Appendix E. Consideration of Comments

The Forest received comments from: American Forest Resource Council (AFRC), Bark, Oregon Wild, Wasco County Forest Collaborative, Wild Earth Guardians, and ten individuals. All comments are posted on the project website.[1]

Comments were considered by the responsible official and interdisciplinary team members. Comments were broken down into three areas for review:

1) **Common themes and concepts:** Some broad themes and concepts were discussed by commenters. Discussion of these themes and concepts is below in Section 1.

2) **Site-specific comments:** Some commenters shared information about specific areas such as units within the project footprint. Consideration of these comments is documented below in Section 2.

3) **Science citations and other references:** Some commenters submitted citations or references to support their comments. Consideration of citations and references is documented below in Section 3.

Section 1. Common themes and concepts

National Environmental Policy Act (NEPA)

Level of NEPA and public engagement.

Some commenters stated that because of the size of the project, and because of the potential for extraordinary circumstances under NEPA, that use of a categorical exclusion (CE) was not appropriate. Instead they suggested analysis through an Environmental Assessment (EA) or Environmental Impact Statement (EIS). The term "categorical exclusion" refers to exclusion from documentation in an EA or EIS – not exclusion from NEPA. A project of any size that uses a CE must evaluate whether extraordinary circumstances exist to determine if higher level NEPA analysis is needed. Resource conditions that may present extraordinary circumstances are listed in the Code of Federal Regulations (CFR) with the following explanation: "the mere presence of one or more of these resource conditions does not preclude use of a categorical exclusion (CE). It is the existence of a cause-effect relationship between a proposed action and the potential effect on these resource conditions, and if such a relationship exists, the degree of the potential effect of a proposed action on these resource conditions that determines whether extraordinary circumstances exist" 36 CFR 220.6(b). Specialist reports and the Decision Memo (DM) support the conclusion that no extraordinary circumstances were found that would preclude use of this CE.

Some commenters suggested that use of a CE does not allow for meaningful public engagement. Examples in comments included: only one 30-day comment period was used, not a large enough audience or enough local citizens were engaged, and not enough material was shared to allow for meaningful comments. It is correct that one 30-day comment period occurred (July 8 – August 7, 2023). Thirty-day comment periods are not required for CEs, however the responsible official chose to hold one to request public input. Collaboration is required for use of this CE (P.L. 117-58 Section 40806), and the

[1] https://www.fs.usda.gov/project/mthood/?project=63368

Wasco County Forest Collaborative group was engaged throughout project planning beginning in early May, 2023. The Wasco County Forest Collaborative includes voting members appointed by the Wasco County Board of Commissioners to represent diverse interests at the collaborative table. These meetings are open to the public, and most people who consistently attend live and/or work near the project area or in other parts of Wasco County. To reach a broader audience of interested persons and entities, the Forest uses a system called "GovDelivery" to provide information via email to anyone who has signed up for project information online. Subscribers do not have to know about the project specifically in order to receive information; they can sign up for information about any project on the Forest based on location or their interests and receive details. In this case, approximately 230 individuals and entities received the scoping letter that invited comments on this project.

It is understood that some commenters did not think the scoping materials shared with the public provided enough detail for them to provide meaningful comments. The scoping process occurs prior to analysis. Objectives of scoping include inviting input that the responsible official may not be aware of so that a proper analysis is performed. Not all details are known at the time of scoping, such as what units may be anticipated to need commercial treatment, or what the desired canopy cover will be for each unit. Items such as these require input from all specialists which is why the environmental analysis occurs. However, in the spirit of transparency and collaboration, the interdisciplinary team worked to develop as much information as possible to provide for public input. A preliminary effects analysis was conducted to disclose anticipated effects to sensitive species and other resource conditions that could trigger extraordinary circumstances. This was explained in the scoping letter. Appendix A included five maps showing land use allocations, fire regime and fire regime condition classes of the area, potential alignments of temporary roads, and unit boundaries. Appendix B showed eight metrics describing existing conditions for every unit in the project area. Appendix C provided over 100 draft project design criteria that were specifically created for unique elements of the project and which were part of the proposed action. The responsible official feels an appropriate amount of information was shared as demonstrated by the meaningful comments received from 15 individuals and groups.

All National Forests are directed to use the most efficient level of NEPA that is necessary to complete the appropriate level of analysis for a project. For more information about use of this CE category and management direction, see the section in this document titled "Public Law 117-58 Section 40806, the Wildfire Crisis Strategy, and management direction."

Public Law 117-58 Section 40806, the Wildfire Crisis Strategy, and management direction.

Section 40806 of the 2021 Bipartisan Infrastructure Law (Public Law (P.L.) 117-58) established the categorical exclusion used for this project (the "Fuel Break CE"). Some comments questioned whether the project met requirements for use of this CE. Specifically, they cited the purpose and need language was inconsistent with the requirement that the project be "intended to reduce the risk of uncharacteristic wildfire on Federal land or catastrophic wildfire for an adjacent at-risk community" (Section 40806(c)(1)(B)). The project is consistent with this requirement. This area is primarily classified as a frequent fire interval, low intensity fire regime. For details, see sections in this document titled "Historic and current fire regimes," Uncharacteristic versus characteristic fire," and "Wildland urban interface." Also see the Decision Memo and Fuels Report.

The Mt. Hood National Forest was selected in January 2023 as one of 11 national investment landscapes as part of the "Wildfire Crisis Strategy" (WCS) launched in 2022.[2] The 27 Road Fuel Break Project also falls within one of the 250 high-risk firesheds identified by the WCS. In March 2023, the Chief of the U.S. Forest Service issued a memorandum[3] directing staff to "use and prioritize all available resources and authorities to expedite actions to reduce wildfire threats to communities, critical infrastructure, public health and safety, and natural resources." The memorandum goes on to explain Section 40807 of P.L. 117-58 which "authorizes the Secretary to determine that an emergency exists where implementation of emergency actions is necessary to achieve relief from hazards threatening human health and safety or to mitigate threats to natural resources on National Forest System land and adjacent lands. Based on the risks outlined in the WCS, [the Secretary] determined that an emergency does exist on the 250 high-risk firesheds in the western U.S. identified in the Strategy." National Forests are currently developing processes for using emergency authorities that are described further in the memorandum. However, use of the Fuel Break CE for this project is consistent with overall national direction because of the location of the project, the project design that ensures CE requirements are met, and the most efficient level of NEPA for project planning is applied.

Cumulative effects.

A commenter brought up landscape connectivity and cumulative effects. The Fuels Report acknowledges: "When viewed at the landscape scale, the 27 Road Fuel Break connects other projects (Rocky EA, Grasshopper EA, South Pen Insect & Disease CE, Owl Underburn CE) with restoration and fuel reduction objectives. Combining fuel breaks with area wide fuel treatments in adjacent areas can reduce the size and intensity of a wildland fire (Agee 2000, Kennedy 2019)." The analysis did not result in discovery of any cumulative effects for any resource that would raise uncertainty about extraordinary circumstances or significance. Also see section below titled "Landscape connectivity."

Fuel Break Design and Function

Fuel break size.

Some comments discussed fuel break size. There is no standard for fuel break widths. They vary in size depending on a variety of factors, including, but not limited to, terrain and height of surrounding vegetation. Agee (2000) states that fuels breaks have been variable, both in recommendations and construction, but continued to say that proposals for fuel break projects are being recommended up to 400 meters.

Shaded fuel breaks.

Some comments suggested a shaded fuel break. This project is proposing a shaded fuel break. The project is not proposing to remove all vegetation. Proposed activities are designed to thin from below, retaining the largest, healthiest and fire resistant tree species wherever possible. The intent is to increase canopy base height, reduce canopy density and reduce the surface and ladder fuels. Target canopy cover is 35-50%. The target basal area is 60-80 ft². See specialist reports including the Fuels Report for more details on effects of proposed treatments.

[2] https://www.fs.usda.gov/managing-land/wildfire-crisis

[3] Memorandum from Chief Randy Moore to Forest Service National Leadership Council: "Implementing Secretary's Direction on Authorized Emergency Actions." U.S. Forest Service. March 10, 2023.

Maintenance.

Some comments asked about how the fuel break would be maintained. The project proposes to treat fuels created by thinning activities (commercial and noncommercial treatments) and piling of existing and activity-created fuels followed by use of prescribed fire. These actions ensure the effectiveness of the fuel break. It is anticipated that over time, vegetation will regrow in the treatment units and future maintenance treatments will be required. Fuel breaks are shown to have an effective period of use for 10-20 years (Low 2023). Units in the planning area that were treated in the late 1980s and early 1990s are now in need of treatment. This project serves as the "maintenance" of those past treatments. Future projects will be designed based on needs at that time. Ingrowth of small trees is expected, and will vary based on site conditions including aspect, moisture availability, and plant community. Maintenance treatments may consist of non-commercial thinning, brushing, and piling of material. Monitoring will occur immediately after treatment occurs, and in 5-10 years after treatment to determine if maintenance treatments are needed.

Potential operational delineations (PODs).

A commenter suggested that use of Potential Operational Delineations (PODs) appeared to be a Forestwide strategy and therefore should undergo NEPA analysis. Although PODs can be used in fuels planning by helping prioritize treatment locations, PODs do not prescribe a specific fuels treatment for any given POD. PODs have been developed by fire managers and cooperative partners to facilitate fire suppression efforts across boundaries. PODs look at possible control lines from the view of historical success in containing wildfires and summarizes fire risk to values within that POD.

As noted in the scoping letter, this project follows the same principals used as the PODs approach, such as considering values at risk from a wildfire and utilization of geographic features. PODs are developed to provide response options before there is a wildfire. When paired with a wildfire risk assessment, PODs can be used to quantify and summarize risk into strategic response zones that provide the starting point for planning of incident response. In development of the 27 Road fuel break locations, some of the same features used to determine POD boundaries were used to spatially analyze locations that provide the highest chances for success in managing a wildfire. The key features being the Suppression Difficulty Index (SDI) and the Potential Control Location (PCL).

Future treatment opportunities.

A commenter discussed how ideally, the project would address entire stands' treatment needs rather than a linear strip, and asked how the project could affect future projects. As stated in the Decision Memo "The purpose of the 27 Road Fuel Break project is to reduce the risk of landscape level disturbance by establishing a linear fuel break along National Forest System (NFS) Roads". The proposed action would leave some stands partially untreated limiting the future options for treatment. However, the proposed action would help reduce the risk posed by fire to a much larger area of untreated stands outside the project area. Future area needs would be addressed by future NEPA projects.

Redundancy.

Some comments questioned "redundancy" of proposed treatments; for example, why were roads parallel to one another proposed for treatment. Proposed units along Forest System Road (FSR) 2711000 (Units 73-79) were removed from the project after the scoping period. These units are located interior of the Douglas Cabin LSR. See the Decision Memo for more details.

Treatments were designed to provide an opportunity for suppression resources to limit the risk of uncharacteristic fire on National Forest System lands and reduce the risk of catastrophic wildland fire

impacting adjacent at-risk communities. Treatment design and location were developed to provide fire managers more decision space when determining a fire response. Overlap in treatments may provide additional buffers against the variability in a fire's shape and changing wind directions (Finney 2001). This follows the mindset of having primary and secondary lines, or contingency lines, in place when conducting fire suppression activities. Multiple options provide greater flexibility in management decisions, while potentially providing time for resources to arrive. Additionally, having overlapping treatments would provide higher chances of success during suppression activities, which would decrease the risk of catastrophic wildfire to the adjacent at-risk communities of Pine Hollow and Wamic in addition to reducing the risk of uncharacteristic wildfire to National Forest System lands. Also, see the section later in this document titled "Topography."

Project connectivity.

The project was designed to create a fuel break that connects several other previously approved projects for fuels reduction or restoration. These projects include Rock Creek Sapling Thin & Burn CE, Rocky EA, Grasshopper EA, South Pen Insect & Disease CE, and Owl Underburn CE. These projects have associated fuel reduction treatments that are in alignment with 27 Road Fuel Break proposed treatments. Fuel break effectiveness is increased when designed to connect to larger restoration, or fuel reduction projects.

Comments were received regarding unit selection. Comments inquired why some areas where not included, despite being in similar conditions of an adjacent unit that is proposed for treatment. FSRs 2720000 and 2730000 have several locations where there is not a unit proposed. Areas along these roads that are not proposed for treatment are covered under existing NEPA. Existing NEPA that pertains to these is the 2010 Sapling Thin CE and the 2018 Mastication CE. These projects authorized similar fuels treatments, thinning small diameter material, piling, and masticating.

Comments were raised regarding inclusion of the proposed units that run east to west units, along FSRs 2720000 and 2730000 roads. Commenters stated concerns that these units do not meet the purpose and need of the project. See sections below titled "Prevailing winds" and "Topography" for additional details.

Fuels and Fire Behavior

Prevailing winds.

Some comments discussed winds and some wondered why East/West fuel break segments were proposed instead of predominantly North/South. As stated in the scoping letter, a west wind is the typical wind direction in this area. As noted in the Douglas Cabin LSR Assessment, this area is "partially exposed to strong west winds that are funneled down Badger Creek canyon and across Gordon Butte. These topographic features often cause winds to accelerate as they funneled down drainages oriented in the same direction as the prevailing summer winds." The proposed treatments were designed to mitigate and reduce the risk of a wildland fire that starts on National Forest lands, and spreads east (with a west wind), impacting the surrounding communities. This is achieved through project design of having a North/South linear fuel break. Finney (2001) stated that it is clear that the greatest reduction in fire size and severity occurs when fuel treatment units limit fire (moving with the wind or slope) spread in the heading direction.

Creating a linear fuel break in a North/South direction will increase the initial attack success, which will limit the size and scale of a wildland fire burning uncharacteristically across the landscape, which results

in a reduced risk of a landscape level disturbance, and reduces the risk of catastrophic wildfire impacting adjacent communities.

Winds can occur from any direction and in conjunction with topography, influence a wildland fire's behavior and direction of spread. Proposed treatments along East/West oriented roads were designed to account for topography and the overall variability with wind directions. Proposed treatments in these locations (roads along ridgetops) are intended to reduce the risk of a wildfire burning uncharacteristically on the Forest, by increasing initial attack success, limiting the size and extent of an emerging wildfire. See response to topography comments for additional details.

Topography.

Comments addressed topography. Wildfires burn at all elevations, on all aspects and in all directions, uphill and down. A primary method of fire spread is through spotting, where embers are lofted and carried by the wind. A fire travelling down slope may be difficult to contain and control due to spotting. Embers will land down slope, ignite a spot fire, then begin spreading back upslope to the main fire. The fire spreading upslope may see an increase in rates of spread due to the slope, and could put firefighters at risk of being caught between the main fire and a spot fire. Fire igniting below firefighters is part of several watch out situations, which are elements to be aware of when responding to a wildland fire[4].

Treatment units were designed to limit fire spread due to winds, as well as driven by slope. Units proposed for treatment along FSR 2720 and FSR 2730 (west to east linear fuel break) were selected as they are not only along a road, but at the top of, or near the top of ridgelines. Fuel breaks located along roads and ridgetops have higher probabilities of success when used for fire suppression actions. Suppression difficulty is reduced along ridgetops and roads have a long history of being used for potential fire control lines. These strategies follow the PODS concepts discussed in the section titled "PODs". Creating a linear fuel break along these roads will increase the initial attack success, which will limit the size and scale of a wildland fire burning uncharacteristically across the landscape, resulting in a reduced risk of a landscape level disturbance.

Historic and current fire regimes.

Some comments discussed fire regimes. Decades of fire suppression and past management practices have resulted in important changes to the structure of the dry ponderosa pine and Douglas-fir forests. Historically, low intensity fires would control regeneration of fire-intolerant species, promote fire-tolerant species (ponderosa pine and Douglas-fir), and maintain an open forest structure (Graham 2004). This creates resistance to large severe disturbances (Merschel 2021). With the increase of fire-intolerant vegetation and dense forest canopies with a continuity in fuels both vertically and horizontally, the potential for uncharacteristic wildfire has increased. These conditions are not characteristic of low intensity wildfire. The changes in forest structure have altered how wildfires burn in these forests from how they burned historically (Graham 2004, Low 2023).

Uncharacteristic versus characteristic fire.

Several comments questioned the project's relationship with uncharacteristic versus characteristic fire. This area is primarily classified as a frequent fire interval, low intensity fire regime. Wildland fire is a primary component of this landscape and historically fire disturbances occurred frequently. Existing conditions, due to fire suppression and past management, have created a forest structure that is moderately to highly departed from historical conditions. Throughout the dry forest of Oregon and

[4] https://www.nwcg.gov/publications/pms118

Washington, this has led to a large increase in the proportion of forest burned at high severity in comparison to historical regimes, with over half burning in uncharacteristically large patches (Merschel 2021). In the project area, dense trees, abundant surface fuels, abundant brush fuels, and low canopy base heights exist - creating conditions where wildland fires burn uncharacteristically. This is depicted by high flame lengths, high spread rates, increased crown fire potential and high burn intensities. These conditions have resulted in the planning area, and surrounding area, to be classified as a "High to Very High" wildfire risk.

See section above titled "Historic and current fire regimes." See Fuels Report introduction, 2nd paragraph for additional details.

Surface fuels and microclimates.

Some commenters suggested treatment would exacerbate wildfire conditions. Effectiveness of fuels reduction is not diminished by the slight increase in winds or drying of surface fuels that may occur post treatment. Research continues to conclude that thinning for fuels reduction outweigh any changes to the microclimate in the thinned stand (Weatherspoon 1996, Agee 2005, Bigelow 2012, Jones 2022). Any increases in the wind is inconsequential and unlikely to pose concerns to suppression efforts. Conversely, a slight increase in wind may be beneficial during prescribed fire efforts, as the light winds may dissipate the heat and prevent crown scorch (Bigelow 2012).

The proposed treatments of thinning from below will leave the larger, more fire resilient trees whenever possible, while prescribed fire will be used to reduce the surface fuels and activity created slash from thinning. There is a substantial body of evidence that fuel reduction treatments that include mechanical thinning (commercial or non-commercial) followed by prescribed fire are most effective at reducing fire severity relative to an untreated forest (Agee 2005, Vaillant 2009, Kennedy 2019, Dodge 2019, Jones 2022, Low 2023). Reducing fire severity and crown fire potential will provide safer access for first responders and increase the chances of success during initial attack of wildland fires (Agee 2000, Holsinger 2016).

Community and Firefighter Safety

Wildland Urban Interface (WUI).

Some comments asked about the Wildland Urban Interface (WUI) or WUI boundaries. Recently Wasco County (the County) updated their Community Wildfire Protection Plan (CWPP) which revised the County's WUI boundaries. With this revision, there are few places where the CWPP WUI designation overlaps the Mt Hood National Forest. This is a change from the 2005 Wasco County CWPP. The 27 Road Fuels Break Project had designated WUI zones (per the County's 2005 CWPP) within the planning area which is why the scoping letter stated the project was "primarily within the designated Wildland Urban Interface (WUI), as outlined in the Central Wasco County Community Wildfire Protection Plan".

Despite the 2022 CWPP update, the project still meets the requirements of the Fuel Break CE, as defined by Public Law No. 117-58, section 40806 for two reasons. The project is primarily in Condition Class 2 or 3 in Fire Regime Group I and III that contains very high wildfire hazard potential. The project also overlaps an insect and disease area designated by the Secretary of Agriculture (April 16, 2019). See the Decision Memo and section in this document titled "Public Law 117-58 Section 40806, the Wildfire Crisis Strategy, and management direction."

The planning area may no longer show an overlapping WUI designation from the CWPP, however; the communities of Pine Hollow, Wamic and Sportsman's Park, Oregon are identified in the federal register

as communities near, or within the vicinity of Federal lands managed by the Department of Agriculture that are high risk from wildfire (Federal Register Supplement Notice 66 FR 43383). Additionally, these adjacent communities are designated as having a very high wildfire risk through the USDA US Forest Service's Wildfire Risk to Communities resource database (wildfirerisk.org).

While not listed in the federal register, other unincorporated communities (Friend, OR) are adjacent to federal lands and have homes and basic infrastructure and services that are mapped as a very high threat of wildfire. These areas would be at risk of a large-scale wildland fire event, with high flames length and an overall high to very high hazard to structures.

Use of Fire, including but not limited to Prescribed Fire

Several comments supported use of fire on the landscape. Prescribed fire is a part of the proposed treatments. It will be primarily through pile burning, but some low intensity underburning may occur where the risk of escape is minimal and able to be mitigated. Given the existing conditions of the planning area, and the surrounding landscape, the use of fire as the primary restoration tool will be unlikely. See the Fuels Report for details on the existing condition of the planning area. Overall wildfire risk is high to very high in this area; the ability to contain, hold and control a wildland fire, prescribed or natural, without prior vegetation manipulation is very low (Merschel 2021, Andrews 2011)

Commercial and Non-Commercial Treatment Types

Commenters made suggestions about non-commercial versus commercial thinning, or asked where each would occur. Part of the analysis process is determining which units may be non-commercial and which may be commercial. A mix of non-commercial and commercial treatments are likely to be used to implement the project. See Appendix B for detailed unit information for treatment types, including which units are expected to use non-commercial or commercial treatments. Treatment type may vary among units due to past treatment history and current stand conditions.

Old-Growth and Mature Forests

All areas proposed for treatment would be thinned from below, prioritizing the retention of the largest and oldest trees within the stands. Occasionally, large trees may be felled if they are determined to present abnormally high fire risk (e.g. crown structure resulting in high connectivity to the ground surface or presence of disease that may result in higher failure potential during a wildfire event). A general diameter limit was not applied for this project for this reason. Diameter limits are not necessary to meet law, regulation and policy requirements as described in the following paragraphs. Also see the Decision Memo.

Executive Order 14072 directed land management agencies to define mature and old-growth forests. Region 6 of the Forest Service had already defined old-growth before the Northwest Forest Plan went into effect, by developing the Region 6 Interim Old Growth standards (Hopkins 1993). However, the Forest Service as a whole responded to the Executive Order in 2023 by developing a Technical Guide titled "Mature and Old-Growth Forests: Definition, Identification, and Initial Inventory on Lands Managed by the Forest Service and Bureau of Land Management" (FS-1215a USDA 2023). This Technical Guide and Region 6 Interim Old Growth standards both provide landscape-scale metrics according to plant community that are needed to meet minimum standards for old-growth forests. These

metrics which provide approximate stand conditions to meet the mature and old growth definition according to plant community can be read about in the Technical Guide (Appendices 1 & 2). Old-growth and mature stand structure and composition differ by plant community, with tree size and age acting as only two of several metrics used to determine mature and old-growth.

Region 6 Interim Old Growth standards provide minimum structural features to classify stands as old growth, including required minimums of large live and dead trees, according to plant community and site productivity. For this project, stand structural stages were determined using stand evaluations and these standards, in conjunction with the Technical Guide. Current stand inventory data show that none of the stands exhibit all of the characteristics necessary to meet old-growth conditions. Therefore, the proposed action does not include treatments in any stands within old-growth habitat.

Mature forests are defined in the Technical Guide: “Mature forests exhibit structural characteristics that are lacking in earlier stages of forest development and may contain some but not all the structural attributes in old-growth forests” (USDA Forest Service 2023, p. 5). Some stands in the project area fall into the mature forest definition as described.

The project is consistent with Region 6 Interim Old Growth standards and 2023 Technical Guide. Treatments promote development of future old-growth habitat and protect structural elements of the stands that currently meet mature forest definition. Thinning intermediate and suppressed trees, as this project proposes, promotes the growth of retained co-dominant trees and mitigates the loss of older trees from competition-related stress. Diameter limits may be assigned where appropriate to individual stands to help maintain and protect stand structure elements and large trees, as well as move stands towards the old growth standards specific to the plant community as outlined in the technical guide for Mature and Old-Growth Forests (USDA Forest Service 2023) and Region 6 Interim Old Growth Definition (Hopkins 1993). Project design criteria provide protections for other structural elements critical to the development of mature and old growth forests, including coarse woody debris and large snags.

Refer to Appendix B for detailed unit information for current structural stages. These stages were determined through a combination of Lidar modeling, stand walk-throughs, and common stand exam. Structural elements that contribute to the development of old-growth characteristics (including snags greater than 12” DBH and large coarse woody debris) would be maintained in all treatment units. See Appendix C for PDC. Trees occupying the mid-story would largely be reduced as a result of treatment, although this canopy layer would not be eliminated entirely as a result of treatment. Reducing densities may increase resource availability for co-dominant trees retained, promoting growth and development of individual trees within the stand long-term.

Species Composition

Commenters wanted to point out the variety of vegetative species diversity in the planning area and understand how different species would be treated. Deciduous hardwood species and other minor species are present across the planning area including but not limited to western red cedar, Pacific yew, and cottonwood and would be maintained. Treatments are not expected to change or reduce coniferous species richness, but may decrease proportions of shade-tolerant species such as grand fir.

Desired Future Conditions

Commenters wanted to know about desired future conditions. Desired future conditions are described in the proposed action and the vegetation report. Treatments would consist of a thin from below, targeting

retention of overstory trees that have self-pruned. Density levels would be reduced to approximately 60-80 square feet of basal area and 35-50% canopy cover. Frequency of overlapping crowns would be reduced, and the spatial arrangement of overlapping crowns would be altered to increase spatial heterogeneity. Trees occupying the midstory canopy layer would be reduced the most, followed by co-dominant trees. Species composition is not expected to change, with species targeted for retention reflecting plant communities within individual stands. See the Vegetation Report for details, and see Appendix B of the Decision Memo for detailed unit information for a description of commercial and noncommercial treatment units. Treatment type may vary among units due to past treatment history, current stand conditions, and plant community.

Late-successional Reserve (LSR)

Commentors expressed concern with Northwest Forest Plan Consistency, in particular treatments identified within the Douglas Cabin LSR. The project area includes areas of the Surveyor's Ridge LSR and Douglas Cabin LSR. The project was found to be consistent with both LSR Assessments. Many areas within the Douglas Cabin LSR (units 73-79) are no longer proposed for treatment. See the Decision Memo. Treatments within all LSRs are designed to meet applicable Northwest Forest Plan ROD standards and guidelines related to risk reduction, as shown on page C-13-14 in the ROD. Treatments would consist of a thin from below. Thinning from below emphasizes removal of small diameter trees first, until the prescribed density or canopy cover target is achieved. This treatment type would maintain large, old trees in the overstory and reduce, but not eliminate, small diameter trees in the midstory and understory. Late successional characteristics would be maintained through the retention of large, old trees, retention of snags, and retention of existing coarse woody debris. See Silviculture PDC 3-6 and Wildlife PDC #5 for protection measures applicable to LSR treatments.

Current departure from historic fire regimes and condition classes both within and adjacent to the project area illustrate a clear need to reduce risks. The area proposed for treatment within the Douglas Cabin LSR is classified as Fire Regime Condition Class III, indicating a high departure from historic fire regime. Additionally, the Douglas Cabin LSR Assessment describes a clear risk of catastrophic fire. It states, "current conditions will support high intensity and severity fires in fire groups two and three. Such fires would eliminate any existing late successional and old growth stands and the potential to move existing stands towards the characteristic old growth structure quickly."

Location of treatment units were chosen to provide landscape connectivity and opportunities for safe engagement of fire with firefighting personnel. Treatments would seek to reduce fire intensity by reducing crown fire potential.

Whitebark Pine

Commenters noted that portions of the planning area contain potential whitebark pine habitat as according to the Current Range Map from the U.S. Fish and Wildlife Service (https://ecos.fws.gov/ecp/species/1748). Walk-through surveys were conducted by Forest personnel in all units identified as potential habitat for whitebark pine. Surveys confirmed that there is no habitat for or presence of whitebark pine. The current range map referenced in the comments is necessarily large to incorporate potential habitat for whitebark pine. However, on the Mt. Hood National Forest whitebark pine only persists at high points within this range. The 27 Road Fuels Break Project does not include habitat where this species could persist.

Interim Recovery Actions specified by the Fish and Wildlife Service for Whitebark Pine Recovery[5] (US Fish and Wildlife Service 2022) include: "Reduce surface and ladder fuels in and adjacent to whitebark pine stands to increase resilience and resistance to fire and reduce the risk from high intensity wildfires near whitebark pine stands." Current proposed treatments are in alignment with these recommended actions.

Habitat Connectivity

A commenter brought up the importance of habitat connectivity for wildlife. Wildlife habitat connectivity is considered in project development and is typically examined and addressed by species guilds. In general, the Forest strives to ensure connectivity between Late-Successional Reserves, Wilderness, ridgelines, and riparian corridors across the Forest because these areas are natural wildlife travel routes and typically have the least amount of human presence and use. This project is centered around existing linear features (roads) and will remove a minimal amount of wildlife habitat. It should not meaningfully change existing connectivity in either a North-South or East-West manner. No new permanent roads will be created as a result of the project and temporary roads will be rehabilitated within 3 years of project completion.

Northern Spotted Owls

Historic sites.

Some commenters were concerned about northern spotted owl sites. Historic Northern spotted owl sites overlap portions of the project area. A protocol survey will be conducted to ensure these sites are unoccupied. Unoccupied sites will be maintained on the landscape in accordance with the requirements set forth in the Biological Opinion for Timber Harvest and Routine Activities likely to adversely affect (LAA) Northern Spotted Owl (01EOFW00-2020-F-0170) (pg. 32, 33). Protections include no treatments in nest patches, and specific requirements of suitable habitat retained in the core area and territory.

Noise impacts.

Noise impacts to spotted owls were raised as a concern. Portions of the project that contain suitable habitat will have a timing restriction to prevent disturbance to potential nesting spotted owls during the critical breeding season (March 1-July 15).

Critical Habitat.

A commenter discussed Critical Habitat. Portions of the project occur in designated Northern spotted owl Critical Habitat. Effects to the Critical Habitat unit are disclosed in the Wildlife Report.

Botany and Invasive Plants

A couple of comments asked how botanical species would be protected and also were concerned about invasive species introduction. Botanical staff surveyed all units of the project area to map invasive species infestations and assess native plant communities. We recognize that project disturbance has a

[5] U.S. Fish and Wildlife Service (Service). 2022. Recovery outline for whitebark pine. Wyoming Ecological Services Field Office, Cheyenne, Wyoming. 21pp.

high risk of increasing invasive plant infestations. Coordination for project sites and staging areas will occur with botanical staff to avoid areas that have high concentrations of invasive species. Effort will be made to treat populations a year ahead of time to reduce the spread of infestations. Project design criteria (see Appendix C) also require that equipment is cleaned prior to entry on the Forest and weed free materials are used in order to prevent the introduction of new invasive plant species. Following invasive plant treatments and project implementation, impacted areas would be restored with appropriate native plant seeds or plugs.

Riparian Reserves

Riparian reserve protections were asked about by commenters. Protection of water resources and features for all projects is prescribed according to the Standards & Guidelines in the Mt Hood Land and Resource Management Plan (Forest Plan) and the Northwest Forest Plan. Additional regulatory protections are guided by a Memorandum of Agreement with the Oregon Department of Environmental Quality, and through regulatory compliance with the National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the Oregon Department of Fish and Wildlife.

Riparian Reserve strategies as described in the Northwest Forest Plan and the Mile Creeks and White River Watershed Analyses serve as the basis for planning protection buffers for all water features. Additional measures or Best Management Practices (BMPs) to protect waters are prescribed along with PDC during planning. See PDC in Appendix C.

Riparian Reserve BMPs and PDC are intended to avoid or minimize potential long-lasting and deleterious effects of activities to water resources and riparian values. These undergo development and are refined during the continuum of planning through implementation. Treatments proposed within Riparian Reserves to meet project objectives are balanced with objectives and direction to conserve water and riparian values.

During the planning phases of a project, water features such as rivers, streams, lakes, and wetlands that may be associated with a project are identified using a variety of data sets from the Forest Service corporate geographic information system (GIS). Field surveys are conducted to verify the characteristics of these features and the precision of mapping. Additional features may be encountered and identified during these field exercises, which are then included in project planning and mapping refinements. Other information about water features, such as crowd sourced data or comments is corroborated.

As the project transitions to the implementation phase, all the data on water features is conveyed to ground crews conducting layout. During layout fine scale adjustments are made in the field as conditions dictate to incorporate all water features, including any that may have been missed during planning, into Riparian Reserves. The width of Riparian Reserve buffers is measured outward from the edge of a water or riparian feature. This general methodology serves as the means for maintaining, protecting, and conserving water and riparian resources as prescribed and directed by the Forest Plan and Northwest Forest Plan.

All wetlands will be included in the Riparian Reserve network. Wetland features in units 16, 31, 90, and 183 along with any others that could be identified in the project area would be verified in the field to identify their location and extent throughout the course of planning and implementation.

The project is being planned with the intent of balancing its objectives with those of maintaining or improving riparian values consistent with the Northwest Forest Plan and its Aquatic Conservation Strategy (ACS) objectives, and the Forest Plan. Treatment prescriptions in Riparian Reserves will largely

be dependent upon forest conditions. Conditions in treatment units and riparian zones are surveyed during the planning phase of the project. Where riparian stands are overstocked and dense, thinning will be prescribed, particularly if there is an overabundance of ladder fuels.

Some of the riparian areas in the project area are departed from reference conditions and are densely stocked with small diameter trees. Thinning the understory would be prescribed to release some of the trees in Riparian Reserves from competition for light, nutrients, growing space, and water. The intent is to reduce fuels while simultaneously capitalizing on release to maintain or hasten the development of more complex and resilient riparian forest structure and function.

For this project, two portions of the Riparian Reserve buffers are prescribed. The inner zone and the outer zone, both of which have unique prescriptions. Treatments in inner riparian zones will be lighter than those in the outer riparian zones to help maintain microclimates along stream channels and around water bodies. The inner zone may get thinned for reducing fuel build up. But only by hand and where stocking of small trees is dense. There will not be any mechanical or commercial treatment within the inner Riparian Reserve and the overstory canopy will be retained.

Outer riparian zones as identified in Appendix C will be treated by thinning from below. Canopy cover minimums have been prescribed for retention in outer riparian zones. Forty to fifty percent of the overstory canopy would be retained depending upon the type of water feature. Large overstory trees in the canopy will be favored for retention, as will select species such as hardwoods, Pacific yew, and cottonwood for example to maintain diversity.

Thinning in older uneven-aged riparian stands would be based upon retention of vigorous overstory trees and favored species so that spacing is variable depending upon their stocking level and the density of younger cohorts around them. Each unit will have a specific individual prescription based upon its current conditions and characteristics.

See Appendix C for project design criteria and Appendix D for descriptions about consistency with ACS objectives.

Forest Products

A commenter raised the importance of provision of forest products. While economics and forest product production were considered in the development of the proposed action and it is anticipated that this project will generate a timber component, this was not a primary driver to project design.

Operations

Concern was raised about economic viability of sales and operational flexibility. Appendix C includes PDC that use conditions-based approaches as appropriate for resource conditions.

Roads

Temporary roads.

Commenters asked about temporary road details. Approximately 10 miles of temporary roads are anticipated to be needed for implementation. Whenever possible, existing alignments will be used. Appendix A includes a map showing potential temporary road alignments. Appendix C includes PDC

that apply to temporary roads. Any temporary roads will be decommissioned within three years of project completion as required by the Fuel Break CE (P.L. 117-58 Section 40806).

Decommissioning.

Some commenters suggested road decommissioning be added to the proposal. Decommissioning permanent Forest System Roads is outside the scope of activities included in the categorical exclusion applied for this project.

Opinions and Position Statements

Some comments received were opinions or position statements. There are many ideas about how forests should be managed or not managed. While the Forest appreciates the diverse viewpoints of members of the public, Forest Service staff are directed to design activities to meet a project's purpose and need while meeting requirements of relevant law, regulation, and policy and using the best available science. This approach was taken for the 27 Road Fuel Break Project.

Scope of Project

Some comments suggested actions that were outside of the scope of the project or outside of federal land managers' jurisdiction. For example, this project does not address housing development or fire mitigations on private lands.

Section 2. Site-specific comments

The tables below consider site-specific information submitted through comments. Where relevant, discussions below reference other sections of this document.

Site:	Unit 16
Commenter:	Bark
Concern:	unmapped wetland, beavers
Discussion:	District staff also encountered this wetland during our spring surveys and found similar beaver activity to what is described in the comment. This area will be protected during project implementation using BMPs and PDCs. The responsible official will consider separately the suggestion about wetland restoration with surrounding treatment of encroaching conifers, but that is currently outside this project's purpose and need.

Site:	Units 66-79
Commenter:	Bark, WCFC
Concern:	Douglas Cabin LSR
Discussion:	Units 73-79 are no longer proposed for treatment. See the Decision Memo. Treatments in the Douglas Cabin LSR were designed to mitigate risks associated with uncharacteristic wildland fire on National Forest lands, which reduces the risk of catastrophic wildland fire to the adjacent communities. Proposed treatments will reduce density of ladder fuels and alter spatial arrangement of individual trees within the treatment area so that interlocking crowns would be reduced and become more patchy. Treatments would consist of a thin from below, targeting retention of overstory trees with robust crowns that have self-pruned. Current densities of snags

	and large woody debris would not be impacted by treatments. It is recognized that these treatments are linear in nature, and as a result do not impact forest processes within the interior of the LSR.

Site:	Units 6-18, 66-79,181-183 (Simon-Behmes) and 6-182, 23-42, 66-79 (Kaufman)
Commenter:	Simon-Behmes, Kaufman
Concern:	fuel break effectiveness
Discussion:	Units 73-79 are no longer proposed for treatment. See sections titled “Prevailing winds” and “Topography” earlier in this document for need and effectiveness of a fuel break on the west to east roads, which encompasses the units listed above.

Site:	Units 2 and 71
Commenter:	Kaufman
Concern:	existing stand conditions
Discussion:	Individual unit prescriptions and treatments recognize the variability that may occur both within and between units. Treatments in unit 2 would not occur in portions of the unit where density and canopy cover objectives are already met. They would occur in the ‘overly dense’ portions that was noted in the comment. This unit is located in pine/oak habitat, which supports low densities of trees due to dry conditions and historic frequent fire return intervals. Treatments in unit 71 would reduce densities in the midstory to introduce more spatial variability in canopy distribution.

Site:	Unit 17
Commenter:	Kaufman and Freifelder
Concern:	steep slopes, existing stand conditions, proximity to special emphasis watershed
Discussion:	Treatments in unit #17 would aim to thin patches of small densely stocked trees and where ladder fuels are present. Natural openings with sparsely stocked trees would be skipped and large overstory trees would be favored for retention throughout. Due to the variable stocking, steep slopes and the narrow configuration of the unit, treatment will likely be conducted by hand. The entirety of the unit is outside of the Fifteenmile Special Emphasis watershed, which was initially designated by the Forest Plan because it served as the source water for the town of Dufur. Since then, the town has transitioned to groundwater sources for their municipal supply. Surface water of Fifteenmile Creek no longer is sourced by the town. The creek remains however, an important resource for a variety of values such as for steelhead, recreation, and wildlife. BMPs and PDC have been prescribed and would be implemented during the project to avoid or minimize unwanted effects to those values.

Site:	Unit 72
Commenter:	Kaufman
Concern:	potential wolf den or rendezvous site
Discussion:	District wildlife specialists visited the site on 8/10/23. There were no wolf tracks, scat, bone fragments, hair, or disturbance in or around the entrance to the cave that would indicate use as a wolf den or rendezvous site. While it is serving as possible habitat for many species it doesn’t meet the criteria for special protections provided for active

	wolf sites. See Appendix C for project design criteria that would protect wolf dens or rendezvous sites, if found.

Site:	Units 74-79
Commenter:	Kaufman
Concern:	existing stand conditions
Discussion:	These units are no longer proposed for treatment.

Site:	Unit 75
Commenter:	Kaufman
Concern:	unmapped perennial stream, existing stand conditions, steep road grade
Discussion:	District staff visited this stream during August baseflows and verified that it is perennial. This unit has since been dropped from the project and is now not proposed for treatment.

Site:	Unit 78-79
Commenter:	Kaufman
Concern:	no road access
Discussion:	These units are no longer proposed for treatment.

Site:	Units 180-182
Commenter:	Kaufman
Concern:	unmapped wetland, beavers
Discussion:	PDC have been developed that provide protection for all wetlands, both identified and unidentified, during project implementation.

Site:	Units 70-72
Commenter:	Kaufman
Concern:	road conditions
Discussion:	All roads used for haul would receive some type of road maintenance following standard road maintenance specifications. Some of the roads used for haul would receive some type of road repair or reconstruction work. Collector and primary haul routes would likely receive more road repairs and constructive improvement work than some others to accommodate heavy haul. See the Transportation Report for more detail.

Site:	Units 16 and 183
Commenter:	Freifelder
Concern:	wetland size and location, beavers, existing stand conditions, aspect, surface fuels
Discussion:	District staff are aware of the wetlands in Unit 16 as well as other treatment units, and they all will be protected during project implementation. Staff also observed signs of beaver activity and large logs in Unit 16. All wetlands, regardless of them being found

	during surveys or during project implementation, will have riparian reserve PDC applied to them.

Site:	Units 15, 16, 17
Commenter:	Freifelder
Concern:	large trees, fire behavior, recent fire history
Discussion:	Treatments would consist of a thin from below, which would maintain large trees within the project area. See section titled "Old-growth and mature trees" earlier in this document. Also see section titled "Surface fuels and microclimates" earlier in this document. Last, Jones (2022) highlights several recent research studies on fuel treatment effectiveness.

Site:	Badger Creek drainage
Commenter:	Freifelder
Concern:	fuel break effectiveness
Discussion:	See section titled "Prevailing winds" earlier in this document. The Douglas Cabin LSR Assessment stated one concern for this area is winds funneling downslope. The LSR Assessment specifically mentioned Badger Creek canyon, and how winds may increase coming down slope through the drainage.

Site:	Unit 70
Commenter:	Cole
Concern:	unit design
Discussion:	Treatment units were determined based on current stand conditions. This particular plantation (within Unit #70) was omitted from proposed treatment as it is covered under existing NEPA. The 2018 Mastication CE covered small diameter thinning, mechanical piling and pile burning. . Adjacent plantations were not covered under the 2018 Mastication CE, do not meet desired conditions, and are therefore proposed for treatment. This is likely a function of microsite conditions within individual stands or conditions when planting occurred for these specific plantations.

Site:	Units 6, 10, 17, 18, 24, 30, 32, 35-37, 39, 40, 182
Commenter:	Cole
Concern:	overlap with past projects
Discussion:	Past treatments have occurred in portions of the project area. Much of this harvest activity occurred in the 1980s and 1990s. The resulting in growth of small trees in the understory necessitates re-entry to reduce density of available canopy fuels. A majority of these trees can be removed through non-commercial treatments.

Site:	FSR 2711000, 2720000 and 2730000
Commenter:	Oregon Wild
Concern:	Forest Plan standards, cumulative effects, redundancy
Discussion:	The project was designed to be consistent with the Forest Plan. See sections earlier in this document titled "Cumulative effects," "Redundancy," Topography," and "Project Connectivity."

Section 3. Science citations and other references

The tables below discusses citations and other references submitted by commenters. A summary of the comment is provided with the citation or reference submitted to support the comment. If the comment was irrelevant to the project the citation or reference was not considered. If the citation supported general knowledge it is not listed here. For example, a citation to support the fact that old trees are valuable would not be considered because this is general knowledge.

Best available science is considered when the Forest makes decisions. Examples include peer-reviewed publications in the form of journal articles, agency general technical reports, and meta-analyses and science syntheses. The Forest also uses recent scientific findings when presented at a professional meeting and preliminary results directly communicated by scientists.

Commenter:	Freifelder
Comment summary:	Project will make fire behavior worse.
Citation or reference:	https://www.environment.sa.gov.au/topics/fire-management/fire-science-and-planning/fire-behaviour
Discussion:	See Fuels Report (Page 5, conclusion) that highlights literature on this topic. Thinning, with surface fuel treatments are effective at reducing fire severity.

Commenter:	Freifelder, Pisano
Comment summary:	Fire has historically been present in the project area. Landscape-level fire disturbance is not uncharacteristic.
Citation or reference:	Merschel, A., Johnston, J.D., Reilly, M.J. 2023, August 6-11. Fire tended forests: Fire history and stand development of old-growth Douglas-fir forests in Oregon and Washington. [Conference presentation]. Ecological Society of America, Portland, OR, as discussed at Wasco County and Hood River County Forest Collaborative Group meetings (2023).
Discussion:	Fire has been historically present in the project area. As Merschel, et al. determined in their research, fires occurred frequently in both the dry, mild sites and the moist, warm sites within the project area. The historic occurrence of frequent, low intensity fire is well documented in the project area. Fire activity has been very limited in the last century, creating stand conditions that are uncharacteristically dense. It is expected that fire severity would be much higher than historically occurred as a result of current conditions. The intent of the proposed fuel break is not to prevent fire from occurring, but to reduce severity such that it can be safely managed and engaged, as needed. See Fuels Report Introduction for more details on existing condition and uncharacteristic wildfire potential.

Commenter:	AFRC
Comment summary:	Severe fire has detrimental short-term effects on northern spotted owls.
Citation or reference:	Jones, G.M., Kramer, H.A., Whitmore, S.A., Berigan, Gutierrez, R.J. & Peery, M.Z. (2021). Megafire causes persistent loss of an old-forest species. Animal Conservation. 35, 1199–1213.

Discussion:	The project intends to address these concerns by creating a fuel break to reduce the amount of available fuel and creating a defensive buffer. Part of the objective of this project is to prevent additional habitat from burning if there were to be a fire outbreak.

Commenter:	AFRC
Comment summary:	After severe fire, northern spotted owls will not return even years later.
Citation or reference:	Jones, G.M., et al. (2016). Megafires: an emerging threat to old-forest species. Front. Ecol. Environ. 14, 300–306
Discussion:	The project intends to address these concerns by creating a fuel break to reduce the amount of available fuel and to create defensive buffer. Part of the objective of this project is to prevent additional habitat from burning if there were to be a fire outbreak. Fuel reduction outside the buffer zone to reduce fire severity is outside the scope of this project.

Commenter:	AFRC
Comment summary:	Severe fire is more impactful to northern spotted owls compared to salvage logging.
Citation or reference:	Jones, G.M., et al. (2020). Habitat selection by spotted owls after a megafire reflects their adaptation to historical frequent-fire regimes. Landscape Ecol. 35, 1199–1213.
Discussion:	The project intends to prevent severe fire from consuming additional habitat by reducing fuel loads within a buffer zone. Salvaging post fire timber is outside the scope of this project.

Commenter:	Vivola
Comment summary:	The best fuel breaks are shaded and have large trees.
Citation or reference:	https://efotg.sc.egov.usda.gov/api/CPSFile/20901/383_PS_CA_Fuel_Break-Forestland_05-2020
Discussion:	The project is a shaded fuel break with large trees. The proposed treatments would maintain some canopy cover and large trees, as described in the referenced document. It is expected that the retained overstory would serve to provide shading and retention of microclimates as described in the referenced document.

Commenter:	Vivola
Comment summary:	Shaded fuel breaks have benefits when considering climate change and long-term restoration.
Citation or reference:	https://fireecology.springeropen.com/articles/10.1186/s42408-023-00187-2
Discussion:	This research supports the proposed project. Treatments proposed would be very similar to those that occurred in this long-term study, including maintaining large trees and focused removal of small trees that act as ladder fuels. Treatments in this study also decreased stand densities to a basal area of 80 ft^2/acre, approximately the target density for proposed treatments in much of the project area.

Commenter:	Wild Earth Guardians
Comment summary:	WUI definitions differ between USDA mapping and CWPP mapping. It is problematic that the CWPP mapping is relied on.
Citation or reference:	U.S. Forest Serv., The 2010 wildland-urban interface of the conterminous United States - geospatial data, https://www.fs.usda.gov/rds/archive/products/RDS-2015-0012/_metadata_RDS-2015-0012.html Wasco County Community Wildfire Protection Plan (CWPP). December 2022.
Discussion:	See the subsection in section 1 of this document titled "Wildland Urban Interface." Also, this CE does not require the use of a specific WUI definition. WUI may be delineated in a Forest Plan, in a Community Wildfire Protection Plan, or by delineating an area where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. In design of the project, the WUI as previously delineated by the 2005 Wasco County CWPP was looked at and provided guidance on proposed treatment locations.

Commenter:	Oregon Wild
Comment summary:	2-acre gaps are inappropriate for a fuels break project.
Citation or reference:	Evers C, Holz A, Busby S, Nielsen-Pincus M. Extreme Winds Alter Influence of Fuels and Topography on Megafire Burn Severity in Seasonal Temperate Rainforests under Record Fuel Aridity. Fire. 2022; 5(2):41. https://www.mdpi.com/2571-6255/5/2/41/pdf Steel, Z.L., Jones, G.M., Collins, B.M., Green, R., Koltunov, A., Purcell, K.L., Sawyer, S.C., Slaton, M.R., Stephens, S.L., Stine, P. and Thompson, C. (2022), Mega-disturbances cause rapid decline of mature conifer forest habitat in California. Ecological Applications. Accepted Author Manuscript e2763. https://doi.org/10.1002/eap.2763 Harold S. J. Zald, Christopher J. Dunn. 2018. Severe fire weather and intensive forest management increase fire severity in a multi-ownership landscape. Ecological Applications. Online Version of Record before inclusion in an issue. 26 April 2018. https://doi.org/10.1002/eap.1710 https://phys.org/news/2018-04-high-wildfire-severity-young-plantation.html Lesmeister, D. B., S. G. Sovern, R. J. Davis, D. M. Bell, M. J. Gregory, and J. C. Vogeler. 2019. Mixed-severity wildfire and habitat of an old-forest obligate. Ecosphere 10(4):e02696. 10.1002/ecs2.2696. https://esajournals.onlinelibrary.wiley.com/doi/pdf/10.1002/ecs2.2696
Discussion:	The literature provided indicates that heavily managed plantations may burn at a higher severity than older stands with more structural diversity. They also note that one of the largest drivers of fire behavior is weather. Treatments proposed would occur in a variety of stand types, including plantations and non-plantations. These treatments would consist of a thin from below, until a target basal area or canopy cover is achieved. Some small diameter trees would be maintained within treatment areas, to maintain appropriate age class distribution across the stands.

Commenter:	Oregon Wild
Comment summary:	The project is part of a larger (fuels or PODS) strategy that has not been analyzed through NEPA with consideration of large areas of effects and cumulative effects.
Citation or reference:	Thomas v. Peterson, 753 F.2d 754 (9th Cir. 1985) Elijah Veenendaal 2012. Avoiding Improper Segmentation and Accounting for Cumulative Impacts During Deployment of a Broadband Infrastructure. https://dukespace.lib.duke.edu/dspace/bitstream/handle/ 10161/5755 /E.%20Veenendaal%20NEPA%20CAPSTONE %20PAPER %20%28Final%29.pdf
Discussion:	This project was designed to provide connectivity to approved projects with fuels reduction or forest restoration objectives. From the Fuels Report: "Combining fuel breaks with area wide fuel treatments in adjacent areas can reduce the size and intensity of a wildland fire (Agee 2000, Kennedy 2019)". Also, see sections earlier in this document titled "Cumulative effects" and "Potential Operational Delineations (PODs)."

Commenter:	Oregon Wild
Comment summary:	Older forests are more fire-resilient. Plantations pose more fire risk. The Forest should focus on treating plantations.
Citation or reference:	Tom Spies, emeritus scientist with the USDA Forest Service's Pacific Northwest Research Station. Look to wildfires history to better prepare for next one. Sept 20, 2020 op-ed in The Oregonian. https://www.oregonlive.com/opinion/2020/09/opinion-look-to-wildfires-history-to-better-prepare-for-next-one.html Lesmeister et al., 2019; Lesmeister et al., 2021; Zald & Dunn, 2018). Small trees with thinner bark are more exposed to lethal temperatures than large trees with thicker bark, even in low- and moderate-severity fire (Dunn & Bailey, 2016; Johnston et al., 2018) Jiang et al., 2019. Agee & Skinner, 2005 Reilly, Matthew J., Zuspan, Aaron, Halofsky, Joshua S., Raymond, Crystal, McEvoy, Andy, Dye, Alex W., Donato, Daniel C., et al. 2022. " Cascadia Burning: The Historic, but Not Historically Unprecedented, 2020 Wildfires in the Pacific Northwest, USA." Ecosphere 13(6): e4070. https://doi.org/10.1002/ecs2.4070, https://esajournals.onlinelibrary.wiley.com/doi/pdfdirect/10.1002/ecs2.4070
Discussion:	Some of the treatment units are plantations that were established in the 1980s and 1990s. Treatments proposed in these units would reduce densities and increase spatial heterogeneity, which would promote growth and development of remaining trees and provide light to the understory to allow a second age class to develop. This would ultimately accelerate stand development into an older forest structure, improving fire resilience overall.

Commenter:	Oregon Wild
Comment summary:	Northwest Forest Plan consistency cannot be met because commercial logging is likely to cause more harm to habitat than fire.
Citation or reference:	See Heiken, D. 2010. Log it to save it? The search for an ecological rationale for fuel reduction logging in Spotted Owl habitat. Oregon Wild. V 1.0. May 2010. https://www.dropbox.com/s/pi15rap4nvwxhtt/Heiken_Log_it_to_save_it_v.1.0.pdf?dl=0
Discussion:	The project was designed to meet all law, regulation and policy including direction in the Northwest Forest Plan.

Commenter:	Oregon Wild
Comment summary:	Fuel breaks are largely untested with potentially uncertain ecological effects.
Citation or reference:	Shinneman, Douglas J.; Germino, Matthew J.; Pilliod, David S.; Aldridge, Cameron L.; Vaillant, Nicole M.; Coates, Peter S. 2019. The ecological uncertainty of wildfire fuel breaks: examples from the sagebrush steppe. Frontiers in Ecology and the Environment 17(5):279-288. https://doi.org/10.1002/fee.2045 Shinneman, D.J., Aldridge, C.L., Coates, P.S., Germino, M.J., Pilliod, D.S., and Vaillant, N.M., 2018, A conservation paradox in the Great Basin—Altering sagebrush landscapes with fuel breaks to reduce habitat loss from wildfire: U.S. Geological Survey Open-File Report 2018–1034, 70 p., https://doi.org/10.3133/ofr20181034
Discussion:	The literature provided discusses fuel break effects in an ecotype that does not occur in the planning area—sagebrush steppe. However, treatments proposed in this project would consist of a shaded fuel break, leaving cover of large overstory trees and structural elements of stands currently present, but at a lower density. The project was designed to be consistent with the Forest Plan, as amended. See Appendix C for Project Design Criteria.

Commenter:	Oregon Wild
Comment summary:	Focus fuel breaks closer to roads (comment letter page 6) There is a relationship between fuel break effectiveness and how breaks are used in relation to suppression activities (comment letter page 7)
Citation or reference:	https://www.firescience.gov/projects/19-2-01-1/project/19-2-01-1_final_report.pdf
Discussion:	This report was a survey of fire managers. On page 3 of the provided reference it states: “We used a survey of wildland fire management personnel to gather information on perceptions of fuel break effectiveness, data on fuel break use, and locations of the fuel breaks in question.” The perspective of fire managers surveyed concluded that fuels breaks were effective in aiding suppression resources hold the fire and that fuel breaks were used to contain the fire. Respondents said they trusted the fuel break to aid in suppression efforts. No one responded saying they did not trust the fuel break. The respondents also stated that fuel breaks should be wider to lead to better outcomes.

Commenter:	Oregon Wild

Comment summary:	PODs should be explicitly planned and designed to facilitate the return of fire to the landscape, not the failed policy of continued suppression of wildfire.
Citation or reference:	Timothy Ingalsbee 2005. Fuel breaks for Wildland Fire Management: A Moat or a Drawbridge for Ecosystem Fire Restoration? Journal of Fire Ecology, Pages: 85-99. DOI:10.4996/fireecology.0101085. http://fireecology.org/docs/Journal/pdf/Volume01/Issue01/085.pdf.
Discussion:	See Fuels Report conclusion. Fuels breaks are a part of the solution moving forward, and are a part of restoring the fire adapted ecosystem. "Fuel breaks are part of the solution to preparing communities for wildland fire of all kinds, planned and unplanned, and serve a role in restoring fire adapted communities and ecosystems" (Ingalsbee 2005, Low 2023).

Commenter:	Oregon Wild
Comment summary:	Fuel breaks can exacerbate invasive and non-native plant species establishment.
Citation or reference:	Merriam, K.E., Keeley, J.E., and Beyers, J.L., 2007, The role of fuel breaks in the invasion of nonnative plants: U.S. Geological Survey Scientific Investigations Report 2006-5185, 69 p. http://pubs.usgs.gov/sir/2006/5185/pdf/sir_2006-5185.pdf
Discussion:	See Section 1 of this document ("Botany and Invasive Plants.") See the Invasive Plants Report. See PDC in Appendix C.

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