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Draft Supplemental Environmental Assessment

Forest Park Wildfire Mitigation

HMGP 5195-17R City of Portland

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FEMA

U.S. Department of Homeland Security Federal Emergency Management Agency Region X
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SECTION ONE| INTRODUCTION

The City of Portland (City) has applied to the Federal Emergency Management Agency (FEMA) through the Oregon Office of Emergency Management (OEM) for a grant under FEMA's Hazard Mitigation Grant Program (HMGP). OEM is the direct recipient for the grant, and the City is the subrecipient. The City proposes to use grant funds to implement a wildfire mitigation project in Forest Park in Portland, Multnomah County. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act and funds for this project were made available following 2017 and 2018 wildfires in Oregon that received Fire Management Assistance Grants. Under the HMGP, federal funds pay 75 percent of the project cost, and the remaining 25 percent comes from nonfederal funding sources.

FEMA has prepared this Supplemental Environmental Assessment (SEA) in accordance with the National Environmental Policy Act (NEPA) of 1969; the Council on Environmental Quality (CEQ) regulations to implement NEPA (40 Code of Federal Regulations [CFR] Parts 1500 to 1508, as amended); and the U.S. Department of Homeland Security's 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. Where existing NEPA analyses exist, FEMA's Instruction allows the use of that documentation to avoid redundancy and unnecessary paperwork. Accordingly, this SEA supplements an Environmental Assessment (EA) FEMA completed in 2006 for a similar project in Forest Park which was funded with FEMA Pre-Disaster Mitigation Grant Program funds (PDMC-PJ-10-OR-2005-005). That EA was titled *Final Environmental Assessment (EA) Urban Fuel Load Reduction in Portland, OR (March 2006)* [2006 EA] and is thus incorporated by reference and will be referred to throughout this SEA. Additionally, recent changes to the CEQ NEPA regulations became effective on September 14, 2020 and apply to subsequent NEPA reviews. This SEA substantively commenced prior to the changes; therefore, this SEA conforms to the CEQ regulations that were in place before the changes became effective. This SEA is intended to provide supplemental discussions and/or decision-making documentation for resources/areas of concern that are required to be evaluated in all FEMA EAs. To provide sufficient detail, pertinent portions of the 2006 EA are summarized or cited in this SEA. The 2006 EA includes both a Glossary and list of Acronyms and Abbreviations that are pertinent to this SEA but not repeated herein.

The proposed project is located on the west side of Portland in Forest Park which encompasses 5,200 acres within 17,331 acres of natural area (see 2006 EA Appendix A, Figure 1). Large areas of Portland are comprised of natural areas, stream corridors, and open spaces. While this is a community asset, it can also be a fire hazard at the wildland-urban interface (WUI) such as around Forest Park. Large areas of highly flammable, non-native invasive vegetation are present on steep slopes near homes and businesses. Stands of dead trees, and growth of weedy trees and vertical ladder fuels are expanding. For these reasons, the risk for a catastrophic wildfire is increasing.

The proposed project would allow Portland Fire & Rescue (PF&R) and Portland Parks & Recreation (PP&R) to significantly reduce fuel loads in a critical 500 acre target area of Forest Park and establish conditions that can more easily and affordably be maintained in perpetuity (Appendix A Figure 1). By removing ground and ladder fuels, the likelihood of a wildfire rapidly spreading throughout the park and surrounding Linnton community will be reduced. The proposed project, along with ongoing and prior work, will help improve overall forest health and leave the park less vulnerable to wildfires and pose a lower risk to nearby residences, businesses, and critical infrastructure in Linnton. There is also outreach and education as part of the proposed project, intended to promote defensible space measures on private property, which would lessen the need for disaster assistance for losses and damages to the built environment in the WUI.

SECTION TWO | PURPOSE AND NEED

FEMA's HMGP provides funds to eligible state and local governments, federally recognized tribal governments, and nonprofit organizations to help implement long-term hazard mitigation measures after a presidential major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable risk mitigation measures to be implemented during the recovery from a declared disaster. Specifically, the purpose of the proposed HMGP project is to reduce wildfire hazards in the City's Forest Park and adjacent areas consistent with the *Forest Park Natural Resource Management Plan* (1995) [NRMP], *Forest Park Wildfire Risk Reduction Final Report* (2008), *Mitigation Action Plan* (2016), and Multnomah County's *Wildland Protection Plan* (2011) [WPP].

Fuel loads in Forest Park, which includes a 5,151-acre maintained open space park, currently present a real danger to property and people who live, work, and recreate in this area. An excess of highly flammable non-native and invasive vegetation and steep slopes combine to increase fire risk in this area. Much of the invasive vegetation consists of ivy, clematis, non-native blackberry vines, holly, and laurel trees. In addition to the invasive ground and ladder fuels, recent drought conditions in the area have worsened wildfire hazards leaving more dead or dried out flammable vegetation. When fire is introduced by human and/or natural causes and the flammable vegetation ignites and spreads, there is the potential for risk to human lives, immediate damage to property from the fire, and potential subsequent damages due to landslides on slopes where fire has removed soil-holding vegetation. There are about 192 residences near the target area and the City estimates property values at the wildland-urban interface exceed $62,028,014. Additionally, Linnton has significant Critical Energy Infrastructure (CEI) facilities, petroleum storage, and other industrial/commercial facilities and businesses along Highway 30 that may be vulnerable to wildfire hazards. Moreover, Highway 30 along with railroad lines comprise a critical transportation corridor through Linnton. Over 20,000 Portland residents and hundreds of thousands of park visitors would feel the devastation resulting from a catastrophic fire in this area. Based on some of the above factors, the WPP's assessment for Forest Park ranked it as at a high risk for a wildfire and determined Linnton is an "community at risk" (City of Portland 2018). Thus, the need for this action is to reduce or eliminate the risk to public health and safety, improved property, and CEI from wildfires in this Portland natural area.

SECTION THREE | ALTERNATIVES

As with the 2006 EA this SEA analyzes a No-Action Alternative, the Proposed Action, and alternatives considered but dismissed from further study.

3.1 No Action Alternative

Under this alternative FEMA would not provide funding to reduce the fuel loads in Forest Park. In accordance with its NRMP, the City would continue to conduct some annual fuels treatment and noxious weed abatement work in the Park but at a reduced rate. Existing conditions in the target area would continue to deteriorate, including forest health and further spread of invasive vegetation. People and nearby structures and infrastructure would continue to be at risk from catastrophic fire events.

3.2 Proposed Action

Under the Proposed Action, PP&R and PF&R would collaborate on a hazardous fuels reduction project targeting a 500-acre area in Forest Park and directly surrounding the community of Linnton. To reduce the rapid spread of wildfire to residences and critical infrastructure, activities would include understory enhancement, ladder fuel removal and pruning, and the creation of defensible space wherever park property in the WUI falls within the "home ignition zone" of adjacent residences (Appendix A Figure 2).

PP&R would contract with professional forest management crews that would use manual, mechanical and chemical methods to reduce hazardous fuel loads and invasive vegetation surrounding the Linnton neighborhoods as detailed in Table 1. As illustrated in Appendix A Figure 3, invasive vines and weedy trees are scattered throughout the treatment area. Work would be completed over a two-year period. Ground crews would move through the forest using hand-held equipment to cut or apply herbicide to invasive trees, shrubs, ground cover and vines. Crews would be state licensed herbicide applicators, would be supervised by PP&R staff, and work done in accordance with PP&R's *Integrated Pest Management Program* (2019) program. In addition, selective pruning to reduce fuel sources and ladder fuels in strategic locations would occur.

Following the invasive plant removal work, contractors, staff, and volunteer crews would re-plant sites with low-growing native species of shrubs and ground covers, preventing erosion and restoring healthier conditions. In consultation with the Oregon Department of Forestry (ODF), plant species will be chosen that promote long-term fire resilience and minimize hazardous fuels. Although no plant is considered fire-proof, there are many native plants that have fire-resistant properties such as higher leaf moisture content, less deadwood accumulation, and water-like sap with lower resin levels. The *Portland Plant List* will also guide planting. It is a reference document with information about local native plants, including classified native trees and shrubs that are "fire accelerants" – explaining their range of flammability characteristics. On the list of fire accelerant "neutral" species, proposed for planting, are options like vine maple, ocean spray, Indian plumb, mock orange, red current, thimbleberry, salmonberry, elderberry, and

snowberry. In addition, revegetating with low stature plants, such as sword fern, will reduce the potential for ground fire and ladder fuels (City of Portland 2016b).

Ground disturbance is limited to bareroot planting, which involves the creation of a small slot in the soil and the installation of the plant in this space. Soil would not be removed from the area nor excavated. Straw mulch may be applied as necessary to maintain surface sediment filtration in areas where invasive plants have been manually removed and soil exposed. There will be no staging of equipment off improved surfaces within the project area. Any chipping would occur in an established disturbance area, such as an existing access road.

Table 1:
Summary of Proposed Work

Activity	**Species Targeted**	**Method/Equipment Used**	**Disposal Method**
Reduce surface fuels	Ivy (*Hedera sp.)* Non-native blackberry (*Rubus sp.*)	Herbicide application with backpack sprayers, manual removal directly adjacent to trails and surface water areas.	Treated vegetative matter left in place to decompose after treatment.
Reduce ladder fuels	Ivy on trees (*Hedera sp.*) Non-native blackberry (*Rubus sp.*) Clematis (*Clematis vitalba*)	Cut vines from trees with handheld equipment (e.g. pole saws, chainsaws) and treat stump with herbicide applied by spray bottles.	Cut and scatter - vegetative matter decomposes after treatment.
	Low limbed cedar *(Thuja plicata)*	Limb-up trees, where appropriate, to reduce ladder fuel effect, using handheld equipment (e.g. pole saws, chainsaws).	All material to stay in park. Cut and scatter or haul into isolated clusters. Isolated clusters to be chipped or left in place.
	Holly (*Ilex sp.*) Laurel (*Prunus sp.*)	Hand-cut and stump-treat invasive weedy trees and shrubs with handheld equipment (e.g. pole saws, chainsaws) and treat stump with herbicide applied by spray bottles.	All material to stay in park. Cut and scatter or haul into isolated clusters. Isolated clusters to be chipped or left in place.

Planting	Low-growing native shrub and ground covers that promote fire resilience (e.g. ferns)	Contract and volunteer crews plant bare root and container plants with handheld tools, (e.g. spades).	N/A

The herbicide mix that would be used for this project was identified by PP&R as the most effective for control of the target invasive plants and includes 4% glyphosate (Rodeo), 1.6% triclopyr (Vastlan), and a surfactant (Competitor). This herbicide mix was also chosen to comply with the PP&R Salmon-Safe Certified Integrated Pest Management Program. State certified contractors would treat invasive plants with herbicide in the fall. Additionally, herbicide application would include buffer zones (conservation measures) to prevent herbicide introduction into the existing water bodies within Forest Park. For broadcast spraying, the exclusion zone will be 100 feet from the Ordinary High-Water Mark (OHWM) on wet channels and 50 feet on dry channels. To allow for additional fuels reduction, limited herbicide application (spot spraying) could occur up to 25 feet from the OHWM of each. And within 25 feet of the OHWM, only manual removal of invasive vegetation and direct herbicide application (e.g., wicking, cut stump) may be used. These conservative buffer zones when combined with the herbicide application method will reduce any potential of herbicide drift during application and reduce surface runoff to de-minimis levels.

Follow-up maintenance is not part of the proposed federal grant funding; however, it is a requirement of the grant award and may be considered an effect of the proposed action. Longer-term maintenance would be required for 20 years to ensure the effectiveness of fuels reduction treatments in the project area. Maintenance is scheduled on an annual basis, during adaptive management monitoring sessions which occur in the early spring and summer. Treatments include herbicide application, mechanical cutting, and manual labor to control vegetative ladder and ground fuels. A single treatment is typically adequate to control these flammable invasive species on an annual basis for a period of two years, and every other year beyond. Thus, PP&R would conduct treatment in the target area annually per a required maintenance agreement.

PF&R and PP&R will also partner with the non-profit Forest Park Conservancy to conduct homeowner outreach and education in the park adjacent Linnton neighborhoods, providing information on local wildfire risk and guidance on creating defensible space on private property. There are about 192 single family residences neighboring the proposed project area.

3.3 Additional Action Alternatives Considered and Dismissed

Some other alternatives to reducing wildfire hazards from the target area were considered. A variation of the proposed action was evaluated that included use of prescribed burning in the target area to reduce fuels. This alternative was dropped from further study based on issues of safety and fire preparedness risks.

Another alternative to the proposed action included implementation of a defensible space and ignition resistant material retrofit program for properties in the Linnton community.

This would be consistent with the Oregon Forestland-Urban Interface Fire Protection Act of 1997 which encourages homeowners in areas of wildfire risk to complete fuels reduction on their properties. The scope of this alternative would be smaller-scale and occur within private property only and would be overseen by the PF&R or a partnering non-profit which would assist homeowners by conducting wildfire risk assessments of residential properties. These assessments would produce prescriptions for structure modifications and/or vegetation management treatments to create fire resistive structures and defensible space within the home ignition zone. Grant funds would be offered through a homeowner cost-share program, supporting approved defensible space activities. These activities could be implemented by the homeowner or a contracted professional.

This alternative has many potential benefits and could be complimentary to the proposed action; however, it would not manage fuels within the outer-most home ignition zone for Linnton residences, which for many falls within Forest Park boundaries. This alternative also poses feasibility concerns. Such a project would require community notifications, obtaining right-of-access agreements, developing the administrative structure to execute cost-share agreements, and conducting hazardous fuels assessments of individual properties for analysis (City of Portland 2018). Furthermore, this does not meet the stated purpose of the project of reducing wildfire hazards in Forest Park itself.

SECTION FOUR |AFFECTED ENVIRONMENT and ENVIRONMENTAL CONSEQUENCES

This section describes the environment potentially affected by the alternatives, evaluates potential environmental impacts, and recommends measures to avoid or reduce those impacts. The combined effects from the proposed action and reasonably foreseeable other planned actions that are proximate to or related to the proposed action will be discussed as needed by resource. When possible, quantitative information is provided to establish potential impacts, and the potential impacts are evaluated qualitatively based on the criteria listed in the table below. The study area generally includes the project area and access/staging areas needed for the proposed action. If the study area for a particular resource category is different from the project area, the differences will be described in the appropriate subsection.

Table 2: 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.

FEMA has analyzed the consequences of the considered alternatives. This SEA will refer to the 2006 EA and as needed provide additional discussions and/or further documentation and analysis.

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 have been removed from further consideration in this SEA.

Table 3: Resources Eliminated from Further Consideration

Resource Topic	Reason for Elimination
Geology and Topography	Section 4.2.2 of the 2006 EA describes the project area's geology and topography. Defensible space management and hazardous fuels reduction and plantings are surface-level activities that would not affect geology and topography.
Wild and Scenic Rivers Act	According to the National and Wild and Scenic Rivers website (National Wild and Scenic Rivers 2020), the closest wild and scenic river, the Sandy River, is approximately 20 miles east 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 Multnomah County. There is a Sole Source Aquifer located in Clark County, WA approximately 4 miles from the project area. Due to the nature of the project 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 would not change existing land uses and is consistent with the current zoning. The alternatives would have no effect on land use and zoning.
Public Utilities	Since the proposed action activities would occur inside the park there would be no potential to affect public utilities in the project area.
Transportation	Since the proposed action activities would occur inside the park there would be no potential to affect transportation patterns in the project area.

4.2 Soils

Soils in Forest Park are generally described Section 4.2.2 of the 2006 EA. The Farmland Protection Policy Act requires federal agencies to minimize the unnecessary conversion of farmland into non-agricultural uses. According to the NRCS (2021), the project area includes no prime farmland soils or farmlands of statewide importance.

No Action

Under the no action alternative, FEMA would not provide funding to reduce urban fuel loads in Forest Park, but some limited annual fuels treatment and invasive vegetation abatement work would continue. This would result in negligible soil disturbance from vegetation removal activities. However, in the absence of a substantive reduction in fuel loads, in the event of a major wildfire, there could be a significant loss of vegetation which could lead to an increase in soil erosion and mudflows from rain events, especially on steep slopes such as those in the project area. The loss of vegetation can result in higher soil temperatures, increased evaporation, and reduced soil moisture. High-intensity wildfires can alter the physical and chemical properties and the moisture, temperature, and biotic characteristics of soils. Heat from wildfires can cause soils to form hydrophobic layers that repel water, resulting in decreased stormwater infiltration and increased runoff (USFS 2005). Thus, in the absence of a wildfire, the no action alternative would have negligible effects on soils. Farmland soils would not be impacted. 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, invasive vegetation abatement, defensible space and hazardous fuels reduction work, and planting would be conducted with ground crews using hand tools. Vehicles and mechanical equipment, such chippers, would be restricted to existing access roads or trails, thereby eliminating erosion and soil compaction risks. Planting ground disturbance is limited to bareroot planting, which involves the creation of a small slot in the soil and the installation of the plant in this space. Straw mulch may be applied as necessary to maintain surface sediment filtration in areas where invasive plants have been manually removed and soil exposed. The proposed action would not convert farmland soils. Based on treatment methods the proposed action would have negligible adverse effects on soils and long-term beneficial effects by reducing the risk of soil damages and erosion from major wildfires.

4.3 Air Quality and Climate

The 2006 EA can be referred to for the regulatory basis for air quality considerations and the climate in the Portland area. According to the U.S. Environmental Protection Agency's (EPA) Green Book (2020), Multnomah County is currently in attainment status for all criteria pollutants. Although the County may be in attainment status, the Linnton community is in a heavily industrialized area of Portland and straddles a major transportation corridor. There are several industrial facilities in Linnton that have air contaminant permits from either EPA or the Oregon Department of Environmental Quality (ODEQ), and many more in the surrounding area. Additionally, Oregon Department of Transportation (ODOT) data indicates over 2,000 trucks pass through Linnton daily, with most of these emitting diesel exhaust fumes with particulate matter (Linnton Neighborhood Association 2019). Although air quality varies day to day, based on the industrial facilities and transportation uses present, ambient air quality in the Linnton area is generally diminished.

The effects of climate change in the Portland area are apparent with warmer and drier than average conditions causing earlier springs and hotter summer temperatures. The typical wildfire season, June through October, also is extending. These conditions impact fire behavior, ignitions, fire management, and vegetation fuels. “Hot dry spells create the highest wildfire risk. Increased temperatures may intensify wildfire danger by warming and drying out vegetation. Climate change may also increase winds that spread fires and thunderstorms producing lightning that ignite fires.” More wildfires could release stores of carbon and further contribute to the buildup of greenhouse gases (City of Portland 2018).

No Action
Under the no action alternative FEMA would not provide funding to reduce urban fuel loads in Forest Park, some limited annual fuels treatment and invasive vegetation abatement work in the Park would continue. The risk of wildfire spread would remain high. Wildfire smoke, composed of carbon dioxide, water vapor, particulate matter, carbon monoxide, nitrogen oxides, organic chemicals such as hydrocarbons, and trace minerals; can deteriorate air quality to hazardous levels and expose vulnerable populations such as the young and elderly to harmful pollutants.

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). If a wildfire were to reach the industrial facilities in Linnton and ignite stored petroleum products or hazardous materials, air quality would become particularly hazardous. Additionally, major wildfires can emit high levels of greenhouse gases into the atmosphere, contributing to climate change, which exacerbates the risk of wildfires. Thus, in the event of a wildfire in the Park, the no action alternative could have a negligible to major impact on regional air quality and climate, depending on the intensity and scale of the wildfire. Linnton could be particularly impacted with already diminished air quality exacerbated by smoke.

Proposed Action
As with the 2006 EA, negligible impacts to air quality are expected from herbicide use due to the small-scale, localized, hand-applied methods and the non-volatile nature of the herbicide. The particle size of the herbicide spray would cause it to sink, causing no affect to air quality. Negligible impacts to air quality are expected from work vehicles and the use of chainsaws, weed cutters and other small power tools due to the short duration, small-scale, localized nature of their proposed use. By reducing the risk of wildfire spread and scale within the Park through a reduction in hazardous fuels, Linnton would benefit in the long-term by being less vulnerable to further diminished air quality from wildfire hazards. Given the small scale of the project, there would be negligible but beneficial impacts on climate change.

4.4 Visual Quality and Aesthetics

Defensible space and hazardous fuel reduction activities alter vegetation and thus have the potential to affect visual quality. Because the target area is within Forest Park, it would generally be considered to have good visual quality and aesthetics. The analysis of visual quality is a qualitative analysis that considers the 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, 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.

No Action
Under the no action alternative FEMA would not provide funding to reduce urban fuel loads in Forest Park, some limited annual fuels treatment and invasive vegetation abatement work in the Park would continue. Perceptible changes in the appearance and visual quality of the project area would be localized and negligible because of the small amount of work. However, a major wildfire would be more likely to spread through the area under the no action alternative, which could have a minor to major adverse impact on the visual quality the Park, depending on the intensity and extent of the fire damage on vegetation.

Proposed Action
Under the proposed action, the treatment area would undergo a visual change from the fuels reduction activity, from a relatively dense understory to a more open understory, which could be perceived as a cleaner and safer landscape. Visual changes would be apparent with a large area planned for treatment. Hazardous fuel reduction activities conducted along ridgelines, roadways and trails would increase the number of viewers who view the changes in vegetation. A total of

500 acres would be treated within the project area, leaving portions of Forest Park unchanged. Defensible space and hazardous fuel reduction activities would have negligible to minor, short-term effects on visual quality and aesthetics. In the long-term, the risk of wildfire spread in the project area would be reduced, which would have a minor long-term beneficial effect on visual quality and aesthetics by reducing the chance that a high-intensity wildfire occurs and destroys vegetation.

4.5 Water Resources and Wetlands

The USFWS' National Wetland Inventory (NWI) shows mapped streams within the Forest Park target area but no wetlands (USFWS 2021). This is likely due to the steep slope of the Forest Park landscape and the well-drained characteristics of many of its soils. There are several small perennial and intermittent streams that flow through Forest Park, cross under NW St. Helens Rd and pass through 0.1 to 0.2 miles of developed industrial areas before flowing into the Willamette River.

No Action

Under the no action alternative FEMA would not provide funding to reduce urban fuel loads in Forest Park, but some limited annual fuels treatment and invasive vegetation abatement work in the Park would continue. This would result in minimal soil disturbances from vegetation removal activities and thus negligible potential for soil erosion into streams. The risk of wildfire spread would not be substantially reduced. If a wildfire occurs and spreads, the loss of vegetation would impact surface water quality through increased soil erosion and sedimentation, as described in Section 4.2, and increased temperatures from the loss of shade along riparian zones. Increased stream discharges, which could include mudflows, in the short and long term could cause damage to downstream infrastructure such as bridges and culverts. The no action alternative could have a minor to major impacts on surface waters and water quality depending on the scale and intensity of a wildfire.

Proposed Action

As described Section 3.2, PP&R will adhere to work buffer zones to minimize herbicide introduction into the perennial and intermittent streams in the project area. For broadcast spraying, the exclusion zone will be 100 feet from the OHWM on wetted channels and 50 feet on dry channels. To allow for additional fuels reduction, spot spraying could occur up to 25 feet from the OHWM of each. Within 25 feet of the OHWM, only manual removal of non-native invasive vegetation and direct herbicide application (e.g., wicking, cut stump) may be used. These mitigation measures will reduce the potential for herbicide spray drift and runoff into streams to de-minimis levels. Pruning to reduce ladder fuels would occur in select areas using hand-held equipment, with chipping equipment remaining on existing access roads or trails. Low-growing native species of shrubs and ground covers would be planted as needed using a bareroot planting method, which would limit ground disturbance. Straw mulch may be applied as necessary to maintain surface sediment filtration in areas where invasive plants have been manually removed and soil exposed. Based on the manual, mechanical, and herbicidal vegetation removal and native planting methods and mitigation measures, the proposed action would have negligible impacts on surface waters. Removal of vegetative fuels in the project area would reduce the risk wildfire spread and the potential post-fire soil erosion into streams. Therefore, the

proposed action would have minor long-term beneficial effects on drainages in and downstream of the project area.

4.6 Floodplains

The 2006 EA includes a discussion of EO 11988 *Floodplain Management* and related analysis. Based on FEMA Flood Insurance Rate Map 4101830060F, effective October 19, 2004 none of the proposed project area falls within the 1- percent floodplain. However, Forest Park is adjacent to the Willamette River floodplain to the east.

No Action

Under the no action alternative, FEMA would not provide funding to reduce urban fuel loads in Forest Park, some limited annual fuels treatment and invasive vegetation abatement work in the Park would continue. Since there are no floodplains in the target area, there would be no floodplain impacts from this work. However, this alternative does not meaningfully reduce hazardous fuels and the risk of wildfire spread, which could damage or eliminate existing vegetation beyond the project area, depending on the scale and intensity of a wildfire. If a wildfire were to occur, vegetation could be destroyed, which could lead to increased stormwater runoff following precipitation events. The loss of vegetation would adversely affect natural floodplain functions outside of the project area by contributing to increased stormwater runoff and sedimentation. If severe enough, additional sedimentation, such as from post-fire flash flood mudflows, could occur where slopes are steeper. This could lead to an increase in the base flood elevation of downstream floodplains over time and thus greater flood hazard risks to structures in those floodplains in the long term. Therefore, the no action alternative could have minor to moderate adverse effects on floodplains in surrounding areas, depending on the intensity and scale of a wildfire.

Proposed Action

Since there are no floodplains within the project area, the proposed action would have no impact on floodplains. The proposed action's reduction in hazardous fuels and potential wildfire damages and spread risks could have minor, long-term beneficial effects on floodplains in the surrounding area by avoiding or minimizing sediment runoff from burned areas.

4.7 Vegetation

Forest Park is comprised of a varied and evolving forest ecosystem as described in Section 4.5.1 of the 2006 EA and the project area's native and invasive vegetation is as discussed therein. About half of the park is ecologically healthy with native species and watershed function, while the remaining area is significantly impacted by spreading invasive plants and weedy trees (Appendix A Figure 3). The impacts are a consequence of logging, wildfire, and the Park's interface with residential and urban development including roads and utility easements that bisect the park (City of Portland 2018). EO 13751 *Safeguarding the Nation from Invasive Species* 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. PP&R's *Integrated Pest Management Program* (2019) guides ongoing treatment of invasive vegetation in the Park.

No Action
Under the no action alternative, FEMA would not provide funding to reduce urban fuel loads in Forest Park, some limited annual fuels treatment and invasive vegetation abatement work in the Park would continue consistent with PP&R's *Integrated Pest Management Program* (2019). The encroachment by invasive vegetation would persist, contributing to more fuel loads and crowding out native vegetation. Unabated, the invasive vegetation could alter hydrological processes and suppress natural forest regeneration, leading to a gradual loss of native plants and trees. A 'weakened' forest is both less resilient to wildfires and enhances the potential for a more intensive and spreading fire. In the event of a fire, invasive species such as blackberry act as an accelerant to spread fire. Invasive vines such as ivy and clematis become ladder fuels which can lead to a canopy fire which is much harder to suppress (City of Portland 2018). Thus, risk of wildfire spread would remain high under this alternative. In the event of a wildfire, depending on the intensity and scale, there could be partial or complete loss of vegetation in and around the project area. In addition, a major wildfire could result in changes to the soil characteristics as described in Section 4.2 that could delay regrowth of forest vegetation for many years following the fire. In the event of vegetation loss from a wildfire, non-native invasive vegetation might be expected to become established over larger areas. Thus, there could be minor to major adverse impacts on vegetation under the no action alternative.

Proposed Action
Under the proposed action, the integration of manual/mechanical/herbicidal vegetative treatments described in Section 3.2 would result in a minor loss of individual native plants, shrubs, and trees. Various disturbances, as a result of the work crews, hand thinning/limbing, and herbicide application would result in localized, direct, and minor effects to native plant communities. However, thinning is generally desirable and promotes reduction of overstocked understory trees and shrubs. The treatment of invasive vegetation described in Table 1 would help halt spread and allow native vegetation restoration as augmented by proposed more fire resilient plantings described in Section 3.2. Since the purpose of the project is to treat invasive species and work would be implemented using best management practices detailed with PP&R's *Integrated Pest Management Program* (2019*)*, the proposed action is consistent with E.O. 13751. Changes in the vegetative community or species population would be measurable within the treatment area. In the long term, the proposed action would have moderate beneficial effects because the risk of wildfire spread, and associated vegetation damage and invasive species spread, would be reduced in the project area along with helping to restore forest health and wildfire resiliency.

4.8 Fish & Wildlife
Section 4.6 of the 2006 EA provides an overview of the regulatory basis for evaluating biological resource impacts and a discussion of fish and wildlife resources that are found in Forest Park. There are over 100 species of birds, 50 species of mammals, and 400 species of invertebrate found in the park. About half of the park is in good ecological health in terms of native plant species and proper watershed function (City of Portland 2018). In accordance with Section 7 of the Endangered Species Act (ESA) a Biological Evaluation (BE) of the project area was completed using current listed species and critical habitat information from the USFWS and

National Oceanic and Atmospheric Administration Fisheries (NOAA). And per the Magnuson-Stevens Fishery Conservation and Management Act, a review of NOAA Fisheries information determined there is no essential fish habitat (EFH) in the project area. Most of the streams in the project area are small, intermittent upper watershed tributaries and EFH only occurs downstream of the proposed project area.

Federally Listed Species and Critical Habitat

Table 4 provides a complete listing of species and designated critical habitats potentially present in the project area. The BE determined that based on the lack of suitable habitat ultimately none are present in the project area. While Forest Park is forested and may contain marginal or dispersal habitat for Northern Spotted Owls (NSO), it is isolated from known activity centers by urban and residential landscapes. Coordination with the Oregon Department of Fish and Wildlife (2020) and Park staff confirmed there is no regular NSO activity in Forest Park, and that there are active Barred Owls (Strix varia) in the area which displace NSOs. The Oregon Biodiversity Information Center (ORBIC) GIS data indicates the nearest documented NSO center is 20 miles away. Any NSO present in Forest Park would be transitory and would be acclimated to anthropogenic noise sources.

Table 4 ESA Listed Species and Critical Habitat Potentially Present

Agency	Listed Species (ESU/DPS)	Status	Presence in Action Area	Listing	Critical Habitat
NMFS	Lower Columbia Steelhead *Oncorhynchus mykiss*	T	No	Revised 4/14/2014	9/2/2005
	Upper Willamette River Steelhead *O. mykiss*	T	No	Revised 4/14/2014	9/2/2005
	Lower Columbia River Chinook *O. tshawytscha*	T	No	Revised 4/14/2014	9/2/2005
	Upper Willamette River Chinook *O. mykiss*	T	No	Revised 4/14/2014	9/2/2005
	Lower Columbia River Coho *O. kisutch*	T	No	Revised 4/14/2014	3/25/2016
	Green Sturgeon *Acipenser medirostris*	T	No	Revised 4/14/2014	10/9/2006
USFWS	Bull Trout *Salvelinus confluentus*	T	No	6/10/1998	10/18/2010
	Bradshaw's Desert parsley *Lomatium bradshawii*	E	No	09/30/1988	NA
	Kincaid Lupine *Lupinus sulphureus kincaidii*	T	No	01/25/2000	10/31/2006
	Nelson's Checkermallow *Sidalcea nelsoniana*	T	No	02/12/1993	07/11/2012
	Water Howelia	T	No	07/14/1994	11/01/1991

	Howellia aquatilis				
	Willamette Daisy *Erigeron decumbens*	E	No	01/25/2000	10/31/2006
	Streaked Horned Lark *Eremophila alpestris strigata*	T	No	11/04/2013	10/03/2013
	Yellow-billed Cuckoo *Coccyzus americanus*	T	No	11/03/2014	02/27/2020
	Northern Spotted Owl *Strix occidentalis caurina*	T	Unlikely	06/26/1990	12/04/2012

Migratory Birds

Fuels reduction activities such as vegetation removal have the potential to directly and indirectly affect migratory birds. Forest Park provides habitat for a wide variety of migratory birds including songbirds and birds of prey. The USFWS Office of Migratory Bird Management maintains a full list of migratory birds that may occur in the Park (USFWS 2021). The following are migratory birds of conservation concern: Bald Eagle (*Haliaeetus leucocephalus*), California Thrasher (*Toxostoma redivivum)*, Great Blue Heron (*Ardea herodias fannini),* Olive-sided Flycatcher (*Contopus cooperi),* Rufous Hummingbird (*Selasphorus rufus);* and the Western Screech-owl (*Magascops kennincottii kennincottii)*. The combined nesting season for these birds extends from January 1 to September 30. For work that has the potential to impact migratory birds, the City conducts work consistent with its guidance: *Protecting Nesting Birds Best Management Practices for Vegetation and Construction Projects* (May 2017).

No Action

Under the no action alternative, FEMA would not provide funding to reduce urban fuel loads in Forest Park. Some limited annual fuels treatment and invasive vegetation abatement work in the Park would continue. Due to the limited extent and nature of this work there would be negligible effects on common fish and wildlife species. Similarly, impacts on migratory birds would be negligible even if work were performed during the nesting season. There would be no impacts to ESA-listed species since none are present. However, if a major spreading wildfire were to occur because of the lack of substantive fuels reduction, the no action alternative could result in the significant loss of vegetation, depending on the scale and intensity of the fire. Therefore, the no action alternative could result in minor to moderate impacts to wildlife through the loss of habitat in the short- and long-term and/or the mortality of individuals.

Proposed Action

The proposed action has the potential to impact common wildlife species and associated habitats occurring within the project area because of the removal of understory vegetation and select trees. Additionally, noise impacts related to vegetation removal activities could disturb wildlife. Because only a small portion of Forest Park would be treated, wildlife species would be able to temporarily relocate to suitable habitat nearby. There would be no in-water work and herbicide use would be restricted in riparian buffers described in Section 3.2, providing protection for aquatic species. The proposed action could affect migratory birds if work were to occur during

the breeding season, between January 1 and September 30. Specific project area Birds of Conservation Concern breed between January 1 and August 31. The disturbances in the project area could result in inadvertent nest destruction, birds abandoning nesting activities, and their displacement from preferred foraging areas. Ground-nesting and shrub-nesting birds could be impacted to a greater extent than birds that nest in the upper canopy of trees. If work during the nesting season cannot be entirely avoided, to mitigate impacts on migratory birds, the PP&R would implement best management practices from its 2017 guidance and secure appropriate permitting from USFWS before work. The native planting component of the proposed action would contribute to restoring forest health and associated wildlife habitats. Since there are no ESA-listed species present in the proposed project area there would be no effects on them as determined in the BE. Additionally, based on the riparian buffers and treatment methods limitations therein, there is no potential for effects on ESA-listed aquatic species downstream of the project area. Therefore, impacts on common wildlife species would be localized, minor, and short term. In the long term, there would be minor to moderate beneficial effects on fish, wildlife, and migratory birds because the reduced spread of invasive vegetation, native plantings, and reduced risk of wildfire spread and associated widespread vegetation loss (including on ecologically sensitive vegetation).

4.9 Cultural and Historic Resources

The 2006 EA provides a brief description of the historic context of Linnton and Forest Park which is within the ancestral lands of the Cowlitz Indian Tribe and the Confederated Tribes of the Siletz Indians. Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470f), requires that activities using federal funds are reviewed for potential effects on historic properties that are listed in or may be eligible for listing in the National Register of Historic Places (NRHP). Cultural resources include prehistoric or historic archeology sites; historic standing structures; historic districts; objects; artifacts; cultural properties of historic or traditional significance, such as Traditional Cultural Properties that may have religious or cultural significance to federally recognized Indian tribes.

A review of the Oregon Archaeological Records Remote Access found that there are no documented historic resources within the target area. A single survey (The Portland Area Reconnaissance 1979) of the greater Portland area encompasses Forest Park. While historic resources are mentioned within the park, no sites were delineated. Consultation was initiated with the Oregon State Historic Preservation Officer (SHPO) and the Cowlitz Indian Tribe on May 28, 2020, and with the Confederated Tribes of the Siletz Indians on June 3, 2020 regarding the proposed action (Appendix B). The SHPO concurred to FEMA's determination that the proposed project will likely have no effects on historic properties on July 6, 2020 (Appendix B). No responses have been received to date from the two Tribes.

No Action

Under the no action alternative, FEMA would not provide funding to reduce urban fuel loads in Forest Park, some limited annual fuels treatment and non-native invasive vegetation abatement work in the Park would continue. These activities would have minimal ground disturbance and thus limited potential to affect any unidentified cultural resources that may be present in the project area. However, with the risk of wildfire spread remaining, in the event of a wildfire there

could be minor to moderate adverse impacts on unidentified archeological resources in the project area depending on the scale and intensity of the wildfire.

Proposed Action
With fuels reduction and invasive species abatement work being done by ground crews using hand-held tools and herbicides and no mechanical equipment operated off road, ground disturbance would be minimal. For the proposed native vegetation plantings, the bare root planting method would also cause minimal ground disturbance. Thus, due to the low impact nature of the proposed action, no impacts to cultural resources are anticipated. However, in the event that there is an inadvertent discovery of archeological or cultural resources, work in the affected area would immediately cease and be secured, followed by PP&R notifying FEMA and the SHPO for further evaluation. With the risk of wildfire intensity and spread reduced, if there are unidentified archeological or cultural resources in the project area the proposed action may help protect them.

4.10 Environmental Justice

Section 4.10 of the 2006 EA provides an overview of EO 12898, Environmental Justice, and the basis for evaluating impacts on minority or low-income populations using US Census data. Minority or low-income census tracts are defined as meeting either or both of the following criteria:

- Census block group 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.

Based on the most recently available census data (US Census American Community Survey (ACS) 5-year survey 2019), the Linnton community (Census Tract 43, Block Group 1) consists of an estimated 5% multiracial, 5% Asian, 3% Hispanic, 1% Native American, and 0.9% Black or African American. About 8.7% of residents are below the poverty level. Demographics for Multnomah County are 5% multiracial, 7% Asian, 12% Hispanic, 1% American Indian, and 5% Black or African American. Approximately 13.8% of residents are below the poverty level in Multnomah County. The census block group (Census Tract 43) does not contain minority or low-income populations that are more than 10% greater than the average of Multnomah County (the surrounding county) nor a population of 25 percent or more of low-income persons as listed in the criteria above.

No Action
Under the no action alternative, FEMA would not provide funding to reduce urban fuel loads in Forest Park, some limited annual fuels treatment and invasive vegetation abatement work in the Park would continue. In the absence of minority or low-income populations in the project area there would be no disproportionate and adverse effects on these populations from no action.

Proposed Action
Since there are no minority or low-income populations in the project area, there is no potential for disproportionate and adverse impacts on these populations from the proposed action to occur.

4.11 Hazardous Materials

Section 4.9 of the 2006 EA provides a brief discussion of hazardous materials regulation. Hazardous materials may be encountered in the course of a project or may be generated by the project activities. To determine whether any hazardous waste facilities exist in the vicinity or upgradient of the proposed treatment area or whether there is a known and documented environmental issue or concern that could affect the proposed treatment area, a search for superfund sites, toxic release inventory sites, industrial water dischargers, hazardous facilities or sites, and multiactivity sites was conducted using the OR DEQ's (2021a) website for such permitted facilities. According to the database, no known hazardous materials are present within the project area. However, as described in Section 4.3 there are several hazardous materials permitted facilities near the project area along the Highway 30 corridor. These range from small residential or business heating oil tanks to several large bulk petroleum storage facilities and lumber facilities. For example, the NuStar Energy L.P. facility, located at 9420 U.S. Highway 30/NW St. Helens Road, was identified in the Portland *Mitigation Action Plan* as a CEI. This complex has the capacity to store 1,191,000 barrels of fuel oil, gasolines, diesel, ethanol, and biodiesel and is a key component of a resilient fuel distribution network in the region.

No Action Alternative

Under the no action alternative FEMA would not provide funding to reduce urban fuel loads in Forest Park, some limited annual fuels treatment and invasive vegetation abatement work in the Park would continue. Since there are no known hazardous materials or contaminated sites within the project area, no impacts from existing activities would be expected. However, with potential for wildfire spread remaining, the various hazardous materials permitted facilities along Highway 30 in Linnton could be at risk if a wildfire reached those locations. If bulk fuel storage tanks caught on fire, there would be significant release of toxic fumes and smoke in the surrounding area, creating particularly hazardous public health conditions. Additionally, in the event of a wildfire direct release of hazardous materials, such as toxic metals and asbestos, into the air, soil, and water occurs as construction materials, plastics, and household hazardous materials, that are otherwise safely stored, burn (OR DEQ 2021). Impacts from the no action alternative would be negligible to major, depending on the scale and intensity of a wildfire if one were to occur.

Proposed Action

Since there are no known hazardous materials or contaminated sites in the project area, there would be no impacts on such sites from project implementation. The proposed actions would include the use of mechanical equipment such as chainsaws, chippers, and vehicles, which could pose the threat of minor leaks and spills. The short-term duration of equipment use at any individual treatment area and the use of equipment in good condition would reduce any potential effect to an insignificant level. Additionally, all equipment and project activities would adhere to City of Portland IMP Policy 12: Pesticide (Herbicide) Spill Response (2020 City of Portland IMP Policy 12) to reduce the risk of hazardous leaks and spills. Any spills during implementation would be immediately contained and cleaned. Thus, there would be a negligible contamination threat from vehicle and equipment use. By reducing the risk of wildfire spread, there would also be a reduction in the potential for various hazardous material releases from

development surrounding the project area including the various CEI hazardous materials permitted facilities.

4.12 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, libraries, and parks. Sensitive receptors near the project area consists of residences and the park itself. Any noise-generating activities in the Park or proximate to residences could have the potential to adversely affect these receptors. The Park would generally be considered to be a quiet area (less than 40 decibels dBA) with limited and intermittent noise coming from wildlife, park patrons, and occasional and short term use of park maintenance equipment (vehicles, mowers, chainsaws, chippers, etc.). Similarly, the residential area bordering the Park would also be considered relatively quiet, with typical noise coming from light traffic and from intermittent use of lawn and garden equipment. Additionally, the City has a noise ordinance (City Ordinance #175772 under Title18: Noise Control) to help regulate noise that can become particularly disruptive or a nuisance.

No Action Alternative

Under the no action alternative, FEMA would not provide funding to reduce urban fuel loads in Forest Park, some limited annual fuels treatment and invasive vegetation abatement work in the Park would continue. Since there is some ongoing vegetation maintenance work in the Park, there would be no change in ambient noise conditions in and adjacent to the Park from the no action alternative.

Proposed Action

Under the proposed action, noise would be generated by the operation of equipment, such as vehicles, small chippers, and chainsaws. The loudest equipment likely to be used would be chippers and chainsaws, which can produce noise levels up to 125 dBA (CHC 2021). The implementation of the proposed action would increase noise levels within the immediate vicinity of the work for the duration of the work. Hazardous fuels work may occur between 30 to 100 feet of structures. However, increases in noise levels would be minor and of short duration at any one location, and all work would occur during normal waking hours. Vehicle and equipment runtimes would be kept to a minimum. Work would be in compliance with the City's noise ordinance. Thus, noise impacts from the proposed action would be negligible to minor.

4.13 Public Health and Safety

As described in Section 1 of the 2006 EA and Section 2 herein, the excessive vegetative fuel loads and highly flammable invasive vegetation in Forest Park can pose a variety of public health and safety risks. The Linnton community is at high risk as residences are adjacent to large tracts of the Park and if a wildfire were to occur it could spread directly into forested vegetation close to homes and beyond. The risk of wildfire spread is exacerbated by the project area's steep

terrain. Also, as discussed in Section 4.11, the numerous large industrial facilities in Linnton could exacerbate public health and safety risks if impacted by a wildfire. And described in Section 4.3, air quality conditions in Linnton are diminished from the prevalence of industrial facilities and transportation infrastructure, which impacts public health. Moreover, wildfire smoke can impact public health by worsening respiratory health issues, such as asthma and chronic obstructive pulmonary disease, and contribute to respiratory infections and cardiovascular concerns (Reid et al. 2016). Emergency services in the area are provided by PF&R.

Environmental Consequences:

No Action Alternative

Under the no action alternative, FEMA would not provide funding to reduce urban fuel loads in Forest Park, some limited annual fuels treatment and invasive vegetation abatement work in the Park would continue. In the event of a wildfire, the risk of spread would remain high along with public health and safety vulnerabilities, including to firefighters. The prevalence of dense highly flammable ground and ladder fuels from established invasive vegetation, along with steep terrain, could be particularly difficult and dangerous for firefighters to contain, especially if the fire reaches the canopy. Depending the location and scale a wildfire, evacuations could be required in the area, especially given the proximity of CEI and other industrial facilities. As described above, the smoke generated by a wildfire could particularly impact vulnerable populations, such as the youth and elderly, and those with underlying health conditions. If some of the nearby CEI or industrial facilities were impacted by a fire, the smoke and fumes would be particularly hazardous. Firefighters responding to such an incident would also have significant safety risks. As described in Section 4.11, the cleanup and recovery following a fire also poses health and safety risks to residents and clean-up workers because of the potential exposure to hazardous materials that remain after buildings have burned. Under the no action alternative, there could be minor to major impacts on public health and safety depending on the scale and intensity of a wildfire.

Proposed Action

Under the proposed action, the creation of defensible space and reduction of hazardous fuels would help to reduce the frequency, spread, and intensity of a wildfire in the project area. This would create a safer environment for firefighters and allow them to more easily and quickly contain a wildfire, which would ultimately reduce the safety risks for people living next to the project area. Similarly, the nearby CEI and other industrial facilities in Linnton would be less vulnerable. The reduction in potential for significant wildfire smoke would also alleviate public health concerns on vulnerable population. Park patrons would also benefit from safer conditions within the Park. Therefore, the proposed action's wildfire risk reduction would have a moderate long-term beneficial effect on public health and safety in the Linnton Area.

4.14 Summary of Effects and Mitigation

Table 5 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 best management practices (BMPs).

Table 5 Summary of Impacts and Mitigation

Affected Resource Area	Impacts	Agency Coordination or Permits	Mitigation/BMPs
Soils and Topography	Negligible, short-term impact on soils; minor, long-term benefit on soils by reducing the risk of wildfire spread. No effect on topography.	N/A	• Treatment work would be conducted with ground crews using hand tools due to steep conditions in the project area. • Defensible space management and hazardous fuels reduction are surface-level activities that would not affect geology or soils.
Visual Quality and Aesthetics	Negligible to minor short-term effects; minor, long-term beneficial effects by reducing the risk of wildfire spread.	N/A	N/A
Air Quality and Climate	Minor, short-term impacts from vehicle and equipment use; minor, long-term beneficial effect by reducing the risk of wildfire spread.	N/A	• Hand tools would be used to implement defensible space and hazardous fuels reduction treatments. • Vehicles and equipment running times would be kept to the minimum extent possible. • No burning would be conducted to dispose of detritus. • small-scale, localized, hand-applied herbicide methods and the nonvolatile nature of the herbicide.
Surface Waters and Water Quality	Negligible short-term impact: minor long-term beneficial effect by reducing the risk of wildfire spread and associated vegetation loss.	N/A	• For broadcast spraying, the exclusion zone will be 100ft from the OHWM on wetted channels and 50ft on dry channels. To allow additional fuels reduction, limited herbicide application (spot spraying) will be allowed up to 25ft from the OHWM. • Within 25ft of OHWM, only manual removal of invasive vegetation and direct application (e.g., wicking, cut stump) may be used.
Wetlands	Negligible short-term impact: minor long-term beneficial effect by reducing the risk of wildfire	N/A	• Implement conditions described on page 46 of the Integrated Pest Management Program: "*The buffer zone referred to in this policy is defined as a corridor of land that is*

Affected Resource Area	Impacts	Agency Coordination or Permits	Mitigation/BMPs
	spread and associated vegetation loss.		*25 feet in width on the sides of a stream or other body of water. Measurement of this buffer zone begins at the edge of the water line at the time of application."*
Floodplains	No effect: however, there would be minor, long-term beneficial effects on floodplains in surrounding areas from the reduced risk of wildfire spread.	N/A	N/A
Vegetation	Impact on individual trees and shrubs but minor beneficial effect on existing vegetation communities; minor long-term beneficial effects by reducing the risk of wildfire spread and vegetation loss.	N/A	• Implement conditions described in the Portland Integrated Pest Management Program for herbicide best management practices. • Implement suggested species in the Portland Plant List document for re-establishment of native vegetation.
Fish and Wildlife	Minor short-term impact on wildlife and migratory birds from vegetation removal; negligible short-term impact on eagles; no short-term effect on fish species. Minor long-term beneficial effect by reducing the risk of wildfire spread and vegetation loss.	N/A	• Adhere to "Protecting Nesting Birds" Best Management Practices for Vegetation and Construction Projects if nesting season (Jan 1 to Aug 31) cannot be avoided. • Cover disturbed areas (hand pulling) with straw mulch until native plantings are established. • Herbicide Application: Implement herbicide BMPs, including setting sprayers to coarse droplets (~400mm). • Herbicide Application: Maintain a no spray buffer around Ordinary High-Water Mark (OHWM) of all streams (perennial and intermittent) within the Project area depending on application method. Any removal of invasive plants within 25ft of the OHWM will be done manually (hand tools, chainsaws, weedwhackers). o *Hand Selective*. These direct application methods (dabbing, wicking, stem injection, cut-stump treatment, etc.) may be done up to the top of bank. o *Spot spray*. Use of backpack sprayers to apply to patches or individual plants, will

Affected Resource Area	Impacts	Agency Coordination or Permits	Mitigation/BMPs
			require a 25ft exclusion buffer. ○ *Broadcast Spraying*. This method is for applying herbicide on larger upland areas and will require a 100ft exclusion buffer around wetted channels, and 50ft from dry channels. When applying to tall vegetation keep nozzle within 6 feet of the ground.
Threatened and Endangered Species	The project would have no effect on gray wolf and Gentner's fritillary. The project may affect but would not likely adversely affect NSO.	City of Portland Forest Park Wildfire Mitigation, Biological Evaluation, Section 7 ESA/MSA No-effect; Multnomah County, OR, FEMA-5195	• Mitigation and BMPs will be same as prescribed in the Fish and Wildlife section above.
Cultural Resources	No Historic Properties Affected	N/A	• In the event that any archeological resources are discovered during project implementation, work would immediately cease, the area would be secured, and Portland Parks & Recreation would notify the SHPO and FEMA for further evaluation.
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.	N/A	• Equipment would be kept in good condition. • Any spills or leaks from equipment would be contained and cleaned up right away. • All equipment and project activities would adhere to City of Portland IMP Policy 12 to reduce the risk of hazardous leaks and spills.
Noise	Minor temporary impacts from increased noise within the project area and the immediate vicinity of	N/A	• Noise-producing equipment use would occur during less-sensitive, waking hours (7 a.m. to 10 p.m.).

Affected Resource Area	Impacts	Agency Coordination or Permits	Mitigation/BMPs
	the work; no long-term noise impacts.		• Vehicle and equipment runtimes would be kept to a minimum.
Transportation	Minor short-term impact from vehicle staging on roadsides. Minor long-term beneficial effect by reducing the risk of wildfire spread.	N/A	N/A
Utilities	No short-term impact: minor long-term beneficial effects by reducing the risk of wildfire spread.	N/A	N/A
Public Health and Safety	No short-term impact: moderate long-term beneficial effects by reducing the risk of wildfire spread.	N/A	N/A

SECTION FIVE |CUMULATIVE EFFECTS

This section addresses the potential cumulative impacts associated with the implementation of the proposed action. CEQ's regulations define cumulative impacts as noted in the 2006 EA.

The City's Forest Park NRMP (1995) mandates that the City monitor and manage fire hazards in the Park as a priority. Also, in the past decade the City and other local agency partners, such as West Multnomah Soil and Water Conservation District (SWCD), have worked to develop additional plans to broadly help address wildfire risk. These plans include Multnomah County's WPP (2011) and City's *Mitigation Action Plan* (2016). Thus, wildfire mitigation in the Park and surrounding areas has been a long-term and ongoing priority for the City.

During 2006-2009 the City conducted a FEMA funded project in the Park which focused on reducing wildfire risk through proactive management of vegetation. The project included the following achievements:

- Reduced long-term and short-term wildfire risk to nearby homes and businesses
- Removed flammable non-native plants
- Improved wildlife habitat and forest ecosystems
- Set the stage for long range management

The project resulted in fuel reduction throughout 2,218 acres of the Park in key locations, such as powerline corridors and areas heavily infested by invasive plant species with high hazardous fuel potential. Similar to the proposed project, treatments targeted the removal of climbing vines/ladder fuels (English ivy and clematis), the shrub layer (Himalayan blackberry and Scots broom), and tall non-native grasses. Rights-of-way, powerline corridors, and edges were ranked as top priority for fuel reduction treatments. Native plants were replanted in these areas after invasive removal to re-establish native habitats and prevent erosion. These FEMA-funded project areas are now actively managed areas in the Park's portfolios. The final product of this project was a report (City of Portland, 2009 Wildfire Readiness Assessment: Gap Analysis) that identified and prioritized actions to improve managing wildfire hazards in and around natural areas. The report recommendations have helped City managers continue effective coordination, improve integration of wildfire management into work plans and training, and pursue resources to help accomplish long term goals.

PP&R has continued to implement similar vegetation management projects on several hundred high-priority acres within the Park. Funding for these projects was achieved through grants, partnerships, and to some degree with available City funding for park maintenance.

Current and ongoing actions also include annual fire season monitoring and management of high-priority access routes, as well as management of fuels in key locations. PP&R has coordinated seasonal meetings with PF&R at the beginning and end of fire season, including meeting in the Park to address issues related to fire lane maintenance, vegetation management and mowing fields and roadsides. During the regular PP&R and PF&R coordination meetings, the following issues are typically addressed:

- Forest Park construction activities that may be occurring during fire season
- Outreach and education related to fire safety
- Mowing schedules
- PF&R fire season monitoring and updates to the Emergency Access Maps

Specific actions taken during fire season each year include:

- PP&R installs fire hazard signage at trailheads
- PF&R conducts frequent patrols by ATV of access roads and trails to monitor conditions during fire season
- PF&R creates and distributes weekly reports from patrols during fire season
- PP&R staff and partner organizations conduct brush cutting, downed tree removal and other corridor clearing in direct response to concerns around access road and trail maintenance

Furthermore, the PP&R Security Team has provided assistance to address fire risks associated with illegal camping in the Park, including on-the-ground outreach and education to homeless campers about fire risks associated with camping and the unique risk associated with Forest Park. In recent years, the PP&R Security Team has also worked with PF&R to help lead community listening sessions around the fire concerns and to provide education around fire safety to neighbors living in the WUI that surrounds the Park. PF&R also offers free wildfire risk home assessments to residents and distributes information about Firewise Communities.

Once the proposed project has been completed, PP&R will continue maintenance of hazardous fuels in the project areas to ensure the benefits are sustained long-term as part of the "active" natural areas management portfolio. The long-term plan for the project area includes annual vegetation maintenance treatments with herbicide application, mechanical cutting, and manual labor to control ladder and ground fuels.

There is the potential for these various past and future wildfire mitigation efforts to combine with the proposed action with respect to effects on the resources described in this SEA. However, it is unlikely that there would be significant cumulative impacts because, in most cases, there would be temporal and spatial separation between activities. The combined activities would improve forest health and wildlife habitat in the Park and incrementally benefit climate conditions. The potential severity and risk of wildfire spread in the project area, Park, and vicinity would be substantively reduced from these various activities; thereby lessening public health and safety vulnerabilities.

SECTION SIX | 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 Portland Forest Park Wildfire Mitigation Project. In addition, an overview of the permits that would be required under the proposed action is included.

6.1 Agency Coordination

Consultation with the Cowlitz Indian Tribe was initiated on May 28, 2020 and the Confederated Tribes of the Siletz Indians June 3, 2020 per the NHPA. Neither Tribe has responded to date. Similarly, consultation was initiated with the SHPO on May 28, 2020, which responded on July 6, 2020 concurring with FEMA's determination. Appendix B provides a copy of agency and tribal correspondence (only one Tribe letter is included as representative).

6.2 Public Participation

In accordance with NEPA, this draft SEA will be released to the public and resource agencies for a 30-day public review and comment period. This draft SEA 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. Comments on this draft SEA will be incorporated into the final SEA as appropriate. If no substantive comments are received from the public or agency reviewers, this draft SEA will be assumed to be final and a FONSI will be issued by FEMA.

The draft SEA will be available for review and download on FEMA's website at: https://www.fema.gov/emergency-managers/practitioners/environmental-historic/region/10. Hard copies of the draft SEA will be made available at the Linnton Community Center (10614 NW St. Helens Road, Portland, OR 97231 between 7am and 6pm weekdays). Electronic copies will also be available for review on the Linnton Neighborhood Association website at: https://linntonna.org/. The comment period for the draft SEA will start when the public notice of SEA availability is published and will extend for 30 days. Comments on the draft SEA may be submitted to FEMA-R10-EHP-Comments@fema.dhs.gov. Comments also may 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 Portland will be responsible for obtaining and complying with any necessary local, state, or federal permits needed to conduct the proposed work.

SECTION SEVEN | LIST OF PREPARERS

The following is a list of FEMA preparers who contributed to the development of this draft Supplemental Environmental Assessment. The individuals listed below had principal roles in the preparation of this document.

Reviewers	Experience and Expertise	Role in Preparation
Fisher, Philip	Archaeologist	NHPA/Consultations
Kilner, Science	Senior Environmental Specialist	Technical Review, Editing and Approval
Parr, Jeffrey	Biologist	ESA/Biological Evaluation
Coskey, Owen	Environmental Specialist	NEPA Documentation

SECTION EIGHT | REFERENCES

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APPENDIX A: Maps

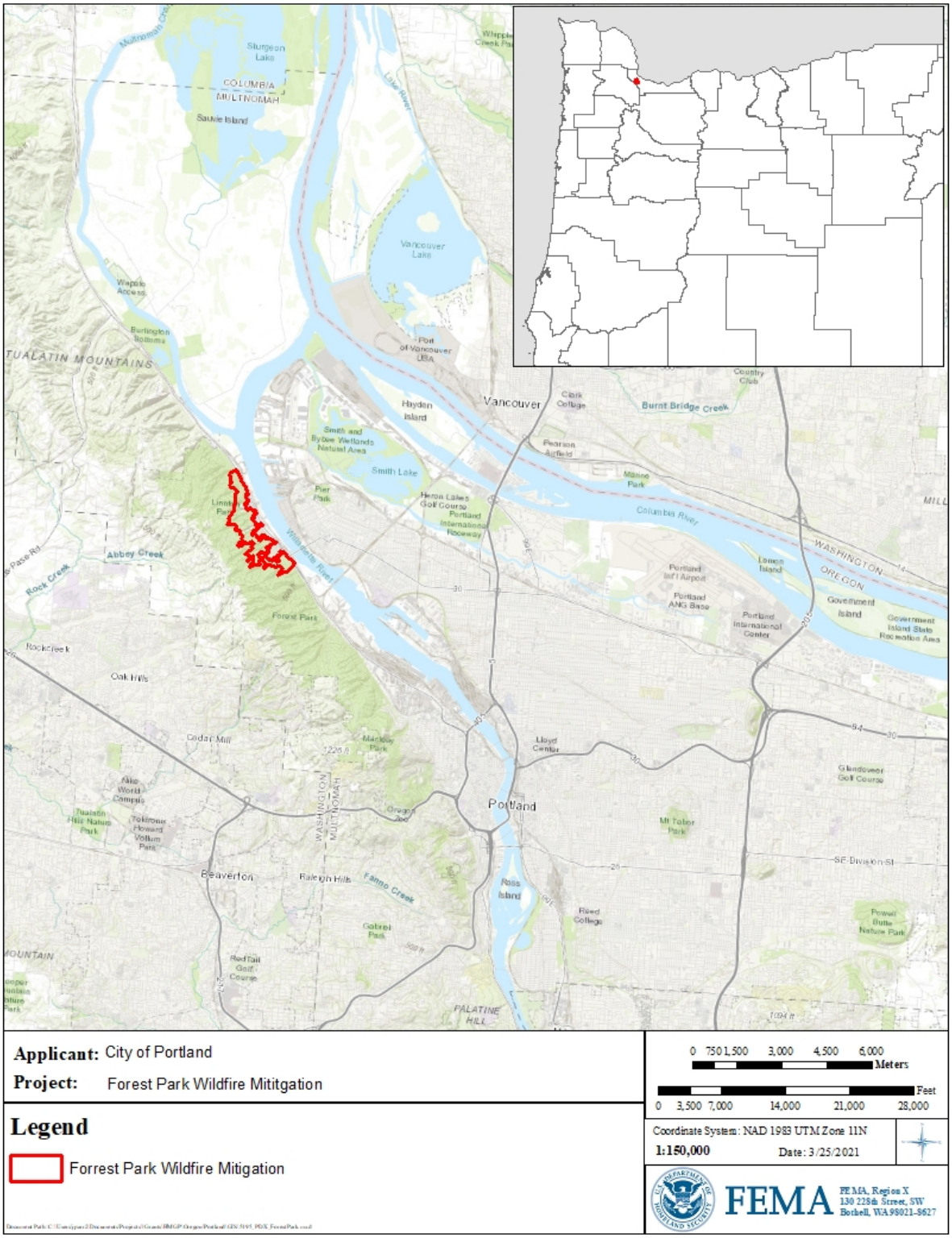


Figure 1 - Forest Park topographic vicinity map.

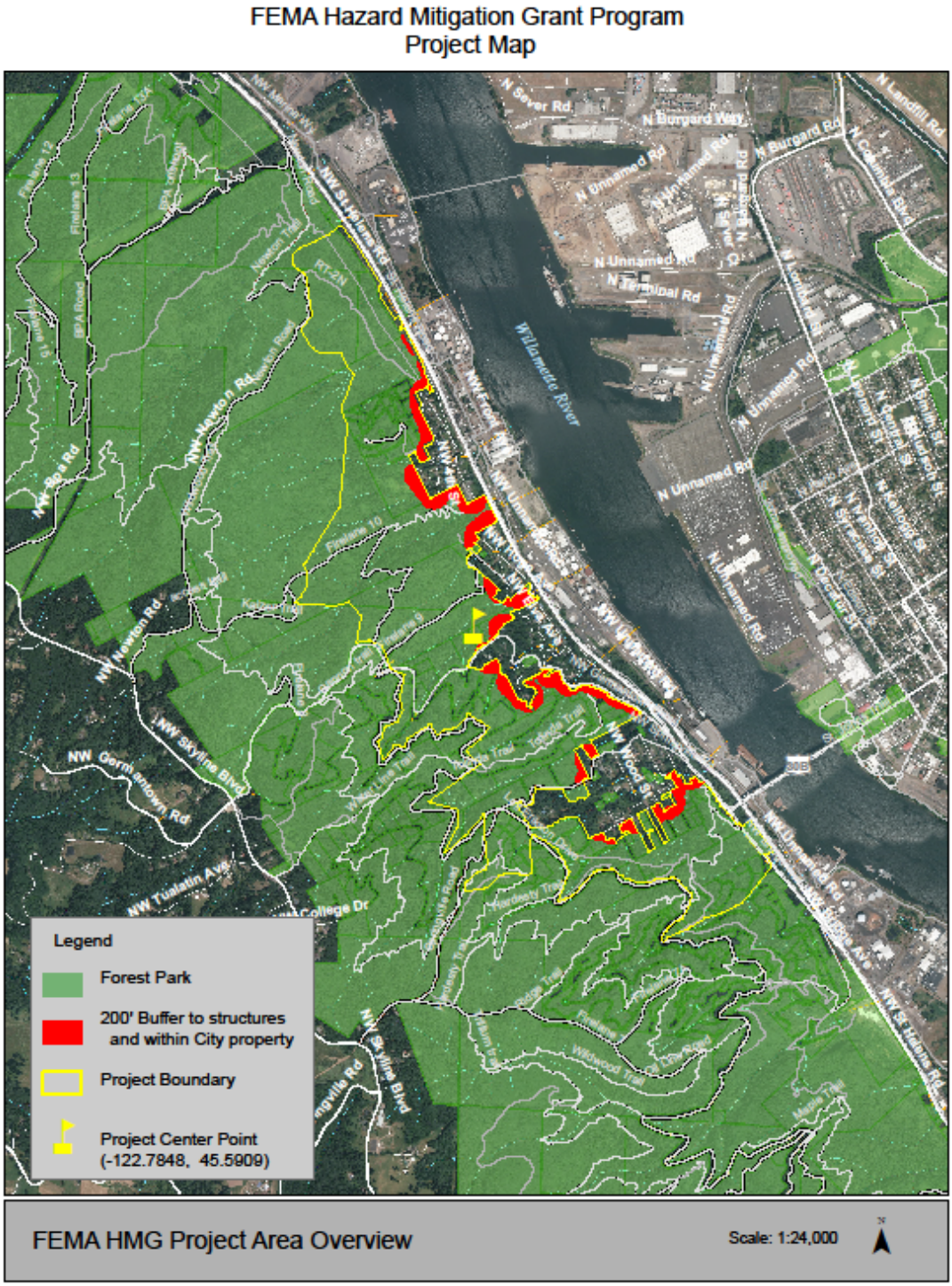


Figure 2 – Forest Park target project area boundary and buffer areas.

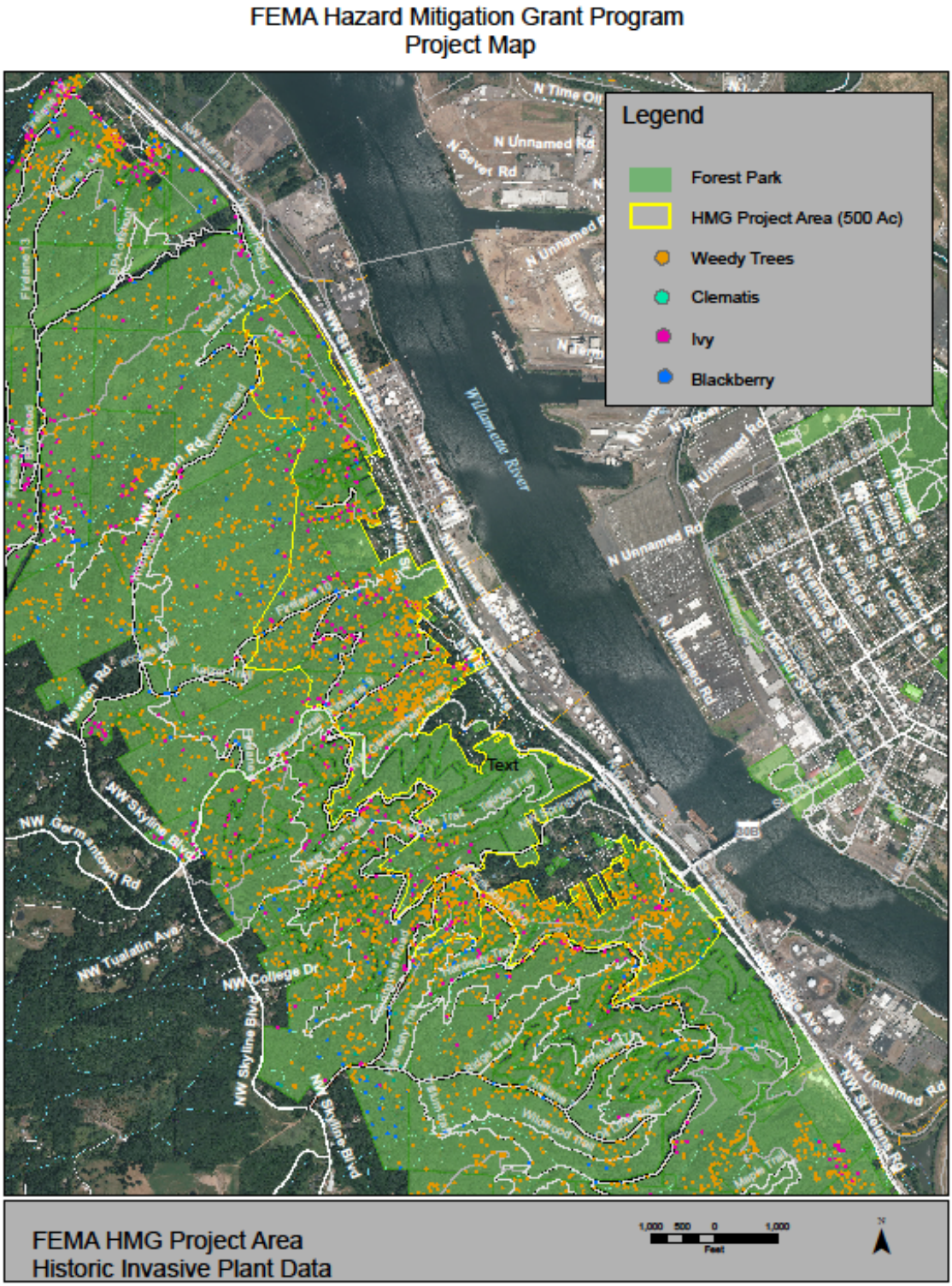


Figure 3 – Forest Park project area invasive plant distribution.

APPENDIX B:

Cultural and Historic Resources Correspondence

Oregon
Kate Brown, Governor

Parks and Recreation Department
State Historic Preservation Office
725 Summer St NE Ste C
Salem, OR 97301-1266
Phone (503) 986-0690
Fax (503) 986-0793
www.oregonheritage.org

July 6, 2020

Mr. Phillip Fisher
FEMA
Region 10
130 228th Street SW
Bothell, WA 98021-9796

RE: SHPO Case No. 20-0871
FEMA Project HMGP 5195-17, Forest Park Wildfire Mitigation, City of Portland
Fuels reduction and wildfire mitigation
(1N 1W 3, 10, 11) (2N 1W 34), Portland, Multnomah County

Dear Mr. Fisher:

Oregon SHPO reviewed information for theundertaking referenced above.Based on the information provided, Oregon SHPO concurs the undertaking will likely have no effect onhistoric properties. In the unlikely event an inadvertent discovery of an archaeological object or site (i.e., historic or prehistoric), any ground disturbance at the location should cease immediately until a professional archaeologist can be contacted to evaluate the discovery.

Under state law (ORS 358.920 & ORS 97.745) archaeological sites, objects and human remains are protected on both public and private land in Oregon. If you have not already done so, be sure to consult with all appropriate Indian tribes regarding your proposed project. If you have any questions regarding any future discovery or this letter, feel free to contact me at your convenience.

Sincerely,

John D. Pouley

John Pouley, M.A., RPA
Assistant State Archaeologist
(503) 986-0675
john.pouley@oregon.gov

U.S. Department of Homeland Security
FEMA, Region X
130 228th Street, SW
Bothell, WA 98021-8627

FEMA

May 28, 2020

William B. Iyall, Chairman
Cowlitz Indian Tribe
P.O. Box 2547
1055 9th Avenue Suite B
Longview, Washington 98632
(via email)

Re: FEMA HMGP 5195-17, City of Portland Forest Park Wildfire Mitigation

Dear Chairman Iyall:

The City of Portland has applied for funding from the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) for a wildfire fuels reduction project (Undertaking). This funding is available from FEMA's Hazard Mitigation Grant Program (HMGP), administered by the Oregon Office of Emergency Management (OEM), and funding is from 2018 wildfires in Oregon. The proposed Undertaking is being reviewed pursuant to Section 106 of the National Historic Preservation Act and an Environmental Assessment is being prepared per the National Environmental Policy Act.

Proposed Undertaking
The proposed Undertaking will reduce and manipulate live fuels including invasive species by targeting a 500-acre area in Forest Park, and the surrounding community of Linnton in Portland (Figure 1). The 500 acres is along the eastern portion of Forest Park (approximately bound as follows NE latitude 45.60813, longitude -122.78623, NW latitude 45.60611, longitude -122.79697, SW latitude 45.58037, longitude -1220.38536, SE latitude 45.58185, longitude -122.76615 (see Figure 2). The project will implement hazardous fuels reduction within Forest Park that both reduces wildfire risk in the project area and creates defensible space around structures inside or adjacent to the park. The project also supports education and outreach with neighboring landowners to promote community-driven efforts to create defensible space on private property.

The fuels reduction Undertaking will involve three activities.
1. Reduce surface fuels, including invasive plants, through herbicide application with backpack sprayers, and the manual removal directly adjacent to trails and surface water areas.
2. Reduce ladder fuels by select thinning of small trees, cutting vines from trees, removing brush, and limbing-up trees where appropriate. Work will be done by ground-crews using handheld tools (e.g. pole saws, loppers, chainsaws).
3. Planting of native vegetation through contract and volunteer crews planting bare root and container plants with handheld tools (e.g. spades).

Ground disturbance for the Undertaking will be limited to bareroot planting, which involves the creation of a small slot in the soil and the installation of the plant in this space. Soil is not removed from the area nor excavated. There will be no staging of equipment within the project area. Cut trees, brush and branches will be piled in isolated clusters, chopped into small pieces and scattered in the woods or chipped with a chipper and scattered. All chipping will occur from existing access roads or trails and vehicles needed for work will remain on existing access roads or trails.

Area of Potential Effects
FEMA has determined that the Area of Potential Effects (APE) for the proposed Undertaking. within Forest Park is approximately 500 acres located in T1N R1W Sections 3, 10, and 11 and T2N R1W Section 34, as illustrated in Figure 2.

Historic Property Identification and Evaluation
A review of the Oregon Archaeological Records Remote Access found that there are no documented historic resources within the APE. A single survey (The Portland Area Reconnaissance) (1979) of the greater Portland area encompasses Forest Park and the APE. While historic resources are mentioned as having come from within the park, no sites were delineated. Due to the low impact nature of the Undertaking no additional identification or evaluation efforts are planned.

Determination of Effects
Barring additional information from the Tribe, based on the low impact nature of the activities, FEMA has determined that the Undertaking will result in No Historic Properties Affected. Furthermore, the project will be conditioned to protect any unanticipated discoveries during fuels reduction work. We respectfully request your concurrence with these findings, or additional comments regarding cultural resources of religious and or cultural significance in or near the APEs that may be impacted by the Undertaking. Any information provided would be subject to Tribe-requested dissemination restrictions and may be used to further inform identification and evaluation efforts and help determine project effects. To assist your review please find enclosed project maps. Should you have any questions, please contact Philip Fisher (425) 471-9018 or philip.fisher@fema.dhs.gov. Thank you.

Sincerely,

Mark G. Eberlein
Regional Environmental Officer

Enclosures

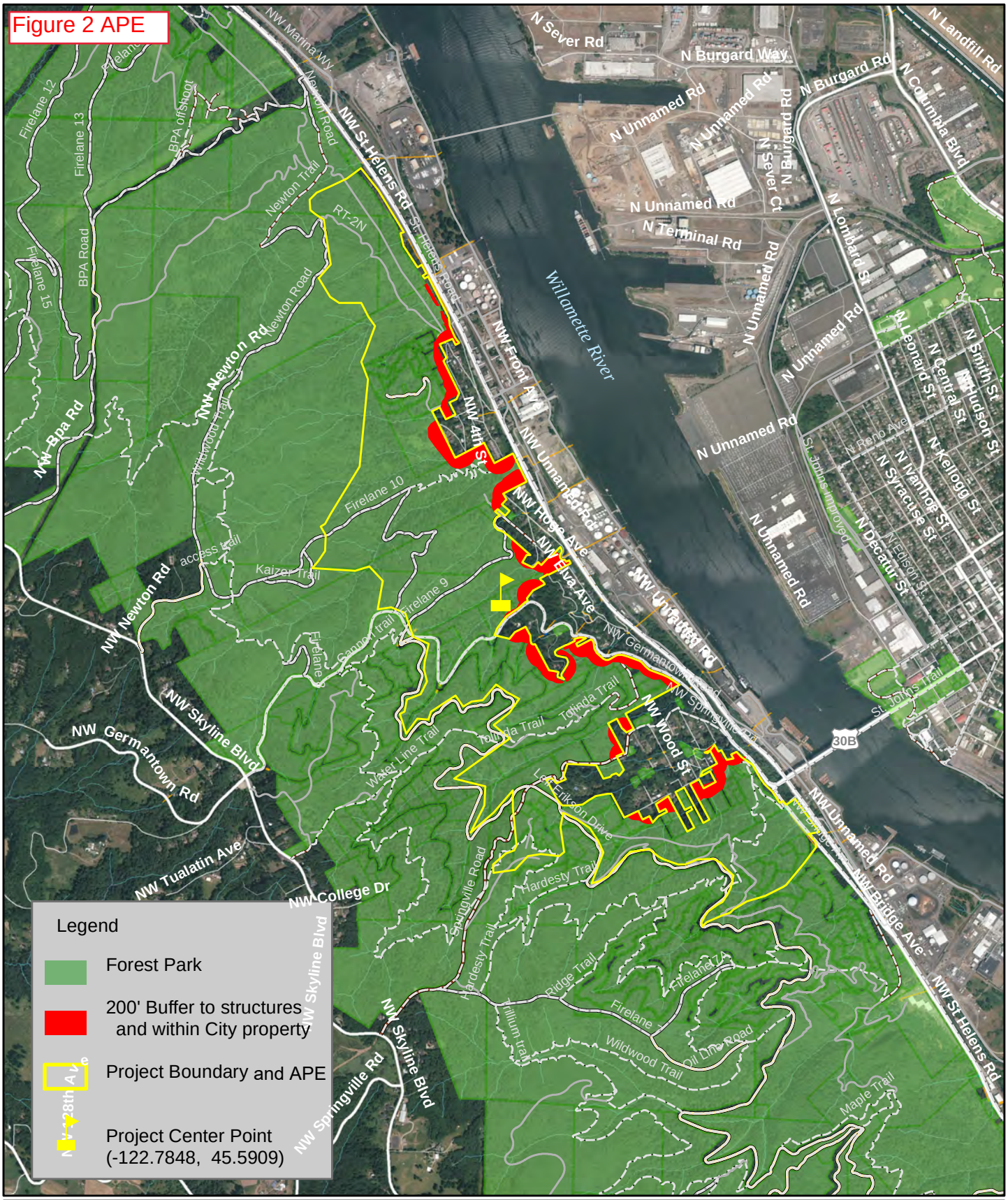
cc: Nathan Reynolds, Cultural Resources Program (via email)
James Gordon, Cultural Resources Program (via email)

FEMA HMGP 5195-017 City of Portland

City Park Fuels Reduction Project

Figure 2

FEMA Hazard Mitigation Grant Program
Project Map



FEMA HMG Project Area Overview

Scale: 1:24,000

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