Draft Environmental Assessment

City of Ashland Wildfire Mitigation Project

PDMC-PJ-10-2018-001

Jackson County, Oregon

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FEMA

Federal Emergency Management Agency
Region X
Department of Homeland Security
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Acronyms and Abbreviations

AFR	Ashland Forest Resiliency
AMC	Ashland Municipal Code
APE	Area of Potential Effects
BMP	Best management practice
CEQ	Council on Environmental Quality
C.F.R.	Code of Federal Regulations
EA	Environmental assessment
EFH	Essential Fish Habitat
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FONSI	Finding of no significant impact
NEPA	National Environmental Policy Act
NHMP	Natural Hazard Mitigation Plan
NRHP	National Register of Historic Places
NSO	Northern Spotted Owl
OEM	Oregon Office of Emergency Management
PDM	Pre-Disaster Mitigation Grant Program
RCRA	Resource Conservation and Recovery Act
SONCC	Southern Oregon/Northern California Coast
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
WHZ	Wildfire Hazard Zone
WRZ	Water Resources Protection Zone

Glossary

Canopy: The cover provided by the crowns of trees. A closed canopy occurs when the crowns of adjacent trees touch to form a continuous cover over the forest floor. An open canopy occurs when trees are more widely spaced so that their crowns do not touch or where there are gaps in the canopy.

Defensible Space: An area around a building where vegetation, debris, and other types of combustible fuels have been treated, cleared, or reduced to slow the spread of fire to and from the building.

Ignition-Resistant Construction: The application of noncombustible building envelope assemblies, the use of ignition-resistant materials, and the use of proper retrofit techniques in new and existing structures.

Ladder Fuels: Includes shrubs, small trees, down wood or brush, and low limbs that may provide the means for fire to climb from the ground up into the forest canopy.

Suppression: Response to wildland fire that results in the curtailment of fire spread and elimination of all identified threats from the fire; wildland fire suppression requires a variety of unique tactics to successfully curtail fires.

Wildfire: Any uncontrolled fire that spreads through vegetative fuels such as forests, shrubs, or grasslands, exposing and possibly consuming structures.

SECTION 1. Introduction

The City of Ashland (subrecipient) proposes to implement defensible space and ignition-resistant construction wildfire mitigation measures in the City of Ashland, Oregon. The City applied to the Federal Emergency Management Agency (FEMA) through the Oregon Office of Emergency Management (OEM) for a grant under FEMA's Pre-Disaster Mitigation Grant Program (PDM); OEM is the direct recipient for the grant, and the City of Ashland is the subrecipient. The PDM is authorized by Section 203 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. Under the PDM, federal funds pay 75 percent of the project cost, and the remaining 25 percent comes from nonfederal funding sources.

The City of Ashland is located in Jackson County, Oregon, in southwest Oregon. The City is primarily composed of residential developments that are built up to the edge of managed forestlands. The communities of Talent and Phoenix in Jackson County, which are just northwest of the City of Ashland, were devasted by the Almeda Fire in September 2020. The fire burned about 2,977 acres and destroyed more than 2,300 structures, emphasizing the need for wildfire hazard mitigation projects in the project area. The City is proposing to establish up to 100 feet of defensible space around approximately 1,100 homes and retrofit up to 23 structures containing wood shake shingles with ignition-resistant material roofs. A defensible space is an area around a building where vegetation, debris, and other types of combustible fuels have been treated, cleared, or reduced to slow the spread of fire to and from the building. The project would target the portions of the built environment with the highest and high wildfire risk (**Figure 1-1**). On each selected parcel, the amount of flammable vegetation around the structure would be reduced to reduce the risk of wildfire spread from adjacent forestlands and reduce wildfire starts from embers and the chance of urban conflagration.

This environmental assessment (EA) was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the President's Council on Environmental Quality (CEQ) regulations to implement NEPA (40 Code of Federal Regulations [CFR] Parts 1500 to 1508), U.S. Department of Homeland Security DHS Instruction 023-01-001, and FEMA Instruction 108-01-1 NEPA implementing procedures. FEMA is required to consider potential environmental impacts before funding or approving actions and projects. The purpose of this draft EA is to analyze the potential environmental impacts of the proposed action. FEMA will use the findings in this draft EA to determine whether to prepare an environmental impact statement or to issue a finding of no significant impact (FONSI).

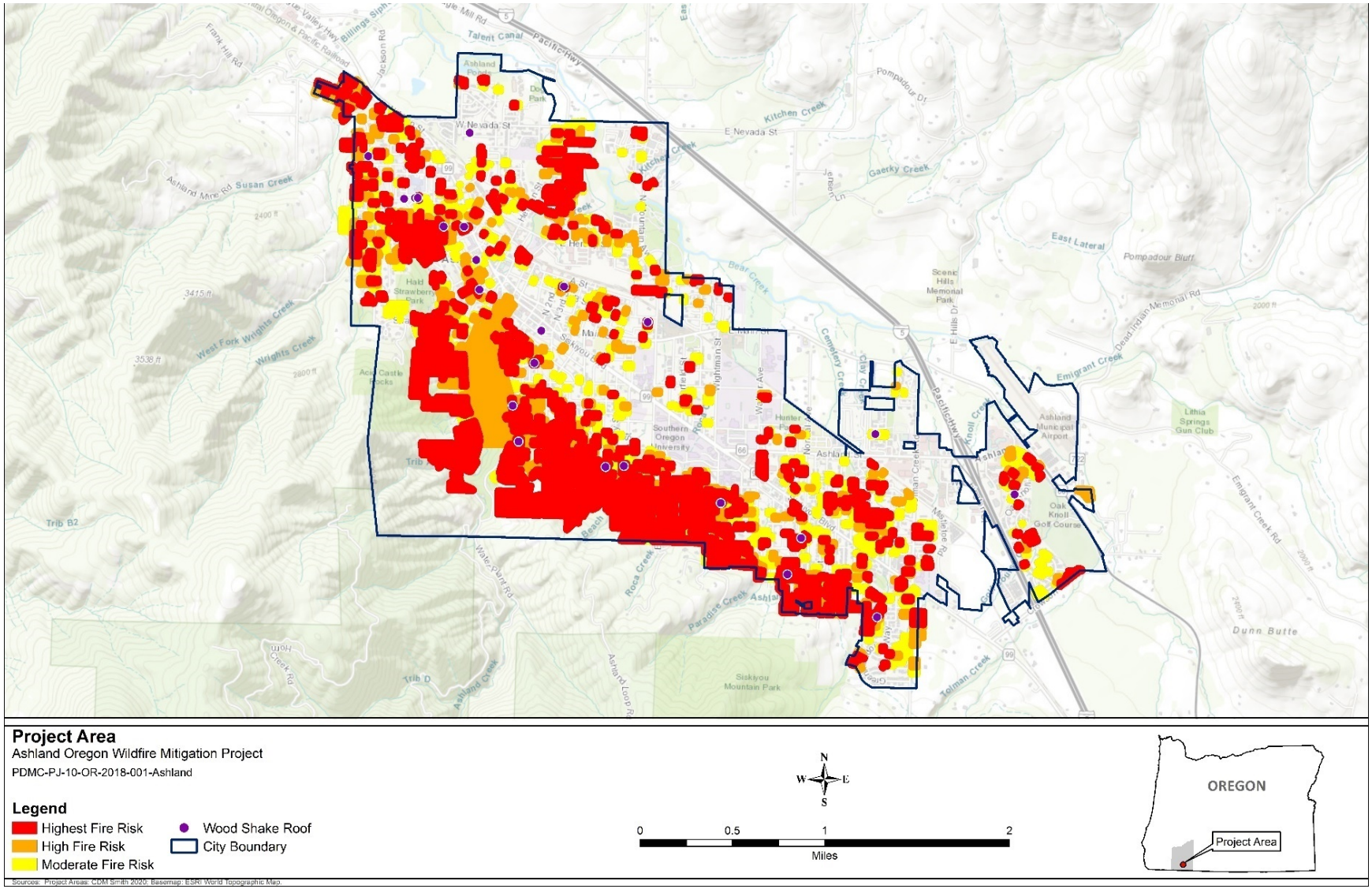

Figure 1-1. Wildfire Risk Within the Project Area

SECTION 2. Purpose and Need

FEMA's PDM program provides grants to eligible state, territory, and local governments and federally recognized tribes to implement sustained pre-disaster natural hazard mitigation programs. The objective of the PDM program is to reduce overall risk to the population and structures from future hazard events as well as reduce reliance on federal funding from future disasters. Specifically, the purpose of this proposed PDM project is to slow the spread of wildfire within the City of Ashland and reduce the likelihood of wildfire impacts on people and property.

According to data by the National Interagency Fire Center, the average wildfire size in the U.S. has increased from less than 40 acres in the 1980s and early 1990s to more than 120 acres in 2017 and 2018. Wildfires in Oregon have been getting larger, more destructive, and more costly to fight. In 2018, costs to suppress wildfires in Oregon exceeded $514 million and over 840,000 acres burned (Statesman Journal 2018). The 2020 wildfire season in Oregon has been unprecedented, with over 900,000 acres burned to date, resulting in a Federal Disaster Declaration that designated 20 counties eligible for federal assistance including Jackson County. These fires caused extensive loss and damage to property and structures, led to mass evacuations, and caused fatalities. The communities of Talent and Phoenix in Jackson County, which are just northwest of the City of Ashland, were particularly devasted by the Almeda Fire which burned about 2,977 acres and destroyed more than 2,300 structures in September (**Figure 2-2**). One of the larger fires in recent years was the Klondike Fire of 2018 that burned over 175,000 acres in Josephine County west of Ashland. Other large wildfires in 2018 included the Klamathon Fire that burned 38,000 acres just to the south of Ashland in California, and the Miles Fire that burned over 54,000 acres in Jackson and Douglas Counties to the north of Ashland.

The Jackson County Multi-Jurisdictional Natural Hazard Mitigation Plan (NHMP) ranks wildfire as a top-tier hazard. The County is moderately vulnerable to wildfires (up to 10 percent of the County's population or properties would be affected by a major wildfire) and has a high probability for experiencing a wildfire within the next 10 to 35 years.

The City of Ashland has had a history of wildfires that have damaged property and caused mandatory evacuations. For example, the 2009 Siskiyou Fire forced evacuations from 110 homes and one elementary school and the 2010 Oak Knoll fire burned 11 homes and damaged 3 other residences. The City also experienced significant wildfires in 1973 and 1959. The City is at high risk because it is built up to the edge of large tracts of forest land, and wildfires can spread directly into vegetation around homes within the city limits (**Figure 2-1**). As a result of this hazard, the City declared the encompassing city limits a Wildfire Hazard Zone (WHZ) in 2018 and adopted a Wildfire Safety Ordinance (Ashland Municipal Code (AMC) 18.3.10.100). The ordinance outlines defensible space requirements for new construction and additions and bans new plantings of known flammable plant species.

Creating defensible space typically involves vegetation management within 100 feet of homes. Defensible space may include activities such as replacing flammable vegetation with fire-resistant vegetation or removing ladder fuels (e.g., shrubs, small trees, down wood or brush, and low limbs that may provide the means for fire to climb from the ground up into the forest canopy). The purpose of defensible space is to provide a buffer around a structure that limits the

spread of wildfire and to establish an area in which firefighters can safely protect structures through fire suppression activities (FEMA 2015). The City of Ashland is largely built up within its urban growth boundary; therefore, implementing defensible space between homes is important for reducing wildfire risk. The Defensible Space Initiative in the Jackson County NHMP identifies the creation of defensible space in vulnerable neighborhoods in Ashland as a high-priority action.

The City conducted an inventory of homes and identified 23 that still have wood shake roofs. A significant component of a wildfire is airborne wind-driven embers that can travel up to a mile or two from the actual fire perimeter. If these burning embers land on a combustible wood shake roof, the home could quickly catch fire and burn. If homes in the city catch fire, they could ignite neighboring homes, resulting in pockets of fire or a more widespread urban conflagration within the heart of the city at the same time that fire crews might be focused on fighting a wildfire at the edge of the city.

Wildfire smoke exposure can impact human health by exacerbating respiratory health issues, such as asthma and chronic obstructive pulmonary disease. Wildfire smoke may contribute to respiratory infections and possibly other cardiovascular concerns (Reid et al. 2016). Communities exposed to wildfire smoke, especially for an extended period of time, can experience economic impacts, such as a reduction in tourism or canceled outdoor events, such as the Oregon Shakespeare Festival in Ashland (Tornay 2018).

Figure 2-1. Residential Development Interspersed with Forest Vegetation

Figure 2-2. Aftermath of Almeda Fire in Phoenix, Oregon

SECTION 3. Alternatives

This section describes the no action alternative, the proposed action, and alternatives that were considered but dismissed.

3.1. No Action Alternative

Under the no action alternative, no FEMA-funded defensible space or ignition-resistant construction work would be conducted in the City of Ashland. The City would continue to sponsor some wildfire hazard reduction efforts, as would some at-risk property owners on their own initiative. The City's Wildfire Safety Ordinance (AMC 18.3.10.100) would implement defensible space requirements for new construction and additions and ban new plantings of known flammable plant species. Additionally, the City participates in the Firewise Community program, which assists community members and local fire professionals in reducing wildfire risks in their local area. However, this program only incorporates 10 percent of the City's residential structures and does not explicitly focus on the highest hazard properties. Thus, limited defensible space would be created, and it would be scattered throughout the WHZ. Wood shake roofs would eventually be replaced due to age and failure, but this replacement would likely occur over a much longer time period than under the proposed action, greatly extending the period over which these properties would be at risk. Under the no action alternative, the risk of a severe fire burning through residential neighborhoods would remain high and the potential for embers to ignite wood shake roofs leading to spot fires within city limits would also remain high.

3.2. Proposed Action

The City of Ashland proposes to implement defensible space and ignition-resistant construction wildfire mitigation measures in the City of Ashland, Oregon. Defensible space would occur within 100 feet of structures and the work on any particular parcel would be contained within that parcel. The amount of land treated with defensible space prescriptions could range between 198 acres and 1,177 acres, depending on which property owners participate and whether the property owner has 100 feet of defensible space under their ownership (many homes in Ashland have less than 100 feet of defensible space before reaching a neighbor's property line). The City plans to assist property owners identified as owning homes with the highest wildfire risk (**Figure 1-1**) that are willing to participate in the project until the grant funding limit is reached. The highest risk properties have already been identified through a 2018 curbside wildfire risk assessment of every home in the City. Residents eligible to participate would be contacted by the Fire Department if the City receives PDM funding and should not contact the fire department to ask if they are eligible. If some property owners in the "highest fire risk" group don't participate, then property owners in the "high fire risk" and "moderate risk" categories would be approached about participation until approximately 1,100 homes are mitigated (**Figure 1-1**). The FEMA PDM Grant program would fund approximately 75 percent of the cost of the proposed action and the remaining 25 percent of costs would come from matching funds contributed by the City of Ashland (through existing staff time) and project participants (property owners).

Treatments to create defensible space would follow the City's *Defensible Space Treatment Prescription* (provided below and in Appendix A). Defensible space is typically created in zones

with progressively less modification further away from the structure. Both horizontal and vertical spacing is considered. The first zone typically extends 30 feet out from the structure and is the area where the greatest fuel modification occurs. In this zone, all flammable vegetation is generally removed. Flammable vegetation includes tree species such as cedar (*Cedrus* spp.) and Douglas fir (*Pseudotsuga menziesii*), shrub species such as juniper (*Juniperus* spp.) and manzanita (*Arctostaphylos* spp.), and grass species such as Pampas grass (*Cortaderia selloana*). Firewise plants, or plants that are generally less flammable, include species such as rhododendron (*Rhododendron* spp.), maple (*Acer* spp.), dogwood (*Cornus* spp.), and spirea (*Spiraea thunbergii*) (Appendix C). In the zone between 30 and 100 feet from a structure, vegetation is widely spaced and ladder fuels that allow fires to climb from the ground up into tree canopies are removed. Steep slopes may require greater spacing between trees and shrubs to limit wildfire spread.

The following activities comprise the *Defensible Space Treatment Prescription* and would be applied to each participating property as needed, and detailed in an individual property treatment prescription, depending on individual circumstances.

- Remove standing dead and dying vegetation, except vegetation that is ecologically beneficial and can be safely reserved.
- Remove all bark mulch, stored wood, and dry leaves and needles that have accumulated within five feet of buildings.
- Remove all vegetation (trees and shrubs) listed on the City's Prohibited Flammable Plant List within five feet of buildings or decks (except significant trees) (see Appendix C).
- Existing trees that are also on the City's Prohibited Flammable Plant List would be maintained so that there is:
    - 10-foot horizontal clearance from any chimney outlet
    - 10-foot vertical clearance from the furthest extension of all buildings
    - At least 10 feet between the outermost limbs at mature size
- Prune fire-resistant trees to ensure they do not touch any part of a structure including, but not limited to, roofs, eaves, and decks.
- Separate all existing shrubs on the City's Prohibited Flammable Plant List by a minimum of two times the shrub's height.
- Remove all shrubs from underneath the drip line of trees.
- Prune tree limbs to create spacing between shrubs and the lowest tree limbs that is at least three-times the height of the shrub.

Chainsaws, handsaws, and other hand tools would be used to complete the majority of defensible space work. Cut material would primarily be chipped and hauled off-site. Firewood-size material would be transported to the Jackson County Fuels Committee drop-off site and smaller chipped material to the Recology transfer station using trucks and trailers. Vehicles would primarily use existing roads and driveways to access the site; however, contractors may need to occasionally drive over lawns to load cut materials.

The City of Ashland also proposes to provide financial assistance with replacing wood shake roofs with ignition-resistant roof materials that exceed a Class B requirement or higher on 23

homes (**Figure 1-1**). Four of these properties would only require awnings, not the entire roof, to be replaced. Roofs would be installed by licensed contractors using power saws, pneumatic hammers, and other standard roofing equipment.

3.2.1. Best Management Practices and Avoidance and Minimization Measures

Some of the fuel reduction actions may occur within the City of Ashland established Water Resource Protection Zones (WRPZ) (AMC 18.3.11). These zones are identified around water resources within the city limits to promote pollution control through vegetation retention, protect clean water, and preserve endangered species. The WRPZ buffers have been mapped and identified on the City of Ashland Water Resource Protection Zones Requirement map (see Appendix D). The City of Ashland has three buffer classifications for streams and two for wetlands (AMC 18.3.11.040), which are summarized below:

- Stream Bank Protection Zones
    - Riparian Corridor – Streams with this classification are fish-bearing streams with average annual stream flow less than 1,000 cubic feet per second; the WRPZ includes the stream channel plus a 50-foot buffer measured from the top of the bank.
    - Local Streams – Streams with this classification are non-fish bearing perennial streams, and the WRPZ includes a 40-foot buffer measured from the stream centerline.
    - Intermittent and Ephemeral Streams – Streams with this classification are intermittent and ephemeral streams, and the WRPZ includes a 30-foot buffer measured from the stream centerline.
- Wetland Protection Zones
    - Locally Significant Wetlands – Wetlands with this classification have a WRPZ that includes the entire boundary of the identified wetland, plus a 50-foot buffer.
    - Possible Wetlands – Wetlands with this classification on the Water Resources map, have a WRPZ that includes the entire boundary of the identified wetland plus a 20-foot buffer.

There are specific rules and regulations to cover a range of actions that may occur within the WRPZ. The full text of these rules and regulations can be found within AMC 18.3.11. A summary of the rules and regulations relevant to the proposed action include:

- Equipment and machinery – The use of hand-held equipment or machinery for vegetation maintenance, planting, and/or removal within the WRPZ is allowed. The use of power assisted equipment or machinery is limited pending issuance of a City of Ashland Planning Department permit. Permits would require best management practices (BMPs) when using power-assisted equipment.
- Erosion Controls – The ordinance calls for the use of erosion controls and streambank stabilization measures that have been approved by the Oregon Department of State

Lands, the U.S. Army Corps of Engineers, and/or other federal agencies. These measures include non-structural bio-engineering methods.

The following additional measures would be incorporated into the treatment approach to avoid and minimize potential harm to water resources and water quality, floodplains, wetlands, fish and wildlife, and Endangered Species Act (ESA)-listed species and habitat.

- Riparian buffer: Maintain all existing vegetation within the WRPZs. Allowable exemptions to this minimization measure are:
    - **Exemption:** Removal of Himalayan blackberry (*Rubus armeniacus*) and other flammable noxious weeds with hand-held equipment (weed trimer, loppers, push mowers) may still occur within WRPZ.
    - **Exemption:** Fire resistant vegetation that is in contact with structures may be trimmed and maintained to remove the contact.
    - **Exemption:** Any vegetation on the Prohibited Flammable Plant List may still be removed at the following extents:
        - 5-foot horizontal clearance of building or decks.
        - 10-foot horizontal clearance from any chimney outlet.
        - 10-foot vertical clearance from the furthest extension of all buildings.
- No disturbed or exposed ground shall be left unaddressed within 100 feet of the OHWM of streams. Implement sediment best management practices (BMPs) where ground is disturbed or left exposed after noxious weed removal. Application of loose straw mulch (approximately 50 percent coverage) and native grass seeding would be the minimum acceptable treatment.
- There is a low potential for Pacific fisher denning activity to occur within the south end of the Beach Creek drainage. The rest of the project area is predominately unsuitable habitat, occasionally explored by roving adult fishers. To mitigate for this potential, a restriction on the use of gas-powered tools from March 1st to July 15th (denning season) would be applied to properties in the Beach Creek drainage. These properties are shown in **Section 4.10**.

3.2.2. Project Duration and Maintenance

The proposed action would take approximately 3 years to implement, although work at any one property would only take a few days to a week or two. Property owners would be expected to maintain the project for a minimum of 20 years after project implementation. Ashland Fire and Rescue would monitor the maintenance of the treated properties in the project area.

3.3. Additional Action Alternatives Considered and Dismissed

No other reasonable or practicable alternatives were identified to the proposed action. In 2018, the City of Ashland declared the encompassing city limits a WHZ and adopted a codified Wildfire Safety Ordinance (AMC 18.3.10.100) that outlines defensible space requirements for new construction and additions and prohibits planting known flammable plant species. However, this ordinance does not address features of existing structures that are easily ignitable (e.g., wood

shake roofs) or existing flammable vegetation. Thus, this alternative does not entirely address the purpose and need for reducing the likelihood of wildfire impacts on people and property within the City of Ashland.

SECTION 4. Affected Environment, Potential Impacts, and Mitigation

This section describes the environment potentially affected by the alternatives, evaluates potential environmental impacts, and recommends measures to avoid or reduce those impacts. When possible, quantitative information is provided to establish potential impacts, which are evaluated qualitatively based on the criteria listed in **Table 4.1**. Although it is not known which properties would be treated with defensible space, this work would be targeted at high-fire-risk areas within the City (**Figure 1-1**). This impact evaluation is based on an analysis of the effects of the proposed volume of work within high-fire-risk portions of the city. On each parcel, the area of effect would be the treatment area and staging areas, and the effect of the project would be the cumulative effect on the neighborhoods and the city as a whole.

Table 4.1. Evaluation Criteria for Potential Impacts

Impact Scale	Criteria
None/Negligible	The resource area would not be affected, or changes or benefits would be either nondetectable, or if detected, would have effects that would be slight and local. Impacts would be well below regulatory standards, as applicable.
Minor	Changes to the resource would be measurable, although the changes would be small and localized. Impacts or benefits would be within or below regulatory standards, as applicable. Mitigation measures would reduce any potential adverse effects.
Moderate	Changes to the resource would be measurable and have either localized or regional scale impacts/benefits. Impacts would be within or below regulatory standards, but historical conditions would be altered on a short-term basis. Mitigation measures would be necessary, and the measures would reduce any potential adverse effects.
Major	Changes would be readily measurable and would have substantial consequences on a local or regional level. Impacts would exceed regulatory standards. Mitigation measures to offset the adverse effects would be required to reduce impacts, though long-term changes to the resource would be expected.

4.1. Resources Not Affected and Not Considered Further

The following resources would not be affected by either the no action alternative or the proposed action because they do not exist in the project area, or the alternatives would have no effect on the resource. These resources were removed from further consideration in this EA.

Table 4.2. Resources Eliminated from Further Consideration

Resource Topic	Reason for Elimination
Geology	Defensible space management and ignition-resistant construction are surface-level activities that would have no effect on geology.
Farmland Soils	The proposed action is located within incorporated municipal boundaries and is not subject to the Farmland Protection Policy Act.
Wild and Scenic Rivers Act	According to the National Wild and Scenic Rivers website (National Wild and Scenic Rivers 2020), the closest Wild and Scenic River—the Klamath River—is located approximately 30 miles south of the project area. The alternatives would have no effect on Wild and Scenic Rivers.
Sole Source Aquifers	According to the U.S. Environmental Protection Agency's (EPA) sole source aquifer map (EPA 2020c), there are no sole source aquifers designated in Jackson County; therefore, the alternatives would have no effect on sole source aquifers
Coastal Resources	This project area is not located in the Coastal Zone Boundary designated by the State of Oregon (Oregon Coastal Program 2020) or within a Coastal Barrier Resources Unit (U.S. Fish and Wildlife Services [USFWS] 2019).
Land Use and Zoning	This proposed action is not expected to change existing land use and is consistent with the current zoning. The alternatives would have no effect on land use and zoning.

4.2. Soils and Topography

Jackson County is bounded by the Klamath Mountains to the west and south, Western Cascades in the north, and the High Cascades to the east (Jackson County 2018). The topography of the City of Ashland ranges from approximately 1,800 feet NAVD88 in the northern part of Ashland near Bear Creek to 2,600 feet NAVD88 in the southern portion of Ashland near Siskiyou Mountain Park.

The City of Ashland is located within the Bear Creek Valley, which is characterized by soft sediments over rock (Jackson County 2018). According to the U.S. Department of Agriculture's Natural Resource Conservation Service (NRCS) Web Soil Survey, there are 28 soil map units in the City of Ashland (NRCS 2019). These soils units primarily include a variety of loam soil types, which consist of sand, silt, and clay. The majority of the land within the City of Ashland (approximately 70 percent) have slopes that are less than or equal to 20 percent.

No Action Alternative

Under the no action alternative, some wildfire hazard reduction activities would occur in the WHZ in compliance with the Wildfire Safety Ordinance and by at-risk property owners on their own initiative. This would result in negligible soil disturbance from vegetation removal activities and no effect on topography. However, in the event of a major wildfire in the WHZ, there would be a significant loss of vegetation. Vegetation loss would lead to an increase in erosion, especially on steep slopes. Loss of vegetation may result in higher soil temperatures, increased evaporation, and reduced soil moisture. Within the city limits, a major wildfire would also result in a significant loss of homes and other structures, and soils could be disturbed during rebuilding efforts, resulting in erosion.

High-intensity wildfires can alter the physical and chemical properties and the moisture, temperature, and biotic characteristics of soils (U.S. Forest Service [USFS] 2005). Heat from wildfires can cause soils to form hydrophobic layers that repel water, resulting in decreased stormwater infiltration. Hydrophobicity occurs when plants burn in wildfires, releasing a gas into the soil that cools and solidifies into a waxy, water-repellent substance that coats soil particles. Large-pored soils, such as sandy or coarse-textured soils, like some of the soil types in the project area (NRCS 2019), are more vulnerable to becoming hydrophobic because they transmit heat more easily than heavily textured soils, such as clays (USFS 2005).

Under the no action alternative, there would be no effect on topography. In the absence of a wildfire, the no action alternative would have negligible effects on soils. In the event of a wildfire, there could be minor to moderate adverse impacts on soils depending on the intensity and scale of a wildfire.

Proposed Action

Under the proposed action, there would be no effect on topography. Defensible space would be created with ground crews using hand tools, and no heavy tracked equipment would be used. Some trees and shrubs would be retained according to the City's *Defensible Space Fuels Prescription,* helping to prevent erosion caused by vegetation removal. Ignition-resistant construction activities would involve roof replacements, which would not impact soils. Vehicles may need to occasionally drive on lawns to access properties for both defensible space and roof replacement activities, which could result in minor soil disturbance.

The proposed action would likely have minor long-term beneficial effects on soil quality by reducing the risk of soil damage from wildfires and the consequences of a wildfire as described under the no action alternative.

4.3. Visual Quality and Aesthetics

Because defensible space activities alter vegetation, and ignition-resistant construction activities involve replacing wood shake roofs with new materials, both activities have the potential to affect visual quality. The analysis of visual quality is a qualitative analysis that considers visual context of the project area, potential for changes in character and contrast, assessment of whether the project areas include any places or features designated for protection, and the number of people who can view the site and their activities, and the extent to which those activities are related to the aesthetic qualities of the area.

Approximately 1,100 properties are expected to receive defensible space treatments, 23 of which would also receive roof replacements. These properties are largely located within residential neighborhoods in the southern and western areas of the city near the Siskiyou Mountains (**Figure 1-1**). These residential neighborhoods primarily consist of single-family homes with yards and vegetation. Some roof replacements may occur in historic districts, as explained in **Section 4.11**.

No Action Alternative

Under the no action alternative, the change in appearance and visual quality of the project area as a result of limited ongoing wildfire hazard reduction activities may not be perceptible overall. However, properties that are treated for defensible space either per the Wildfire Safety Ordinance and by at-risk property owners on their own initiative, would undergo a visual change from the vegetation management activity, which could be perceived as a cleaner and safer looking on a localized scale. Ignition-resistant construction activities could alter the color or texture of the roofs, although these changes might be harder to detect than the visual change from defensible space. However, a major wildfire would be more likely to spread into the city under the no action alternative, resulting in the loss of large sections of the town. The potential for a catastrophic wildfire could have a minor to major adverse impact on the visual quality of properties within the city, depending on the extent of the fire damage.

Proposed Action

Properties that receive defensible space treatments would undergo a visual change from the vegetation management activity, which could be perceived as a cleaner and safer looking on more of a landscape scale. However, residents may also consider the removal of vegetation to increase exposure of treated properties, and these changes may be perceived as an adverse effect. Ignition-resistant construction activities could alter the color or texture of the roofs, although these changes might be harder to detect than the visual change from defensible space. Defensible space and ignition-resistant construction activities would have negligible to minor, short-term effects on visual quality and aesthetics. Defensible space would also be required to be maintained for 20 years; thus, there could be negligible to minor long-term impacts.

In the long-term, the risk of wildfire spread in the City of Ashland would be reduced, which would have minor long-term beneficial effects on visual quality and aesthetics by reducing the chance that properties are burned and damaged in a wildfire.

4.4. Air Quality and Climate

The Clean Air Act, amended in 1990, requires EPA to set National Ambient Air Quality Standards (NAAQS) for six pollutants harmful to human and environmental health, including ozone (O_3), particulate matter (PM), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), and lead (Pb) (EPA 2016). According to the EPA's Green Book (2020a), Jackson County is currently in attainment status for all criteria pollutants.

Air quality is negatively affected by everyday activities, such as vehicle use, and major events, such as wildfires. Wildfire smoke is composed of carbon dioxide, water vapor, particulate matter, carbon monoxide, nitrogen oxides, organic chemicals such as hydrocarbons, and trace minerals, which affect air quality (EPA et al. 2019). Air quality can also be affected by fugitive dust, which is considered a component of particulate matter. Fugitive dust is released into the air by wind or human activities and can have human and environmental health impacts (California EPA Air Resources Board 2007).

The project area is located in the Klamath Mountain Ecoregion, which has a mild and subhumid climate (Thorson et al. 2003). The temperature in the City of Ashland ranges from an average low of 29 degrees Fahrenheit in December and January to an average high of 88 degrees Fahrenheit in July (U.S. Climate Data 2020). The City of Ashland receives an average of 20 inches of rain annually (U.S. Climate Data 2020). Most of the precipitation occurs in the fall, winter, and spring. Summer precipitation is low, which increases the risk of wildfire spread (Jackson County 2018).

"Climate change" refers to changes in the Earth's climate caused by a general warming of the atmosphere. Its primary cause is emissions of greenhouse gases, including carbon dioxide (CO_2) and methane (CH_4). Climate change is capable of affecting species distribution, temperature fluctuations, and weather patterns. The CEQ's *Final NEPA Guidance on Consideration of Greenhouse Gas Emissions and the Effects on Climate Change* (CEQ 2016) suggested that quantitative analysis should be done if an action would release more than 25,000 metric tons of greenhouse gases per year.

Estimates indicate that average annual temperatures in the Pacific Northwest region will increase by 2.0 degrees Fahrenheit by the 2020s, 3.2 degrees Fahrenheit by the 2040s, and 5.3 degrees Fahrenheit by the 2080s (U.S. Fish and Wildlife Service [USFWS] 2011). Warmer temperatures would decrease mountain snowpack, resulting in higher winter and lower summer stream flows (USFWS 2011). Earlier spring snowmelt and higher temperatures also increase the risk of wildfires in the region; North American wildfires have increased in intensity and frequency over the past 50 years (USFWS 2011).

No Action Alternative

As a result of limited ongoing wildfire hazard reduction activities per the Wildfire Safety Ordinance and by at-risk property owners on their own initiative, the no action alternative would have negligible, short-term impacts on air quality from vehicle and equipment use, primarily from hand tools, such as chainsaws and hand saws. However, under this alternative, the risk of wildfire spread would remain high. Wildfire smoke can deteriorate air quality and expose vulnerable populations (e.g., the young and the elderly) to harmful pollutants (EPA et al. 2019). Approximately 13 percent of the population of Ashland is less than 15 years old and 20 percent of the population is greater than 64 years old (Jackson County 2018). Particulate matter, specifically, can have many harmful effects, including eye and respiratory tract irritation, reduced lung function, asthma, and heart failure (EPA et al. 2019). An ongoing study in Montana is finding that prolonged exposure to wildfire smoke can result in long-term health effects even several years after exposure (Houghton 2020). In addition to particulate matter in smoke, a fire in an urban area will also emit a variety of other toxins produced when buildings and their contents burn.

Air quality impacts can also lead to economic impacts. In 2018, the Oregon Shakespeare Festival suffered a $2-million loss in revenue because outdoor events were cancelled or moved to smaller outdoor spaces to avoid wildfire smoke (Libbey 2018). Smoke from large wildfires can affect air quality over large areas impacting people far from the fire, even several states away. Major wildfires also emit high levels of greenhouse gases into the atmosphere, thus contributing to

climate change, which exacerbates the risk of wildfires. In the event of a wildfire, the no action alternative could have a minor to major impact on air quality and regional climate, depending on the intensity and spread of the wildfire within the WHZ.

Proposed Action

The proposed action would also have negligible, short-term impacts on air quality from equipment and vehicle use. Contractors would primarily use hand tools, such as chainsaws and hand saws, for the creation of defensible space, and power saws and hammers for roof replacements. Chippers and trucks would be used to haul cut material to disposal and recycling sites. Vehicles would be used to transport crews and equipment and would primarily access project sites through existing access roads. Although trucks may occasionally need to drive on lawns, the resulting ground disturbance would be minimal, and the release of fugitive dust would be limited.

By reducing the risk of wildfire spread within Ashland's WHZ, defensible space and ignition-resistant construction activities would have minor, long-term, beneficial effects on air quality and climate change.

4.5. Surface Waters and Water Quality

The Clean Water Act of 1977, as amended (33 United States Code [U.S.C.] § 1313(d)(2)), establishes requirements for states and tribes to identify and prioritize water bodies that do not meet water quality standards.

The City of Ashland encompasses three watersheds from west to east: Ashland Creek Watershed (171003080106), Hamilton Creek–Bear Creek Watershed (171003080105), and Neil Creek Watershed (171003080104) (EPA 2020b) (larger streams in the project area are shown in **Figure 4-1**):

- Bear Creek is a fish-bearing stream listed as impaired for aquatic life, recreation, and other beneficial uses. Reasons for impairment include abnormal flow, acidity, bacteria and other microbes, excess algae, low oxygen, metals, nitrogen and phosphorus, and temperature.
- Ashland Creek is a fish-bearing stream listed as impaired for aquatic life and recreational beneficial uses. Reasons for impairment include bacteria and other microbes, low oxygen, nitrogen and phosphorus, and temperature.
- Neil Creek is a fish-bearing stream listed as impaired for aquatic life, recreational beneficial uses. Reasons for impairment include bacteria and other microbes, low oxygen, and temperature.

Other smaller fish-bearing creeks, such as Kitchen and Tolman Creeks, and non-fish bearing creeks flow within the project area. (**Figure 4-1)**.

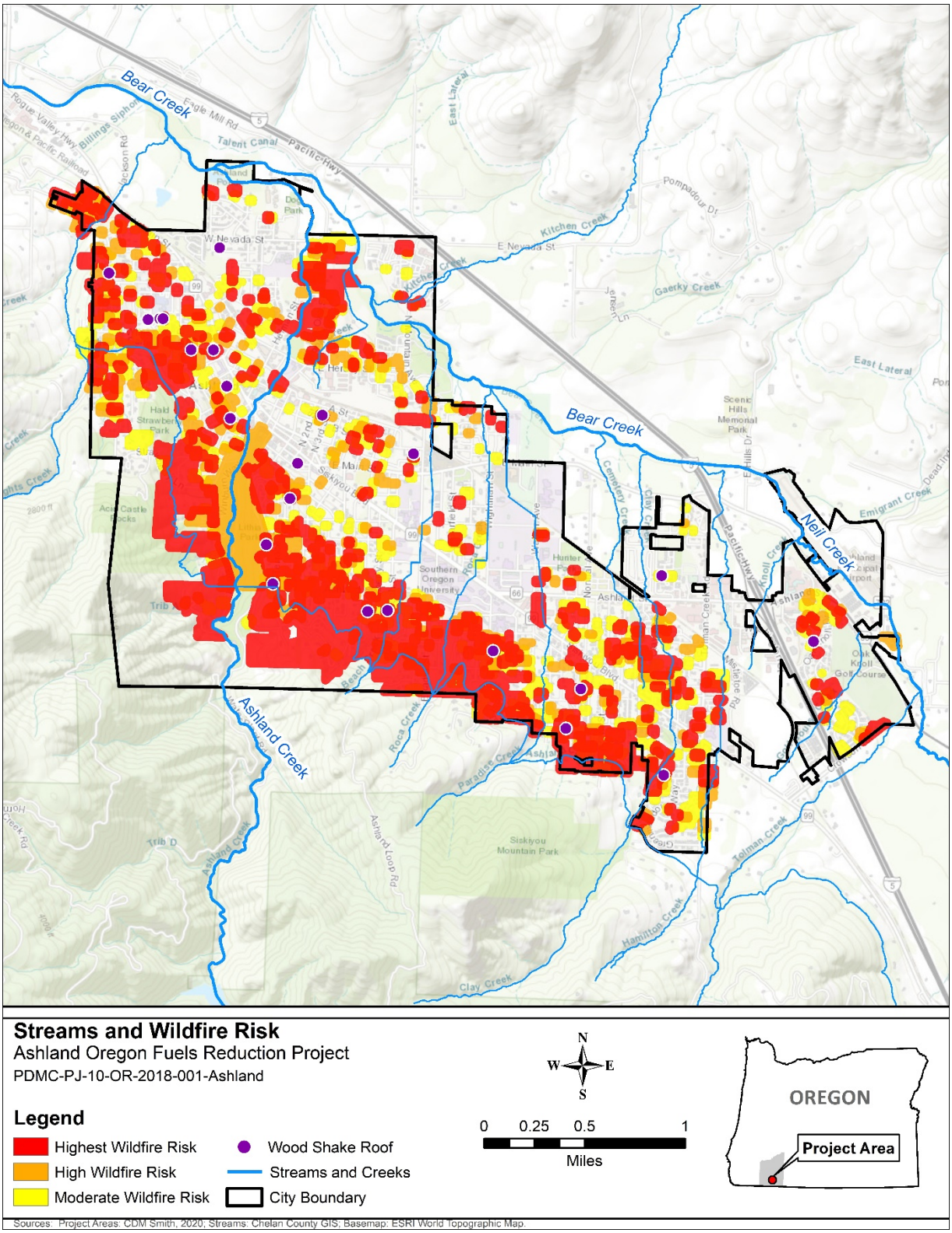

Figure 4-1. Surface Waters and Wildfire Risk

No Action Alternative

If a wildfire occurs and spreads, vegetation in riparian zones would be at a high risk for burning. This loss of vegetation would impact surface water quality through increased soil erosion and sedimentation and increased temperatures from the loss of shade. Additionally, intense lasting heat from major wildfires can cause soils to form hydrophobic layers, as described in **Section 4.2**, which would decrease infiltration of stormwater and aquifer recharge while increasing runoff, erosion, sedimentation, and stream discharges. Increased stream discharges in the short- and long-term could cause damage to downstream infrastructure such as bridges and culverts. If structures burn, subsequent stormwater runoff may contain toxic compounds that could further degrade stream quality. Although limited ongoing wildfire hazard reduction activities would occur per the Wildfire Safety Ordinance and by at-risk property owners on their own initiative under the no action alternative, these efforts would not be expected to be systematically implemented in the highest hazard areas and may occur over a very long time. The no action alternative could have a minor to major impact on surface waters and water quality.

Proposed Action

The proposed action would not require in-water work. Creation of defensible space could affect water quality because it involves the removal of vegetation. The use of ground crews and hand tools in most treatment areas, and the occasional operation of vehicles off existing roads (e.g., on lawns) would result in minor soil disturbance and mobilization of fine sediments that could affect water quality. Some vegetation would be retained according to the City's fuels prescription (**Section 3.2**), helping to prevent substantial erosion from vegetation removal. The City would implement the water quality measures described in **Section 3.2.1**, including maintaining existing vegetation within the WRPZ buffers and applying sediment control BMPs to disturbed or exposed ground. Herbicides would not be used to manage vegetation for defensible space. Thus, impacts on water resources from project implementation would be short-term and negligible.

The proposed action would reduce the risk of wildfire spread within the WHZ and subsequently reduce the risk of impacts associated with wildfires on water resources, as described in the no action alternative. Therefore, the proposed action would have minor, long-term beneficial effects on water bodies in and near the project area.

4.6. Wetlands

Executive Order (EO) 11990, Protection of Wetlands, requires federal agencies to consider alternatives to working within wetlands and limits potential impacts on wetlands if there are no alternatives. FEMA regulation 44 CFR Part 9, Floodplain Management and Protection of Wetlands, sets forth the policy, procedures, and responsibilities to implement and enforce EO 11990 and prohibits FEMA from funding activities in a wetland unless no practicable alternatives are available.

According to the USFWS's National Wetlands Inventory maps, 70 of the 2,000 highest risk properties within the WHZ encompass a freshwater emergent wetland or freshwater forested shrub wetland (**Figures 4-2** through **4-4**). No wood-shake-roof properties proposed for ignition-

resistant construction encompass wetlands. The majority of wetlands within high-fire-risk properties are associated with streams draining from the Siskiyou mountains towards Bear Creek.

No Action Alternative

In the absence of a major wildfire, the no action alternative would have no effect on wetlands. Any defensible space created in compliance with the Wildfire Safety Ordinance would also be required to comply with the Oregon Removal-Fill Law (ORS 196.795-990), which protects wetlands. This alternative would not meaningfully reduce the risk of a major wildfire spread within the WHZ, which could destroy and deteriorate vegetation in wetlands in and around the treatment areas. Vegetation destruction in wetlands would damage habitat for wildlife and lessen the effectiveness of wetlands to filter pollutants and maintain water quality.

Proposed Action

Under the proposed action, there would be a negligible short-term impact on wetlands because the majority of defensible space treatment areas are located outside of wetlands. For treatment areas that do include wetlands, no fill would be placed in wetlands. As described in **Section 3.2.1,** vegetative buffers would be implemented along streams, which would help avoid impacts on wetlands because most wetlands in the project area follow streams (**Figures 4-2** through **4-4**). The proposed action would reduce the risk that a major wildfire would spread through the city and damage wetland vegetation; therefore, there would be minor, long-term benefits on wetlands.

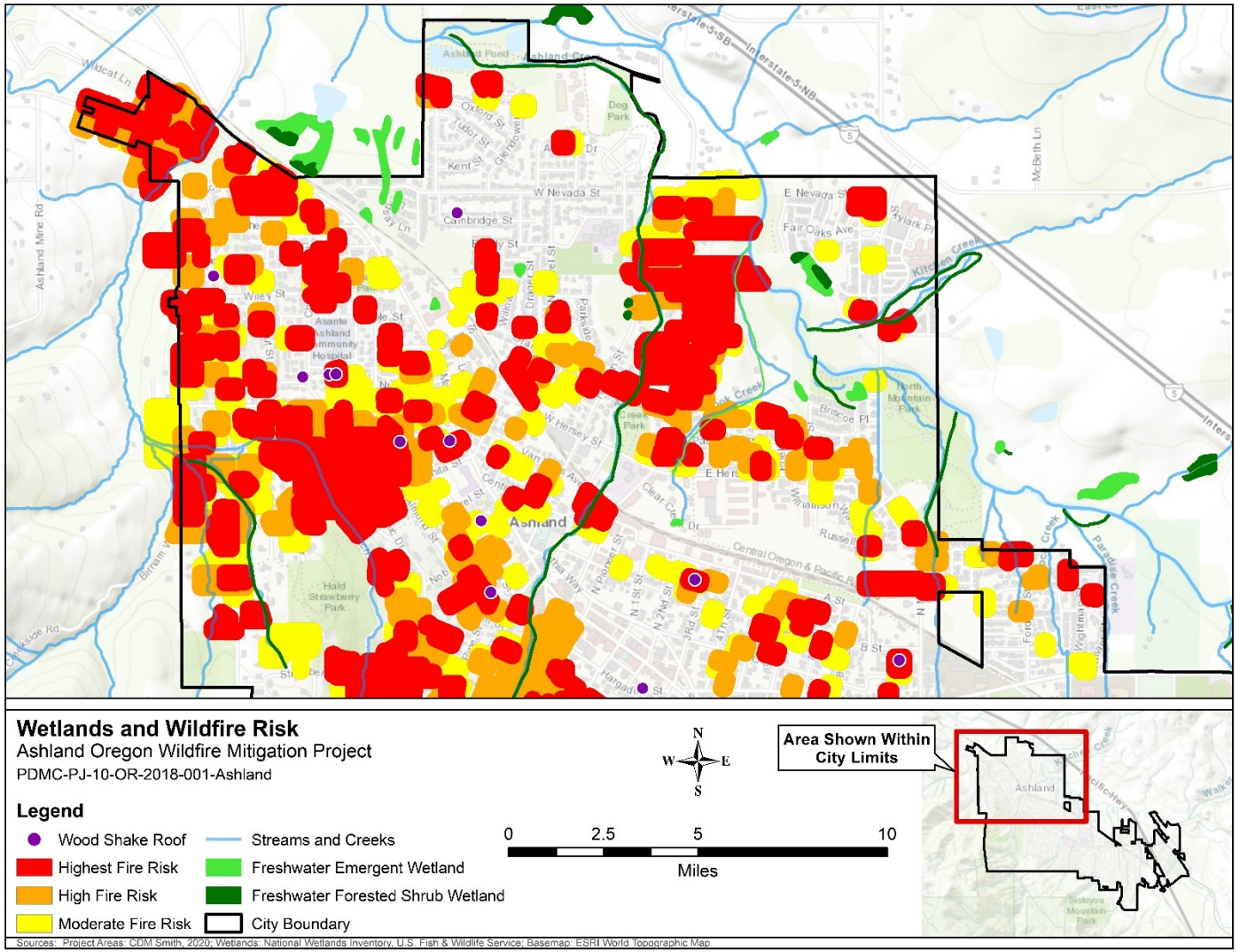

Figure 4-2. Wetlands and Wildfire Risk – Northwest Ashland

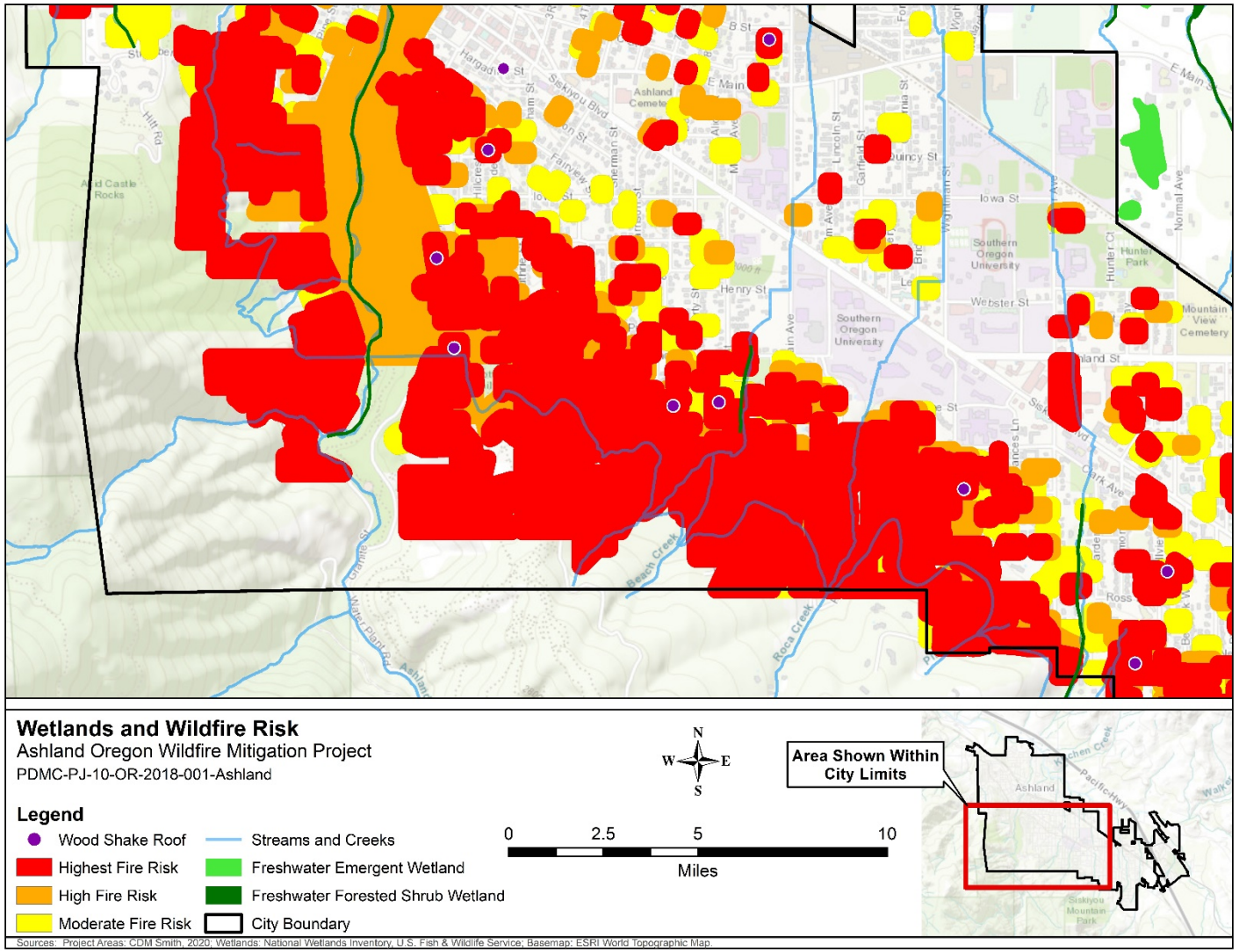

Figure 4-3. Wetlands and Wildfire Risk – Central Ashland

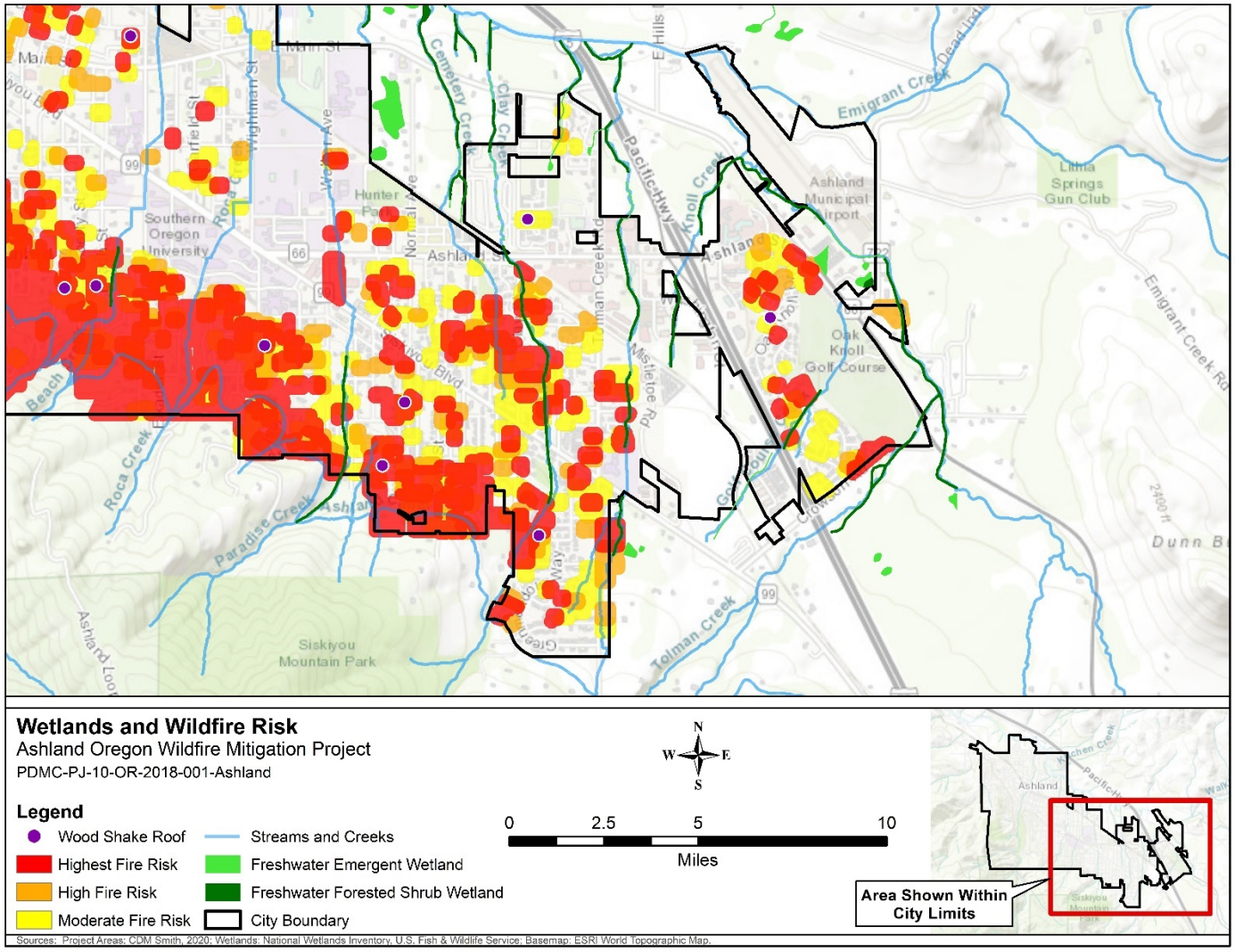

Figure 4-4. Wetlands and Wildfire Risk – Southeast Ashland

4.7. Floodplains

EO 11988, Floodplain Management, requires federal agencies to avoid, to the extent possible, long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practical alternative. FEMA regulations (44 CFR Part 9.7) use the special flood hazard area, or the area subject to inundation by a 1-percent-annual-chance flood, as the minimal area for floodplain impact evaluation.

Based on FEMA Flood Insurance Rate Map panels 41029C2203F, 41029C2211F, 41029C2212F, 41029C2204F, 41029C2201F effective May 3, 2011, and 41029C2209G, 41029CC2217G, 41029CC2216G, and 41029CC2208G effective June 30, 2015; few of the 2,000 highest risk properties are within the 1-percent floodplain (**Figure 4-5**) in Ashland. No wood-shake-roof properties are located within a floodplain.

No Action Alternative

In the absence of a major wildfire, there would be no effects on floodplains under the no action alternative. Although defensible space created in compliance with the Wildfire Safety Ordinance and by at-risk property owners on their own initiative could remove vegetation within a floodplain, this would not affect floodplain functions because some vegetation would remain, and riparian buffers would be preserved. Creation of defensible space would not require placement of fill within floodplains. The risk of wildfire spread would remain high under this alternative. Wildfires could damage vegetation within and beyond the proposed treatment areas. If a wildfire were to occur, substantial vegetation would be destroyed, which could lead to increased stormwater runoff following a rain event. Loss of vegetation would adversely affect natural floodplain functions by contributing to increased stormwater runoff and sedimentation. The additional sedimentation in the long-term could lead to an increase in the base flood elevation and thus greater flood hazard risks to improved property in the affected floodplain. Thus, the no action alternative could have minor to moderate adverse impacts on floodplains, depending on the intensity and scale of a wildfire.

Proposed Action

The proposed action would have negligible, short-term impacts on floodplains because most treatment areas are located outside of the mapped special flood hazard area (**Figure 4-5**). No fill would be placed in floodplains. The floodplains are relatively narrow and closely associated with stream corridors where existing vegetative WRPZ buffers would be maintained. The minimal vegetative removal within the WRPZ buffers would reduce potential impacts on floodplains. The proposed action would not cause an increase in flood elevations or modify the existing floodplain. In the long-term, the proposed action would reduce the risk of wildfire spread and associated vegetation loss; therefore, there would be minor, long-term benefits on floodplains in and around the treatment areas.

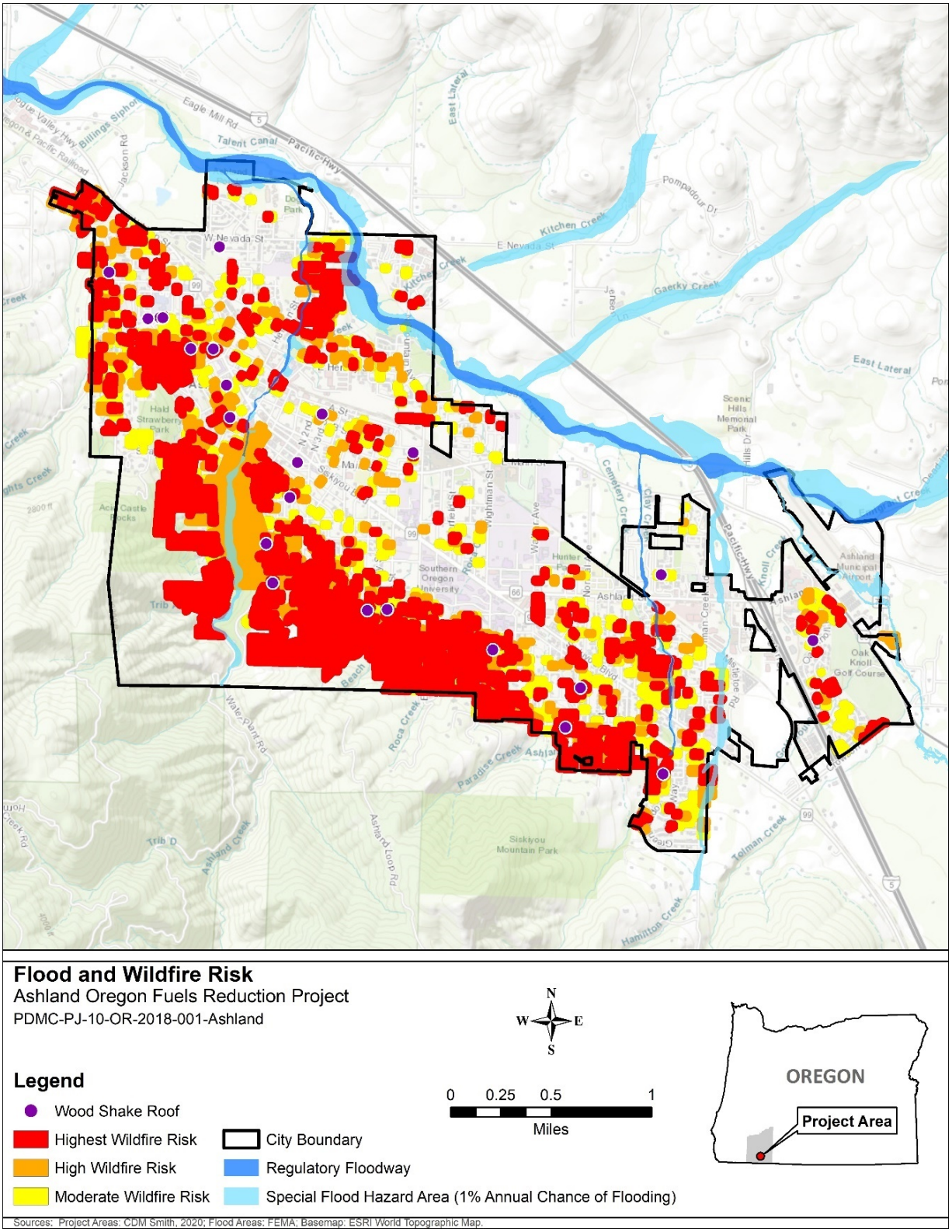

Figure 4-5. Flood and Wildfire Risk

4.8. Vegetation

The City of Ashland is located in the Rogue/Illinois Valleys and Inland Siskiyous ecoregions in the Klamath Mountains Ecoregion of Oregon and California. Predominant vegetation includes Oregon white oak (*Quercus garryana*), California black oak (*Quercus kelloggii*), Pacific madrone (*Arbutus menziesii*), ponderosa pine (*Pinus ponderosa*) and Douglas fir (*Pseudotsuga menziesii*), with an understory chaparral community that includes California fescue (*Festuca californica*), snowberry (*Symphoricarpos alba.*), serviceberry (*Amelanchier alnifolia.*), Oregon grape (*Mahonia aquifolium*), and poison oak (*Toxicodendron diversilobum*). The treatment areas are located in the City of Ashland and are primarily composed of residential developments built up to managed forestlands. The project would target the already built environment and primarily mature, flammable, domestic landscape vegetation on private property.

Federally listed plant species that may occur in the vicinity of the proposed treatment areas are discussed in **Section 4.10.**

Invasive Species

EO 13112 requires federal agencies to prevent the introduction of invasive species and provide for their control to minimize the economic, ecological, and human health impacts that invasive species cause. The spread of invasive plant or animal species within the project area is not expected to occur as part of the proposed action.

No Action Alternative

In the absence of a major wildfire, there would be no impacts on vegetation and or related to invasive species spread. Defensible space created in compliance with the Wildfire Safety Ordinance and by at-risk property owners on their own initiative would remove some vegetation in disparate locations. Some of the work would be associated with new construction and there are limited opportunities for new construction within the city limits. Therefore, the amount of vegetation removed under the no action alternative would be minor. However, the risk of wildfire spread would remain high under this alternative. There could be minor to major adverse impacts on vegetation if a wildfire were to occur and result in partial or complete loss of vegetation in and around the treatment areas, depending on the intensity and scale of the wildfire. In the event of vegetation loss from a wildfire, non-native and/or invasive species might be expected to become established over larger areas.

Proposed Action

The defensible space component of the proposed action would have minor short-term impacts on vegetation because individual trees and shrubs would be removed within the treatment areas. Not all vegetation would be removed, and defensible space treatments would encompass only the activities listed in the *Defensible Space Treatment Prescription* (Appendix A) described in **Section 3.2**. In addition, much of the vegetation affected by the proposed action around existing structures within the city limits may be landscape vegetation composed of non-native species. Vegetation would not be affected by ignition-resistant construction activities. In the long-term, the proposed action would have minor beneficial effects because the risk of wildfire spread, and associated vegetation damage and invasive species spread, would be reduced.

4.9. Fish and Wildlife

The Rogue/Illinois Valleys and Inland Siskiyous ecoregions of the Klamath Mountains Ecoregion of Oregon and California are known for their biodiversity. However, because the proposed treatment areas are within the City of Ashland are highly modified urban and suburban residential areas, the available habitats are sparse and of poor quality. Landscape vegetation and introduced plant species dominate large areas and provide poor resources for native wildlife. Areas within the city limits are characterized by young and modified forests with few perennial streams or wetlands, and the biodiversity potentially present would be less than might be expected in nearby forest areas. Birds and mammals that are expected to use the project area include turkey (*Meleagris gallopavo*), black bear (*Ursus americanus*), black-tailed deer (*Odocoileus hemionus*), mountain lion (*Puma concolor*), Douglas squirrel (*Tamiasciurus douglasii*), and a variety of other small mammals (Klamath Bird Observatory 2012).

The Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. §§ 703–711), provides protection for migratory birds and their nests, eggs, and body parts from harm, sale, or other injurious actions. There are a number of migratory bird species that could occur in the project area, including species such as golden-crowned sparrow (*Zonotrichia atricapilla*), great blue heron (*Ardea herodias*), blue-gray gnatcatcher (*Polioptila melanura*), and mountain bluebird (*Sialia currucoides*). The nesting season for migratory birds is generally February through July, depending on the species.

The Bald and Golden Eagle Protection Act of 1940 prohibits the take, possession, sale, or other harmful action of any gold or bald eagle, alive or dead, including any part, nest, or egg (16 U.S.C. §§ 668(a)). Because of the distance of the action area from major rivers and the proximity of the action area to developed lands, bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) are not expected to nest in the project area; although they would occasionally pass through.

Bear Creek is a fish-bearing creek that flows through the City of Ashland and also contains ESA-listed Southern Oregon/Northern California Coasts (SONCC) coho salmon, as well as fall-run Chinook salmon, summer and winter steelhead, and pacific lamprey. Ashland Creek and Neil Creek, two tributaries to Bear Creek that flow through the project area, are also fish bearing and may contain SONCC coho salmon. The presence of Chinook and coho salmon indicates that the project area contains Essential Fish Habitat (EFH). Listed salmonids and EFH are discussed in **Section 4.10**. Several mapped (fish-bearing and non-fish-bearing) streams are present within the project area. Blockages to fish passage occur on Neil Creek and Anderson Creek upstream of the city limits.

No Action Alternative

In the absence of a major wildfire, the no action alternative would have negligible effects on common fish and wildlife species in the project area. Defensible space created in compliance with the Wildfire Safety Ordinance and by at-risk property owners on their own initiative would remove some vegetation and habitat for urban-adapted species. However, the limited extent and scattered nature of the defensible space created would be negligible overall and, thus, the potential impacts on fish and wildlife would also be negligible. Similarly, impacts on migratory

birds would be negligible even if work is performed during nesting seasons. Under the no action alternative, a major wildfire would be more likely to spread and result in the destruction of terrestrial and aquatic habitats. Therefore, the no action alternative could result in minor to moderate impacts on fish and wildlife and their habitats.

Proposed Action

The proposed action has the potential to have minor, short-term impacts on common wildlife species and their habitats. Vegetation removal for defensible space activities and noise related to defensible space and ignition-resistant construction activities could disturb wildlife and cause individuals to move from their preferred areas or temporarily change their behavior. The bird and mammal species expected in the project area are those that are commonly found within fragmented or managed forest habitats and urban areas. Therefore, effects would be expected to be temporary, localized, and related to the noise and activity associated with vegetation removal. Vegetation that is ecologically beneficial would remain and there would be no in-water work or herbicides used as part of the proposed action. As described in **Section 3.2.1**, the WRPZ would maintain vegetated buffers around all waterways, providing protection for fish species and resulting in no effect on fish. Seasonal clearing restrictions for listed species on some parcels would also benefit other wildlife. In the long-term, there would be minor beneficial effects because the risk of wildfire spread and associated widespread vegetation loss (including ecologically sensitive vegetation) would be reduced.

Vegetation clearing associated with the creation of defensible space activities could impact migratory birds if work is performed during nesting season, generally between February and July, depending on the species. The disturbances on a parcel could result in inadvertent nest destruction, birds abandoning nesting activities, and their displacement from preferred foraging areas. Ground-nesting and shrub-nesting birds would be impacted to a greater extent than birds that nest in the upper canopy of trees. Cavity-nesting birds such as woodpeckers and nuthatches could be also be disproportionally affected from removal of dead or dying trees (snags). Thus, if vegetation clearing during the breeding season cannot be avoided, these small-scale vegetation management activities would have minor localized and temporary impacts on migratory birds. Because most of the work would be in close proximity to occupied residences where normal human activity levels discourage many species from nesting and the vegetation affected would include a large proportion of non-native landscape vegetation, the potential impact on migratory birds would be minor.

If vegetation removal during the nesting season (February 1 to July 31) cannot be avoided, the project would still be subject to the prohibitions of the Migratory Bird Treaty Act. The City would be responsible for determining if active nests are present prior to clearing and obtaining and complying with any necessary permits from the USFWS; and documenting it on each project parcel assessment/treatment plan. USFWS allows empty or abandoned nests to be removed and destroyed without a permit as long as they are not taken into possession.

Seasonal clearing restrictions for listed species on some parcels (**Section 4.10**) would benefit migratory birds in those areas. In addition, the proposed action would reduce the risk of wildfire spread and associated vegetation loss, including spread from the urban areas into wildland areas with greater habitat values for migratory birds, thus benefiting migratory birds in the long-term.

The proposed action would likely have a negligible effect on bald and golden eagles and their habitat because defensible space treatments would take place in areas where eagles are unlikely to occur. Defensible space would be created in close proximity to structures and ignition-resistant construction treatments would be applied. Although some snags may be removed, which do provide perching, the proposed action would primarily target ladder fuels and shrubs, which do not provide nesting or perching support for eagles.

4.10. Threatened and Endangered Species and Critical Habitat

The ESA of 1973 gives USFWS and the National Marine Fisheries Service authority for the protection of threatened and endangered species. This protection includes a prohibition of direct take (e.g., killing, harassing) and indirect take (e.g., destruction of habitat).

The Magnuson-Stevens Fisheries Conservation and Management Act (16 U.S.C. § 1801 et seq.), designates EFH for certain commercially managed marine and anadromous fish species and is intended to protect the habitat of commercially managed fish species, including anadromous fish species, from being lost because of disturbance and degradation. Pacific salmon species of interest related to EFH in the action area are Chinook and coho salmon. EFH is present within the action area at Ashland Creek, Bear Creek, and Neil Creek.

The ESA defines the action area as "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action" (50 CFR §402.02). Therefore, the action area where effects on listed species must be evaluated may be larger than the project area where project activities would occur. The potential physical and biological disturbance effects of this project would be limited to areas within 0.25 mile of project activities. Noise impacts have the potential to extend the farthest based on the maximum noise generation of a chainsaw (85 decibels [dB]) (see also **Section 4.14**).

The USFWS Information for Planning and Consultation was used to identify proposed, threatened, and endangered species in the action area. In addition, information available from the National Marine Fisheries Service was used to identify potential fish species that could occur in the action area. All ESA-listed species that may be in the vicinity of the action area are listed in **Table 4.3** (USFWS 2020a). A biological evaluation for effects on listed species was completed and a No Effect Memo is available upon request.

Table 4.3. Federally Listed Species in the Project Area

Common Name	Scientific Name	Status
Fish		
Southern Oregon- Northern California Coast (SONCC) coho salmon	*Oncorhynchus kisutch*	Threatened
Birds		
Northern spotted owl (NSO)	*Strix occidentalis caurina*	Threatened
Mammals		
Northern California-Southern Oregon Distinct Population Segment Pacific Fisher	*Pekania pennanti*	Proposed

Common Name	Scientific Name	Status
Gray Wolf	*Canis lupus*	Threatened
Plants		
Gentner's fritillary	*Fritillaria gentneri*	Endangered

Source: USFWS 2020a

Designated critical habitat for SONCC coho salmon occurs in Ashland Creek, Bear Creek, and Neil Creek throughout the city limits; critical habitat for the Northern Spotted Owl (NSO) occurs just outside of the Ashland city limits to the southwest, but still within the action area.

Southern Oregon-Northern California Coast Coho Salmon: Based on the potential for coho salmon use, the only stream that supports coho salmon within 0.25 mile of the treatment area is Bear Creek. Other streams within the action area do not support fish use. The critical habitat for SONCC coho salmon includes 4th Field HUC 17100308 – Middle Rogue watershed.

Northern Spotted Owl: The NSO range includes most of the Southern Oregon Cascade Mountains. Based on their range, there is the potential for noise generated from the proposed action to affect nesting NSOs if they were present within the action area. NSO critical habitat occurs just outside of the Ashland city limits to the southwest; however, NSOs are not known to typically occur near the City of Ashland. The nearest documented NSO observations and activity are several miles to the southwest. The noise action area would not extend more than approximately 0.25 miles from the city limits. Because the action area is largely within the city limits with its mix of residential activities and modified forest cover, the action area is unlikely to contain suitable NSO nesting trees.

The project area is within established neighborhoods that were modified for residences. Thus, the proposed project areas contain substantial disturbed edge habitat and experience constant noise generated from multiple sources across the action area. Any NSOs in the project area would likely be singular younger owls passing through the area in search of better habitat and they would likely be transient.

Pacific Fisher: The typical habitat utilized by fisher are low- and mid-elevation coniferous and mixed conifer forests. The preferred forest stands are areas that are contiguous, complex, and predominantly (greater than 50 percent) mature. Denning occurs in areas where there are cavities in large trees or snags, which are typically found in mature or old-growth forests. Adult individuals are known to grow accustomed to anthropogenic activities (noise) and enter the city limits. Nursing mothers and their kits may be susceptible to noise disturbance and change behavior as a result of above-average volume and high-pitched noise (chainsaws).

Most of the fisher habitat (surrounding the City of Ashland but within the action area) is sparse or otherwise low-quality young and modified forests. The best apparent habitat for fisher is found in the Beach Creek drainage along the southern edge of the City. There is low potential that fisher would den and rear young in this area that is at the outer extent of typical urban noise disturbances, such as automobiles and lawn mowers.

Gray Wolf: While the City of Ashland is within the known range of listed gray wolves, the nearest known pack activity is on the eastern slope of the Cascade Mountains, just northeast of

Upper Klamath Lake. It is possible that wandering individual wolves could be found in the action area, and they would be able to leave the area at will.

Gentner's Fritillary: Gentner's fritillary is a red-flowered lily that can be found in Jackson County in multiple habitat types. The primary habitat type is dry open woodlands and chaparral ranging between 1,000 to 5,000 feet in elevation. The Recovery Plan for *Fritillaria gentneri* (USFWS 2003) contains information on the plant and recovery information. The recovery unit borders the western side of Ashland and is located just outside of the city limits; the nearest known population is approximately three miles west of Ashland.

No Action Alternative

In the absence of a major wildfire, the no action alternative would have no effect on ESA-listed species and their habitats. Defensible space created per the Wildfire Safety Ordinance and by at-risk property owners on their own initiative would remove some vegetation in disparate locations. These treatments may not be as prescriptive as the proposed action, nor include conservation measures to avoid or minimize impacts on ESA-listed species that may be present, including their designated critical habitat. Work in riparian areas could degrade SONCC coho salmon habitat, and impacts could be negligible to moderate. Similarly, in the absence of work timing restrictions, work in areas where fishers may be present could disrupt their behavior, causing negligible to minor impacts on individuals. A major wildfire would be more likely to spread under the no action alternative, which could have minor to major impacts on ESA-listed species and their habitats. This would most likely affect coho salmon if riparian corridors along streams were burned in a wildfire, potentially causing major habitat degradation.

Proposed Action

The proposed action would not require in-water work. Additionally, the WRPZ would maintain a vegetative buffer around all water bodies within the project area and includes treatment prescriptions and conservation measures (described in **Section 3.2.1**) that would maintain existing stream shading and retain ground cover to filter surface runoff. Thus, the proposed action would have no effect on SONCC coho salmon or their critical habitat, and no effect on EFH in or around the action area.

The proposed action would have no effect on NSOs or their critical habitat. It is unlikely that any nesting habitat would occur within the action area because most known activity occurs several miles away. NSOs that choose to stay in or near the action area would have adapted to higher noise levels as the ambient condition of an urban area. It is unlikely that NSOs would find suitable habitat within the city limits where project activities would be implemented. Additionally, the project primarily targets ladder fuels and shrubs, which do not provide nesting habitat.

The properties targeted for work under the proposed action would already be modified from the construction of the existing structures and existing levels of human activity. The parcels proposed for work likely do not contain suitable habitat for denning and rearing fisher. Additionally, to mitigate any potential impacts from treatment activities (e.g., noise generated by the use of chainsaws), gas-powered chainsaw work would not be allowed on select properties from March 1st to July 15th (**Figure 4-6**). If any of these properties are selected for defensible

space work, the work would be conducted outside of the denning season for the fisher. Because of the low potential for reproducing fisher to occur within the action area and the mitigation measure (as previously described), the proposed action would have no effect on fisher or fisher habitat.

The proposed action would have no effect on gray wolf packs or their habitat because of their distance from the project area.

The nearest known population of Gentner's Fritillary is approximately three miles west of the action area. The proposed treatment areas are residential lots with existing structures and regular human activity. These parcels are likely modified by residential landscaping and activities such that they do not provide the Gentner's Fritillary's primary habitat components; therefore, the proposed action would result in no effect on the Gentner's Fritillary.

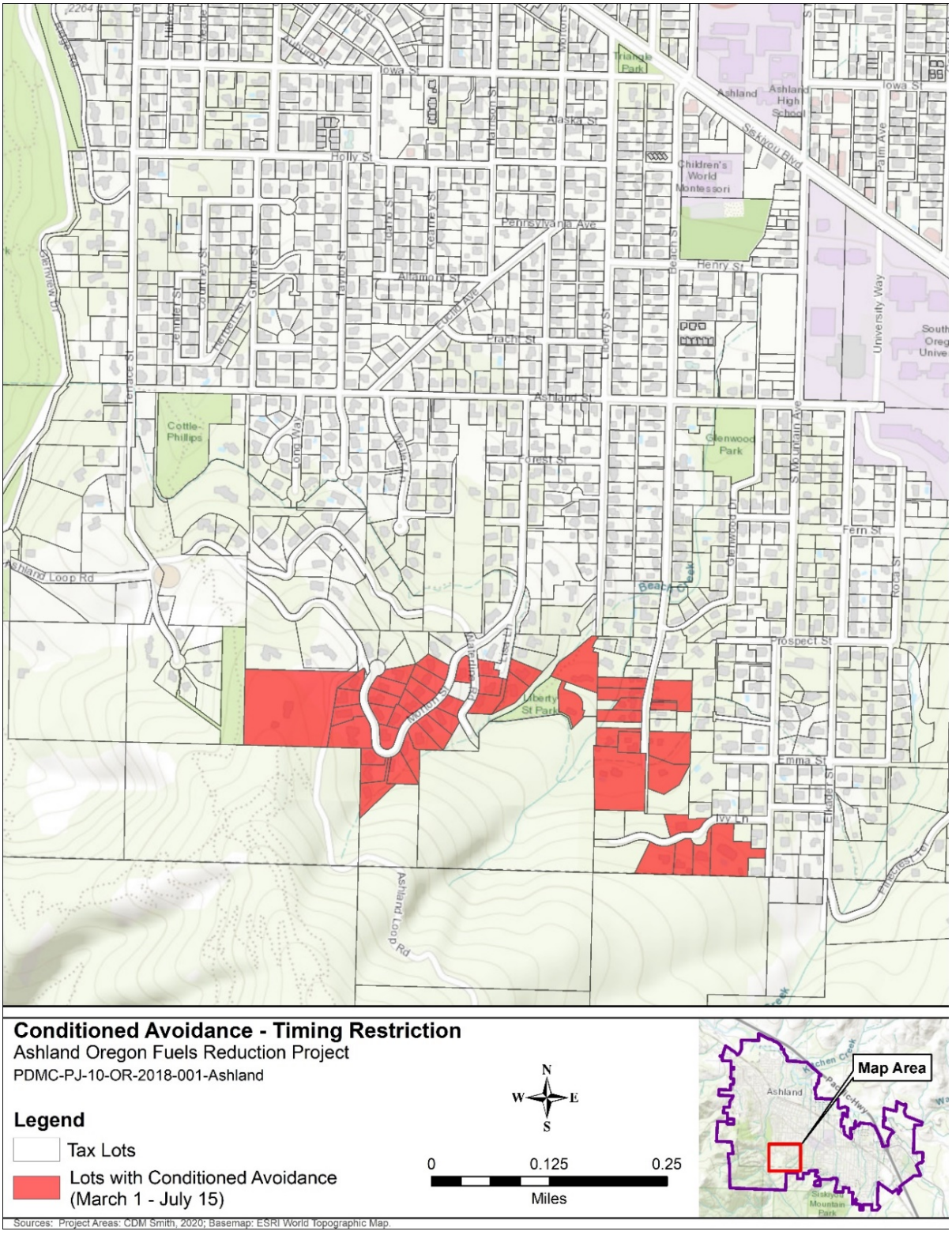

Figure 4-6. Fisher Avoidance Condition Zone

4.11. Cultural Resources

Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. § 470f), requires that activities using federal funds undergo a review process to consider potential effects on historic properties that are listed in or may be eligible for listing in the National Register of Historic Places. Cultural resources include prehistoric or historic archeology sites; historic standing structures; historic districts, objects, or artifacts; cultural properties of historic or traditional significance (referred to as Traditional Cultural Properties that may have religious or cultural significance to federally recognized Indian Tribes); or other physical evidence of human activity considered to be important to culture, subculture, or community for scientific, traditional, religious, or other reasons.

Pursuant to 36 CFR 800.4(a)(1), an Area of Potential Effects (APE) was defined to include the areas within which the undertaking may directly or indirectly affect cultural resources. For this project, only the built environment was considered where the project could affect historic structures by applying ignition-resistant roofing materials. Because defensible space-related activities would be conducted without disturbing the ground, archaeological resources would not be affected.

The project area is located in the Rogue River Valley. The first non-Natives in the Rogue River Valley were fur trappers employed by the Hudson's Bay Company after 1824. The systematic exploration of southern Oregon was conducted by the Hudson's Bay Company in order to establish holdings in areas with previously untapped fur resources (Brauner and Honey 1979). These endeavors ultimately established the Siskiyou Trail, which connected Fort Vancouver to the Sacramento Valley, and generally followed the path of present-day Interstate 5. In 1846, The Applegate Trail was established, providing a southern alternative to the Oregon Trail. The Applegate Trail was not as heavily used as other wagon trails at the time, but was directly responsible for an increased number of emigrants in the Rogue River Valley, particularly following the discovery of gold in the Rogue Basin in 1850 and the passage of the Donation Land Act in the same year which encouraged the development of new communities (Beckham 1971; Haines 1976; LaLande 2019). Land Act legislation ultimately shaped a Eurocentric vision of the northwest and policy was continually used to consolidate power and limit the opportunities of minorities in the region (Millner 2019; Riddle 2010).

During the 1840s, settlers began moving *en masse* into the river valleys of Oregon where they claimed ownership of traditional Native lands, consuming the most agriculturally and timber rich tracts in the region and often choosing to build homes in open areas that had been maintained by prescribed burning and other land management techniques employed by Indigenous populations. The discovery of gold and the desire to claim agriculturally attractive lands in the Rogue Valley led to increased settlement in the area during the 1850s. Following the Rogue River Wars of 1855-1856, Indigenous populations of southern Oregon, including the Takelma had begun to be forcibly removed to reservation lands on the coast.

Mining in southern Oregon provided economic possibilities for a diverse array of immigrants, including a substantial population of mobile Cantonese-Chinese gold miners during the 1850s and 1860s. Between the 1860s and 1880s, the significant expansion of railroads in the west was

achieved through the labor of Chinese rail workers. Establishment of the railroad opened up new towns and cities where Chinese communities settled, like Ashland. By the mid-1850s, the Ashland Flouring Mills on Mill Creek (present-day Ashland Creek) was built (General Land Office 1855; McCall 1879). The flouring mill was constructed by M.B. Morris in 1854. A sawmill, several homesteads, and agricultural fields were present in what is now central Ashland. Settlements were also scattered in the valley to the east. Early lumber and flouring mills built along Mill Creek inspired the name "Ashland Mills" for the town, although "Mills" was dropped from the name by the 1870s. By the 1880s, the Southern Pacific Railroad was built, connecting Sacramento to Portland. Ashland boomed, becoming the wealthiest town in southwestern Oregon.

Ashland contains four historic districts that encompass the majority of the city. Historic districts include the Downtown district, the Siskiyou-Hargadine district, the Railroad district, and the Skidmore Academy district, each of which represent significant periods of time in Ashland's development (City of Ashland, n.d.).

Willamette Cultural Resources Associates conducted a survey of the historic built environment. Of the 23 buildings with wood shake roofs identified for treatment, 17 buildings are 45 years old or older. Of these, 5 were previously determined eligible for listing in the National Register of Historic Places (NRHP) and 2 more are recommended as NRHP-eligible. **Table 4.4** provides details on the 17 buildings aged 45 years or older. The full cultural resources report is available upon request.

Table 4.4. Structures with Wood Shake Roofs Aged 45+ Years

Address	Year Built	NR Status	District	Eligibility Recommendation
321 North Main St	1905	Listed	Yes	Eligible
116 Church St	1880	Eligible/Contributing	Yes	Eligible
353 Hargadine St	1910	Eligible/Contributing	Yes	Eligible
800 Clarence Ln	1890	Unevaluated	No	Eligible
165 Meade St	1932	Eligible/Contributing	Yes	Eligible
63 Bush St	1905	Eligible/Contributing	Yes	Eligible
400 Clay St	1915	Unevaluated	No	Eligible
339 Ridge Rd	1966	Unevaluated	No	Not Eligible
349 Cambridge St	1968	Unevaluated	No	Not Eligible
92 Emerick St	1920	Unevaluated	No	Not Eligible
904 Hillview Dr	1972	Unevaluated	No	Not Eligible
274 Catalina Dr	1966	Unevaluated	No	Not Eligible
286 Catalina Dr	1966	Unevaluated	No	Not Eligible
1163 Bellview Ave	1960	Unevaluated	No	Not Eligible
772 Indiana St	1967	Unevaluated	No	Not Eligible
701 Oak Knoll Dr	1966	Unevaluated	No	Not Eligible

Address	Year Built	NR Status	District	Eligibility Recommendation
611 Beach St	1905	Unevaluated	No	Not Eligible

No Action Alternative

Under the no action alternative, although some scattered defensible spaces would be created per the Wildfire Safety Ordinance and by at-risk property owners on their own initiative, the risk of wildfire spread would remain high. Also, homeowners that have structures with wood shake roofs would replace their roofs slowly over time as they age and deteriorate; however, they may not be replaced with similarly appearing or appropriately rated fire-resistant materials. Thus, if these structures are historic properties, their integrity from a NHRP eligibility standpoint could be diminished. In the absence of roof replacements and with the limited defensible space work, in the event of a wildfire, embers could ignite these structures in the heart of the city, resulting in historic structures in historic districts being damaged or destroyed. Thus, the no action alternative would have a minor to moderate impact on historic resources, depending on the intensity and scale of a wildfire.

Proposed Action

The wood shingle roofs of the seven historic buildings (determined eligible previously and in this study) are among the character-defining features of the houses. Their removal would potentially compromise the historical integrity of the buildings and constitute an "adverse effect." Thus, to diminish the loss of integrity and adverse effects, wood shake roofs would be replaced with suitable, fire-resistant materials with a style, texture, color, and design that matches the original wood shake roof. Replacement roofing would be in keeping with the *Secretary of Interior's Standards for Treatment of Historic Properties* and National Park Service guidance in Preservation Brief 4: *Roofing for Historic Buildings* and Preservation Brief 19: *The Repair and Replacement of Historic Wooden Shingle Roofs*. Wood shake roofs would also be replaced in accordance with FEMA P-737, Home Builder's Guide to Construction in Wildfire Zones, Fact Sheets 5 and 7. Replacement of shingles is expected to result in "No Historic Properties Adversely Affected." Consultation with these findings was initiated with the SHPO and a response from the SHPO has not been received as of the date of this draft EA.

Defensible space activities would not pose impacts to eligible historic structures or districts. Defensible space-related activities would be conducted by ground crews on already developed parcels, and crews would maximize the use of existing roads and driveways for access. Thus, minimal ground disturbance is expected. If archaeological resources were present, they would be unlikely to be affected given the low-impact nature of the work. Under the proposed action, the risk of wildfire spread would be reduced, which would reduce the risk of wildfire damage to all homes, including those eligible for the NRHP, and provide a long-term benefit.

4.12. Environmental Justice

Environmental justice is defined by EO 12898 (59 Federal Register 7629) and CEQ guidance (1997). Under EO 12898, demographic information is used to determine whether minority

populations or low-income populations are present in the areas potentially affected by the range of project alternatives. If so, a determination must be made on whether implementation of the program alternatives may cause disproportionately high and adverse human health or environmental impacts on those populations.

This environmental justice analysis is focused at the local (i.e., city) level. The local area included in this analysis is where project-related impacts would occur, potentially causing an adverse and disproportionately high effect on neighboring minority and low-income populations. Minority or low-income census tracts are defined as meeting either or both of the following criteria:

- Census tract contains 50 percent or more minority persons or 25 percent or more low-income persons
- Percentage of minority or low-income persons in any census tract is more than 10-percent greater than the average of the surrounding county

Minority Populations

CEQ (1997) defines the term *minority* as persons from any of the following groups: Black, Asian or Pacific Islander, American Indian or Alaskan Native, and Hispanic. According to EPA's Environmental Justice Screening tool (EPA 2019a), the minority population in Ashland is 13 percent, as compared to Jackson County with 18-percent minority population. Ashland does not contain an environmental justice minority population because it does not meet the criteria listed above.

Low-Income Populations

Residents of areas with a high percentage of people living below the federal poverty level may be considered low-income populations. As shown in **Table 4.5,** the low-income population in Ashland is 36 percent as compared to Jackson County with 39 percent (EPA 2019a). Ashland would be considered to contain an environmental justice low-income population because the low-income population is greater than 25 percent.

Table 4.5. Environmental Justice Demographics

Area	Percent Minority Population	Percentage of Population Below Poverty Level
Ashland, Oregon	13%	36%
Jackson County, Oregon	18%	39%

Source: EPA 2019a

No Action Alternative

Under the no action alternative, although some scattered defensible spaces would be created per the Wildfire Safety Ordinance and by at-risk property owners on their own initiative, the risk of wildfire spread would remain high, particularly in the southern and western portions of the city (**Figure 1-1**). In the event of a wildfire, the population in Ashland, including low-income populations, may experience adverse health impacts, such as those mentioned in **Section 2**, and/or damage or loss of property and assets. Because of their low income, this population could

be disproportionately and adversely affected by a wildfire because of their limited resources to recover. Therefore, minor to moderate impacts may occur on both low-income and non-low-income populations, particularly those living and working in the southwestern portion of the city, depending on the intensity and scale of a wildfire.

Proposed Action

The proposed action would implement defensible space treatments and ignition-resistant construction to reduce the risk of wildfire spread in the City of Ashland. Temporary and localized impacts from the proposed action, such as noise and increased traffic, would impact those proximate to the work location, including low-income populations. These short-term impacts may be concentrated in the southern and western portions of the city where the wildfire risk is the highest (**Figure 1-1**). However, the benefits of reduced risk of wildfire spread would be applicable to the entire population of Ashland, including low-income populations. Therefore, no disproportionately high and adverse impacts on low-income populations would result from the proposed action.

4.13. Hazardous Materials

Hazardous materials are those substances defined by the Comprehensive Environmental Response, Compensation, and Liability Act, as amended by the Superfund Amendments and Reauthorization Act, and the Toxic Substances Control Act. The Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA), which was further amended by the Hazardous and Solid Waste Amendments, defines hazardous wastes. In general, both hazardous materials and waste include substances that, because of their quantity, concentration, physical, chemical, or infectious characteristics, may present substantial danger to public health or to the environment when released or otherwise improperly managed.

Hazardous materials may be encountered in the course of a project or they may be generated by the project activities. To determine if hazardous materials or waste facilities exist in the vicinity or upgradient of the project area, a search for hazardous waste, water dischargers, toxin releases, Superfund sites, Brownfields, and Toxic Substances Control Act sites was conducted using EPA's NEPA Assist website (EPA 2019b). According to this database, hazardous waste, water dischargers, and brownfields are present within the City of Ashland.

No Action Alternative

Under the no action alternative, existing conditions would not change with implementation of some defensible spaces created per the Wildfire Safety Ordinance and by at-risk property owners on their own initiative in disparate locations. There would be some limited potential for release of hazardous materials from equipment, and thus very localized and minor site contamination from leaks or spills. Under this alternative, the risk for wildfire spread would not be reduced. Wildfire could damage regulated sites and potentially release hazardous materials into the environment, posing minor to moderately adverse impacts, depending on the intensity and scale of a wildfire. Wildfire damage in urban areas also directly releases hazardous materials into the air, soil, and water as plastics burn and materials that are otherwise safely stored are damaged and released (CalRecycle 2020).

Proposed Action

There are RCRA-regulated hazardous waste, water dischargers (National Pollutant Discharge Elimination System), and one brownfield site (Assessment, Cleanup, and Redevelopment Exchange System) in the project area. These sites would not be affected by implementation of the proposed action because they would primarily occur outside of treatment areas. Both components of the proposed action would involve the use of mechanical equipment, such as chainsaws and vehicles, which would pose the threat of minor leaks and spills. The short-term duration of the use of equipment at any individual treatment area and the use of equipment in good condition would reduce any potential effect to an insignificant level. All equipment and project activities would adhere to local regulations to reduce the risk of hazardous leaks and spills. Any spills during construction would be immediately contained and cleaned. Thus, there would be a negligible contamination threat from vehicle and equipment use.

In the long-term, the proposed action would reduce the risk of damage to regulated sites and the risk of release of hazardous materials from burning homes because of the reduced risk of wildfire spread into the city.

4.14. Noise

Sounds that disrupt normal activities or otherwise diminish the quality of the environment are considered noise. Noise events that occur during the night (10 p.m. to 7 a.m.) are more annoying than those that occur during normal waking hours (7 a.m. to 10 p.m.). Assessment of noise impacts includes the proximity of the proposed action to sensitive receptors. A sensitive receptor is defined as an area of frequent human use that would benefit from a lowered noise level. Typical sensitive receptors include residences, schools, churches, hospitals, nursing homes, and libraries. Sensitive receptors in the project area consist of residences (including those that would receive defensible space and ignition-resistant construction treatment), schools, churches, hospitals, and libraries. Any noise-generating activities in proximity to residences would have the potential to adversely affect these receptors. The City of Ashland restricts construction noise to the hours of 7:00 a.m. and 7:00 p.m. on weekdays, and 8:00 a.m. and 6:00 p.m. on weekends and holidays (AMC 9.08.170).

Typical existing noise sources in the project area are associated with traffic and other residential conditions, including the use of mechanical equipment such as lawn mowers and leaf blowers.

No Action Alternative

Under the no action alternative, there would be scattered defensible spaces created per the Wildfire Safety Ordinance and by at-risk property owners on their own initiative. These activities would be scattered in space and time, thus there would be no change in existing noise levels that could affect sensitive receptors in the project area.

Proposed Action

Under the proposed action, noise would be generated by the operation of equipment, such as chainsaws and hand saws used for the creation of defensible space, and power saws and pneumatic hammers for ignition-resistant construction (replacement of wood shake roofs). The loudest equipment likely to be used would be chainsaws, which can produce noise levels up to

85 dB when perceived from approximately 50 feet away (Federal Highway Administration 2017).

The implementation of the proposed action would be scattered on high-fire risk properties in the WHZ and there would be increased noise levels within the immediate vicinity of the work for the duration of the work. Defensible space work would occur within 100 feet from primary residences and roof replacements would occur on structures with wood shake roofs. The properties receiving treatments may be within 100 feet of other residences or other sensitive receptors such as churches. However, increases in noise levels would be temporary and of short duration (a few days to a week) at any one location, and all work would occur during normal waking hours in compliance with the City's noise regulations. Potential noise impacts on receptors near project activities would be negligible to minor, depending on location, and short term. In addition, all equipment and machinery would be used in accordance with the City of Ashland noise regulations (AMC 9.08.170). No long-term noise impacts would occur.

4.15. Transportation

Ashland is a linear city situated between the Siskiyou Mountains to the south and Bear Creek/ Interstate 5 (I-5) to the north. Ashland's major arterials are classified as boulevards, major collector roads are classified as avenues, and minor roads are classified as neighborhood collectors. Ashland has one north-south boulevard, namely Siskiyou Boulevard (OR 99), which runs through the center of the city. East-west boulevards include East Main Street (OR 66) and Ashland Street, both connecting to I-5. Avenues provide north-south and east-west connectivity throughout Ashland and numerous neighborhood streets provide access to residences and neighborhood commercial uses. Ashland is served by the Rogue Valley Transportation District which provides public transportation to serve Medford, Ashland, Central Point, Talent, Phoenix, White City, and Jacksonville.

No Action Alternative

Under the no action alternative, transportation in the project area would not be directly affected by the implementation of scattered defensible spaces created per the Wildfire Safety Ordinance and by at-risk property owners on their own initiative. However, the potential for a major wildfire to spread would continue to be high. Wildfire may encroach upon roadways and wildfire smoke may inhibit the ability to see roadways clearly and travel throughout the city. In recent years, fires close to I-5 in southern Oregon have required the closure of this major interstate transportation corridor because of reduced visibility from smoke. Thus, impacts on transportation could be minor to major, depending on the intensity and scale of a wildfire.

Proposed Action

Under the proposed action, crews would primarily access treatment areas from existing roads and driveways. Work on each property would require a small number of vehicles for a short duration. However, because of the number of participating properties, there may be negligible, localized, short-term impacts on transportation and traffic from vehicle staging on roadsides. The proposed action would treat approximately 1,100 properties over the course of three years. Therefore, it is likely that up to seven properties would be treated each week, requiring several crews to be working at any given time. However, because the proposed work would take place on private

residential properties using existing driveways and roadway access, and would be scattered, no road closures would be expected. In the long-term, the proposed action would reduce the risk of wildfire spread, which would reduce potential impacts of wildfire smoke and damage to the transportation infrastructure.

4.16. Public Utilities

The City of Ashland is developed with existing utilities. Power to these residential areas is provided from overhead power lines. Drinking water is held in the Reeder Reservoir before being treated and provided to customers from underground infrastructure. Wastewater is collected by underground infrastructure and treated locally. The City also provides internet access from locally owned fiber-optic infrastructure (City of Ashland 2020).

No Action Alternative

Under the no action alternative, although some defensible spaces would be created per the Wildfire Safety Ordinance and by at-risk property owners on their own initiative, the risk of wildfire spread and potential damage to utilities would remain high. In the event of a wildfire, intense heat could adversely impact water system components on the surface and underground. If intense heat modifies the chemical properties of water system components, chemicals might leach into the water, causing contamination (FEMA 2019). Damage or destruction to public utilities such as power generation and distribution infrastructure, drinking water infrastructure, or wastewater treatment plants from wildfire spread would likely result in loss of public services. Thus, impacts on public utilities could be minor to major, depending on the intensity and scale of a wildfire.

Proposed Action

The proposed action would not directly affect utilities. Some of the proposed tree thinning and limbing could provide protection to overhead power lines and reduce the potential for powerlines to spark a fire. In the long-term, the proposed action would reduce the risk of damage to public utilities from wildfire spread. Therefore, the proposed action could have minor, long-term beneficial effects on public utilities.

4.17. Public Health and Safety

Jackson County and the City of Ashland have a history of wildfire. As of October 2018, all homes within the City are considered to be in the WHZ. Ashland is at high risk because it is built up to the edge of large tracts of forest land and wildfires can spread directly into forested vegetation around homes within the city limits. The interface between homes and vegetative fuels has significantly increased the threat to life and property from fires. Wood shake roofs on structures within the project area also pose a risk for wildfire spread in the interior of the city from airborne embers.

Ashland Fire and Rescue provides emergency medical services, fire prevention, and safety services, as well as fire response for the City of Ashland. The Ashland Police Department supports public safety through crime prevention, emergency, and nonemergency policing services.

No Action Alternative

Under the no action alternative, although some defensible spaces would be created per the Wildfire Safety Ordinance and by at-risk property owners on their own initiative, current conditions would not change substantially, and the risk of wildfire spread would remain high. In the event of a wildfire, there is an increased risk to public health and safety, as well as services provided to protect public safety, such as firefighters. The risk of a wildfire spreading into residential neighborhoods and burning homes would remain very high. When entire neighborhoods catch on fire, the potential for injury and death rises, as people may be trapped by flames on narrow roads or stay behind to try to protect property.

Wildfires can generate substantial amounts of particulate matter, which can affect the health of people breathing smoke-laden air. This is a particular concern for vulnerable populations, such as the youth and elderly, as discussed in **Section 4.4**. Wildfires can also generate substantial amounts of carbon monoxide, which can pose a health concern for frontline firefighters. In addition, fires that are burning residences can release toxic materials into the air, soils, and water, posing health risks to populations both during the fire and later during cleanup and recovery (CalRecycle, 2020).

Heavy rain conditions following wildfires can contribute to sediment and debris in nearby waterways, which can affect downstream water quality and damage structures, roads, and utilities critical to the safety and well-being of citizens. During a major wildfire, emergency personnel would not be available to respond to other emergencies in their service area, potentially resulting in indirect impacts on health and property. Therefore, there could be minor to major impacts from the no action alternative if a wildfire occurs depending on the extent of the damage to the City's infrastructure.

Proposed Action

Under the proposed action, the creation of defensible space and replacement of wood shake roofs with ignition-resistant construction materials would help to reduce the spread of wildfires in the City of Ashland. This would create a safer environment for firefighters and allow them to more easily control the spread of a wildfire. These activities would not prevent wildfires but could contribute to containment, which would ultimately reduce the risks for people living in and near the project area. In addition, when wildfires are controlled more quickly, a smaller area is burned, and less sediment and debris may be transported downstream during future precipitation events that could potentially affect water quality. The proposed action could reduce the probability that emergency services would be focused on firefighting and would allow emergency responders to remain available to respond to other emergencies throughout the city. Therefore, the proposed action would have a moderate beneficial effect on public health and safety.

4.18. Summary of Effects and Mitigation

Table 4.6 provides a summary of the potential environmental effects from implementation of the proposed action, any required agency coordination efforts or permits, and any applicable proposed mitigation or BMPs.

Table 4.6. Summary of Effects and Mitigation

Affected Resource Area	Impacts	Agency Coordination or Permits	Mitigation/BMPs
Soils and Topography	Minor short-term impact from trucks having to drive on lawns; minor long-term benefit on soils by reducing the risk of wildfire spread. No effect on topography.	N/A	• Hand tools would be used to implement defensible space and ignition-resistant construction activities; no heavy, tracked equipment would be used. • Some vegetation would be retained according to the City's fuels prescription (**Section 3.2**), helping to prevent significant erosion from vegetation removal.
Visual Quality and Aesthetics	Negligible to minor short-term and long-term impacts and minor long-term beneficial effects as a result of reduced damage from wildfire.	N/A	NA
Air Quality and Climate	Negligible, short-term impacts from vehicle and equipment use; minor long-term beneficial effects by reducing the risk of wildfire spread.	N/A	• Hand tools would be used to implement defensible space and ignition-resistant construction activities.
Surface Waters and Water Quality	Negligible, short-term impact; minor long-term beneficial effects by reducing the risk of wildfire spread and associated vegetation loss and sedimentation effects.	N/A	• Maintain a 50-foot vegetation buffer around fish-bearing waterways. • Maintain a 40-foot vegetation buffer around smaller non-fish bearing waterways • Maintain a 30-foot vegetation buffer intermittent and ephemeral streams. • Fire resilient vegetation outside buffers would be retained according to the City's fuels prescription (**Section 3.2**), further reducing significant erosion from vegetation removal. • Implement sediment BMPs where ground is disturbed within 100 feet of a waterbody.
Wetlands	Negligible, short-term impact; minor long-term beneficial effects by reducing the risk of wildfire spread and associated vegetation loss.	N/A	Implement conditions described in the Surface Water and Water Quality Section (**Section 4.5**).

Affected Resource Area	Impacts	Agency Coordination or Permits	Mitigation/BMPs
Floodplains	Negligible, short-term impact; minor long-term beneficial effects by reducing the risk of wildfire spread and associated vegetation loss.	N/A	Implement conditions described in the Surface Water and Water Quality Section (**Section 4.5**).
Vegetation	Minor short-term impact on removed vegetation; minor long-term beneficial effects by reducing the risk of wildfire spread and vegetation loss.	N/A	Defensible space treatments would encompass only the activities listed in the Subrecipient's Defensible Space Treatment Prescription (**Section 3.2**).
Fish and Wildlife	Minor short-term impact by disrupting nesting birds; negligible short-term impact on eagles; minor long-term beneficial effects by reducing the risk of wildfire spread and vegetation loss; no effect on fish species.	N/A	• Implement the conditions described in the Surface Water and Water Quality Section (**Section 4.5**). • Seasonal clearing restriction recommended during migratory bird nesting season (February 1 through July 31). If nesting season cannot be avoided, inspect for active nests prior to clearing and coordinate with USFWS. • Cut vegetation will be disposed of in an appropriate manner to prevent the spread of invasive species.
Threatened and Endangered Species	No effect on listed species or designated critical habitat in the project area.	N/A	• Implement the conditions described in the Surface Water and Water Quality Section (**Section 4.5**). • To mitigate for potential fisher denning activity, gas-powered tools would be restricted from use from March 1st to July 15th (denning season) on selected parcels.
Cultural Resources	No adverse impact to historic structures if fire-resistant roof materials with a character similar to shake roofing is applied.	SHPO	• Wood shake roofs would be replaced with suitable, fire-resistant materials with a style, texture, color, and design that matches the original wood shake roof. • Replacement roofing would be in keeping with the Secretary of Interior's Standards for Treatment of Historic Properties and National Park Service guidance in Preservation Brief 4*: Roofing for Historic Buildings* and Preservation Brief 19: *The Repair and Replacement of Historic Wooden Shingle Roofs*.

Affected Resource Area	Impacts	Agency Coordination or Permits	Mitigation/BMPs
			• Wood shake roofs would also be replaced in accordance with FEMA P-737, Home Builder's Guide to Construction in Wildfire Zones, Fact Sheets 5 and 7.
Environmental Justice	No disproportionately high and adverse impacts on low-income populations.	N/A	N/A
Hazardous Materials	Negligible contamination threat from vehicle and equipment use. Minor long-term beneficial effect by reducing the risk of wildfire spread.	N/A	• Any spills or leaks from equipment would be immediately contained and cleaned.
Noise	Negligible, short-term impacts from increased noise within the immediate vicinity of the work.	N/A	• Noise-producing equipment use would occur during waking hours (7 a.m. to 10 p.m.). • The project would conform to the City of Ashland's noise ordinance (9.08.170).
Transportation	Negligible, localized, short-term impact on traffic from vehicle staging on roadsides. Minor long-term beneficial effects by reducing the risk of wildfire spread.	N/A	N/A
Public Utilities	Minor long-term beneficial effects by reducing the risk of wildfire spread.	N/A	N/A
Public Health and Safety	Moderate long-term beneficial effects by reducing the risk of wildfire spread.	N/A	N/A

SECTION 5. Cumulative Impacts

This section addresses the potential cumulative impacts associated with the implementation of the proposed action. Cumulative impacts can be defined as the impacts of a proposed action when combined with impacts of past, present, or reasonably foreseeable future actions undertaken by any agency or person. CEQ's regulations for implementing NEPA require an assessment of cumulative effects during the decision-making process for federal projects. Cumulative impacts can result from *individually minor* but *collectively significant* actions.

The City of Ashland makes ongoing efforts to increase community resilience to wildfires. In 2018, the City of Ashland declared the encompassing city limits a WHZ and adopted a codified Wildfire Safety Ordinance (AMC 18.3.10.100) that outlines defensible space requirements for new construction and additions, and prohibits planting known flammable plant species.

The City participates in the Firewise Community Program, which assists community members and local fire professionals in reducing wildfire risks in their local area. There is an emphasis on helping community members understand the importance of implementing defensible space and ignition-resistant actions on their property (National Fire Protection Association 2020).

The City owns and manages forest lands in and adjacent to the city limits and is a partner with the successful Ashland Forest Resiliency Stewardship Project (AFR) on U.S. Forest Service lands in and surrounding the Ashland Creek Watershed. The AFR is implementing a 10-year stewardship project to reduce the risk of severe wildfire in the watershed, including the southwest portion of Ashland and encompassing the Siskiyou Mountains to the west. The AFR aims to protect people, property, forests, wildlife, and water quality by providing forest stewardship educational programs, volunteer opportunities, landowner grants for defensible space and fuel reduction activities, and implementing controlled burns to reestablish natural forest conditions (AFR 2020). The primary activity planned for 2020 through 2023 on City-owned land and on federal land is prescribed burning. Previous surface and ladder fuel and density management activities are largely completed, though up to 50 acres of additional thinning may take place in scattered areas on City lands during this period.

The recent Almeda Fire in the project area vicinity has led to additional efforts to reduce wildfire hazards. Currently, the Lomakatsi Restoration Project with other state and local partners are conducting soil stabilization work in the wake of the fire along Bear Creek to protect soils, water quality, fish habitat, and other environmental values. New hazardous fuels reduction treatment initiatives have also been proposed. The West Bear All-Lands Restoration Project aims to treat approximately 11,000 acres within the foothills west of Bear Creek, extending from Ashland to Medford (approximately 28,000 acres).

There is a possibility for these wildfire mitigation efforts to combine with potential effects of the proposed action with respect to soils, visual quality and aesthetics, air quality, surface waters and water quality, floodplains, wetlands, fish and wildlife, and noise. However, it is unlikely that there would be significant cumulative impacts because, in most cases, there would be temporal and spatial separation between activities. However, these activities would result in long-term net beneficial effects and would complement the proposed action by reducing the risk of wildfire

spread in and near the City of Ashland and consequent impacts discussed throughout Section 4. Therefore, there would be long-term beneficial cumulative effects from these initiatives and the proposed action.

SECTION 6. Agency Coordination, Public Involvement, and Permits

This section provides a summary of the agency coordination efforts and public involvement process for the proposed City of Ashland Wildfire Mitigation Project draft EA. In addition, an overview of the permits that would be required under the proposed action is included.

6.1. Agency Coordination

A scoping notice and fact sheet on the project were distributed to the following federal agencies: Department of the Interior, National Interagency Fire Center, National Marine Fisheries Service, NRCS, EPA, USFWS, and USFS. The notice and fact sheet were also sent to the following state agencies for comment: Oregon Department of Environmental Quality, ODFW, Oregon Department of Forestry, Oregon Department of Land Conservation and Development, Oregon Department of State Lands, OEM, Oregon Parks and Recreation Department, and Oregon Watershed Enhancement Board. And the notice was sent to the following Tribes: Confederated Tribes of the Siletz Indians of Oregon and Tolowa Dee-ni' Nation (formerly the Smith River Rancheria). No comments were received.

Appendix B provides a copy of the consultation with the SHPO regarding impacts on historic properties. A response from the SHPO has not been received to date.

6.2. Public Participation

A public scoping notice and fact sheet about the proposed project was published at www.ashland.or.us/fema on July 3, 2020 and the notice was published in the hardcopy of the *Ashland Tidings* newspaper on July 3, 2020, and was subsequently posted to the online version of the *Ashland Tidings* newspaper on July 6, 2020. The scoping notice was intended to notify and provide the public with an opportunity to comment on the proposed action, potential alternatives, and preliminary identification of environmental issues. The 30-day public comment period on scoping closed on August 3, 2020. No comments were received.

In accordance with NEPA, this draft EA will be released to the public and resource agencies for a 30-day public review and comment period. Comments on this draft EA will be incorporated into the final EA, as appropriate. This draft EA reflects the evaluation and assessment of the federal government—the decision maker for the federal action. However, FEMA will take into consideration any substantive comments received during the public review period to inform the final decision regarding grant approval and project implementation. If no substantive comments are received from the public and/or agency reviewers, this draft EA will be assumed to be final and a FONSI will be issued by FEMA.

The City of Ashland will make the draft EA available on their website at: www.ashland.or.us/fema. The draft EA will also be available on FEMA's website. Hard copies of the draft EA will be made available at Ashland Library, 410 Siskiyou Blvd, Ashland, OR, 97520. The comment period for the draft EA will start when the public notice of EA availability is published and extend for 30 days. Comments on the draft EA may be submitted to FEMA-

R10-EHP-Comments@fema.dhs.gov (include "Ashland" in the subject line). Comments may also be submitted via mail to:

Science Kilner
Regional Environmental Officer
FEMA Region 10
130 228th Street SW,
Bothell, WA 98021

6.3. Permits

The City of Ashland will be responsible for obtaining, or ensuring property owners obtain, any necessary local, state, or federal permits needed to conduct the proposed work. The roof replacement work for ignition-resistant materials may trigger local permitting.

SECTION 7. List of Preparers

The following is a list of preparers who contributed to the development of the City of Ashland Wildfire Mitigation Project draft EA for FEMA. The individuals listed below had principal roles in the preparation of this document. Many others, including senior managers, administrative support personnel, and technical staff, had significant roles and contributions, and their efforts were no less important to the development of this EA.

Preparers	Experience and Expertise	Role in Preparation
Argiroff, Emma[1]	Environmental Planner	NEPA Documentation
Ellis, Dave[2]	Senior Archaeologist	Cultural Resources
Fogler, Wilson[1]	Biologist	NEPA Documentation
Goodwin, Matt[2]	Archaeologist	Cultural Resources
Shepard, Brian[1]	GIS Specialist	GIS
Stenberg, Kate Ph.D.[1]	Senior Biologist, Senior Planner	Project Manager, Technical Review
Taylor, Breanne[2]	Archaeologist	Cultural Resources
Weddle, Annamarie[1]	Environmental Planner	NEPA Documentation

[1] CDM Smith
[2] Willamette Cultural Resource Associates

Federal Emergency Management Agency

Reviewers	Role in Preparation
Kilner, Science	Technical Review and Approval
Parr, Jeffrey	ESA/No Effect Memo

SECTION 8. References

Ashland Forest Resiliency (AFR). 2020. What We Do. Accessed July 13, 2020, https://www.ashland.or.us/Sectionindex.asp?SectionID=503.

Beckham, S.D. 1971. Requiem for a People. University of Oklahoma, Norman.

Brauner, D.R., and Honey, W. 1981. A Reevaluation of Cultural Resources Within the Proposed Elk Creek Lake Project Area, Jackson County, Oregon. Department of Anthropology, Oregon State University, Corvallis. Submitted to U.S. Army Corps of Engineers, Portland District, Oregon.

California EPA Air Resources Board. 2007. *Fugitive Dust Control Self-Inspection Handbook.* Accessed July 13, 2020, https://www.arb.ca.gov/pm/fugitivedust_large.pdf.

CalRecycle. 2020. *Wildfire Debris Cleanup and Recovery.* Accessed August 4, 2020, https://www.calrecycle.ca.gov/disaster/wildfires.

City of Ashland. 2020. Public Works. Access July 20, 2020, https://www.ashland.or.us/SectionIndex.asp?SectionID=428._____. 2008. Zoning Map. Accessed June 9, 2020, http://www.ashland.or.us/Files/Official_Zoning.pdf.

_____. N.d. Local and National Historic Districts Overview. Accessed August 8, 2020, https://www.ashland.or.us/Files/Local_and_National_Historic_Dist_Overview.pdf

Council on Environmental Quality (CEQ). 2016. *Final NEPA Guidance on Consideration of Greenhouse Gas Emissions and the Effects on Climate Change.* Accessed September 5, 2018, https://obamawhitehouse.archives.gov/administration/eop/ceq/initiatives/nepa/ghg-guidance.

_____. 1997. *Environmental Justice: Guidance Under the National Environmental Policy Act.* Accessed August 28, 2018, https://www.energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/G-CEQ-EJGuidance.pdf.

Federal Emergency Management Agency (FEMA). 2020. City of Ashland Wildfire Mitigation, Biological Evaluation, Section 7 ESA/MSA No-Effect; Jackson County, OR, FEMA-PDM 18. May 20, 2020.

_____. National Flood Hazard Layer. Accessed July 7, 2020, https://www.fema.gov/national-flood-hazard-layer-nfhl.

_____. 2019. Job Aid for Disaster Recovery Reform Act, Section 1205 Additional Activities for Wildfire and Wind Implementation under Hazard Mitigation Assistance Programs. Accessed August 4, 2020, https://www.fema.gov/sites/default/files/2020-07/fema_DRRA-1205-implementation-job-aid.pdf.

_____. 2015. Hazard Mitigation Guidance Addendum. Accessed June 16, 2020, https://www.fema.gov/media-library-data/1424983165449-38f5dfc69c0bd4ea8a161e8bb7b79553/HMA_Addendum_022715_508.pdf.

Federal Highway Administration. 2017. *Construction Noise Handbook*. Section 9.0 Construction Equipment Noise Levels and Ranges. Available at: https://www.fhwa.dot.gov/Environment/noise/construction_noise/handbook/handbook09.cfm.

General Land Office. 1855 Plat of Township No. 39 South, Range No. 1 East, Willamette Meridian. Portland, Oregon.

Haines, F. 1976. *The Applegate Trail: Southern Emigrant Route, 1846*. The Applegate Bicentennial Trek. Unknown Publisher.

Houghton, K. 2020. *Wildfire's toxic air leaves damage long after the smoke clears.* Missoula Current. September 18, 2020. Accessed at: https://missoulacurrent.com/outdoors/2020/09/toxic-air-smoke/.

Jackson County. 2018. Multi-Jurisdictional Natural Hazard Mitigation Plan (NHMP). Accessed June 11, 2020, https://jacksoncountyor.org/emergency/County-Plans/NHMP.

Klamath Bird Observatory. 2012. *Birding Guide to Ashland and the Greater Rogue Valley*. Accessed July 17, 2020, https://klamathbird.org/images/stories/kbo/pdfs_handouts/Ashland_Birding_Guide.pdf

LaLande, J. 2019. Applegate Trail – Oregon Encyclopedia. Accessed August 25, 2019. https://oregonencyclopedia.org/articles/applegate_trail/#.V_KN0cn53qZ.

Libbey, P. 2018. Wildfire Smoke Disrupts Oregon Shakespeare Festival. *The New York Times*. Accessed August 4, 2020, https://www.nytimes.com/2018/08/24/theater/oregon-shakespeare-festival-wildfire-smoke.html.

McCall, M.L. 1879 Map of Ashland. Surveyed by M.L. McCall. Accessed August 25, 2020, http://www.ashland.or.us/Files/ashland1879.pdf

Millner, D. 2019. "Blacks in Oregon" (essay). Accessed July 16, 2020, https://oregonencyclopedia.org/articles/blacks_in_oregon/#.XvIzCed7n7M.

National Fire Protection Association. 2020. Firewise USA. Accessed July 16, 2020, https://www.nfpa.org/Public-Education/Fire-causes-and-risks/Wildfire/Firewise-USA

National Wild and Scenic Rivers System. 2020. Official Website. Accessed July 1, 2020, https://www.rivers.gov/.

Oregon Coastal Program. 2020. Official Website. Accessed July 13, 2020, https://www.oregon.gov/lcd/OCMP/Pages/Where-FC-Applies.aspx.

Reid, C.E., Brauer, M., Johnston F.H., Jerrett, M., Balmes, J.R., and Elliott, C.T. 2016. "Critical Review of Health Impacts of Wildfire Smoke Exposure." *Environmental Health Perspectives* 124(9):1334–1343 (doi:10.1289/ehp.1409277).

Riddle, M. 2010. "Donation Land Claim Act, Spur to American Settlement of Oregon Territory, Takes Effect on September 27, 1850." Accessed July 16, 2020, https://www.historylink.org/File/9501.

Statesman Journal. 2018. Oregon wildfire costs hit record high of $514 million in 2018. October 10, 2018. Accessed September 1, 2020, https://www.statesmanjournal.com/story/news/2018/10/10/oregon-wildfire-costs-hit-record-high-2018/1581132002/.

Thorson, T.D. Bryce, S.A., Lammers, D.A., Woods, A.J., Omernik, J.M., Kagan J., Pater, D.E, and Comstock, J.A. 2003. Ecoregions of Oregon (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,500,000). Accessed February 13, 2019, http://people.oregonstate.edu/~muirp/FuelsReductionSWOregon/ToolsResources/EcoregionsOregonLevelIVEPA.pdf.

Tornay, K. 2018. "Smoked Out: Locals Tell Governor of Summer Fires' Economic Impact." Accessed June 22, 2020, https://www.heraldandnews.com/news/local_news/smoked-out-locals-tell-governor-of-summer-fires-economic-impact/article_18bc1633-b837-538a-88d4-4f7bc7d9b12f.html.

U.S. Climate Data. 2020. Climate Ashland – Oregon. Accessed on July 1, 2020, https://www.usclimatedata.com/climate/ashland/oregon/united-states/usor0015.

U.S. Department of Agriculture Natural Resource Conservation Service (NRCS). 2019. Web Soil Survey. Accessed July 10, 2020, https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm.

U.S. Environmental Protection Agency (EPA). 2020a. *EPA Green Book*. Data current as of May 31, 2020. Accessed June 30, 2020, https://www3.epa.gov/airquality/greenbook/ancl.html.

_____. 2020b. How's My Waterway? Accessed July 10, https://mywaterway.epa.gov/community/171003080105/overview.

_____. 2020c. Sole Source Aquifer Interactive Map. Accessed July 13, 2020 at https://www.epa.gov/dwssa.

_____. 2019a. EJSCREEN. Accessed June 17, 2020, https://ejscreen.epa.gov/mapper/.

_____. 2019b. NEPA Assist. Accessed June 17, 2020, https://nepassisttool.epa.gov/nepassist/nepamap.aspx.

_____. 2016. NAAQS Table. Accessed June 30, 2020, https://www.epa.gov/criteria-air-pollutants/naaqs-table.

U.S. Environmental Protection Agency (EPA), U.S. Forest Service (USFS), U.S. Centers for Disease Control and Prevention, and California Air Resources Board. 2019. Wildfire Smoke – A Guide for Public Health Officials, Revised. Accessed on July 13, 2020, https://www3.epa.gov/airnow/wildfire-smoke/wildfire-smoke-guide-revised-2019.pdf.

U.S. Fish and Wildlife Service (USFWS). 2020a. IPaC – Information for Planning and Consultation. Accessed July 6, 2020. https://ecos.fws.gov/ipac.

_____. 2020b. Migratory Bird Treaty Act Protected Species (10.13 List). Accessed July 17, 2020, https://www.fws.gov/birds/management/managed-species/migratory-bird-treaty-act-protected-species.php.

_____. 2020c. National Wetlands Inventory. Last updated May 4, 2020. Accessed July 7, 2020, https://www.fws.gov/wetlands/data/mapper.html.

_____. 2019. Coastal Barrier Resources System. Accessed July 13, 2020, https://www.fws.gov/CBRA/Maps/Mapper.html.

_____. 2011. Climate Change in the Pacific Northwest. Accessed July 1, 2020, https://www.fws.gov/pacific/Climatechange/changepnw.html.

_____. 2003. Recovery plan for *Fritillaria gentneri* (Gentner's fritillary). U.S. Fish and Wildlife Service, Portland, Oregon. viii + 89 pp. Accessed June 30, 2020, https://www.fws.gov/pacific/ecoservices/endangered/recovery/documents/GentnersFritillaryFinalRecoveryPlan.pdf.

U.S. Forest Service (USFS). 2005. Wildland Fire in Ecosystems: Effects of Fire on Soil and Water. General Technical Report RMRS-GTR-42-volume4. Accessed July 1, 2020, https://www.fs.fed.us/rm/pubs/rmrs_gtr042_4.pdf.

Appendices

Appendix A Ashland Defensible Space Treatment Prescription

Appendix B NHPA Section 106 Correspondence

Appendix C Firewise Plant List for Ashland, Oregon

Appendix D City of Ashland Water Resource Protection Zones Map

Appendix A

Ashland Defensible Space Treatment Prescription

Defensible Space Treatment Prescription

Once the grant is officially awarded to Ashland Fire & Rescue, staff will move forward with hiring a FEMA Project Manager. The FEMA Project Manager will directly contact the top 1,100 homeowners on the attached project spreadsheet. Since the grant is a 3 year project, they will contact the first 366 homes the start of the first year, and then continue the same process at the start of the 2nd and 3rd grant year.

The FEMA Project Manager will perform a preliminary site visit to each property, outlining the scope of work and obtaining signatures on the landowner contract. The landowner will schedule the project with an approved contractor after the contract is signed. Contractors will use chainsaws and handsaws to do the defensible space work. All wood will be removed off site and brought to the Valley View Transfer Station or the Jackson County Fuels Committee drop off site. There will be no burning as part of this grant.

The defensible space projects will be primarily reducing flammable landscape vegetation like juniper, arborvitae and cypress. There is also a native component of ponderosa pine, Douglas-fir and other conifer trees that will be pruned. Trees will only be removed if they are less than 12 inches in diameter.

Below is the scope of defensible space work all within 100 feet of the structure:

1. All standing dead and dying vegetation will be removed from, except when considered ecologically beneficial.

2. Remove all vegetation listed on the City's Prohibited Flammable Plant List within five (5) feet of all buildings except for significant trees.

3. Remove all bark mulch, stored wood and accumulation of dry leaves and needles within five (5) feet of all buildings.

4. Existing trees, which are identified on the City's Prohibited Flammable Plant List shall be maintained to provide a clearance from new structures, and additions, as follows:

    a. Create a ten (10) feet horizontal clearance for all trees to a chimney outlet. At no time shall tree crowns or limbs extend into the vertical plane of a chimney outlet.

    b. Create a ten (10) feet vertical clearance of trees listed on the City's Prohibited Flammable Plant List above the roof.

    c. Create a ten (10) feet horizontal clearance for trees listed on the City's Prohibited Flammable Plant List from the furthest extension of all buildings.

5. Canopy spacing of the outermost limbs of trees on the City's Prohibited Flammable Plant List by separating them at least ten (10) feet at mature size.

6. Prune fire resistant trees to ensure they do not touch any part of a structure including but not limited to roofs, eaves and decks.

7. Remove ladder fuels on existing trees which are identified on the City's Prohibited Flammable Plant List creating a ground clearance of a minimum eight (8) feet above the ground, or 1/3 of the tree height, whichever is less.

8. Remove all existing shrubs on the City's Prohibited Flammable Plant List within five (5) feet of all buildings or decks.

9. Separate flammable shrubs on the City's Prohibited Flammable Plant List by a minimum of two times the shrub's height at maturity.

10. Remove all shrubs from underneath the drip line of a tree.

11. Prune the lowest tree limbs at least three (3) times the height of the shrub.

Appendix A

City of Ashland Defensible Space Treatment Prescription

Defensible Space Treatment Prescription

Once the grant is officially awarded to Ashland Fire & Rescue, staff will move forward with hiring a FEMA Project Manager. The FEMA Project Manager will directly contact the top 1,100 homeowners on the attached project spreadsheet. Since the grant is a 3 year project, they will contact the first 366 homes the start of the first year, and then continue the same process at the start of the 2nd and 3rd grant year.

The FEMA Project Manager will perform a preliminary site visit to each property, outlining the scope of work and obtaining signatures on the landowner contract. The landowner will schedule the project with an approved contractor after the contract is signed. Contractors will use chainsaws and handsaws to do the defensible space work. All wood will be removed off site and brought to the Valley View Transfer Station or the Jackson County Fuels Committee drop off site. There will be no burning as part of this grant.

The defensible space projects will be primarily reducing flammable landscape vegetation like juniper, arborvitae and cypress. There is also a native component of ponderosa pine, Douglas-fir and other conifer trees that will be pruned. Trees will only be removed if they are less than 12 inches in diameter.

Below is the scope of defensible space work all within 100 feet of the structure:

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2. Remove all vegetation listed on the City's Prohibited Flammable Plant List within five (5) feet of all buildings except for significant trees
3. Remove all bark mulch, stored wood and accumulation of dry leaves and needles within five (5) feet of all buildings
4. Existing trees, which are identified on the City's Prohibited Flammable Plant List shall be maintained to provide a clearance from new structures, and additions, as follows:
    a. Create a ten (10) feet horizontal clearance for all trees to a chimney outlet. At no time shall tree crowns or limbs extend into the vertical plane of a chimney outlet.
    b. Create a ten (10) feet vertical clearance of trees listed on the City's Prohibited Flammable Plant List above the roof
    c. Create a ten (10) feet horizontal clearance for trees listed on the City's Prohibited Flammable Plant List from the furthest extension of all buildings.
5. Canopy spacing of the outermost limbs of trees on the City's Prohibited Flammable Plant List by separating them at least ten (10) feet at mature size

6. Price fire resistant tree limbs to ensure they do not touch any part of a structure including but not limited to roofs, eaves and decks.

7. Remove ladder fuels on existing trees which are identified on the City's Prohibited Flammable Plant List creating a ground clearance of a minimum eight (8) feet above the ground, or 1/3 of the tree height, whichever is less.

8. Remove all existing shrubs on the City's Prohibited Flammable Plant List within five (5) feet of all buildings or decks.

9. Separate flammable shrubs on the City's Prohibited Flammable Plant List by a minimum of two times the shrub's height at maturity.

10. Remove all shrubs from underneath the drip line of a tree

11. Prune the lowest tree limbs at least three (3) times the height of the shrub

Appendix B

NHPA Section 106 Correspondence

U.S. Department of Homeland Security
Region X
130 228th Street SW
Bothell, WA 98021

FEMA

September 22, 2020

Ms. Christine Curran
Oregon State Historic Preservation Officer
Oregon Parks & Recreation Department
725 Summer St NE, Suite C
Salem, Oregon 97301
(via email)

Re: FEMA Pre-Disaster Mitigation Program FY18 – City of Ashland Defensible Space and Ignition Resistant Construction Project

Dear Ms. Curran:

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) proposes to fund the City of Ashland (Applicant), through the Office of Oregon Emergency Management (OEM), for a wildfire mitigation project (Undertaking). This funding is available from the Pre-Disaster Mitigation Program (PDM), Fiscal Year 2018. The proposed Undertaking is being reviewed pursuant to Section 106 of the National Historic Preservation Act and the Programmatic Agreement in effect with your office and OEM. Willamette Cultural Resources Associates, Limited's (Willamette) 2020 report titled *Historic Built Environment Survey for the City of Ashland Defensible Space Ignition Resistant Construction Project* has been enclosed to support this consultation. Note that FEMA is also preparing an Environmental Assessment for this Undertaking per the National Environmental Policy Act.

Proposed Undertaking

The proposed Undertaking is for the implementation of preventative measures intended to reduce the potential for wildfire spread and losses due to wildfire throughout the City of Ashland. Work includes creating defensible spaces around up to 1100 homes and retrofitting flammable roofing material on 23 (note Willamette's report incorrectly notes 22) homes with ignition resistant material. Of the 23 homes, 17 properties over 45 years of age (Willamette, Table 1). The project area extends across the city in Sections 4, 5, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 23 of Township 39 South, Range 1 East, Willamette Meridian (Willamette, Figures 1 and 2). Mitigation will include the creation of defensible space within up to 100 feet of the buildings through the removal of brush and select trees, and limbing. Some defensible space work will occur as needed on the properties with planned roof retrofits. The defensible space portion of the Undertaking meets Appendix B, Tier II Allowance F.3. of the Programmatic Agreement. Additionally, wood shake roofing replacements on six (6) of the 23 buildings meets Tier II Allowance F.4. Thus, because these latter two elements of the Undertaking meet Allowances, the focus of this consultation is on the 17 properties that do not meet an Allowance, identified in the Willamette report (Table 1).

Taking into consideration both National Park Service's Preservation Brief 4, *Roofing for Historic Buildings* and Preservation Brief 19, *The Repair and Replacement of Historic Wooden Shingle Roofs,* the Applicant is proposing that participating homeowners replace their shake roofs with

> *fire-retardant materials that match the color, texture and style of the current shakes and the new roof also match the design and installation of the current roof. In other words, the new roof must resemble the current roof as closely as possible* - Willamette

Additional details concerning the proposed fire-resistant alternatives are discussed beginning at the bottom of page 21 of the Willamette report.

Area of Potential Effects

FEMA has determined that the Area of Potential Effects (APE) for the overall Undertaking includes the above outlined Sections in Ashland (Willamette, Figure 1). For purposes of this consultation the APE includes the footprint of each of the 17 properties and the area immediately surrounding for the staging of equipment and supplies (Willamette, Figure 2). Additionally, as further discussed below, some of the properties are located within National Register of Historic Places (NRHP) eligible or listed historic districts. Thus, these districts would also be part of the APE and include: the Skidmore Academy Historic District, the Ashland Downtown Historic District, and the Siskiyou-Hargadine Historic District, as illustrated below.

Historic Property Identification and Evaluation

Based on the Oregon Historic Sites Database and as noted above, there are three (3) NRHP eligible or listed historic districts within the APE, including the Skidmore Academy (NRHP ID#01000832), Ashland Downtown (NRHP ID#00000446), and Siskiyou-Hargadine (NRHP ID#02001008) Historic Districts. And of the 17 properties that are over 45 years of age (Table 1), five (5) were previously determined to be *Eligible* for listing in the NRHP while the remaining 12 have not been evaluated.

Table 1: Properties over 45)'.ears of age within the APE

Address	Year Built	NRHP Status prior to Willamette Survey	District	Eligibility Recommendation following Willamette Survey
321 North Main St	1905	Listed	Skidmore Academy	Eligible
116 Church St	1880	Eligible/Contributing	Skidmore Academy	Eligible
353 Hargadine St	1910	Eligible/Contributing	Ashland Downtown	Eligible
800 Clarence Ln	1890	Unevaluated	No	Eligible
165 Meade St	1932	Eligible/Contributing	Siskiyou-Hargadine	Eligible
63 Bush St	1905	Eligible/Contributing	Skidmore Academy	Eligible
400 Clay St	1915	Unevaluated	No	Eligible

Address	Year Built	NRHP Status prior to Willamette Survey	District	Eligibility Recommendation following Willamette Survey
339 Ridge Rd	1966	Unevaluated	No	Not Eligible
349 Cambridge St	1968	Unevaluated	No	Not Eligible
92 Emerick St	1920	Unevaluated	No	Not Eligible
904 Hillview Dr	1972	Unevaluated	No	Not Eligible
274 Catalina Dr	1966	Unevaluated	No	Not Eligible
286 Catalina Dr	1966	Unevaluated	No	Not Eligible
1163 Bellview Ave	1960	Unevaluated	No	Not Eligible
772 Indiana Street	1967	Unevaluated	No	Not Eligible
701 Oak Knoll Dr	1966	Unevaluated	No	Not Eligible
611 Beach St	1905	Unevaluated	No	Not Eligible

Because the defensible space work and roof retrofits on structures that are less than 45 years old meet Allowances, no identification and evaluation work is planned for these elements of the Undertaking.

Willamette's report contains a detailed Historic Context for the area, photographs, description and determination of eligibility for each of the 17 properties. Five (5) properties, 321 North Main St (individual NRHP ID#98000626) (in Skidmore Academy Historic District), 116 Church St (Skidmore Academy Historic District), 353 Hargadine St (Ashland Downtown Historic District), 165 Meade St (Siskiyou-Hargadine Historic District) and 63 Bush St (Skidmore Academy NRHP Historic District) have either been previously listed or determined NRHP-eligible and contributing resources to the respective historic district. All five (5) are being recommended by Willamette to retain their integrity and thus NRHP eligibility, FEMA agrees with this determination .

Additionally, Willamette recommended two (2) previously unevaluated properties, 800 Clarence Lane and 400 Clay Street as eligible for listing in the NRHP. Historically known as the Ware-McNeal House, 800 Clarence Lane is recommended as eligible locally under Criterion B for its association with Roy W. McNeal, a prominent Southern Oregon Normal School coach and professor, and under Criterion C for its late 19th century vernacular, Queen Anne and Victorian Farmhouse style architecture (Willamette, page 21). The Colonial Revival style residence at 400 Clay Street is recommended for listing under Criterion C as an excellent example of the style and retention of original character defining features (Willamette , page 21). The remaining 10 properties were also evaluated and were recommended as not eligible for listing in the NRHP, as detailed in Table 2 of Willamette's report. FEMA agrees with the NRHP determinations for previously unevaluated properties within the APE.

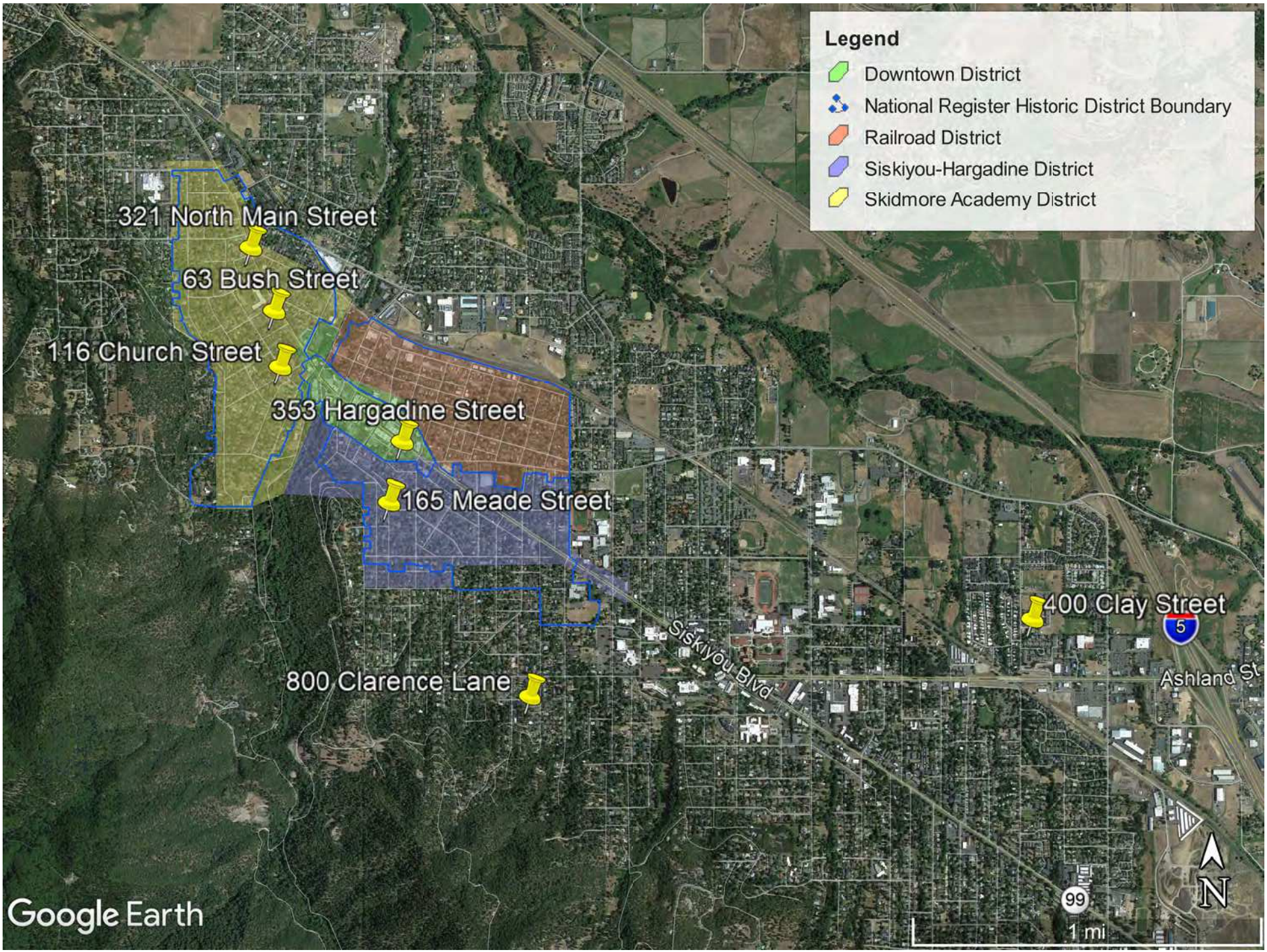
Although the roofing on the eligible/listed/contributing properties is considered a character defining feature, proposed replacement of the wood shingle roofing on these properties will be done using roofing that is similar in color, texture, style and design to the original wood shake roof. Thus, since the retrofits will be consistent with Preservation Briefs 4 and 19, work will meet Secretary of Interior (SOI) Standards for Rehabilitation and any loss of integrity will be minimal. Moreover, because work will meet SOI Standards, there will be also be minimal loss of integrity to the character defining features of the three affected historic districts.

Finding of Effects
Barring further information from your office and based on the aforementioned identification and evaluation efforts and treatment measures, FEMA has determined that the Undertaking will result in No Adverse Effects to Historic Properties, including to the three historic districts. Additionally, the project will be conditioned to protect any unexpected discoveries of historic or archaeological remains during site work. We respectfully request your concurrence with these findings or additional comment. Should you have any questions, please contact me or Margaret Ball at (857) 229-4621 or margaret.ball@fema.dhs.gov. Thank you in advance.

Sincerely,
SCIENCE A KILNER
Digitally signed by SCIENCE A KILNER
Date: 2020.09.22 11:06:39 -07'00'

Science Kilner
Acting Regional Environmental Officer

Cc: Katie Gibble, Ashland
Amie Bashant, OEM
Kate Stenberg, CDM Smith
David Ellis, Willamette CRA


Legend
Downtown District
National Register Historic District Boundary
Railroad District
Siskiyou-Hargadine District
Skidmore Academy District
321 North Main Street
63 Bush Street
116 Church Street
353 Hargadine Street
165 Meade Street
400 Clay Street
800 Clarence Lane
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Ashland St
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Google Earth

Appendix C

City of Ashland Firewise Plant List

NOTES

All plant material should have a minimum of seasonal maintenance to remove dead or diseased plant material.

Characteristics of highly flammable plants include: Dry, dead leaves, twigs or litter, high oil or resin including gums or terpenes & foliage with low moisture content.

Supplemental irrigation (even for drought tolerant plants) is necessary to keep adequate moisture levels in our Rogue Valley climate. In times of drought give preference to irrigating trees and shrubs over lawn and perennials.

OTHER RESOURCES

Waterwise Ashland
www.ashlandsaveswater.org

OSU Extension Service
www.ashland.or.us/privacyscreening

Ashland - Bee City USA
www.ashland.or.us/beecity

Looking for more information?
www.ashlandfirewise.org

FIREWISE PLANT LIST

for

Ashland, Oregon

This information was produced in 2018 in collaboration with City of Ashland's Wildfire Mitigation Commission and Water Conservation Specialist.

Interested in a FREE Firewise Home Assessment?
Call 541-482-2770

CITY OF ASHLAND | FIRE ASHLAND RESCUE 1887

Did You Know?

Fire science indicates that the first 5 feet around structures should be free from all combustible material, including flammable vegetation and bark mulch.

FIREWISE PLANTS

Plants typically have high moisture content, are low growing and deciduous or broadleaf evergreen.

EVERGREEN SHRUBS:

- Mexican Orange, *Choisya* spp.
- Boxwood, *Buxus sempervirens*
- Rhododendron, *Rhododendron* spp.
- Camellia, *Camellia sinensis*
- Distylium, *Distylium* spp.
- Portuguese Laurel, *Prunus luisitanica*
- Silverberry, *Eleagnus* spp.
- Coffeeberry, *Rhamnus* spp.
- Abelia, *Abelia* spp.
- Holly, *Ilex* spp.
- Silk tassel, *Garrya eliptica*
- Strawberry Tree, *Arbutus unedo*

DECIDUOUS TREES:

- Chaste tree, *Vitex agnus-castus*
- Persian ironwood, *Parrotia persica*
- Oak, *Quercus* spp.
- Maple, *Acer* spp.

DECIDUOUS SMALL TREES & SHRUBS:

- Azalea, *Rhododendron* spp.
- Hydrangea, *Hydrangea* spp.
- Japanese Maple, *Acer palmatum*
- Ninebark, *Physocarpus* spp.
- Currant, *Ribes* spp.
- Serviceberry, *Amelanchier* spp.
- Elderberry, *Sambucas* spp.
- Pieris, *Japonica* spp.
- Spirea, *Spiraea thunbergii*
- Crepe Myrtle, *Lagerstroemia* spp.
- Daphne, *Daphne* spp.
- Mock Orange, *Philidelphus* spp.
- Snowberry, *Symphoricarpos* spp.
- Cornelian Cherry, *Cornus mas*
- Tree Peony, *Paeonia suffruticosa*
- Redbud, *Cercis* spp.
- Fruit Trees
- Dogwood, *Cornus* spp.
- Hornbeam, *Carpinus* spp.

PROHIBITED FLAMMABLE PLANTS

Not to be used within 30' of any structure, including outbuildings and decks (AMC 9.04). Avoid mass planting.

Prohibited Trees

Arborvitae/Redcedar, *Thuja* spp.
*Cedar, *Cedrus* spp.
*Cedar/Cypress, *Chamaecyparis* spp.
*Cypress, *Cupressus* spp.
Douglas-fir, *Pseudotsuga menziesii*
Fir, *Abies* spp.
*Hemlock, *Tsuga* spp.
Incense Cedar, *Calocedrus decurrens or Libocedrus decurrens*
*Juniper, *Juniperus* spp.
*Pine, *Pinus* spp.
Giant Sequoia, *Sequoiadendron* spp.
Coast Redwood, *Sequoia* spp.
*Spruce, *Picea* spp.
*Yew, *Taxus* spp.

Prohibited Shrubs

Bitterbrush, *Purshia tridentata*
Broom, *Cytisus* spp.
*Ceanothus, *Ceanothus* spp.
Himalayan Blackberry, *Rubus armeniacus*
Juniper, *Juniperus* spp.
*Lavender, *Lavandula* spp.
*Manzanita, *Arctostaphylos* spp.
*Oregon grape, *Mahonia aquifolium*
*Rosemary, *Rosmarinus* spp.
Sagebrush, *Artemisia tridentata or californica* spp.

Prohibited Grasses

Pampas grass, *Cortaderia selloana*

*Exceptions may be granted for dwarf or prostrate varieties of these species planted beyond 5 feet from any structure, and that follow tree or shrub spacing guidelines as defined in the General Fuel Modification Area Standards in AMC 18.3.10.100.

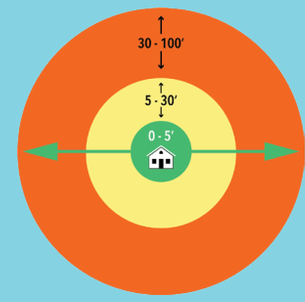
Plant Icon Key

- Drought Tolerant
- Pollinator Plants
- These Plants May Require Deer Protection

Planting Distances

Use this chart to plan your firewise landscaping.

Firewise plants may be planted within 5 feet of a building. Prohibited flammable plants must be planted a minimum of 30' from any structure.



PLANTS TO USE WITH CAUTION

These plants require more annual maintenance to remove dead leaves and branches. Use caution and plant outside of 5' of buildings.

EVERGREEN SHRUBS:

- Japanese Plum Yew, *Cephalotaxus* spp.
- Bottlebrush, *Callistemon* spp.
- Rockrose, *Cistus* spp.

GROUNDCOVERS:

- Creeping Thyme, *Thymus* spp.
- Creeping Oregon Grape, *Mahonia repens*
- Creeping Strawberry, *Fragaria* spp.
- Kinnickkinnick, *Arctostaphylos uva-ursi*
- Phlox, *Phlox subulata*
- Sweet Woodruff, *Galium odoratum*
- Rosemary ground cover, *Rosmarinus prostratus*

THIS LIST IS NOT EXHAUSTIVE! Ornamental grasses and herbaceous perennials offer color, and texture, attract beneficials and are typically suitable for Firewise plantings. Additional Firewise plant resources can be found on the back of this pamphlet or your local nursery.

Appendix D

City of Ashland Water Resource Protection Zones Map

Water Resource Protection Zones Requirements

Stream Bank Protection Zones

Riparian Corridors (Goal 5 Resource)

For all fish-bearing streams with average annual stream flow less than 1,000 cubic feet per second (cfs), the Stream Bank Protection Zone shall include the stream, plus a riparian buffer extending 50 feet upland from the top of bank.

Local Streams

For non fish-bearing streams, the Stream Bank Protection Zone shall include the stream, plus a riparian buffer extending 40 feet upland from the centerline of the stream.

Intermittent and Ephemeral Streams

For intermittent and ephemeral streams, the Stream Bank Protection Zone shall include the stream, plus a riparian buffer extending 30 feet upland from the centerline of the stream.

Wetland Protection Zones

Locally Significant Wetlands

W1, W4 through W10, W12, W14 (Goal 5 Resource)

For wetlands classified as locally significant on Ashland's Local Wetland Inventory (LWI), the Wetland Protection Zone shall consist of lands identified to have a wetland presence on the wetland delineation, plus all land within 50 feet of the upland-wetland edge.

Possible Wetlands (PW)

For wetlands not classified as locally significant on Ashland's Local Wetland Inventory (LWI), the Wetland Protection Zone shall consist of lands identified to have a wetland presence on the wetland delineation, plus all land within 20 feet of the upland-wetland edge.

Note: Where the stream bank protection zone includes all or portions of a locally significant wetland, the standard distance to the stream bank protection zone shall be measured from, and include, the upland edge of the wetland.

Other Relevant Data:

- 100-Year Flood Zone (FEMA)
- Ashland Flood Zone
- Other Water Features
- Piped or Culverted Stream Reach

*Note:
The Local Wetlands Inventory (LWI) is a technical study supporting the Ashland Comprehensive Plan adopted by Ordinance 2999.

This is to certify that this is the Official Water Resources Map referred to in Section 18.63.040 of the Ashland Municipal Code.

Signed:

Mayor _____ *Date* _____

City Recorder _____ *Date* _____

Water Resources

Riparian_Wetlands.mxd Last data revision: 8/3/2007 Print date: 12/16/2009