear a mask, ensure the mask fits to cover your nose, mouth, and chin.
- Respiratory etiquette, covering coughs and sneezes.
- Physical distancing, keeping a safe space of at least 6 feet (about 2 arm's length) from other people.
- Stay home if you feel sick.
- Notify Safety Officer if you have been in contact with anyone testing COVID positive.

Detailed protocols are outlined in the CDR Maguire COVID-19 Safety Plan and documented in the sites ICS 208 (Safety Message).

Safety Assurance

Monitoring and evaluation will be used to measure the effectiveness of the safety program.

Safety Officers will monitor sites to identify any deviations from the standards and work processes that have potential to cause injury and/or property damage.

Ongoing evaluations will be conducted to:

- Determine needs
- Determine whether the safety program is operating as planned
- Investigate to what extent the program is achieving its outcomes

Safety Promotion

Effective safety communication and training is vital to maintaining a positive safety culture. Therefore:

- Initial safety training will be provided for newly assigned personnel.
- Refresher training provided upon request.
- Safety information gathered and communicated from lessons learned.
- Raise awareness of new safety risk controls and corrective actions.
- Provide information on new or amended safety procedures.
- Encourage personnel to identify and report hazards; safety communication is two-way.
- Provide feedback to personnel submitting safety reports on what actions have been taken to address any concerns identified.

Appendix D - Wood Chipping

(Source: OSHA <https://www.osha.gov/dts/shib/shib041608.html>)

Training and Work Practices

The following recommended training and work practices will help to ensure safe operation of chippers:

Training - Employers and employees should be trained to understand the hazards associated with chippers. Training should cover the following:

- Correct operation of the chipper and its safety controls,
- Manufacturer's instructions on operation, inspection and maintenance of the chipper,
- Proper procedures for machine start-up and shutdown, and
- Correct use and maintenance of personal protective equipment.

Training should be provided in an effective manner and should make provision for those employees who speak or read little or no English.

Employers should closely supervise newly-hired employees to ensure that they are safely operating the chipper and should reinforce training through regular safety talks and unannounced site visits. When an employee engages in unsafe work practices, or disables existing safety devices, immediate corrective action, including refresher instruction and/or disciplinary measures, should be taken.

When chipping is being done as part of a logging operation, training is required by the Logging Operations standard (29 CFR 1910.266(i)). The logging standard establishes specific training requirements for all employees, including provisions on training content, frequency and portability.

Work practices - Proper work practices are essential for safe operation of chippers. Employers should reinforce proper work practices on a regular basis, such as during "toolbox talks".

The following are recommended safe chipper work practices to reduce "caught-in" and "struck-by" hazards:

- Designate one or more employees as a safety watch to be stationed near emergency shut-off devices while other employees feed material into the chipper.
- Stand to the side of the infeed chute when feeding material into the chipper. This reduces the "caught-in" hazard and allows quick access to emergency stop devices.
- Keep hands and feet out of the immediate infeed chute area while the chipper is running.
- Push material into feed rollers with a wooden tool or a long branch.
- Feed branches into the chipper butt-end first.
- Place shorter branches on top of longer branches being fed into the chipper.
- Place small debris into trash cans instead of feeding it into the chipper.
- Never stand, sit or climb onto any part of the chipper while it is running.
- Shut down the chipper and remove the ignition key when it is unattended.

- Before starting a chipper, ensure that the chipper's disc hood is completely closed and latched, and that there are no foreign objects in the infeed area.
- Ensure that the discharge chute is positioned to prevent chips from hitting employees.
- Do not stand in front of the feed table when the chipper is running.
- Check material to be fed to ensure that it is free of metal and other foreign objects.
- Use proper locking pins to immobilize the disc cutting wheel when attempting to clear a clogged chipper chute or changing chipper blades.

When chipping is being done as part of a logging operation, the Logging Operations standard requires:

- Employers hold safety and health meetings as necessary and at least monthly (29 CFR 1910.266(i)(11)),
- Chipper access covers or doors must not be opened until the drum or disc comes to a complete stop (29 CFR 1910.266(h)(4)),
- Employees be trained in the recognition of safety and health hazards associated with specific work tasks, including work practices to prevent or control those hazards (29 CFR 1910.266(i)(3)(iii)).

Personal protective equipment and clothing - Employers must "assess the workplace to determine if hazards are present, or likely to be present, which necessitate the use of personal protective equipment" (29 CFR 1910.132(d)(1)).⁵

Employees must take the following precautions:

- Use appropriate hand protection ... relative to the task(s) to be performed, conditions present ... and the hazards and potential hazards identified (29 CFR 1910.138(a) and (b)).⁶
- Use appropriate eye and face protection (29 CFR 1910.133).⁷ Devices purchased after July 5, 1994 must comply with ANSI Z87.1-1989 (.133(b)).
- Wear a protective helmet (29 CFR 1910.135). Helmets purchased after July 5, 1994 must comply with ANSI Z89.1-1986 (.135(b)).⁸

The following are industry and ANSI recommended clothing and apparel to prevent entanglement hazards:

- Wear gloves with no cuffs (non-gauntlet) (ANSI Z133.1-2006-3.4 4, 8.6.3).
- Wear close-fitting and tucked-in clothing with no stray straps or strings. Jewelry should not be worn while operating chippers (ANSI Z133.1-2006-8.6.3).

Inspection and maintenance - Employers need to inspect and maintain chippers in accordance with the manufacturer's specifications. Employers should inspect and test the chipper at the start of each workshift to ensure that all parts and safety devices are functioning properly. This should include looking for broken parts, cracks, worn hinges, and missing parts and pins.

Before beginning any servicing operation, lockout/ tagout procedures must be utilized to control hazardous energy related to start-up of the chipper (29 CFR 1910.147).⁹

When chipping is being done as part of a logging operation, the Logging Operations standard requires that employers ensure that machines, including chippers, are maintained in serviceable condition (29 CFR 1910.266(f)). To that end, the logging standard requires that each machine be inspected before every work shift and that damage or defects be repaired before the machine is used.

APPENDIX E - SAMPLE RIGHT OF ENTRY

RESPONSE # [REDACTED] **SUBMITTED ON 10/06/2020 01:40:16 PM**

[REDACTED] County

Page 1 of 2

Please Choose Permit Type:

All Wildfire Debris

Edit section title

Edit section title

Please check one

Owner

Full Name

[REDACTED]

Assessor’s Parcel Number (APN):

[REDACTED]

Household FEMA No

No answer given

Age of Structure

[REDACTED]

Property Address

[REDACTED]

Apt/Unit #

No answer given

City

[REDACTED]

State

Oregon

Mailing Address

[REDACTED]

Apt/Unit #

[REDACTED]

No answer given

City

[REDACTED]

State

Oregon

Phone 1

[REDACTED]

Phone 2

[REDACTED]

Email

[REDACTED]

Please select an option:

I agree to the terms of the Right of Entry Permit freely.

Insurance

Please select one

The property is insured

Insurance Information for the Property

Insurance Company

[REDACTED]

Agent

[REDACTED]

Agent Phone

[REDACTED]

[REDACTED]

Claim Number

[REDACTED]

Policy Number

[REDACTED]

Address for Claims

[REDACTED]

Upload Proof of Insurance

[REDACTED]

SECONDARY Insurance Information for the Property or other damaged items on the property:

Insurance Company

No answer given

Agent

No answer given

Agent Phone

No answer given

Claim Number

No answer given

Policy Number

No answer given

Address for Claims

No answer given

ADDITIONAL Insurance Information for the Property or other damaged items on the property:

Insurance Company

[REDACTED]

No answer given

Agent

No answer given

Agent Phone

No answer given

Claim Number

No answer given

Policy Number

No answer given

Address for Claims

No answer given

Signature

[Redacted Signature]

[Redacted Name]

Name

2020-10-06 17:40:17 (UTC)

Date

Attached Files

[Redacted File List]

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