

2020 LABOR DAY WILDFIRES

HAZARD TREE AND DEBRIS REMOVAL OPERATIONS

AFTER ACTION REPORT



OREGON DEBRIS MANAGEMENT TASK FORCE
OREGON DEPARTMENT OF TRANSPORTATION
JULY 2022

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LIST OF ABBREVIATIONS

Abbreviation	Definition
ACM	Asbestos Containing Material
BLM	Bureau of Land Management
Category A	Debris Removal
Category B	Emergency Protective Measures
DBE	Disadvantaged Business Enterprise
DEI	Diversity, Equity, and Inclusion
DEQ	Oregon Department of Environmental Quality
DROP	Debris Removal Operations Plan
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
EPP	Environmental Protection Plan
ER	Emergency Relief Program
ESB	Emerging Small Business
ESF	Emergency Support Function
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
HHW	Hazardous Household Waste
ICS	Incident Command System
IGA	Intergovernmental Agreement
M/WBE	Minority/Women Business Entity
MOU	Memorandum of Understanding
ODMP	Oregon Debris Management Plan
ODOT	Oregon Department of Transportation
OEM	Oregon Office of Emergency Management
OSHA	Oregon's Occupational Safety and Health Division
PA	Public Assistance Program
PPDR	Private Property Debris Removal
QA/QC	Quality Assurance/Quality Control
ROE	Right of Entry
SB	Small Businesses
SDV	Service Disabled Veteran
USACE	United States Army Corps of Engineers
USFS	United States Forest Service

REPORT METHODOLOGY

ODOT engaged an independent consultant to assist in facilitating a review of the Task Force in its support of the 2020 Labor Day Wildfires. This review also included close collaboration and input from operation partners and stakeholders. To conduct this review, the consultant first reviewed Oregon's readily available relevant plans, processes, policies, and other wildfire-related documentation in ODOT's Doc Express. Results of this review provided a baseline understanding of what was in place prior to and during the hazard tree and debris removal operations.

Next, the consultant supported ODOT in the development and conduct of ten, in-person after-action review sessions with various members of the Task Force and relevant stakeholders. Each after-action review session focused on a different topic, including: (1) Maintenance Hand-Off; (2) Initial Contracts; (3) Senior Leadership; (4) Contract Administration; (5) Data Collection and Management; (6) Communication & Public Information; (7) Field Operations; (8) Disposal; (9) Stakeholder Engagement with Cities & Counties; and (10) Stakeholder Engagement with Federal Partners.

Following the after-action review sessions, participants analyzed the information collected during each of the sessions as well as from the documentation review to identify strengths and lessons learned. The participants developed recommendations to address identified gaps or shortfalls, and to institutionalize successes and best practices.

EXECUTIVE SUMMARY

The wildfires that impacted Oregon in 2020—known as the 2020 Labor Day Wildfires—burned more than 1.2 million acres of land, destroyed upwards of 5,000 homes and businesses, and claimed nine lives, producing the most destructive sequence of simultaneous wildfires in the state’s history. Oregon Governor Kate Brown issued 15 invocations of the Emergency Conflagration Act in response to this historic incident. As response and recovery needs overwhelmed state and local responders, Governor Kate Brown requested a federal emergency declaration on September 9 and a major disaster declaration on September 15 of 2020.

Fueled by prolonged dry conditions, drought, and a historic wind event, the wildfires affected eleven Oregon counties including Clackamas, Douglas, Jackson, Jefferson, Klamath, Lane, Linn, Lincoln, Marion, Tillamook, and Washington counties. The aftermath of the wildfires produced record amounts of burned trees, ash, and debris, necessitating the largest hazard tree and debris removal operation in Oregon’s history.



I-5 Talent Exit 21 shortly after beginning of Almeda Fire

For the first time, the state assembled and activated a task force of state agencies—the Debris Management Task Force (hereafter referred to as the “Task Force”)—to coordinate and manage the removal, disposal, and cleanup of hazard trees and debris from properties across the state. This after-action report (AAR) reviews the entirety of these hazard tree and debris removal operations, led by the Oregon Department of Transportation (ODOT) via the Task Force, and supported by the Oregon Office of Emergency Management (OEM) and Oregon Department of Environmental Quality (DEQ).

The culmination of multi-day high winds, a cold front, a critically-dry ecosystem, and the potential need for additional brush and forest management and thinning treatments in some federal forests, resulted in over 30 active fires and over 1.2 million acres burned—twice the annual average—and forced more than 40,000 Oregonians to evacuate¹ their homes. The wildfires resulted in hazardous conditions across the state including rock falls, landslides, and hundreds of thousands of hazardous trees, as well as substantial structural destruction to several state highways.²

¹ Oregon Department of Transportation, *Hazard Tree and Debris Removal Operation Plan Version 1.0* (Salem, Oregon: Oregon Department of Transportation, 2020), Report: DR-4562-OR, 4.

² Ibid.



OR 22 Checkpoint

In response, stakeholders from ODOT, OEM, DEQ, the Federal Emergency Management Agency (FEMA), U.S. Army Corps of Engineers (USACE), and the Owner's Representative convened a meeting on September 19, 2020 to discuss debris removal operations and establish the Task Force, to manage and coordinate hazard tree and debris removal operations on state and private lands. Shortly afterward, ODOT, in coordination with OEM

and DEQ, contracted a firm experienced in disaster management and recovery to augment overburdened state personnel and serve as the Task Force's primary work Monitoring Firm. Oregon-based sub-consultants supported the Monitoring Firm in protecting natural and cultural resources of the state.

Early in the aftermath of the wildfires, clearing hazard trees and debris from federal and state highways became a critical priority for enabling evacuations, firefighting, and hazardous substance or materials removal throughout the state. As some of the fires subsided in late September 2020, ODOT-employed and contracted maintenance work crews deployed to impacted highways. ODOT, funded by Federal Highway Administration Emergency Relief Program (FHWA ER) funds, would eventually conduct first push operations, clearing immediate hazards from over 120 miles of affected federal and state highways.

Shortly after the start of highway hazard tree removal operations, DEQ led operational coordination with the U.S. Environmental Protection Agency to remove and dispose of Household Hazardous Waste (HHW)³ and other dangerous substances at public and private properties within impacted areas. HHW removal was an important first step to ensure that follow-on private property debris removal crews were safe while cleaning properties and



Smoke persists as crews clear out hazards on OR 18

³ Hazardous waste includes fuel, car batteries, antifreeze, paint, bleach, fertilizers, pesticides, propane tanks, disinfectants, aerosols, solvents, used oil filters, pool chemicals, ammunition, and more. Crews also identified and disposed of large pieces of asbestos materials. Oregon Office of Emergency Management, "Step 1 Cleanup," website, undated, accessed February 20, 2022, <https://wildfire.oregon.gov/Pages/step-1-cleanup.aspx>.

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to ensure property owners' safety upon their return to assess property damage and begin rebuilding efforts.⁴ Unlike highway clearing operations, the state was able to qualify for FEMA Public Assistance Category B: Emergency Protective Measures funds to pay for HHW removal.

By the middle of December 2020, wildfire recovery operations shifted into a new phase as a result of the transition from FHWA ER-funded and FEMA PA Category B-funded activities to FEMA PA Category A: Debris Removal-funded activities.⁵ To execute this second phase of operations, the Task Force implemented new processes for assessing and identifying hazardous trees for removal based on FEMA PA Category A requirements by prioritizing the protection of natural resources. In addition, the Task Force engaged with archaeological consultants to ensure the protection of Oregon's cultural resources throughout hazard tree and debris removal operations.

Particularly novel to the state's normal process for removing hazard trees and debris was FEMA's requirement to implement a Right of Entry (ROE) process. The ROE process was a key step to enable (1) tree and archaeological assessments and (2) contractors to remove and clear hazard trees and debris on private lands.⁶ Removal and cleanup operations could only begin in earnest once the state received private property owner permission through the ROE process to receive FEMA reimbursement.



Home along OR 22 destroyed by the 2020 wildfires

Over the course of the next 13 months from January 2021 to February 2022, the Task Force—made up of Prime Contractors, including the Monitoring Firm—in coordination with natural and cultural resource consultants, executed the identification and removal of hazard trees as well as cleared and disposed of wildfire ash and debris on private properties throughout the state.

The 2020 Labor Day Wildfires have proven to be the most expensive disaster in Oregon's history. In October 2020, Oregon initially estimated a cost of \$622 million and USACE estimated \$1.2 billion. However, as of June 30, 2022, the cost for the removal and cleanup of HHW, hazardous trees, ash, and debris is \$355 million with state fieldwork complete. Administrative Task Force work continues.

⁴ Ibid.

⁵ For more information on the FEMA PA Program, please visit: https://www.fema.gov/sites/default/files/documents/fema_pappg-v4-updated-links_policy_6-1-2020.pdf.

⁶ No ROE was needed for state infrastructure.

ASSESSMENT

The following section lays out what worked well in the Task Force's response to the 2020 Labor Day Wildfires and opportunities for improvement in Oregon's disaster preparedness.

WHAT WORKED WELL

Participants in the after-action review session identified many successes that came out of the 2020 Labor Day Wildfire Recovery.

ORGANIZATIONAL MISSION AND STRUCTURE

The decision to focus recovery operations on equitable opportunities ensured that the health and well-being of all Oregonians was a priority.

Soon after the 2020 Labor Day Wildfires, Oregon State Legislature, along with Governor Kate Brown, made the decision to prioritize the health and well-being of all Oregonians by providing equitable opportunities throughout the wildfire recovery process. To execute this promise, stakeholders from ODOT, OEM, DEQ, and consultants decided to establish the Task Force to coordinate and manage the removal of debris from every wildfire-affected home, property, and business, at no cost to the landowner, city, or county. To help facilitate an equitable mission and operation, the Task Force collaborated with local officials to prioritize traditionally under-served communities, which were also some of the most negatively impacted communities, as key cleanup areas.



The Corona family after evacuating from the Almeda Drive Fire

CONTRACT PROCUREMENT AND ADMINISTRATION

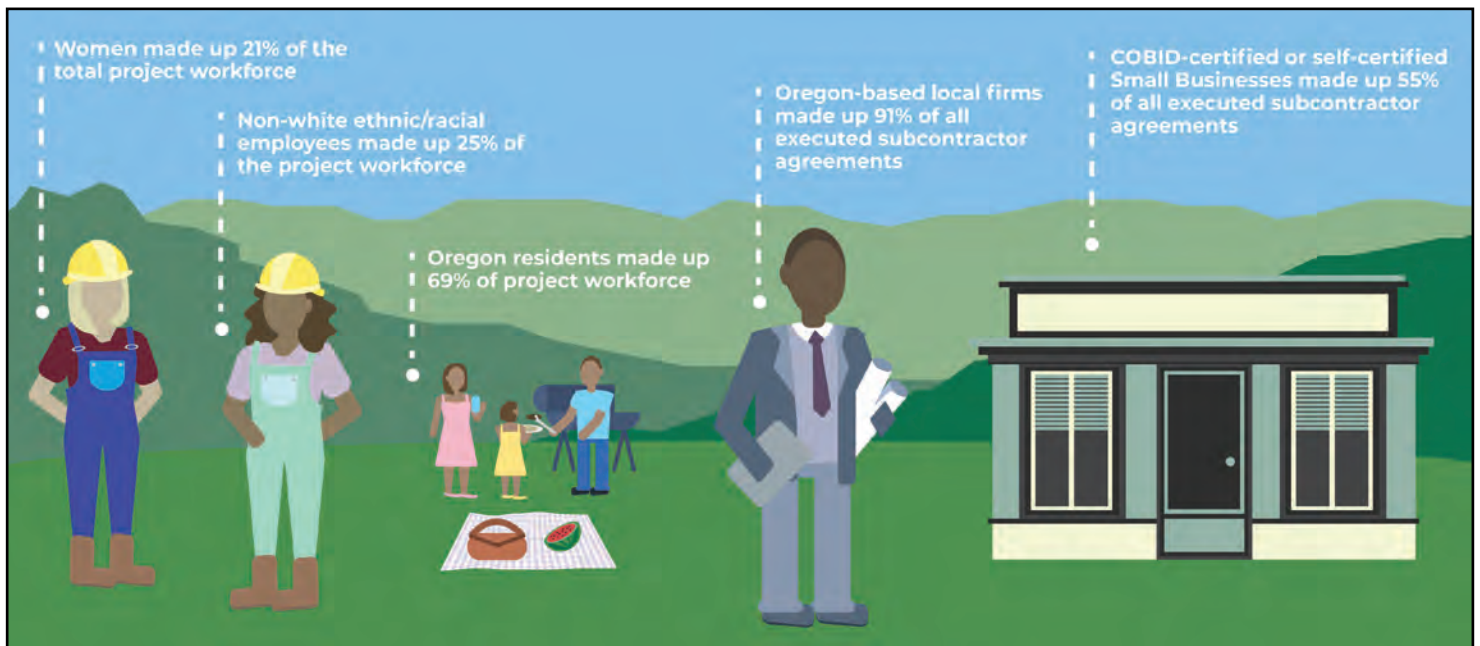
The inclusion of a Diversity, Equity, and Inclusion (DEI) requirement within contracts was valuable to ensuring that recovery operations prioritized local, small, and women- and BIPOC-owned businesses.

ODOT used the Values and Objectives section of their contracts to include this requirement, and assigned a specific person to oversee implementation. Contractors

created and upheld these sections themselves, as shown in the attachment to Contract B37922, to ensure:

“the work plan for this contract will be developed and executed assisting, counseling, advising, and using, to the maximum extent possible and to the extent consistent with Oregon Department of Transportation’s interest, local and other Small Businesses (SB) as well as Service Disabled Veteran (SDV), Disadvantaged Business Enterprise (DBE and ACDBE), Minority/Women Business Enterprise (M/WBE), Emerging Small Business (ESB) for the provision of equipment, labor, services and supplies,” and prioritize the use of local companies to execute work.⁷

The prioritization of contract oversight—both in the field and at headquarters—ensured all contractors were held accountable and had additional benefits like ensuring payments and keeping costs low.



Final Wildfire Demographics Report infographic

ODOT had strong consultants who had clear, effective invoicing and validation processes. For example, the Monitoring Firm dedicated an individual to each contract or contractor, providing the Task Force with direct insight into contracting processes and issues. Through staff in the field and staff assigned in support of contract administration, the Monitoring Firm was able to control the process for issuing approval tickets that allowed contractors to be paid. This fulfilled their contractual requirement to “compile a database of cost tracking tickets and their daily reconciliation with the Hazard Tree and Debris Removal Contractors’ Project Manager and in support of the

⁷ Ceres Environmental Services, Inc., Values and Objectives Plan, (Sarasota, Florida: Ceres Environmental Services, Inc.), Request for Proposal: 34569, 1.

Monitoring Contractor's Finance Chief.”⁸ Additionally, the Monitoring Firm worked closely with the Owner's Representative, who added yet another layer of compliance review to the invoice process.

The Task Force also implemented the following processes to successfully maintain oversight of contract administration at the headquarters level:

- Developed timely methods to process invoices in approximately 14 days (as opposed to the 30-day industry standard)
- A change order process to provide flexibility with the contractors on-the-ground
- A Paid Summary Report, which verified that prime contractors were paying their sub-contractors

The procurement team proved to be an important asset throughout hazard tree and debris removal operations.

In addition to their day-to-day responsibilities, ODOT resourced its procurement office staff to the Task Force to aid in the development and adjustments of contracts. This enabled the Task Force to fulfill its mission to provide recovery and rebuilding efforts centered on Oregonians.

DATA MANAGEMENT AND SHARING

Deploying dedicated personnel within each of the county EOCs to serve as connecting paths of communication was valuable in the Task Force's data requests to the Counties.



Task Force crews coordinating hazard operation at Collier Memorial State Park following 242 Fire

Immediately following the 2020 Labor Day Wildfires, the state structured its operations based on state-managed, locally-coordinated principles. Most notably, the Task Force deployed personnel (from the Owner's Representative) to each county to serve as data administrators and manage the flow of data from the field to the Task Force and vice versa. In particular, these personnel provided quality control and quality assurance of information, adjudicated discrepancies between

⁸ Oregon Department of Transportation, *Hazard Tree Debris Monitoring; Attachment D* (Salem, Oregon: Oregon Department of Transportation, 2019), Request for Proposal: 3452, 15.

data from the field and the Task Force, and served as the primary touch point for inquiries from the Task Force. As a result, communication flowed smoothly between the counties and the Task Force.

Real-time information sharing tools successfully facilitated operational information to personnel in the field.

Many of those deployed in the field to support hazard tree and debris removal operations were located in remote areas with limited telecommunications connectivity. This, in addition to interoperability between various information-sharing systems, initially hindered communications between field recovery elements and the Task Force. To improve communications, the Task Force consolidated the various, disparate data management systems into a single collaborative data system. This system provided Task Force personnel with a single source to access daily status reports, report data, view invoices, and other necessary data.

COMMUNICATIONS AND PUBLIC INFORMATION

Regularly scheduled meetings and check-ins were beneficial for maintaining consistent internal communications and a clear operational picture in the field while communicating and diagnosing ongoing challenges.



The Task Force provided multiple opportunities and mechanisms to facilitate communications. As reported by after-action review session participants, Task Force leadership, members, and Incident Commanders met daily for field briefings and once a week coordination calls. The frequency of these meetings encouraged constant communication and coordination across and among field and state-level stakeholders, especially when having to communicate changes to work orders.

Community-centered storytelling was beneficial to sharing progress and successes in communities, while helping to support and bring together wildfire survivors as they processed trauma.

According to after-action review session participants, storytelling—a method the Task Force’s communications team adopted for the second phase of operations—successfully shared the Task Force’s progress with those impacted by the 2020 Labor Day Wildfires. By bringing in additional resources, like a videographer and veteran strategic communication professionals, the communications team told stories of progress, hope, neighborly support, and next steps in the recovery process. This, combined with sharing first-hand experiences from survivors and Task Force employees, aimed to unite and inspire communities across the state.



Jocksana Corona, Talent, OR resident and community advocate, in the video “A Year After the 2020 Wildfires”

The call center helped homeowners understand which services the Task Force offered and answered any questions or concerns about how to receive those services.

The addition of the call center—set up by OEM and run by the Owner’s Representative firm—enhanced communications between the Task Force and the public. The call center functioned as a trusted source to answer questions, whether about contractors or services in their area or about the Task Force’s By the Numbers Dashboard, which provided live updates from the Task Force. In addition, the call center provided clarification on the ROE process, including correcting any misinformation or public misconceptions, and assisted callers in completing an ROE form.

PRE-OPERATIONAL ASSESSMENTS

ODOT accommodated wildfire survivors by not requiring strict deadlines to opt into the state-led debris removal program and complete their ROE form.

By not setting a hard deadline for when those affected by the 2020 Labor Day Wildfires must submit their ROE application, ODOT was able to give Oregonians time to process the extent of damage to their property and consider all available options to mitigate damages.

Archaeological monitors developed and maintained positive relationships with Tribal communities in affected areas, which led to positive feedback in the media and public forums.

Archaeological monitors complied with the National Historic Preservation Act when unearthing cultural artifacts, pre-established relationships with tribes impacted by the wildfires, and facilitated coordination and collaboration between the state and tribal communities.

OPERATIONAL COORDINATION

Real-world experience established and/or strengthened relationships between, and debris management mission understanding for, ODOT, state partners, and local agencies.



ODOT On-Scene Incident Commander Steve Jacques and OPRD Operations Support Manager Bridget Tinsley meet at Collier Memorial State Park

Despite initial coordination difficulties and a steep learning curve for the state's implementation of the Task Force, valuable inter-agency relationships emerged that should facilitate coordination in future operations. In addition, state and local agencies, contractors, and consultants learned valuable lessons about operating under FEMA PA policies for wildfire hazard tree and debris removal. The response also prompted coordination between the state's natural resource experts, who had not been meeting regularly prior to 2020. Local agencies found

themselves working with an array of new partners and organizations from state, tribal, and federal agencies, as well as the Task Force, contractors, consultants, and other partners. This close coordination allowed many involved in the 2020 Labor Day Wildfires response to recognize the importance of leveraging and continuing to strengthen these relationships ahead of future disasters.

Some counties provided a liaison to Task Force contractors in the field to coordinate directly with private property owners during hazard tree and debris removal.

Some counties provided a liaison to accompany the Task Force's contractor staff when coordinating directly with property owners. Stakeholders who worked in counties with this practice noted its effectiveness, saying that deploying county liaisons alongside Task Force contractors increased the level of trust between property owners and contractors, and facilitated communications with county- and local-level personnel. Counties felt that including this county liaison in the field also helped to reduce "panic withdrawal" from the ROE program—a misinformation campaign spread by scam contractors.

ODOT Maintenance's existing relationships with BLM and USFS were critical, and extremely valuable for coordinating debris removal operations along Federal lands.

According to ODOT and Monitoring Firm data, BLM and USFS own almost half of the lands where trees were cut or planned to be cut. The Task Force simplified communication and coordination with property owners in places where USFS was the sole owner of the land surrounding the highway, such as in the Riverside Fire area (State Highway OR 224, Clackamas County). In Riverside, USFS attended meetings with ODOT, local, state, and other partners, and shared updates with the Task Force and public outreach personnel.



DMTF leadership, in collaboration with the Mt. Hood US Forest Service, hosting a tour of OR 224 for Governor Kate Brown

The existing relationships between ODOT and federal partners from BLM and USFS were extremely valuable in coordinating cleanup and debris removal operations.

HAZARD TREE AND DEBRIS REMOVAL OPERATIONS

Existing COVID-19 mitigation protocols, enforcement mechanisms, and collaboration tools were adequate for Task Force personnel and contractors to perform their work.



Oregon-based firm Mason, Bruce & Girard staff providing hazard tree assessments, erosion and sediment control oversight, and environmental compliance

Before the 2020 Labor Day Wildfires cleanup and debris management mission, ODOT personnel had ample practice with COVID protocols, best practices, and collaboration methods. ODOT mirrored their highway construction crew policies for all contractors, including contract notification processes and requirements for reporting sick personnel and the use of additional cars to ensure fewer people traveling together. If contractor employees violated ODOT protocols, ODOT would formally warn the company, noting that they were prepared to terminate a contract due to non-compliance. In addition, the

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Task Force held fewer in-person meetings, wore masks, and social distanced whenever possible. As a result of these practices, COVID had almost no effect on staffing levels.

ODOT's culture of worker safety and familiarity with tree removal operations contributed to low instances of field injuries.



Suulutaaq, Inc. tree scaler scales a hazard tree in Holiday Farm Fire area

Despite having 1,200 deployed personnel working hundreds of thousands of hours in hazardous conditions—such as in dangerous environments with the potential for landslides or in the presence of trespassers and angry protesters at work sites—only three incidents of employee injury have occurred as of publication of this AAR. ODOT attributes this record to their culture of adhering to Oregon's Occupational Safety and Health Division (OSHA) standards, excellent contract flaggers, strong communication between contractors and the public, clear message boards, and signs notifying the public of any safety hazards.

Maintaining the same personnel from Phase 1 to Phase 2 operations allowed for efficient and effective operations.

As the mission transitioned from Phase 1 (Initial Response by ODOT Maintenance Crews) to Phase 2 (Recovery Response by the Task Force), ODOT tried to keep the same partners and Task Force members involved in cleanup and debris removal operations. When successful, the result was a flatter operational learning curve, improved coordination with local partners, tribes, BLM, and USFS, and enhanced operational efficiency of contractors at work sites.

Pegging the price of scrap metals recovered from debris sites to national commodity market indices assisted the state's ability to contract successfully for the disposal of metals.

The initial delay of the appropriate and accepted value of re-purposed metals slowed the development of contracts for the sale of these materials. At the time, the Task Force had no standardized process for the consideration of price determination of recycled metals, especially given the amount of scrap metal being processed. Following this initial period of discovery, scrap recyclers identified the use of national commodities' indices to determine the value and appropriate pricing of scrap metals within contracts. By doing so, scrap recyclers were able to validate their proposed pricing of metals within contracts, as well as justify the awarding of sales based on buyer bids, which matched this pricing.

Identifying specific areas for wildfire ash and debris at landfills, as well as erecting roads to these areas, enhanced the ability of one Oregon landfill to receive disposed material.

ODOT heeded warnings from California about traffic congestion around landfills as haulers drive to landfills to dispose of wildfire-related debris. To mitigate potential traffic congestion near landfills, ODOT dedicated specific landfills for wildfire debris, and landfill operators opened a secondary road for only haulers to access.



Schnitzer Steel Industries, Inc.; contracted to recycle metal debris from wildfire-damaged home sites



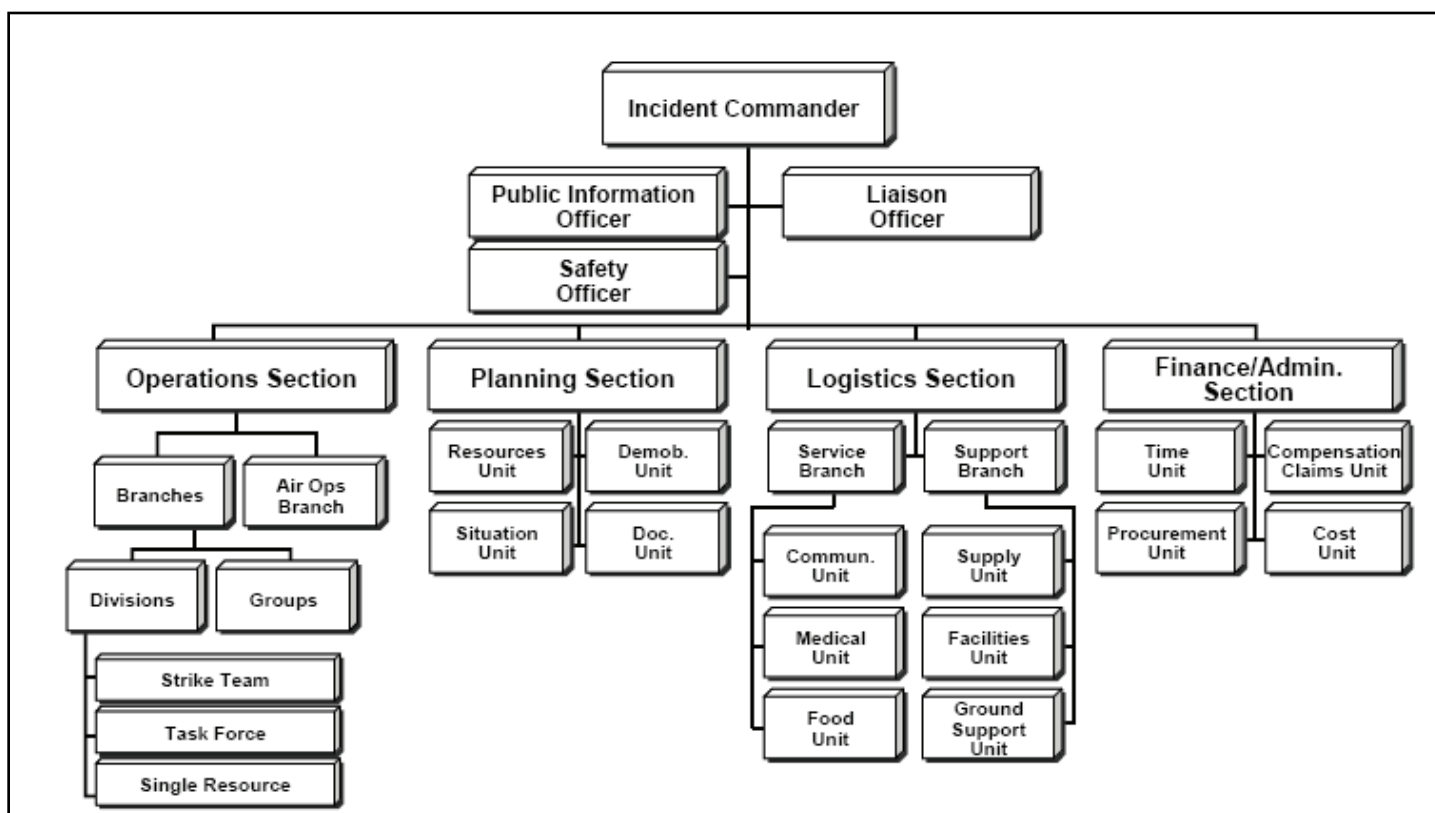
JJ Aleson, Phoenix, OR resident and Trucking & Grinding Operations Manager at Biomass One; a DMTF-contracted wood debris recycling facility

OPPORTUNITIES FOR DEVELOPMENT

A great deal went well during the recovery from the 2020 Labor Day Wildfires, and the state succeeded in its ultimate goal of removing hazards created by the disaster event. However, as in any recovery, there are aspects that serve as lessons learned, or could be improved upon, as a playbook is further developed for Oregon.

ORGANIZATIONAL MISSION AND STRUCTURE

The use of the Incident Command System (ICS) to coordinate and control recovery operations proved to be ineffective for hazard tree and debris removal operations. However, to address this, Task Force leadership made course corrections and created a longer-term programmatic structure for operation oversight.



Task Force and State emergency response professionals initially attempted to implement a formal ICS structure to coordinate and manage hazard tree and debris removal operations, and even sought out consultants to provide staff in support of an ICS structure. However, upon realizing the inadequacies of using a formal ICS structure to coordinate and control operations, the Task Force adjusted its operational structure to address the nuances and challenges of long-term recovery operations.

For a nearly fourteen month wildfire response operation, it was determined that a full-functioning Emergency Operations Center (EOC) would not be required to manage a debris removal project and often created more check-in meetings, layers of authority, and reporting structures than were necessary to fulfill the mission of the work. The Task Force elected to follow ODOT's standard construction management practices, which have been utilized for decades and met all federal and state requirements.

CONTRACT PROCUREMENT AND ADMINISTRATION

The absence of pre-positioned contracts delayed the mobilization and deployment of resources to the field. Looking forward, staff are creating a bench of resources for future disasters.



Crew rescues Osprey chicks from a hazard tree along OR 126

The 2020 Labor Day Wildfires created a landscape requiring urgency and action. The daunting work left in its aftermath required a state entity willing to immediately get to work, with no playbook or blueprint. This operation was also the first time ODOT conducted major hazard tree and debris removal operations at such a massive scale. As such, ODOT did not have pre-positioned debris contracts ready to deploy, nor a contractual framework, instead borrowing from California. From a blank sheet, ODOT created,

assigned, and deployed contracts rapidly, and stood up an operation the size of a state agency in a matter of weeks. In fact, there were only four days between contracting the Monitoring Firm's approval and the request for proposals for their debris removal contracts.⁹

Once on contract, the Monitoring Firm did not have adequate time to conduct surveys, work through issues surrounding decision-making and information sharing procedures, or establish clear lines of authority with ODOT and other contractors (environmental, cultural, tree assessment, haulers, etc.). The pressure to start recovery as soon as possible also limited ODOT and the Monitoring Firm's ability to develop a runway of properties that were ready for debris and hazard tree removal with executed work orders. Contractors were unable to conduct work until environmental, cultural resources, and hazard tree assessments were completed.

⁹ Advisory Report, 6.

DATA MANAGEMENT AND SHARING

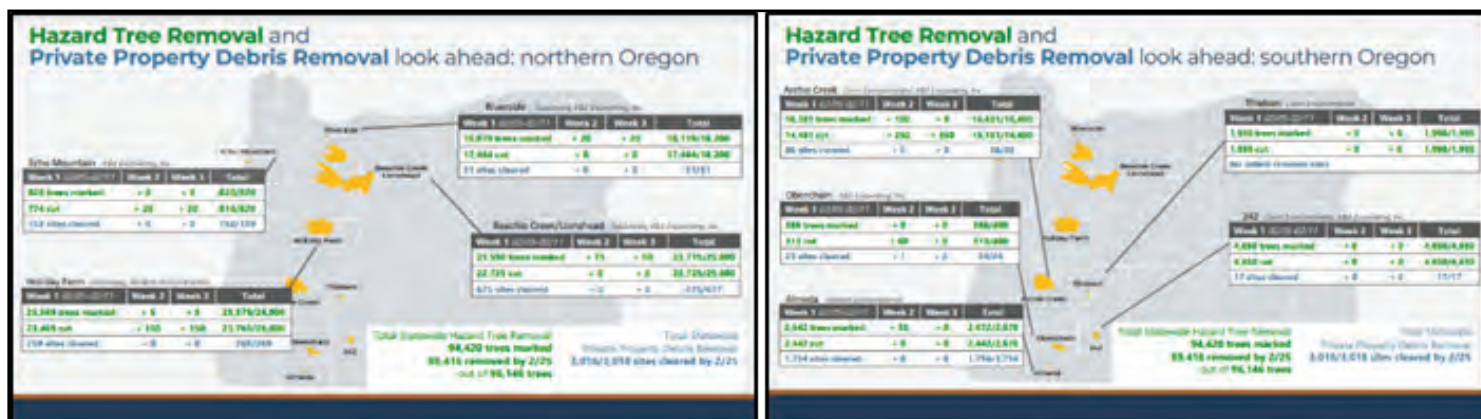
The State Historic Preservation Offices' (SHPO) Oregon Historic Sites Database could benefit from updates, which created difficulties for the Task Force as it tried to avoid cultural resource sites in wildfire-impacted areas throughout the state.

Archaeological consultants conducted archaeological monitoring at specific sites to protect cultural resources during hazard tree and debris removal work, revealing hundreds of previously unknown historic and pre-historic sites. However, according to after-action review session participants, the Oregon Historic Sites Database—which is supposed to list all known cultural resource sites—was incomplete and outdated, rendering it unreliable for archaeological consultants requiring precision and accuracy.



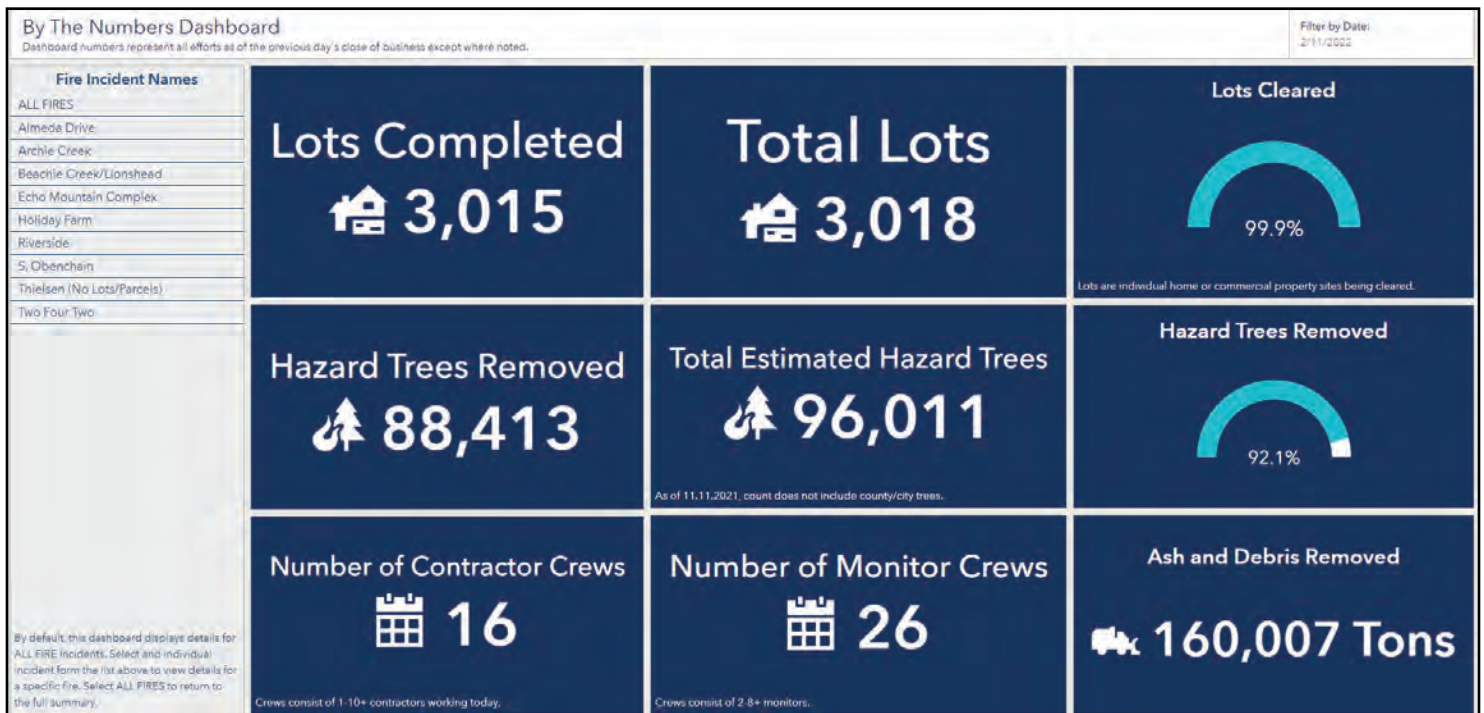
Markers within the 242 Fire area indicate environmental or cultural resources at Collier Memorial State Park

The Hazard Tree Removal and Private Property Debris Removal Three-Week Look Ahead reports were often unreliable and did not adequately set realistic operational expectations.



The Task Force developed *Hazard Tree Removal and Private Property Debris Removal Three-Week Look Ahead* reports (see figure below for example reports) to provide Task Force leadership with a broad picture of progress made in tree marking, tree cutting, and debris removal, as well as providing projections for anticipated, future progress. Although developed to help inform and guide leadership decision-making, the reports often inaccurately forecasted hazard tree and debris removal progress, rendering the reports ineffectual.

Despite the intended “One Message, One Voice” behind the Task Force’s By the Numbers Dashboard, there were information discrepancies between what was posted and realities in the field or progress experienced by property owners. This caused confusion for the public leading to greater call volumes at the call center.



The Task Force’s *By the Numbers Dashboard* provided live statistics on five areas related to hazard tree and debris removal operations, including: Debris Clean-up and Hazard Tree, Damage Assessment, Sheltering and Housings, Fires Story Map, and Federal Assistance. The Task Force created this dashboard to provide the public with a readily accessible way to verify the efforts of the Task Force and feel confident in their progress.

However, updates to information on the dashboard did not align with information communicated by counties to property owners. As a result, there was not “One Message, One Voice” and the Task Force’s call center had to unnecessarily field questions from the public on which information was accurate.

COMMUNICATIONS AND PUBLIC INFORMATION

The Task Force did not have its own social media account, which complicated the development and release of public information and limited the Task Force's ability to respond quickly to public inquiries. To address this, the Task Force created other information channels to provide recovery and cleanup-specific information and built a large audience list separately in the absence of direct social media.

The *State of Oregon Emergency Operations Plan Emergency Support Function 14: Public Information (ESF 14 EOP)* states that "OEM and the Governor's Office will coordinate public information resources in response [...] includ[ing] traditional media, social media, video sharing, media relations and other methods." However, the Task Force did not develop any social media accounts dedicated to relaying information regarding ongoing operations or addressing inquiries from the public. Instead, the Task Force relied on OEM's social media accounts to distribute information.



Graphic shared by OEM on September 10, 2021, announcing the final statewide ROE deadline

Consequently, any information released by the Task Force via OEM's social media accounts was oftentimes lost in the array of unrelated messages sent out from OEM and required a significant amount of time investment in cross-agency coordination or duplicating messages/posts that already existed elsewhere. For example, the Task Force released an update on the number of home sites participating in Step 2 of the cleanup process and a closer look at what had been done since December 2020. That update was lost among OEM updates on "harmful algae bloom season."¹⁰

During the after-action review sessions, Task Force participants confirmed the challenges they encountered by having to rely on OEM's social media accounts, saying that without a dedicated social media account, the Task Force was not able to address misinformation campaigns in a timely way. In particular, participants discussed the large-scale panic and then withdrawal from state-provided support in at least one county due to targeted, misinformation campaigns on the ROE process. While the Task Force found ways to create their own content channels to support timely distribution of information, the time invested to coordinate, duplicate, or "making a case" that a post was worthwhile was inefficient and unnecessary.

¹⁰ Oregon OEM Twitter Feed, posted August 6, 2021, accessed February 10, 2022, <https://twitter.com/OregonOEM/status/1423667680838438913>.

Scamming businesses surfaced during the wildfire recovery operations, targeting survivor populations.

During hazard tree and debris removal operations, members of the Task Force reported instances of scam contractors attempting to convince homeowners to pay for their hazard tree or debris removal services (while the state's services are free). However, once a property owner employs a privately hired contractor, the Task Force is no longer able to provide hazard tree and debris removal services. Therefore, if the contractor does not adequately clear a property owner's lot or takes the valuable metals off the lot without any further services, the property owner may no longer be able to receive Task Force assistance.

The Oregon Department of Justice developed resources for the public on ways to avoid wildfire scams. This information was shared early on during the initial stages of the Task Force and distributed via OEM's social media accounts, but not all affected by the wildfires saw OEM's posts.

Regularly scheduled meetings and check-ins were beneficial for maintaining consistent internal communications and a clear operational picture in the field while communicating and diagnosing ongoing challenges.

Although after-action review participants agreed internal communications were effective and efficient, there were challenges in the coordination and flow of information at the outset of operations. For example, while communication up to Task Force leadership was standardized with General Daily Progress Reports—a summary of ongoing, daily operations—communication back down to field staff was initially difficult to maintain, as communication occurred on an ad hoc basis and not in a standardized form.



Hazard tree removal prep meeting at an Alameda Fire site

PRE-OPERATIONAL ASSESSMENTS

ROE processes and practices were confusing to state and local agencies and the public, causing delays in completing hazard tree and debris removal operations. While extensive efforts to simplify, coordinate, communicate, and provide direct customer service via the call center helped provide resources, Oregon can benefit from a more streamlined ROE policy and process in the future.

Under the Stafford Act, and in line with FEMA PA policy, ODOT was designated to coordinate debris removal from private lands for anyone that is eligible for FEMA PA Category A Debris Removal funds. However, counties were unclear on the specifics of this arrangement and it was not an activity that ODOT Maintenance maintained as part of its portfolio of duties. As ODOT tried to establish Memorandums of Understanding (MOUs) or Intergovernmental Agreements (IGAs) to gain ROE onto private lands, counties were unclear of ODOT's roles, responsibilities, and authorities. Some counties believed the ROEs included cleanup of debris other than trees, while other counties wanted to formalize and define what constitutes as "debris" for removal operations. Counties were likewise divided on whether they believed ROEs could be done on a property-by-property basis or were put into place county-wide.

ROE processes and practices were also confusing to the public. ROE forms provided too many options for homeowners to decide between and used confusing language, resulting in the need of a call center to field the public's questions. Additionally, these forms were not provided to the public until late in Phase 1. This caused confusion and affected the timeliness with which ODOT could carry out Phase 2 hazard tree and debris removal. Moreover, the lack of a clear timeline for property owners to opt in/opt out of the program, while empathetic to disaster survivors (see Strength 5.1.1), negatively affected the efficiency of field operations with mobilization and clean up.

Some property owners opted in and out of the program multiple times while others opted into the program after the contractors already left the area, causing them to have to return. Both situations caused months-long operational delays.

A collaborative planning effort with local communities to define the ROE process, roles, and responsibilities further will be beneficial to future success.



Graphic shared by OEM on May 25, 2021, announcing upcoming ROE deadlines by county

Currently, Oregon does not have a statewide ROE system. Finding solutions for this can benefit Oregon beyond wildfire recovery and cleanup planning.

ODOT does not have a statewide system to track ROE processes. As a result, ODOT was unable to track the often-changing status of any given ROE and had no definitive dataset containing property and contact information. ODOT and the Task Force depended upon the information maintained by the counties. According to members of the Task Force, this caused a delay in getting the signoffs required for doing the cleanup, and a lack of a statewide view of progress and issues. This also made it more difficult to track the properties that did not respond to attempted communications from the state, and are automatically opted into the program after the required length of time passes. Tracking all this information could help aid the creation of a strategic plan in future debris removal operations, targeting the areas with the highest submitted ROEs first.

Lack of a standardized hazardous tree assessment process or quality control methods led to delays and confusion.

Before cutting and removing hazardous trees¹¹, each tree must be marked as hazardous through a diligent and time-intensive methodological determination, as required by FEMA guidance. However, due to the magnitude of the cleanup and debris removal operations, there were multiple organizations contracted to conduct tree assessments, including arborists subcontracted directly to the Monitoring Firm and those directly employed by the Monitoring Firm. On more than one occasion, these arborists would arrive at different conclusions about whether or not a tree is hazardous, which is not uncommon when exercising “professional judgment.” When this occurred, a final decision was made that required efficient decisiveness, but also stood the potential for conflict amongst field staff who agreed or disagreed strongly based on the work of their team.



Two Douglas firs on the bank of the McKenzie River along OR 126

¹¹FEMA defines eligible vegetative debris, including hazardous trees, as those that are still in place, but damaged by the incident in question to the extent they pose an immediate threat. In particular, FEMA considers incident-damaged trees to be hazardous and eligible if the tree has a diameter of 6 inches or greater measured 4.5 feet above ground level, and if the tree has a split trunk, broken canopy, or is leaning at an angle greater than 30 degrees. FEMA, *Public Assistance Program and Policy Guide, Version 4.0* (Washington, D.C.: U.S. Department of Homeland Security, 2020), 102.

While the majority of trees were marked correctly¹², the lack of a formal process to resolve these disputes delayed operations as stakeholders came to a consensus and developed a tree-by-tree plan of action. Additionally, ODOT subjected nearly all hazard tree removal to an additional formal quality assurance/quality control (QA/QC) process. While this extra layer of determination was important to the citizens of Oregon, it was neither required by FEMA nor typical in debris removal operations and contributed to numerous procedural delays.



Arborist tagging a hazard tree in the Riverside Fire area

Using this process as a pilot and test case will provide a series of lessons learned to apply to the next disaster when Oregon is more accustomed to the unfortunate reality of removing the dead and dying trees left in the wake of catastrophic wildfires in populated areas.

Minimum qualifications for professionals performing hazard tree assessments could have been further tailored to support Oregon's recovery efforts.

While the Task Force used both arborists and foresters to carry out their mission, they did not have time to weigh the benefits and challenges of using each before contracting out the work. Although the Task Force generally agreed that foresters and forest technicians seemed more effective in the field due to their operational approach to assess hazardous trees, arborists had certifications that became relevant following public scrutiny about the number of trees being removed. For both groups, however, experience with trees in the Pacific Northwest proved critical, as types of trees, terrain, and soil all differ by region and impact the chance that a tree will survive.

OPERATIONAL COORDINATION

Mental and emotional health and burnout raised concerns during prolonged recovery operations. Nearly all field and leadership staff reported some type of mental health challenge during a sustained fourteen-month emergency response operation. Leadership will prioritize solutions for this emergency response reality for future events.

After-action review session participants noted several circumstances that led to mental and emotional health issues among personnel.

¹² Washington Forestry Consultants, Inc, determined that 96% of trees were properly marked, and 99% of trees marked for removal were dead or in poor condition. Washington Forestry Consultants, Inc., *Independent Review of the ODOT Hazard Tree Operation* (Olympia, WA: Washington Forestry Consultants, Inc., 2021), 2.



These included:

- Working long hours over an extended response and recovery timeline
- Stress associated with the COVID-19 pandemic
- Overly large spans-of-control
- A lack of backfill/redundancy planning and resources, leading to little/no time off
- The emotional strain of working directly with wildfire-impacted homeowners and communities
- A lack of awareness about mounting stress and burnout levels
- The additional pressure of ODOT and other personnel to continue to perform their 'day jobs' while supporting the debris removal mission

While there were some support services available during recovery operations—including an ODOT peer support structure and OEM support services including staff and emotional support dogs—most staff were often not able to take advantage of these services in between their daily roles and responsibilities.

There was a perceived lack of representation and appreciation of county and local interests, eccentricities, and nuances on the Task Force and in the planning process. Future discussions will further explore what alternative options could exist for future events.

Some county stakeholders felt that they lacked insight, inclusion, or representation of their interests on the Task Force, and felt that support from the Task Force came later than expected or needed by the county. Some counties perceived the Task Force's funding as not inclusive of efforts to address county concerns. As a result, some counties decided to manage debris removal in-house. Important differences between counties, which was not accounted for in the early stages of Task Force planning, resulted in some important local and county interests being overlooked. The lack of pre-positioned disaster services contracts that include annual discussion-based exercises led to a less than desirable coordination among county agencies in the early stages of the Task Force. Subsequently, in some instances, this made it difficult to obtain trust and buy in from local and county partners, and complicated PPDR cleanup operations.

Transition from Phase 1 to Phase 2 was not clearly outlined, nor well-coordinated, resulting in confusion among agencies at all government levels.

During the transition from Phase 1 (Initial Response by ODOT Maintenance Crews) to Phase 2 (Recovery Response by the Task Force) operations, there was confusion at all levels of government on the operational structure, who was in charge for the state, and which hazard tree and debris removal operations could be funded through FHWA versus FEMA. Funding eligibility and program requirements within and between the FHWA ER Program and FEMA PA Category A Debris Removal program efforts were unclear to ODOT personnel conducting Phase 1 operations in the field.



Debris-cleared home sites in the Echo Mountain Fire area

Although state and local agencies had experience operating under the FHWA-funded debris removal program, they had not previously done so under the Stafford Act and the FEMA PA Category A Debris Removal program. State and local agencies were not familiar with the extensive and detailed debris documentation, time and resource records, and invoices required to receive reimbursement under the FEMA PA program. Although ODOT and OEM hired consultants to help navigate FEMA's reimbursement

requirements, there remained a steep learning curve. Ultimately, the Governor designated ODOT overall lead for hazard tree and debris removal operations under Phase 2 and assigned ODOT authority to operate outside its typical purview. However, these issues caused uncertainty, complications, and delays in opening highways during the transition to and early months of Phase 2 operations.

HAZARD TREE AND DEBRIS REMOVAL OPERATIONS

The limited number of foresters within ODOT inhibited the ability to remove hazard trees, and consequently delayed the reopening of highways.

The ODOT Maintenance and Operations Branch (Maintenance), as funded by the FHWA ER Program, led Phase 1 operations for hazard tree removal along highways with resources from the Environmental Program and Emergency Operations Program. However, Maintenance only has two foresters on staff—not nearly enough to address the many thousands of trees that needed to be removed following the 2020 Labor Day Wildfires. With this initial staffing shortage, hazard trees along highways were removed slowly, delaying the ability of residents to re-enter their neighborhoods to assess damage to their properties.

There was uncertainty among field personnel on the structure of wildfire recovery operations during the transition from Phase 1 to Phase 2 operations.

After-action review session participants reported confusion on the command and control structure, including the transition of command, roles, and responsibilities, during the transition from Phase 1 to Phase 2 operations. This resulted in part from delays in designating ODOT as the lead agency for the hazard tree and debris removal mission, as well as an overall lack of preparedness efforts to establish roles, responsibilities, and authorities of ODOT and the Task Force versus roles and authorities of counties in the hazard tree and debris removal operations. State and local agencies' inexperience working within FEMA's Disaster Recovery Framework, FEMA PA program guidance, and debris management requirements added to the uncertainty of operational coordination for the cleanup and debris removal mission.

During the transition to Phase 2 debris removal work, after-action review session participants noted internal communication and coordination challenges as the state's approach to the debris removal program shifted to align with FEMA's PA program guidance. This transition was not clearly laid out in Oregon's pre-disaster planning and preparedness efforts and had never been implemented for an Oregon disaster of this magnitude. When Oregon received the Stafford Act declaration for the 2020 Labor Day Wildfires and became eligible for FEMA PA funding, Phase 1 FHWA-funded debris removal was no longer allowed (the FHWA ER program is not eligible for debris removal in a Stafford Act event).

Additionally, the Recovery Plan and ODMP (Oregon Debris Management Plan) do not address all of the nuances associated with the shift from Phase 1 FHWA-funded debris removal to Phase 2 FEMA-funded debris removal under the Stafford Act. Clearly identifying the agencies leading and contributing

to the debris removal mission and outlining their operational structure, roles, and responsibilities may improve local agencies and the public's understanding of the Task Force and its role in coordinating disaster debris removal and cleanup operations.



Rockfall hazard zone along OR 224

Waiting for asbestos lab results delayed debris removal operations.

According to the DROP (Debris Removal Operations Plan), "Prior to the removal of ash and debris, an [Asbestos Hazard Emergency Response Act] AHERA accredited building inspector will assess and sample all structures and all ash and debris generated from structures to identify the presence of [Asbestos Containing Material] ACM." In addition, the

Wildfire Asbestos Survey Guidance states that “DEQ asbestos rules require a survey before renovation or demolition. A survey is required for all commercial facilities, and for all residences with four or fewer dwelling units built before Jan. 1, 2004, to prove that no asbestos is present in ash and debris.” The survey is conducted by sending samples to “a qualified analytical laboratory” and all debris removal operations must be put on pause until results are returned from the lab.



Crews gather samples to test for asbestos in the Alameda Fire area

For future events, ODOT will not issue a Notice to Proceed for debris removal contractors until the Consultant has had adequate time to build a runway of properties that have been tested for asbestos containing materials.

Property owners did not trust out-of-state contractors to conduct debris removal on their properties.

After-action review session participants described the lack of trust for out-of-state contractors among Oregonians impacted by the wildfires, saying that property owners would often prevent these contractors from conducting debris removal on their properties immediately upon seeing their out-of-state license plates. This distrust may have in part been caused by media reports of looting and other crimes happening in areas impacted by the wildfires, as well as a well-founded wariness of disaster response scams. The results were serious, with ODOT personnel and contractors being threatened when trying to come onto private properties and facing claims that they were stealing trees or other debris-related materials.

POLICY, PLANNING, AND PREPAREDNESS

The legislative process to approve and release funding for recovery from the 2020 Labor Day Wildfires was time-consuming and delayed recovery operations.

On August 20, 2020, Oregon Governor Kate Brown signed a disaster declaration and—starting on September 7 of that year—invoked the Emergency Conflagration Act 15 separate times. On September 19, 2020, the Task Force, and its partners, met to discuss and agree on the best ways forward for debris management operations. Then, the Legislative Emergency Board met on October 23, 2020 to approve recovery funding from the Emergency Fund, thereby delaying the start of cleanup and debris removal operations by more than a month.¹³

¹³ Legislative Fiscal Office, *Certificate*, Oregon Legislative Emergency Board, October 23, 2020, <https://www.oregonlegislature.gov/lfo/eboard/EB%20Certificate%2010-23-2020.pdf>.

The state does not have formalized policies around the activation and use of a Debris Management Task Force.

As noted previously, the 2020 Labor Day Wildfires incident was the first time ODOT and state agencies stood up a task force to manage and coordinate cleanup and debris removal activities. While the Task Force accomplished their mission and served Oregon, they faced consistent and persistent challenges and delays due to a lack of clarity surrounding Task Force roles, responsibilities, policies, and authorities at each stage of the response and recovery.



Ash and debris removal in the Archie Creek Fire area

Oregon lacked an all-hazards hazard tree removal and debris management plan that could effectively guide large-scale operations.



Crews assess fallen hazard tree on OR 224

Oregon's OEM has a 2015 Debris Management Plan that is (1) based on assumptions of county-led operations with state assistance and (2) heavily focused on hazards other than wildfires, such as earthquakes, windstorms, flooding, ice storms, landslides, and human-caused incidents. As such, the plan proved insufficient for the size and scope of the 2020 Labor Day Wildfires. It also did not provide an operational coordination structure for use when responding to and recovering from wildfires.

In response, ODOT and DEQ developed the DROP, which proved useful for guiding operations in the field. However, while the DROP established ICS as the operational framework, ODOT and DEQ were not trained in the ICS operational framework outside of Operations Section¹⁴ elements.

FEMA PA/debris removal and cleanup guidance should expand its scope related to wildfires.

FEMA's debris management planning guidance—which is based on other natural disasters, such as hurricanes and tornadoes—was insufficient to support the Task

¹⁴ ICS includes Operations, Planning, Logistics, and Administration and Finance Sections.



Breitenbush wilderness burned by the Lionshead Fire

Force's cleanup and debris removal operations following the 2020 Labor Day Wildfires. Without any specific guidance from FEMA, ODOT and the Owner's Representative Firm collaborated with FEMA early on to define a 'hazardous tree' in the wildfire landscape.¹⁵ This definition was necessary to make sure the state would be eligible for federal public assistance to help pay for the cleanup. In addition, ODOT and its partners had to develop an

approved method for slash measurement. Both of these actions also forced the state to seek legal advice and create policy in real-time, in the midst of operations.

Oregon has not developed or conducted cleanup and debris removal preparedness events or exercises. Moving forward, Oregon needs a clear plan, with defined roles and responsibilities, as well as ongoing training exercises, in place for future disaster events. While the contracting infrastructure and operational playbook is now available to tackle this work swiftly and efficiently in the future, defining an established team and providing regular training activities would be beneficial.

Infrequent or inadequate preparedness events on recovery operations, especially debris removal operations of this type and scale, often leave personnel wondering what to do or who to contact following a disaster. Many of those assigned to serve on the current Task Force brought an array of skills and expertise in maintenance, operations, management, and communications, but had not participated in wildfire-related recovery preparedness events or exercises in a formal capacity before. To help supplement these skillsets, Task Force staff collaborated closely with national contractors and partners who provided extensive experience in this field. Future success will be contingent on hiring and maintaining ongoing expertise and institutional knowledge for future events, including expert knowledge and experience with response and recovery systems, and FEMA's rules and regulations.



Ash and debris removal at Upward Bound Camp in Gates, OR

¹⁵ Advisory Report, 38.

CONCLUSION

The 2020 Labor Day Wildfires produced an unprecedented volume of burned trees, ash, and debris throughout Oregon, requiring the largest cleanup and hazard tree debris removal operation in the state's history. Many aspects of the 2020 Labor Day Wildfires—primarily the magnitude and impacts wrought—significantly tested ODOT and the Debris Management Task Force's capacity to manage and coordinate large-scale debris removal operations.



Ash and debris removal in Detroit, OR

Initial activation of the Task Force challenged state agencies, but the Task Force and its partners successfully came together to develop plans and procedures to guide the protection of Oregon's natural and cultural resources, clear debris from state and federal highways, and help Oregonians turn a page on this traumatic, yet critical, first step in the wildfire recovery process. The state's lack of pre-existing contracts for debris removal was a fundamental issue that will likely continue to impede

future disaster preparedness, and hazard tree and debris removal operations, until addressed and formally institutionalized through routinely-scheduled planning, training, and exercises. In addition, ODOT and the Task Force should develop a set of cohesive, comprehensive processes to mobilize, oversee, and demobilize consultants, contractors, and resources quickly and efficiently, including contract mechanisms, data collecting and reporting tools, and any other technology required to support those processes.

Given the considerable staffing and backfill limitations, compounded by the COVID-19 pandemic, and the need for specialized natural and cultural resources monitoring, ODOT and partner agencies should examine requirements, identify constraints (e.g., funding, policy, legal), and consider options to build out a statewide staffing plan with backfill considerations for future operations. Building this plan will require future Task Forces to formalize MOUs, IGAs, and other inter-agency agreements; identify key staff within the broader state and local government workforce to provide surge support; and establish contracts prior to another incident. While much of this pre-planning contract work is underway, it is recommended that state leadership further supplement these pre-planning activities with defining and delivering much needed staffing and resource capacity for the future.

In a truly remarkable way, the Debris Management Task Force worked tirelessly to coordinate and manage the largest wildfire cleanup and recovery operation in Oregon history. The Debris Management Task Force faced a number of challenges including political pressure and public scrutiny; staffing and backfill issues; evolving definitions and criteria for hazard trees; a range of environmental, natural, cultural, and historic resource considerations; and a steep learning curve for FEMA PA Category A program compliance.

Leveraging existing partnerships, and incorporating lessons learned and best practices from the 2020 Labor Day Wildfires into plans, processes, policies, and training and exercise events will facilitate and help set up future cleanup and debris removal operations for success. While the impacts of the 2020 Labor Day Wildfires continue to be felt across the state, the State of Oregon must look forward and focus on preparing for wildfire disasters and other incidents that may necessitate a similar emergency response operation.



North Fork wilderness burned by the Beachie Creek Fire



On-Scene Incident Commander Drake McKee with home owners in Echo Mountain Fire area

Hazard Tree and Debris Removal Operations After-Action Report



OREGON Debris Management Task Force

