From:	Carol McClelland Fields
To:	Coffin Butte Landfill Appeals
Subject:	Oppose/Deny LU-24-027 – CWPP Fire Plan and Fire Risk at Coffin Butte - Carol McClelland Fields
Date:	Sunday, October 19, 2025 6:38:55 PM
Attachments:	Written Testimony - Oppose-Deny LU 24-027 - Carol McClelland Fields - CWPP Fire Plan and Fire Risk at Coffin Butte - 10.19.25.pdf Resource 3 - Missouri Independent Jan 2025 - Bridgeton Landfill owned by Republic Services smoldering landfill.pdf Resource 2 - Waste360.com - 2022 Officially the Worst Year for Waste & Recycling Facility Fires.pdf Resource 4 - National Interagency Coordination Center - Wildland Fire Annual Report 2024.pdf Resource 1 - Benton County - CWPP - Community Wildfire Protection Plan.pdf

Hello,

I've attached my testimony and supporting reference documents.

Please add them to the record for LU-24-027.

Please note: Allow the large pdfs to fully populate before saving them. Otherwise the full documents are not saved and cannot be accessed.
Thank you.

Carol

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Carol McClelland Fields, PhD, BCC
541 243 3675
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BENTON COUNTY
2023-2028
COMMUNITY WILDFIRE PROTECTION PLAN

"there is no future without fire on the ground and smoke in the sky[1]"

https://inciweb.nwcg.gov/incident/photograph/7609/106/117342 Bootleg Fire Incident Photographs

1 Paul Hessburg, Research Ecologist, co-author of "Making Transparent Environmental Management Decisions", TEDxBend, May 2017
https://www.ted.com/talks/paul_hessburg_why_wildfires_have_gotten_worse_and_what_we_can_do_about_it/transcript?language=en

Signature Page:

The contents of this document have been agreed upon and endorsed by the Benton County Board of Commissioners, the Oregon Department of Forestry, and the Fire Defense Board. This plan is not legally binding as it does not create or place mandates or requirements on individual jurisdictions. It is intended to serve as a planning tool for fire and land managers, and to provide a framework for those local agencies associated with wildfire suppression and protection services to assess the risks and hazards associated with wildland urban interface areas and to identify strategies for reducing those risks. This is a working document to be updated as necessary.

ODF West Oregon District, Oregon Department of Forestry

Michael Curran 1/20/23

Michael Curran, District Forester — Date

Fire Defense Board Chair

1/19/23

Ben Janes, Corvallis Fire Department, Fire Chief — Date

Benton County Board of County Commissioners

Pat Malone 2/22/23

Pat Malone, Chair — Date

Approved as to form:

2-2-23

Benton County Counsel — Date

Acknowledgments

This Community Wildfire Protection Plan (CWPP) represents the efforts and collaboration of professionals and community members working to improve preparedness for wildfire events while reducing factors of risk.

Agencies and organizations that participated in the planning process are listed below. These agencies appointed representatives to a **Technical Advisory Committee**. The representatives that helped create the 2023 CWPP are listed in ***Appendix B***. This list will undergo change as members change positions, change jobs, etc., so the list of representatives will be updated prior to each annual meeting to ensure accuracy.

- Benton County Fire Defense Board
  - Philomath Fire and Rescue
  - Corvallis Fire Department
  - Blodgett-Summit Rural Fire Protection District
  - Alsea Rural Fire Protection District
  - Adair Rural Fire Protection District
  - Albany Fire Department
  - Monroe Rural Fire Protection District
  - Hoskins-Kings Valley Rural Fire Protection District
- Benton County Commissioners and County Departments
  - Community Development
  - Public Works
  - Sheriff's Office (Emergency Management)
  - Natural Areas, Parks and Events
- Oregon Department of Forestry
- Oregon State University Extension
- Benton County Soil and Water Conservation District
- U.S. Fish and Wildlife Service
- Natural Resources Conservation Service
- United States Forest Service
- Bureau of Land Management
- United States Department of Agriculture
- Starker Forests, Inc.
- Weyerhaeuser
- Hull-Oakes Lumber Co

Also included in ***Appendix B*** is a list of community members who volunteered to be on a **Community Advisory Committee** and helped create the 2023 CWPP. Along with the Technical Advisory Committee, these members provided staff with valuable input prior to and after the public comment period. The members of this committee will also be updated annually and new members who have an interest in supporting the CWPP will be welcomed to the committee.

If you have an interest in joining the Technical or Community Advisory Committee, please email comdevinfo@bentoncountyor.gov with the subject line – CWPP Community Advisory Committee.

Table of Contents

It is imperative that homeowners implement fire mitigation measures and have an escape plan in place prior to any emergency event.

Disclaimer for the term "risk":

Please note that there are many references to risk in this document. Where the risk refers to a degree based on a Risk Map, this is the State's current risk map. These references will be updated as necessary when the SB 762 Risk Map is released. Some references compare certain areas of the county to others in terms of risk and this is a subjective assessment based on local knowledge.

EXECUTIVE SUMMARY

Over a century of timber harvest and aggressive fire suppression has significantly altered forest composition and structure from historical conditions. These activities have resulted in the accumulation of vegetation and a more closed and dense forest structure. Changing climate has also contributed as rainfall and snowfall amounts and locations change patterns. Extended drought conditions are occurring in locations that are typically high rainfall areas. Such conditions contribute to wildfires that burn at higher intensity than in the past. More severe fire events have also become increasingly costly to taxpayers, who ultimately shoulder the expense of fire suppression efforts.

The human cost of wildfire is felt most acutely in the Wildland-Urban Interface (WUI), where residential and other developments have increasingly encroached into these altered forest environments. In the WUI, homes, pets, crops, livestock, and human lives are vulnerable. Long-term damage to the environment and to critical infrastructure is also a real danger. The Benton County Community Wildfire Protection Plan (CWPP) provides a comprehensive approach to managing wildfire threats in the County's forestlands and in the WUI. All recommendations should be viewed through the lens of personal responsibility and collaboration between governmental officials, community leaders, and citizens.

The document first presents background regarding wildfire and the government (federal, state, and local) efforts to plan for and mitigate the effects of wildfire. **Chapter 1** also provides a definition of Wildland Urban Interface that was adopted by Oregon in 2021.

Chapter 2 focuses on the risk of fire in the interface between development and wildlands and the general approaches to mitigating that risk.

Chapter 3 evaluates the fire conditions and response capabilities within different regions of the county.

Chapter 4 identifies the goals and objectives of this Community Wildfire Protection Plan and promulgates policies and tasks to meet those goals and objectives.

Chapter 5 dives into the factors affecting wildfire risk statewide in Oregon as well as past fires in Benton County.

Chapter 6 summarizes the fire protection agencies and related partner agencies in the county.

Appendix A outlines resources available for self-education and monetary or other assistance.

Appendix B identifies the members of the Technical and Citizen Advisory Committees that helped create the 2022 CWPP.

Appendix C is the Advanced Report for Benton County from the Oregon Wildfire Risk Explorer (dated July 21, 2021); when completed by the State, this appendix will include the updated wildfire risk map.

Appendix D contains the task lists from the 2009 and the 2016 CWPPs and provides updates if available.

Appendix E is the table showing the complete known fire history for the county from 2021 back to the year 1960.

Appendix F compiles the two public surveys and the responses received to those surveys.

CHAPTER 1 BACKGROUND

The first Benton County Community Wildfire Protection Plan (CWPP) was developed in 2008 by the Benton County Fire Defense Board, Oregon Department of Forestry, and Benton County Community Development Department with project facilitation and support provided by Northwest Management, Inc. of Moscow, Idaho. It became effective in 2009.

The first update of the CWPP was completed in 2016. It was developed through a collaborative process facilitated by Patrick MacMeekin of Oregon Department of Forestry and Chris Bentley representing the Benton County Community Development Department.

This second update to the CWPP will combine and update information from both the 2009 and 2016 versions, in addition to incorporating new information, new projects, and new Goals, Objectives and Policies.

Wildfire Characteristics

Wildfire[2] (or wildland fire) is an unplanned fire that can have beneficial and harmful effects on human, historical, cultural, and ecological resources. Wildfires can reduce fuel loads, increase ecosystem health and functioning, and restore fire-adapted ecosystems. At the same time, they can damage timber resources and soils, degrade water quality, and impair watershed functions. Wildfires also can damage communities, destroy homes, and lead to loss of human life.

Wildfire management is a series of coordinated activities undertaken by federal, state, local authorities, and community members to prepare for, resolve, and recover from wildfire events. These activities generally include prevention, preparedness, suppression, and post fire site rehabilitation.

The characteristics of fire are important to understand when trying to mitigate the negative effects on humans and structures. For fire to exist, the three components of the fire triangle must be present. The triangle consists of fuel, heat, and oxygen. Most fires caused by natural events are initiated by lightning strikes. Human-caused fires, both accidental and deliberate, are produced in many ways, including campfires, chimneys, matches, fireworks, cigarettes, vehicle fires, military ordnance, equipment usage, and smoldering slash piles. In either instance, natural or human-caused, the ignition is started because the fire triangle exists.

Figure 1.1 The Fire Triangle

Fire occurring in natural ecosystems begins as a point of ignition, burns outward into circles and spreads in the direction toward which the wind is blowing. Additionally, when burning occurs on uneven terrain, the fire spreads upslope and will form itself into broad ellipses. The effects of fire on ecosystem resources can represent damages, benefits, or some combination of both, depending largely on the

[2] A ***wildfire*** is an unplanned fire caused by lightning or other natural causes, by accidental (or arson-caused) human ignitions, or by an escaped prescribed fire. Wildfires, Prescribed Fires, and Fuels - Wildland Fire Program (U.S. National Park Service) (nps.gov)

characteristics of the fire site, the severity of the fire, the period of valuation, and the values placed on the resources affected by the fire.

The ecosystems of most forests depend upon fire to maintain various functions. The use of fire for beneficial purposes (a controlled burn) is used for reducing fuel loads, disposing of slash, preparing seedbeds, thinning overstocked stands, increasing forage plant production, improving wildlife habitats, changing hydrologic processes, and improving aesthetic environments. However, despite its beneficial values to ecosystems, fire has been suppressed for years. In addition, as new development continues to push its way into what is termed the "wildland-urban interface," the use of fire for beneficial purposes becomes more and more difficult.

Oregon Senate Bill 762 (2021)

During the 2021 Regular Session, Oregon State Legislature passed Oregon's first comprehensive wildfire preparedness and resiliency bill. Senate Bill 762 passed with bipartisan support that will provide more than $220 million to help Oregon modernize and improve wildfire preparedness through three key strategies: creating fire-adapted communities, developing safe and effective response, and increasing the resiliency of Oregon's landscapes. The bill is the product of years of hard work by the Governor's Wildfire Council, the Legislature, and state agencies.

[3]A summary of three major SB 762 requirements is as follows:

1. **Map wildfire risk across Oregon.** SB 762 requires that the Oregon Dept of Forestry (ODF) develop a comprehensive statewide map of wildfire risk displaying five classifications of wildfire risk, from none to extreme. The map will be useable to the parcel level and include layers identifying vulnerable populations, locations of critical services such as hospitals, major infrastructure, and other important data layers. The map will be developed with input from Oregon State University, state agencies, the State Fire Marshal, federally recognized Indian tribes, local governments, and others.
    - In the broad view of the State, properties within Benton County fall within the low-risk category. The current wildfire risk map report is in Appendix C.
2. **Avoid development in high-risk areas and limit structures to those needed for farming and forestry.** SB 762 directs the Department of Land Conservation & Development (DLCD) to determine the updates needed to the statewide land use planning program and local comprehensive plans and zoning codes to incorporate the wildfire risk map to minimize risk — including through provisions on development considerations in high and extreme wildfire risk areas, defensible space, building codes, and safe evacuation routes.
3. **Mitigate risks to existing and future development.** SB 762 requires the state to adopt wildfire hazard mitigation building code standards and apply them to new dwellings and accessory structures, as well as standards for additions to existing dwellings and accessory structures and for replacement of existing exterior elements.

A detailed summary of the specific bill section requirements follows:

Statewide Map of Wildfire Risk
Under the administration of the Oregon Department of Forestry (ODF)
Required to be complete by June 30, 2022 – deadline extended

[3] From the 1000 Friends of Oregon, by Mary Kyle McCurdy, Deputy Director

- Directs the ODF to create a statewide map of wildfire risk with five risk classifications: extreme, high, moderate, low, and no risk.
- The map will be developed with input from Oregon State University, state agencies, the State Fire Marshal, federally recognized Indian tribes, local governments, and others.
- The map will be based on weather, climate, topography and vegetation and consistent with criteria by which the forestland-urban interface shall be identified and classified.
- Public input opportunities are required and affected property owners and local governments will be able to appeal the assignment of properties to the wildfire risk classes after the map is developed.
- The map will be maintained by OSU and made available on the Oregon Wildfire Risk Explorer. https://tools.oregonexplorer.info/OE_HtmlViewer/index.html?viewer=wildfireplanning
- This map will be sufficiently detailed to assess wildfire risk at the property-ownership level, include WUI boundaries, and include layers identifying vulnerable populations, locations of critical services such as hospitals, major infrastructure, and other important data layers.

Land Use [Planning]
Under the administration of the Department of Land Conservation and Development (DLCD)
Required to be complete by October 1, 2022 – Completed
https://www.oregon.gov/lcd/Publications/20220930_DLCD-Wildfire-Recommendations-Report.pdf

- Directs the Department of DLCD to identify updates to statewide land use planning program and local comprehensive plans and zoning codes needed to incorporate wildfire risk maps and minimize wildfire risk.
- These would include provisions on development considerations in high and extreme wildfire risk areas, defensible space, building codes, and safe evacuation routes.

Building Codes
Under the administration of the Department of Consumer and Business Services (DCBS)
Required to be complete by October 1, 2022 but shall not be operative before April 1, 2023 – deadline extended

https://www.oregon.gov/bcd/codes-stand/Pages/wildfire-hazard-mitigation.aspx

- The effective date of the new code requirements will be based on when the wildfire risk map is available.
- Requires the DCBS to adopt hazard mitigation building code standards for Oregon Residential Specialty code (R327) to apply to new dwellings and new accessory structures.
- Requires an amendment of Code to include standards when there are additions to existing dwellings and accessory structures, and for replacement of existing exterior elements.
- New building code standards will require fire-smart construction materials and techniques in high-risk fire areas.
- Must create and maintain an interactive mapping tool to display at the property level which properties must comply with the Code.

Defensible Space
Under the administration of the Oregon State Fire Marshall (OSFM)
Requirements required to be established by December 31, 2022 – deadline extended

https://www.oregon.gov/osp/programs/sfm/pages/oregon-defensible-space-code.aspx

- Directs the OSFM to create and enforce defensible space standards for all lands in the wildland-urban interface that are designated as extreme or high risk.
- Requirements shall not exceed the standards set forth in the International Wildland-Urban Interface Code by the International Code Council – but they can be modified specific to Oregon conditions.

  https://codes.iccsafe.org/content/IWUIC2018/effective-use-of-the-international-wildland-urban-interface-code
- The OSFM shall enforce these standards through the local fire districts; the local government may also choose to enforce.
- Local government can also adopt and enforce local requirements for defensible space greater than the OSFM rules but still must be consistent with the International Wildland-Urban Interface Code or other Oregon best practices.
- The bill also includes financial resources (Community Risk Reduction Fund) to help low-income and traditionally underserved populations protect their homes, for critical and emergency infrastructure, and for schools, hospitals, and senior service facilities
- Once adopted, the new defensible space requirements can't be used to approve or deny a land use application but can be used as a criteria to review the request

Reduction of Wildfire Risk
Under the administration of the ODF, in collaboration with Oregon State University Extension Service

Required to be complete by June 30, 2023

- Requires the State Forestry Department to design and implement a program to reduce wildfire risk through the restoration of landscape resiliency and the reduction of hazardous fuel on public or private forestlands and rangelands and in communities near homes and critical infrastructure.

Utilities' Electric System Plans
Under the administration of the Public Utility Commission

No mandated timeline

- Requires electric utilities to operate in compliance with a risk-based wildfire mitigation plan.
- After regional, state, and local input, public utilities will be required to submit plans for de-energizing their lines during high wind and hot days that pose a greater risk for downed power lines to spark fires.

Health Systems for Smoke
Under the administration of the Department of Environmental Quality (DEQ), in coordination with the Oregon Health Authority (OHA) and the Department of Human Services (DHS)
No designated "due by" date but the OHA and the DHS must report to the Legislative Assembly by June 20, 2023 on the operation of the grant

- Requires DEQ to monitor for wildfire smoke, the OHA to create clean air shelters for the public, and OHA increase the availability of smoke filtration systems.
- OHA and DHS are tasked with implementing a grant program to local governments for establishment of emergency clean air shelters and equipping public buildings with smoke filtration systems.
- They must also establish a program to make smoke filtration devices available to vulnerable residents and for residential buildings with residents who qualify for the Oregon Health Plan or Medicaid.

Emergency Response and Disaster Recovery
Under the administration of the Department of Emergency Management

- Requires wildfire to be included in the definition of "emergency" and for the Department to update its statewide emergency plan to prepare for wildfire.

Oregon Conservation Corps

- Creates the Oregon Conservation Corps to engage youth and young adults in reduction of risk wildfire poses to communities and critical infrastructure, and to help create fire-adapted communities.
- Tasked to help ODF with the Reduction of Wildfire Risk.
- The grant will fund to proposals that: (a) Protect at-risk communities and infrastructure within the wildland-urban interface (b) Meet standards for fuel treatment established by the department

Small Forestland Grant Program
Under the administration of the ODF

- ODF is tasked with establishing a small forestland grant program for providing grants, on a competitive basis, to support small forestland owners (up to 160 acres) in reducing wildfire risk through the restoration of landscape resiliency and the reduction of hazardous fuels on the owners' property.

Prescribed Fire
Under the administration of the ODF

- Creates a Certified Burn Manager program to include best practices.
- Trying to make it easier for property owners to be able to used prescribed fire as a mitigation tool.

Federal Partnerships

- Requires ODF to cooperate with federal forest management agencies.

Protected Areas
Under the administration of the State Forester, in collaboration with State Fire Marshal, state agencies and local governments

- A county shall ensure that all lands that are outside of forest protection districts and susceptible to wildfire have baseline level or higher wildfire protection no later than January 1, 2026 – This would apply to the Greenberry Gap area which is not within a Rural Fire Protection District.

- Rules shall be established creating baseline levels of wildfire protection for lands.
- Must reflect regional conditions.
- The State Forester can provide some financial assistance to counties to carry this out.

Wildfire Response Capacity
Under the administration of the ODF

- ODF shall establish and maintain an expanded system of automated smoke detection cameras and sufficient staffing in detection centers to monitor and alert fire suppression staff when fires are detected.
- ODF shall act to facilitate wildfire prevention and wildfire response communication and coordination between federal, state, local and private entities.
- Will assess the adequacy of available mutual aid to local fire departments and identify means for providing additional resources

Wildland-Urban Interface Fire Protection
State Board of Forestry

- Requires adoption of a new definition of WUI, which will be used to create the Map of Wildfire Risk

The Wildland-Urban Interface

The Department of Forestry adopted wildfire risk mapping and wildland-urban interface identification criteria rules in 2022[4], as required by Senate Bill 762[5]. The definition of the term Wildland-Urban Interface (WUI) was adopted into a new rule by the Department of Forestry and became effective on June 14, 2022. The definition is:

> *The geographic area where structures and other human developments meet or intermingle with vegetative fuels or border up against wildland fuels.*

The WUI can be thought of as a transition zone between wildlands and human communities. On one side of the WUI, in the wildlands, fires are less likely to damage buildings because there are too few buildings. On the other side of the WUI, in the developed core of a community, there is not enough vegetation to support wildfires. In the WUI there is enough vegetation to support a wildfire and there is enough development that wildfires could result in significant damage to homes, critical infrastructure, and human lives.

[6]State law says that in Oregon the WUI boundary is defined by areas within an Urban Growth Boundary, or any area with a building density of at least one building per 40 acres. The WUI is also defined by the density and proximity of wildland and vegetative fuels. By including density and proximity of fuels in the definition of the WUI, the urban core is excluded, and the focus is placed on those areas with sufficient building density and sufficient fuels to facilitate a WUI conflagration. Consistent with national standards, the WUI is further classified into three general classes (intermix, interface, occluded). These general classes will help map where wildfires pose the most risk to

[4] Rules effective June 14, 2022, Division 44, 629-044-1000, final adopted rules
[5] https://olis.oregonlegislature.gov/liz/2021R1/Downloads/MeasureDocument/SB762/Enrolled
[6] https://osuwildfireriskmap.forestry.oregonstate.edu/wildland-urban-interface

structures and other human developments and further classify property into a no, low, moderate, high and extreme wildfire risk.

The following figures are from the College of Forestry OSU Wildfire Risk Mapping website.

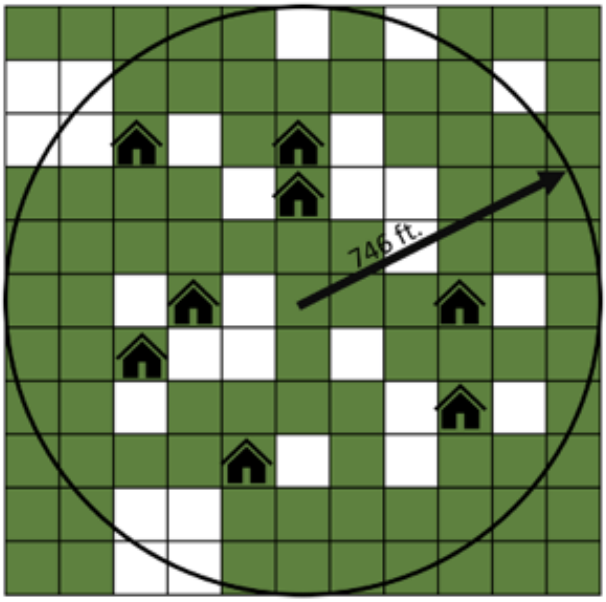


Figure 1.2 Intermix WUI

Areas that meet the minimum building density threshold and which are surrounded by at least 50% fuel.

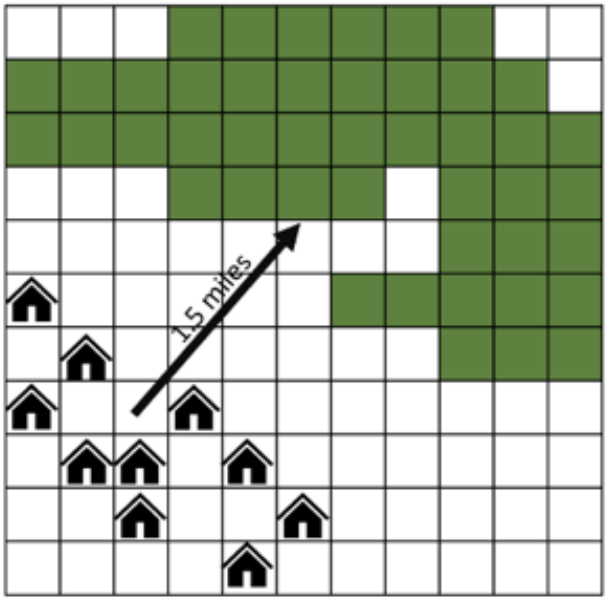


Figure 1.3 Interface WUI

Areas that meet the minimum building density threshold and which are surrounded by less than 50% fuel cover but are within 1.5 miles of a large patch (≥ 2 sq. mi) of fuels.

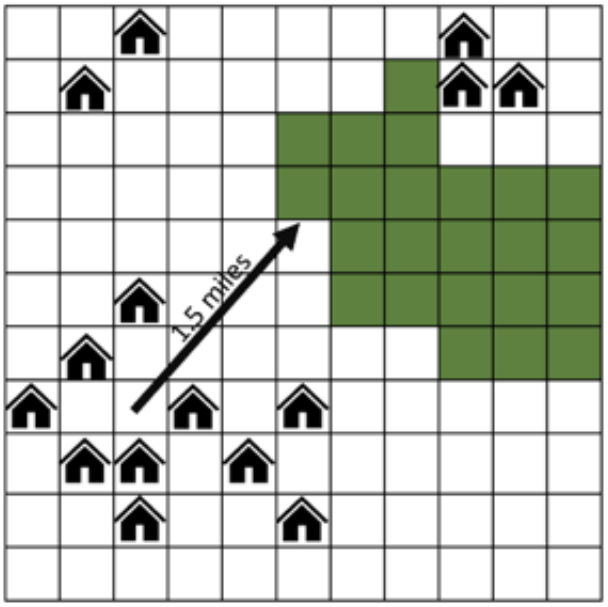


Figure 1.4 Occluded WUI

Areas that meet the minimum building density threshold and which are surrounded by less than 50% fuel cover but are within 1.5 miles of a moderate patch of fuels (1-2 sq. mi).

The following are other relevant definitions from the new rule, OAR 629-044-1005:

> "Geographical area" means an area of land with similar characteristics that can be considered as a "unit" for the purposes of classification of the wildland-urban interface.
>
> "Intermingles with wildland or vegetative fuels" means a minimum of 50% coverage of wildland or vegetative fuels.
>
> "Meets with wildland or vegetative fuels" means located within a 1.5-mile buffer from the edge of an area greater than 2 square mile with a minimum of 75% cover of wildland or vegetative fuels.
>
> "Occluded geographical area" means an area with a minimum of one structure or other human development per 40-acres within 1.5 miles of an area greater than 1 square mile but less than 2 square miles with a minimum of 75% cover of wildland or vegetative fuels.
>
> "Vegetative fuels" means plants that constitute a wildfire hazard.
>
> "Wildland fuels" [7] means natural vegetation that occurs in an area where development is essentially non-existent, including grasslands, brushlands, rangelands, woodlands, timberlands, or wilderness. Wildland fuels are a type of vegetative fuels.
>
> "Wildfire Risk" means the wildfire impacts to values based on scientifically modeled wildfire frequency and wildfire intensity.

Built fuels are structures or infrastructure.

The WUI is widespread across a diverse range of geographies and landscapes and is a result of many factors in the natural and built environments. The dynamic nature of the WUI presents many challenges and requires a fundamental shift in views on development and wildfire hazard.

[7] Fire managers define **fuels** as all living and dead plant material that can be ignited by a fire. Fuel characteristics strongly influence fire behavior and the resulting fire effects on ecosystems. Wildfires, Prescribed Fires, and Fuels - Wildland Fire Program (U.S. National Park Service) (nps.gov)

Healthy Forests Restoration Act (HFRA)[8]

As part of its focus on hazardous fuel reduction, the HFRA defines Community Wildfire Protection Plans (CWPPs). President Bush established the Healthy Forests Initiative on August 22, 2002, directing the Departments of Agriculture and Interior and the Council on Environmental Quality to improve regulatory processes to ensure more timely decisions, greater efficiency, and better results in reducing the risk of catastrophic wildland fires.

HFRA provides funding and guidance for forest management activities, with the goal of protecting communities from catastrophic wildfire. Activities include implementing hazardous fuel reduction projects on federal lands, working with private landowners and tribal governments to protect and restore watersheds, and promoting conservation activities to protect endangered species habitat and enhance biodiversity.

Creating a CWPP is voluntary for local governments. However, HFRA requires that federal land management agencies (e.g., the Bureau of Land Management and USDA Forest Service) use them to prioritize funding approval for fuel-reduction projects on both federal and nonfederal lands. At least 50 percent of all funds appropriated for projects under HFRA must be used within the WUI as defined by the local CWPP document. As a result, preparing a CWPP provides communities with significant opportunities for input into the implementation of hazardous fuel management on surrounding federal lands, such as national forests.

HFRA requires that CWPPs meet three minimum requirements:

1. A CWPP must be collaboratively developed by local and state government agency representatives, in consultation with federal agencies and other interested parties. Collaborative planning can be key to effective wildland fire management because a collaborative process has the capacity to bring together multiple private and public stakeholders across the landscape in a partnership to reduce fire risk. In addition, working collaboratively strengthens relationships and communication within a community. The final CWPP must be approved by the city or county government, the local fire department(s), and the state forest management agency.
2. A CWPP must identify and prioritize areas for hazardous fuel reduction treatments and recommend the types and methods of treatment that will protect one or more at-risk communities and essential infrastructure. It provides communities with a great opportunity to influence where and how agencies implement fuel reduction projects on federal or private lands, as well as how additional federal funds may be distributed for projects on non-federal lands. This is important because reducing fuels within a few feet of homes and other structures can significantly reduce fire losses, and, in addition, there is evidence that fuels treatments in wildlands can affect fire behavior and thereby reduce fire risk for WUI communities.
3. A CWPP must recommend measures that homeowners and communities can take to reduce the ignitability of structures in areas addressed by the plan. The key to limiting the loss of structures from wildland fire is to reduce the ignitability of the structure and its immediate surroundings. Property owners, therefore, have a primary responsibility for reducing structural ignitability, with members of the fire services collaborating in the process.

[8] Courtesy of PAS Report 594, Planning the Wildland-Urban Interface; Molly Mowery, AICP, Anna Read, AICP, Kelly Johnston, RPF, and Tareq Wafaie, AICP

With hazardous fuel reduction treatments and structure ignitability reduction, it is key that the whole community be involved because the 'immediate surroundings' of a structure may include neighboring public and private properties. A local CWPP guides actions to implement safety measures and fuel management to protect residents, homes, businesses, natural areas, and cultural resources against wildfires. It is not a regulatory document although new regulations or revisions to existing regulations can be a recommendation within the document. The CWPP acts as a instrument to promote work on public lands and private lands. Private landowners are encouraged to take preparedness steps well ahead of fire season. Within the document, there are recommendations to reduce structural ignitability, create defensible space[9], and evacuation preparedness information.

Typical information contained in a CWPP includes a clear methodology for identifying and spatially delineating the extent of the WUI, historical information on regional wildfires, a community wildfire hazard or risk assessment, potential funding sources, data related to response capabilities, required actions to address minimum requirements, and other factors or strategies that require consideration for the community. County CWPPs become the plan to address overarching concerns related to wildfire planning needs.

Federal Land Assistance, Management, and Enhancement (FLAME) Act

In 2009, Congress passed the Federal Land Assistance, Management, and Enhancement Act and called for a National Cohesive Wildland Fire Management Strategy (Cohesive Strategy)[10]. The Cohesive Strategy, finalized in 2014, represents the evolution of national fire policy. The national fire policy is to safely and effectively extinguish fire, when needed; use fire where allowable; manage our natural resources; and, ultimately, learn how to live with wildland fire. The National Cohesive Wildland Fire Management Strategy encourages everyone to work together using the best management practices and good science and research to make progress in three main goals to achieve the vision:

Resilient landscapes: Landscapes across all jurisdictions are resilient to fire-related disturbances in accordance with management objectives.

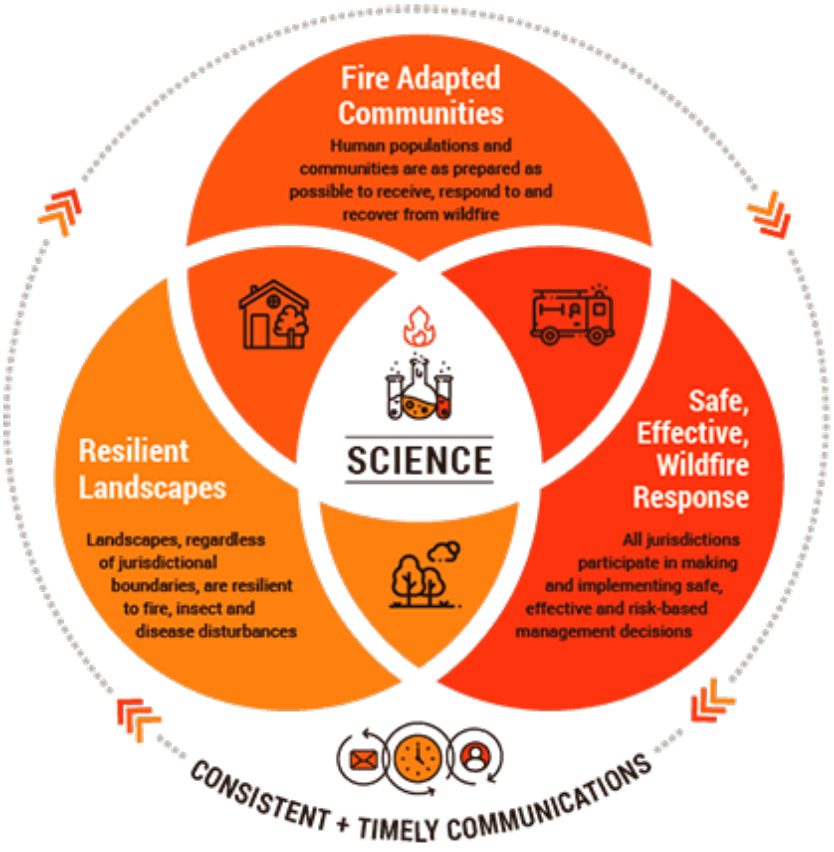
Fire-adapted communities: Human populations and infrastructure can withstand a wildfire without loss of life and property.

Safe and effective risk-based wildfire response: All jurisdictions participate in making and implementing safe, effective, efficient risk-based wildfire management decisions. Building a collaborative and cooperative environment with the fire department(s), community-based organizations, local government and the public land management agencies has been the first step in reducing the risk of loss from wildland fire.

[9] **Defensible space** is defined as a natural or human-made area in which material capable of supporting the spread of fire has been treated, cleared or modified to slow the rate and intensity of advancing wildfire and allow space for fire suppression operations to occur.

[10] https://cohesivefire.nemac.org/national-priorities

Figure 1.5 How the three goals overlap with science in the middle



[11]

The Cohesive Strategy establishes a national vision for wildland fire management, defines three national goals, describes the wildland fire challenges, identifies management opportunities to reduce wildfire risks, and establishes national priorities focused on achieving the national goals. The Cohesive Strategy serves as the key framework for addressing wildland fire challenges across the nation. This strategy is outlined below and illustrated in Figure 1.3.

The Cohesive Strategy

Vision: To safely and effectively extinguish fire when needed, use fire where allowable, manage our natural resources, and as a nation, to live with wildland fire.

National Goals:

1. Resilient Landscapes
2. Fire Adapted Communities
3. Safe and Effective Wildfire Response

Wildland Fire Challenges:

1. Managing vegetation and fuels;
2. Protecting homes, communities, and other values at risk;
3. Managing human-caused ignitions; and

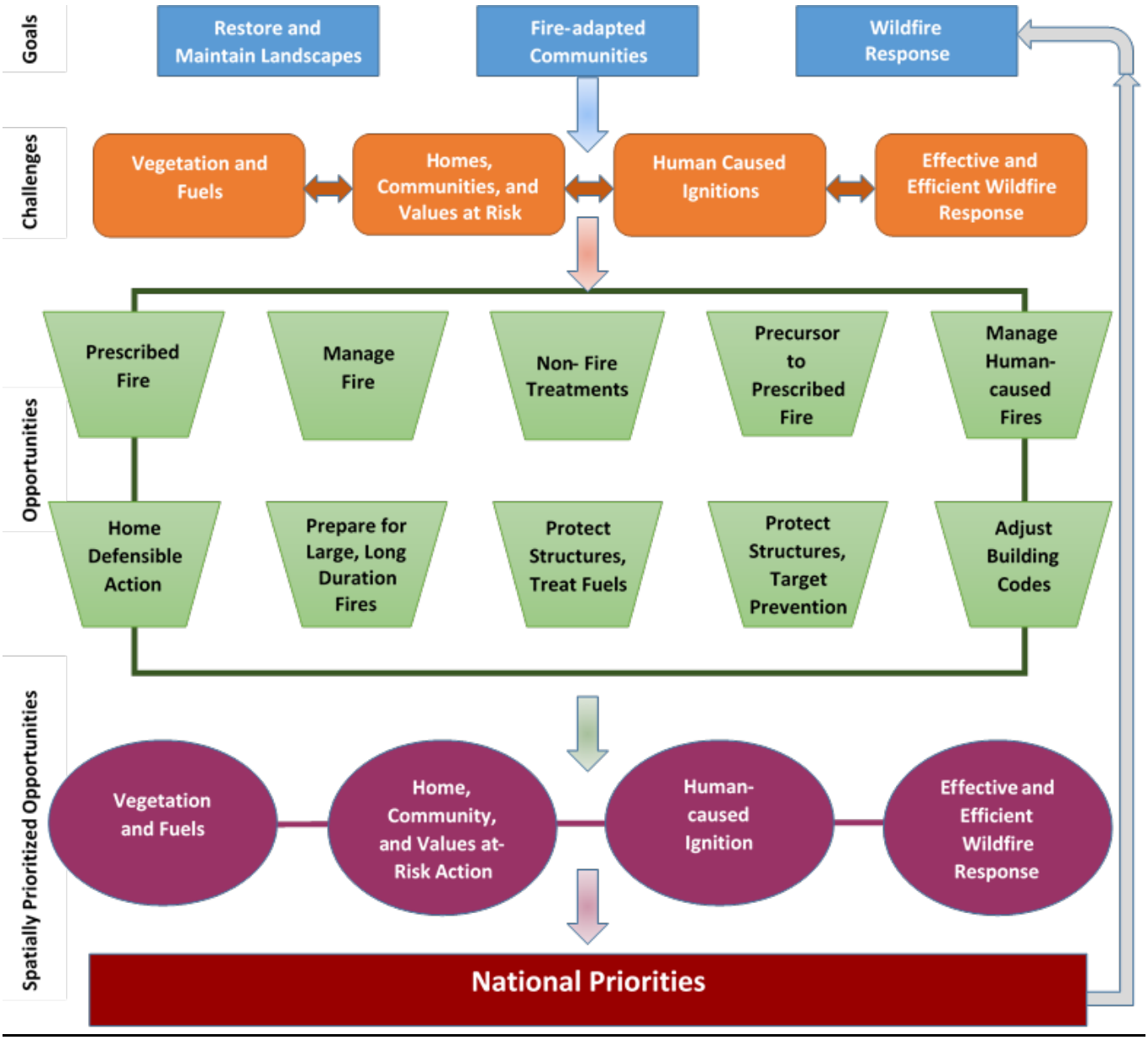
[11] U.S. Fire Administration, https://www.usfa.fema.gov/blog/cb-042120.html

4. Effectively and efficiently responding to wildfire.

Management Opportunities:

1. Managing vegetation and fuels
    a. Use prescribed fire.
    b. Use unplanned ignitions to achieve resource management objectives and ecological purposes.
    c. Use a variety of methods that do not directly involve fire to change vegetation composition and structure and alter fuels to reduce hazard. These include product utilization (forest thinning, commercial timber harvest) along with various mechanical thinning and debris disposal techniques. Non-mechanical methods can involve livestock grazing to reduce fine fuels in rangeland systems, or using herbicides to eradicate or suppress unwanted vegetation.
    d. Use economically sustainable mechanical treatment as a precursor to, and combined with, safer and more expanded use of wildland fire.
2. Protecting homes, communities, and other values at risk
    a. Focus on home defensive actions.
    b. Focus on combination of home and community actions.
    c. Adjust building codes.
3. Managing human-caused ignition
    a. Support fire prevention educational efforts.
    b. Develop adequate and enforceable state and local ordinances related to wildfire prevention.
    c. Tailor prevention programs to specific causal factors and community dynamics.
4. Effectively and efficiently responding to wildfire
    a. Prepare for large, long-duration wildfires.
    b. Create solutions that generally include combinations of resources, organizational or administrative adjustments, and tactics.
    c. Match response efforts with other management options, such as target landscape fuels and ignition prevention.

Figure 1.6 The National Cohesive Wildland Fire Management Strategy



General Guidance

Vegetation and Fuels

- Where wildfires are unwanted or threaten communities and homes, design and prioritize fuel treatments to reduce fire intensity, structure ignition and extent.
- Where allowed and feasible, manage wildfire resources objectives and ecological purposes to restore and maintain fire-adapted ecosystems and achieve fire-resilient landscapes.
- Use and expand fuel treatments involving mechanical, biological, or chemical methods where economically feasible and sustainable, and where they align with landowner objectives.

Homes, Communities, and Values at Risk

- Promote community and homeowner involvement in planning and implementing actions to mitigate the risk posed by wildfire.
- Emphasize proactive wildfire risk mitigation actions.
- Pursue municipal, county, and state building and zoning codes and ordinances that mitigate fire risk to protect life and property from wildfire.

Human-caused Ignitions

- Emphasize programs and activities that prevent human-caused ignitions, whether accidental or incendiary, where these ignitions, combined with high levels of area burned, suggest the greatest need. Programs should be tailored to meet identified local needs.

Effective and Efficient Wildland Fire Response

- Enhance wildfire response preparedness in areas more likely to experience large, long-duration wildfires.
- Enhance wildfire response preparedness in areas experiencing high rates of structure loss per area burned.
- At the community level, emphasize both structure protection and wildfire prevention to enhance the effectiveness of initial response.

What is a Fire Adapted Community?

Communities in wildfire-prone areas are learning what it takes to be fully prepared for wildland fire. A Fire Adapted Community incorporates people, buildings, businesses, infrastructure, cultural resources, and natural areas into the effort to prepare for the effects of wildland fire. Community leaders and residents accept responsibility for living in an area with wildfire hazards. They have the knowledge, skills and have adopted tools and behaviors to prepare in advance for their community's resilience in a wildfire prone environment.

A Fire Adapted Community…

- Acknowledges and understands its wildfire risk.
- Recognizes that it is in or near a fire-prone ecosystem.
- Has leaders and citizens with the knowledge, skills, willingness and realistic expectations to properly prepare for and deal with wildland fire.
- Communicates clearly with citizens about wildfire risks and specific methods for preparedness.
- Has adequate local fire suppression training, equipment and capacity to meet realistic community protection needs.
- Creates and uses a Community Wildfire Protection Plan (CWPP).
- Reduces levels of flammable vegetation on lands near and inside the community.
- Has local building, planning, zoning and fire prevention policies and codes that require ignition-resistant buildings, building materials and landscapes.

- Has buildings and landscaping that are designed, constructed, retrofitted and maintained in a manner that is resistant to ignition.
- Creates safety features such as buffers between fuels and neighborhoods, designated evacuation routes and internal neighborhood safety zones.
- Makes sure fire adapted community features, activities and behaviors are maintained over time.
- Has leaders and residents who coordinate, plan and collaborate to leverage their resources to reduce wildfire risk while increasing community resiliency.

An increased scope of service delivery to communities and local governments provides the tools and technical advice to help encourage community and landowner involvement with fuels mitigation, target fire prevention messages toward human caused ignitions, and to review building and zoning codes that make buildings more resistant to fire. Creating fire adapted communities benefit all with reduction in loss of infrastructure, watersheds, cultural assets, parks, view sheds, transportation, and utility corridors.

Oregon Forests and Management

About 35 percent of Oregon's forests are at high-risk of uncharacteristic fire because of disruption in their natural fire regimes. Another 42 percent are at moderate risk. As projected under climate change analysis, continuation of warmer, drier conditions increases forest vulnerability to insect and disease attack, and ultimately increase the risk of uncharacteristically severe wildfires. Such fires can threaten communities and adjoining private lands, while destroying timber values, terrestrial and aquatic habitat, domestic use watersheds, cultural resources and critical infrastructure. [12]

Oregon's forested landscape consists of a mosaic of land uses including working forests, conservation reserves, and those associated with human-dominated uses. Oregon is home to some of the world's most productive forests, ranging from dense Douglas fir forests of the Willamette Valley and Coast Range to the high desert Ponderosa Pine stands in the Cascades and Blue Mountains. Forests cover over 30.5 million acres of Oregon, almost half of the state. Sixty percent of the forestland base, approximately 16 million acres, is owned and managed by the federal government under management plans for different benefits. The Oregon Department of Forestry estimates that there are approximately 10.4 million acres of nonfederal wildland forests and approximately 853,000 acres of mixed forest/agriculture that are protected under zoning designations.

Due to the proportion of ownership by the US Forest Service or Bureau of Land Management, the condition of the state's federal forests has a magnified effect on the health of Oregon's total forestland base, and, in turn, on the Oregon Department of Forestry's ability to accomplish its mission. Through its Federal Forest Restoration Program[13], the Oregon Department of Forestry can implement active treatments using the Good Neighbor Authority to increase the resilience of federal forests to wildfire.

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[12] 2019-21 Governor's Budget, Oregon Department of Forestry, Agency Summary Narrative, please review the referenced document to understand what they are deeming high risk and moderate risk. https://www.oregon.gov/odf/AboutODF/Documents/Budget/ODF%202019-21%20Governor%E2%80%99s%20Budget%20Narrative%20FINAL_Agency%20Summary.pdf

[13] https://www.oregon.gov/Oregon Department of Forestry/working/Pages/federal-forest-restoration-program.aspx

Approximately 15 percent, or 4.3 million acres, of Oregon's forests are owned by families or individuals. Of this total, roughly half of these acres are inside urban growth boundaries or are within a mile of current residential or other development zones (i.e., rural residential). Various factors interact to divide tracts of working forests into smaller parcels and lead to an intermingling of homes and forestlands. This reduces the likelihood that forests will be actively managed to produce a range of values and increases the cost and complexity of fire protection.

Since the implementation of Oregon's unique Land Use system in 1974, Oregon has maintained 97 percent of all non-federal land as resource land use (farm, forest, or range). However, the WUI has grown significantly during that period. Between 1994 and 2019, over 18,000 dwellings of all types were approved on farmland across the state. Oregon Department of Forestry's Five-Year Land Use Report (2018) shows that 704,000 acres have shifted from resource lands to low-density residential or urban uses[14]. Fire ignition data shows an increased exposure to risk within the WUI. Over the decade from 2008 through 2017, 64 percent of fires on Oregon Department of Forestry-protected lands occurred within one mile of the WUI, and 87 percent of these fires were human-caused.

It should not be assumed that just because an area is identified as being within the WUI, that it will receive treatments because of this identification alone. Nor is it implicit that all WUI treatments will be the application of the same prescription. Instead, each location targeted for treatments must be evaluated on its own merits: factors of structural ignitability, access, resistance to control, population density, resources and capabilities of firefighting personnel, and other site-specific factors.

It should also not be assumed that WUI designation on national or state forestlands automatically equates to a treatment area. The U.S. Forest Service, Bureau of Land Management, Oregon Department of Forestry, and Oregon Department of State Lands are still obligated to manage lands under their control according to the standards and guides listed in their respective forest plans. The adopted forest plan has legal precedence over the WUI designation until such a time as the forest plan is revised to reflect updated priorities.

[14] Land Use Change on Non-Federal Land in Oregon and Washington, July 2018
https://www.oregon.gov/odf/board/bofarchives/20180905/BOFSR_20180905_07_01_Land%20Use%20Change%20on%20Non-Federal%20Land%20in%20Oregon%20and%20Washington%202018%20Update.pdf
2018-2019 Farm & Forest Report https://www.oregon.gov/lcd/Publications/2018-2019_Farm_Forest_Report.pdf

The Four Phases of Wildfire and Emergency Preparedness

Emergency management is a continuous process that requires the participation of all the members of a community. Wildfire and emergency management is divided into four distinct phases: mitigation, preparedness, recovery, and response. Each of the four phases is interconnected and the outcome of one phase can influence the outcome of another. The four phases of emergency preparedness need to be incorporated into actions proposed in the CWPP. Each of the four phases is described in more detail below.

Figure 1.6 Wildfire Emergency Phases

Courtesy Fairfax County, Virginia Community Emergency Response Guide

Mitigation: taking place before a wildfire occurs, mitigation involves preventing future wildfires from happening or lessening their effects. Mitigation can involve activities like educating the public about local hazards, assessing hazards and a community's vulnerabilities to these hazards, and improving critical infrastructure. A local example would be a homeowner requesting a property fire assessment from the rural fire department, Corvallis Fire Department, or Oregon Department of Forestry (location of property determines agency conducting). Once the assessment is done, the property owner then takes action to reduce risk.

Preparedness: also taking place before a wildfire, preparedness is the state of being ready for a major disaster or emergency. Preparedness involves agencies and property owners making cohesive plans and preparing supplies to be used in the event of a wildfire. Additionally, preparedness includes training for the occurrence of a major disaster. Preparedness is one of the most time-consuming phases of wildfire management, but its importance cannot be overstated.

Response: taking place during and in the immediate aftermath of a wildfire, the response phase of wildfire management involves the immediate actions taken by both professional emergency services and prepared citizens. The overall goal of this phase is to minimize the loss of life and

economic impact of a wildfire. Response also involves the evacuation of citizens and the formation of shelters. Plans composed in the preparedness phase greatly influence the outcome of the response phase.

Recovery: taking place in the aftermath of a wildfire, recovery involves all actions taken to restore a community to its pre-disaster state. Recovery is a process that can take anywhere from a few days to years and includes both social and economic elements.

CHAPTER 2 THE WILDAND-URBAN INTERFACE HAZARD

Unlike most other natural hazards, wildfire risk within the WUI is not defined by geography alone. Certain conditions must be present for significant interface fires to occur. The most common are hot, dry, and windy weather; the inability of fire protection forces to contain or suppress the fire; the occurrence of multiple fires that overwhelm committed resources; and a large fuel load (dense vegetation).[15] Once a fire has started, several conditions influence its behavior, including fuel, topography, weather, drought, and development. These combined conditions are the key elements that add to increased wildfire hazard. The severity of the wildfire is ultimately affected by the severity of these conditions. For example, if a steep slope (topography) is combined with extremely low humidity, high winds, and highly flammable vegetation, then a high-intensity wildfire may develop.

Since the 1970s, Oregon's growing population has expanded further and further into traditional resource lands. The interface between urban and suburban areas and the resource lands created by this expansion has produced a significant increase in threats to life and property from fires and has pushed existing fire protection systems beyond original or current design or capability. New property owners in the interface are often unaware of the problems and threats they face. Therefore, many owners have done very little to manage or offset fire hazards or risks on their own property. Furthermore, human activities increase the incidence of fire ignition and potential damage.

Factors that Influence Fire Behavior

Fuel[16]

Fuel is the material that feeds a fire and is a key factor in wildfire behavior. Grasses, brush, branches, logs, logging slash, litter, leaves, conifer needles, and buildings are all examples. Fuel is classified by volume and by type. Volume is described in terms of fuel loading[17], or the amount of available vegetative fuel. The type of fuel refers to the species of trees, shrubs, and grass that are present. Oregon, as a western state with prevalent conifer, brush, and rangeland fuel types, is subject to more frequent wildfires than other regions of the nation. The physical properties and characteristics of fuels govern how fires burn. Fuel loading, size and shape, moisture content, and continuity and arrangement all influence fire behavior.

An important element in understanding the danger of wildfire is the availability of diverse fuels in the landscape, such as natural vegetation, structures, and combustible materials. A house surrounded by brush rather than defensible space allows for greater continuity of fuel and increases the fire's ability to spread. After decades of fire suppression, dog-hair thickets have accumulated, and these enable high intensity fires to flare and spread rapidly. Structures that are made of

[15] Robert Olson Associates. June 1999. Metro Regional Hazard Mitigation Policy and Planning Guide. Portland, OR: Metro.

[16] Department of Land Conservation and Development (DLCD). July 2000. Planning for Natural Hazards: The Oregon Technical Resource Guide. Chapter 7.

[17] The total amount of combustible material in a defined space. Fuel load is quantified in heat units or in its equivalent weight in wood. Excessive fuel load for what would normally be expected in a space of that type can be an indicator of incendiary fire (a perpetrator attempted to accelerate fire spread and burning by moving combustible materials into the fire area).

combustible material such as shake roofs and wood siding are especially susceptible to fire. Untrimmed bushes near these structures often serve as ladder fuels[18] – enabling a slow-moving ground fire to climb onto rooftops and into the crowns of trees. A crown fire is significantly more difficult to suppress than a ground fire and is much more threatening to structures in the interface.

Wildfire at the upper end of the wildfire intensity spectrum is likely to spread into the tops of the tallest trees in violent and discontinuous surges. Fire that occurs at this severe end of the spectrum responds to its own convective winds, spreading rapidly as sparks from exploding trees ignite other fires many meters away. Because of the many different possible fuels found in the interface landscape, firefighters have a difficult time predicting how fires will react or spread. Prevention activities primarily focus on altering the characteristics of fuels to mitigate the risk of catastrophic fires. These activities generally are referred to as fuel reduction.

Topography

Fires burning in similar fuel conditions burn very differently under varying topographic conditions. Topography alters heat transfer and localized weather conditions, which in turn influence vegetative growth and resulting fuels. Changes in slope and aspect can have significant influences on how fires burn. In general, north slopes tend to be cooler, wetter, and more productive sites. This can lead to heavy fuel accumulations, with high fuel moistures, later curing of fuels, and lower rates of spread. South and west slopes tend to receive more direct sun, and thus have the highest temperatures, lowest soil and fuel moistures, and lightest fuels. The combination of light fuels and dry sites leads to fires that typically display the highest rates of spread. These slopes also tend to be on the windward side of mountains. Thus, these slopes tend to be "available to burn" a greater portion of the year.

Topography influences the movement of air, thereby directing the course of a fire. For example, if the percentage of uphill slope doubles, the rate of spread in wildfire will likely double. Gulches and canyons can funnel air and act as chimneys, which intensify fire behavior and cause the fire to spread faster. Solar heating of dry, south-facing slopes produces upslope drafts that can complicate fire behavior.

Unfortunately, hillsides with hazardous topographic characteristics are also desirable residential areas in many communities. Homeowners seem to prefer lots that are private and have scenic views nestled in vegetation. A private setting may be far from public roads, or hidden behind a narrow, curving driveway. These conditions, however, make evacuation and firefighting difficult. The scenic views found along mountain ridges can also mean areas of dangerous topography. Natural vegetation contributes to scenic beauty, but it may also provide a ready trail of fuel leading a fire directly to the combustible fuels of the home itself. This underscores the need for wildfire hazard mitigation and increased education and outreach to homeowners living in interface areas.

Weather

Weather is the most unpredictable component governing fire behavior, constantly changing in time and across the landscape. Weather includes temperature, relative humidity, wind speed and direction, atmospheric stability, cloud cover, and precipitation.

Weather patterns combined with certain geographic locations can create a favorable climate for wildfire activity. Areas where annual precipitation is less than 30 inches per year are extremely fire susceptible. High-risk areas in Oregon share a hot, dry season in late summer and early fall when

[18] Fuel that can carry a fire burning in low-growing vegetation to taller vegetation is called ladder fuel. Examples of ladder fuels include low-lying tree branches and shrubs and trees under the canopy of a large tree.

high temperatures and low humidity favor fire activity. Predominant wind directions may guide a fire's path. In addition, many high intensity fires produce their own wind, which aids in the spread of fire.

Weather patterns causing extreme fire behavior in western Oregon are associated with Foehn winds in late summer and early fall. Historic fire events including the Tillamook Burns and 2020 Labor Day Fires developed under the influence of these winds, locally referred to as East Winds

Development

Currently, approximately 3,687 sq. mi. or 3.8 percent of Oregon's land base is WUI[19]. Using data from the Wildfire Risk Assessment tool, ODF estimated over 750,000 homes are located in WUI areas in Oregon. This percentage will change when the new statewide WUI mapping, undertaken by the State because of the passage of Senate Bill 762 (2021), is complete.

[20]The United States Forest Service published a study identifying the WUI according to the federal government's definition of the WUI. The study finds that 36 percent of all homes in Oregon are built in the WUI and 80.4 percent of seasonal (vacation) homes in Oregon are built in the WUI. Oregon has one of the highest proportions of seasonal homes in the WUI in the nation.

Fires in the WUI are common. Since 1988, 64 percent of fires on lands protected by the Oregon Department of Forestry took place within a mile of the WUI. Of these, 87 percent are human caused. Growth and development in forested areas is increasing the number of human-caused wildfires in the interface in Oregon. Wildfire influences development, yet development can also influence wildfire. While wildfires have always been a historic part of the ecosystem in Oregon, homes in the interface can lead to increased human ignition of fire. The combined increase in human development and activity in the interface, with the high content of fuels from years of fire suppression, can create a lethal combination.

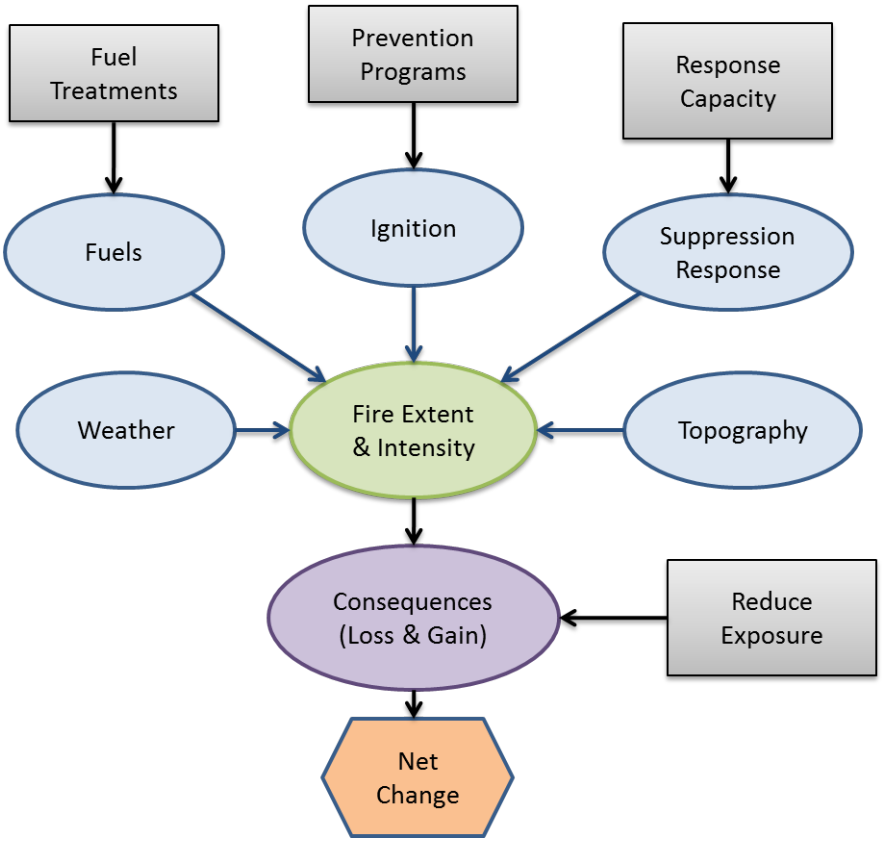
A simple conceptual model of wildfire mitigation

Figure 2.1 includes five principal contributing factors (blue circles) and four management options (grey boxes) designed to either change wildfire extent and intensity, or to alter risk by changing the degree of exposure experienced by valued elements of the landscape.

[19] Oregon Department of Land Conservation and Development 2019-2021 Biennial Report https://www.oregon.gov/lcd/About/Documents/2019-21_Biennial_Report.pdf This amount may change once the new Wildfire Risk Map is completed.

[20] A New Vision for Wildfire Planning: A Report on Land Use and Wildfires https://friends.org/sites/default/files/2019-04/A%20New%20Vision%20for%20Wildfire%20Planning%202018.pdf

Figure 2.1 Influences on Wildfire



Exacerbating Conditions

Because wildland fires have been suppressed, the patterns and characteristics of fires are changing. Vegetation that historically would have been minimized by frequent fires has become more dominant. Over time, some species have also become more susceptible to disease and insect damage, which leads to an increase in mortality. The resulting accumulation of dead wood and debris creates the types of fuels that promote intense, rapidly spreading fires. Decades of logging and fire suppression have also changed the characteristics of forests, trending towards younger forest stands. Mature forests are typically less dense, with smaller numbers of large, more fire-resistant trees. Young forests are denser with larger numbers of small, less fire-resistant trees.

Benton County's historic oak woodland and savanna ecosystems' fire regime typically consisted of relatively low-intensity fires on a short fire return interval (5-25 years). With the current and past fire suppression efforts and changes in land use, there is an increase in this interval. By suppressing fires, the ecosystem has been changed, allowing coniferous trees, such as Douglas fir, to establish and overtop the oak trees that once dominated the landscape. In many cases these forests have been altered to the point where oak is no longer the primary tree species and the understory is dominated by woody shrubs, rather than grasses and forbs.

Vulnerability of the WUI

The development of homes and other structures within natural areas is expanding the WUI in Benton County, as it is across the country. The interface areas are characterized by a diverse

mixture of housing structure styles, age, development patterns, ornamental and natural vegetation, and natural fuels.

The defining characteristic of the WUI area is that structures are built in areas with essentially continuous (and often high) vegetative fuel loads. In other words, structures are built in areas subject to wildland fires. When wildland fires occur in such areas, they tend to spread quickly and structures in these areas may become little more than additional fuel sources. The siting of homes has also changed over time. Historically, pioneering families built their homes in low lands, close to water and the fields they intended to work. In the last 30 years or so, rural homes have increasingly been built in locations chosen because of the view or other amenities. Thus, many newer homes are in locations more difficult to defend against wildland fires.

Structures and occupants in WUI areas have limited fire suppression resources compared to urban or suburban areas. Homes in the WUI are most commonly on wells rather than on municipal water supplies, which limits the availability of water for fire suppression. Less availability of water resources makes it more likely that a small wildland fire or a single structure fire will spread before it can be extinguished. The intensification of drought also exacerbates the risk as wells pump less water or run dry, and streams and ponds have low water levels during critical months of fire season.

Life safety risk in interface areas is exacerbated by limited numbers of roads (in the worst case, only one access road) that are often narrow, winding, and subject to blockage by a wildland fire. Life safety risk in the WUI is also increased by homeowners' reluctance to evacuate homes quickly and instead try to protect their homes with whatever fire suppression resources are available. Such efforts generally have very little effectiveness.

In the event of a wildfire, vegetation, structures, and other flammable materials can merge into unpredictable fuel loads and events. Factors relevant to the fighting of wildfires within WUI include access, firebreaks, proximity of water sources, distance from a fire station, and available firefighting personnel and equipment. The availability of fire personnel is dependent on the severity of a fire season as crews are activated and called to active wildfire events. A busy wildfire season will leave fire personnel stretched thin as resources are dispersed to priority areas. Residents should do all they can to reduce their susceptibility to wildfire.

Structures are typically destroyed or damaged by wildfire for one or more of the following reasons:

- Location in or surrounded by heavy fuel loads with a high degree of continuity (i.e., few significant firebreaks). Risk may be particularly high if the fuel load is grass, brush, and smaller trees subject to low moisture levels in short duration drought periods.
- Construction of structures to less than fully fire-safe practices: combustible roofing material, wood construction.
- Structures with no defensible space or lack of maintenance of defensible zones around structures.
- Storage of firewood and combustibles beneath or around structures.
- Lack of maintenance clearing debris from gutters and roof.
- Poor road access to structures limiting firefighting apparatus.
- Structures located on steep slopes covered with flammable vegetation.
- Limited fire suppression capacity: limited water supply capacity for fire suppression purposes, limited firefighting personnel and apparatus, and long response times for fire alarms.

Local Wildfire Threat

Overall, the threat of wildland fire is low for Benton County, in large part because of a historically long-duration wet season lasting from October through May. See the ***Appendix C*** for the Advanced Report for Benton County from the Oregon Wildfire Risk Explorer. Once the Wildfire Risk Explorer has been updated with the new wildfire risk information on a landscape level per the requirements of Senate Bill 762, the appendix will be updated with a new report.

Local Fire Protection Issues

The following is a brief overview of the many issues continuing to challenge Benton County in providing wildland fire safety to citizens.

Urban and Semi-Rural Growth

One challenge is the continued development of houses in the intermix and interface WUIs. Despite statewide regulation of residential development in resource lands, dwellings continue to be approved in the intermix WUI through exemptions in the regulations. Also, the interface WUI is expanding and has created, by this expansion, a significant increase in threats to life and property from fires and has pushed existing fire protection systems beyond original or current design or capability. Property owners in the interface may not be aware of the problems and threats and the need to offset fire hazards or risks on their own property. Furthermore, human activities increase the risk of fire ignition and potential damage.

Rural Fire Protection

People moving from urban dwellings to areas that are more rural frequently have high expectations for structural fire protection services. New residents may not realize they are living outside a fire protection district or that the service provided is not the same as in an urban area. The diversity and amount of equipment and the number of personnel can be substantially limited in rural areas. Fire protection may rely more on the landowner's personal initiative to take measures to protect their property. Furthermore, subdivisions on steep slopes and/or in areas with poor access and the greater number of homes exceeding 3,000 square feet are also factors challenging fire service organizations.

Unprotected Land

An area in Benton County between Corvallis and Monroe is not currently within a structural fire protection district. This area includes approximately 232 structures.

Debris Burning

Local burning of trash and yard debris has been identified as a significant problem as well as the number one cause of wildfires throughout Benton County. Escaped debris fires impose a very high fire risk to neighboring properties and residents whether it is done within or outside of the designated period. A growing portion of local fire department calls are in response to debris fires or backyard burning that either have escaped the landowner's control or are causing smoke management problems. It is likely that regulating this type of burning will always be a challenge for

local authorities and fire departments; however, improved public education regarding the county's burning regulations and permit system as well as potential risk factors would be beneficial.

Road and Bridge Standards

Fire chiefs throughout Benton County have identified home accessibility issues as a primary concern in many of the rural areas in the county. Many private driveways are too narrow and/or too steep and most do not have adequate turnouts, turnaround areas, or alternative escape routes. In addition, many privately maintained, rural access roads have become overgrown by vegetation, effectively restricting safe access, particularly in a wildfire situation.

Inadequate private bridges lacking weight rating signage has also been identified by Fire Chiefs as a common problem. Due to the risk of bridge failure and resulting personnel injury and equipment damage, fire and medical service organizations will not cross bridges that may be incapable of handling the weight of emergency response apparatus or for which weight limits are not known.

Volunteer Firefighter Recruitment

The rural fire departments in Benton County are predominantly dependent on volunteer firefighters. Each district spends a considerable amount of time and resources training and equipping each volunteer, with the hope that they will continue to volunteer their services to the department for at least several years. One problem that all volunteer-based departments encounter is the diminishing number of new recruits. As populations continue to rise and more and more people build homes in fire risk areas, the number of capable volunteers has gone down. Many departments also have difficulty with volunteers being available during regular workday hours (8 a.m. to 5 p.m.).

Public Wildfire Awareness

As the potential fire risk in the WUI continues to increase, fire service organizations cannot be solely responsible for protection of lives, structures, infrastructure, ecosystems, and all the intrinsic values that go along with living in rural areas. Public awareness of the wildland fire risks as well as homeowner accountability for the risk on their own property is paramount to protection of all the resources in the WUI.

Water Resources

Even though there are many streams, rivers, ponds, and private wells in the county, access to this resource for fire suppression is not always available. There is a need to develop additional water resources in several rural areas. Developing water supply resources such as cisterns, dry hydrants, drafting sites, and/or dipping locations ahead of an incident is considered a force multiplier and can be critical for successful suppression of fires. Pre-developed water resources can be strategically located to cut refilling turnaround times in half or more, which saves valuable time for both structural and wildland fire suppression efforts.

Mitigation

Hazardous Fuel Reduction.

The reduction of hazardous fuels is a proven means of mitigating wildfire hazards. Hazardous fuels include all living and dead plant material subject to ignition by fire. When fire encounters areas where fuels have accumulated, the result is wildfires that burn hotter, faster, and higher. When fire encounters areas of heavy fuel loads (continuous brush, downed vegetation, or small trees) it can

burn these surface and ladder fuels and may quickly move from a ground fire into a crown fire. The principal aim of any fuel reduction intervention is to remove or modify fuel loads so that wildfires are less severe and can be suppressed more easily. The following treatments can be utilized to reduce hazardous fuels:

Mechanical treatments include harvesting, thinning tree stands, limbing overgrown trees, mowing, mastication, chipping, removing underbrush, cutting, and piling using hand crews or machines. Fuel breaks and other landscape modifications can also mitigate potential wildfire damage.

Chemical treatments include the use of herbicide to inhibit vegetative growth and accumulation. Any such treatment should only be employed where appropriate and in compliance with State and Federal Regulations.

Biologic treatments, such as grazing, should be employed where use would be a benefit to agriculture as well as fuel reduction projects.

Prescribed burning involves the use of fire under specific environmental conditions, to a predetermined area, to achieve a desired outcome. Prescribed burning should only be employed as a method of fuels reduction where appropriate. Caution is always necessary when using this method and all preparations to extinguish an emergent fire should be in place.

Structural Ignitability.

The threat of structure loss makes fire management in the WUI distinct from other wildfire management situations. **Structural ignitability is a principal cause of structural losses during WUI fires. Highly ignitable homes can be destroyed during lower-intensity wildfires, whereas homes with low ignitability may survive high-intensity wildfires.** The primary area of concern is the Structure Ignition Zone (SIZ), which includes the home and its immediate surroundings within 100' of the home in all directions. Common contributors to structural ignitability are flammable roofing materials, wooden decking, debris-filled gutters, uncovered vents, and the presence of burnable vegetation (ornamental trees, shrubs, firewood) immediately adjacent to the structure. By constructing or retrofitting a structure to harden it against wildfire and by maintaining a defensible space, structural ignitibility can be effectively mitigated and a structure's chance of surviving a wildfire may be considerably increased.

Education and Outreach.

Public education and outreach are critical tools in any effort to mitigate wildfire. How best to encourage homeowners to create defensible space and reduce ignitibility of their homes is a challenge for policymakers, land managers and community officials. Making information on hazard reduction available through multiple outlets and in a variety of forms is critical.

Restoration and Recovery.

The true cost of wildland fire is not in suppression alone. There are mitigation and recovery costs in the aftermath of wildland fire such as socioeconomic impacts, consequences to physical and mental health, as well as long-term restoration work that must be done. High intensity fires have been shown to kill trees and the seed source, essentially sterilizing the landscape and interfering with natural regeneration. In such cases, dead trees harbor disease and insect infestation and contribute to fuel loading, which increases future fire potential.

Research has shown that actions taken immediately following a catastrophic wildfire, such as salvage logging and reforestation, can mitigate these effects. Salvage logging, for example, removes

hazardous dead trees and recovers the burned logs to recoup the economic value, which can then be reinvested into other restoration and forest management activities. Taking no action following a fire event can significantly raise the potential for catastrophic stand replacement fire in the future.

In response to the 2020 Wildfires (Labor Day Fires) the State established a Recovery Task Force. This is a multi-agency body that covers all efforts in restoring communities and homeowners that were impacted by the fires.

Mitigation Actions and Activities

There are many actions that will help improve safety in a particular area; there are also many mitigation activities that can apply to all residents and all fuel types. General mitigation activities that apply to all of Benton County are discussed below while activities that are more specific to the county are identified within Chapter 4.

Residential Treatments. Effective mitigation strategies begin with public awareness campaigns designed to educate homeowners of the risks associated with living in a flammable environment. Home defensibility starts with the homeowner. In any residential setting, treatments should begin with a home evaluation. Many guides are available to help a homeowner through the evaluation process. The Community Wildfire Forester with ODF is also a resource that is available to the community. Treatment factors are usually based around structural ignitability (roofing, siding, deck materials, mesh screening) and landscape treatments (defensible space).

Once a fire has started and is moving toward a structure, the probability of that structure surviving is largely dependent on the structural characteristics of the building and landscaping treatments around it. Beyond the home zone, forest management efforts must be relied upon to slow the approach of a fire that threatens a community.

[21]The following guidance for Defensible Space is the result of modeling fuels and fire behavior in Lane County. The results confirmed that maintaining a canopy adequately disconnected from surface fuels is the most effective long-term forest management action. The closed canopy prevents light from reaching the forest floor and this inhibits the growth of understory vegetation. This does not mean that you can't remove trees, just be aware that you should compensate for the removal by creating manageable landscaping using the defensible space parameters.

Defensible Space. Management of vegetation around structures is an ongoing maintenance process constantly requiring the removal of dead branches, leaves and needles, and dry grasses and weeds.

The following are recommended defensible space standards:

Primary Fuel Break

The primary fuel break is measured from the edge of the structure footprint, defined as the structure and attached accessories, such as decks, carports and any other building material attached to structure.

The Primary Fuel Break includes the Structure Ignition Zone; 0-5 Feet from the structure and an additional 25 feet of managed landscaping.

[21] Lane County CWPP Fire Siting Recommendations and Fuels and Fire Behavior Modeling; Oregon Department of Forestry, Oregon Office of State Fire Marshalls, United States Forest Service, Bureau of Land Management, The Nature Conservancy, Friends of Buford Park and Lane County Parks

There shall not be any tree branches within 15 feet of the structure footprint in any direction. Within 15 feet, tree trunks (defined as the main stem(s) of a large woody plant) are acceptable within this zone if tree limbs have been pruned to allow 15 feet of clearance from the structure footprint. For example, a large conifer tree may be growing within 6 feet of a house if the closest branches are at least 15 feet above and away from the structure in all directions.

Immediate Zone 0-5 Feet

A 5-foot non-combustible perimeter is required, measured from structure perimeter outwards. Non-combustible is defined as material incapable of burning during sustained convection and radiant heat. Non-combustible is also defined as material unable to combust under extreme heat and extended flame contact, rock or mineral soil for example. The recommendation is that there is no vegetation within this zone.

Intermediate Zone 5-30 Feet

Grass is maintained to no more than 4 inches above the ground and kept green if possible. Mature trees are pruned to a height of 10 feet from the ground (lowest point of branch); trees less than 20 feet tall are pruned up to 1/3 of the tree's height to avoid damage from pruning. Prune trees as they grow until the branches reach 10 feet from the ground. No dead plant material is present. Three times vertical spacing is maintained between surface and canopy fuels. Surface fuels other than short, maintained grass lawns shall not be growing or arranged in a continuous or otherwise connected fashion, nor in quantities nor densities known to sustain fire activity under extreme.

Secondary Fuel Break

Extended Zone: 30-100 feet

All trees over 20 feet tall are pruned to a height of 10 feet from the ground (lowest point of branch), trees less than 20 feet tall are pruned up to 1/3 of the tree's height to avoid damage from pruning. Prune trees as they grow until the branches reach 10 feet from ground. All dead plant material within 10 feet of the surface has been removed or mulched. Dead plant material includes but is not limited to sticks, limbs, leaves, branches, and trunks. Maintain at least two times vertical clearance between canopy layers and from the lowest canopy layer to the ground. This may be replicated for multiple canopy layers. For example, surface vegetation may be 2 feet tall, with the understory canopy greater than 4 feet above the surface vegetation, and at least two times lower than the height of the dominant canopy.

Coarse Woody Debris (CWD) Exemption: CWD can be defined as dead trees and remains of large branches on the ground in forests, rivers and wetlands. CWD is known to increase soil moisture and improve wildlife habitat, therefore a Limited Amount will be allowed within the secondary fuel break. In total no more than 200 linear feet will be allowed within the secondary fuel break. The diameter of all CWD must be a minimum of 9 inches. All CWD present must be either in contact with surface soil or within 6 inches of surface contact. For example, you could have two 100-foot long, downed trees, 9 inches in diameter or larger as long as the fine fuels such as branches have been removed or mulched.

Additional Slope restrictions:

Sloping land within 100 feet of structures in which much of a quadrant has a greater than 10% grade will have additional primary fuel break distances. No matter the additional primary fuel break distance, the immediate zone will remain the same (0-5 feet non-combustible fuel break)

0-9%

The standard fuel breaks mentioned above should be created (5-30 feet Intermediate Zone) and the Secondary Fuel Break (30-100 feet).

10-24%

Within 180^{o} of the steepest downward slope, the Primary Fuel Break should extend an additional 10 feet, creating an Intermediate Zone from 5-40 feet. The Secondary Fuel Break (Extended Zone) should be 40-100 feet.

24-39%

Within 180^{o} of the steepest downward facing slope, the primary fuel break should extend an additional 20 feet creating a 50-foot Intermediate Zone (5-50 feet) on the downslope half of the house/property. The Secondary Fuel Break should extend from 50 feet to 100 feet.

>40%

Allowing structures within 100 feet of slopes exceeding 39% is not recommended. If additions occur on sites with slopes 40% or greater, the Primary Fuel Break should extend an additional 30 feet (5-60 feet) from the structure on all sides. The Secondary Fuel Break should extend from 60-100 feet from the structure.

The above specifications alone will not improve home survivability during wildfire events. Home hardening activities (fire resistant building material paired with annual fine fuel removal and maintenance) have a much larger impact on home ignition risk than fuel breaks. Fuel breaks require annual maintenance. The above recommendations are an attempt to improve long-term efficacy of fuel break codes by incorporating canopy shade as a significant maintenance tool for controlling surface fuels in Western Oregon.

Structural Treatments. Structural treatment can be as simple as putting mesh screens over any openings into the dwelling and closing in the space under any porches. It can also include more thorough treatments such as reroofing and using ignition resistant materials for additions. A study[22] by Headwaters Economics in 2018 showed that there are negligible costs between a typical home and a home constructed using wildfire-resistant materials and design features.

Decades of research and post-fire assessments have provided clear evidence that building materials and design, coupled with landscaping on the property, are the most important factors influencing home survivability during a wildfire.

Human-caused Prevention. The safest, easiest, and most economical way to mitigate unwanted fires is to stop them before they start by preventing human-caused fires. Campaigns designed to reduce the number and sources of ignitions can be quite effective and can take many forms. Traditional “Smokey Bear” type campaigns that spread the message passively through signage can be effective. Active prevention techniques can involve mass media, radio, and the local newspapers.

[22] https://headwaterseconomics.org/wp-content/uploads/building-costs-codes-report.pdf

Pre-planning for Fire Response. Although conducting home, community, and road defensible space projects is a very effective way to reduce the fire risk to communities, recommended projects cannot all occur immediately, and many will take several years to complete. Thus, developing pre-planning guidelines specifying which and how local fire agencies will respond to specific areas is beneficial. These response plans should include assessments of the structures, topography, fuels, available evacuation routes, available resources, response times, communications, water resource availability, and any other factors specific to an area.

Limiting Use. Areas within the Oregon Department of Forestry Protection District boundary are also subject to Public Use Restrictions, referred to as "Regulated Use", during fire season to limit or manage use of activities known to cause fires. The countywide ban on debris or "backyard" burning agreed upon by the Benton County Fire Defense Board during the fire season is an example of actions specifically taken to prevent wildfires.

Evacuation Pre-planning. Development of community evacuation plans is necessary and critical to assure an orderly evacuation in the event of a threatening wildland fire. Designation and posting of escape routes reduce chaos and escape times for fleeing residents. Community safety zones should also be established in the event safe evacuation is impossible and 'sheltering in place' becomes the better option.

Facility Maintenance. Recreational facilities near communities or in the surrounding forests such as parks or natural areas should be kept clean and maintained. To mitigate the risk of an escaped campfire, escape-resistant fire rings and barbeque pits should be installed and maintained. In some cases, restricting campfires during dry periods may be necessary.

Reducing Wildland Fuels. Surface fuel accumulations in nearby forests can also be kept to a minimum by periodically conducting pre-commercial thinning, pruning and limbing, and possibly controlled burns.

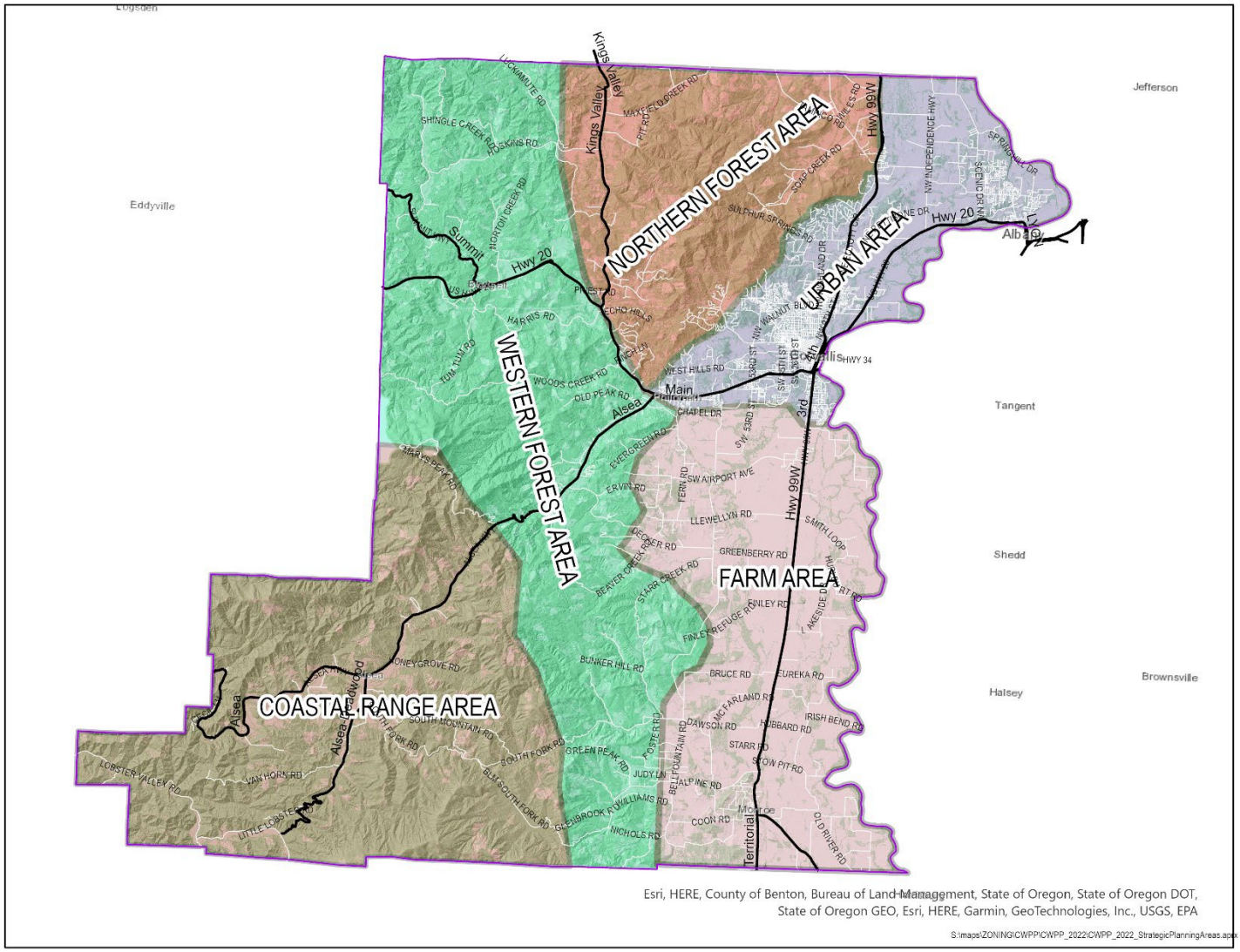
Fire Response. Once a fire has started, how much and how large it burns is dependent on the availability of suppression resources. In most cases, rural fire departments and the Oregon Department of Forestry are the first to respond and have the best opportunity to halt the spread of a wildland fire. For many districts, the ability to reach these suppression objectives is largely dependent on the availability of functional resources and trained individuals. Increasing the capacity of departments through funding and equipment acquisition can improve response times and subsequently reduce the potential for resource loss.

Wildland Fire Specific Development Regulations. As the trend to build in the WUI continues, regulation rather than persuasion is becoming more prevalent. WUI codes regarding new construction that regulate the use of certain building materials (roofing, siding, vents, decking, etc.), road and bridge standards, availability of water resources, proximity of vegetation, and other requirements have been adopted in communities and counties across the United States. County policies can be revised to provide for more fire conscious techniques such as using fire resistant construction materials; improved road, driveway, and bridge standard, establishment of permanent water resources, and adoption of defensible space requirements.

Other Mitigation Efforts. Other actions to reduce fire hazards are thinning and pruning power line corridors and strictly enforcing fire-use regulations. This ensures that areas beneath power lines have been cleared of potential fuels and makes sure that the buffer between the surrounding forestlands is wide enough to protect the poles as well as the lines. Another action is creating a fire resistant buffer along roads.

CHAPTER 3 STRATEGIC PLANNING AREAS

To facilitate the understanding of wildfire risks specific to areas in Benton County, sub regions called "Strategic Planning Areas (SPAs)" were identified in the 2009 CWPP. SPAs are distinguished by similar fuel conditions and would require similar initial fire attack techniques. Typically, SPA boundaries lie along local zoning boundaries, fuel or vegetative cover type changes, or logical topographic features. The following SPAs are from the 2009 CWPP and little of the information identified for each of the SPAs has changed.



Information Applicable To All SPAs

Emergency Response.

- Emergency response is coordinated by the county emergency dispatch system. All fire districts and the Oregon Department of Forestry have mutual aid agreements. This is an agreement that allows for support, additional resources, and specialized teams from other districts or agencies. Mutual aid agreements enable the utilization of nearby assets when needed, providing timely fire and rescue response to all areas of the county based on available resources.
- The Oregon Department of Forestry does not provide structural fire protection. Mutual aid agreements between Oregon Department of Forestry and the fire districts supplement wildland fire protection, when needed.

Evacuation.

- In general, the Benton County Sheriff's Office is responsible for all evacuations within the County. Most often, there are recommendations from the first fire/public safety personnel on-scene that need to be relayed to dispatch. In matters that threaten public safety, the information will be relayed to the Sheriff, On-Duty Patrol Supervisor, and Emergency Manager. The Sheriff or Patrol Supervisor will delegate that authority to either on scene Incident Commander or another supervisor to make that determination under the authority of the Sheriff. The Emergency Management Division of the Sheriff's Office will be responsible for supporting evacuation efforts and overall coordination and notification.
  - For example, if a fire touches off in the Summit area, the first on scene is the Blodgett-Summit Rural Fire Department. The on-scene Incident Commander determines the nature and scope of the fire and calls in more resources. When that goes to dispatch, it should include, as basic information, if structures are being threatened and the need for both evacuations and mass notifications to the public. At that point, a call is made to Emergency Management to notify them of the need for evacuation and notification. The Sheriff and Emergency Management then determine the incident area and launch the initial alert based on fire location, growth, and available resources. First Responders and Emergency Management would direct evacuees out a safe route to a secure location away from the incident.
  - If the incident is between Blodgett and Summit, Emergency Management would want to send evacuees out one of the "major" highways (e.g. Summit Highway or Logsden Road) to a location in Newport. They would launch the initial notification sending people out and determine if residents were in an area that would require a "Level 3:Go!" evacuation or just a general notice of a fire in the area. Emergency Management would then make a phone call to the Lincoln County Emergency Management to ensure they can support receiving some incoming evacuees from Benton County.
- Community members should develop household and community emergency evacuation plans and follow direction from the on-scene first responders. The most important part of evacuation is that it requires information sharing from the first individuals on scene to dispatch and to the Emergency Management office to send out accurate mass notification information. Mass notification during emergencies is accomplished using a variety of tools including Linn-Benton ALERT, social media posts, Emergency Alert Systems (EAS), Integrated Public Alert and Warning Systems (IPAWS), and on-scene first responders. Emergency Management relies on would then rely on neighbors and community members sharing information as rapidly as possible to help

ensure adequate communications to those that may have access and functional needs or limited technology access.

Hazardous Conditions.

- Development continues in the forested foothills as people seek to live in seclusion yet remain near urban amenities. As more area is developed and human use rises, the chance of a human caused wildfire will increase and the pressure on fire protection services and the need for improved infrastructure and education will increase.
- Ignitions are often concentrated around roads and rail lines due to the intense activity and availability of ignition sources, such as cigarettes, hot metal, and sparks.
- Agricultural and riparian lands adjacent to forested land are a considerable wildfire concern. Depending on the time of year, slope, and weather, fuels such as grasses, brush and agricultural crops can easily ignite. If these fuel types are within proximity to forested areas, a surface fire may move into the forest, creating a wildfire situation during times when forest fire risk is normally low. Vegetation, slope, and wind direction can be factors in determining whether a non-threatening ground fire spreads to the forest canopy and becomes a dangerous crown fire.
- A wind-driven fire in agricultural fuels or dry native fuel complexes would produce a rapidly advancing, but variable intensity fire. Fires burning in some types of un-harvested fields would be expected to burn more intensely with larger flame lengths due to the greater availability of fuels. Fields enrolled in conservation programs or set aside for wildlife habitat, can burn very intensely due to an increased amount of fuel build-up from previous years' dead growth. Larger flame lengths and intense heat make fires in these fields difficult to control. Under extreme weather conditions, such as particularly strong winds, escaped agricultural or open range fires can threaten individual homes or a town site with a rapidly advancing fire. However, this type of fire usually is quickly controlled.
- The human factor combined with heavy accumulation of mixed fuels can result in a rapidly spreading and potentially destructive wildfire. The rate of wildfire spread in a forest environment is dependent on the structure of the forest, weather, aspect, and slope. Heavy understory vegetation in multi-storied forests creates a situation conducive to a rapidly advancing, highly destructive crown fire.
- High winds increase the rate of spread and intensity of fires. It is imperative that homeowners implement fire mitigation measures to protect their structures and families prior to a wildfire event. Most homeowners can maintain an adequate defensible space around structures by watering their yards, clearing brush and ladder fuels, and mowing grass and weeds.

Forest Management.

- Clearcutting of plantation conifer forests, followed by planting is the most common harvest and regeneration method practiced in the region. The road systems to support this industry are expansive and well maintained. Brush control is a top priority for land managers as such vegetation can out compete the trees species. Stands are planted dense but typically thinned to provide for better growing conditions. Canopies are typically closed, even in younger stands (15+ years) and the forest floor is almost completely shaded providing conditions for little to no ground fuels. The understory vegetation and lower branches are reduced due to the lack of available light.
- The reduced ground vegetation and ladder fuels lessen the ease with which a ground fire can move into the canopy. Only under extreme fire weather conditions are there crown fires in the

coast range. Single and group tree torching has a higher probability of being on the extreme end of fire behavior, but a true crown fire where the flame front is carried almost exclusively by the crowns of burning trees is extremely rare as typical fire seasons in Benton County don't create suitable conditions. A ground level fire would be more characteristic for our area.

- Slash generated from timber harvest is often piled after logging and burned in the wet season after it has cured for an appropriate length of time. Broadcast burning[23] is not as common as pile burning, but there are 5-10 units annually that get burned with that tactic in Benton County.

Mitigation measures.

- Farmstead and homesite openings can act as fuel breaks by creating a discontinuous fuel bed, which can help slow a wildfire and improve suppression efforts. Clearings and fuel breaks will disrupt a slow-moving wildfire enabling suppression before a fire can ignite heavier fuels.
- Due to the low risk of wildfires in urban areas, mitigation is less of an issue than it is in the wooded foothills or in areas bordering open space parks or agricultural fields. Measures that can be taken in densely landscaped urban residential areas include watering yards, clearing litter accumulations from both the yard and the roof, and mowing grass and weeds. Designing fuel breaks between wildland fuels and residential areas would significantly lessen a fire's potential of igniting structures or landscape vegetation. Maintaining a clean and green yard around dwellings is also an effective fire mitigation measure.
- Travel corridors can be made more fire resistant by frequently mowing or use of herbicides along the edges to reduce the fuels or planting grasses that are more fire resistant such as western wheatgrass and blue grama. Aggressive initial attack on fires occurring along travel routes will help ensure that these ignitions do not spread to nearby residential areas.
- Mitigation measures needed in forested areas include construction of a defensible space around structures and along access routes, pruning and thinning trees, mowing, and removing weeds and other vegetation and moving flammable items such as propane tanks and wood piles to a safe distance from any flammable material.
- Using fire resistant siding, decking, and roofing will help reduce the ignitability of a structure.
- Signage of unrestricted, alternate escape routes would reduce confusion and save time during a wildfire or other emergency event. Many access routes in the wooded foothills are in areas of fire risk due to the close proximity of continuous fuels. In the event of a wildland fire, it is likely that one or more escape routes would become impassable. Landowners should clearly understand the designated emergency evacuation routes for their area.
- Roads and driveways accessing rural residential areas may or may not have adequate road widths and turnouts for firefighting equipment depending on when the residences were constructed. Performing road inventories in risk areas documenting or mapping their access limitations and substandard bridges will improve firefighting response time and identify areas in need of improvement. Current fire codes now require compliance with minimum road standards for new construction.
- Designing a plan to help firefighters control fires in farmland and open areas adjacent to forest would significantly lessen the spread of fire. Mitigation activities would include plowing a fire-resistant buffer zone around fields and along pre-designated areas to tie into existing natural or

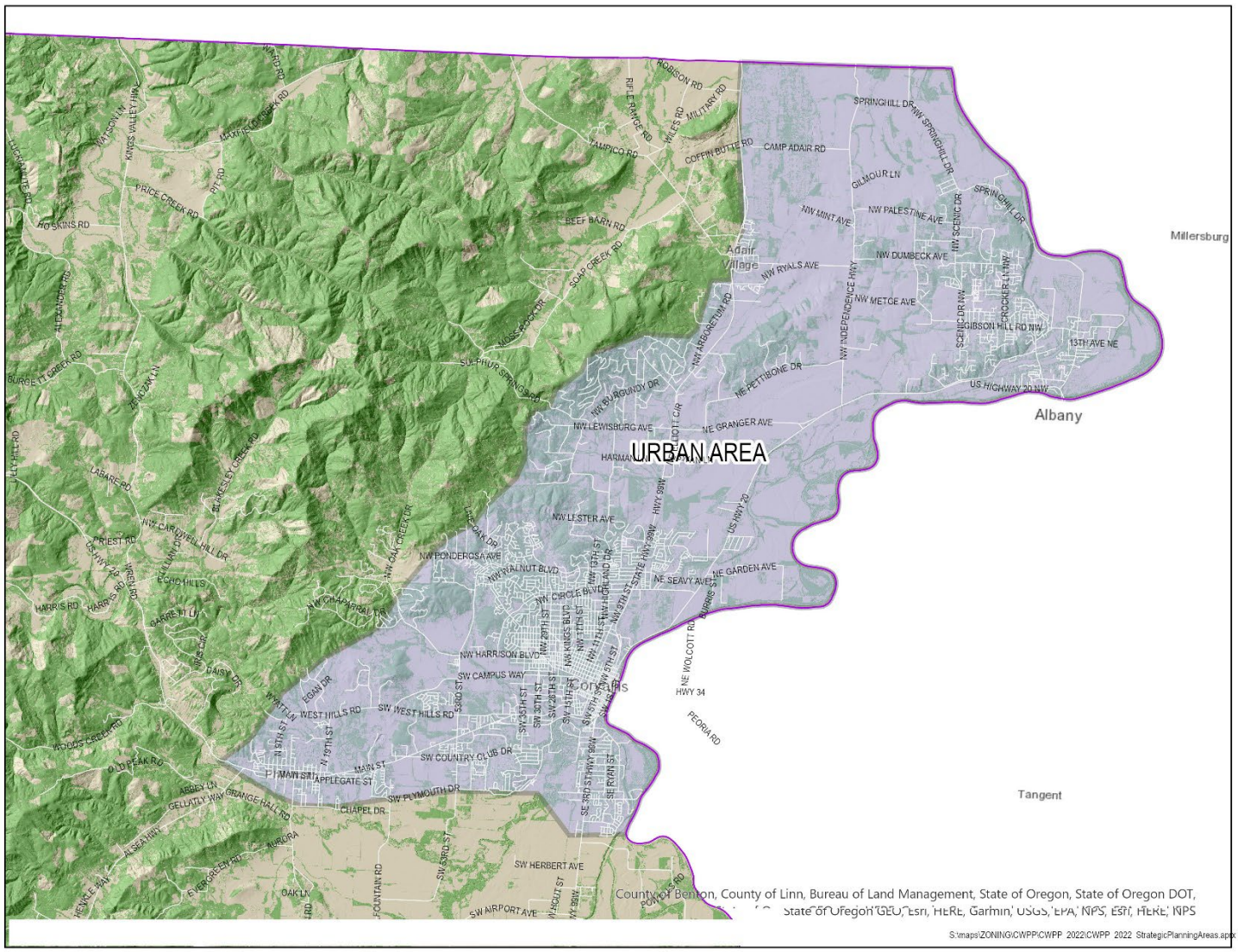
[23] A prescribed fire ignited in areas with little or no forest canopy present.

manmade barriers or implementing a prescribed burning regime during less risky seasons of the year.

- Maintaining developed drafting sites and mapping alternative water resources such as underground tanks near rural subdivisions will increase the effectiveness and efficiency of emergency response by rural fire districts in a wildfire situation.

Urban Area - Strategic Planning Area #1

SPA 1 is in the northeastern corner of Benton County and includes the cities of Corvallis, Albany, Philomath and Adair Village. SPA 1 is bordered on the east by the Willamette River, SPA 3 (Northern Forest Area) to the west, Polk County to the north and SPA 2 (Farm Area) to the south.



Planning Area Assessment

This is a heavily populated urban and semi-urban area intermixed with parks, farmland, wooded river bottomland, forested knolls, foothills, and major transportation corridors. Land ownership is predominantly private with several large tracts owned by Oregon State University, Benton County, Oregon State Parks and Recreation and the E.E. Wilson Wildlife Area operated by the Oregon Department of Fish and Wildlife.

Forest and shrub land vegetation is common in and around many residential areas developed near foothills and riparian waterways. Development in the agricultural land is widely dispersed on isolated parcels surrounded by seasonal crops, tree farms and orchards. Homesite and subdivision development is increasing throughout the area by expanding into the wooded areas and farmland as zoning allows, particularly in the North Albany, Vineyard Mountain, Cascade Heights, Skyline West, Oak Creek, and the Cardwell Hills areas.

Wildfire Potential

Residents within this SPA have a low risk of experiencing a wildland fire in the urban areas of Corvallis, Philomath, and Albany with the outlying residential areas adjacent to open space, farmland, wooded foothills, and river drainages being at greater risk than the urban areas. Residential areas with dense landscaping adjacent to wildland fuels are at a relatively greater risk due to the continuity of fuels and litter accumulations.

Native and non-native landscape vegetation is especially dense in the older residential clusters and many of these areas lie adjacent to ignitable fuels. Privacy and seclusion created by landscaping is highly desirable in closely arranged subdivisions, which limits opportunities for creation of wildfire defensible space and creates large accumulations of potentially flammable biomass in yards and on rooftops. Under extreme wildfire conditions or during an extreme wind event, heavily vegetated residential areas have the potential to carry an advancing fire front, fueling the fire with landscape vegetation, litter and ultimately the home itself as seen in many of the recent southern California wildfires.

In the wooded foothills and wooded residential lots, wildfire potential is high due to the heavy concentration of forest vegetation, ladder fuels, steep slopes, and numerous potential ignition sources. Wildland fuels are a mix of oak savanna and grassland at the lower elevations and transitions into variable density Douglas fir/Hemlock forest mixed with oak and maple species at higher elevations. Homesite development and timber management has transformed these areas into a mosaic of multi-aged stands of timber mixed with open areas of pasture and farmland. Human activity increases the probability of a wildfire during the dry season or during a high wind event.

Ingress-Egress

Ingress and egress within the heavily populated urban areas is currently regulated through planning and building codes. Most of the roads in newer subdivisions have been designed to accommodate emergency vehicles with either loop roads or cul-de-sacs with wide turning radii and easily negotiable grades, which are better suited to all types of emergency response equipment. This minimizes hazards associated with emergency access and provides multiple emergency escape routes.

Some residences constructed in the outlying foothills' subdivisions and occluded woodlots and prior to modern codes are accessed via unimproved, single-lane roads. In these areas, access roads and driveways are often steep and/or lined with shrubs and mature trees that can limit or prohibit access during a wildfire. Many of these roads have a single access point for both ingress and egress and lack adequate turnout and turn-around areas for emergency vehicles. The inability of emergency resources to safely access structures reduces or may even eliminate suppression response.

Infrastructure

Urban residents throughout most of SPA 1 have municipal water systems, which includes a network of public fire hydrants. New development is required by the International Fire Code to have hydrant placement in their development plan. Subdivisions and development outside municipal boundaries typically rely on community water systems or multiple-home well systems.

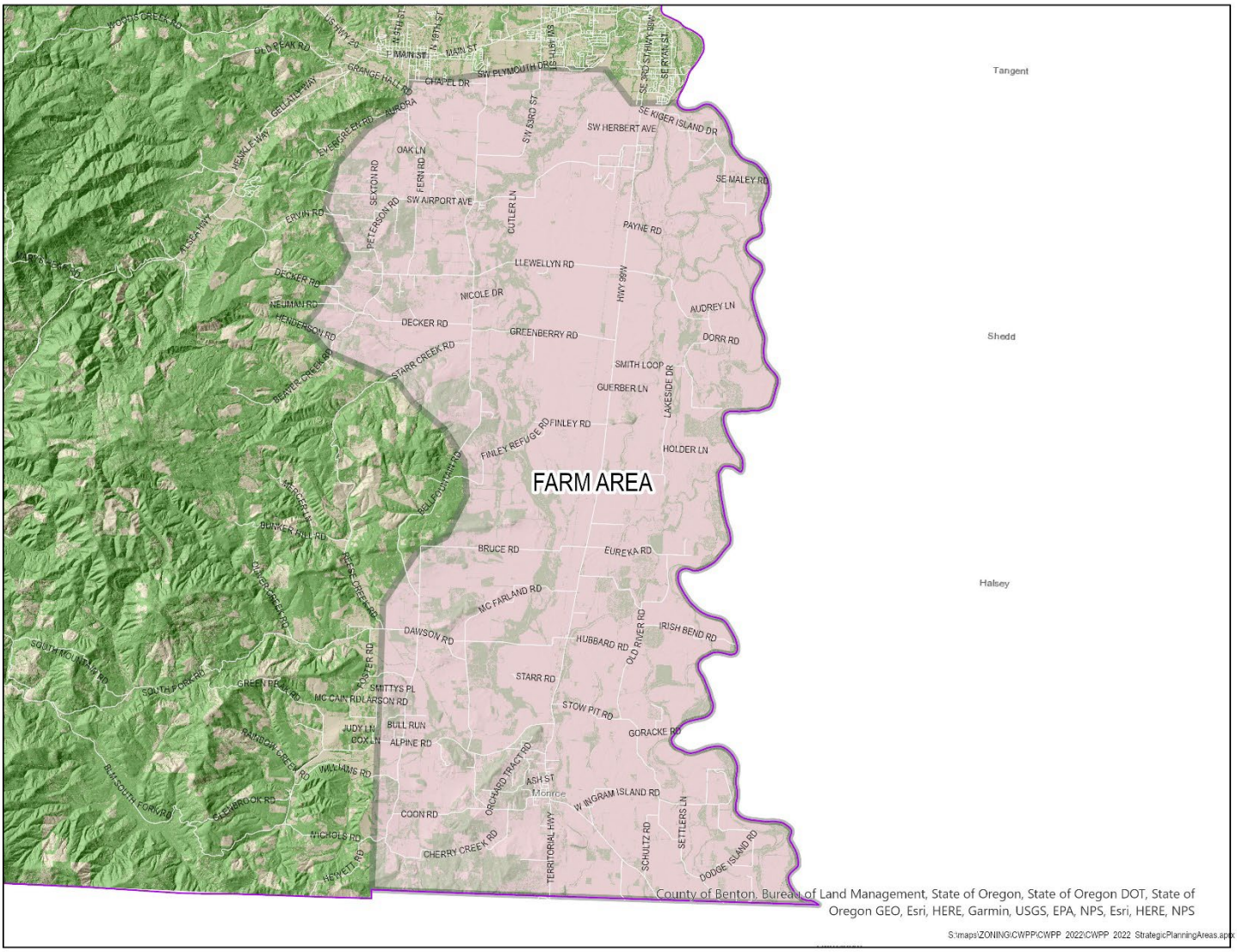
Above ground, high voltage transmission lines cross the planning area in many directions in corridors cleared of most vegetation, which provides for a defensible space around the power line infrastructure and may provide a control point for fire suppression, if well maintained. Local public electrical utility lines are both above and below ground traveling through back yards and along roads and highways. Many of these lines are exposed to damage from falling trees and branches. Power and communications may be cut to some of these during a wildfire event.

Fire Protection

Structural fire protection in SPA 1 is provided by the Corvallis Fire Department, Albany Fire Department, Adair Rural Fire Protection District and Philomath Fire and Rescue. The Oregon Department of Forestry has jurisdiction for wildfires in the forested foothills along the western edge of SPA 1.

Farm Area – Strategic Planning Area #2

SPA 2 is in the southeastern portion of Benton County and includes the communities of Monroe, Alpine, Alpine Junction, Bellfountain and Greenberry. SPA 2 is bordered on the east by the Willamette River and Linn County, dense forestland on the west, SPA 1 (Urban Area) on the north, and Lane County to the south.



Planning Area Assessment

This area is predominantly rural farmland interspersed with wooded hilltops and shrubby riparian areas. Land ownership is primarily private with a few large tracts owned by Benton County, forest industry, and the William Finley National Wildlife Refuge operated by the United States Fish and Wildlife Service. Muddy Creek and its tributaries pass through the center of the planning area creating widely diverse woodlands and riparian habitat. Widely scattered homesite development is common in the forested areas and along wooded draws that flank cultivated farmland.

Development in the rural farmland is widely distributed. New development occurs primarily near communities and along major roads. Occasionally, farmland is subdivided between family members for new homesites or for development of new farming facilities. Most of the pressure for multi-housing subdivisions occurs near existing cities due to requirements of the Oregon statewide land

use system. In nearly all developed areas, structures are near vegetation that becomes a fire risk at certain times of the year.

Wildfire Potential

Residents within this SPA have a variable risk of experiencing a wildland fire depending on their location and proximity to vegetative cover. Wildfire potential is low to moderate in the rural farmland and moderate to high in the wooded riparian areas and patches of forestland. Residences in wooded areas are at the greatest relative risk and residences in the rural farmland are at a lower risk.

Fuels in the forested areas consist of several conifer and hardwood species mixed with a variety of understory shrubs and grasses. Forested areas in this SPA are often adjacent to or surrounded by agricultural crops or rangeland. Agricultural and ranching activities throughout the area have the potential to increase the risk of a human-caused ignition. Large expanses of wildlife habitat, conservation lands or annual crops provide areas of continuous fuels that have the potential to threaten homes and farmsteads.

There are also numerous residences located in the portion of this SPA that are currently not covered by a fire protection service. If these residents have a fire, the Fire Defense Board has created a plan to send a full box alarm comprised of resources from Corvallis, Monroe and Philomath. Each department would then bill the residents for the response. This process continues to evolve.

Ingress-Egress

Many access routes in this SPA are in areas of risk due to the proximity of continuous fuels along the roadway. Commercial forestlands generally have good logging roads enabling access for fire suppression equipment, however, many residences are accessed via unimproved, narrow roads and driveways accessible only by small emergency vehicles. Many of these roads lack adequate turnout and turn-around areas for emergency vehicles and have bridges that are underrated for heavy equipment. The inability of firefighters to safely access structures reduces or may even eliminate suppression response. In the event of a wildland fire, it is likely that one or more of the escape routes would become impassable.

Highway 99W and Bellfountain Road are the primary ingress and egress routes traveling north to south. Highway 99W is the main highway between the communities of Corvallis and Monroe. Primary routes traveling east and west include the Decker/Greenberry Road and the Alpine to Alsea access road.

Infrastructure

Residents living in Monroe have access to a municipal water system with public fire hydrants. Outside of Monroe, development typically relies on individual or multiple-home well systems. Creeks, ponds and developed drafting areas provide water sources for emergency fire suppression in the rural areas to a limited extent. Additional water resources distributed throughout the planning area are needed to provide water for fire suppression in a timely manner.

Local public electrical utility lines travel both above and below ground along roads and highways with some exposure to damage from wind and falling trees. Power and communications may be cut to some of these areas during a wildland fire event.

Fire Protection

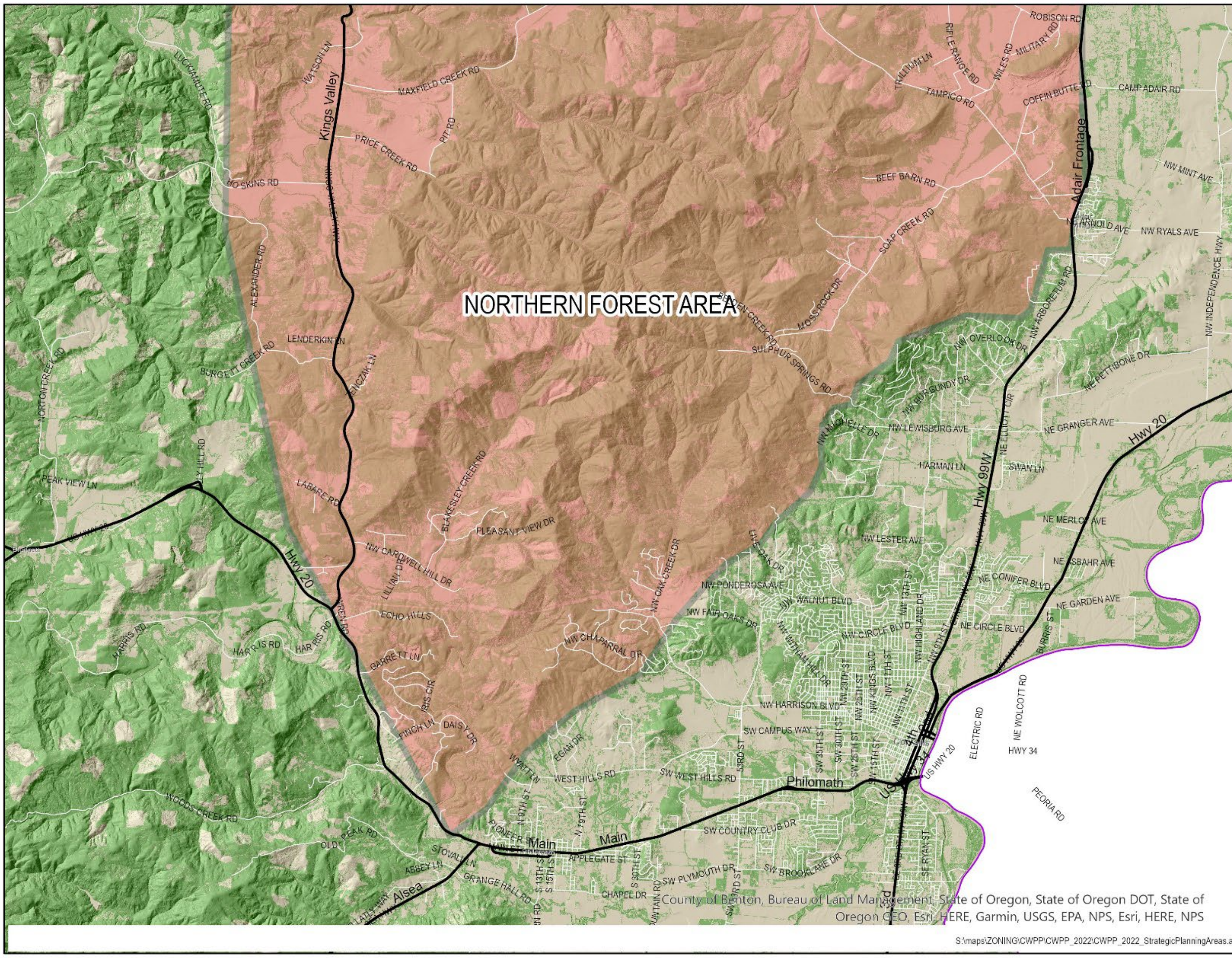
Structural fire protection is provided by the Monroe Rural Fire Protection District, Philomath Fire and Rescue, and the Corvallis Fire Department. These departments provide the first level of

emergency response within their respective districts. The Oregon Department of Forestry has jurisdiction for wildfires in the forested foothills along the western edge of the SPA.

A large area in the east central portion of the planning area has no assigned fire protection district and is outside the Oregon Department of Forestry jurisdictional boundary. Fires in this area are primarily managed by the local citizens and a cooperative of local farmers.

Northern Forest Area – Strategic Planning Area #3

SPA 3 is in the north central portion of Benton County from Kings Valley to Soap Creek and includes the communities of Kings Valley, Hoskins, and Wren. The SPA is bordered on the west by SPA 4 (Western Forest Area), on the north by Polk County, and SPA 1 (Urban Area) to the east and south.



Planning Area Assessment

Land ownership consists of private- and industry-held tracts, Oregon State University (State of Oregon), Bureau of Land Management, and Benton County. Homesite development in this planning area is confined primarily to areas in and around Kings Valley, Soap Creek, Oak Creek, Wren/Blakesley Creek and Highways 99W and 223 (Kings Valley Highway) west of Philomath. Extensive homesite development is occurring in forested areas surrounding the valleys and highways near wildland fuels. These homes are typically accessed by timbered forest routes, some with roads with a single access providing both ingress and egress. A main railroad spur linking the coast to inland resources passes through this area.

This planning area is predominantly forestland on mountainous terrain and agricultural areas along the valley bottoms. SPA 3 includes all the McDonald-Dunn Forests managed by Oregon State Experimental Forest as well as large expanses of commercial forestland actively managed by timber

companies and non-industrial private landowners. The McDonald-Dunn Forests in the east central portion of this planning area and industrial timberlands to the west provide a multitude of recreational opportunities including hunting, camping, hiking, and biking. This area is a popular recreation and interpretive area experiencing heavy use throughout the year. Adjacent land subdivision and development continues, to the extent allowed by limited availability of residentially zoned land, in the wooded foothills due to its proximity to the Corvallis area.

Wildfire Potential

Residents within this area have a variable risk of experiencing a wildland fire depending on location and proximity to vegetation cover. Residences within the forest and woodland areas are at the greatest relative risk and residences in the valley bottoms and surrounded by farmland are at a lower risk. Wildfire potential is low to moderate in the farmland, valley bottoms and highways, and moderate to high in the forested areas. Wildland fuels in forested areas consist of several conifer and hardwood species mixed with a variety of understory shrubs and grasses. Timber management throughout this area has created a mosaic of forest stands with widely varying age and size classes enhancing stand density and structure, which can increase ladder fuels and wildland fire potential. In many areas along the valley bottoms, agriculture and forested land lie adjacent to residential developments and individual homesites.

Many homes in the forested areas are surrounded by forest fuels and only a few have taken measures to reduce this risk by creating a defensible space. The desire for seclusion, views, and privacy creates dangerous living conditions in the forest environment, often without the landowner's awareness of the potential consequences. Fuels along driveways also increase homeowner's risk as both access by fire equipment and escape from the area may become difficult during a fire event.

Development and human activity in areas with heavy fuel loads increases wildfire risk and the chances for major property damage or loss of life. Outdoor recreation and desire for rural living is increasing in popularity, especially in the mountains and forested areas. As more forested areas are used for recreation and habitation, the probability of a human-caused ignition increases. Special consideration is needed to increase public education and fuels mitigation treatments where recreation and development coexist in wildland fire areas.

Ingress-Egress

Primary ingress and egress routes traveling north to south through SPA 3 include Highway 20 and 223 on the west and south side and Highway 99W on the east side. Primary access from the Soap Creek area to Highway 99W is via Soap Creek to Tampico Road and Coffin Butte Road. Access routes to Highway 20 include Maxfield Creek Road, Marys River Estates Road and to Highway 223 include Cardwell Hill Drive and Blakesley Creek Road.

Many access routes are narrow and windy and driveways in this planning area are overgrown with vegetation, have bridges that are underrated for heavy equipment, are too narrow, or lack adequate turn out or turn around areas. Many of the roads provide only one access for both ingress and egress, passing through heavily forested areas. In the event of a wildland fire, it is likely that one or more of the designated escape routes would become impassable.

Remote forested areas within the planning area generally have logging road access enabling access for fire suppression equipment. Most of these roads were designed for logging trucks and can accommodate larger fire equipment.

Infrastructure

Residents within the communities of Kings Valley, Hoskins, and Wren as well as the surrounding areas do not have access to municipal water systems; thus, no public fire hydrants are available. Development throughout this SPA typically relies on individual or multiple-home well systems. Ponds, rivers, creeks and developed drafting sites provide additional water sources for fire suppression in emergencies.

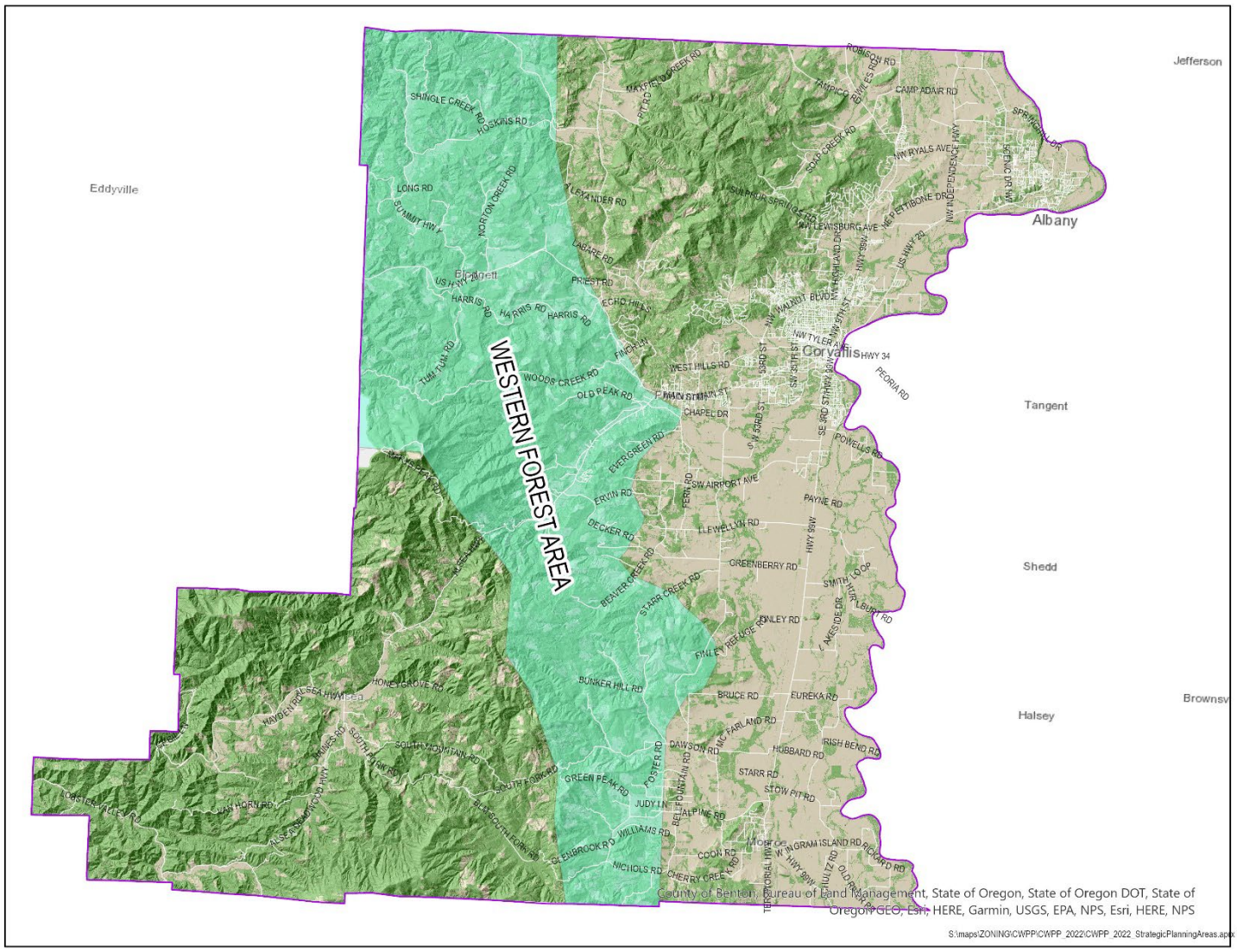
Above ground, high voltage transmission lines cross the planning area in corridors cleared of most vegetation, which provides for a defensible space around the power line infrastructure and may provide a control point for fire suppression, if well maintained. Local public electrical utility lines are both above and below ground traveling through back yards and along roads and highways. Many of these lines are exposed to damage from falling trees and branches. Power and communications may be cut to some of these areas during a wildfire event.

Fire Protection

Structural fire protection in SPA 3 is provided by the Hoskins-Kings Valley Rural Fire District, Philomath Fire and Rescue, Corvallis Fire Department and Adair Rural Fire Protection District. These departments provide the first level of emergency response within their respective districts. The Oregon Department of Forestry has jurisdiction for wildfires in the forestlands.

Western Forest Area – Strategic Planning Area #4

SPA 4 is in the west central portion of Benton County running the entire length of the county from north and south. SPA 4 includes the communities of Summit, Blodgett, Dawson, and Glenbrook. SPA 4 is bordered on the east by SPA 2 (Farm Area) and SPA 3 (Northern Forest Area), on the west by SPA 5 (Coastal Range Area) and Lincoln County, on the north by Polk County and to the south by Lane County.



Planning Area Assessment

This planning area is nearly all forestland except for a few areas where farmland extends into river valleys or timber has been cleared for a farmstead. Land ownership in this area is predominantly Bureau of Land Management, U.S. Forest Service (Siuslaw National Forest), Oregon Board of Forestry (State), forest industry, City of Corvallis, and scattered holdings of non-industrial private forestland. Vast expanses of forestland, especially public forestland, provide recreational opportunities including hunting, fishing, camping, off-road vehicle use, hiking and biking. This area is a popular recreation area and experiences heavy use throughout the year.

Due to the rural nature of this area, forest zoning, and vast expanses of commercial timberland, most development has occurred only along major highways and river corridors as well as areas at

the edge of the farmland on the east side of the planning area. Structures have been built near wildland fuels along timbered forest routes, some with roads with a single access providing both ingress and egress. In addition, openings have been cut for development of farmsteads and homesites, especially near the main roads and rural towns. Small land clearings for pasture development as well as for cash crops, open space, and orchards are common.

Land subdivision and development continues to the outskirts of this SPA due to its close proximity to urban areas, subject to the limitations of resource zoning.

The Corvallis Watershed, owned by the City of Corvallis and the U.S. Forest Service, is located within this planning area. Corvallis obtains almost half of its annual water needs from this area.

Wildfire Potential

Residents have a risk of experiencing a wildland fire due to the extensive forestland and the trend towards development in the WUI. The concern is that with more development adjacent to wildland fuels, the potential fire danger increases due to increased ignition sources caused by human activity. Recreation, agriculture, logging, and ranching activities throughout the area increase the risk of a human-caused wildfire spreading to forested areas. Fields enrolled in conservation programs or non-annual cash crops near development provide areas of continuous fuels that have potential to threaten several homes and farmsteads and possibly escape into forested areas or into towns.

Wildland fuels are primarily mixed conifer and deciduous forest with areas of shrubs, mixed crops, and orchards. The topography changes from rolling to steep in the mountain areas and flat to gently rolling in the river valleys.

Ingress-Egress

Primary access in the northern part of SPA 4 is via Highway 20 (Corvallis-Newport Highway). Secondary access funneling into Highway 20 includes the Summit/Blodgett Road, Hoskins/Summit Road, and Marys River Road. Highway 34 (Alsea Highway) provides primary access through the middle of the area and the South Fork Access Road, from Alsea to Alpine, provides primary access in the south as well as emergency access for residents east of the Coast Range summit. Highways 20 and 34 are heavily traveled main roads that provide access through the Coast Range to the Oregon Coast.

There are also multitudes of paved and graveled secondary roads that crisscross the timbered areas. Many are single lane roads providing both ingress and egress, leading to homesites or logging units. Many access routes and driveways in this planning area are overgrown with vegetation, have bridges that are underrated for heavy equipment, are too narrow, or lack adequate turn out and turn around areas. In the event of a wildland fire, it is likely that one or more of the designated escape routes would become impassable.

Remote forested areas within the planning area generally have logging road access, which enables access for fire suppression equipment. Most of these roads were designed for logging trucks and can accommodate larger fire equipment. But many roads have not been maintained for blockage, structural stability, or even side clearance. The mapping of the roads is inadequate and signage is nonexistent. Most of the roads have locked gates.

Infrastructure

Residents along the Alsea Highway near Philomath have limited access to a municipal water system. Those outside the city limits and in unincorporated areas typically rely on individual or multiple-home well systems.

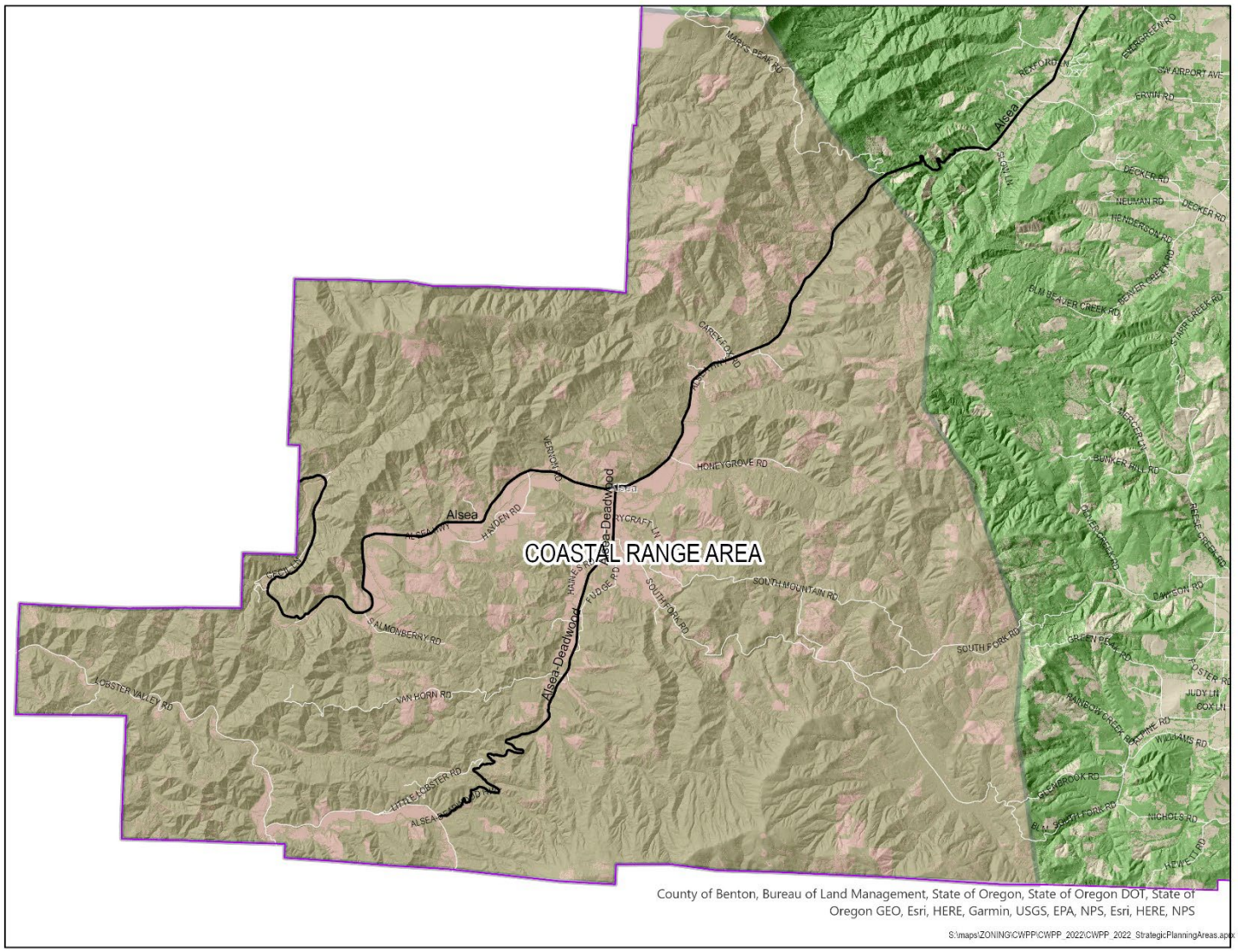
Above ground, a high voltage transmission line crosses the planning area in a corridor cleared of most vegetation, which provides for a defensible space around the power line infrastructure and may provide a control point for fire suppression, if well maintained. Local public electrical utility lines are both above and below ground traveling through back yards and along roads and highways. Many of these lines are exposed to damage from falling trees and branches. Power and communications may be cut to some of these areas during a wildfire event.

Fire Protection

Structural fire protection in SPA 4 is provided by Blodgett-Summit Rural Fire Protection District, Philomath Fire and Rescue, and Monroe Rural Fire Protection District. These departments provide the first level of emergency response within their respective districts. The local fire agencies need water both for protecting structures and initial attack on wildfire. The main local water source is drafting from rivers and creeks and is limited by access and seasonal flow rates. Stream levels can drop quickly below usable levels in early Summer and stay there until late Fall. The Oregon Department of Forestry has jurisdiction for wildfires on all forestlands within their jurisdictional boundary.

Coastal Range Area – Strategic Planning Area #5

SPA 5 is in the southwest corner of Benton County within the coastal mountain range. This planning area is bordered on the north and west by Lincoln County, south by Lane County and on the east by SPA 4 (Western Forest Area).



Planning Area Assessment

SPA 5 is a rural area where most of the residential development occurs along the river valleys and major highway corridors. Alsea, a rural unincorporated community, is the only community in this planning area.

SPA 5 is nearly all forested with scattered development and farmsteads occupying the fertile river valleys and highway corridors. Most of the development in this SPA is farmsteads and homesites occurring along the main highway corridors and river bottoms. Land clearing for pasture, cash crops, open space, and orchards is common.

Land ownership in this area is predominantly Bureau of Land Management, U.S. Forest Service (Siuslaw National Forest), forest industry and non-industrial private forestland. Vast expanses of forestland, especially public forests, provide recreational opportunity including hunting, fishing, rafting, camping, off-road vehicle use, hiking and biking. This area is a popular recreation area

experiencing heavy use throughout the year. Due to the ownership pattern, resource zoning, and remote location, there is less pressure for land subdivision and development in this planning area than other parts of the county.

Wildfire Potential

Residents have a risk of experiencing a wildland fire since it is heavily forested and has extensive recreational use. Recreation, agriculture, logging, and ranching activities throughout the area increase the risk of a human-caused wildfire spreading to forested areas. Wildfire potential is the same as for SPA4. Under extreme weather conditions, fires could threaten individual homes or the town of Alsea.

Ingress-Egress

Primary access is Highway 34 (Alsea Highway) and Lobster Valley/Alsea Road. Highway 34 is a heavily traveled route through the Coastal Range to the Oregon Coast. There are also multitudes of paved and graveled secondary roads leading off the main highways into the forested areas. Many roads are timber-covered lanes leading to homesites or logging units with a single access point providing both ingress and egress. Many access routes and driveways in this planning area are overgrown with vegetation, have bridges that are underrated for heavy equipment, are too narrow, or lack adequate turn out and turn around areas. In the event of a wildland fire, it is likely that one or more of the designated escape routes would become impassable.

Remote forested areas within the planning area generally have established logging roads enabling access for fire suppression equipment. Most of these roads were designed for loaded logging trucks; thus, they also accommodate larger fire equipment.

Infrastructure

Residents within the town of Alsea have access to municipal water systems. In this area, public fire hydrants are available. Outside of Alsea, development typically relies on individual or multiple-home well systems. Ponds, rivers, creeks and developed drafting sites provide additional water sources for fire suppression in emergencies.

Local public utility lines traveling along roads and highways and are exposed to damage from falling trees. Power and phone service into forested areas are both above and below ground. Power and communications may be cut to some of these areas during a wildfire.

Fire Protection

Structural fire protection in SPA 5 is provided by Alsea Rural Fire Protection District, which provides the first level of emergency response within its districts. The Oregon Department of Forestry has jurisdiction for wildfires on all forestland within their jurisdictional boundary except for the U.S. Forest Service lands.

CHAPTER 4 THE FOCUS

Why Develop a Community Wildfire Protection Plan?

The process of developing a CWPP can help a community clarify and refine its priorities for the protection of life, property, and critical infrastructure in the wildland–urban interface on both public and private land. It also can lead community members through valuable discussions regarding management options and implications for the surrounding land base. Local fire service organizations help define issues that may place the county, communities, and/or individual homes at risk. The CWPP planning process also incorporates an element for public outreach. Public involvement in the development of the document not only facilitates public input and recommendations, but also provides an educational opportunity through interaction of local wildfire specialists and an interested public.

The ultimate goals of a CWPP are to improve wildfire preparedness and to protect lives and property. Many benefits accompany the creation of a CWPP. Through the process of developing a CWPP, entities can:

- Improve coordination and communication between emergency response agencies and the community.
- Define and map the WUI.
- Identify and prioritize projects that will increase wildfire preparedness.
- Identify community values.
- Assess wildfire risk.
- Increase competitive advantage in securing grant funding.
- Reduce the risk and impacts of wildfire.
- Restore healthier, more resilient conditions in local forests.
- Improve communications.

Integration with Other Plans

The CWPP builds on and supplements the wildfire chapter of the Federal Emergency Management Agency's (FEMA's) approved Benton County Multi-Hazard Mitigation Plan. The update process will continue to include integration with the National Fire Plan, the Healthy Forests Restoration Act, and the Disaster Mitigation Act. The plan utilizes the best and most appropriate science from all partners as well as local and regional knowledge about wildfire risks and fire behavior, while meeting the needs of local citizens and recognizing the significance wildfire can have to the regional economy.

Benton County CWPP History

Benton County's first Community Wildfire Protection Plan (CWPP) was completed and approved by the Board of County Commissioners in 2009. An update of that plan was completed and approved in 2016. These plans have helped guide community education, risk assessment, and fuel reduction projects, as well as planning and implementing infrastructure improvements to reduce wildfire risk. A review of projects from the 2009 and 2016 CWPPs are summarized in ***Appendix D.***

VISION, MISSION, GOALS & OBJECTIVES

Based on an understanding of the WUI, the specific fire response and mitigation capacities within Benton County, and the concerns the county faces, as documented in the chapters of this plan, the CWPP sets out to achieve the following vision and mission. The mechanisms for achieving the vision and mission are policies and strategies described under the Goals and Objectives, below. The strategies contribute to meeting the goals and objectives. It is not intended that all strategies be completed or undertaken simultaneously; some strategies are on-going. Lead and partner agencies work together to complete as many strategies as possible. **The five highest priority strategies in the table are identified by blue, bolded font.**

BENTON COUNTY'S VISION FOR WILDIRE MANAGEMENT AND ADAPTABILITY

For the County's populace to be wildfire aware and prepared for fire emergencies and for all properties to be adapted to local wildfire risk.

MISSION OF THE COMMUNITY WILDFIRE PROTECTION PLAN

To provide direction in the cooperative and collaborative coordination of agencies and communities through education, communication, and implementation of defined responsibilities to promote pre-fire risk mitigation and life safety preparation, while fostering landscapes that can absorb, respond, recover from, and more successfully adapt to adverse events.

GOAL 1

To Marshal Obtainable Resources And Mobilize Capabilities To Improve The Safety Of People, Protect Structures And Infrastructure, Reduce Smoke-caused Hazards, Preserve Natural Resources, And Restore Fire-Balance To Ecosystems Of The County

OBJECTIVE 1.1

REDUCE HAZARDOUS FUELS AND CONSTRUCT WITH FIRE RESISTANT MATERIALS, thereby reducing the potential for severe wildfire behavior and lessening post-fire damage

Policy

Strategies	Preparedness	Response	Mitigation	Recovery	Status/Timeline ST = Short term (1-3 yrs) MT = Mid term (4–10 yrs) LT = Long Term (10+ yrs) OG =ongoing	Partners	Lead Agencies
Policy 1.1.1 **INCORPORATE THE PRACTICE OF** creating and maintaining **DEFENSIBLE SPACE AND STRUCTURAL RESISTANCE TO FIRE** for existing and new structures in the WUI, and other urban and rural locations.							
1.1.1a Disseminate information about fire resistant construction and adaptations that can lower flammability of structures; provide comparison of fire resistant costs vs. traditional material	X				OG	Builders, Construction Companies, Office of the State Fire Marshall	Benton County, Cities of Monroe, Philomath, Adair, Albany, and Corvallis Fire Departments and Fire Districts
1.1.1b Evaluate all city and county facilities to identify defensible space opportunities and fire resistant structural adaptations; prioritize projects	X		X		LT	Fire Departments and Fire Districts, Oregon Department of Forestry	Benton County, Cities of Monroe, Philomath, Adair, Albany, and Corvallis
1.1.1c Establish a property evaluation program for home owners; encourage wildfire safety adaptation through grant funding when available	X		X		OG	Oregon State University, Office of the State Fire Marshall	Oregon Dept. of Forestry, Rural Fire Protection Districts

Policy							
Strategies	**Preparedness**	**Response**	**Mitigation**	**Recovery**	**Status/Timeline** **ST = Short term (1-3 yrs)** **MT = Mid term (4–10 yrs)** **LT = Long Term (10+ yrs)** **OG =ongoing**	**Partners**	**Lead Agencies**
1.1.1d Support a yearly brush and branch chipping service to each Firewise Community, a community actively pursuing a Firewise Community designation	X		X		OG	Firewise Communities Fire Departments and Fire Districts Fire Marshals Oregon Department of Forestry	Benton County
1.1.1e Create additional disposal opportunities for yard debris using alternative methods to burning	X		X		ST	Republic Services Fire Departments and Fire Districts Fire Marshals	Benton County
1.1.1f Provide assistance to socially vulnerable or rural WUI communities to create defensible space and incorporate hardening of structures	X		X		OG	Benton County	Oregon Department of Forestry
Policy 1.1.2 Increase **SAFETY ALONG EVACUATION ROUTES** in WUIs through landscape modification.							
1.1.2a Identify public access roads that contain an overgrowth of vegetation; prioritize a project list	X		X		ST	Road Districts, Public Works, Oregon Department of Forestry	Benton County Public Works, City's Public Works Department
1.1.2b Encourage home owners to clear vegetation and improve road grades along driveways	X		X		MT	Homeowners, Oregon Department of Forestry	Benton County, Cities of Monroe, Philomath, Adair, Albany, and Corvallis

Policy							
Strategies	**Preparedness**	**Response**	**Mitigation**	**Recovery**	**Status/Timeline** **ST = Short term (1-3 yrs)** **MT = Mid term (4–10 yrs)** **LT = Long Term (10+ yrs)** **OG =ongoing**	**Partners**	**Lead Agencies**
1.1.2c Identify landscaping constraints on access roads to critical infrastructure (as identified in the All Hazards Mitigation Plan[24]); prioritize a project list	X		X		MT	Property owners	Benton County Public Works, City's Public Works Department
Policy 1.1.3 **PRIORITIZE ECOLOGICALLY RESILIENT[25] FUEL TREATMENTS** in forest and farm land to reduce the intensity, severity, and effects of wildfire.							
1.1.3a Prioritize county-wide forest treatments; give priority to forests adjacent to WUI areas and critical infrastructure; engage property owners to create wildfire buffers	X		X		LT	Commercial forestry companies, Oregon State University	Oregon Department of Forestry
1.1.3c Use the State's Fire Risk Map data (when completed) as a tool for prioritizing fuel reduction projects	X		X		ST		Oregon Department of Forestry
1.1.3d Manage and remove dead and dying vegetation caused by natural disasters to remove wildfire fuels	X		X		OG	Oregon Department of Forestry	All landowners, public and private
Policy 1.1.4 Guide investment toward projects that both **PROMOTE ECOSYSTEM RESTORATION AND IMPROVEMENT** as well as fire adaptation							
1.1.4a Promote oak woodland and prairie restoration on lands not managed for industrial forestry using appropriate treatments such as mechanical removal of conifers, prescribed burning, mastication, and other approved management treatments	X		X		OG	Native Plant Society, Nature Conservancy, Other environmental groups. Oregon Department of Forestry	USDA Natural Resources Conservation Service, Mary's River Watershed Council, Soil and Water Conservation District, Greenbelt Land Trust, Siletz and Grand Ronde Confederations

[24] https://www.co.benton.or.us/sheriff/page/natural-hazards-mitigation-plan-nhmp

[25] Ecological resilience: also called ecological robustness, the ability of an ecosystem to maintain its normal patterns of nutrient cycling and biomass production after being subjected to damage caused by an ecological disturbance.

Policy							
Strategies	**Preparedness**	**Response**	**Mitigation**	**Recovery**	**Status/Timeline** **ST = Short term (1-3 yrs)** **MT = Mid term (4–10 yrs)** **LT = Long Term (10+ yrs)** **OG =ongoing**	**Partners**	**Lead Agencies**
1.1.4b Encourage the restoration of forest diversity and native forest habitat on all lands not utilized for agriculture, silviculture, or residential use	X		X		OG	Native Plant Society, Nature Conservancy, Other environmental groups, Oregon Department of Forestry	USDA Natural Resources Conservation Service, Mary's River Watershed Council, Soil and Water Conservation District, Greenbelt Land Trust, Benton Small Woodlands, Siletz and Grand Ronde Confederations
1.1.4c Restore and preserve wetlands and riparian areas	X		X		OG	Oregon Watershed Enhancement Board	Soil and Water Conservation District, Mary's River Watershed Council
1.1.4d Remove invasive species whenever possible to prevent spread after wildfire events		X		X	OG	Institute for Applied Ecology, Mary's River Watershed Council, Greenbelt Land Trust. Siletz and Grand Ronde Confederations	Soil and Water Conservation District
1.1.4e Secure funding for an ODF district-wide fuels reduction crew	X		X		OG	Benton County	Department of Forestry

OBJECTIVE 1.2 **Enhance safe and effective RESPONSE TO WILDFIRES**							
Policy							
Strategies	**Preparedness**	**Response**	**Mitigation**	**Recovery**	**Status/Timeline** ST = Short term (1-3 yrs) MT = Mid term (4–10 yrs) LT = Long Term (10+ yrs) OG =ongoing	**Partners**	**Lead Agencies**
Policy 1.2.1 **IMPROVE EVACUATION** and emergency access **ROUTES**							
1.2.1a Complete a county-wide evacuation assessment to identify existing and needed critical transportation routes (needed to allow emergency access to all locations within the county and allow evacuation of residents)	X				ST	Cities of Monroe, Philomath, Adair, Albany, and Corvallis, Oregon Department of Transportation Fire Departments and Fire Districts Fire Marshals Oregon Department of Forestry	Benton County
1.2.1b Evaluate the critical transportation routes identified through 1.2.1a for inadequacies (e.g., connectivity/alternative routes, road width, turnouts, turnarounds); prioritize infrastructure improvements and develop funding-ready project descriptions for high priority projects; seek funding	X				MT	Cities of Monroe, Philomath, Adair, Albany, and Corvallis, Oregon Department of Transportation Fire Departments and Fire Districts Fire Marshals	Benton County

Policy							
Strategies	**Preparedness**	**Response**	**Mitigation**	**Recovery**	**Status/Timeline** **ST = Short term (1-3 yrs)** **MT = Mid term (4–10 yrs)** **LT = Long Term (10+ yrs)** **OG =ongoing**	**Partners**	**Lead Agencies**
1.2.1c Conduct an analysis of city/county codes related to ingress/egress for new developments					MT	Benton County, Cities of Monroe, Philomath, Adair, Albany, and Corvallis	
Policy 1.2.2 Seek opportunities to **IMPROVE INTERAGENCY WILDFIRE COMMUNICATION** and interagency emergency response systems							
1.2.2a Establish a consistent communication strategy among intergovernmental and industrial forestry partners using appropriate conduits and delivery mechanisms	X				MT		Fire Defense Board, Oregon Department of Forestry, US Forest Service, Oregon State Fire Marshal
1.2.2b Collaborate on opportunities to secure additional fire equipment, training, and infrastructure to boost wildfire response capability for rural, volunteer, and city fire departments	X				OG		Fire Defense Board
Policy 1.2.3 **Provide a COMPREHENSIVE SMOKE MANAGEMENT system.**							
1.2.3a Develop a comprehensive smoke management plan for the county	X				MT	DEQ, Public Health	Benton County Emergency Management, Benton County Health Department, Oregon OSHA
1.2.3b Analyze and improve environmental safety for outdoor workers (& access to resources)	X				LT	DEQ, Public Health	Benton County Emergency Management, Benton County Health Department, Oregon OSHA

Policy							
Strategies	**Preparedness**	**Response**	**Mitigation**	**Recovery**	**Status/Timeline** **ST = Short term (1-3 yrs)** **MT = Mid term (4–10 yrs)** **LT = Long Term (10+ yrs)** **OG =ongoing**	**Partners**	**Lead Agencies**
1.2.3c Create a program to provide access to residential air filters for socially vulnerable populations	X				ST	DEQ, Public Health	Benton County Emergency Management, Benton County Health Department, Oregon OSHA
1.2.3d Create public clean air shelters	X				ST	DEQ, Public Health	Benton County Emergency Management, Benton County Health Department, Oregon OSHA

OBJECTIVE 1.3 **Provide timely REHABILITATION EFFORTS to reduce environmental, social, and economic impacts of fire**							
Policy							
Strategy	**Preparednes**	**Response**	**Mitigation**	**Recovery**	**Status/Timeline** **ST = Short term (1-3 yrs)** **MT = Mid term (4–10 yrs)** **LT = Long Term (10+ yrs)** **OG =ongoing**	**Partners**	**Lead Agencies**
Policy 1.3.1 **IDENTIFY** short and long-term **RECOVERY EFFORTS AND OPPORTUNITIES** for cross-jurisdictional coordination							
1.3.1a Coordinate with the State Wildfire Recovery Task Force (when established)		X		X	OG	Federal Emergency Management Agency, Oregon Department of Forestry	Benton County

Policy							
Strategy	**Preparednes**	**Response**	**Mitigation**	**Recovery**	**Status/Timeline** **ST = Short term (1-3 yrs)** **MT = Mid term (4–10 yrs)** **LT = Long Term (10+ yrs)** **OG =ongoing**	**Partners**	**Lead Agencies**
1.3.1b Provide recovery workshops for businesses, farming and agriculture operations, and homeowners and provide post-fire recovery materials		X		X	OG	Oregon State University, Oregon Department of Forestry	Benton County
1.3.1c Educate citizens on imminent post-wildfire threats to human life and safety, property, and critical natural or cultural resources				X	OG	Oregon State University, Oregon Department of Forestry	Benton County
1.3.1d Identify opportunities to re-establish native ecosystems			X	X	OG	OSU, USDA Natural Resources Conservation Service, Mary's River Watershed Council, Soil and Water Conservation District, Greenbelt Land Trust, Benton Small Woodlands, Oregon Department of Forestry	Benton County
1.3.1e Explore regulatory and policy opportunities to coordinate post-fire treatments between private, county, state and federal lands immediately following a fire event, giving priority to WUI areas		X	X	X	MT	Oregon Department of Forestry	Benton County

GOAL 2

PROMOTE PUBLIC AWARENESS, UNDERSTANDING, AND ACTIONS TO REDUCE RISK FROM WILDFIRE.

OBJECTIVE 2.1

PROVIDE access to, promote, and develop materials and PROGRAMS IN PREVENTION AND EDUCATION that improves community wildfire awareness and safety.

Policy

Strategies	Preparedness	Response	Mitigation	Recovery	Status/Timeline ST = Short term (1-3 yrs) MT = Mid term (4–10 yrs) LT = Long Term (10+ yrs) OG =ongoing	Partners	Lead Agencies
Policy 2.1.1 **REINFORCE PROGRAMS ON WILDFIRE PREPAREDNESS** in the county that center on the topics of the Firewise program, Fire Adapted Communities, Defensible Space, reducing Structural Vulnerability, and the Oregon State Evacuation Levels "Be Ready, Be Set, and Go" through coordination between all groups and individuals that are providing education							
2.1.1a Develop a coordinated multi-agency seasonal outreach campaign that includes county- and city-specific educational materials to promote effective risk reduction practices and communicate landowner assistance programs in the WUI	X				OG	Oregon State University, Soil and Water Conservation District, Mary's River Watershed Council	Fire Defense Board, Benton County, Oregon Department of Forestry, Cities of Monroe, Philomath, Albany, Corvallis, and Adair
2.1.1b Increase awareness of the Firewise program and develop more communities that are Firewise.	X				OG		Fire Defense Board, Benton County, Oregon Department of Forestry, Cities of Monroe, Philomath, Albany, Corvallis, and Adair
2.1.1c Educate the community on the evacuation process, and key functions such as functions of a temporary evacuation	X	X			OG		Fire Defense Board, Benton County, Oregon Department of Forestry, Cities of Monroe,

Policy							
Strategies	**Preparedness**	**Response**	**Mitigation**	**Recovery**	**Status/Timeline** **ST = Short term (1-3 yrs)** **MT = Mid term (4–10 yrs)** **LT = Long Term (10+ yrs)** **OG =ongoing**	**Partners**	**Lead Agencies**
point, shelter in place, and Oregon Level 1, 2, and 3 evacuation orders (Be Ready, Be Set, GO)							Philomath, Albany, Corvallis, and Adair
2.1.1d Partner with Oregon State University to utilize their expertise, education opportunities, and outreach capability to promote homeowner responsibility for wildfire preparedness	X				OG	Rural Fire Protection Districts	Benton County
2.1.1e Partner with each Rural Fire Protection District, as well as road, water, and park districts, to provide training within each jurisdiction	X				OG	OSU	Benton County
Policy 2.1.2 **PROVIDE** resources for volunteers within an organized program[26] that will provide **OUTREACH TO THE COMMUNITY** on wildfire safety							
2.1.2a Establish a sub-committee to coordinate and sustain effective countywide public education and outreach activities	X				ST	OSU	Benton County
2.1.2b Provide access to trainings and resources	X				OG	Benton County	Fire Marshal

[26] A program similar to the Master Gardener program

GOAL 3

Manage The CWPP Document To Be A Flexible And Living A Document That Incorporates A Joint Multi-Agency And Interested Party Approach To Wildfire Planning.

OBJECTIVE 3.1

REVIEW AND UPDATE CWPP on a scheduled and as-needed basis

Policy

Strategies	Preparedness	Response	Mitigation	Recovery	Status/Timeline ST = Short term (1-3 yrs) MT = Mid term (4–10 yrs) LT = Long Term (10+ yrs) OG =ongoing	Partners	Lead Agencies
Policy 3.1.1 **ENSURE that the CWPP IS UPDATED on a consistent and regular timetable**							
3.1.1a Formalize a CWPP Project Committee to sustain the Community Wildfire Protection Plan	X				ST	Oregon Department of Forestry	Benton County
3.1.1b Request the Technical Advisory Committee and Community Advisory Committee assess the CWPP on a yearly basis	X				ST	Oregon Department of Forestry	CWPP Project Committee
3.1.1c Update project tables at every yearly assessment meeting	X				ST	Oregon Department of Forestry	CWPP Project Committee
3.1.1d Outline accomplishments each year	X				ST		CWPP Project Committee
3.1.1e Conduct a major update of the CWPP every 5 years	X				MT	CWPP Project Committee	Benton County
Policy 3.1.2 **MONITOR state and Federal CHANGES TO WILDFIRE PROGRAMS AND INCORPORATE changes to the CWPP as necessary**							
3.1.2a Monitor Senate Bill 762 (2021) projects and incorporate any resultant data into the CWPP	X				ST		Benton County, Oregon Department of Forestry

OBJECTIVE 3.2 **CONSIDER changes to the REGULATORY FRAMEWORK surrounding wildfire safety**							
Policy							
Strategies	**Preparedness**	**Response**	**Mitigation**	**Recovery**	**Status/Timeline** **ST = Short term (1-3 yrs)** **MT = Mid term (4–10 yrs)** **LT = Long Term (10+ yrs)** **OG =ongoing**	**Partners**	**Lead Agencies**
Policy 3.2.1 Promptly **PROVIDE UPDATES** to land use regulations, plans, and building codes in response to new (mandatory) legislative requirements							
3.2.1a Track mandatory code updates and work with advisory committees to incorporate those changes into the Development Code	X				LT	Fire Departments and Fire Districts Fire Marshals	Benton County, Cities of Monroe, Philomath, Adair, Albany, and Corvallis
Policy 3.2.2 **REVIEW AND EVALUATE** the potential of **INCORPORATING VOLUNTARY LEGISLATIVE CHANGES** furthering fire preparedness into land use regulations, plans, and building codes							
3.2.2a Review and develop recommendations for requiring the use of structural fire resistant materials within the WUI	X		X		MT	Fire Departments and Fire Districts Fire Marshals	Benton County, Cities of Monroe, Philomath, Adair, Albany, and Corvallis
3.2.2b Evaluate the possibility of requiring defensible space around all dwellings in the WUI	X		X		MT	Fire Departments and Fire Districts Fire Marshals	Benton County, Cities of Monroe, Philomath, Adair, Albany, and Corvallis
3.2.2c Analyze the potential for adopting rules to constrain expansion of WUI zones	X		X		LT	Fire Departments and Fire Districts Fire Marshals	Benton County, Cities of Monroe, Philomath, Adair, Albany, and Corvallis

Policy							
Strategies	**Preparedness**	**Response**	**Mitigation**	**Recovery**	**Status/Timeline** **ST = Short term (1-3 yrs)** **MT = Mid term (4–10 yrs)** **LT = Long Term (10+ yrs)** **OG =ongoing**	**Partners**	**Lead Agencies**
3.2.2d Evaluate requiring any new construction utilizing county and city funds to create defensible space and use fire resistant construction materials; implement if feasible	X		X		MT	Fire Departments and Fire Districts Fire Marshals	Benton County, Cities of Monroe, Philomath, Adair, Albany, and Corvallis
Policy 3.2.3 **Review the BENTON COUNTY DEVELOPMENT CODE and other local development policies or regulations and EVALUATE THE POTENTIAL OF INCORPORATING STRICTER RULES**							
3.2.3a Exercise planning oversight over egress/ingress	X				MT	Fire Departments and Fire Districts Fire Marshals	Benton County, Cities of Monroe, Philomath, Adair, Albany, and Corvallis
3.2.3b Incorporate multiple egress requirements in series partitions and subdivisions	X				MT	Fire Departments and Fire Districts Fire Marshals	Benton County, Cities of Monroe, Philomath, Adair, Albany, and Corvallis

Projects Table

Please see **Appendix G,** which is an Excel Workbook outlining the list of projects.

CHAPTER 5 CHANGING DYNAMICS

Historic Wildfire Conditions in Oregon

Wildfires are nothing new in Oregon's history, whether it is the Bandon Fire of 1936 or the four Tillamook Burns between 1933 and 1951. The largest wildfires in Oregon's recent history are believed to have taken place in the 1800s. The Silverton Fire of 1865 is listed as Oregon's largest fire at over 900,000 acres. Several other fires apparently reached 400,000 to 800,000 acres in those early days, though accurate mapping is limited.

The era of giant fires started coming to an end with the creation of the Forest Service and Oregon Department of Forestry, which actuated almost a century of aggressive suppression. However, putting out every fire led to a buildup of fuels in the forest that, combined with rising temperatures, has led to the return of megafires in Oregon beginning with the 2002 Biscuit fire (500,000 acres) in Southern Oregon and B&B Complex (90,000 acres) on Santiam Pass.

In the decade before Biscuit and B&B — from 1992 to 2001 — Oregon wildfires burned an average of 198,000 acres per year, according to the Northwest Interagency Coordination Center. In the years from 2002 through 2010, the number jumped to an average 438,616 acres burned each year. In the decade from 2011 through 2020, the number jumps higher to an average 713,438 acres burned each year.

In addition, the fires have become increasingly dangerous. While Oregon was sparsely populated back in the 1800s, the situation has changed, with Oregon's fast-growing population pushing into the WUI. This places more structures, infrastructure, people, and domesticated animals in harm's way.

Summary of Acres Burned in Oregon since 2002[27]

YEAR	ACRES BURNED
2002	1,109,512
2003	262,677
2004	170,100
2005	289,146
2006	661,819
2007	758,922
2008	252,671
2009	231,322
2010	208,447
Total	3,944,616
Average of 2003 through 2012	438,291

YEAR	ACRES BURNED
2011	359,567
2012	1,316,887
2013	425,470
2014	1,073,516
2015	773,782
2016	303,951
2017	762,597
2018	897,262
2019	79,732
2020	1,141,612
2021	828,778
Total	7,963,154
Average of 2011 through 2020	723,923

[27] Assembled from annual Wildland Fire Summaries reports by the National Interagency Fire Center

Oregon's ecosystems and their diversity are among the state's most remarkable features. Wildfires and anthropogenic fires have always been part of these forests, rangelands and grasslands.

- Low-intensity fires were historically frequent in dry interior Oregon forests, and were key to maintaining wildfire resilience, forest structure and ecosystem health.
- Wildfires were typically much less frequent, but much more intense in western Oregon and coastal conifer forests, while burning by Indigenous peoples tends toward higher frequency and lower intensity in grasslands, woodlands, and savannas.

Ecologists estimate that prior to Euro-American settlement large, stand-replacing crown fires burned Pacific Northwest coastal forests every 200-500 years. Smaller surface fires revisited dry interior forests as often as every 4-20 years. West-side Cascade wildfire intervals and intensity fell somewhere in the range between.

Grasslands such as those found in the Willamette Valley were characterized by frequent, low-intensity fires ignited by Indigenous peoples. These historical surface fires were quite extensive, burning in late summer and early fall. These low-intensity fires:

- cultivated and maintained cultural resources such as camas and tarweed.
- reduced hazardous fuels.
- promoted regeneration of fire-tolerant and dependent species such as Oregon white oak and Ponderosa pine.
- maintained open, park-like savanna characterized by larger, fire resistant trees.
- cycled nutrients back into the soil.
- decreased disease and insect impacts.
- provided habitats for wildlife species.

In western Oregon forested ecosystems, historical fire intervals are often long enough that some forests are still within their historical range of variability for wildfire. Due to the interactive influence of Indigenous burning and wildfires caused by lightning, there is a high degree of variability of vegetation and historic fire return intervals based on aspect, elevation, and soil type.

Research[28] findings over the last 10 years reveal the following:

- The total area burned annually by wildfire in the United States has increased since the 1980s. Nine of the 10 years with the most acreage burned have occurred since 2000, including the peak year of 2015. While there is a trend of increasing acreage burned, there is no clear trend in wildfire frequency.
- Since the 1980s, the number and size of large (>1,000 acres) wildfires and the total area burned in the western United States has increased. These trends are found in most, but not all, western U.S. ecoregions and states, including Oregon. Across the West, fire seasons have started earlier and lasted longer during the year.

[28] Fire FAQs—Have the size and severity of forest wildfires increased in Oregon and across the West? Max Bennett, Stephen A. Fitzgerald, Daniel Leavell, Carrie Berger Oregon State University Extension, EM 9194, Revised October 2018, https://catalog.extension.oregonstate.edu/em9194

- Very large fires (also called “megafires”) represent a small number of the total fires but comprise most of the area burned. For example, from 1970 to 2002 on U.S. Forest Service lands, 1.1 percent of all fires burned 97.5 percent of total area. During this same period, firefighters successfully extinguished 97 to 99 percent of all wildfires on Forest Service lands while they were still small (<300 acres).
- Trends in fire severity[29] vary by region, vegetation type, and historical fire regime (the spatial pattern, intensity, and frequency of occurrence in which fires naturally occur over time in a particular region). Historically, frequent fire limited fuel buildup in these forests, but decades of fire exclusion (and in some areas, poor management) have resulted in large fuel accumulations. Widespread and intense drought stress also has increased tree mortality in some dry forests, leading to higher dead fuel loads and drier surface conditions.
- In the Pacific Northwest, the proportion of fire burning at any severity level does not appear to have changed from 1985 to 2010. During this period, wildfires in both moist and dry forests have typically included a mix of low-, moderate-, and high-severity fire. In moist forests that historically experienced high-severity fire, high-severity fire accounted for about 45 percent of the acres burned in the 1985–2010 period, with most of the high-severity fire occurring in patches of over 250 acres. In dry forests that historically experienced low- and moderate-severity fire, these severity levels accounted for roughly 75 percent of the acres burned during the 1985–2010 period. However, the proportion of high-severity fire, about 25 percent, and the size of high-severity patches were greater than would be expected in a low-severity fire regime, suggesting that dry forests have departed from historical patterns of burn severity.

Why wildfires have gotten worse

Management

The combination of how people have managed forested areas over the past 150+ years and climate change have resulted in the major wildfires today, and a lot of these habits could have been avoided. People need to change their way of life and the actions they take in terms of fire prevention to see a difference in fire severity in the future.

The Indigenous people of the Pacific Northwest shaped their lands with many intentional practices long before settlers came to the continent. One of the most important was controlled burning, which cleared areas of crowded trees, undergrowth, and pests, making space for new growth and wildlife. Indigenous burning has historically been the primary mechanism of fire management in and around human communities. Colonial settler habits, such as livestock grazing and land clearing for agriculture provided barriers to how far a fire could burn before running out of fuel. However, settlement and disease upended Indigenous populations and culture, stifling these practices. For hundreds of years after, fire suppression became the favored means of management, which brought back woods dense with fuels and higher wildfire risks.

[29] What is fire severity? Fire severity refers to the effects of a fire on the environment, focusing on the loss of vegetation and impacts on soils.

Low severity: <25 percent of overstory trees are killed, limited effects on soils
Moderate severity: 25–75 percent of overstory trees killed and/or moderate effects on soils
High severity: >75 percent of overstory trees killed and/or extensive mineral soil exposure

As large timber was removed during World War II in the Pacific Northwest, smaller trees began to grow in and crowd forest areas. As firefighters encouraged fire suppression by fighting wildfires yearly, more undergrowth was being developed and trees began filling in and growing to touch each other. Although wildfire fighting is not a negative act and has been crucial to saving large areas of land and the lives of many people, this suppression of the fire is an ultimate cause as to why the fires are worsening over time. Although not as obvious, by saving forests over time, humans have created perfect conditions for the spread of mega fires. This protective action results in the landscape having way more trees than the forest floor can handle. With this, as well as other major factors such as diseases killing forests and climate change, it is predicted that the area burned since 2000 could double or triple in decades to come.

Population Increase

Even with such danger in place, the way in which people have situated their homesites as the general population of Oregon has increased has become very problematic. Thousands have built homes and communities in zones full of vegetation that have the potential to be a part of some of the largest wildfires in the area. As seen during the 2020 wildfire season, this caused near total losses of towns such as Talent, Vida, and Detroit, and risks major displacement of even larger towns and cities in the future. This scenario makes population growth in the WUI an environmental issue.

Because conditions have worsened so much in just the past century, many who recently have settled in Oregon and the rest of the Northwest did not understand the risk they were putting themselves into in regard to wildfires. This can similarly be related to the risk that millions have unwillingly put themselves into by living near the Cascadia Subduction zone. The love and protection of the forests in Oregon has allowed for massive forest growth, which is perfect grounds for fires to break out. As humans build individual homes and communities within these beautiful, wooded areas, they are placing themselves in danger's way without realizing how much of a risk there is to their economic well-being, property safety, and health.

Weather and Climate Change

Weather conditions contribute significantly to determining fire behavior. Wind, moisture, temperature, and relative humidity ultimately determine the rates at which fuels dry and vegetation cures, and whether fuel conditions become dry enough to sustain ignition. Once conditions can sustain a fire, atmospheric stability and wind speed and direction can have significant effects on fire behavior. Winds increase airflow, adding more oxygen to fires, allowing them to burn hotter and increasing the rate at which fire spreads across the landscape.

Additionally, the effects of climate change have begun to become apparent in the local fire season[30]. Trends have shown rising temperatures throughout the year are causing the fire season to

[30] Fire season is defined under ORS 477.505

(1) "When conditions of fire hazard exist in a forest protection district or any part thereof, the state forester may designate for that district or any part thereof the date of the beginning of a fire season for that year. The fire season shall continue for that district or part thereof until ended by order of the state forester when conditions of fire hazard no longer exist in that district or part thereof."

(2) "The state forester may, during the same year and for the same district under circumstances similar to those described in subsection (1) of this section, designate one or more subsequent fire seasons."

The State Forester designates a representative for each district to decide when to go into fire season. The district foresters jointly decide with their neighboring districts when to declare fire season based on several factors, most importantly fuel moistures. When fuel moistures become low enough they constitute "conditions of fire hazard". Also considered is expected weather patterns.

begin earlier, and persist longer, with more extreme high temperatures and extreme low humidity measurements. This shift allows fuels to cure[31] for longer periods throughout the summer months and increases periods of "High" fire danger and "Extreme" fire danger during the fire season.

Climate changes are already visible in Oregon, resulting in:

- *Higher Summer Temperatures.* Higher summer temperatures and earlier spring snowmelt are increasing the risk and workload to suppress forest fires.

  [32]Oregon is projected to warm by 4-9 degrees (F) by 2100, with the amount depending, in part, on whether global emissions can be curtailed or follow the current path. The number of days with temperatures higher than 86 degrees in many Oregon locations – excluding the cooler mountains and the coast – are expected to increase by 30 days a year by mid-century.

  By 2100, the Willamette River Basin is projected to be between 1° C (2° F) and 7° C (13° F) warmer than today. This conclusion is based on two greenhouse gas (GHG) concentration pathways, also called emissions scenarios, with output from 20 global climate models.

  - Warming from increasing anthropogenic GHG concentrations dominates the long-term variability in temperature. Projected temperature increases on the decadal scale (or decades-long scale) exceed natural variability such that the Willamette River Basin does not experience the climate of the latter 20th century during any decade from the present through 2100 (and beyond).
  - The summer months of July through September, already the warmest months of the year, are projected to warm most under climate change, by about 2° C °(3.6° F) more than in winter.

- *Declining Winter Snowpack.* Increasing temperatures are affecting the form of precipitation, and therefore Oregon's mountain snowpack. This is altering the timing, duration, volume, and quality of water runoff throughout the state. As mean annual temperature increases, the percentage of precipitation that falls as rain instead of snow will increase. Oregon is classified as 75 percent mixed-rain-and-snow for the twentieth century climate. By 2080, all of Oregon, except for parts of the Blue Mountains, is projected to become rain-dominant.[33] Annual precipitation is not projected to change significantly, but more will fall as rain instead of snow.

  - Most climate scenarios show a general trend of wetter winters and drier summers in the Willamette River Basin. However, unlike with temperature projections that uniformly show temperatures will rise, climate models do not unanimously simulate either a drier or a wetter future.

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[31] Drying and browning of herbaceous vegetation due to mortality or senescence, and also loss of live fuel moisture content of woody fuel following mechanically-caused mortality (e.g., woody debris slash. From the Glossary of Wildland Fire Terminology, National Wildfire Coordinating Group, 2008

[32] ABOUT WW2100 MODELING SCENARIOS The Willamette Water 2100 project modeled 22 scenarios, a reference or base case, and a suite of alternative scenarios. The Reference Case scenario represents future conditions in the Willamette River Basin, under expected trends in population and income growth, existing policies and institutions, and a mid-range climate change projection. A suite of 18 alternative scenarios explore the influence of a single model driver or policy setting at a time. They each vary a single element or assumption from the Reference Case. Three alternative scenarios vary multiple scenario elements from the Reference Case and represent plausible thematic narratives such as "Extreme" or "Worst Case." Refer to the scenarios page for a detailed description of the WW2100 modeling scenarios, their purpose, and their assumptions. https://inr.oregonstate.edu/ww2100

[33] Oregon's 2017 Integrated Water Resource Strategy

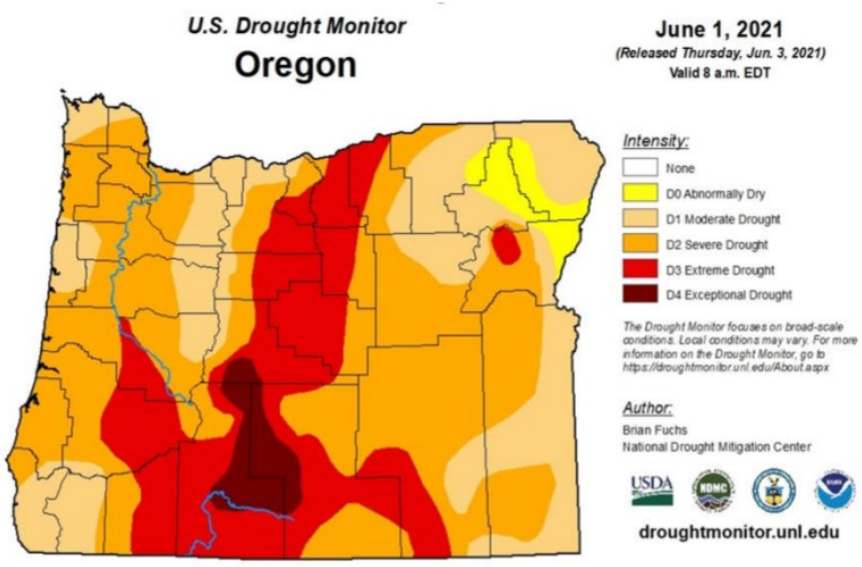
- Increases in winter precipitation stem mainly from heavier precipitation during wet periods, not an increase in the frequency of precipitation.
- Natural variability will remain large relative to the greenhouse gas response, even at the decadal scale, so that yearly and decadal precipitation both above and below the historical averages should still be expected.
- Sub-basins with little snow currently, such as Middle Willamette, are projected to receive virtually no snow in the future. The small projected increases in total winter precipitation provide little offset to the loss in snow due to projected warming
- For every 1° C (~2° F) increase in annual mean temperature, there is a roughly 15 percent decrease in summer flow in the lower Willamette River Basin. However, as temperatures get significantly higher than the historical average, the spring snowpack is essentially absent. Thus, additional temperature increases have only a marginal effect on streamflow.

As of early June 2021, nearly all mountain snowpack had melted, with the exceptions of the volcanic peaks in the Cascades. Snow melted in April and May 2021 at a high rate that exceeded historical melt rates at most locations. The peak seasonal snowpack occurred in March 2021 and was below average for the southern half of the state and near to above average for the northern half.

- *Increased Occurrence of Drought.* Drought is not an abnormal occurrence in Oregon, with notable recorded droughts since the 1930s. In 2015, the state had recorded its warmest year and experienced the lowest snowpack on record. Dry conditions in May through July 2017 were the fifth-warmest on record in 123 years, contributing to an intense wildlife season across the state.

  The term “drought” is applied to a period in which an unusual scarcity of rain causes a serious hydrological imbalance. Unusually dry winters, or significantly, less rainfall than normal, can lead to relatively drier conditions, and leave reservoirs and water tables lower. Drought leads to problems with irrigation, and may contribute to additional fires, or additional difficulties in fighting fires. Most fuel types (not including grasses), however, require two or three years of drought before the fuel becomes dangerously dry. Drought contributes to the frequency and intensity of fires.

  The year of 2021 may prove to break all records. Precipitation for the 2021 water year (Oct 1, 2020 through June 2, 2021) ranges from 40 to 85 percent of average in Oregon. The sum of March through May precipitation resulted in the driest spring on record for much of western and north-central Oregon.



The Changing Wildfire Environment

Longer Fire Seasons[34]

Oregon's fire seasons have become longer, more severe and increasingly complex, impacting agencies' ability to respond to the wildfire workload and sustain core agency businesses while proactively protecting Oregonians, forests and communities from wildfire. In the Pacific Northwest, the length of fire seasons in the 1970s used to be 23 days. The ten-year average is now approximately 102 days.

Table 3.2 - Increase in length of fire season[35] 2011-2020 (10-year average: 101.5 days fire season in effect)

Year	Fire Season start date	Fire Season end date	Length (days)
2011	7/11	10/3	84
2012	7/11	10/16	97
2013	7/2	9/25	85
2014	7/1	10/14	105
2015	6/16	10/26	132
2016	7/5	10/4	91
2017	7/3	10/11	100
2018	6/21	10/29	130
2019	6/17	9/18	93
2020	7/6	10/12	98
2021	6/16	10/5	111
2022	7/6	10/23	110

[34] From the 2019-21 Governor's Budget, Oregon Department of Forestry, Agency Summary Narrative

[35] It is important to keep in mind that these data are for Oregon Department of Forestry declared fire season and does not include all dates/restrictions covered by local fire departments or areas where federal agencies (specifically the U.S. Forest Service) have fire suppression responsibility. However, for Benton County, lands protected by Oregon Department of Forestry include about 69% of the entire county, the majority of wildlands.

Increased Wildfire Complexity

In Oregon, acres across all ownerships burned by wildfire are on the rise, increasing from a 10-year average of 156,000 acres burned during the 2000s to 452,000 acres burned in the 2010s. This trend is occurring nationally. Catastrophic wildfires cause significant public safety concerns. During the 2017 fire season, over 10,000 Oregonians were evacuated from their homes and unhealthy air quality conditions persisted across much of the state. This occurred again in 2020[36] when severe drought, extreme winds and multiple ignitions fueled the most destructive wildfires in state history. Roughly, 1.07 million acres burned during the 2020 season, the second most on record.

The most striking thing from the 2020 fires was the number of homes lost. From 2015 to 2019, which included major wildfire years, Oregon lost a combined 93 homes, according to the Northwest Interagency Coordination Center. In 2020, 4,021 homes burned down.

Homes destroyed by wildfire:

2020: 4,021

2019: 2

2018: 14

2017: 16

2016: 1

2015: 60

Whether ignited by downed power lines, arson or the explosive spread of active wildfires, flames ripped through a number of Oregon towns from Sept. 7 to 9, 2020. From the Santiam Canyon to Southern Oregon, the Oregon Coast to the Clackamas River, the damage was widespread across the state's west side. In the past, Oregon's largest wildfires stayed mostly in remote forest or grassland. In 2012, for example, 1.2 million acres burned in Oregon — the most in state history - but the large number was fueled by giant grass fires in remote parts of the state where few people live.

In addition to the increased risk for causing wildfires, the presence of dwellings can significantly alter fire control strategies and can increase the cost of wildfire protection by 50 to 95 percent. In order to protect dwellings, firefighters must devote manpower and resources to activities like establishing fire perimeters, conducting burnouts around structures and addressing combustible materials commonly found around residential structures – like gas, propane and electrical lines. Isolated rural dwellings particularly increase suppression costs. The incremental cost of protecting two homes instead of one within six miles of a wildfire is estimated to be over $31,000. For comparison, the incremental cost of protecting 100 homes instead of 99 homes within six miles of wildfire is estimated at $319.

Greater Wildfire Smoke Impacts

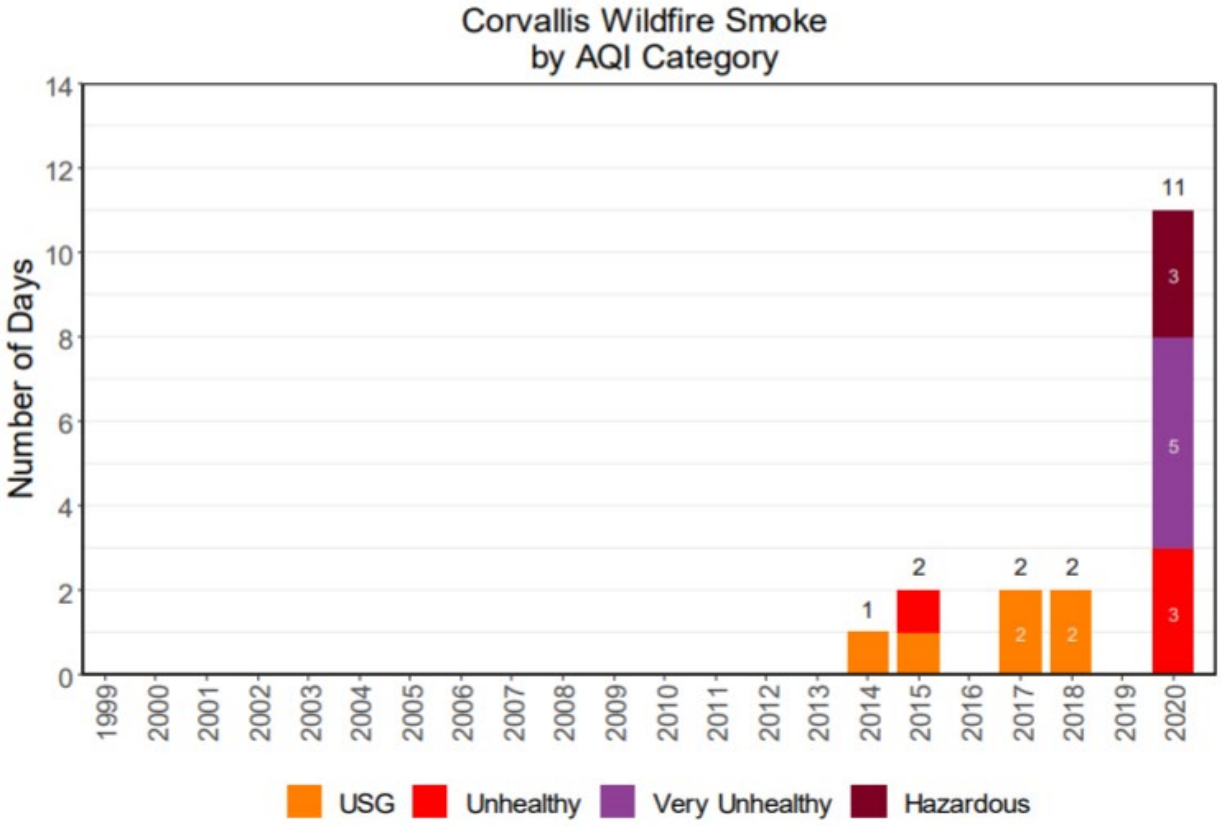
Wildfire smoke significantly imperils public health. Wildfire smoke emits a wide variety of pollutants measured as particulate matter (PM2.5 and PM10), black carbon, nitrogen dioxide, carbon

[36] Zach Urness, Salem Statesman Journal Oct. 30, 2020

monoxide, volatile organic compounds, polycyclic aromatic hydrocarbons and metals. According to the Oregon Health Authority's publication, Wildfire Smoke and Your Health, of these pollutants, PM2.5 may represent the greatest health concern since it can be inhaled deeply into the lungs and a fraction may even reach the bloodstream. Volatile organic compounds can cause early symptoms such as watery eyes, respiratory tract irritation and headaches. Higher levels of ozone (smog) can also be formed from an increase in the precursor pollutants: nitrogen dioxide and volatile organic compounds.

Wildfire smoke impacts are increasing across the state. There are more Unhealthy for Sensitive Groups, Unhealthy, Very Unhealthy and Hazardous (≥USG) days per year and more years with at least one ≥USG event. The most significant air quality impacts from fires are in Southern Oregon. Eastern Oregon is also experiencing more ≥USG than in the past. Portland did not experience smoke impacts at all from 1985 until 2015, and then four out of the next six years had smoke impacts.

The 2020 wildfire season was shorter than past years but far more intense. Oregon experienced some of the highest PM2.5 concentrations on record with historic wildfires in the Cascades. In particular, the Willamette Valley and Portland had several days in the hazardous health category for the first time. For at least a week in September, unhealthy to hazardous Air Quality Index (AQI) levels were present across the west side of the state. The graph below shows the number of days with an Air Quality Index (EPA) ≥ USG for Corvallis since 1999.



Increased Suppression and Other Costs

Commensurate with increased occurrence, complexity and numbers of acres burned, fire suppression costs are increasing. According to the Oregon Department of Forestry, the agency's 10-

year average of suppression costs more than doubled over the past decade with gross large fire costs of $8 million to over $34 million. The 2013 season had been the costliest season ever, with costs rising over $120 million and the most acres burned since 1951. This was eclipsed by the cost to fight the 2020 fires— $354 million. The increase is due to factors such as rising fire equipment and resource costs as well as climate conditions, contraction in forest-sector industries that are important on-the-ground partners in fire protection, fuel buildup, and the higher cost and complexity of providing fire protection in the growing WUI.

The 2020 wildfires constituted the biggest and most expensive disasters in Oregon history. The current total cost for debris cleanup — which includes hazard trees, ash, and debris— is estimated at $622 million. Debris and hazardous materials have left entire communities with overwhelming wreckage.

2020 Fires Summary[37]

In 2020, wildfires in Oregon burned more than 1.2 million acres statewide, with some of the largest and most devastating fires worsened by a severe windstorm on Labor Day that spanned eight counties (Clackamas, Douglas, Jackson, Klamath, Lane, Lincoln, Linn, and Marion). Taken together, these fires destroyed more than 5,000 homes and commercial structures, took the lives of nine Oregonians, and displaced thousands of Oregonians. What makes 2020 fires different is the fact that they were much closer to cities and towns than in recent years.

The impact to communities across the state was devastating. Entire communities were wiped out and Oregonians were left without homes, jobs, or even local businesses. With over a million acres burned and thousands of homes and businesses destroyed, the impacts of the 2020 wildfire season on jobs and local economies will last for months and years to come.

Based on a Preliminary Damage Assessment (PDA) conducted by FEMA, the Oregon Office of Emergency Management (OEM), and other state agencies and local governments, the state estimates a total cost of $1.15 billion in wildfire/wind damage, response costs, and debris removal.

The economic destruction was also significant. Many people were displaced, including a large population of undocumented workers with limited English proficiency. Businesses that employed thousands of Oregonians were wiped out, leaving some Oregonians unemployed. Private industry structures including restaurants, shops, grocery stores, and other businesses were destroyed.

Beyond the urban destruction, the flames destroyed the livelihoods of Indigenous peoples. The impact of the increasingly intense fires around the U.S. West is felt directly by Indigenous communities, who have managed the land for millennia. Fires burned Tribal reservations and sacred lands and areas used under treaty rights, destroying hunting, fishing, and gathering territory. This is a result of the suppression of traditional forest management techniques.

[37] Recovering & Rebuilding From Oregon's 2020 Wildfires, Report Presented by the Governor's Wildfire Economic Recovery Council, January 4, 2021 https://www.oregon.gov/gov/policy/Documents/WERC-2020/Wildfire%20Report%20FINAL.pdf

9	1.2 million	4,021	1,193	2,100	$1.15 billion	$32.2 million
Lives lost[1]	Acres of land burned	Homes or housing structures destroyed[2]	Structures destroyed	People sought sheltered	Estimated cost of wildfire response[3]	FEMA Individual Assistance payments to Oregonians (as of January 5, 2021)

[1] *The statewide reported number, in accordance with the State Medical Examiner.*
[2] *Number of homes destroyed statewide, across all fires and all eight affected counties. Over half of the homes destroyed statewide were in Jackson County. 1,600-1,700 manufactured homes were lost, with the vast majority in Jackson County.*
[3] *Estimates are based on initial assessments from local and state agencies conducted in October of 2020 and consider response and emergency protective measures. These estimates also reflect costs to repair and/or replace damaged public infrastructure to pre-disaster condition. In addition, these costs are likely to be eligible for partial reimbursement through the FEMA Public Assistance grant program. All cost share calculations are based on the current 75/25% cost share available through FEMA Public Assistance. Once the minimum obligation threshold of $570 million is reached, there is a potential for an increase in federal cost share to 90/10%. The non-federal cost share can be met through state or local funding, or a combination of the two. Estimates do not include damaged/destroyed privately-owned infrastructure, property or economic losses.*

Solutions

By implementing the idea of patchwork back into the natural landscape of Oregon and the rest of the Pacific Northwest, any natural occurring wildfire would be limited in size and would not reach the "mega fire size" like the many that happened in 2020. Although it sounds counterintuitive, by letting the forest burn with managed wildfires, performing prescribed burns, and performing other mechanical thinning techniques, hazardous fuels can be reduced. Performing these techniques near urban areas close to wildfire prone forests can save mass displacement from occurring, which would be a huge turning point in the safety of thousands.

Prescribed burning is an idea that has been researched thoroughly for many years and is a common management tool used worldwide for the prevention of wildfires and the reduction of risk to the biodiversity loss. Prescribed burns are conducted according to state regulations set forth under the Clean Air Act to limit negative impacts to human health and are very beneficial to limiting the effects of wildfire. Regulatory compliance is required in order for prescribed burning to occur, and generally involves working through ODF and DEQ. Understanding what tools are needed to be effective with these burnings and knowing how often to complete them is important.

Benton County Fires

The Timberhill Fire

The Timberhill Fire was reported on Friday, September 5, 2014, at 8:34 pm, in conditions typical of Fire Season in Benton County: the weather was hot and dry, the temperature was 81°F, relative humidity was 19% and winds were 12-19 mph NNW.

The fire started as the result of human activity in dry grass in the Timberhill Natural Area in North Corvallis, about 250 yards east-northeast of the intersection of 29th Street and Bunting Drive. The Timberhill Natural Area is comprised of open meadows with tall grasses, scattered stands of oak, hawthorn, and fir trees, and associated woody brush such as blackberry. The natural area is surrounded on all sides by residential neighborhoods, with homes numbering in the hundreds.

Due to the hot weather, strong winds, and low humidity, the fire rapidly grew to 87 acres, and prompted evacuations of 221 residences. The fire burned in Corvallis City Limits, across six different properties and, fortunately, only one structure was damaged.

Fire crews swiftly responded with 35 engines, 1 dozer, a five-person hand crew, and numerous overhead and fire supervisors. Responding were engines from 15 fire departments: Corvallis, Oregon Dept. of Forestry, Philomath, Monroe, Kings Valley, Alsea, Adair, Polk County #1, Junction City, Albany, Lebanon, Tangent, Halsey, Shedd, Brownsville, and Scio, as well as the Corvallis Police Department, the Benton County Sheriff, and the REACH helicopter.

The Timberhill Fire cost more than $72,000.00 to suppress and was not declared out until September 13, 2014.

Local Wildfires Statistics

The Oregon Department of Forestry has been keeping track of fires in Benton County since 1960. The Timberhill Fire (identified as the Chip Ross Fire in the next table) was the largest fire to burn in Benton County since 1960, but it was not the only one. Fires occur yearly, but they have usually been put out when still small. National statistics indicate that more than 95% percent of wildfires are contained in the first 24 hours of initial response, meaning tens of thousands of fires are extinguished before becoming large wildfires. This percentage has been surpassed by the emergency response personnel in Benton County. The table below is a summary of the full table contained in ***Appendix E***. The summary table below shows all fires that were 10 acres or greater; none of the fires in Benton County reached the size considered large[38] by the US Forest Service.

Only 10% of the total fires (619) listed in the full table were directly attributed to a natural cause, lightening; 8.9% are listed as miscellaneous with no explanation as to what this includes. The remainder were attributed to smoking (12%), recreational use (9.4%), the railroad (3.2%), juveniles (2.7%), equipment use (20.5%), debris burning (28.8%), and arson (2.7%). Nationally on average, human-caused wildfires make up 87% of all wildfire occurrences annually. Many of these wildfires occur in proximity to roadways, communities and recreational areas, posing considerable threat to public safety.

Fire Year	Fire Number	Fire Name	*Fuel Model	Report Date	General Cause	Total Acres
2016	4	Coon Rd Fire	A	8/4/2016 17:50	Equipment Use	29.50
2016	18	Lasky Powerline Fire	L	8/29/2016 11:30	Debris Burning	11.56
2015	9	Hoskins Field	A	7/30/2015 12:57	Equipment Use	17.00
2014	16	Chip Ross Fire	L	9/5/2014 20:35	Juveniles	86.00
2013	33	Honey Grove Hobbit	J	4/25/2013 15:05	Miscellaneous	24.90
2009	2	Tum Tum Central	J	7/24/2009 15:50	Equipment Use	34.00
2002	28	Fort Hoskins	F	9/4/2002 16:01	Equipment Use	23.17
2002	47	Fuller Creek	F	6/12/2002 13:45	Debris Burning	69.00
2002	57	Denzer Bridge	J	11/4/2002 15:00	Arson	25.30
2001	38	Laskey Creek	L	3/22/2001 15:55	Debris Burning	65.00
1988	P36	88551P36	J	9/8/1988 12:45	Arson	30.00
1988	P48	88551P48	L	10/22/1988 14:30	Miscellaneous	21.00
1988	P52	88551P52	I	12/16/1988 12:00	Debris Burning	79.00
1987	103	87551103	H	8/27/1987 12:00	Smoking	12.00
1985	P17	85551P17	H	5/16/1985 12:00	Debris Burning	10.00
1984	P07	84551P07	J	8/28/1984 17:10	Debris Burning	18.00
1983	P06	83551P06	J	5/27/1983 11:00	Debris Burning	26.00

[38] **Large Fire**: 1) For statistical purposes, a fire burning more than a specified area of land e.g., 300 acres. 2) A fire burning with a size and intensity such that its behavior is determined by interaction between its own convection column and weather conditions above the surface.

1981	110	81551110	X	9/11/1981 16:40	Equipment Use	35.00
1977	117	77551117	X	9/7/1977 17:20	Debris Burning	25.00
1977	P20	77551P20	X	4/5/1977 20:10	Debris Burning	10.00
1976	P15	76551P15	X	9/8/1976 15:50	Juveniles	45.00
1974	100	74551100	F	10/9/1974 16:30	Debris Burning	13.00
1973	18	73551018	X	8/8/1973 16:19	Equipment Use	42.00
1972	18	72551018	X	8/10/1972 14:54	Miscellaneous	56.00
1972	38	72551038	G	10/4/1972 13:45	Debris Burning	23.00
1970	47	70551047	X	8/19/1970 9:00	Debris Burning	10.00
1970	62	70551062	F	9/12/1970 17:00	Miscellaneous	15.00
1965	44	65551044	X	3/6/1965 14:00	Debris Burning	50.00
1965	46	65551046	X	3/10/1965 13:00	Debris Burning	15.00
1964	3	64551003	X	5/24/1964 8:00	Debris Burning	49.00
1964	26	64551026	X	9/5/1964 14:00	Debris Burning	35.00
1962	115	62551115	X	8/20/1962 15:00	Debris Burning	65.00
1962	117	62551117	X	8/24/1962 12:00	Smoking	22.00
1962	121	62551121	X	8/30/1962 15:00	Juveniles	30.00
1962	124	62551124	X	9/4/1962 12:00	Smoking	12.00
1961	134	61551134	X	9/25/1961 14:00	Debris Burning	18.00
1961	137	61551137	X	10/1/1961 11:00	Smoking	40.00

***Fuel Model Key**

A	Annual grasses (cheat)	J	Slash, medium
B	Dense Chaparral	K	Slash, thinning, P.C., Scattered
C	Open pine, grass under	L	Grass Perennial
F	Dense Brush (lighter than B)	R	Hardwood, summer
G	Conifer, Old growth	T	Sagebrush, medium dense
H	Conifer, Second growth	U	Closed canopy pine
I	Slash, heavy	X	Non wildland fuel

CHAPTER 6 PARTNER AGENCIES & GROUPS

Fire protection in Benton County is the responsibility of many districts and agencies, working in coordinated partnership. Structural fire protection in the county falls to ten districts, with the benefit of mutual aid agreements among the districts. In addition, forestlands are protected by partnerships between Oregon Department of Forestry, Siuslaw National Forest, Oregon State University Research Forests, and the Western Oregon Forest Protective Association. A new partnership, the cooperation with communities that have attained Firewise Communities USA status, is described following the fire-fighting agency section. On the pages that follow, each partner's capability and current issues of concern are described.

Fire Districts

Adair Rural Fire Protection District

Albany Fire Department

Alsea Rural Fire Protection District

Blodgett-Summit Rural Fire Protection District

City of Corvallis Fire Department & Corvallis Rural Fire Protection District

Hoskins-Kings Valley Rural Fire Protection District

Monroe Rural Fire Protection District

Philomath Fire & Rescue

Other Agencies

Oregon Department of Forestry – West Oregon District

Oregon State University Extension Service and the Research Forests

Suislaw National Forest

West Oregon Forest Protective Association

Firewise Communities

Pioneer Village

Vineyard Mountain

Ridgewood Estates

Chinook

Skyline West

Wren

South Benton (Monroe)

Overview of Fire Protection System

Oregon has a Fire Service Mobilization Plan developed by the Oregon State Fire Marshal's Office and approved by the State Fire Defense Board as mandated by The Emergency Conflagration Act (ORS 476.501 to 476.610). The Plan provides an organized structure and operating guidelines for rapid deployment of Oregon's fire service forces under a common command structure. The plan establishes operating procedures for emergencies beyond the capabilities of the local fire service resources.

Mutual aid agreements are made with nearby districts and the Oregon Department of Forestry to supplement resources of a fire agency or district during a time of critical need. Mutual aid is given only when equipment and resources are available.

Oregon has a common communication channel for fire services' use during multiple-agency responder incidents. This system is called Fire NET. It utilizes a system of 23 mountain-top microwave base stations and a master control console to form a radio and telephone access communication network throughout the state.

Benton County has a 911 Emergency Communication System in place to link citizens with emergency response agencies. The system receives telephone requests for fire, medical or police services and dispatches those calls through a computer aided dispatch system to the appropriate agencies for response. Referenced in this arrangement is a rural addressing system that identifies home locations by address. Rural address numbers are displayed at the entrance to most homesites along access routes to assist in emergency response.

Fire agency personnel are often the first responders during emergencies. In addition to structural fire protection, they are called on during wildland fires, floods, landslides, and other events.

Statewide Fire Resource Mobilization

The Office of the Oregon State Fire Marshal assists and supports the Oregon fire services during major emergency operations through the Emergency Conflagration Act (ORS 476.510). The Conflagration Act was developed in 1940 as a civil defense measure and can be invoked only by the Governor. Under the Act, local firefighting forces will be mobilized when the State Fire Marshal believes that a fire is causing, or may cause, undue jeopardy to life and/or property and the Act is invoked. State funding for use of the resources is provided when the Act is invoked.

The Emergency Conflagration Act required the State Fire Marshal to prepare a plan for the most practical utilization of the state's firefighting resources in time of grave fire emergency. The resulting plan, called the Oregon Fire Service Mobilization Plan provides the organizational structure and operating guidelines for mobilization and direction of fire service forces, promotes effective communication among the fire service agencies, coordinates the efforts of the participating agencies through use of a common command structure and common terminology, and ensures prompt, accurate, and equitable apportionment of fiscal responsibility for fire suppression or other emergency response activity.

The Fire Service Mobilization Plan may be used separately from the Conflagration Act to mobilize local structural fire agencies for any emergency exceeding local mutual aid resources. However, reimbursement for responding resources is assured only when the Governor invokes the Conflagration Act.

Local Response Guide to Wildland Fire during Extreme Fire Behavior Events

The Benton County Fire Defense Board (BCFDB) recognizes that during extreme fire conditions there is a need to quickly extinguish wildland fires in the county. Fires that grow beyond local control could adversely affect all fire control agencies and quickly overwhelm countywide resources. The BCFDB recognizes the need for an aggressive initial attack, in the beginning stages of the fire, especially during extreme fire conditions. To that end, The BCFDB has developed a plan that will send a fire apparatus from each Department or District in the county on the initial dispatch. The goal is to bring multiple resources into and under local control as quickly as possible to stop a wildfire in the incipient stage.

The purpose of the response guide is to provide a reference for all agencies involved in the dispatching and mitigation of wildland fires in Benton County. The Guide does not set policy for individual agencies and is not intended to replace the decisions of the Fire Chief or Incident Commander for any event.

There are two different models utilized by the Benton County Fire Defense Board Chief to establish a high-risk response.

Model 1

If any two of the three following conditions are met, then a fire day should be in effect.

- Anytime the temperature is above 90 degrees.
- Anytime the wind velocity is above 15 miles per hour.
- Anytime the relative humidity falls below 25%.

Model 2

If the Energy Release Component is 38 or higher, then a high fire danger exists. The Burn Index can be obtained from the Oregon Department of Forestry (Philomath) by calling 541-929-3266.

It is the responsibility of the Benton County Fire Defense Board Chief to notify Dispatch when either model goes into effect. All County agencies would then respond with their pre-designated apparatus. Each agency will be responsible for assigning their apparatus and personnel for out-of-district response. The plan does not prohibit the Incident Commander on scene from ordering more resources or from canceling all or part of the responding resources.

Authority for Wildfire Emergency Evacuation

The state of Oregon has an existing authority that would authorize a city or county to designate an official or agency to order mandatory evacuations of residents and other individuals after a state of emergency is declared. An evacuation will only be ordered when necessary for public safety or for the efficient conduct of activities that minimize or mitigate the effects of the emergency. Under "home rule" provisions of the Oregon Constitution, local governments also may adopt specific ordinances ordering mandatory evacuation of an area in a fire emergency.[39]

If the Governor declares an emergency under ORS 401.165, the Governor may specifically order evacuation of persons from the area covered by the order. Sheriffs, State, or local law enforcement may carry out the Governor's orders or those authorized by local ordinances. Fire officials and firefighters would have authority to enforce the Governor's order or an emergency evacuation

[39] Oregon Revised Statutes 401.165, Declaration of state of emergency by city or county

order as detailed in Oregon Statutes[40] under the Mobilization Plan when the Conflagration Act has been invoked by the Governor.

Protecting public health and safety is a fundamental government interest which justifies summary action in emergencies. A Governor's order or local ordinance ordering evacuation is constitutional so long as the order or evacuation ordinance has a real and substantial relationship to public safety and contains an opportunity for prompt post-evacuation review of the action.

Local Firefighting Agencies

The firefighting resources and capabilities information provided in this section is a summary of information provided by the fire chiefs or representatives of the wildland firefighting agencies listed. All fire protection districts have a large number of residents in the WUI and fire risk reduction is a priority project for each one.

[40] ORS 476.510-476.610, Protection of life and property from fire in case of emergency

ADAIR RURAL FIRE PROTECTION DISTRICT

District Summary: Adair Rural Fire Protection District was founded in 1974 and encompasses Adair Village and the surrounding approximately 18 square miles. The district boundary extends from one mile south of Adair Village to the northern County line. On the east, it is bounded by the Willamette Pacific rail line, and on the west, it takes in the Tampico Road and Soap Creek Road areas.

The main fire station is located at 6021 Marcus Harris Road in Adair Village and the second station is at 37096 Soap Creek Road. Both stations have installed emergency backup generators within the past few years, and the substation has added 20K gallons of water storage.

The District responds to all types of emergencies including fire, medical, and rescue and is staffed by 13-17 volunteer firefighters. All firefighters are required to be trained to NFPA Firefighter 1 and EMS First Responder levels. The rescue squad vehicle serves as an emergency medical quick response unit and the Corvallis Fire Department ambulance provides full emergency ambulance service.

Issues of Concern: The majority of residential growth in this district is occurring within the City Limits of Adair Village. In 2010, the City annexed 127 acres, which will result in the addition of approximately 400 new homes, thus an increase in calls. Homes on acreage exist in the rural areas, with a low potential for new dwellings due to restrictive zoning. The District's primary areas of concern for wildland fire are Trillium Lane, Coffin Butte, Soap Creek, and Arboretum Roads.

Inadequate access into new and existing structures in the rural area continues to be problematic for the District, particularly the lack of standards and a maintenance program for private bridges. This issue has been mitigated to some extent by requiring 9-10K gallons of water storage for each new rural development; but the relative high cost of load-rating the bridges (~$4K/each) has proved to be a barrier.

Due to the District's reliance on volunteer help, maintaining a viable work force is a continuing challenge. New recruits are rare and the availability of daytime responders is limited. Despite obstacles, this District has progressed from ISO[41] 4 to ISO 3 in recent years.

[41] Insurance Services Office, https://www.isomitigation.com/

ALBANY FIRE DEPARTMENT

District Summary

The City of Albany Fire Department includes portions of the City located in Benton County. Protection of the rural areas of northeast Benton County is provided by the North Albany Rural Fire District and Palestine Rural Fire District under contract, a total of 26 square miles. Albany's 2015 population in Benton County was 7,286 with approximately 1,684 residents in North Albany Rural and 989 residents in Palestine Rural fire protection districts.

The Albany Fire Department operates out of five stations with the Benton County station located on Gibson Hill Rd. The Department is a career organization with 72 firefighting personnel, and 4 administrative staff that respond to emergencies in command roles. All personnel are trained for wildland response and suppression vehicles are equipped to address wildland risks.

Issues of Concern

North Albany has experienced tremendous growth in the last twenty years and continues to be one of the fastest-growing areas in Benton County. Some of the new development has taken place in areas that were previously allowed to develop with inadequate considerations for access and/or with inadequate consideration given to water availability, fire resistant construction, and other techniques that would minimize the wildland fire risks.

There is also a lack of defensible space surrounding existing structures and steep road grades that make it difficult or impossible to gain access to structures. Long narrow driveways with no turnarounds or safety zones and no alternate escape routes are also common, as well as prolonged response times due to lengthy travel distances from the closest fire station.

ALSEA RURAL FIRE PROTECTION DISTRICT

District Summary

The Alsea Rural Fire Protection District commences in the east at Marys Peak Road and Highway 34. It extends twenty-three miles to the west and terminates at Fall Creek Road. To the southwest, the District includes portions of the Alsea-Deadwood Highway into Lobster Valley. The total District coverage is approximately 88 square miles. The primary station is located in Alsea with an additional sub-station located in Lobster Valley. The District currently has 22 volunteers. The responders are on an on-call basis with the station unmanned most of the time. Building and equipment maintenance is largely provided by the volunteers.

Issues of Concern

The last two decades have seen little or no growth in the community. A number of forest-related industries, including the U.S. Forest Service Office, have closed due to economic conditions.

The original CWPP noted a need for water hydrants in a forest interface portion of the unincorporated community of Alsea, and this project was completed with Title III grant funding in 2010.

In the past five years, Alsea area residents have organized around issues of emergency preparedness and response. They have made progress in providing infrastructure and planning for natural disasters that could impact this isolated community. Recent efforts have resulted in an emergency generator for the Alsea water system, and community planning for wildfire evacuation.

BLODGETT-SUMMIT RURAL FIRE PROTECTION DISTRICT

District Summary

The Blodgett-Summit RFPD provides emergency medical and fire protection to the communities of Blodgett and Summit on the western edge of Benton County. The district covers 32 square miles and contains approximately 226 dwellings and 450 residents. Most of the area is in timber or grazing land. There are 18 miles of paved roads and 12 miles of gravel roads. The department also responds to medical emergencies in an additional 30 square miles outside of our district but within Benton County. The district includes approximately 7 miles of US Highway 20, a major transportation route between the Willamette Valley and the Central Coast and Coast Range for tourists, commerce, and commuters. The district is crossed by BPA high-voltage lines and the Willamette Pacific Railroad.

Issues of Concern

Major concerns for the District include: wildland fires, high-speed motor vehicle collisions on Highway 20, logging and farming accidents, local flooding of the Marys River, Tum Tum Creek, and Norton Creek, black ice, ice storms, and wind storms, railroad-associated fires and hazardous materials spills, suicide by young people, isolation in the event of a major earthquake, residential access issues due to narrow and long driveways and inadequate bridges, and seasonal problems with water sources. The District has two stations; a main station in Blodgett off Highway 20 and a second station located on Happy Hollow Road in Summit. There are currently 8 volunteers, and the District depends on the support of Philomath Fire and Rescue, Corvallis Fire Department, and the Oregon Department of Forestry.

CITY OF CORVALLIS FIRE DEPARTMENT & CORVALLIS RURAL FIRE PROTECTION DISTRICT

District Summary

The Corvallis Fire Department provides fire protection and prevention services to the City of Corvallis and the surrounding Rural Fire Protection District. The City is approximately 14 square miles and the rural district approximately 44 square miles in Linn and Benton Counties. Corvallis Fire Department protects the property of Oregon State University within the city and in the rural district. Corvallis Fire Department serves as the transporting Advanced Life Support (ALS) Ambulance for a 765 square mile Ambulance Service Area (ASA). The rural district stretches from the valley floor to the ridgeline of the Coast Range foothills. It is a mix of residential, cultivated agriculture, and forestlands.

Residential growth within the city has been consistent for the past several years, with primary areas of growth south, west, and north of the City. Rural district growth has been greatest in the Rural Residential zoning north of Corvallis.

Issues of Concern

Access and water supply have been topics of concern in the Corvallis district. The Skyline West area, annexed in the late 1980s, has long posed concerns for the Department: one-way-in-one-way-out access of inadequate width, and the absence of fire hydrants to serve a forested subdivision of 220 homes. In 2016 the community, with the assistance of CFD, addressed wildfire safety issues throughout the subdivision, becoming a recognized Firewise Community. A second egress route is currently in planning stages, providing emergency access to Oak Creek Drive.

Since the 2009 adoption of the original CWPP, outreach and education efforts of Oregon Department of Forestry and local fire districts have resulted in the recognition of three additional subdivisions in the Corvallis Rural Fire District as Firewise Communities: Vineyard Mountain, Ridgewood Estates, Chinook District, and Oakwood Heights.

Access and egress, which encompasses bridge and road standards, and rural water supply remain significant concerns for new and existing developments. The adoption of a WUI Code and consistent Code adoption and application statewide needs to be addressed. When providing mutual aid to surrounding jurisdictions Corvallis Fire needs to be able to continue to address normal calls for service and maintain transport ambulance availability for the Ambulance Service Area. Corvallis Fire would also like to see a renewed public education effort to inform property owners of the steps they can take to mitigate hazardous conditions on their properties.

HOSKINS-KINGS VALLEY RURAL FIRE PROTECTION DISTRICT

District Summary

The Hoskins-Kings Valley Rural Fire Protection District (HKV-RFPD) covers about 30 square miles of northwestern Benton County. The District contains approximately 175 households and a population of about 500 scattered throughout a mix of timberland and farmland. The District currently has 12 - 15 volunteers that provide a combination of fire suppression and EMS services.

Issues of Concern

The Kings Valley area is in danger of a large wildland/interface fire. There are many homes in a wildland setting and very few access points. The District is working on establishing water sites every 5 miles to provide adequate water resources throughout the entire area.

MONROE RURAL FIRE PROTECTION DISTRICT

District Summary

The Monroe Rural Fire Protection District is a combination fire department with a force of 25 - 30 volunteers and one paid position. The current population of the fire district is approximately 3,500, with the city of Monroe being approximately 850 of that total population. The District provides emergency medical services, fire protection and hazardous materials response for the communities of Monroe, Alpine, Bellfountain and a surrounding rural area of approximately 84 square miles. The fire district maintains three stations with the primary station located in Monroe, and sub-stations in the communities of Alpine and Bellfountain. The fire district maintains a continuous program of fire prevention & suppression along with medical intervention including CPR training and public education within the community.

Issues of Concern

Residential growth has been primarily outside the Monroe city limits in the rural area and is generally on 1 to 5 acre parcels. There is currently a developer in negotiations with the city to place a 250 home development within the city limits of Monroe, which would add approximately another 750 people to the total fire district population.

Within the State of Oregon, fire districts are forced to operate under tax limitation measures 5 and 47/50. These measures either limit our ability to increase the taxable income or limit our ability to increase taxable income through new tax levies. This combined with the increasing costs of fuel, vehicle replacement, maintenance, equipment, and training have made the financial aspects of running a fire district extremely challenging today and impossible in the near future.

Staffing of the fire district is another challenge, with decreasing volunteer involvement, the rise in calls for help, and financial constraints making it difficult to maintain the District's current level of service and operations standards.

PHILOMATH FIRE & RESCUE

District Summary

Philomath Fire and Rescue is a combination city and rural department consisting of seven career firefighting staff, a paid Administrative Assistant, six resident volunteers, and twenty-five volunteers. The District is 58 square miles and has a population of approximately 10,000, with a 2020 population of 5,619 within the City Limits. The district runs from the western edge of the valley floor to the foothills of the Coast Range and the district's main station is in downtown Philomath on Main Street. The District maintains two substations: one in the village of Wren on Wren Road, five miles west on US Highway 20, and one in the Inavale area on Llewellyn Road, five miles south of Philomath. Philomath Fire and Rescue responds to all hazard incidents including fire, EMS, HAZMAT, and public assistance calls as well as providing public education and Community Risk Reduction services. Philomath Fire & Rescue provides automatic aid for surrounding fire agencies including Corvallis Fire Department, Blodgett-Summit Rural Fire Protection District, Alsea Rural Fire Protection District, Monroe Fire Department, and Hoskins-Kings Valley Rural Fire Protection District. Philomath Fire & Rescue also participates in expanded mutual aid responses in Benton and Lane Counties, as well as the State of Oregon under the Conflagration Act and EMAC.

Residential growth within the City of Philomath is rising with primary areas of growth south of the City as urban residential land is becoming scarcer in Corvallis. Rural growth has been consistently increasing over the past several years as retirement homes are becoming more popular with the generational population (baby boomers).

The residential subdivision of Pioneer Village was the County's first recognized Firewise Community (2011) and continues to maintain high awareness of wildfire issues. The community of Wren is also a designated Firewise Community (2016) and has a standing Emergency Disaster Committee made up of local citizens.

Issues of Concern

Access to existing residential structures with a narrow driveway, driveways that do not support the weight of fire apparatus (particularly water tenders), and unrated bridges and culverts of questionable construction.

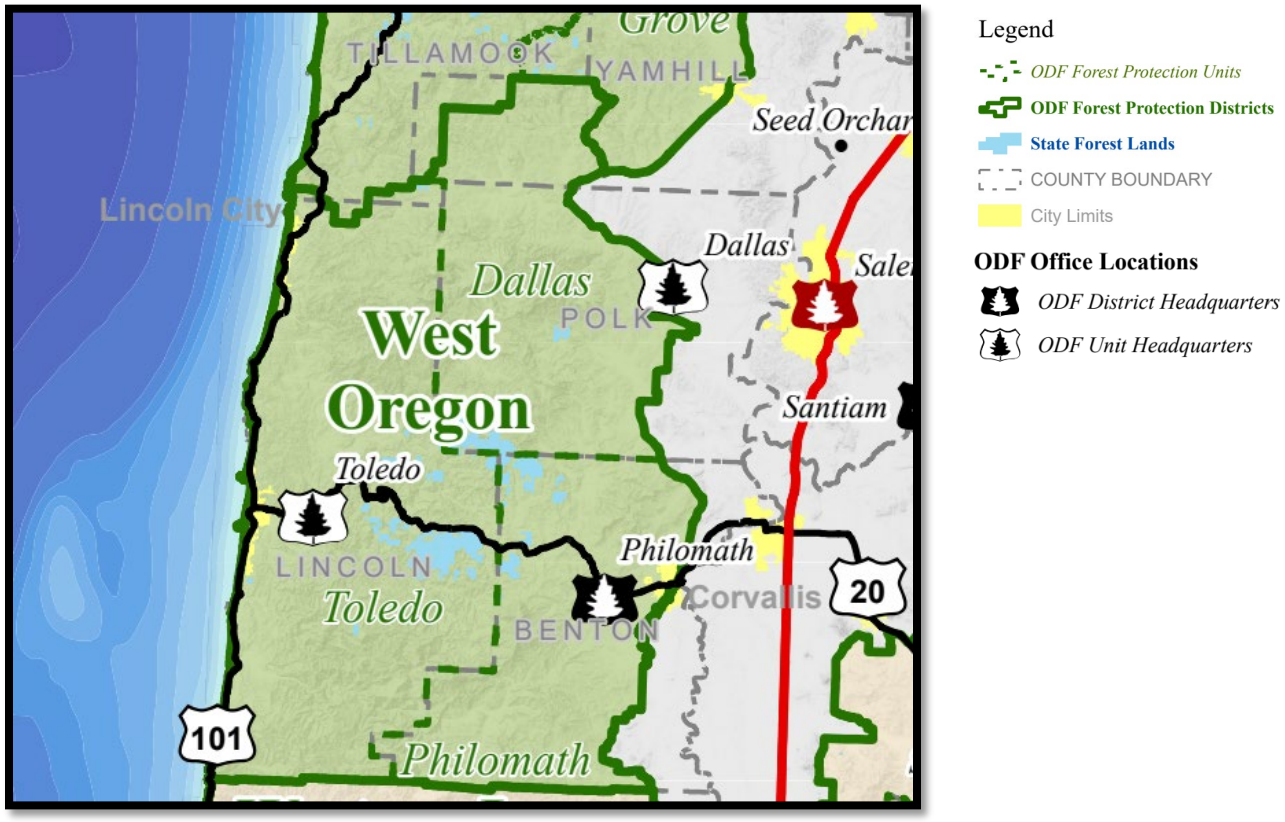
Several limited access neighborhoods exist in the Philomath District, and planning for secondary access is of high concern.

Budgeting constraints are limiting the ability to maintain resources with an ever-increasing call volume. Revenue growth lags behind wages and inflation. Like many local districts, volunteer recruitment, training, and retention are an ongoing challenge. Call volumes have increased by 35% since 2014, while Volunteer resources have decreased nearly 50% in the same period

OREGON DEPARTMENT OF FORESTRY – WEST OREGON DISTRICT

District Summary

The Oregon Department of Forestry West Oregon Forest Protection District provides forest fire prevention, detection, and suppression on approximately 1.1 million acres of forestland in portions of five counties (Benton, Lincoln, Polk, Tillamook, and Yamhill). The district has three units with a unit office located in Dallas and Toledo and the district office located in Philomath. It is one of five districts within the Northwest Oregon Area.



The West Oregon Forest Protection District provides protection to approximately 285,000 acres in Benton County. The District:

- contributes to a complete and coordinated forest protection system on a local and statewide basis;
- provides for cooperative work to public and private landowners to supplement the fire protection system;
- helps secure grant funding for wildfire risk reduction projects within the district;
- provides for environmental protection on commercial forestland through the administration of the Forest Practices Act;

- administers assistance programs to private forest landowners through the Private Forests Program;
- has two community wildfire foresters paid for by grants;
- and intensively manages 37,672 acres of State Forestland.

The Oregon Department of Forestry fights wildfires but will not provide structural protection. Dwellings located outside of a rural fire protection district and in an area covered by the Department of Forestry must be reliant upon their own preparations for wildfire by using home hardening, Firewise landscaping, and other preparations.

The district accomplishes this work with a biennial budget of approximately $10.2 million and employment of 23 permanent and 30 seasonal and temporary employees. It is the intent of the department to secure funding for a fuels reduction crew.

The district is able to cover the majority of the service area with a five-repeater radio system: Mary's Peak, Euchre Mountain, Hebo Mountain, Prairie Peak, and Laurel Mountain. The district has mutual aid agreements with all seven rural fire protection districts in Benton County as well as a closest forces agreement with the Siuslaw National Forest.

Issues of Concern

Changing weather patterns have increased the length and severity of fire season across the state. It is becoming more common for wildfires to occur before seasonal fire crews begin work in the spring, and after fire crews end in the fall. Fire suppression is more difficult due to a lack of capacity in these colder season months.

One issue of concern is the continuous need to find funding for projects or personnel through grants. The community wildfire forester positions are funded by grants, so the positions are not secure in the sense that they receive legislative budgeting. ODF sees the value in continued funding of those positions and is committed to working with partners like Benton County to help make that happen.

U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

District Summary

The Northwest Oregon District BLM manages approximately 715,000 acres with approximately 58,000 acres of BLM managed land in Benton County. The Northwest Oregon District spans 14 counties and has five Field Offices. BLM lands in Benton County are managed by the Mary's Peak and Siuslaw Field Offices.

BLM wildfire response and prevention programs in Benton County are administered through the Western Oregon Operating Plan with the Oregon Department of Forestry. This plan covers wildland fire initial attack, wildfire prevention, and public use restrictions. The plan is currently in effect until June 30th, 2024.

Issues of Concern

The BLM issues of concerns are consistent with the Siuslaw National Forest and Oregon Department of Forestry. Changing weather patterns have increased the length and severity of fire season across the state. It is becoming more common for wildfires to occur before seasonal fire crews begin work in the spring, and after fire crews end in the fall. Fire suppression is more difficult due to a lack of capacity in colder season months.

SIUSLAW NATIONAL FOREST

Forest Summary

The Siuslaw National Forest is approximately 630,000 acres. It is located along the Oregon Coast from Tillamook to Coos Bay and extends into the coast range. The Forest spans eight different counties. In Benton County, there is approximately 18,000 acres of Forest Service land.

The Forest has two districts, the Central Coast Ranger District and t he Hebo Ranger District. The Forest has fire personnel and equipment located at three Stations: Hebo, Alsea (Benton County), and Mapleton. Resources are shared as needed across the Forest and the Forest has a cooperative agreement with OREGON DEPARTMENT OF FORESTRY for initial attack.

Issues of Concern

These issues echo concerns of the Oregon Department of Forestry. Changing weather patterns have increased the length and severity of fire season across the state. It is becoming more common for wildfires to occur before seasonal fire crews begin work in the spring, and after fire crews end in the fall. Fire suppression is more difficult due to a lack of capacity in these colder season months.

OREGON STATE UNIVERSITY RESEARCH FORESTS

Forest Summary

The OSU Research Forests on the outskirts of the Corvallis community total about 11,500 acres comprised of the McDonald, Dunn and Cameron Forests. The Research Forests are used for teaching and research, income, and recreation by the community. They also provide important wildlife habitat and are the water sources of several creeks and streams. Timber is harvested on a sustainable basis and provides income to the College of Forestry to support teaching and research initiatives. The OSU Research Forests are a prime example of a sustainable "working forest." Because of their close proximity to the City of Corvallis, the Forests receive approximately 155,000 non-motorized recreation visits each year, mostly on the McDonald Forest. The Forests are surrounded by several WUI communities and subdivisions, especially around the McDonald Forest. In 2015, Vineyard Mountain Estates residents, Oregon Department of Forestry, Benton County Public Works, and the OSU Research Forest collaborated to construct an egress route for residents through the Forest from the end of Cardinal Drive.

Issues of Concern

Wildfire is a huge concern for the Research Forests because of the many long-term research projects, recreational values, and potential loss of forest cover. Currently, the Research Forests depend on the Oregon Department of Forestry for initial attack on any fires. Research Forest staff members have hand fire tools in all vehicles and are trained on how to use them, but the University possess no pumpers or other fire-fighting apparatus. Thus, Research Forest staff members provide a support role when a wildfire breaks out.

There are two major areas of concern. The first is the high population of WUI residents that surround the Research Forests. Carelessness and resultant fire starts in the WUI could readily spread into the Forests since much forested land is directly uphill from these residential areas. The Timber Hill Fire of 2014 is a good example of this potential threat.

In recent years, the Oregon Department of Forestry has been working with homeowners to conduct fuel reduction projects in the WUI adjacent to the Forests. The Research Forests are in the process of evaluating fire risk on their perimeters with the goal of conducting fuel reduction on the Forests' side to complement the fuel reduction work going on by adjacent homeowners. However, not all adjacent landowners may be supportive of fuel reduction on the Forests side because it may affect the aesthetics in their back yards.

The second area of concern is the number of recreational users. The OSU Research Forests welcome recreational uses on the Forests. Fires and smoking are not allowed on the Forests. A majority of recreationists abide by these rules, but remnants of party fires, fireworks, and cigarette butts on hiking trails and other places regularly found. In July 2016, the Peavy Fire erupted on the McDonald Forest, burning 3.5 acres. It was a human-caused wildfire with the potential to put the rest of the Forest at risk as well as threaten homes and property in the adjacent WUI. Although this was a human-caused fire, the quick action by nearby hikers who called it in kept the fire small.

CITY OF CORVALLIS WATERSHED

Forest Summary

The city of Corvallis owns 2,352 acres in the lower elevations of the Rock Creek Watershed, which covers approximately 10,000 acres on the northeast flanks of Marys Peak. In 2006, the City of Corvallis hired a consultant to assess the current forest conditions and work with the Watershed Commission and citizens to develop a stewardship plan for the city-owned lands in the watershed. The resulting document promoted forest health and ecosystem biodiversity while addressing current resources needs. Recommended management actions for the city's property includes: control of invasive species, improvement of wildlife habitat by creating snags and selective thinning of overstocked plantations and some middle-aged stands, establishment of an expanded reserve system to more effectively protect streams and other sensitive resources, improving fish passage through infrastructure, establishing a stream monitoring plan to study water quality issues, allowing non-motorized public access to Old Peak Road, and annual public tours of the City's forest to promote public involvement.

Issues of Concern

It is the policy of the City of Corvallis to protect their watershed lands from wildfire and to manage forest stands to reduce fire risk. The City has a policy of active suppression of any fires and cooperates with the Oregon Department of Forestry for fire protection and monitoring. To minimize fire hazards and risks, the water plant staff regularly mow roadsides and around facilities to reduce fine fuels, clear blow-downs on roads to maintain vehicle access, and patrol roads for trespass. Public access closure of the watershed eliminates the most probable cause of fires.

Although the Stewardship Plan calls for several fire preventative measures and immediate suppression of wildfires, there are no silvicultural recommendations for fuels modification or reduction. The city's watershed is critical to the community and should be protected from wildfire to the greatest extent possible. It is also imperative that neighboring landowners, including the U.S. Forest Service, take responsibility for wildfire protection as well to help prevent a fire moving from a neighboring property into the watershed or vice versa. The potential impacts of a large stand-replacing fire in this area could negatively affect the City of Corvallis via potential flooding, erosion, and degradation of water quality. A severe wildfire in this watershed could cause serious injury to this resource by removing vegetation, creating ash and sediments, and impairing soil properties. Mitigation treatments prior to a fire event are a high priority and are imperative to conserving the functionality of the watershed following a wildland fire.

West Oregon Forest Protective Association

Association Summary: The West Oregon Forest Protective Association (WOFPA) was formed when the former Benton County Fire Patrol, Lincoln County Fire Patrol, and Polk County Fire Patrol merged together in 1962. The earlier landowner fire patrol association began forming in the district as early as 1910.

WOFPA's primary objectives are the protection of forest resources within its area from possible damages caused by the destructive forces of fire and/or other causes as determined by vote of the Board of Directors and the achievement of effective communications with other organizations and agencies to ensure wise policy decision affecting forest protection.

To accomplish this, the WOFPA works with the West Oregon District to ensure an adequate budget is prepared to provide for the protection of their members' lands. The Association maintains a close liaison of public and private landowners and provides feedback to Oregon Department of Forestry on the protection services they provide.

Currently, the association is comprised of 33 landowner members and 5 affiliate members.

FIREWISE COMMUNITIES

USA/Recognition Program

Since the 2009 adoption of the CWPP, seven communities have received Firewise Community recognition. One area is in the process of organizing one or multiple Firewise Communities – this is the Oak Creek Valley area.

The Firewise Community USA Recognition Program was created in 2002 to engage neighborhoods in preparing and protecting their homes against the threat of wildfire. This program is administered by the National Fire Protection Association (NFPA) and is co-sponsored by the USDA Forest Service and National Association of State Foresters. Individuals and communities participate on a voluntary basis. The program provides a collaborative framework to help neighbors in a geographic area get organized, find direction, and take action to increase the ignition resistance of their homes and community and to reduce wildfire risks at the local level. Any community that meets a set of voluntary criteria on an annual basis and retains an "In Good Standing Status" may identify itself as being a Firewise® Site. The program encourages ongoing self-directed efforts by involving residents in fuels reduction events and annual re-certification.

How does the Firewise USA® program work?

Organization

Neighbors form a board or committee that is comprised of residents and other applicable wildfire stakeholders, such as elected officials, the local fire department, state forestry agency, or emergency manager. This group collaborates on identifying the Firewise site's boundary and size. Sites need to have a minimum of eight individual single-family dwelling units and are limited to a maximum of 2,500. Multiple sites can be located within a single large master-planned community/HOA.

Planning

The group obtains a written wildfire risk assessment from the state forestry agency or fire department. The assessment is a community-wide view that identifies areas of successful wildfire risk reduction and areas where improvements could be made. Emphasis is on the general conditions of homes and related structural ignition zones. The assessment is a living document and needs to be updated at a minimum every five years.

The group then develops an action plan, which is a prioritized list of risk reduction projects and investments for the participating site, along with suggested homeowner actions and education

activities that participants will strive to complete annually, or over a period of multiple years. Action plans should be updated at a minimum of at least every three years.

Approval

State liaisons approve applications, with final processing completed by the NFPA.

Community Investment

Each Firewise Community is required to annually invest the equivalent of one volunteer hour per dwelling unit in wildfire risk reduction actions per year.

Benton County's recognized Firewise Communities

(Dates indicate year of first certification)

Pioneer Village, 2011

Vineyard Mountain, 2011

Ridgewood Estates, 2012

Chinook, 2013

Skyline West, 2016

Wren, 2016

South Benton, 2021

This successful program has been utilized through the management of Oregon Department of Forestry with fuels reduction grant programs, and with financial assistance in annual chipping events provided by Benton County.

Waste Recycling

2022 Officially the Worst Year for Waste and Recycling Facility Fires

The good news is we finally had a reprieve from the record months we have been experiencing in the waste and recycling industry this year. However in November, 2022 officially surpassed 2021 and 2018 as the worst year for waste and recycling facility fires in the U.S. and Canada with 268 fire incidents, and we still have the entire month of December to go.

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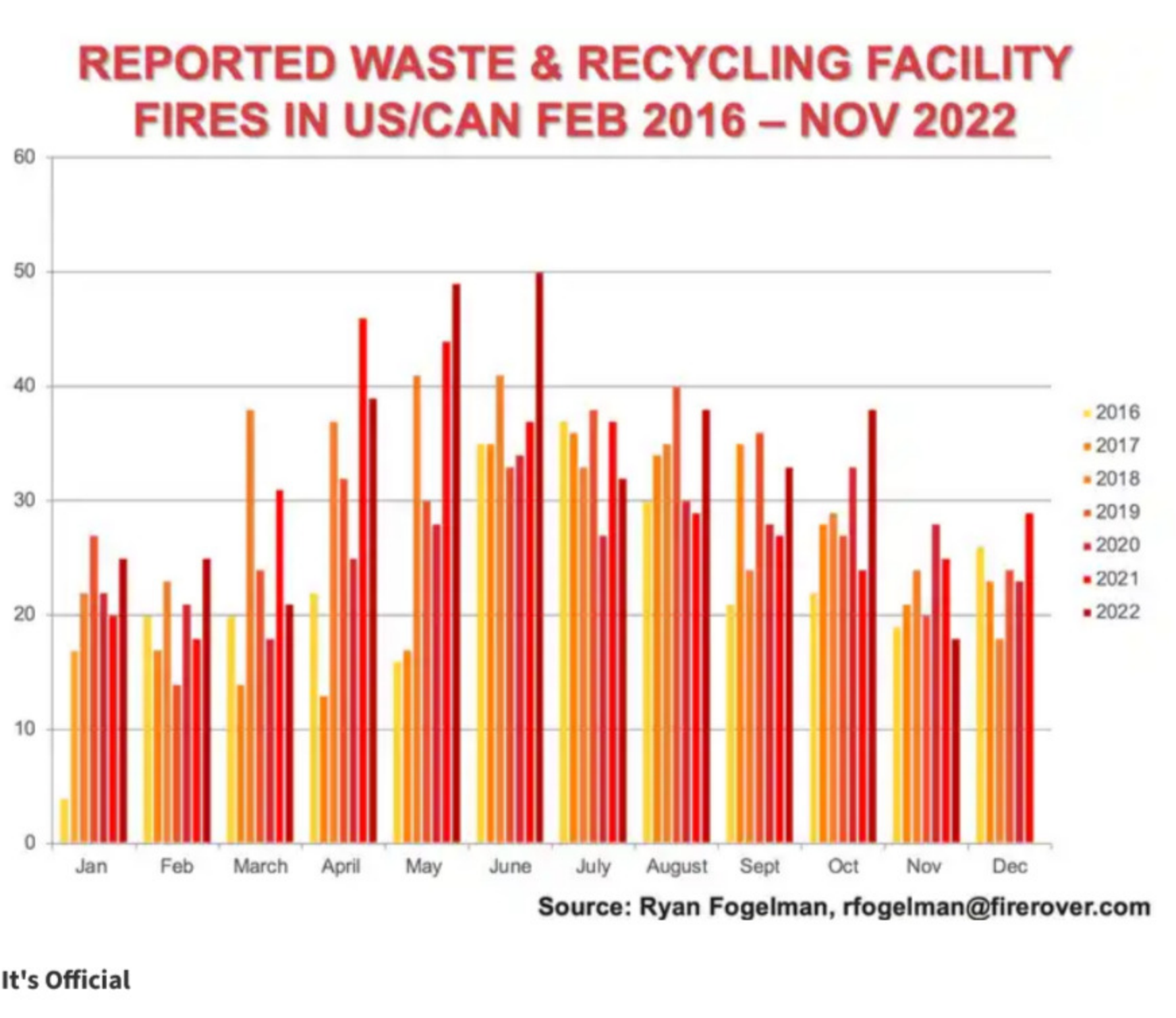
Ryan Fogelman, Vice President of Strategic Partnerships
December 4, 2022

8 Min Read

The good news is we finally had a reprieve from the record months we have been experiencing in the waste and recycling industry this year. However in November, 2022 officially surpassed 2021 and 2018 as the worst year for waste and recycling facility fires in the U.S. and Canada with 268 fire incidents, and we still have the entire month of December to go.

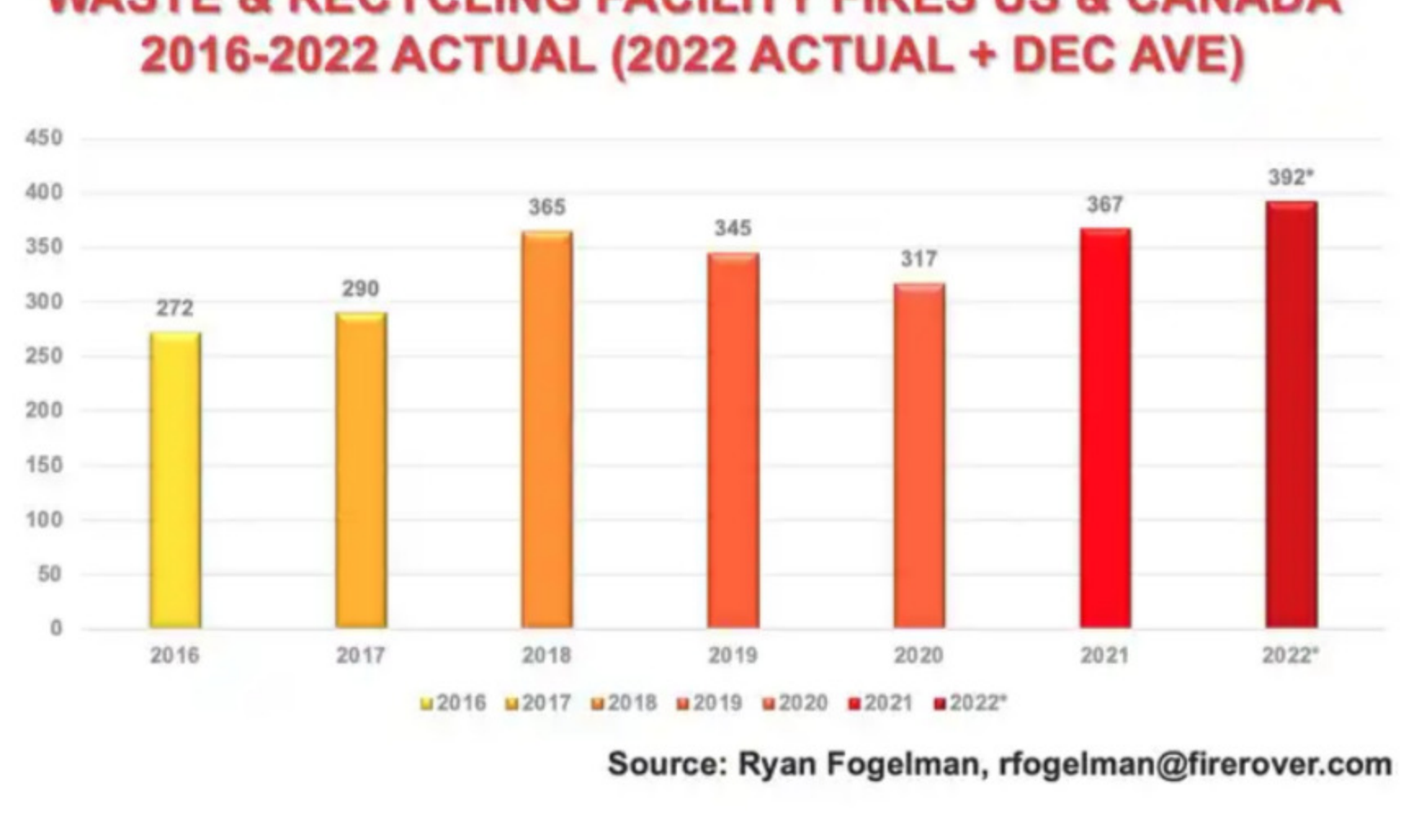
November 2022 Fire Data

This year has been the worst year for fires since I began reporting waste and recycling facility fire incidents in 2016. **In November, we experienced 18 publicly reported fire incidents in the U.S. and Canada.** Twelve of these fire incidents occurred at waste, paper and plastic facilities; three occurred at scrap metal facilities; and one occurred at each a construction and demolition (C&D) facility, a hazmat operation and an organics facility. Although the numbers were down for reported fires across the industry, at Fire Rover, we responded to more than 100 fire incidents at our clients' facilities.



It's Official

I want to make it 100% clear that the data I have been consolidating and analyzing since 2016 only includes the fire incidents that were "reported" by a media outlet or a government agency. **In November, 2022 officially surpassed 2021 and 2018 as the worst year for waste and recycling facility fires in the U.S. and Canada** since I began reporting the data in 2016.



I developed the graph above to show actual number data while also including 2022 actual data plus December's historical average. As you can see, even with an average December from a historical perspective, 2022 will be one for the books. If I had to put money on it, we would come in above the average number and get close to the 400 annual fire incidents in 2022 we were on trend for until we came in far short this month.

Safety Knows No Competition

As one can imagine, at Fire Rover, we have a front-row seat to many different fire events, some caused by batteries, fireworks, accelerants and the like, in various waste and recycling occupancies such as municipal solid waste, paper, plastic, metals, scrap, e-scrap, hazmat, C&D and organics. Some of our clients allow the videos to be shared, and some do not. I do not judge as there are many perceived consequences that businesses deal with from a legal perspective, public perception perspective and industry perspective when they share their events, but it is always nice when we can share the videos. These videos allow us to learn from each other as we dissect each incident as well as educate the public on the dangers/hazards that improper recycling can cause.

With that being said, I am a firm believer in the philosophy of "safety knows no competition," as I believe we can all learn from the fire hazards and incidents that are inundating our waste and recycling streams. Before we had a full understanding of the lithium-ion battery issue that has flooded our waste and recycling streams, there was a belief that "good operators" did not have fires. **I hope that it is clear to all that although there is no substitute for solid operational procedures and execution, the fire hazards the industry faces are no fault of its own.**

A global leader in waste and recycling, SUEZ, along with the Aberdeen, Scotland, City Council, released a very informative video that walks viewers through a fire incident that ultimately led to a catastrophic loss for the Athens East Mixed Recycling Facility. This incident on July 6 started as many of the fires we see started on the tip floor. The cause of the fire is anyone's best guess, but based on my experience and most of the surveys I have seen, there is a greater than 50% chance that a lithium-ion battery started the initial fire.

As we walk through the video, there are several things to focus on:

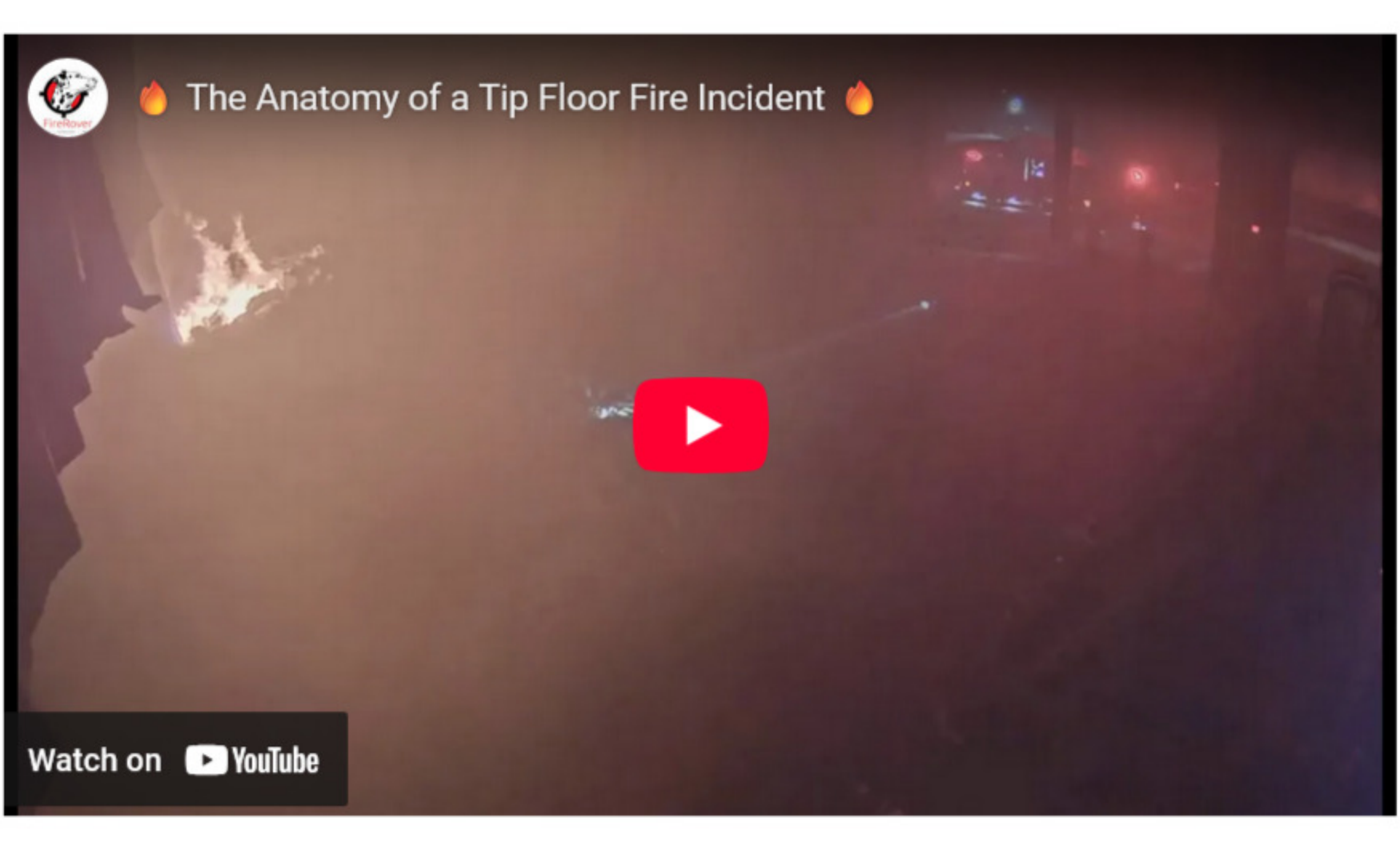
1. 4:04 p.m. – First sign of smoke was visible
2. 4:35 p.m. – Automatic fire alarms are triggered
3. 4:39 p.m. – Fire professionals are dispatched
4. 4:44 p.m. – Fire professionals arrive onsite
5. 4:47 p.m. – Automatic fire sprinkler triggered
6. 4:48 p.m. – Fire professionals get site access
7. Cameras melt

As you can see, it took almost 30 minutes from the first sign of smoke—a symptom of an impending fire—for fire alarms to be triggered. There is a ton of opportunity during that time for solutions like the Fire Rover to pick up a thermal, smoke or flash signature, or a combination of these, that would trigger our agents to dispatch the fire professionals and/or suppress the actual event. Not only did it take 30 minutes from the first sign of smoke for the fire alarms to be triggered, but it took an additional 12 minutes for the sprinkler to go off. By that time, the sprinkler is only there to buy time for the fire professionals to get water on the fire. In this case, the fire professionals got to the site rather quickly; however, getting access to the site was another step that took some time away from their fight.

The fact is that most jurisdictions across the globe only require these facilities to be covered by standard sprinkler systems. Sprinkler systems are an amazing invention that have saved countless lives in commercial and residential facilities, and there are times when these systems work to put out fires in waste and recycling facilities. However, the issue is that they are not made for the initial or final extinguishment of a fire. Most of the time, they only hold the fires at bay until the fire professionals arrive on the scene to put the fire out.

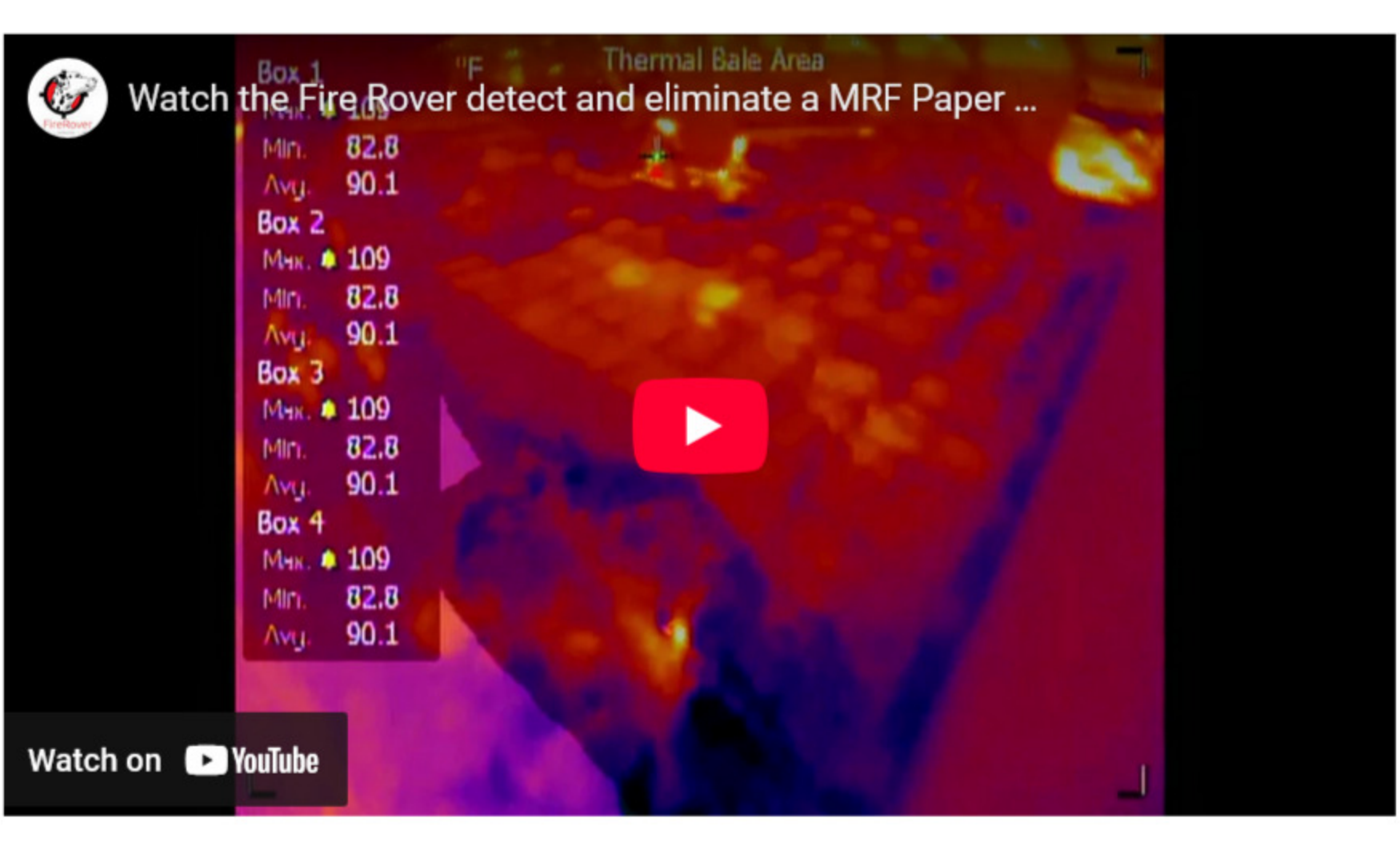
The issue is all about time and response. If you are waiting for a sprinkler system to go off before the fire professionals are notified and dispatched, you are already behind the eight ball.

Take a look at this video from one of our clients' incidents:



This is a thermal-only system. We were notified by the direct heat and smoke 10 to 15 minutes before a fire sprinkler system would have been activated. We dispatched the fire professionals within less than a minute of our agent verifying that a fire was happening. Had we had our full Fire Rover solution in place, we would have sprayed the scene within the same minute we dispatched the fire professionals, having the fire under control by the time the fire professionals arrived on the scene.

The fire professionals took more than 10 minutes to arrive on the scene and almost 15 minutes to get any water on the hazard. In this case, there was not a catastrophic loss to the building, but most fire professionals would agree that another 5 minutes would have been the difference between a total loss and our customers going back to work the next day.



Now watch the video above. We identify and suppress the fire well before any sprinklers, fire professionals or employees have to get involved. A night and day experience with little to no cleanup or downtime. Are they all this clean? Not a chance. What we do is hard, but so is fighting fires. These incidents are dangerous, stressful and unpredictable. There is no magic solution, but there are solutions out there.

A recent article was shared regarding a grant provided to help optical sorters pull batteries out of the waste and recycling stream during sorting. Until some of these technologies are a reality, we need to keep up the good fight of innovating, educating the public, training the firefighters and equipping them with the proper training to deal with these hazards. **And the manufacturers of these hazards should be helping the industry foot the bill!**

Conclusion

As we near the end of 2022, I am getting closer to beginning to work on my "Waste & Recycling Facility Fires Annual Report." Due to the increased fire incidents, this year's report is gearing up to be an interesting one. To be first in line to get a copy, you can sign up and follow my newsletter, "Fire Safety Report." Additionally, if you are attending WASTECON this week and want to connect in person, I will be presenting at the Safety Summit on Wednesday, December 7 at 1:45 p.m. PT in a session titled, "Managing Fires at Facilities and in Trucks."

Ryan Fogelman, JD/MBA, is vice president of strategic partnerships for Fire Rover. He is focused on bringing innovative safety solutions to market, and two of his solutions have won the distinguished Edison Innovation Award for Industrial Safety and Consumer Products. He has been compiling and publishing the "Reported Waste & Recycling Facility Fires In The US/CAN" since February 2016 and the "Waste & Recycling Facility Fires Annual Report." Fogelman regularly speaks on the topic of the scope of fire problems facing the waste and recycling industries, detection solutions, proper fire planning and early-stage fire risk mitigation. Additionally, Fogelman is on the National Fire Protection Association's Technical Committee for Hazard Materials. (Connect with Ryan on LinkedIn at https://www.linkedin.com/in/ryanjayfogelman or email at rfogelman@firerover.com)

About the Author


Ryan Fogelman
Vice President of Strategic Partnerships, Fire Rover

Ryan Fogelman, JD/MBA, is vice president of strategic partnerships for Fire Rover. Fogelman is focused on bringing innovative safety solutions to market, and two of his solutions have won the distinguished Edison Innovation Award for Industrial Safety and…

ATOMIC FALLOUT ENERGY + ENVIRONMENT

‘High likelihood’ of radioactive waste in smoldering landfill, Missouri officials say

BY: **ALLISON KITE** - JANUARY 22, 2025 8:09 PM

Gas extraction wells help limit the odor emanating from the Bridgeton Landfill. The facility, which is adjacent to the radiologically-contaminated West Lake Landfill, is experiencing a subsurface smoldering event, a chemical reaction that creates heat like a fire but lacks oxygen (Theo Welling/Riverfront Times).

Missouri officials are warning the U.S. Environmental Protection Agency of a “high likelihood” there is radioactive contamination in a smoldering landfill outside St. Louis.

In a letter last week, the Missouri Department of Natural Resources asked that the EPA assume oversight of the Bridgeton Landfill, arguing it may contain nuclear waste like the adjacent West Lake Landfill.

The two landfills, situated in the St. Louis suburb of Bridgeton, have received extensive attention from regulators over the years. The Bridgeton Landfill has been experiencing a “subsurface smoldering event” – a chemical reaction that heats and consumes waste like a fire but lacks oxygen – for more than 14 years, emitting noxious odors and raising concerns among residents that the “fire” might reach the radioactive waste in the West Lake Landfill next door.

The West Lake Landfill is subject to an EPA oversight and a cleanup to remove thousands of tons of uranium left over from World War II.

But, the state argued in its letter, there may be radioactive waste in the Bridgeton portion of the landfill far closer to the subsurface smolder than previously known.

Kellen Ashford, a spokesman for the EPA, said in an email that the agency “has no new evidence or information to support any claim that radiologically-impacted material … is present anywhere else in the Bridgeton Landfill.”

Ashford said the EPA is seeking more information from the state about its letter.

Brian Quinn, a spokesman for the Missouri Department of Natural Resources, said in an emailed statement that the department agreed with the EPA’s most recent work and analysis at the site. Quinn did not immediately respond to follow-up questions about the agency’s belief that the Bridgeton Landfill may contain radioactive waste.

The landfill’s owner, Republic Services, said in an emailed statement that “there is no evidence whatsoever of radiologically impacted material … in Bridgeton Landfill.”

The St. Louis area has struggled for years with a radioactive waste problem.

During World War II, uranium was refined in downtown St. Louis for use in the Manhattan Project, the name given to the war-era effort to build the world’s first atomic bomb.

After the war, the waste was trucked to St. Louis County and dumped at the airport where it leaked into Coldwater Creek, polluting its banks and waters and subjecting generations of families to radiation exposure and an increased risk of certain cancers. The waste was sold and moved to a site in Hazlewood – still adjacent to the creek – where it continued to expose residents.

Cost to clean up radioactive West Lake Landfill outside St. Louis nears $400 million

Removing radioactive waste from the West Lake Landfill will cost nearly $400 million after federal officials discovered the contamination was far more widespread than previously known, the U.S. Environmental Protection Agency announced Friday. In a press release, EPA officials announced they had significantly expanded the portions of the suburban St. Louis landfill that will require …

Continue reading

MI Missouri Independent

In 1973, after valuable metals were extracted from the pile, the remaining waste was illegally dumped in the West Lake Landfill, where it remains today.

The EPA is nearing the end of a process to plan an excavation of much of the radioactive waste from the landfill. Parts of the landfill with lower levels of contamination will be capped.

The U.S. Army Corps of Engineers is overseeing the cleanup of Coldwater Creek.

Last week, the EPA announced it would expand the excavation at the West Lake Landfill because it found additional radioactive contamination. Under the revised plan, another 40 acres of the landfill will be included in the cleanup. Crews will need to dig up another 20,000 cubic yards of contaminated soil and debris, and the price of the cleanup will climb to almost $400 million.

For years, the EPA thought the radioactive material was confined to two portions of the landfill, relying on findings from the Nuclear Regulatory Commission, which, in the late 1970s, flew a helicopter over the landfill to measure gamma radioactivity. That effort missed contamination in parts of the landfill.

The Missouri Department of Natural Resources’ letter came in response to the EPA’s announcement last week that it would expand the cleanup. The state agency said it supported the expanded cleanup and recommended that the EPA “considers being the lead agency for all the potentially affected properties.”

ALLISON KITE

Allison Kite was a data reporter for The Missouri Independent and Kansas Reflector, with a focus on energy, the environment and agriculture. A graduate of the University of Kansas, she previously covered City Hall for The Kansas City Star, as well as state government in both Topeka and Jefferson City.

MORE FROM AUTHOR

MORE FROM OUR NEWSROOM

Missouri lawmakers consider funds for radioactive waste testing in St. Louis

BY ALLISON KITE

January 27, 2025

Missouri chief medical officer sounds alarm about radioactive waste at legislative hearing

BY ALLISON KITE

October 16, 2024

New Missouri House committee will investigate impact of St. Louis nuclear waste

BY ALLISON KITE

October 3, 2024

National Interagency Coordination Center

Wildland Fire Summary and Statistics Annual Report 2024

Boise National Forest

National Interagency Coordination Center

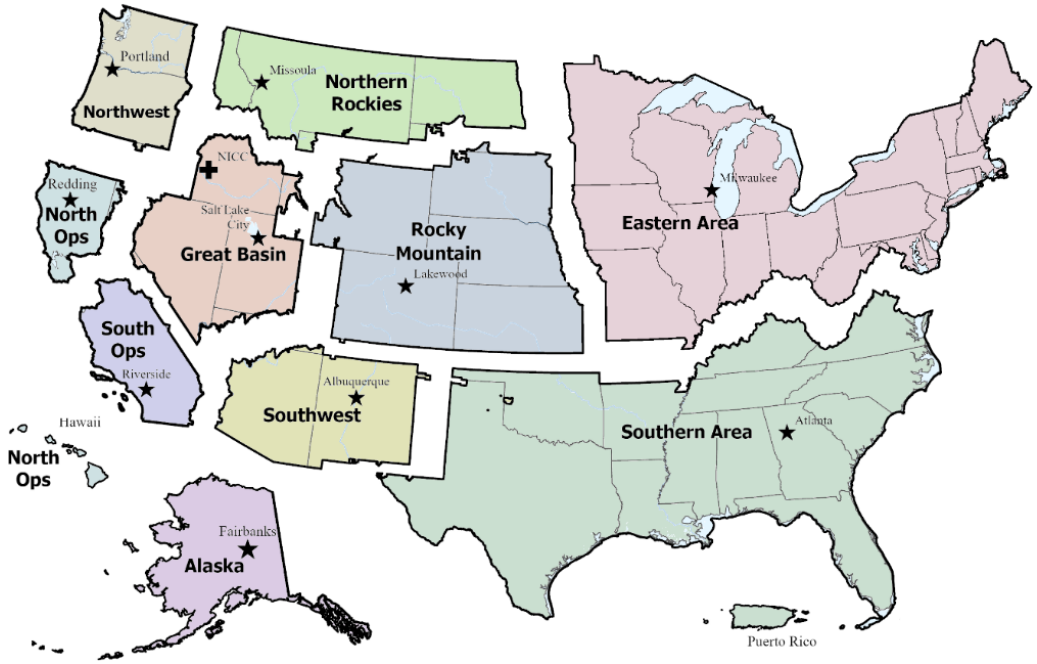
Contents

Preface

Statistics used in this report were gathered from the Situation Report and Incident Status Summary (ICS-209) programs[1]. Previous National Interagency Coordination Center (NICC) annual reports and other sources were also used in this document. The statistics presented here are intended to provide a national perspective of annual fire activity, but they may not reflect official figures for a specific agency. The statistics are delineated by agency and Geographic Area. This document and prior year annual reports are available electronically on the NICC Intelligence web page.

Resource mobilization statistics used in this report were gathered from the Interagency Resource Ordering Capability system (IROC), which tracks aircraft, crews, equipment, overhead, and supplies mobilized nationally. Statistics presented in this report are resources requested by any of the ten Geographic Area Coordination Centers (GACCs) and processed through NICC, apart from Incident Management Teams and Temporary Flight Restrictions[2]. Requests by FEMA are placed to NICC through Emergency Support Function (ESF) #4 (Firefighting). The resource ordering process and procedures may be found in the National Mobilization Guide. The National Mobilization Guide can be found on the NICC Reference Documents web page.

Geographic Area Coordination Centers



[1] Situation Report and ICS-209 data are considered situational and provisional, as they are reported while wildfire activity and incidents are occurring, plus they do not account for all wildland fires and their final outcomes. Some wildfires, including many that are suppressed solely by private citizens or local fire departments (not by wildland fire management agencies), are never reported to any Dispatch Center that submits Situation Report data. Additionally, ICS-209 reports are not required for the small, short duration wildfires that comprise the vast majority of overall fire occurrence annually. For official data and summary statistics, one must contact each of the individual agencies affected and refer to their final fire reports and other authoritative sources of agency-specific information.

[2] This report only tallies resource requests processed through NICC, with the exceptions of Incident Management Team mobilizations and Temporary Flight Restrictions that are captured nationally. It excludes the substantial number of IROC orders that were placed and filled within the same GACC. It also excludes any resource usage not tracked in IROC, such as local dispatch of initial attack resources.

2024 Fire Environment Summary

January – March

Much of the West was characterized by above normal precipitation and near average temperatures January through March, except for areas of Washington into western Montana where precipitation was slightly below normal. Multiple atmospheric rivers brought heavy precipitation from California into the Great Basin and central and southern Rockies, focused on the period from late January through mid-February. Los Angeles, California, recorded more than 8 inches of rain in a 72-hour period February 3-6. While a less active period followed, late February through March had substantial precipitation across the southern half of the West, as is typical during an El Niño. However, the northern half of the West was drier than normal during the same period, also consistent with an El Niño winter. This led to an above normal snowpack, including associated snow water equivalent (SWE) values, in the Sierra, Great Basin, and Southwest, with near normal snowpack from Oregon into the central Rockies. Across Washington and the northern Rockies, snowpack was below average, ranging from 60-90% of average. Snowpack in Alaska was near to above normal, with the above normal snowpack mainly in the southern third of Alaska, where Anchorage recorded over 100 inches of snow by early February. Due to the widespread above normal precipitation in the southern half of the West, drought improved or was removed across the Southwest and Greater Four Corners, but drought intensified across portions of Montana and northeast Wyoming.

Much of the southern Plains into the Southeast had above normal precipitation through March, with significant improvement and removal of drought from much of Texas into the Tennessee and Ohio Valleys. Precipitation was above normal along much of the East Coast as well, but below normal across the northern Plains and the southern High Plains of eastern New Mexico into West Texas and western Oklahoma. Temperatures averaged near normal for much of the Southeast but were well above normal from the northern Plains into the Great Lakes and Northeast, and snowpack was well below normal for the winter as a result. The exceptionally warm conditions resulted in the persistence of drought across much of the Upper Mississippi Valley and Upper Great Lakes, with persistence across the southern High Plains, as well.

Significant fire activity remained minimal across the US through February 23, with a below average number of fires and only 30% of the 10-year average for acres burned. Fire activity increased at the end of February due to a heat wave across the southern Plains, followed by strong westerly winds ahead of a cold front February 25-26 and strong northerly winds behind the front. Several new and significant fires began during this event, including one of the largest fires in modern US history – the Smokehouse Creek Fire, which burned over 1 million acres in the Texas Panhandle into western Oklahoma, with almost all the fire growth occurring in the first 48 hours after ignition. Above average fine fuel loading resulting from 2023's wet, productive growing season in the southern Plains contributed to the February fire outbreak and kept risk elevated for several more weeks, as noted in a Fuels and Fire Behavior Advisory jointly issued by the Southwest, Southern, and Rocky Mountain Geographic Area Coordination Centers (GACCs) for their respective portions of the southern Plains and adjacent grass-dominated landscapes.

Warm and dry conditions throughout much of March in the central Appalachians led to an increase in activity there too, with strong westerly winds and low relative humidity leading to an outbreak of fires in western Virginia and the deployment of two complex incident management teams. By the end of March, the national year-to-date number of fires remained below average, but the cumulative acres burned was well above average at 350%, mainly due to the Smokehouse Creek Fire.

April – June

Temperatures were a bit above normal across much of the US for April, except for the West Coast, Southwest, and Florida, which were near to below normal. Drier than average conditions were observed in the West, especially the Northwest, while abundant precipitation fell in the northern Plains, Midwest, and East Texas into Louisiana. Snowmelt commenced in April from the mountains in the West, but SWE values remained near to above average in the southern half of the West. However, snowpack diminished across Washington into the northern Rockies, with most basins retaining only 50% of median SWE, and many locations below 5,000 feet becoming snow-free by the end of April. A cooler and wetter than normal May for the northern Rockies resulted in a slower melting of snow, while the southern half of the West lost most of its snowpack. Most areas in the West were snow free by the end of June, except at the highest elevations. Across much of the West, June featured above normal temperatures and below normal precipitation, but much of the Southwest and Four Corners were exceptionally wet for June. By the end of June, drought had developed in much of Washington and persisted in the northern Rockies, while the Southwest, especially Arizona, had significant improvement.

After a warm and dry winter with little snow in the Midwest, April and May turned sharply wetter with above normal precipitation alleviating fire concerns. Much of the eastern half of Texas into Louisiana was very wet for the spring quarter, as well, with several bouts of severe weather. Two strong derechos affected East Texas in May with significant damage and power outages, the first in Houston and the northwest Gulf Coast May 16-17, with the second affecting the Dallas area May 28. Much of the rest of the eastern US had precipitation anomalies closer to normal April through June, but much of Virginia and the Carolinas received less than 75% of normal precipitation. Drought was removed from much of the Midwest because of the wet quarter, but drought emerged across much of the East Coast, from north Florida through Virginia, with portions of the Ohio Valley abnormally dry, as well.

Despite the relatively dry spring across much of the Great Basin and interior Northwest, abundant fine fuels, in terms of both fuel loading and continuous coverage across landscapes, carried over from the prior years' productive growing seasons and contributed to elevated fire risk. In California, favorable precipitation and temperature alignments throughout the winter and spring allowed prolific growth in herbaceous vegetation, further adding to above normal fuel loading across many grass-dominated landscapes.

Significant fire activity peaked for the spring fire season in the Southern and Eastern Areas in early April before declining, while fire activity in the West began to increase slowly but absent significant fires. A brief pulse of increased fire activity occurred in the Midwest during a wind event in mid-April but was quickly followed by abundant rainfall. Two strong wind events occurred on the Plains April 14-15 and April 25-28, but few significant fires emerged.

A steady but modest seasonal increase in fire activity warranted elevating to national Preparedness Level two (PL 2; on a scale ranging from 1 to 5) on May 21, yet significant fire activity remained below normal across the US during May and June. Wildfire activity remained low in much of the Southern Area, with infrequent bursts of activity in Texas and Florida. Dry and windy conditions across the Southwest into the southern High Plains May 23 and 25 resulted in significant growth of the ongoing Blue 2 and Indios Fires in New Mexico, but significant fire activity overall remained minimal through May.

A greater increase in fire activity occurred the latter half of June due to a prolonged period of above normal temperatures and dry conditions across the West, reflected in the escalation to national PL 3 on June 28. A dry northerly wind event in northern California June 16 resulted in several new significant fires, and dry lightning June 24-26 resulted in several significant fires in the southern Sierra. Both events illustrated that accumulated fine fuels from abundant grass crops following the past two wet winters were cured and available to burn. However, the most significant event of the month was a period of dry southwest winds across New Mexico June 17, resulting in South Fork and Salt Fires that burned several hundred structures in and around the Village of Ruidoso. A sudden increase in moisture followed June 19-23 across New Mexico, rapidly replacing the fire threat with several damaging debris flows from the burn scars. Alaska also observed a large increase in significant fire activity during the last ten days of June, with several large fires emerging across the Interior.

In late June, two new Fuels and Fire Behavior Advisories were issued. One was relatively short-lived, describing the abnormally high fire danger in the central and northeast Interior of Alaska due to dry fuels, including deeper layers of ground fuels. The other noted the abundant fine fuels and increasingly abnormal dryness in both live and dead woody fuels in California, an elevated risk factor that would persist through most of the remainder of the year.

July – September

Significant fire activity increased rapidly during the first half of July, with activity remaining at extreme levels through the end of the month. The national PL increased from PL 3 to PL 4 July 10, and then again to PL 5, the highest possible level, on July 18. Much of the significant fire activity was in the Northwest Geographic Area, but the Northern Rockies, Great Basin, and California Geographic Areas also had long duration incident management team wildfires on the landscape. The Southwest continued at moderate levels of significant fire activity through July, but Alaska had a rapid decrease in activity during the month. Joining the aforementioned California advisory that was first issued in late June, several more Fuels and Fire Behavior Advisories were issued in July, collectively encompassing most of the Great Basin and interior Northwest, plus southwest Oregon.

An extreme and long-lasting heat wave encompassed much of the West the first three weeks of July. Several all-time high temperatures records were set in portions of the West, including Palm Springs, California, at 124°F, Las Vegas, Nevada, at 120°F, and Redding, California, at 119°F. Widespread monthly and daily record high temperatures were set across the rest of the West during the period, as well. The extreme heat was also coupled with well below normal

precipitation which rapidly dried fuels across the West. Drought expanded and intensified across much of the Northwest into the northern Rockies, and across portions of northern California.

A significant dry lightning outbreak occurred July 13-15 along the West Coast into the northern Rockies resulting in dozens of new large fires, with most of the fires in the Northwest. Another dry lightning event occurred July 21-23 with dozens of additional large fires, again focused on the Northwest, northern Great Basin, and Northern Rockies. The Durkee, Willamette Complex, and Diamond Complex Fires in the Northwest started during these lightning events, with the Northwest Geographic Area elevating from GACC PL 2 at the beginning of the month to PL 5 July 19. The Wapiti Fire in central Idaho emerged during the second event and continued to burn for the next three months. In addition, the Park Fire in northern California burned over 350,000 acres in the first 72 hours after ignition July 24, while the Falls Fire in central Oregon produced pyrocumulonimbus clouds for several days, illustrating the extreme burning conditions late in the month. However, Alaska observed a significant decrease in activity throughout July as a wet pattern developed with periods of wetting rain, occasionally heavy, occurred during the month. This prompted Alaska Geographic Area to drop from GACC PL 5 at the beginning of the month to PL 2 by July 15.

As the North American Monsoon was slow to develop, Southwest Area continued to be active throughout July with periodic significant fires, remaining at GACC PL 3. Conditions across the eastern US remained quiet during July, with above normal rainfall observed across much of central and East Texas, the Mississippi Valley, and Southeast. However, precipitation was below normal in the Upper Ohio Valley and central Appalachians, creating areas of extreme drought that persisted into August, with above normal fire activity in these areas, but few large fires.

A very high level of fire activity continued across the West through the first half of August. A third significant lightning outbreak August 3-5 across the northern half of the West resulted in numerous new fires, including the Middle Fork Complex in central Idaho. Due to the continued extreme activity, sixty firefighting personnel from Australia and New Zealand, along with 245 active-duty soldiers from Joint Base Lewis McChord, were mobilized to aid suppression efforts the first half of the month, with these personnel remaining engaged through mid-September. By mid-August, persistent upper-level troughing developed over the Northwest with much cooler conditions and periods of precipitation, resulting in the decrease in activity across northern California and the Northwest. However, ahead of the trough, periods of strong winds were observed in central Idaho, with the Wapiti and Middle Fork Complex Fires exhibiting significant growth.

Strong winds were also observed east of the Rockies in southeast Montana and northeast Wyoming August 21-23, with numerous significant fires, the largest of which, the Remington Fire, burned over 40 miles from Wyoming into Montana. That northern High Plains area, ultimately extending from the northern Front Range of Colorado through eastern Wyoming into southeast Montana, was highlighted with successive Fuels and Fire Behavior Advisories starting in early August and continuing through September due to above normal fine fuel loading amid persistently dry and often breezy conditions.

Aside from the wind-driven fires in the northern High Plains noted above, significant fire activity gradually decreased elsewhere from mid to late August. The drop to national PL 4 on August 22 was consistent with the typical timing for the seasonal pivot to progressively decreasing wildfire activity in prior fire seasons that attained PL 5. The Northwest Geographic Area observed the greatest decrease in activity, with California, Northern Rockies, and Southwest Geographic Areas also seeing a decline in activity. A significant rainfall event in mid-August triggered the decrease in activity across the northwestern US, while the North American Monsoon finally arrived in the Southwest the second week of August. However, significant fire activity continued to increase across the Great Basin Geographic Area, particularly in central Idaho where numerous significant fires were burning at the end of August.

For the southern and eastern US, a very dry September was observed across much of the Upper Mississippi Valley and Great Lakes, with many areas receiving less than 25% of normal precipitation. This dryness extended into the central and southern Appalachians through much of the month, as well, with fire activity slowly increasing across these areas during September although few significant fires were reported. At the end of the month, Hurricane Helene moved from north Florida into the central and southern Appalachians, with extremely heavy rainfall and catastrophic flooding. Helene ended the fire threat in the southern Appalachians, but it also contributed to extensive blowdown, which is likely to impact fire potential (due to hazard fuel accumulations) for the next few years, plus fire response (due to obstructed access) in the shorter term.

As September began in the West, a widespread dry lightning outbreak September 1-3 resulted in another large increase in significant fire activity across the northwestern tier of states. Several new large fires emerged in Oregon and Idaho. While many fires burned aggressively, the Rail Ridge and Lava Fires exhibited extreme growth, with the Lava Fire producing a long-lived pyrocumulonimbus September 7. Around the same time, a period of extreme heat in southern California resulted in the Airport, Bridge, and Line Fires. These events prompted the rare reescalation to the national PL 5 on September 6 (a second seasonal ascent to PL 5 had arisen only twice before – in August 2002 and August 2003).

Fire activity then moderated in mid-September as a cold and wet storm moved through the northern half of the West, with some areas in central Idaho and western Montana receiving more than one inch of rainfall. This season-slowing event for the Northwest, northern Great Basin, and Northern Rockies Geographic Areas fostered the return to national PL 4 on September 20 and the further descent to PL 3 on September 26. However, on the back side of the storm, another heat wave developed across the West, with Phoenix, Arizona, reaching 117°F September 28, setting a new monthly record, and Rapid City, South Dakota, hitting 100°F the following day. The anomalous heat so late in the season resulted in a slow increase in fire activity but national PL 3 endured through the end of the month. At the end of September, national year-to-date acres burned for the US was above the 10-year average at 131%, with a below average number of fires of near 84%.

October – December

Significant fire activity increased a third time in early October as the anomalous heat at the end of September continued through the first ten days of October. While fewer new fires arose in

early October, ongoing significant fires showed a marked uptick in activity, and several fires that had been relatively quiet for several weeks also experienced significant growth. With this increase in activity across the West, reescalation to national PL 4 occurred on October 4 and then again to an unprecedented third seasonal PL 5 period on October 8. Several westerly wind events also occurred during this time, the strongest of which October 4-5 resulted in a 15-mile run by the Red Rock Fire near Salmon, Idaho. This weather event also resulted in numerous new significant fires across western North Dakota. Fire activity in the West finally saw a rapid and lasting decrease due to a strong fall storm October 17-19, with widespread wetting rain and snow falling in the mountains. This belated onset of favorable weather in mid-October minimized fire behavior on most existing fires and largely negated the potential for new significant fire activity across most of the Northwest, Great Basin, Rockies, and northern Plains, thereby triggering the latest ever final descent to national PL 4, on October 18. Further de-escalation rapidly followed, with the onset of national PL 3 October 22, ending the second longest collective national PL4 and PL5 period of 96 days that began in July (nearly eclipsing the record of 99 days in 2021). Descent to national PL 2 occurred a week later, on October 29.

Parts of the greater Southwest, most notably southern California and parts of Arizona remained mostly dry through October and beyond. Anomalously warm and dry conditions were not confined to the West in October, as well above normal temperatures were also observed on the Plains throughout October, and very dry conditions were observed from the Plains to the East Coast. Drought expanded progressively through the summer and into the fall across multiple large areas of the US, and by early November, 87% of the continental US was classified as abnormally dry or in drought. This is the greatest amount (percent area afflicted) recorded in the 25 years since the inception of the US Drought Monitor. Extreme and exceptional drought expanded across the Upper Ohio Valley, and intensified across the northern High Plains, and portions of the southern Plains. Severe drought developed in portions of the Upper Mississippi Valley, Great Lakes, and Mid-Atlantic, as well. Fire activity increased moderately in many of these drought-afflicted areas, especially in the Great Lakes during October, with a few significant fires arising in Minnesota and Wisconsin. Intensification of drought triggered the re-issuance of a Fuels and Fire Behavior Advisory for parts of Mississippi and Alabama in late October; however, only a few larger fires arose, and those were all relatively short in duration. Fire activity also increased on the southern Plains in the fall, with several significant fires emerging October 28-29 when strong southerly winds developed.

In November, significant fire activity continued to slowly decline nationally outside of couple hotspots, and the national PL reverted to PL 1 November 13, which is about three weeks later than the average end-of-season onset of PL 1. Nonetheless, very dry conditions continued in the Mid-Atlantic and Northeast, where fire activity continued at elevated levels, with periodic significant fires continuing to emerge, most notably the Butternut Fire in Massachusetts and the Jennings Creek Fire on the New York-New Jersey border. Massachusetts recorded their most active fall fire season in over 40 years, and significant activity was also noted in Pennsylvania. Drought continued to intensify in this region, but a strong Nor'easter November 21-23, bringing rainfall of one to three inches, abruptly ended the fall fire season in the Northeast.

While the Northeast was dry for much of the month, November was considerably wetter than normal across much of the Plains into the Upper Mississippi Valley and western Great Lakes,

ending the significant fire threat in the Great Lakes. While portions of the Southeast remained dry in November, the anomalously warm conditions delayed leaf drop, resulting in a lower fine fuel load than typically seen in the fall. In the West, above normal precipitation continued in much of northern California and the Northwest, and into portions of the Great Basin, but southern California remained very dry. A strong Santa Ana wind event November 6-8 resulted in the Mountain Fire that burned hundreds of structures near Santa Paula, California.

An active weather pattern continued across the northern half of the West in December, with numerous atmospheric rivers making landfall the latter half of the month from northern California into the Northwest. Above normal precipitation was observed in these areas, spreading into northern Nevada and southern Idaho. However, precipitation was well below normal in southern California, the Southeast, and southern and central High Plains, with some locations in southern California and the Southwest recording no precipitation for December. Snowpack in the West at the end of December mimicked the precipitation anomaly with near to above normal snowpack and SWE in the Sierra and northern half of the West, with well below normal SWE in the Southwest. The persistently dry conditions continued to make fuels highly receptive for any Santa Ana wind events in southern California. A strong Santa Ana event December 9-10 produced wind gusts up to 75 mph and resulted in the Franklin Fire near Malibu that burned dozens of structures and served as a precursor for other catastrophic wildfires that would arise around the Los Angeles area in January 2025.

Dry conditions also continued across the southern and central High Plains, but southwesterly wind events that occurred were not excessively strong and only locally increased initial attack. The strongest wind event occurred December 28-29 behind a dry line with few fires, but this same storm resulted in a significant severe weather outbreak from East Texas into the Deep South. Numerous tornadoes were reported with this storm along with several deaths due to the severe thunderstorms. Much of the US east of the Mississippi River received near normal precipitation, but the Southeast coast and much of Florida was considerably drier than normal. While fuels dried, few significant fires were reported. The Hawai'ian Islands remained drier than normal through December with periods of strong trade winds, most notably November 15-16 and December 11-12. Initial attack remained elevated compared to normal across the islands, with the 100-acre Ma'alaea Fire on Maui November 14 being the largest fire reported during the two months.

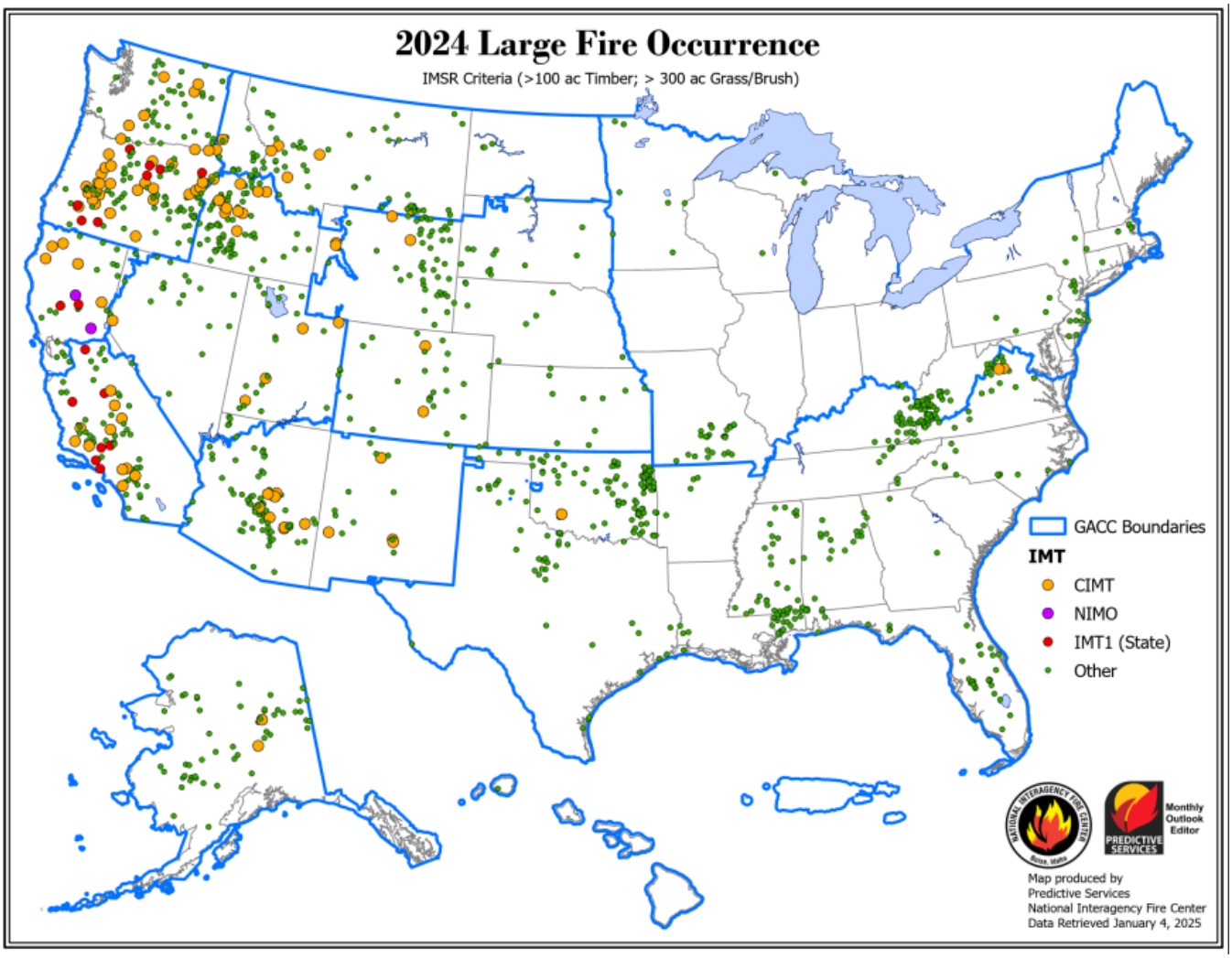
Fire activity generally remained at low levels throughout much of the US as the year ended. A limited number of large fires burned briefly across the country in December, mainly in Eastern, Southern, and Rocky Mountain Areas. Under persistent dry conditions, the Southwest elevated to GACC PL 2 on December 20, with two significant fires burning near or on the Mogollon Rim. Southern California remained at GACC PL 2 at the end of the year with elevated risk of new significant fires due to dry fuels and problematic offshore winds. At the end of the year, annual acres burned for the US in 2024 remained above the 10-year average at 127%, with a slightly above average number of fires, at 104%.

National Fire Activity Synopsis

Nationally, there were 64,897 wildfires reported in 2024, compared to 56,580 wildfires reported in 2023. Reported wildfires consumed 8,924,884 acres, compared to 2,693,910 acres in 2023.

In 2024, the reported number of wildfires and acres burned nationwide was noticeably higher than the five and10-year averages. Seven out of the ten geographic areas saw above average numbers of wildfires and acres burned. The Southern Area had the highest number of wildfires, while the Northwest Area had the most acres burned.

A total of 4,552 structures were reported destroyed by wildfires in 2024, including 2,406 residences, 2,066 minor structures, and 80 commercial/mixed residential structures. In 2024, the Southwest Area accounted for the highest number of structures with 1,455 total structures destroyed.



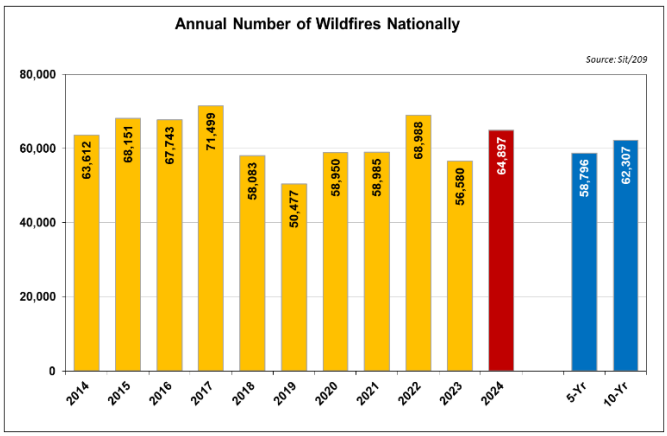
Structures Destroyed

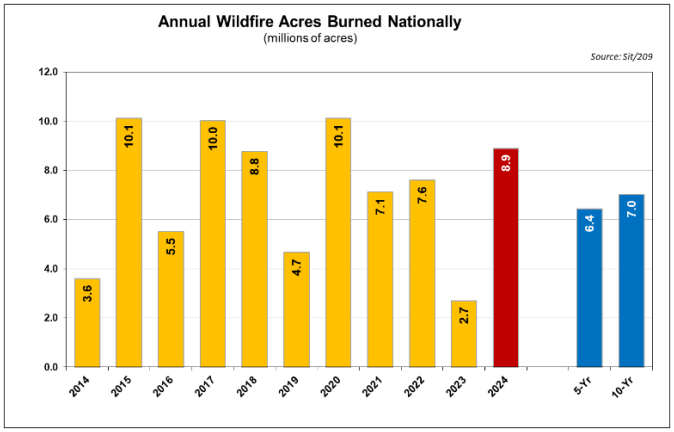
GACC	Single Residences	Mixed Commercial-Residential	Multiple Residences	Nonresidential Commercial Property	Other Minor Structures	Total
AK	0	0	0	0	5	**5**
EA	6	0	0	2	35	**43**
GB	31	9	0	12	63	**115**
NO	462	0	0	7	299	**768**
NR	44	0	0	0	131	**175**
NW	82	0	0	2	181	**265**
RM	49	0	0	10	116	**175**
SA	170	0	0	7	557	**734**
SO	551	2	1	12	251	**817**
SW	1,003	7	7	10	428	**1,455**
Total	**2,398**	**18**	**8**	**62**	**2,066**	**4,552**

***Disclaimer: Statistics above were reported through the SIT/209 application, actual number of structures destroyed could be higher depending on how structure loss is reported at the county level.

National Wildfire Activity

In 2024, there were 64,897 wildfires that burned 8,924,884 acres. The total number of fires and acres burned were both above the five and 10-year averages.

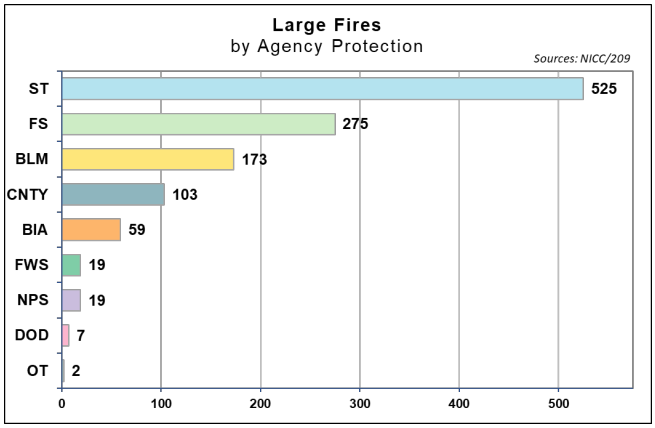


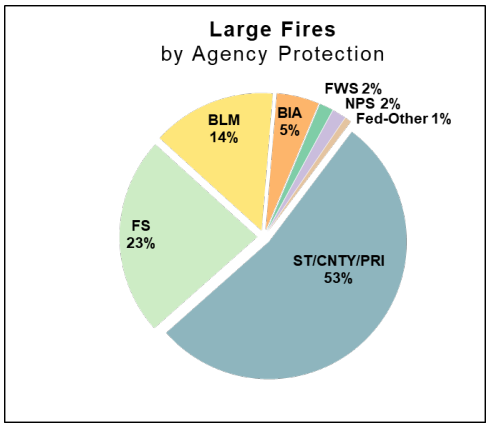


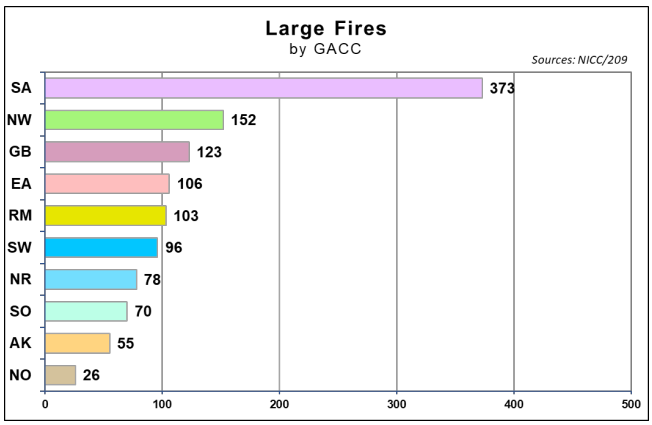
Large Wildfires by Geographic Area and Agency

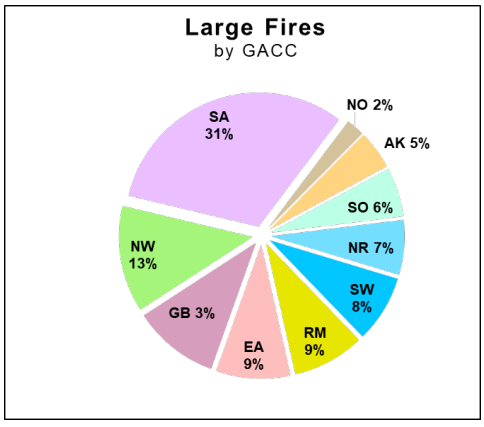
Large fires are defined in the National Interagency Standards for Resource Mobilization as fires that burn a minimum of 100 acres in timber fuel models and 300 acres in grass fuel models.

There were 1,188 large wildfires and complexes reported through the SIT/209 application. Large wildfires represented less than 2% of total wildfires reported nationally in 2024.



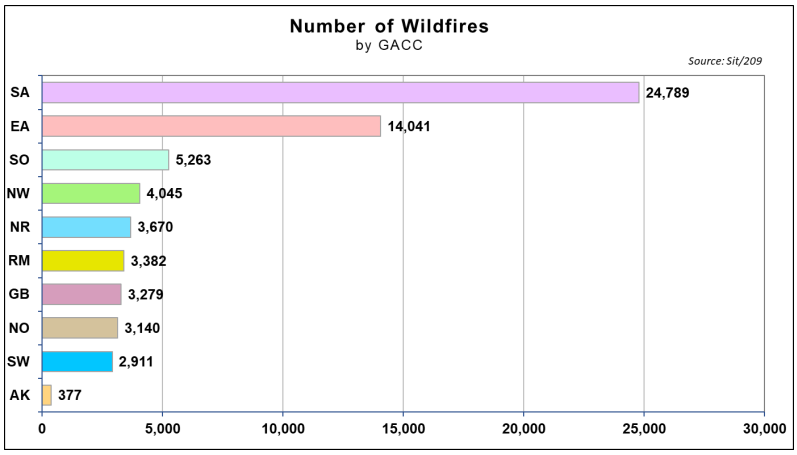


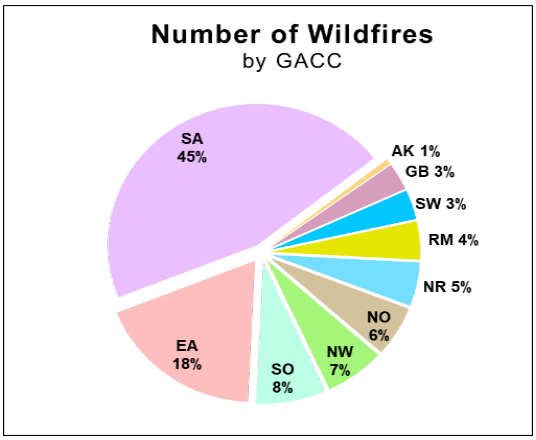


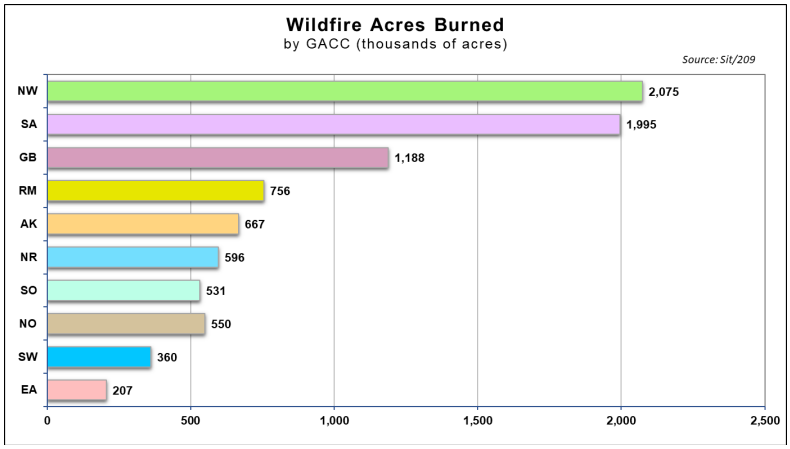


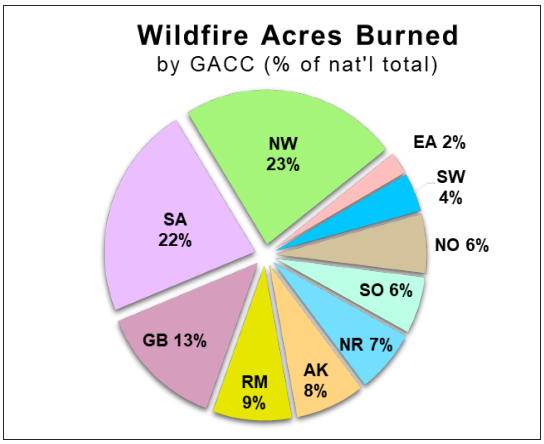
Wildfires by Geographic Area

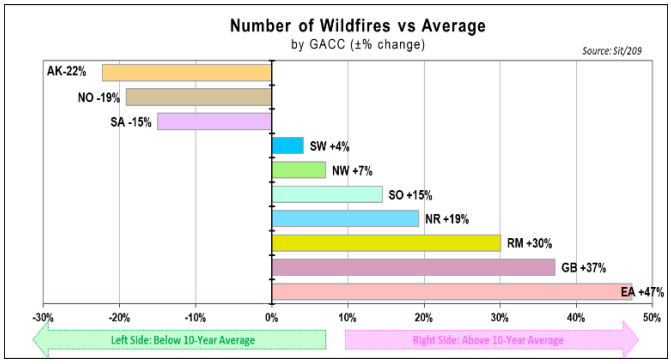
In 2024, the Southern Area accounted for just over a third of the overall distribution of wildfires, while the Northwest Area had the largest proportion of acres burned in the United States.

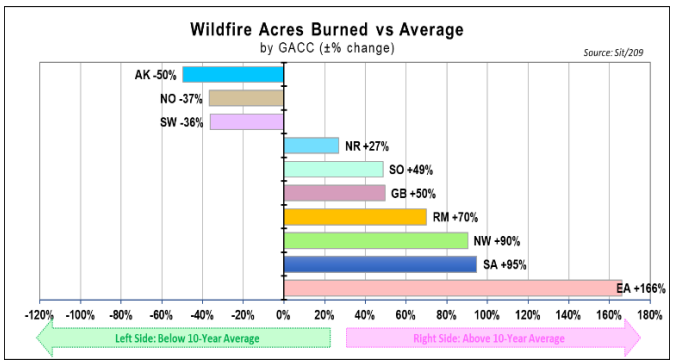






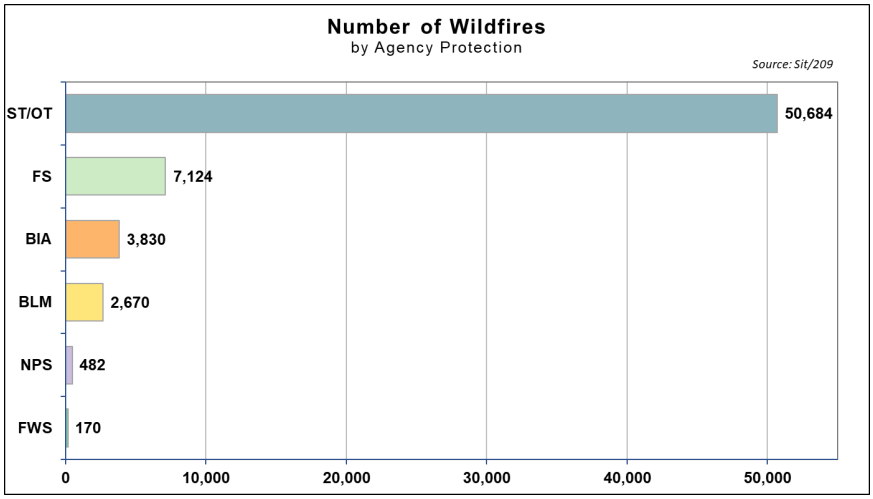


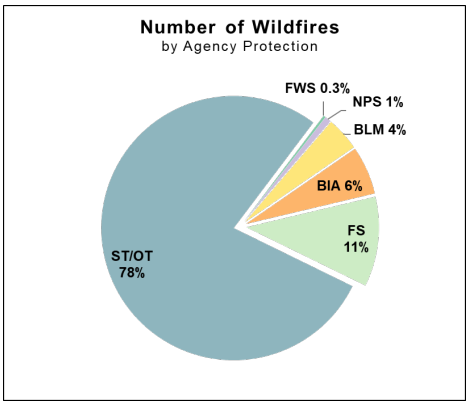


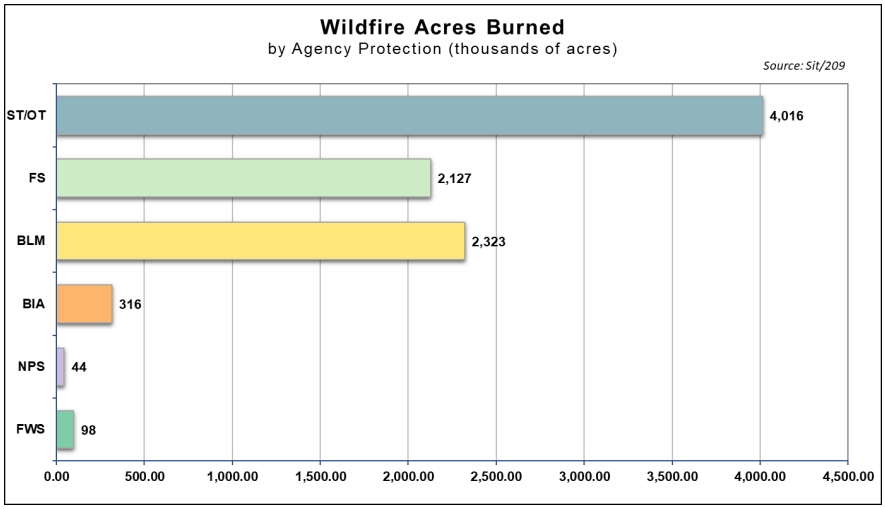


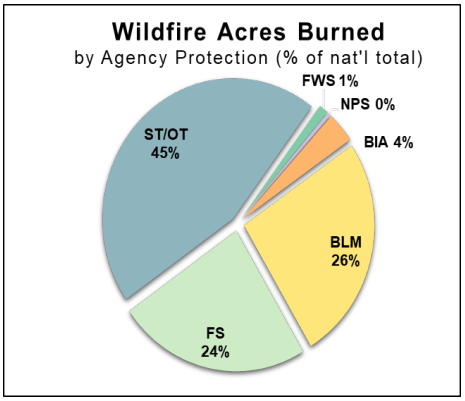
Wildfires by Agency

The distribution of wildfires by protection agency in 2024 was similar to prior years. About one-fifth of the nation's fires occurred on federally protected lands. Most wildfires, however, ignited on private lands, or under state or local protection.









Wildfires over 40,000 acres

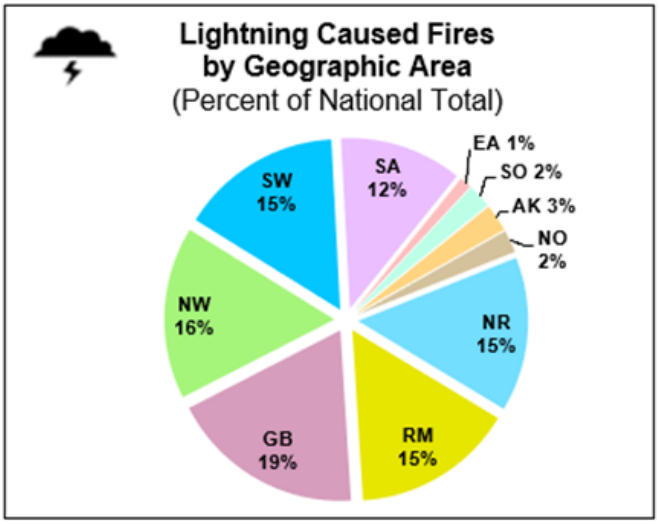
Name	GACC	State	Start Date	Last Report Date	Size In Acres	Cause*
Betty's Way	RM	NE	2/26	3/11	69,810	U
Smokehouse Creek	SA	TX	2/26	3/17	1,054,153	H
Catesby	SA	OK	2/27	3/15	89,688	H
McDonald	AK	AK	6/8	7/20	152,227	L
Midnight	AK	AK	6/19	7/9	52,550	L
Grapefruit Complex	AK	AK	6/28	7/13	89,011	U
Falls	NW	OR	7/10	8/21	151,689	H
Cow Valley	NW	OR	7/11	8/9	133,490	U
Lone Rock	NW	OR	7/13	8/31	137,222	U
Boneyard	NW	OR	7/17	7/25	49,716	L
Durkee	NW	OR	7/17	9/4	294,265	L
Battle Mountain Complex	NW	OR	7/18	9/14	183,026	U
Monkey Creek	NW	OR	7/18	7/20	115,269	U
Swawilla I	NW	WA	7/18	11/3	53,462	L
Telephone	NW	OR	7/22	8/21	54,005	L
Crazy Creek	NW	OR	7/22	9/25	86,968	L
Big Horn	NW	WA	7/22	7/30	51,569	U
Badland Complex	NW	OR	7/23	8/14	54,617	U
Retreat	NW	WA	7/23	10/1	45,601	H
Park	NO	CA	7/24	9/25	429,603	U
Borel	SO	CA	7/24	9/14	59,288	U
Wapiti	GB	ID	7/24	10/24	129,063	L
Hole In The Ground	NW	OR	7/24	8/1	98,855	L
Paddock	GB	ID	8/5	8/17	187,185	L
Warner Peak	NW	OR	8/5	8/23	65,866	L
Nellie	GB	ID	8/6	8/8	48,196	L
Middle Fork Complex	GB	ID	8/8	10/24	61,496	U
Flat Rock	RM	WY	8/21	9/12	52,421	U
House Draw	RM	WY	8/21	9/12	174,547	L
Remington	RM	WY	8/22	9/19	196,368	U
Red Rock	GB	ID	9/2	10/28	79,260	L
Rail Ridge	NW	OR	9/2	10/31	176,661	L
Lava	GB	ID	9/3	10/24	97,585	L
Line	SO	CA	9/4	12/24	43,978	U
Bridge	SO	CA	9/8	12/29	56,030	U
Pack Trail	RM	WY	9/18	11/2	89,930	L
Elk	RM	WY	9/27	11/14	98,352	U

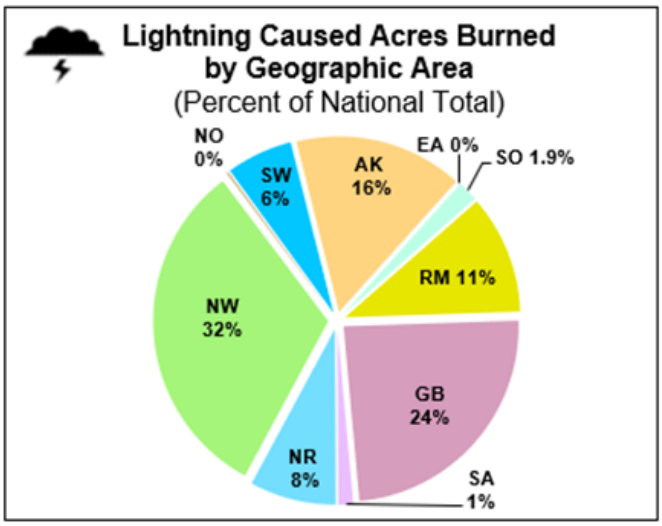
* L = Lightning H – Human U – Undetermined NR – Not Reported

Information in the above table was derived from the Sit/209 Application. This information may not reflect final official figures.

Lightning Caused Fires and Acres by Geographic Area

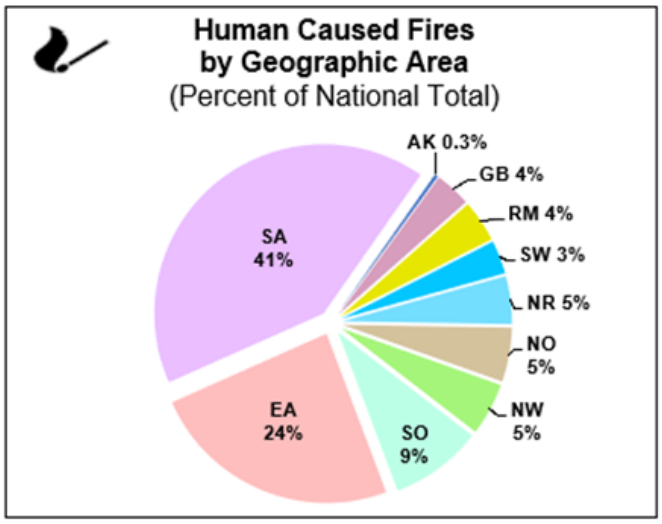
Fires/ Acres	AK	EA	GB	NO	NR	NW	RM	SA	SO	SW	Total
Fires	180	80	1,281	148	1,017	1,134	1,066	809	156	1,064	6,935
Acres	663,564	498	1,024,949	10,919	339,858	1,354,814	465,802	57,789	79,372	260,766	4,258,331

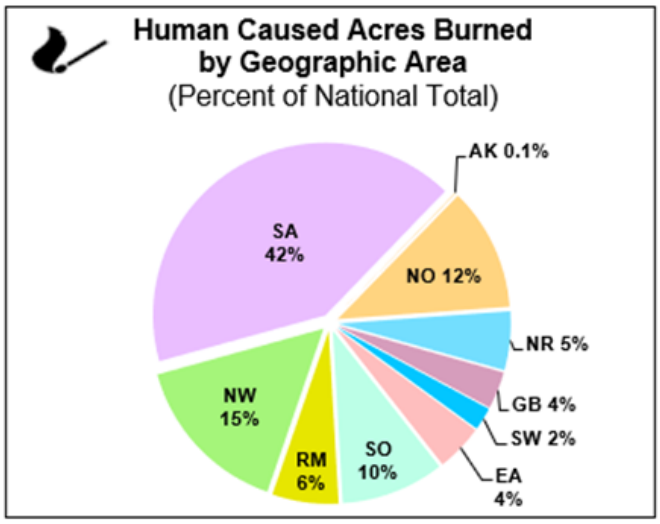




Human Caused Fires and Acres by Geographic Area

Fires/ Acres	AK	EA	GB	NO	NR	NW	RM	SA	SO	SW	Total
Fires	197	13,961	1,998	2,992	2,653	2,911	2,316	23,980	5,107	1,847	57,962
Acres	3,512	206,169	163,215	539,170	256,481	719,771	289,709	1,937,041	451,843	99,642	4,666,553





Wildfires and Acres Burned by Agency and GACC – 2024 & prior years

Agency Fires/Acres	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	5-Yr Avg.	10-Yr Avg.
BIA Fires	3,377	3,886	4,056	3,843	3,472	2,830	4,740	4,646	3,182	2,633	3,830	3,606	3,667
BIA Acres	327,352	591,644	325,162	306,542	216,118	151,305	923,298	396,433	255,552	192,807	316,364	383,879	368,621
BLM Fires	1,944	2,093	2,105	2,927	2,872	2,046	2,362	2,241	1,934	1,836	2,607	2,084	2,236
BLM Acres	871,642	4,770,133	1,183,821	2,711,267	1,905,343	2,024,554	1,131,540	412,155	1,752,793	274,004	2,323,096	1,119,009	1,703,725
FS Fires	6,755	7,056	5,676	6,617	5,629	5,332	6,738	6,244	5,852	5,252	7,124	5,884	6,115
FS Acres	871,876	1,916,302	1,247,906	2,866,031	2,307,439	615,816	4,814,465	4,126,564	1,865,791	831,465	2,127,309	2,450,820	2,146,366
FWS Fires	348	194	174	252	162	175	238	307	196	199	170	223	225
FWS Acres	17,404	33,897	15,374	206,393	71,137	91,311	52,739	51,264	20,659	30,707	98,041	49,336	59,089
NPS Fires	389	398	463	314	389	290	304	361	332	484	482	354	372
NPS Acres	24,949	74,780	177,901	110,349	121,092	27,533	145,447	131,182	28,615	137,242	44,103	94,004	97,909
State/Other Fires	50,799	54,524	55,269	57,546	45,559	39,804	44,568	45,186	57,492	46,176	50,684	46,645	49,692
State/Other Acres	1,482,390	2,738,393	2,559,831	3,825,504	4,146,363	1,753,843	3,054,847	2,008,045	3,653,773	1,227,685	4,015,973	2,339,639	2,645,067
Total Fires:	63,612	68,151	67,743	71,499	58,083	50,477	58,950	58,985	68,988	56,580	64,897	58,796	62,307
Total Acres:	3,595,613	10,125,149	5,509,995	10,026,086	8,767,492	4,664,362	10,122,336	7,125,643	7,577,183	2,693,910	8,924,884	6,436,687	7,020,777

GACC Fires/Acres	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	5-Yr Avg.	10-Yr Avg.
AK Fires	384	768	572	364	367	720	349	384	595	346	377	479	485
AK Acres	233,561	5,111,404	496,467	653,023	410,683	2,498,159	181,169	253,356	3,110,976	314,277	667,076	1,271,587	1,326,308
EA Fires	7,030	11,639	11,270	9,816	6,891	5,750	13,175	10,855	8,592	10,317	14,041	9,738	9,534
EA Acres	54,141	100,294	98,042	41,705	50,734	38,852	63,036	152,669	64,342	113,416	206,667	86,463	77,723
GB Fires	2,250	2,096	2,063	3,127	2,776	2,308	2,958	2,449	2,121	1,751	3,279	2,317	2,390
GB Acres	164,802	505,483	761,622	2,103,788	2,087,922	459,384	948,812	373,165	436,598	97,656	1,188,164	463,123	793,923
NO Fires	4,082	4,587	3,363	4,173	3,602	3,704	4,678	3,962	3,429	3,249	3,140	3,804	3,883
NO Acres	474,826	594,048	96,706	672,448	1,496,950	214,742	2,779,003	1,945,506	246,990	189,647	550,089	1,075,178	871,087
NR Fires	2,665	3,817	2,700	3,900	2,741	2,309	3,404	4,052	2,710	2,468	3,670	2,989	3,077
NR Acres	143,271	745,947	202,140	1,551,275	147,093	74,042	403,046	1,069,660	223,746	137,654	596,339	381,630	469,787
NW Fires	4,572	4,603	2,519	3,404	3,764	3,690	3,853	4,075	3,611	3,687	4,045	3,783	3,778
NW Acres	1,383,514	1,823,473	513,226	1,121,442	1,336,096	249,476	1,983,970	1,503,026	631,605	353,367	2,074,585	944,289	1,089,920
RM Fires	2,356	2,559	3,289	3,164	2,480	1,684	2,852	3,316	2,392	1,908	3,382	2,430	2,600
RM Acres	78,345	180,822	686,921	754,747	748,956	114,685	1,021,951	336,187	273,503	249,363	755,511	399,138	444,548
SA Fires	34,267	31,594	34,474	35,068	27,721	22,999	18,773	22,164	38,945	25,708	24,789	25,718	29,171
SA Acres	752,694	556,267	1,591,044	1,960,764	1,591,101	498,925	556,902	532,835	1,518,116	682,996	1,994,830	757,955	1,024,164
SO Fires	3,786	4,175	3,996	5,389	4,453	4,632	5,419	5,324	4,460	4,329	5,263	4,833	4,596
SO Acres	80,218	304,925	479,207	595,873	348,722	55,092	1,144,214	320,378	87,350	155,134	531,215	352,434	357,111
SW Fires	2,220	2,313	3,497	3,094	3,288	2,681	3,489	2,404	2,133	2,817	2,911	2,705	2,794
SW Acres	230,241	202,486	584,620	571,021	549,235	461,005	1,040,233	638,861	983,957	400,400	360,408	704,891	566,206
Total Fires:	63,612	68,151	67,743	71,499	58,083	50,477	58,950	58,985	68,988	56,580	64,897	58,796	62,307
Total Acres:	3,595,613	10,125,149	5,509,995	10,026,086	8,767,492	4,664,362	10,122,336	7,125,643	7,577,183	2,693,910	8,924,884	6,436,687	7,020,777

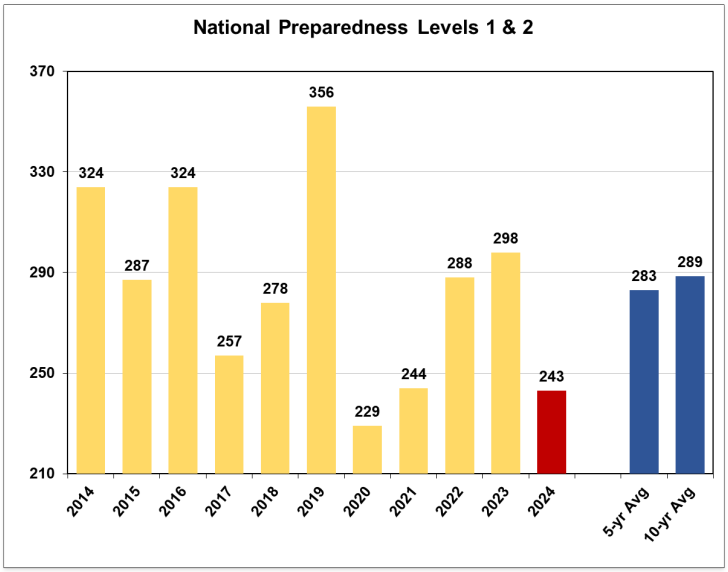
National Preparedness Levels

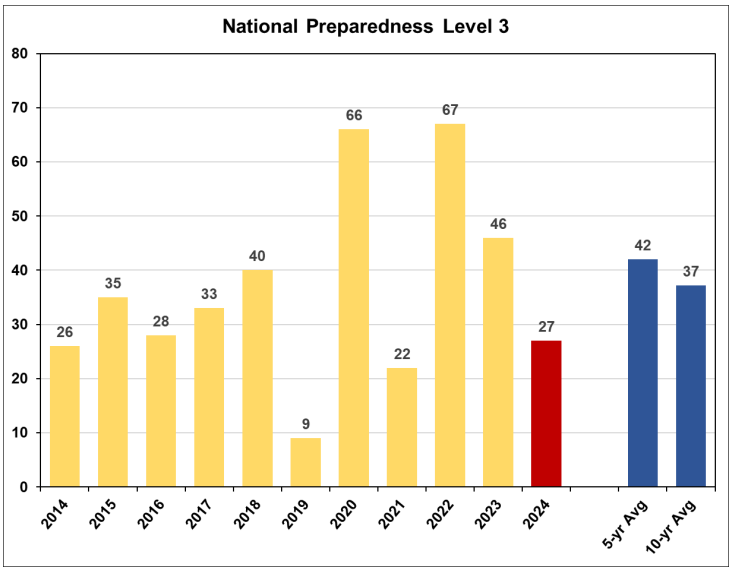
In 2024 the National Preparedness Level (PL) was elevated and decreased accordingly:

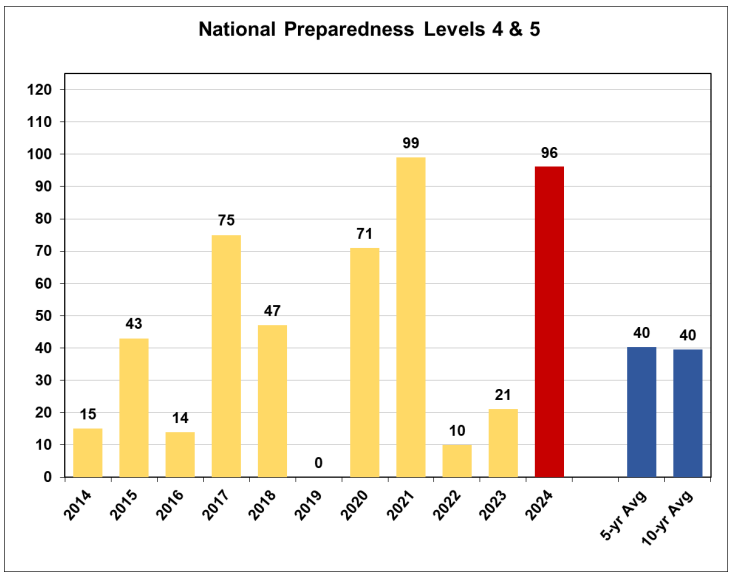
- Elevated from PL 1 to PL 2 on May 21
- Elevated from PL 2 to PL 3 on June 28
- Elevated from PL 3 to PL 4 on July 10
- Elevated from PL 4 to PL 5 on July 18
- Decreased from PL 5 to PL 4 on August 22
- Elevated from PL 4 to PL 5 on September 6
- Decreased from PL 5 to PL4 on September 20
- Decreased from PL 4 to PL 3 on September 26
- Elevated from PL 3 to PL 4 on October 4
- Elevated from PL 4 to PL 5 on October 8
- Decreased from PL 5 to PL 4 on October 18
- Decreased from PL 4 to PL 3 on October 22
- Decreased from PL 3 to PL 2 on October 29
- Decreased from PL 2 to PL 1 on November 13

Total Number of Days at Each National Preparedness Level

PL	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1	31	29	31	30	20	0	0	0	0	0	18	31	**190**
2	0	0	0	0	11	27	0	0	0	3	12	0	**53**
3	0	0	0	0	0	3	9	0	5	10	0	0	**27**
4	0	0	0	0	0	0	8	10	11	8	0	0	**37**
5	0	0	0	0	0	0	14	21	14	10	0	0	**59**
Total:	**31**	**29**	**31**	**30**	**31**	**30**	**31**	**31**	**30**	**31**	**30**	**31**	**366**


National Preparedness Levels 1 & 2
370
330
290
250
210
324
287
324
257
278
356
229
244
288
298
243
283
289
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
5-yr Avg
10-yr Avg


National Preparedness Level 3
80
70
60
50
40
30
20
10
0
26
35
28
33
40
9
66
22
67
46
27
42
37
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
5-yr Avg
10-yr Avg


National Preparedness Levels 4 & 5
120
110
100
90
80
70
60
50
40
30
20
10
0
15
43
14
75
47
0
71
99
10
21
96
40
40
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
5-yr Avg
10-yr Avg

National Preparedness Level Summary

Total Days at National Preparedness Levels

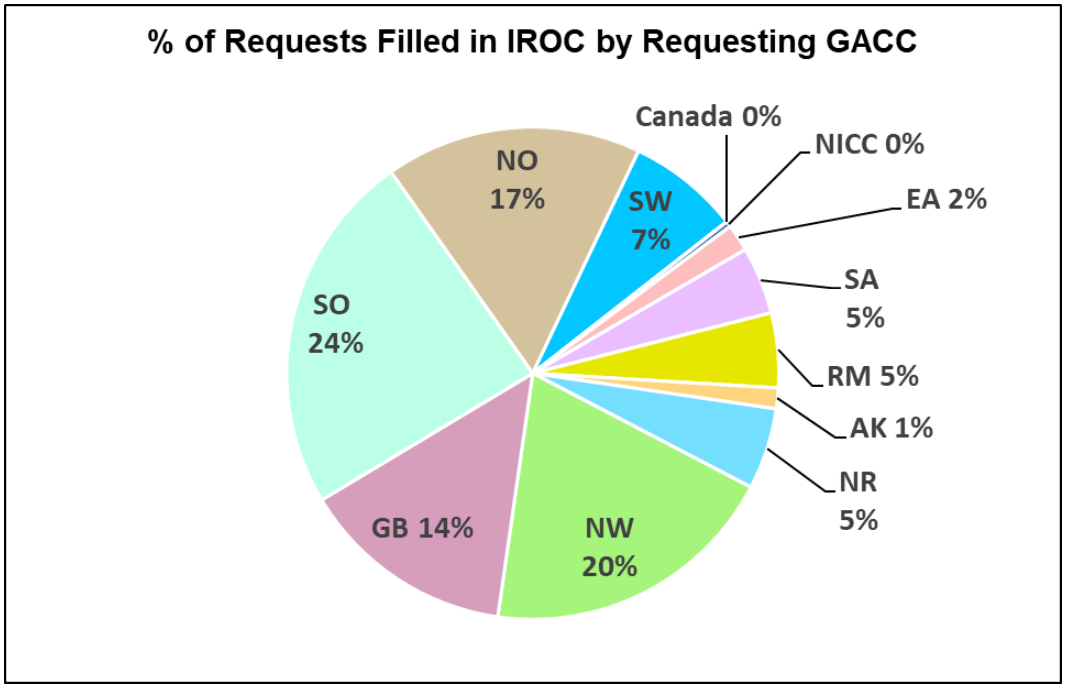
Year	PL 1	PL 2	PL 3	PL 4	PL 5	PL1&2	PL4&5
1990	247	74	31	6	7	321	13
1991	255	103	7	0	0	358	0
1992	278	67	15	6	0	345	6
1993	268	97	0	0	0	365	0
1994	235	26	54	4	46	261	50
1995	254	96	15	0	0	350	0
1996	98	179	60	8	21	277	29
1997	216	149	0	0	0	365	0
1998	157	172	30	6	0	329	6
1999	159	165	33	8	0	324	8
2000	179	73	61	13	40	252	53
2001	188	142	9	10	16	330	26
2002	187	76	14	26	62	263	88
2003	92	155	60	10	48	247	58
2004	249	57	60	0	0	306	0
2005	233	44	47	41	0	277	41
2006	118	137	44	16	50	255	66
2007	212	76	17	21	39	288	60
2008	209	84	15	36	22	293	58
2009	275	62	28	0	0	337	0
2010	231	134	0	0	0	365	0
2011	207	92	59	7	0	299	7
2012	212	49	60	45	0	261	45
2013	253	46	42	17	7	299	24
2014	242	82	26	15	0	324	15
2015	253	34	35	19	24	287	43
2016	251	73	28	14	0	324	14
2017	185	72	33	36	39	257	75
2018	191	87	40	13	34	278	47
2019	241	115	9	0	0	356	0
2020	205	24	66	26	45	229	71
2021	161	83	22	31	68	244	99
2022	152	136	67	10	0	288	10
2023	211	86	46	21	0	298	21
2024	190	53	27	37	59	243	96

Averages	PL1&2	PL 3	PL4&5
Total Days: 5-yr Avg	*283*	*42*	*40*
Total Days: 10-yr Avg	*289*	*37*	*40*

Requests Filled Nationally in IROC

2024 was a well above average year for the wildland firefighter and dispatch community. Over 520,000 requests were filled nationally in IROC. An increase of well over 180,000 orders were filled compared to 2023. The following data shows the number of IROC requests filled in 2024.

GACC	Aircraft	Crew	Equipment	Overhead	Supply	Total
AK	642	89	907	5,107	330	**7,075**
EA	237	90	2,511	6,374	121	**9,333**
GB	4,747	1,345	11,092	53,488	2,932	**73,604**
NICC	67	29	273	1,582	46	**1,997**
NO	9,197	3,482	24,553	48,826	1,729	**87,787**
NR	2,218	545	5,559	18,301	1,209	**27,832**
NW	8,462	2,555	21,278	63,736	6,170	**102,201**
RM	2,551	490	3,370	18,381	795	**25,587**
SA	786	106	3,318	18,297	575	**23,082**
SO	11,082	5,828	33,905	71,095	2,270	**124,180**
SW	2,166	845	4,803	28,189	2,367	**38,370**
Canada	0	0	0	8	0	**8**
Total	**42,155**	**15,404**	**111,569**	**333,384**	**18,544**	**521,056**



**** Disclaimer: Of the 333,384 overhead requests, 249,858 requests were subordinate requests attached to parent aircraft, overhead, crew, and engine requests. Of the 521,056 requests, 7,039 requests were support requests attached to parent aircraft, overhead, crew, and engine requests.*

These statistics are based off an IROC report utilizing the QST1 Request Status Table. Statistics may vary amongst individual Geographic Area annual reports depending on which filters are utilized within the IROC Reports module.

Requests Processed Through the NICC

The following statistics pertain to requests processed through the National Interagency Coordination Center, except for Incident Management Teams, which are captured on a national mobilization scale. This data is broken down by requesting Geographic Area and Requesting Agency. Five and 10-year averages are also provided.

International Resource Mobilizations

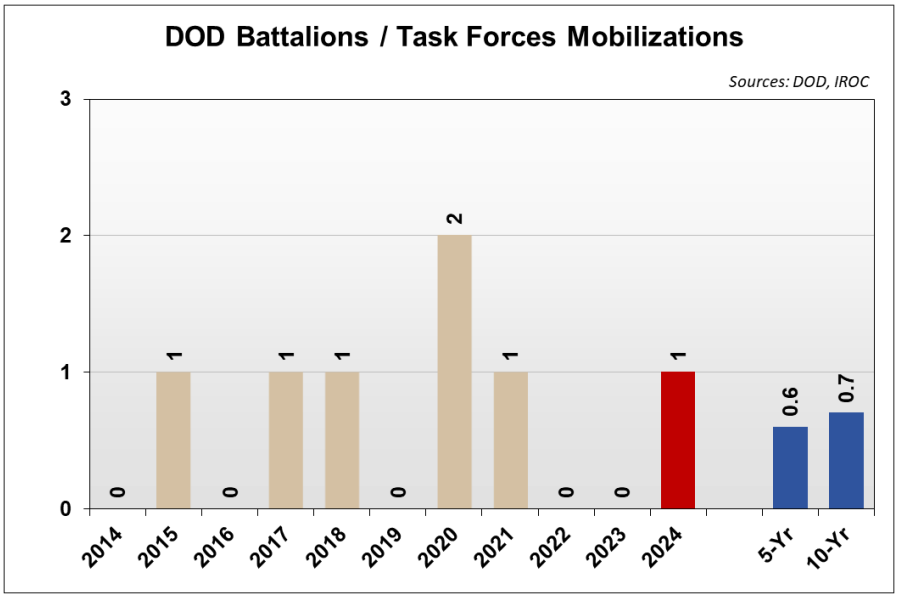
In 2024, The United States mobilized 8 individual overhead personnel to Canada to assist with Burned Area Emergency Response efforts.

Sixty individual overhead personnel were mobilized in support of United States wildfires in the Northwest Area from Australia and New Zealand.

One fire suppression crew from Parks Canada and one fire suppression crew from Saskatchewan, Canada were mobilized in support of United States wildfires in the Great Basin Area.

Department of Defense Mobilizations

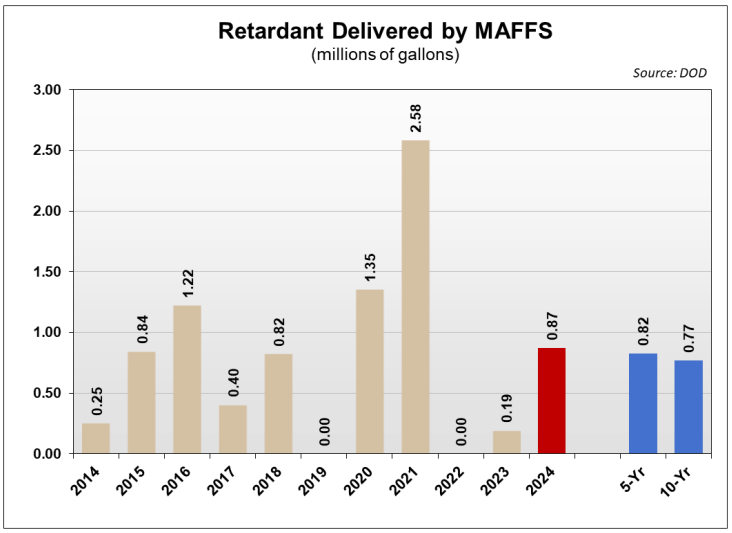
In 2024, NICC processed one half military battalion request which was provided by the 14th Brigade Engineer Battalion and the 1st Battalion, 17th Infantry Regiment based out of Joint Base Lewis McChord (JBLM). All DOD resources were deployed in support of wildland fire operations on the Boise National Forest in the Great Basin Area.



Modular Airborne Fire Fighting Systems (MAFFS)

MAFFS air tankers were activated on July 14 and released on September 5. National statistics for the 77-day activation are listed below:

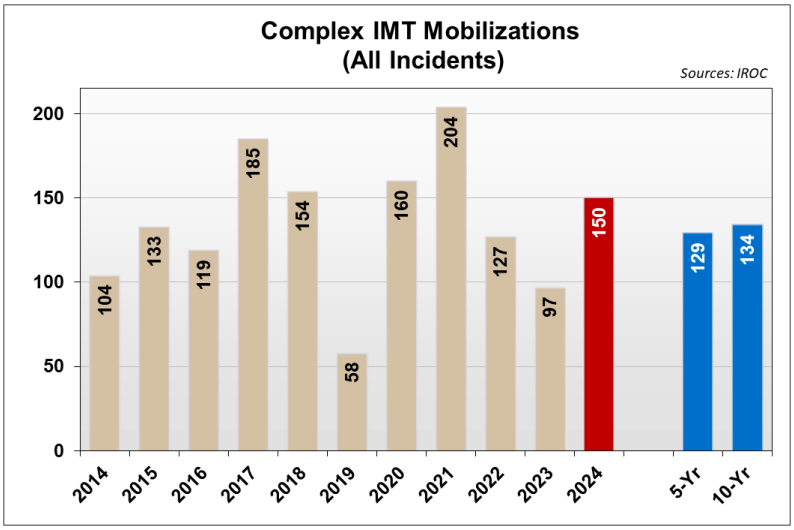
- Total missions: 323
- Total employment hours: 398
- Total retardant drops: 315
- Total gallons of retardant dropped: 871,205



Incident Management Team Mobilizations

In 2024, the firefighting community fully transitioned to the Complex Incident Management Team (CIMT) business model. All federal Type 1 and Type 2 Incident Management Team mobilizations prior to 2024 have been combined and are listed below.

A complete picture of the Complex Incident Management Team business model can be found at the [NWCG Incident Workforce Development Group webpage.]

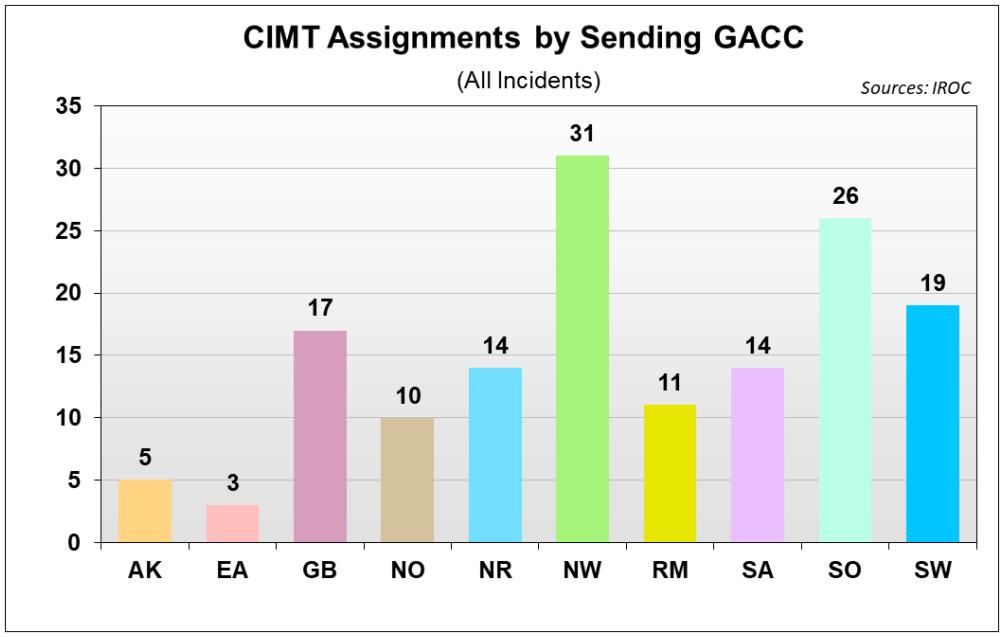


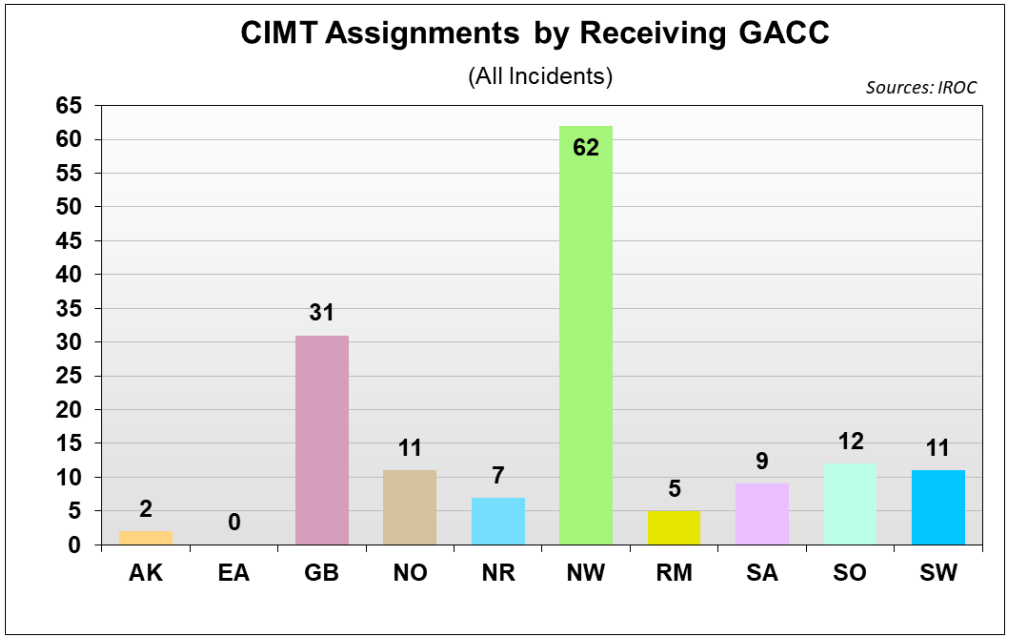
National Incident Management Organization

National Incident Management Organization (NIMO) teams were assigned to three wildfire incidents for 50 days. NIMO teams were also mobilized to three non-wildfire incidents for 97 days.

Complex Incident Management Teams

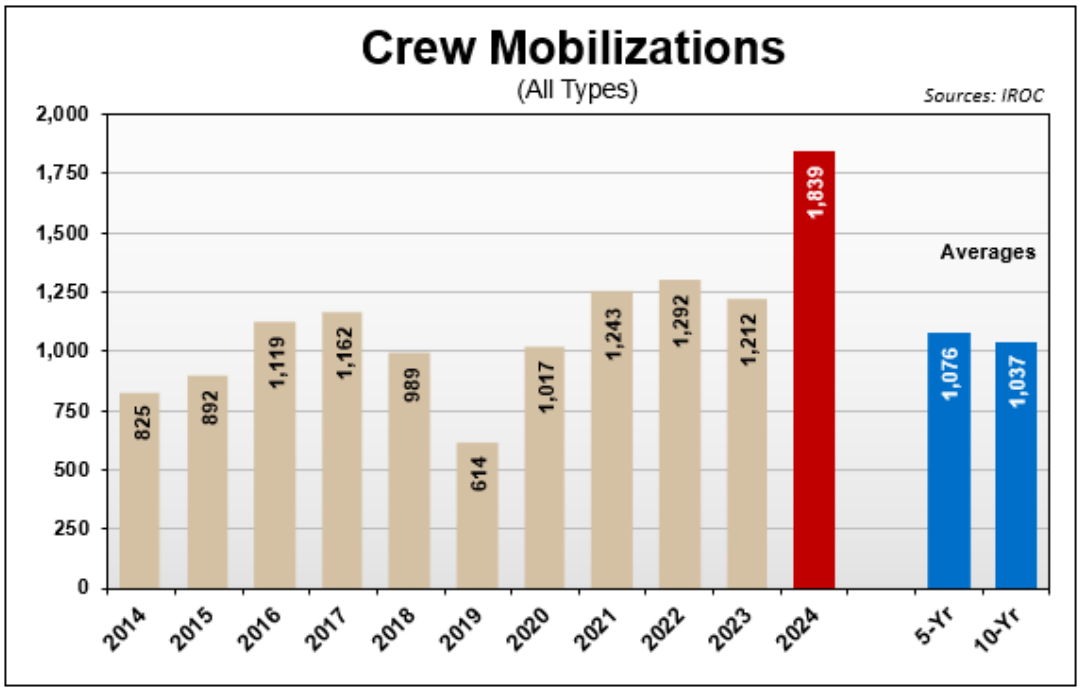
National Complex Incident Management Teams (CIMT) were mobilized 150 times. CIMTs were assigned for over 2,000 days. The following graphs show the mobilization of CIMTs by sending and receiving Geographic Area.

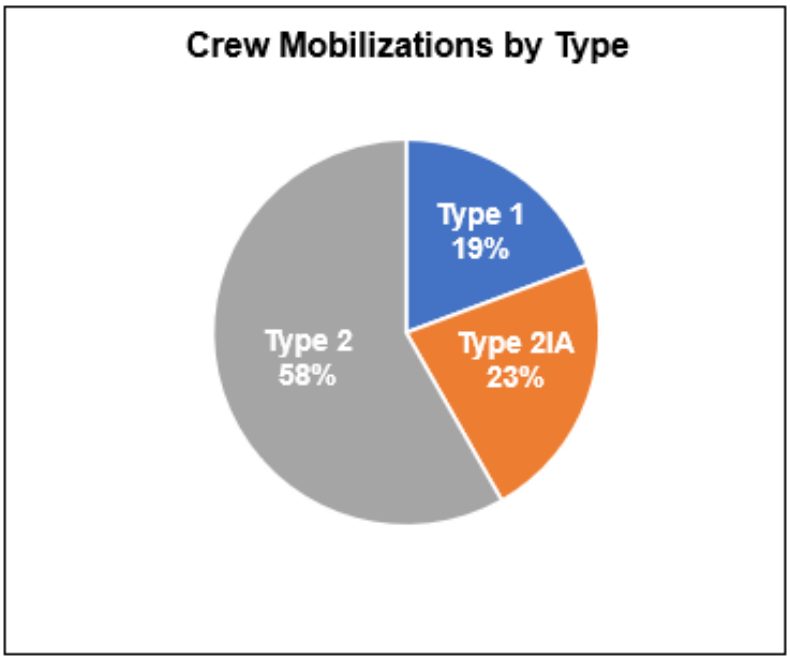




Crew Mobilizations

NICC received 3,350 crew requests in 2024. Of those requests: 1,839 were filled, 636 were canceled and 875 were UTF. The NICC received 1,119 orders for Type 1 crews, 1,511 orders for Type 2 crews and 720 orders for Type 2 IA crews. The number of crew mobilizations in 2024 was above both the five and 10-year average.





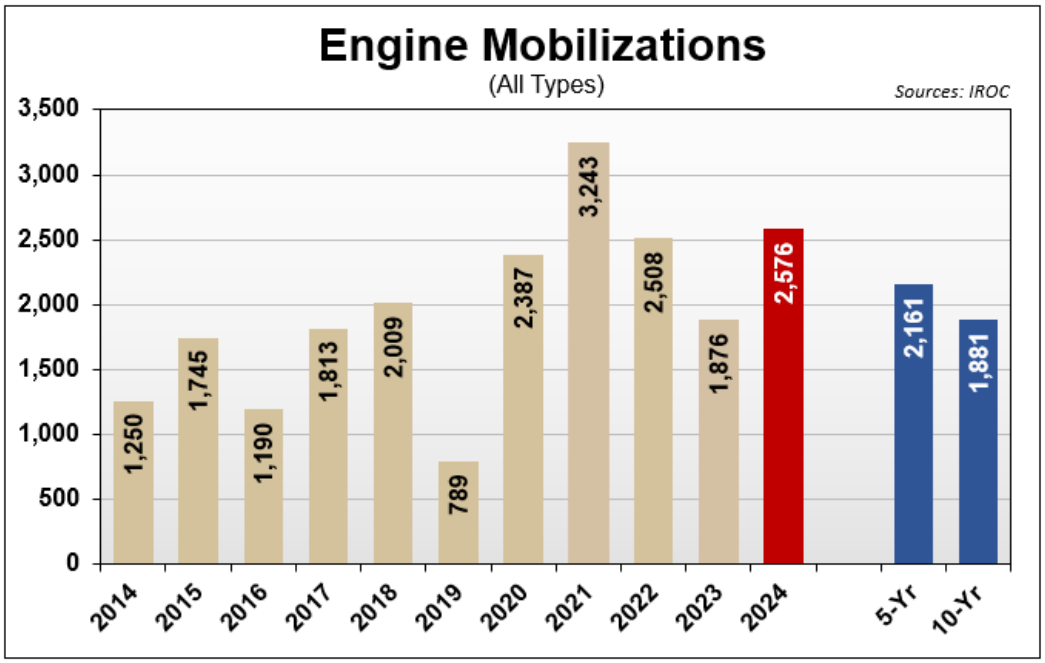
Crew Requests Summary by Requesting Agency and Geographic Area

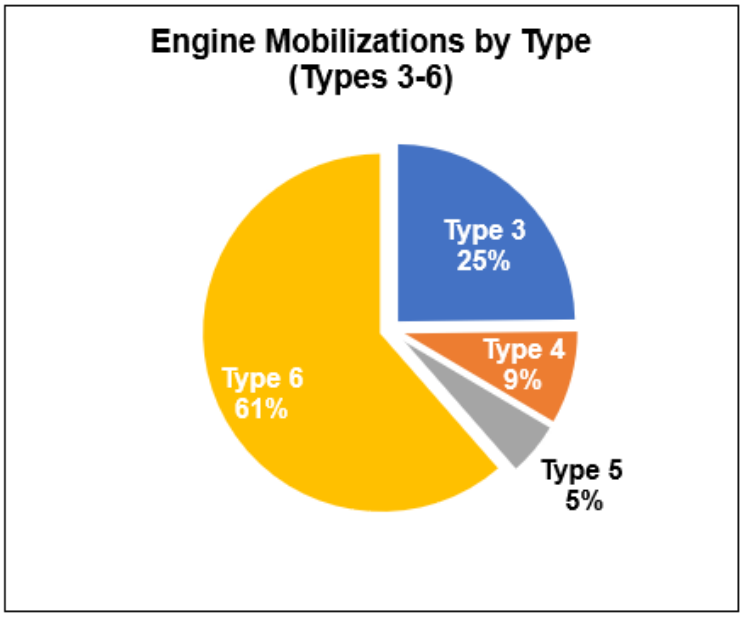
	Type 1 Crew			Type 2 Crew			Type 2-IA Crew			Crew Totals			
	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	*Total*
BIA	1	1	0	9	18	1	8	0	0	18	19	1	***38***
BLM	18	15	10	57	15	9	16	5	2	91	35	21	***147***
DOD	0	1	0	0	0	0	0	0	0	0	1	0	***1***
FEMA	2	0	2	1	0	0	0	0	0	3	0	2	***5***
FS	304	199	472	861	125	151	333	102	165	1,498	426	788	***2,712***
FWS	4	0	0	5	0	0	1	0	0	10	0	0	***10***
NPS	13	2	7	18	3	2	5	2	2	36	7	11	***54***
ST	13	41	8	120	88	28	49	11	16	182	140	52	***374***
Other	0	6	0	0	0	0	1	2	0	1	8	0	***9***
Canada	0	0	0	0	0	0	0	0	0	0	0	0	***0***
Subtotal:	*355*	*265*	*499*	*1,071*	*249*	*191*	*413*	*122*	*185*	*1,839*	*636*	*875*	
Total:	**1,119**			**1,511**			**720**			**3,350**			

	Type 1 Crew			Type 2 Crew			Type 2-IA Crew			Crew Totals			
	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	*Total*
AK	14	0	3	0	0	0	4	0	0	18	0	3	***21***
EA	3	1	6	2	0	0	8	0	1	13	1	7	***21***
GB	90	34	85	209	17	16	105	21	57	404	72	158	***634***
NICC	17	0	1	0	0	0	10	0	0	27	0	1	***28***
NO	31	88	250	139	74	64	58	25	27	228	187	341	***756***
NR	21	13	40	58	1	0	30	11	38	109	25	78	***212***
NW	55	34	41	382	143	88	41	1	23	478	178	152	***808***
RM	35	10	15	88	2	2	63	4	12	186	16	29	***231***
SA	12	2	7	0	1	0	12	3	0	24	6	7	***37***
SO	39	82	51	155	9	21	48	53	25	242	144	97	***483***
SW	38	1	0	38	2	0	34	4	2	110	7	2	***119***
Other	0	0	0	0	0	0	0	0	0	0	0	0	***0***
Canada	0	0	0	0	0	0	0	0	0	0	0	0	***0***
Subtotal:	*355*	*265*	*499*	*1,071*	*249*	*191*	*413*	*122*	*185*	*1,839*	*636*	*875*	
Total:	**1,119**			**1,511**			**720**			**3,350**			

Engine Mobilizations

NICC received 4,550 engine requests in 2024. Of those requests: 2,576 were filled, 1,046 were canceled and 928 were UTF. Type 3 engines were the most requested engine with 2,110 requests and 639 fills. Type 6 engines were the next most requested with 2,005 requests and 1,582 fills. The number of engine mobilizations was above the five and 10-year averages.





Engine Requests Summary by Requesting Agency

	Type 1 Engine			Type 2 Engine			Type 3 Engine			Type 4 Engine		
	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF
BIA	0	0	0	0	0	0	5	5	1	4	1	
BLM	0	0	0	0	0	0	49	39	31	42	4	14
DOD	0	0	0	0	0	0	0	0	0	0	0	
FEMA	0	0	0	0	0	0	0	0	0	0	0	
FS	0	1	0	0	0	0	512	381	636	153	21	16
FWS	0	0	0	0	0	0	3	6	0	7	0	
NPS	0	0	0	0	0	0	1	2	5	0	0	
ST	0	0	7	0	0	0	64	335	22	16	5	3
Other	0	0	0	0	0	0	5	8	0	1	0	
Subtotal:	*0*	*1*	*7*	*0*	*0*	*0*	*639*	*776*	*695*	*223*	*31*	*33*
Total:		**8**			**0**			**2,110**			**287**	

	Type 5 Engine			Type 6 Engine			Type 7 Engine			Engine Totals			
	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	***Total***
BIA	1	0	1	150	14	10	2	0	0	112	20	12	***144***
BLM	17	0	0	116	17	8	0	0	0	224	60	53	***337***
DOD	0	0	0	0	0	0	0	0	0	0	0	0	***0***
FEMA	0	0	0	0	0	0	0	0	0	0	0	0	***0***
FS	80	0	0	1,030	149	138	0	1	0	1,775	553	790	***3,118***
FWS	1	0	0	19	0	1	0	0	0	30	6	1	***37***
NPS	0	0	0	27	3	8	0	0	0	28	5	13	***46***
ST	30	3	0	233	50	19	0	0	3	343	393	54	***790***
Other	1	0	0	7	1	5	0	0	0	14	9	5	***28***
Subtotal:	*130*	*3*	*1*	*1,582*	*234*	*189*	*2*	*1*	*3*	2,576	1,046	928	
Total:		**134**			**2,005**			**6**			**4,550**		

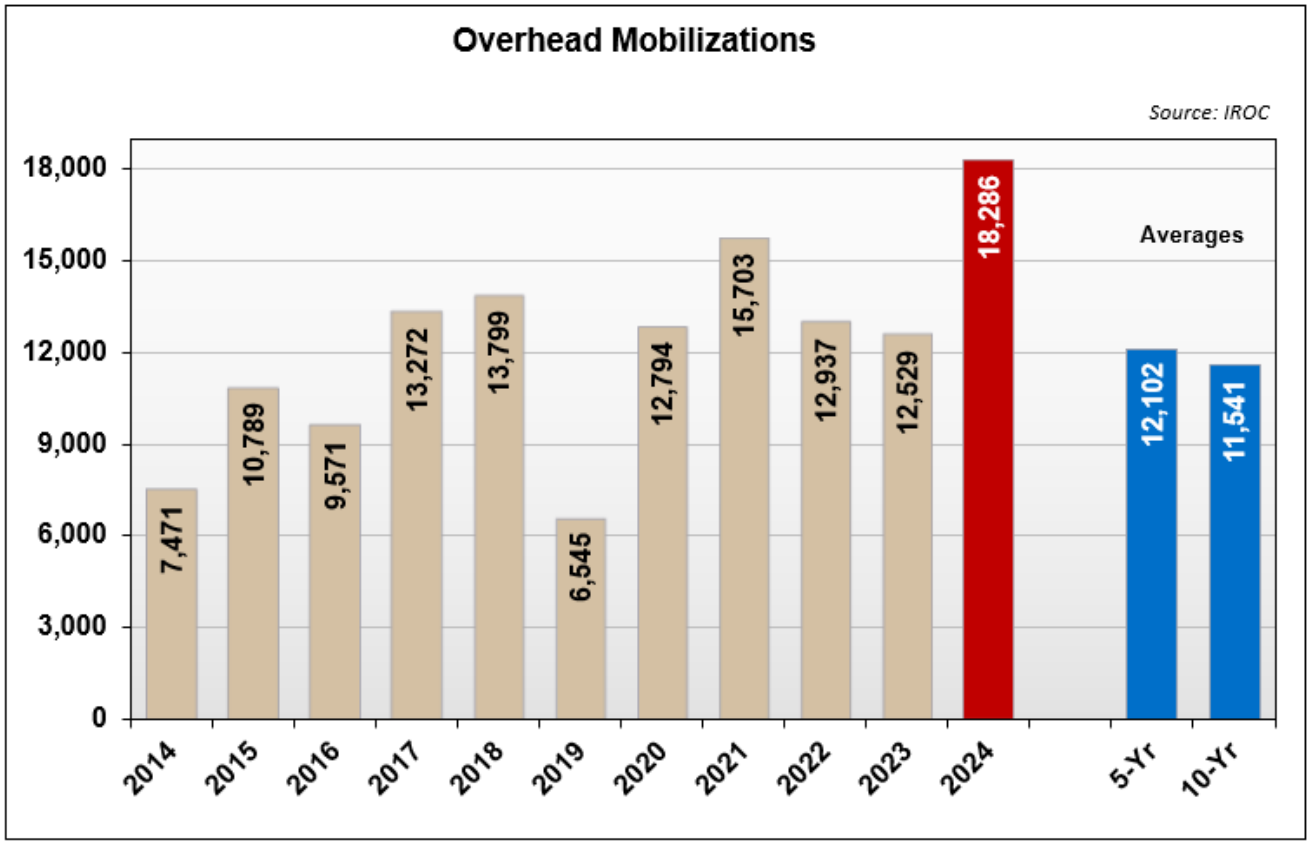
Engine Requests Summary by Requesting Geographic Area

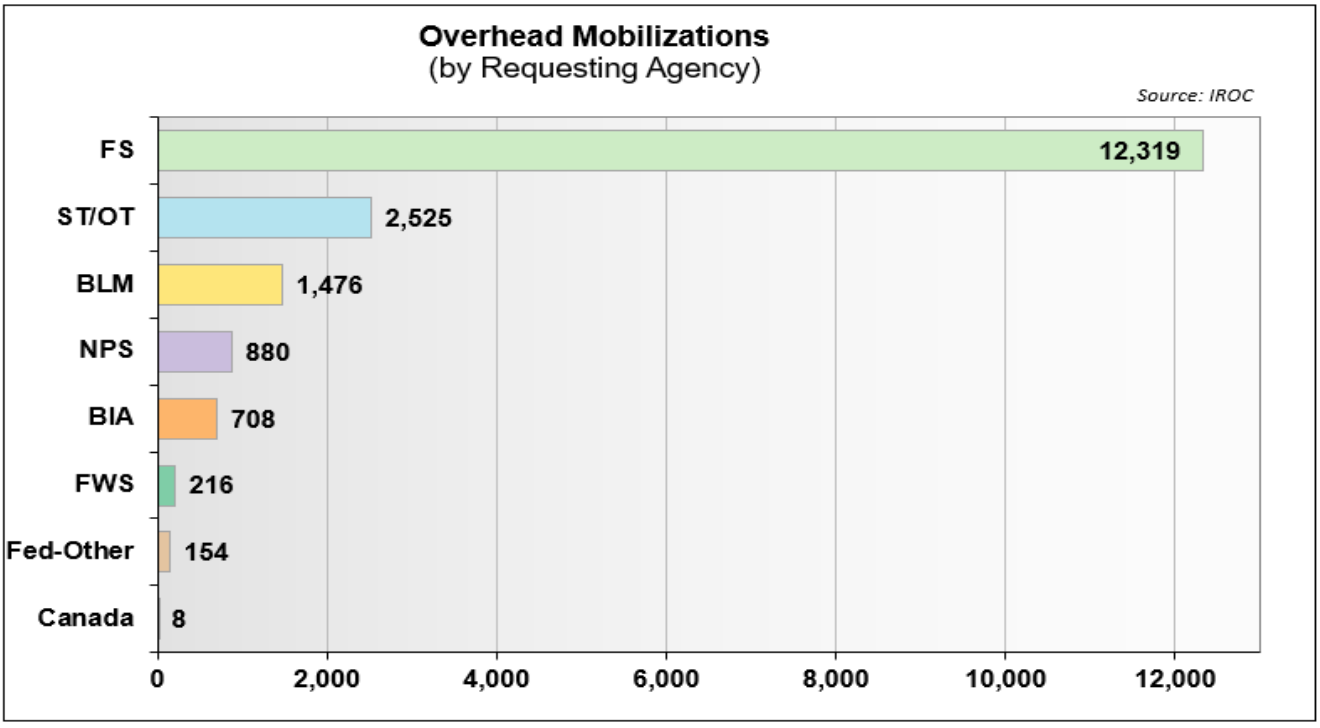
	Type 1 Engine			Type 2 Engine			Type 3 Engine			Type 4 Engine		
	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF
AK	0	0	0	0	0	0	0	0	0	1	0	0
EA	0	0	0	0	0	0	12	9	11	3	1	0
GB	0	1	0	0	0	0	122	66	61	49	4	22
NICC	0	0	0	0	0	0	0	0	0	0	0	0
NO	0	0	0	0	0	0	137	329	257	35	0	0
NR	0	0	0	0	0	0	10	13	33	9	0	1
NW	0	0	0	0	0	0	89	95	46	71	24	5
RM	0	0	7	0	0	0	34	39	61	17	2	4
SA	0	0	0	0	0	0	22	1	1	2	0	0
SO	0	0	0	0	0	0	181	205	208	23	0	0
SW	0	0	0	0	0	0	32	19	17	13	0	1
Subtotal:	*0*	*1*	*7*	*0*	*0*	*0*	*639*	*776*	*695*	*223*	*31*	*33*
Total:		**8**			**0**			**2,110**			**287**	

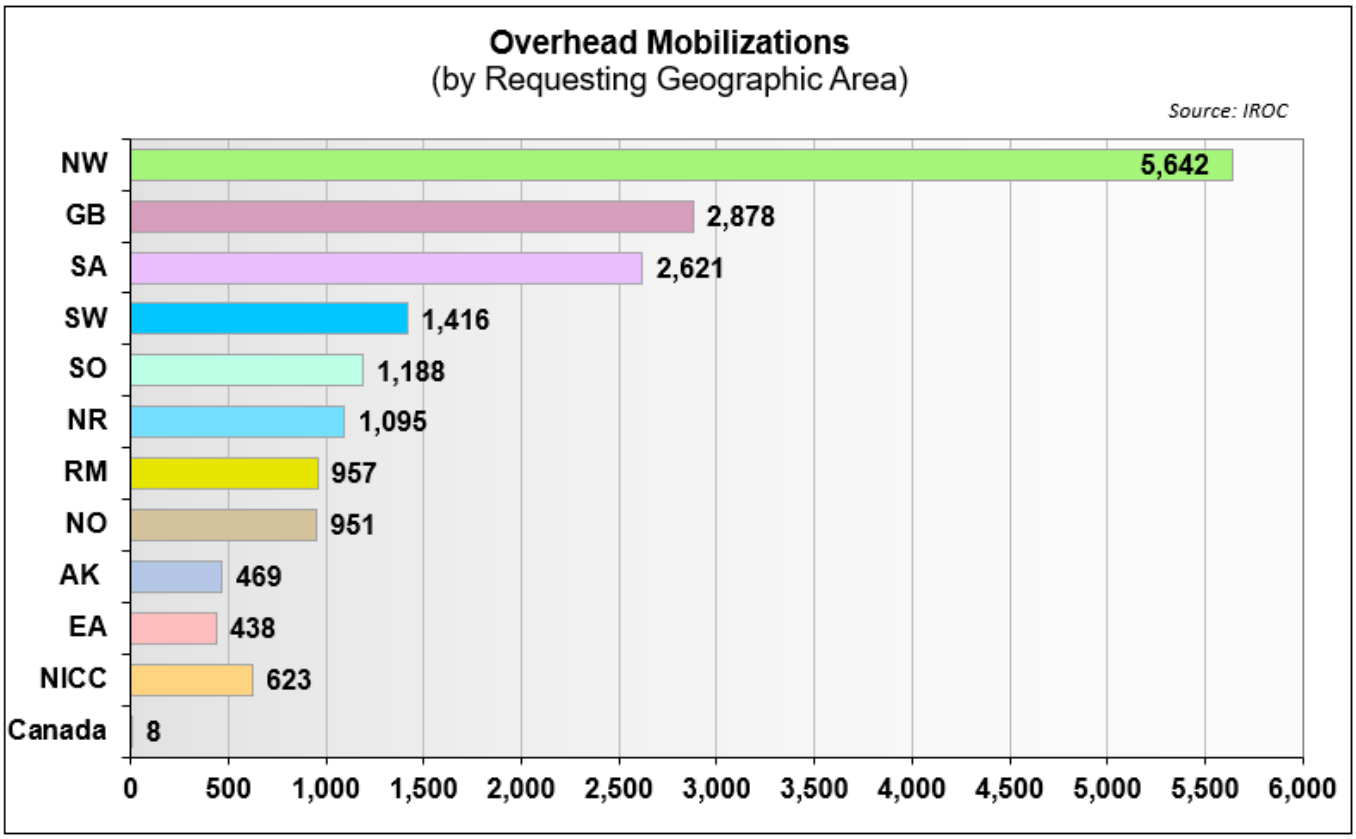
	Type 5 Engine			Type 6 Engine			Type 7 Engine			Engine Totals			
	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	***Total***
AK	0	0	0	0	0	0	0	0	0	1	0	0	***1***
EA	5	0	0	63	14	21	0	0	0	83	24	32	***139***
GB	18	0	0	215	42	24	0	0	0	404	113	107	***624***
NICC	0	0	0	0	0	0	0	0	0	0	0	0	***0***
NO	39	0	0	217	4	4	0	0	0	579	333	261	***1,173***
NR	6	0	1	101	29	54	0	0	0	99	42	89	***230***
NW	34	3	0	377	69	16	0	0	3	571	191	70	***832***
RM	2	0	0	131	25	25	0	1	0	184	67	97	***348***
SA	10	0	0	194	31	27	2	0	0	230	32	28	***290***
SO	15	0	0	131	9	2	0	0	0	350	214	210	***774***
SW	1	0	0	153	11	16	0	0	0	199	30	34	***263***
Subtotal:	*130*	*3*	*1*	*1,582*	*234*	*189*	*2*	*1*	*3*	*2,576*	*1,046*	928	
Total:		**134**			**2,005**			**6**			**4,550**		

Overhead Mobilizations

NICC received 34,062 overhead requests in 2024. Of those requests: 18,286 were filled, 6,255 were canceled, and 9,521 were UTF. The number of overhead mobilizations was well over the five and 10-year averages.







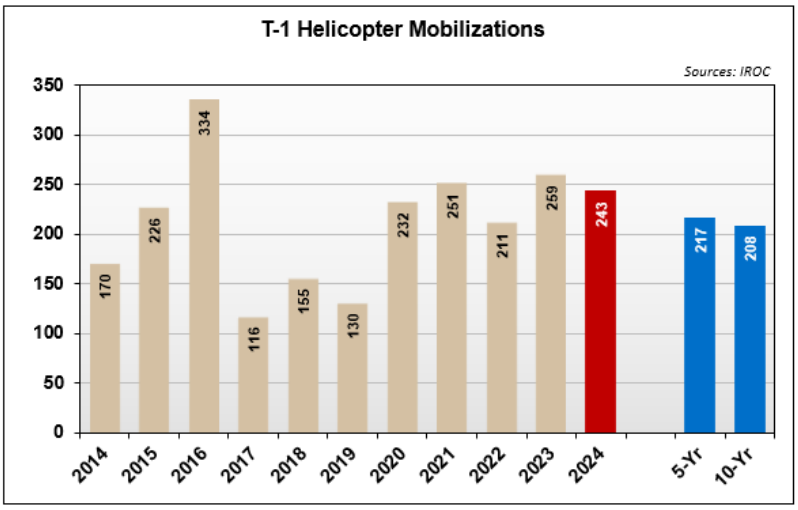
Overhead Requests Summary

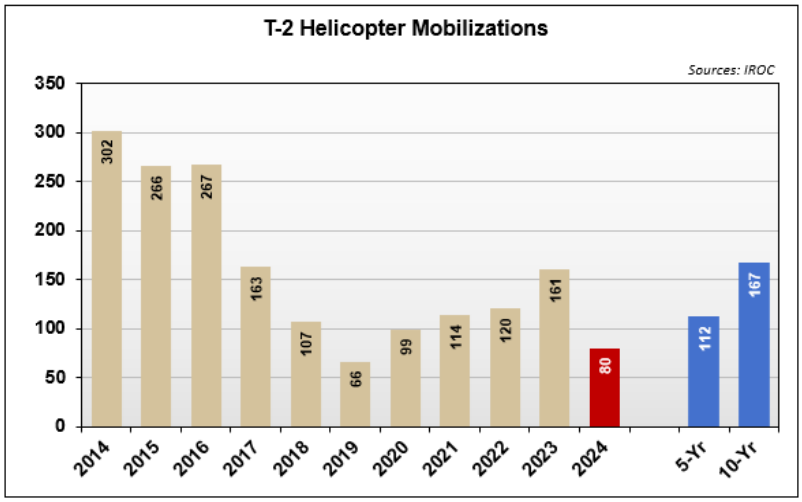
	Individual Overhead			
	Fill	Cancel	UTF	***Total***
BIA	708	188	100	***996***
BLM	1,476	590	610	***2,676***
DOD	10	1	1	***12***
FEMA	144	24	39	***207***
FS	12,319	3,979	7,107	***23,405***
FWS	216	53	36	***305***
NPS	880	113	271	***1,264***
ST	2,499	1,288	1,340	***5,127***
Other	26	19	16	***61***
Canada	8	0	1	***9***
Australia	0	0	0	***0***
Subtotal:	*18,286*	*6,255*	*9,521*	
Total:	**34,062**			

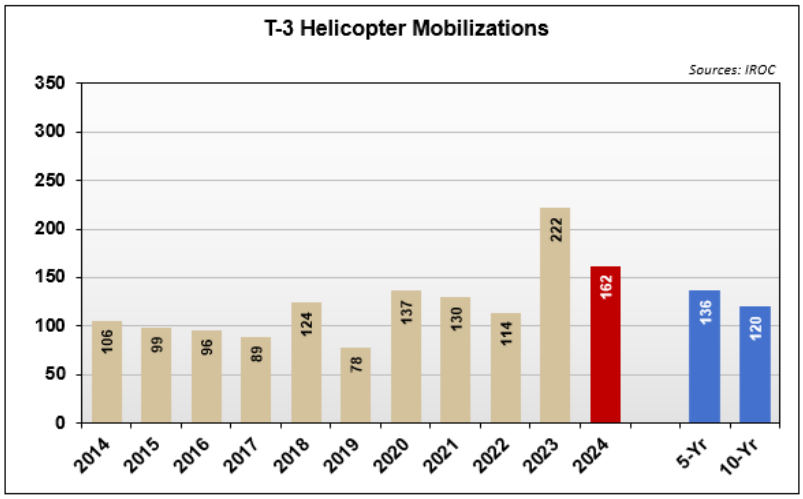
	Individual Overhead			
	Fill	Cancel	UTF	***Total***
AK	469	46	36	***551***
EA	438	71	28	***537***
GB	2,878	737	2,257	***5,872***
NICC	623	28	39	***690***
NO	951	509	944	***2,404***
NR	1,095	383	627	***2,105***
NW	5,642	3,301	3,802	***12,745***
RM	957	181	388	***1,526***
SA	2,621	228	283	***3,132***
SO	1,188	583	918	***2,689***
SW	1,416	188	198	***1,802***
Other	0	0	0	***0***
Canada	8	0	1	***9***
Australia	0	0	0	***0***
Subtotal:	*18,286*	*6,255*	*9,521*	
Total:	**34,062**			

Helicopter Mobilizations

NICC received 880 orders for Type 1, 2, and 3 helicopters in 2024. Of those requests: 485 were filled, 174 were canceled and 221 were UTF. Overall, Type 1 and Type 3 mobilizations were above the five and 10-year averages. Type 2 mobilizations were below the five and 10-year averages.







Helicopter Requests Summary by Requesting Agency

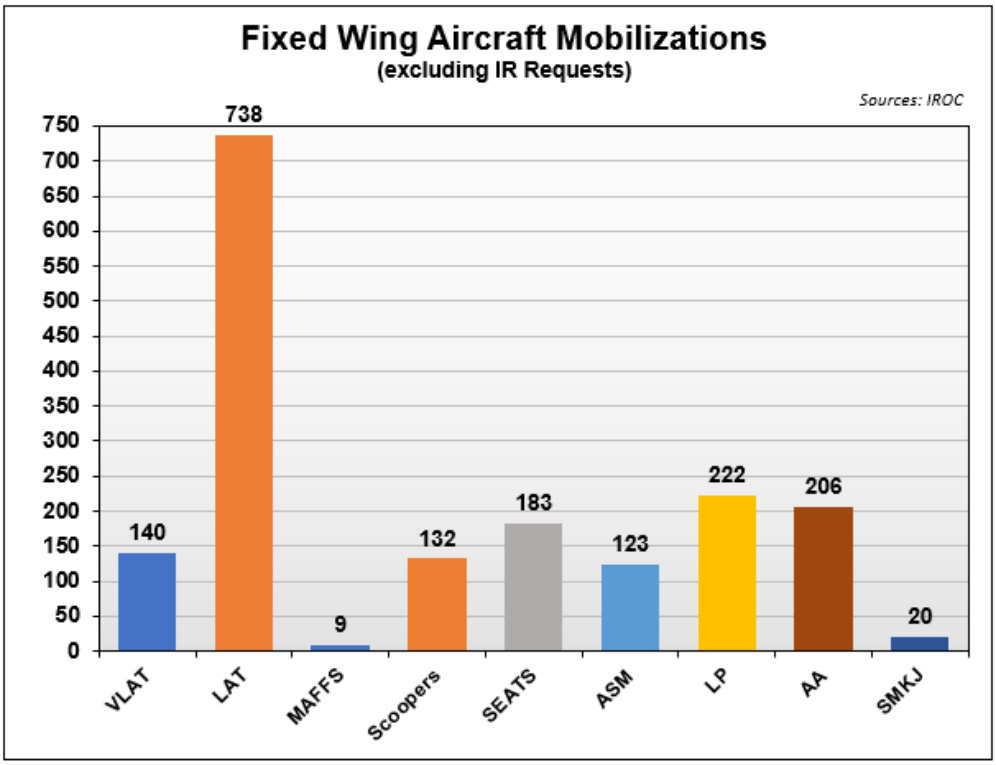
	Type 1			Type 2						Type 3			Helicopter Totals			
				Standard Use			Limited Use									
	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Total
BIA	1	0	3	3	0	1	1	0	0	10	0	0	15	0	4	**19**
BLM	8	9	3	10	8	7	2	1	1	21	13	7	41	31	18	**90**
DOD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
FEMA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
FS	204	45	74	48	25	33	10	6	4	117	40	56	379	116	167	**662**
FWS	1	0	1	1	0	0	0	0	0	1	0	0	3	0	1	**4**
NPS	1	2	1	0	0	0	0	1	0	3	2	0	4	5	1	**10**
ST	28	7	7	3	6	11	2	0	2	10	7	10	43	20	30	**93**
Other	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	**2**
Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Subtotal:	*243*	*65*	*89*	*65*	*39*	*52*	*15*	*8*	*7*	*162*	*62*	*73*	*485*	*174*	*221*	
Total:	**397**			**156**			**30**			**297**			**880**			

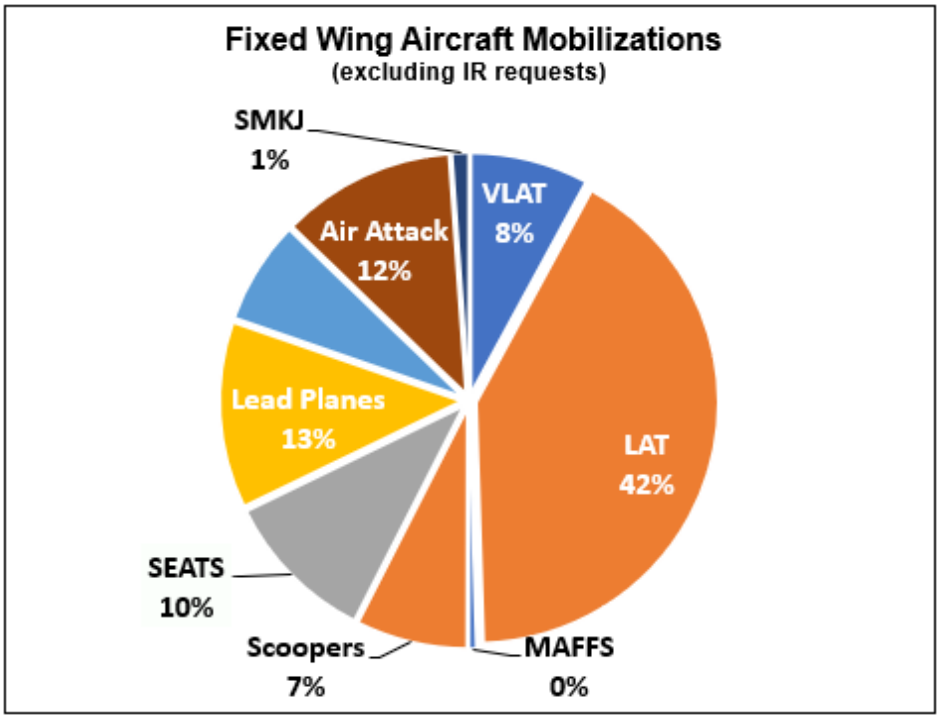
Helicopter Requests Summary by Requesting Geographic Area

	Type 1			Type 2						Type 3			Helicopter Totals			
				Standard Use			Limited Use									
	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Total
AK	0	2	0	5	3	1	0	0	0	5	3	0	10	8	1	**19**
EA	2	0	0	0	0	0	0	0	0	7	0	0	9	0	0	**9**
GB	55	17	37	19	4	20	1	1	2	40	10	26	115	32	85	**232**
NICC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
NO	21	2	8	3	5	12	0	0	0	14	9	7	38	16	27	**81**
NR	20	15	22	2	3	2	9	3	1	13	9	13	44	30	38	**112**
NW	37	10	19	18	9	13	1	2	4	33	16	23	89	37	59	**185**
RM	20	3	1	3	1	3	0	0	0	4	1	3	27	5	7	**39**
SA	22	2	0	2	0	0	1	1	0	21	0	0	46	3	0	**49**
SO	44	6	1	8	11	1	1	1	0	7	8	1	60	26	3	**89**
SW	22	8	1	5	3	0	2	0	0	18	6	0	47	17	1	**65**
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Subtotal:	*243*	*65*	*89*	*65*	*39*	*52*	*15*	*8*	*7*	*162*	*62*	*73*	*485*	*174*	*221*	
Total:	**397**			**156**			**30**			**297**			**880**			

Fixed Wing Aircraft Mobilizations

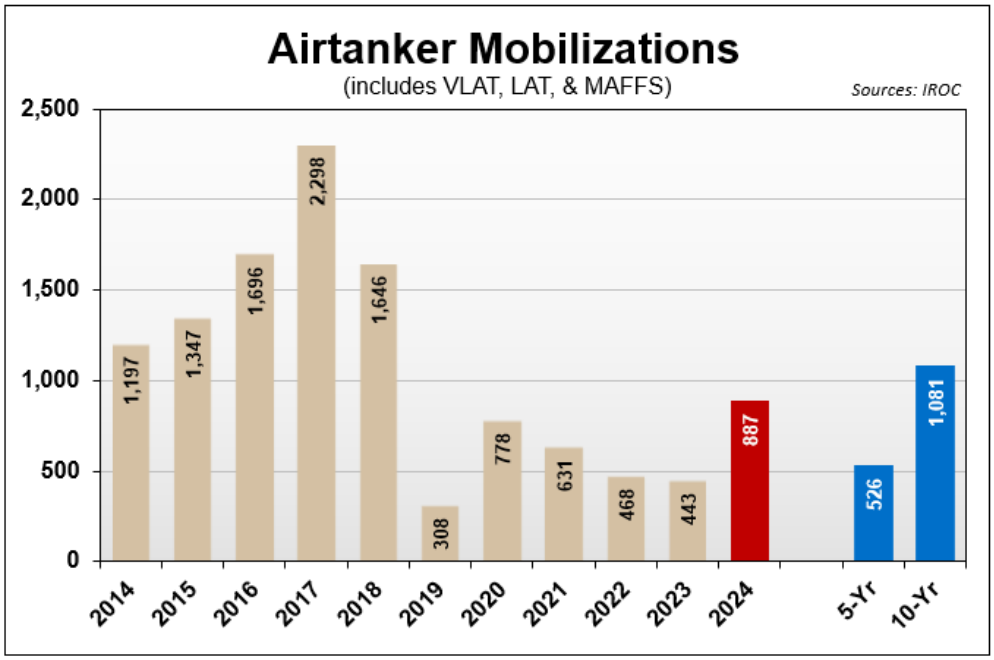
Fixed wing aircraft include very large airtankers (VLAT), large airtankers (LAT), multi-engine airtankers (Scoopers), single engine airtankers (SEATs), lead planes (LP), aerial supervision modules (ASM), air attack (AA), infrared (IR), and smokejumper aircraft (SMKJ). NICC received 5,855 requests for fixed wing aircraft in 2024. Of those requests: 4,093 were filled, 714 were canceled and 1,048 were UTF.

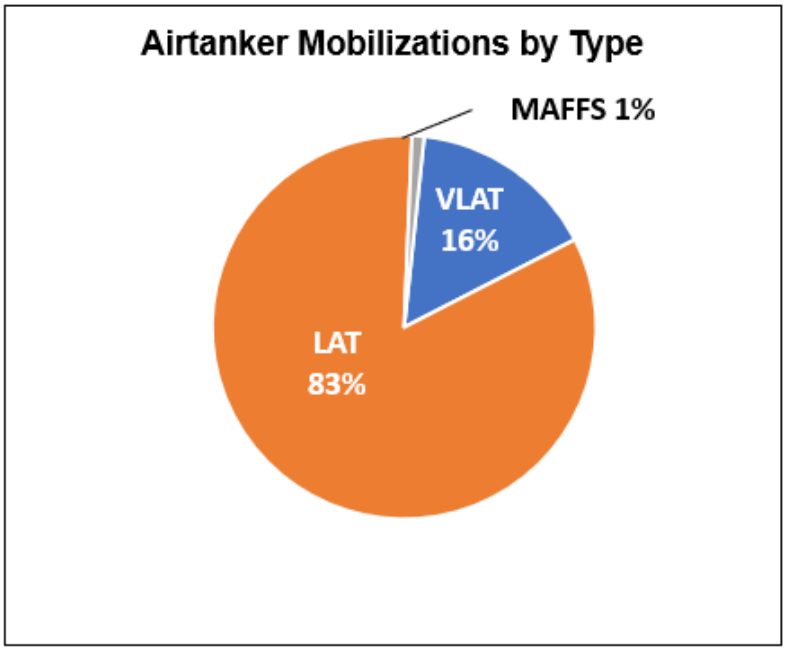




Airtanker Mobilizations

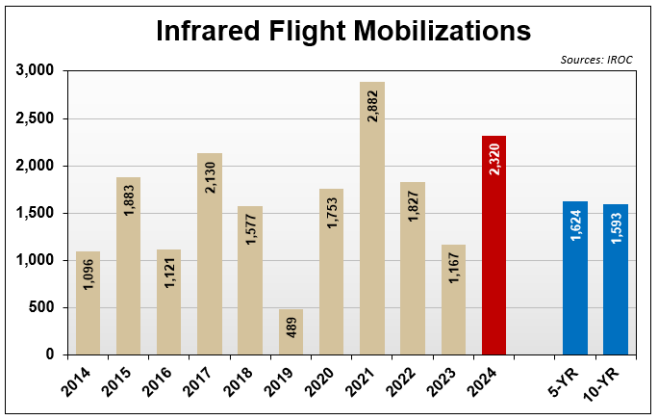
NICC received 1,271 requests for very large and large airtankers in 2024. Of those requests: 887 were filled, 183 were canceled and 201 were UTF. Airtanker mobilizations were between the five 10-year averages.

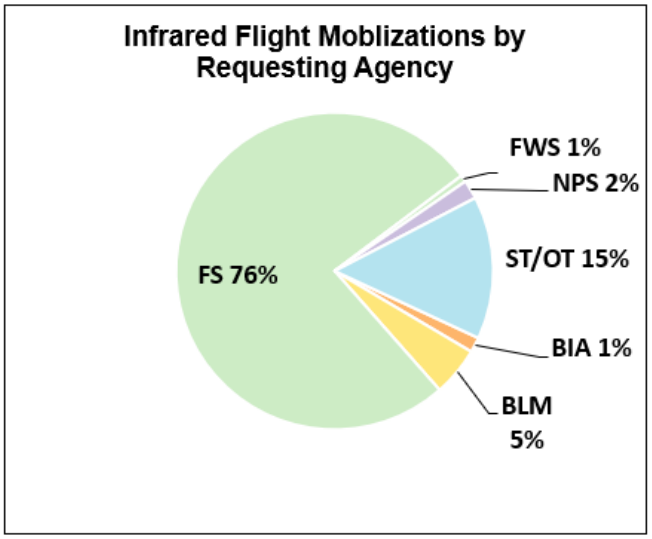


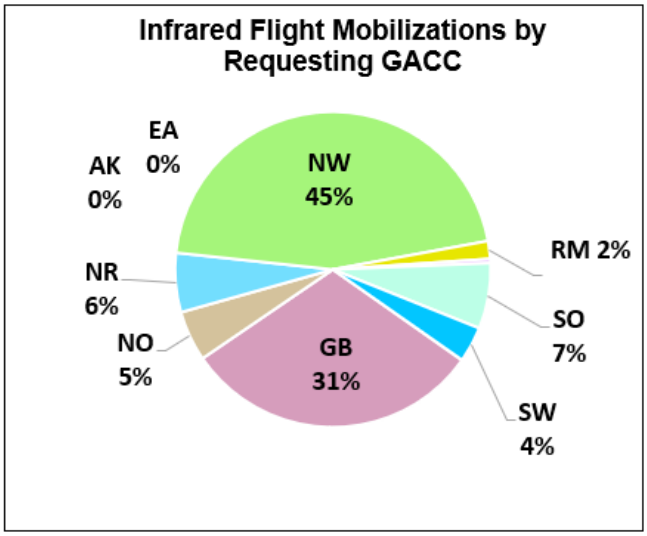


Infrared Aircraft Mobilizations

NICC received 3,287 infrared (IR) aircraft requests. Of those requests: 2,320 were filled, 351 were cancelled and 616 were UTF. IR requests were well above the five and 10-year averages.







Fixed Wing Aircraft Requests Summary by Requesting Agency

	Very Large Airtanker (VLAT)			Large Airtanker (LAT)			Modular Airborne Fire Fighting System (MAFFS)			Type 3 Multi-Engine Airtanker (Scoopers)			Single Engine Airtanker (SEAT)			Lead Plane (LP)		
	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF
BIA	4	1	1	20	10	2	0	0	0	4	0	2	20	1	0	3	3	0
BLM	17	7	9	89	34	38	0	0	0	20	0	8	42	10	3	27	8	2
DOD	0	3	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FEMA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FS	83	17	24	469	69	58	8	0	1	77	40	78	42	13	8	160	24	23
FWS	0	0	1	2	0	1	0	0	0	0	0	0	4	2	0	1	0	1
NPS	1	1	0	6	0	1	0	0	0	4	4	2	0	0	0	0	0	0
ST	34	10	24	149	30	37	1	0	0	27	5	10	75	9	24	31	11	8
Other	1	1	0	1	0	4	0	0	0	0	0	0	0	0	2	0	0	0
Subtotal:	*140*	*40*	*59*	*738*	*143*	*141*	*9*	*0*	*1*	*132*	*49*	*100*	*183*	*35*	*37*	*222*	*46*	*34*
Total:	**239**			**1,022**			**10**			**281**			**255**			**302**		

	Aerial Supervision Module (ASM)			Air Attack (AA)			Infrared (IR)			Smokejumper Aircraft (SKMJ)			Fixed Wing Aircraft Total Requests			
	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	***Total***
BIA	1	0	0	8	1	1	36	9	11	0	0	0	96	25	17	***138***
BLM	6	1	0	25	8	4	116	25	25	2	0	0	344	93	89	***526***
DOD	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	***5***
FEMA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	***0***
FS	106	11	4	126	20	43	1,769	240	470	18	0	0	2,858	434	709	***4,001***
FWS	0	0	0	2	0	0	16	2	1	0	0	0	25	4	4	***33***
NPS	0	0	0	2	0	0	45	12	19	0	0	0	58	17	22	***97***
ST	10	5	2	43	4	6	337	59	90	0	0	0	707	133	201	***1,041***
Other	0	0	0	0	0	0	1	4	0	0	0	0	3	5	6	***14***
Subtotal:	*123*	*17*	*6*	*206*	*33*	*54*	*2,320*	*351*	*616*	*20*	*0*	*0*	*4,093*	*714*	*1,048*	
Total:	**146**			**293**			**3,287**			**20**			**5,855**			

Fixed Wing Aircraft Requests Summary by Requesting Geographic Area

	Very Large Airtanker (VLAT)			Large Airtanker (LAT)			Modular Airborne Fire Fighting System (MAFFS)			Type 3 Multi-Engine Airtanker (Scoopers)			Single Engine Airtanker (SEAT)			Lead Plane (LP)		
	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF
AK	0	0	0	0	0	0	0	0	0	4	0	4	4	0	0	1	0	0
EA	0	0	0	2	0	0	0	0	0	0	0	0	18	4	1	0	0	0
GB	18	4	17	136	20	40	0	0	0	37	14	40	25	9	2	44	5	10
NICC	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	16	1	0
NO	22	3	14	72	11	14	0	0	0	8	2	2	4	0	2	11	1	5
NR	7	5	4	60	8	6	0	0	0	8	6	8	9	4	2	9	4	3
NW	34	11	10	168	36	36	0	0	0	27	5	39	40	12	4	64	15	7
RM	22	1	7	96	19	24	0	0	0	14	6	6	14	0	1	37	8	7
SA	1	0	0	22	3	7	1	0	0	14	0	0	54	4	23	15	1	0
SO	26	13	4	99	28	9	8	0	1	8	6	0	0	0	0	6	1	0
SW	10	3	3	83	18	5	0	0	0	10	10	1	15	2	2	19	10	2
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal:	*140*	*40*	*59*	*738*	*143*	*141*	*9*	*0*	*1*	*132*	*49*	*100*	*183*	*35*	*37*	*222*	*46*	*34*
Total:		**239**			**1,022**			**10**			**281**			**255**			**302**	

	Aerial Supervision Module (ASM)			Air Attack (AA)			Infrared (IR)			Smokejumper Aircraft (SMKJ)			Fixed Wing Aircraft Total Requests			
	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	***Total***
AK	2	0	0	3	0	0	1	1	3	1	0	0	16	1	7	***24***
EA	0	0	0	3	2	1	0	0	0	0	0	0	23	6	2	***31***
GB	16	0	1	35	6	18	708	42	183	4	0	0	1,023	100	311	***1,434***
NICC	3	0	0	7	1	1	14	1	2	1	0	0	43	3	3	***49***
NO	8	0	1	4	4	8	119	8	25	1	0	0	249	29	71	***349***
NR	12	3	1	18	5	6	140	46	41	3	0	0	266	81	71	***418***
NW	18	1	0	41	11	6	1,047	161	289	5	0	0	1,444	252	391	***2,087***
RM	4	1	0	22	2	3	42	10	15	3	0	0	254	47	63	***364***
SA	7	2	3	37	1	3	10	2	1	0	0	0	161	13	37	***211***
SO	39	9	0	11	1	5	155	27	14	1	0	0	353	85	33	***471***
SW	14	1	0	25	0	3	84	53	43	1	0	0	261	97	59	***417***
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	***0***
Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	***0***
Subtotal:	*123*	*17*	*6*	*206*	*33*	*54*	*2,320*	*351*	*616*	*20*	*0*	*0*	*4,093*	*714*	*1,048*	
Total:		**146**			**293**			**3,287**			**20**			**5,855**		

Unmanned Aircraft Systems

The NICC received 147 requests for UAS resources in 2024. Of those requests: 90 were filled, 21 were cancelled, and 36 were UTF. Individual statistics are shown in the tables below.

	Fixed Wing			Rotor Wing			UAS Totals			
	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Total
BIA	0	0	0	3	1	0	3	1	0	**4**
BLM	0	0	0	4	1	2	4	1	2	**7**
DOD	0	0	0	0	0	0	0	0	0	**0**
FEMA	0	0	0	0	0	0	0	0	0	**0**
FS	5	0	1	66	16	31	71	16	32	**119**
FWS	0	0	0	3	0	0	3	0	0	**3**
NPS	0	0	0	5	1	0	5	1	0	**6**
ST	0	0	0	4	2	2	4	2	2	**8**
Other	0	0	0	0	0	0	0	0	0	**0**
Canada	0	0	0	0	0	0	0	0	0	**0**
Subtotal:	*5*	*0*	*1*	*85*	*21*	*35*	*90*	*21*	*36*	
Total:	**6**			**141**			**147**			

	Fixed Wing			Rotor Wing			UAS Totals			
	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Total
AK	0	0	0	1	0	0	1	0	0	**1**
EA	0	0	0	3	0	10	3	0	10	**13**
GB	1	0	0	24	5	8	25	5	8	**38**
NICC	0	0	0	2	0	0	2	0	0	**2**
NO	2	0	0	4	3	3	6	3	3	**12**
NR	0	0	0	9	4	2	9	4	2	**15**
NW	2	0	1	9	2	7	11	2	8	**21**
RM	0	0	0	0	1	0	0	1	0	**1**
SA	0	0	0	15	0	0	15	0	0	**15**
SO	0	0	0	8	5	4	8	5	4	**17**
SW	0	0	0	10	1	1	10	1	1	**12**
Other	0	0	0	0	0	0	0	0	0	**0**
Canada	0	0	0	0	0	0	0	0	0	**0**
Subtotal:	*5*	*0*	*1*	*85*	*21*	*35*	*90*	*21*	*36*	
Total:	**6**			**141**			**147**			

Temporary Flight Restrictions

Temporary Flight Restrictions Request by Agency

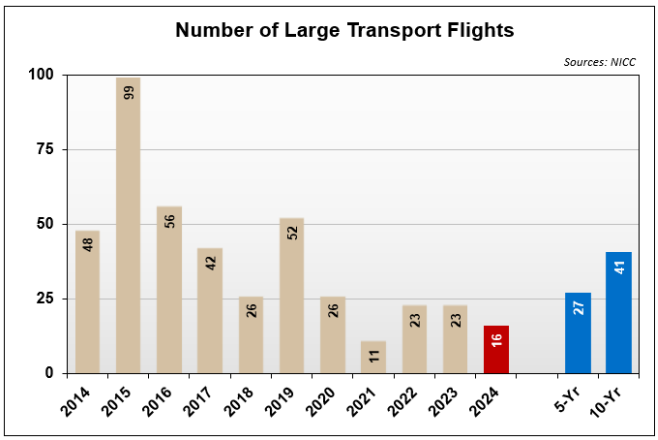
Agency	BIA	BLM	DOD	FEMA	FS	FWS	NPS	ST	Other	Total
Filled	54	159	0	0	709	20	38	379	3	1,362

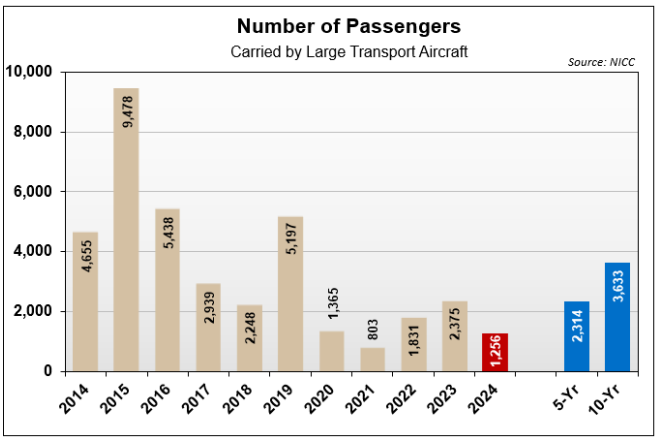
Temporary Flight Restrictions Request by GACC

GACC	AK	EA	GB	NICC	NO	NR	NW	RM	SA	SO	SW	Total
Filled	32	1	265	0	78	118	397	112	14	155	190	1,362

Large Transportation Aircraft

In 2024, there was one exclusive use contract for large transportation aircraft. The contract was filled with a B737-2T4 jet aircraft. This exclusive use jet flew 16 logistical missions, transporting a total of 1,256 passengers.





Exclusive Use and Charter Large Transport Requests Summary by Destination Agency and Geographic Area

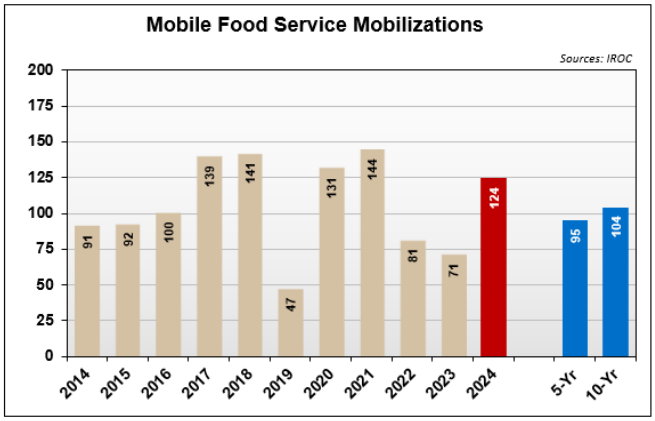
	Exclusive Use Aircraft		Charter Aircraft		Large Trans. Totals	
	Flights	Pax	Flights	Pax	Flights	Pax
BIA	0	0	0	0	0	0
BLM	9	717	0	0	9	717
DOD	6	475	0	0	6	475
FEMA	0	0	0	0	0	0
FS	0	0	0	0	0	0
FWS	0	0	0	0	0	0
NPS	0	0	0	0	0	0
ST	1	64	0	0	1	64
Other	0	0	0	0	0	0
Canada	0	0	0	0	0	0
Total:	**16**	**1,256**	**0**	**0**	**16**	**1,256**

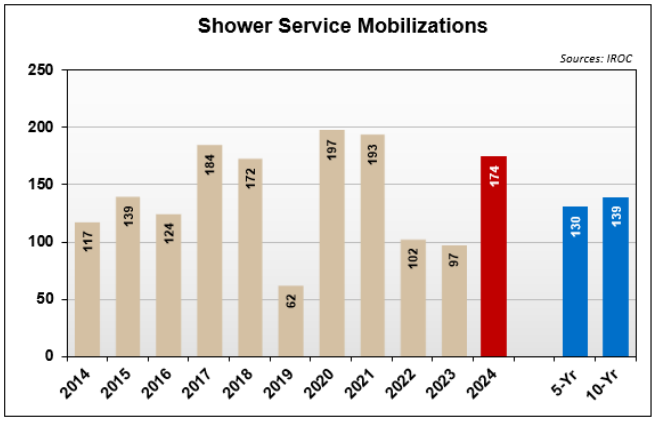
	Exclusive Use Aircraft		Charter Aircraft		Large Trans. Totals	
	Flights	Pax	Flights	Pax	Flights	Pax
AK	9	717	0	0	9	717
EA	0	0	0	0	0	0
GB	6	475	0	0	6	475
NICC	0	0	0	0	0	0
NO	0	0	0	0	0	0
NR	0	0	0	0	0	0
NW	1	64	0	0	1	64
RM	0	0	0	0	0	0
SA	0	0	0	0	0	0
SO	0	0	0	0	0	0
SW	0	0	0	0	0	0
Other	0	0	0	0	0	0
Canada	0	0	0	0	0	0
Total:	**16**	**1,256**	**0**	**0**	**16**	**1,256**

Equipment Services Mobilization

NICC received 156 requests for mobile food services in 2024. Of those requests: 124 were filled, 20 were canceled and 12 were UTF. The number of mobilizations was well above the five and 10-year averages.

NICC received 193 requests for mobile shower services in 2024. Of those requests: 174 were filled,12 were canceled and seven were UTF. The number of mobilizations was well above the five and 10-year averages.





Equipment Services Requests Summary by Requesting Agency and Geographic Area

	Mobile Food			Showers			Equipment Services Totals			
	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Total
BIA	6	0	0	8	0	0	14	0	0	**14**
BLM	8	2	1	15	0	2	23	2	3	**28**
DOD	0	0	0	0	0	0	0	0	0	**0**
FEMA	0	0	0	0	0	0	0	0	0	**0**
FS	86	16	9	116	9	4	202	25	13	**240**
FWS	1	0	0	1	0	0	2	0	0	**2**
NPS	1	0	0	4	0	0	5	0	0	**5**
ST	21	2	2	29	3	1	50	5	3	**58**
Other	1	0	0	1	0	0	2	0	0	**2**
Canada	0	0	0	0	0	0	0	0	0	**0**
Subtotal:	*124*	*20*	*12*	*174*	*12*	*7*	*298*	*32*	*19*	
Total:	**156**			**193**			**349**			

	Mobile Food			Showers			Equipment Services Totals			
	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Total
AK	0	0	0	0	0	0	0	0	0	**0**
EA	0	0	0	0	0	0	0	0	0	**0**
GB	22	4	4	35	3	0	57	7	4	**68**
NICC	1	0	0	2	0	0	3	0	0	**3**
NO	8	2	3	16	0	0	24	2	3	**29**
NR	13	5	0	19	0	1	32	5	1	**38**
NW	48	4	4	63	7	3	111	11	7	**129**
RM	8	0	0	10	0	0	18	0	0	**18**
SA	0	1	0	0	0	0	0	1	0	**1**
SO	10	2	0	17	0	2	27	2	2	**31**
SW	14	2	1	12	2	1	26	4	2	**32**
Other	0	0	0	0	0	0	0	0	0	**0**
Canada	0	0	0	0	0	0	0	0	0	**0**
Subtotal:	*124*	*20*	*12*	*174*	*12*	*7*	*298*	*32*	*19*	
Total:	**156**			**193**			**349**			

Radio and Weather Equipment Mobilizations

NICC received 979 requests for radio kits and weather equipment in 2024. Of those requests: 902 were filled, 67 were canceled, and 10 were UTF.

Radio and Weather Equipment Request Summary by Requesting Agency and Requesting Geographic Area

	4390 Starter			4312 Repeater			4381 Tactical			5869 RAWS			Equipment Totals			
	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Total
BIA	9	0	0	16	0	0	7	0	0	3	0	0	35	0	0	**35**
BLM	11	0	0	28	0	0	14	0	0	12	0	0	65	0	0	**65**
DOD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
FEMA	1	0	0	3	0	1	6	2	0	0	0	0	10	2	1	**13**
FS	123	15	1	227	12	4	176	13	3	90	8	1	616	48	9	**673**
FWS	2	1	0	2	0	0	1	1	0	0	0	0	5	2	0	**7**
NPS	3	0	0	10	0	0	5	2	0	0	0	0	18	2	0	**20**
ST	28	1	0	65	11	0	38	1	0	18	0	0	149	13	0	**162**
Other	0	0	0	2	0	0	0	0	0	1	0	0	3	0	0	**3**
Canada	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	**1**
Subtotal:	*178*	*17*	*1*	*353*	*23*	*5*	*247*	*19*	*3*	*124*	*8*	*1*	*902*	*67*	*10*	
Total:	**196**			**381**			**269**			**133**			**979**			

	4390 Starter			4312 Repeater			4381 Tactical			5869 RAWS			Equipment Totals			
	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Fill	Cancel	UTF	Total
AK	6	0	0	6	0	0	3	0	0	3	0	0	18	0	0	**18**
EA	4	1	0	2	1	0	1	0	0	0	0	0	7	2	0	**9**
GB	19	2	0	58	4	0	42	0	0	31	2	1	150	8	1	**159**
NICC	0	0	0	0	0	0	12	0	0	0	0	0	12	0	0	**12**
NO	18	4	0	33	3	1	16	3	0	12	0	0	79	10	1	**90**
NR	16	3	0	16	1	0	10	0	0	9	1	0	51	5	0	**56**
NW	37	1	1	127	3	2	108	7	1	49	3	0	321	14	4	**339**
RM	10	3	0	11	0	0	4	0	0	6	2	0	31	5	0	**36**
SA	6	0	0	6	1	2	16	3	1	0	0	0	28	4	3	**35**
SO	29	2	0	51	9	0	25	4	0	6	0	0	111	15	0	**126**
SW	33	1	0	43	1	0	10	2	1	8	0	0	94	4	1	**99**
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Subtotal:	*178*	*17*	*1*	*353*	*23*	*5*	*247*	*19*	*3*	*124*	*8*	*1*	*902*	*67*	*10*	
Total:	**196**						**269**			**133**			**979**			

Wildland Fires and Acres Burned by State and Agency

(Figures are from the SIT/209 Application)

Alabama

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
FS	55	2,262	3	897	58	3,159
FWS	2	203	1	399	3	602
NPS	2	1	0	0	2	1
ST	1,363	17,216	99	0	1,462	17,216
Totals:	**1,422**	**19,682**	**103**	**1,296**	**1,525**	**20,978**

Alaska

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BLM	36	2,742	104	551,024	140	553,766
DVF	150	769	75	112,540	225	113,308
FS	11	1	1	0	12	1
Totals:	**197**	**3,512**	**180**	**663,564**	**377**	**667,075**

Arizona

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BIA	604	13,674	152	21,590	756	35,264
BLM	129	3,841	104	39,660	233	43,501
DVF	297	31,963	44	46,839	341	78,802
FS	373	36,953	455	85,450	828	122,402
FWS	8	1,341	1	1,422	9	2,763
NPS	11	1	13	256	24	257
Totals:	**1,422**	**87,773**	**769**	**195,217**	**2,191**	**282,989**

Arkansas

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
FS	1,189	23,714	0	0	1,189	23,714
FWS	4	51	0	0	4	51
NPS	26	1,679	0	0	26	1,679
Totals:	**1,219**	**25,444**	**0**	**0**	**1,219**	**25,444**

California

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BIA	48	898	0	0	48	898
BLM	92	10,670	34	2,833	126	13,503
C&L	47	87,337	0	0	47	87,336
CDF	7,075	503,944	12	934	7,087	504,878
FS	688	385,744	224	71,558	912	457,302
FWS	3	8	0	0	3	8
NPS	46	33	35	14,881	81	14,913
USA	6	2,299	0	0	6	2,299

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
USAF	6	6	0	0	6	6
Totals:	**8,011**	**990,939**	**305**	**90,206**	**8,316**	**1,081,144**

Colorado

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BIA	12	56	45	27	57	83
BLM	54	3,944	262	1,703	316	5,647
BOR	1	0	1	0	2	0
C&L	173	11,366	92	4,423	265	15,788
FS	108	16,622	102	8,287	210	24,909
FWS	3	40	1	3	4	43
NPS	7	0	16	133	23	133
USA	14	13,277	2	566	16	13,842
USAF	1	92	0	0	1	92
Totals:	**373**	**45,398**	**521**	**15,142**	**894**	**60,539**

Connecticut

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
ST	356	339	0	0	356	339
Totals:	**356**	**339**	**0**	**0**	**356**	**339**

Delaware

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
ST	23	137	0	0	23	137
Totals:	**23**	**137**	**0**	**0**	**23**	**137**

Florida

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BIA	3	1	0	0	3	1
DOD	0	0	1	833	1	833
FS	69	6,772	11	923	80	7,695
FWS	6	166	4	4,901	10	5,067
NPS	12	818	4	12	16	830
OTHR	11	52	2	1	13	53
ST	1,805	27,430	420	23,709	2,225	51,139
Totals:	**1,906**	**35,239**	**442**	**30,379**	**2,348**	**65,618**

Georgia

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
FS	35	327	2	2	37	329
FWS	1	1	0	0	1	1
NPS	1	10	0	0	1	10
ST	2,453	11,556	0	0	2,453	11,556
Totals:	**2,490**	**11,894**	**2**	**2**	**2,492**	**11,896**

Hawaii

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
C&L	88	74	1	300	89	374
NPS	0	0	1	78	1	78
Totals:	**88**	**74**	**2**	**378**	**90**	**452**

Idaho

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BIA	38	3,074	5	29,020	43	32,094
BLM	138	21,059	91	288,502	229	309,561
BOR	3	8	0	0	3	8
C&L	34	734	2	60	36	794
DOD	0	0	2	142	2	142
FS	94	3,476	407	569,677	501	573,153
FWS	1	0	1	114	2	114
ST	511	42,160	123	38,736	634	80,896
Totals:	**819**	**70,511**	**631**	**926,251**	**1,450**	**996,762**

Illinois

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
FS	39	380	0	0	39	379
FWS	6	15	0	0	6	15
ST	2	47	0	0	2	47
Totals:	**47**	**442**	**0**	**0**	**47**	**441**

Indiana

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
FS	14	42	0	0	14	42
NPS	44	34	0	0	44	34
ST	6	78	0	0	6	78
Totals:	**64**	**154**	**0**	**0**	**64**	**154**

Iowa

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
DNR	355	3,152	0	0	355	3,152
FWS	7	813	0	0	7	813
Totals:	**362**	**3,965**	**0**	**0**	**362**	**3,965**

Kansas

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BIA	12	273	0	0	12	272
C&L	23	21,818	0	0	23	21,818
FWS	5	126	1	1	6	126
Totals:	**40**	**22,217**	**1**	**1**	**41**	**22,217**

Kentucky

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
FS	24	525	0	0	24	525
ST	933	23,923	0	0	933	23,923
Totals:	**957**	**24,448**	**0**	**0**	**957**	**24,448**

Louisiana

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
FS	15	218	3	14	18	232
FWS	0	0	1	2,830	1	2,830
ST	366	5,996	0	0	366	5,996
Totals:	**381**	**6,214**	**4**	**2,844**	**385**	**9,058**

Maine

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
NPS	3	0	0	0	3	0
ST	650	295	0	0	650	295
Totals:	**653**	**295**	**0**	**0**	**653**	**295**

Maryland

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
FWS	3	2	0	0	3	2
NPS	5	2	1	0	6	2
ST	163	961	2	0	165	961
Totals:	**171**	**965**	**3**	**0**	**174**	**965**

Massachusetts

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
ST	1,297	4,622	2	0	1,299	4,622
Totals:	**1,297**	**4,622**	**2**	**0**	**1,299**	**4,622**

Michigan

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BIA	13	20	0	0	13	20
DNR	279	1,339	16	102	295	1,441
FS	130	271	5	329	135	600
NPS	0	0	0	0	0	0
ST	4	1	0	0	4	1
Totals:	**426**	**1,631**	**21**	**431**	**447**	**2,062**

Minnesota

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BIA	188	883	0	0	188	883
DNR	890	13,475	0	0	890	13,475

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
FS	33	431	0	0	33	431
FWS	11	335	0	0	11	335
NPS	0	0	1	1	1	1
Totals:	**1,122**	**15,124**	**1**	**1**	**1,123**	**15,125**

Mississippi

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BIA	10	20	0	0	10	20
FS	167	15,672	4	122	171	15,794
FWS	8	25	0	0	8	25
NPS	20	408	0	0	20	408
OTHR	1,591	39,633	0	0	1,591	39,633
Totals:	**1,796**	**55,758**	**4**	**122**	**1,800**	**55,880**

Missouri

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
FS	164	11,607	0	0	164	11,607
NPS	3	58	0	0	3	58
ST	2,637	83,430	0	0	2,637	83,430
Totals:	**2,804**	**95,095**	**0**	**0**	**2,804**	**95,095**

Montana

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BIA	372	9,550	44	2,227	416	11,777
BLM	29	478	65	176,074	94	176,552
C&L	775	45,680	263	57,265	1,038	102,945
FS	243	22,863	269	32,468	512	55,331
FWS	4	123	9	1,797	13	1,920
NPS	2	0	6	30	8	30
ST	157	947	85	2,988	242	3,936
Totals:	**1,582**	**79,641**	**741**	**272,849**	**2,323**	**352,491**

Nebraska

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BIA	6	263	0	0	6	263
DOF	899	101,946	107	10,120	1,006	112,066
FS	2	0	16	1,227	18	1,227
FWS	2	284	2	0	4	284
TNC	1	10	0	0	1	10
Totals:	**910**	**102,503**	**125**	**11,347**	**1,035**	**113,850**

Nevada

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BLM	345	20,169	225	23,263	570	43,432

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BOR	56	5	0	0	56	5
C&L	145	6,397	37	2,893	182	9,289
DOD	2	8,026	1	0	3	8,026
FS	21	10	45	9,067	66	9,076
FWS	2	0	2	98	4	98
NPS	29	4	12	478	41	482
ST	5	1	2	0	7	1
Totals:	**605**	**34,612**	**324**	**35,799**	**929**	**70,410**

New Hampshire

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
FS	3	1	0	0	3	1
ST	123	125	4	1	127	126
Totals:	**126**	**126**	**4**	**1**	**130**	**127**

New Jersey

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
FWS	4	25	0	0	4	25
NPS	1	0	0	0	1	0
ST	1,438	12,424	0	0	1,438	12,424
Totals:	**1,443**	**12,449**	**0**	**0**	**1,443**	**12,449**

New Mexico

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BIA	73	8,057	44	17,709	117	25,766
BLM	44	123	36	238	80	361
DOE	1	1	0	0	1	1
FS	95	848	201	47,663	296	48,510
FWS	0	0	2	98	2	98
NPS	2	1	13	1,670	15	1,671
SF	235	2,966	76	3,158	311	6,123
USA	1	0	0	0	1	0
Totals:	**451**	**11,995**	**372**	**70,536**	**823**	**82,531**

New York

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
NPS	3	0	0	0	3	0
ST	119	6,495	3	1	122	6,496
Totals:	**122**	**6,495**	**3**	**1**	**125**	**6,496**

North Carolina

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BIA	13	13	0	0	13	13
FS	40	999	2	2	42	1,001

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
FWS	0	227	0	0	0	227
NPS	5	1	0	0	5	1
ST	4,535	15,345	53	361	4,588	15,706
USM	20	1,285	0	0	20	1,285
Totals:	**4,613**	**17,870**	**55**	**363**	**4,668**	**18,233**

North Dakota

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BIA	369	18,810	2	12	371	18,822
BLM	1	145	0	0	1	145
FS	12	9,340	2	42	14	9,382
FWS	10	1,100	0	0	10	1,100
NPS	2	8	2	11	4	19
ST	522	143,732	13	37	535	143,769
Totals:	**916**	**173,135**	**19**	**102**	**935**	**173,237**

Ohio

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
FS	45	48	0	0	45	48
ST	1,054	2,383	8	10	1,062	2,393
Totals:	**1,099**	**2,431**	**8**	**10**	**1,107**	**2,441**

Oklahoma

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BIA	944	70,757	0	0	944	70,757
FWS	3	12,423	0	0	3	12,423
NPS	1	0	0	0	1	0
OTHR	389	3,177	0	0	389	3,177
ST	1,691	295,179	5	1,835	1,696	297,014
TRIBE	8	220	0	0	8	220
Totals:	**3,036**	**381,757**	**5**	**1,835**	**3,041**	**383,592**

Oregon

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BIA	100	857	5	33	105	889
BLM	158	341,534	147	746,161	305	1,087,695
C&L	2	14	3	0	5	14
DOF	780	34,696	218	120,841	998	155,537
FS	299	145,648	500	335,562	799	481,210
FWS	3	1	7	67,157	10	67,158
NPS	3	1	7	5,292	10	5,293
Totals:	**1,345**	**522,751**	**887**	**1,275,046**	**2,232**	**1,797,796**

Pennsylvania

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
FS	7	1	0	0	7	1
NPS	14	628	0	0	14	628
ST	1,423	3,161	4	2	1,427	3,163
Totals:	**1,444**	**3,790**	**4**	**2**	**1,448**	**3,792**

Rhode Island

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
ST	73	75	0	0	73	75
Totals:	**73**	**75**	**0**	**0**	**73**	**75**

South Carolina

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
FS	49	634	1	0	50	634
Totals:	**49**	**634**	**1**	**0**	**50**	**634**

South Dakota

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BIA	379	21,509	39	491	418	22,000
BLM	3	16	1	0	4	16
C&L	30	744	8	9,952	38	10,696
FS	42	53	62	557	104	610
FWS	3	87	0	0	3	87
NPS	1	0	2	1,981	3	1,981
ST	70	315	32	104	102	419
USA	1	0	0	0	1	0
USAF	2	0	0	0	2	0
Totals:	**531**	**22,724**	**144**	**13,085**	**675**	**35,809**

Tennessee

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
FS	31	351	2	60	33	411
NPS	7	55	0	0	7	55
OTHR	523	6,400	10	154	533	6,554
ST	22	750	1	1	23	751
Totals:	**583**	**7,556**	**13**	**215**	**596**	**7,771**

Texas

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BLM	0	0	0	0	0	0
C&L	4,148	14,553	132	1,681	4,280	16,234
FS	41	1,279	1	0	42	1,279
FWS	7	689	1	0	8	689
NPS	34	162	4	13,519	38	13,681
OTHR	4	1	0	0	4	1

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
ST	562	1,277,517	33	5,502	595	1,283,019
Totals:	**4,796**	**1,294,201**	**171**	**20,702**	**4,967**	**1,314,903**

Utah

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BIA	18	5	14	611	32	616
BLM	118	16,787	199	3,882	317	20,669
DOD	9	5,328	0	0	9	5,328
FS	84	39,634	120	17,960	204	57,594
FWS	1	137	0	0	1	137
NPS	3	0	10	46	13	46
ST	514	2,894	121	3,131	635	6,026
Totals:	**747**	**64,786**	**464**	**25,631**	**1,211**	**90,417**

Vermont

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
FS	2	1	1	0	3	1
ST	93	179	1	0	94	179
Totals:	**95**	**180**	**2**	**0**	**97**	**180**

Virginia

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
FS	46	19,701	6	7	52	19,708
FWS	3	0	0	0	3	0
OTHR	0	10,298	0	0	0	10,298
ST	683	26,343	4	23	687	26,366
Totals:	**732**	**56,342**	**10**	**30**	**742**	**56,372**

Washington

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BIA	160	7,719	24	53,793	184	61,512
BLM	45	13,331	6	336	51	13,667
C&L	70	6,443	1	0	71	6,443
DNR	969	58,650	96	8,306	1,065	66,956
FS	129	22,340	103	14,591	232	36,931
FWS	22	972	1	1	23	973
NPS	32	9	11	1,553	43	1,562
ST	135	87,533	0	0	135	87,533
TRIBE	2	15	0	0	2	15
Totals:	**1,564**	**197,012**	**242**	**78,580**	**1,806**	**275,593**

West Virginia

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
FS	20	49	0	0	20	49

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
NPS	11	245	0	0	11	245
ST	1,073	55,015	0	0	1,073	55,015
Totals:	**1,104**	**55,309**	**0**	**0**	**1,104**	**55,309**

Wisconsin

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BIA	6	2	0	0	6	2
DNR	1,106	2,503	31	26	1,137	2,529
FS	16	32	1	26	17	58
FWS	2	8	0	0	2	8
NPS	0	0	0	0	0	0
Totals:	**1,130**	**2,545**	**32**	**52**	**1,162**	**2,597**

Wyoming

Agency	Fires - Human	Acres - Human	Fires – Lightning	Acres – Lightning	Fires – Total	Acres - Total
BIA	67	465	21	33,944	88	34,409
BLM	68	7,581	73	46,998	141	54,579
C&L	201	68,602	123	268,769	324	337,371
FS	64	12,753	76	149,213	140	161,966
FWS	0	0	2	18	2	18
NPS	6	3	4	0	10	3
SF	14	4,356	19	27,367	33	31,723
Totals:	**420**	**93,760**	**318**	**526,309**	**738**	**620,069**

NICC Benchmarks

The figures below represent national-level totals for fire activity and numbers of **resources mobilized through the National Interagency Coordination Center**, except for Incident Management Team mobilizations, which are displayed in totality of mobilizations nationwide. Records set during the year of this report are in **bold**.

Category	Record Year	Record	2024 Stats
Wildfires	2006	96,385	64,897
Wildfire Acres Burned	2015	10,125,149	8,924,884
Large Fires	2006	1,801	1,180
Days at Preparedness Level 1&2	2010	365	243
Days at Preparedness Level 4&5	2021	99	96
CIMT Mobilizations (fire & non-fire)	2021	204	150
Dept. of Defense Battalions/Task Forces	1988	8	1
MAFFS (millions of gallons delivered)	1994	5.03	0.87
Tactical Crew Mobilizations	**2024**	**1,839**	**1,839**
Engine Mobilizations	2021	3,149	2,576
Overhead Mobilizations	**2024**	**18,286**	**18,286**
Type 1 Helicopter Mobilizations	2016	334	243
Type 2 Helicopter Mobilizations	2006	323	80
Heavy Airtankers (VLAT/LAT/MAFFS)	2017	2,298	887
Large Transport Flights	1994	552	16
Mobile Food Units	1994	195	124
Shower Units	1994	256	174

Identifier Legend

Interagency Coordination Centers
NICC: National Interagency Coordination Center
NIFC: National Interagency Fire Center
CIIFC: Canadian Interagency Forest Fire Centre
AK: Alaska Area
EA: Eastern Area
GB: Great Basin Area
NO: Northern California Area
NR: Northern Rockies Area
NW: Northwest Area
RM: Rocky Mountain Area
SA: Southern Area
SW: Southwest Area
SO: Southern California Area

Federal Government Agencies
FS: Forest Service
BIA: Bureau of Indian Affairs
BLM: Bureau of Land Management
FWS: Fish and Wildlife Service
NPS: National Park Service
FEMA: Federal Emergency Management Agency
ESF4: Emergency Support Function, Firefighting
NWS: National Weather Service
DOE: Department of Energy
DOD: Department of Defense

International Partners
AU: Australia
CN: Canada
MX: Mexico
NZ: New Zealand

Other Providers/Ownership
CNTY: County
OT: Other
PRI: Private
ST: State
ST/OT: State/Other Combined

Acronyms and Terminology

Air Attack: Light aircraft (airplane or helicopter) that carries the ATGS.

ASM: Aerial Supervision Module, light twin-engine airplane that combines the lead plane function and tactical supervision (pilot and Air Tactical Supervisor - ATS).

IA: Initial Attack.

IMT: Incident Management Team.

Infrared: Aircraft outfitted with infrared sensing equipment.

IROC: Interagency Resource Ordering Capability System.

Large fire: A large fire is defined as 100 acres or greater in timber, 300 acres or greater in grass/brush, or a CIMT, Type 1 or NIMO team is assigned.

LAT: Large Airtanker.

Lead Plane: Twin-engine airplane that guides airtankers over a fire.

MAFFS: Modular Airborne Fire Fighting System (military C-130 aircraft).

NIMO: National Incident Management Organization.

Pax: Passengers.

RAWS: Remote Automated Weather Station.

Starter: Type of portable radio kit.

Repeater: Type of portable radio kit.

Tactical: Type of portable radio kit.

SEAT: Single engine airtanker.

Scooper: The vernacular term for a multi-engine airtanker capable of filling its tanks while skimming over a body of water then dropping the water on a wildland fire.

TFR: Temporary Flight Restriction.

UTF: Unable to Fill resource request (the requested resource couldn’t be filled).

UAS: Unmanned Aircraft Systems.

VLAT: Very Large Airtanker.

To: landfillappeals@bentoncountyor.gov

Subject: Oppose/Deny LU-24-027 – **A Garbage-Truck Sized Hole in the Community Wildlife Protection Plan (CWPP)**

Dear Benton County Commissioners Wyse, Malone and Shepherd,

Submitted by:

Carol McClelland Fields – 37326 Soap Creek Road

PhD in Industrial/Organizational Psychology.
Co-Chair of Soap Creek Prepared (since 2022) and Soap Creek Valley Firewise (since 2023)
Author of five published books
10-year resident living less than 5 miles from Coffin Butte Landfill, which was less than 1/2 the size it is now when we moved here.
I have smelled the landfill stench INSIDE my house several times in 2025
Health challenges exacerbated by landfill toxins and PFAS
Avid observer of nature and impacts on the environment

I am writing because we strongly oppose any expansion of the Coffin Butte landfill and urge you to **uphold your Planning Commission's unanimous denial of LU-24-027**, Republic Services' application to expand the Coffin Butte Landfill. The Planning Commission carefully considered all evidence provided by the applicant, as well as considerable testimony, and concluded unanimously that the application did not meet the required Burden of Proof.

> **Benton County cannot afford to make a decision to build a new landfill/landfill expansion *without a full understanding the fire risks associated with landfills.***
>
> **The applicant's fire mitigation plan concludes that "operations at Coffin Butte Landfill *do not present a significant fire risk.*" This statement is completely ludicrous.**

I will demonstrate a serious gap in the County's assessment of Coffin Butte Landfill's fire risk, a disconnect between Benton County's official stance on fires in the county as well as how a large fire on Coffin Butte Landfill **seriously threatens the livability on adjacent properties** [Benton County Code 53.215 (1)]**, seriously impacts the character of the area** [Benton County Code 53.215 (1)], **and imposes an undue burden on the county's and region's fire services, emergency management services, first responders, and residents.** [Benton County Code 53.215 (2)]

SUMMARY

According to Benton County's **Community Wildfire Protection Plan (CWPP)** for 2023 – 2028:

> *"BENTON COUNTY'S VISION FOR WILDFIRE MANAGEMENT AND ADAPTABILITY:* ***For the County's populace to be wildfire aware and prepared for fire emergencies and for all properties to be adapted to local wildfire risk."*** (page 57 of CWPP)

> *"State law says that in Oregon the* ***Wildland-Urban Interface (WUI)*** *boundary is defined by areas within an Urban Growth Boundary****...with sufficient building density and sufficient fuels to facilitate a WUI conflagration****."* (page 12, 14 of CWPP)

The Benton County Community Wildfire Protection Plan (CWPP) for 2023 – 2028 is the County's **comprehensive approach to managing wildfire threats in the County's forestlands and in the WUI (*Wildland-Urban Interface:*** *the geographic area where structures and other human developments meet or* ***intermingle with vegetative fuels or border up against wildland fuels****.)*

However, Benton County's Plan for Managing Wildfires Has A BIG HOLE:

The CWPP DOES NOT MENTION COFFIN BUTTE LANDFILL or REPUBLIC SERVICES!

In the description of the Northern Forest Area of the County – Strategic Planning Area #3 (Page 48-50 of CWPP), which includes Coffin Butte Landfill, the CWPP mentions the high voltage powerlines that cross into this region, **but somehow misses the methane-belching landfill that has a well-documented multi-year pattern of landfill equipment and working face fires.**

> **Spoiler Alert: Coffin Butte Landfill was INTENTIONALLY LEFT OUT of the CWPP:** *"I don't see how I can include this [Coffin Butte Landfill] in CWPP as I have no experience in the topic, and it would be a task too large to undertake."* (From March 18, 2022 Email exchange between County Planning Department Employee and concerned Benton County resident.)
>
> As a county, we have **NOT fully recognized the risks of fire events at the landfill**, whether they originate at the landfill or they are sparked by other fires in the region. Benton County has **NOT communicated the true risks of wildfires** to the residents of this county and surrounding region.

Before the county makes decisions about the current Conditional Use Permit for expansion, we *must* acknowledge the full risks associated with Republic Services' landfill infrastructure, toxic materials from counties throughout Oregon and beyond, and the two toxic commodities (methane & leachate) that Coffin Butte Landfill generates in high quantities now and will into the future.

FULL FINDINGS

(Originally Submitted to Planning Commission)

Benton County's Official Efforts to Protect the County from Fire

"BENTON COUNTY'S VISION FOR WILDFIRE MANAGEMENT AND ADAPTABILITY:

> *For the County's populace to be wildfire aware and prepared for fire emergencies and for* ***all properties to be adapted to local wildfire risk.*****"** (page 57 of CWPP)

The Benton County Community Wildfire Protection Plan (CWPP) for 2023 – 2028 provides a comprehensive approach to managing wildfire threats in the County's forestlands and in the **WUI (*Wildland-Urban Interface: the geographic area where structures and other human developments meet or intermingle with vegetative fuels or border up against wildland fuels.)*** (page 12 of CWPP)

> **Twenty-three (23) fire, county, state, federal agencies and forestry organizations** participated in the CWPP planning process by appointing representatives to a Technical Advisory Committee. (Page 3 of CWPP)
>
> **This CWPP was "*agreed upon and endorsed*** *by the Benton County Board of Commissioners, the Oregon Department of Forestry, and the Fire Defense Board in early 2023* ***... to provide a framework for those local agencies associated with wildfire suppression and protection services to assess the risks and hazards associated with wildland urban interface areas and to identify strategies for reducing those risks***." The individuals who signed the current version of the CWPP include: Michael Curran (ODF West Oregon District, District Forester), Ben Janes (Corvallis Fire Department, Fire Chief), and Pat Malone (Benton County Board of County Commissioners), Vance Croney (Benton County Counsel) (page 2 of CWPP)

"State law says that in Oregon the Wildland-Urban Interface (WUI) boundary is defined by areas within an Urban Growth Boundary, or any area with a building density of at least one building per 40 acres...The focus is placed on those areas with ***sufficient building density and sufficient fuels to facilitate a WUI conflagration.*****"** (page 12, 14 of CWPP) In addition to the forest and vegetation areas, **built fuels (structures or infrastructure) must be considered.**

Communities in wildfire-prone areas, including Benton County, are creating **Fire Adapted Communities** which incorporate people, buildings, **businesses, infrastructure,** cultural resources, and natural areas into the effort to prepare for the effects of wildland fire by:

- Acknowledging and **understanding the County's wildfire risk.**
- Recognizing that regions of the County are **in or near a fire-prone ecosystem.**
- **Having leaders** and citizens with the knowledge, skills, willingness and realistic

expectations to properly prepare for and deal with wildland fire.
• **Communicating clearly with citizens about wildfire risks** and specific methods for preparedness.
(page 20 of CWPP)

The local CWPP is meant to guide actions to implement safety measures and fuel management to protect residents, homes, **businesses**, natural areas, and cultural resources against wildfires by:

1) **Bringing together multiple private and public stakeholders** across the landscape in partnership to reduce fire risk
2) Identifying and prioritizing areas for **hazardous fuel reduction**
3) **Reducing the ignitability** of the structures in the areas
(page 15 of CWPP)

However, There Is a Large Gap in Benton County's Vision for Managing Wildfires:
Benton County's CWPP DOES NOT MENTION COFFIN BUTTE LANDFILL!

I searched the current CWPP document for the following words and phrases:

- **Coffin Butte** - a couple of mentions of Coffin Butte Road as ingress and egress for Northern County. **NO Mention** of the Coffin Butte Landfill.
- **Valley Landfill, Inc** - **NO Mention** of this company name
- **Republic Services** - **ONE Mention** under this heading: *1.1.1e Create additional disposal opportunities for yard debris using alternative methods to burning (page 59 of CWPP)*
- **Methane** – Phrase **Not Found**
- **Lithium Batteries** – Phrase **Not Found**

In the Northern Forest Area– Strategic Planning Area #3 (Page 48-50 of CWPP). *("North central portion of Benton County from Kings Valley to Soap Creek and includes the communities of Kings Valley, Hoskins, and Wren."* Although not mentioned in the written description, this region extends to Hwy 99, including the Coffin Butte landfill.)

> The CWPP mentions the high voltage powerlines that cross into this region (page 50 of CWPP), but somehow misses the fact that there's a **methane-belching landfill** in the northernmost corner of the Northern Forest Area **that has a documented pattern of landfill equipment and working faces catching fire on a regular basis.**
>
> An important element in understanding *"the danger of wildfire is **the availability of** diverse fuels in the landscape, such as natural vegetation, structures, and **combustible***

materials." The bolded phrase are used three times in the document, but landfill-related combustible materials (methane, lithium batteries, or other flammable, toxic substances) are never mentioned. (page 25 of CWPP)

"Prevention activities primarily focus on ***altering the characteristics of fuel to mitigate the risk of catastrophic fires."*** (page 25 of CWPP) But if the combustible nature of the Coffin Butte Landfill are not included in the CWPP or aren't in the minds of County Leaders and Officials, then it's impossible to focus on *"altering the characteristics of fuels to mitigate the risk of catastrophic fires"!*

Why are Republic Services and the Coffin Butte Landfill Missing from the CWPP? Did Anyone Even Notice?

I am not the first to notice this gap in the CWPP. In discussing this topic with a neighbor, I learned that **the Coffin Butte Landfill was INTENTIONALLY LEFT OUT of the CWPP.** *Read the email chain exchange* ***(appended below*)*** *that transpired in March 2022 when my neighbor sent an inquiry to the County staff person who was developing the CWPP. (Note that this same staff person was also the County's Planning Official for the previous Republic Services CUP application in 2021.)*

> **Why didn't any of the 23 organizations and four signers of the 2023 - 2028 CWPP notice that Coffin Butte Landfill managed by Republic Services was NOT Included in the CWPP?**

Coffin Butte Landfill Itself Is a HUGE Flammable Target for Airborne Embers and Source of Airborne Embers

There are several frightening fire scenarios to consider:

1. **Consider a fire** (which may be due to spontaneous combustion, unstable lithium batteries, landfill vehicles or equipment, recently arrived hot loads, firecrackers set off to deter seagulls) **that originates on the Coffin Butte landfill and sets off a methane-fueled explosion.** From there, the embers fly up to five miles into OSU McDonald-Dunn forests, Starker forests, rural neighborhoods, urban areas, and agricultural lands. And then embers from those new fires fly another five miles downwind…and so on.

2. **Consider a hot, high wind event with fire in a nearby forested or agricultural area that generates embers that ignite the industrial-sized methane plumes** that have been documented to exist over the landfill. From there, the embers fly up to five miles into OSU

McDonald-Dunn forests, Starker forests, rural neighborhoods, urban areas, and agricultural lands. And then embers from those new fires fly another five miles downwind…and so on.

3. **Consider a series of lightning strikes hit Coffin Butte landfill during an intense summer storm.** Whether they ignite lithium batteries which are inherently unstable, spark the methane plumes, or burn underground materials, a fire starts. From there, the embers fly up to five miles into OSU McDonald-Dunn forests, Starker forests, rural neighborhoods, urban areas, and agricultural lands. And then embers from those new fires fly another five miles downwind…and so on.

The origin of the fire or the method that provides the spark that starts the fire aren't the main issues here.

The flammable, explosive nature of landfill methane and the toxic nature of the fires creates a very dangerous scenario that would irrevocably change the nature of our community and the surrounding areas for years and decades to come. As a result, the livability of this region would be detrimentally impacted for years and decades to come.

A sizeable fire at the landfill would put an undue burden on fire and emergency management services. Due to the landfill's steep terrain, toxic air generated by a fire, the risk of methane or lithium battery explosions, radioactive waste, and a myriad of other inherent risks, firefighters could NOT and would not put their resources toward fighting the landfill fire itself, they would have to focus on the endless fires that would start from the embers generated by the landfill fire or from the nearby forested areas adjacent to the landfill itself.

The undue burden would also fall on residents who live in the immediate area of the fire or find themselves under a blanket of toxic smoke that is known to have significant health risks. In the aftermath of such a fire, properties and homes would not be inhabitable, which would have a serious impact on the lives of many.

We can't just "assume" that a fire will never happen at Coffin Butte Landfill.

Fires Originating on Landfills

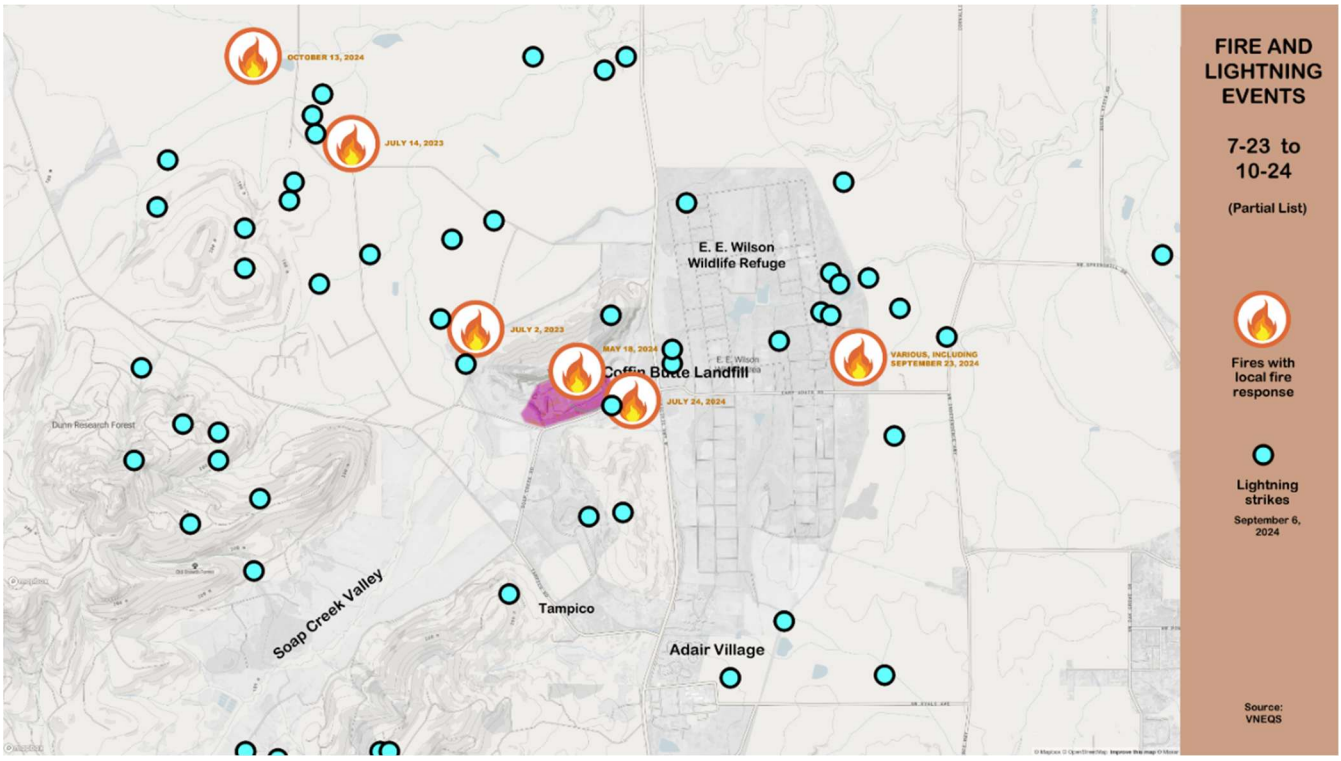
In 2022 alone *"there were **390 unique fire incidents reported at waste and recycling facilities in the U.S. and Canada**, and based on reasonable assumptions, we can **extrapolate that 2,400-plus facility fires occurred in 2022."*** (Resource 2: Waste 360 article dated January 9, 2023 - https://www.waste360.com/waste-recycling/worst-year-for-waste-and-recycling-facility-fires-ever-capped-off-by-best-two-months.)

And don't forget, *the Bridgeton Landfill* ***<owned and operated by Republic Services>*** *has been experiencing a* ***"subsurface smoldering event"*** *— a chemical reaction that heats and consumes waste like a fire but lacks oxygen —* ***for more than 14 years****, emitting noxious odors."* Resource 3: Missouri Independent, Allison Kite, January 22, 2025 - https://missouriindependent.com/2025/01/22/high-likelihood-of-radioactive-waste-in-smoldering-landfill-missouri-officials-say/

Regional Fires that could start a fire at Coffin Butte Landfill

According to the National Interagency Coordination Center - Wildland Fire Summary and Statistics Annual Report in 2024, Oregon had 2,232 fires and 1,797,796 acres (the highest number of acres burned in the entire United Sates, with Texas second at 1,314,903. Of the 1,797,796 acres burned in 2024, 1,275,046 of those acres were burned by fires started by lightning.)
(Resource 4**:** https://www.nifc.gov/sites/default/files/NICC/2-Predictive%20Services/Intelligence/Annual%20Reports/2024/annual_report_2024.pdf - Oregon on page 48)

For example: This map, compiled by VNEQS, is a compilation of **fire events in the region surrounding Coffin Butte Landfill** from July 2023 – October 2024 and **lightning strikes from one storm on September 6, 2024.** *(See Virginia Scott's updated Fire Risk testimony for documentation of additional fire and lightning strikes.)*



The risk and threat of fire cannot be minimized or dismissed. **Any operations plan for Coffin Butte Landfill put forth by the applicant can't erase the enhanced fire risk in our region.**

How can County Leaders, County Officials, and Planning Commission – in good conscience – make decisions about the future of the new landfill / landfill expansion without fully understanding the fire risks and their impact on Benton County?

This landfill business isn't another blueberry farm or winery; it's a waste disposal business that builds infrastructure, accepts processes toxic materials from various counties throughout Oregon and beyond, and generates two toxic commodities (methane & leachate) in high quantities into the foreseeable future.

Coffin Butte Landfill definitely contributes to the fire risk we face in Benton County, we just buried the lede and minimized the proof by leaving the landfill out of the CWPP, which is one of the main planning document for fire management in Benton County!

I firmly oppose LU-24-027.

We can't make a decision to build a new landfill/landfill expansion without first understanding the fire risks *(along with all the other risks other residents have mentioned: health, air quality, water quality)* associated with the landfill.

Let's return to the description of some of the goals of Fire-Adapted Communities that Benton County has committed to (page 20 of CWPP)**:**

- Acknowledge and **understand its wildfire risk.**
  Currently the county and community have not acknowledged nor understood the fire risk associated with the Coffin Butte Landfill.

- Recognize that it is **in or near a fire-prone ecosystem.**
  Currently we, as a county, do NOT recognize the risks of fire events at the landfill, whether they originate at the landfill or they are sparked by other fires in the region.

- **Have leaders** and citizens with **the knowledge, skills, willingness and realistic expectations** to properly prepare for and deal with wildland fire.
  The fact that leaders and officials of this community signed off on the CWPP without a single mention of the landfill runs counter to the county's vision. An unforgivably large oversight.

- **Communicates clearly with citizens about wildfire risks** and specific methods for preparedness.

Benton County has NOT communicated the wildfire risks of the landfill because they have NEVER looked at the issue, or they are too afraid to voice facts that run counter Republic Services' dreams of expanding the landfill.

* Email Exchange that demonstrates why the Coffin Butte Landfill Was Left Out of the CWPP.

Read the email chain exchange that transpired in March 2022 when my neighbor sent an inquiry to the County staff person who was developing the CWPP. (Note that this same staff person was also the County Planning Official for the previous Republic Services CUP application in 2021.)

Subject: Community Wildfire Protection Plan

From: N Whitcombe - Sent: Friday, March 18, 2022 2:01 PM

Hi Inga,

I do not see anything in the Community Wildfire Protection Plan that addresses exit routes from vulnerable neighborhoods (for example, Coffin Butte Road). Am I missing that? It seems to have been an issue that has mobilized several at-risk neighborhoods lately (for example, Oak Creek and Soap Creek of course).

I also did not see the issue of the landfill addressed. Since the landfill is itself an enormous fire risk (because of the methane it generates and its history of catching on fire), I am wondering if that should be addressed in this plan. Many of us in the neighborhood have wondered if the higher temperatures that we have been experiencing lately will have an impact on the flammability of the methane in the landfill. I have not been able to find any research that addresses this issue.

Whom should I speak with about these issues?

On Fri, Mar 18, 2022 at 3:22 PM WILLIAMS Inga wrote:

Nancy,

Please review the Scope document that I have attached <not available>. This is what was given to the Board of County Commissioners at the beginning of this project. Disregard the Draft stamp, this is what was approved. Review of evacuation routes will be done after the CWPP has been approved, and then folded into it during an update.

I am not sure who you can talk to about the **increase in flammability of the landfill, sorry. It**

isn't a topic I will add to the CWPP.

From: N Whitcombe - Sent: Friday, March 18, 2022 3:28 PM
Who at the County is working on this *[the risk associated with the landfill]*?

On Fri, Mar 18, 2022 at 3:39 PM WILLIAMS Inga wrote:
No one is working on the landfill topic at the moment. It may be addressed through a community process in the broader context of waste management options. But I do not know when that process will begin exactly – maybe a month or two?

From: N Whitcombe - Sent: Friday, March 18, 2022 4:22 PM
I would like to bring the issue of the flammability of the existing landfill to the attention of whoever is working on the wildfire protection plan. It seems that **when you have a vast reservoir of flammable methane as a known fire risk, and which has repeatedly caught on fire, that should be taken into account in the formulation of a plan to reduce wildfires.**

From: WILLIAMS Inga – Sent Fri, Mar 18, 2022 at 4:31 PM
Nancy,
I am working on the CWPP**. I don't see how I can include this in CWPP as I have no experience in the topic, and it would be a task too large to undertake for what is in the final draft stages.** It may be that it could be included as a task to be worked on in future year updates.
Inga

Please reject LU-24-027. Thank you for your consideration and for protecting the health and future of Benton County.

Sincerely,
Carol McClelland Fields
Corvallis, OR 97330