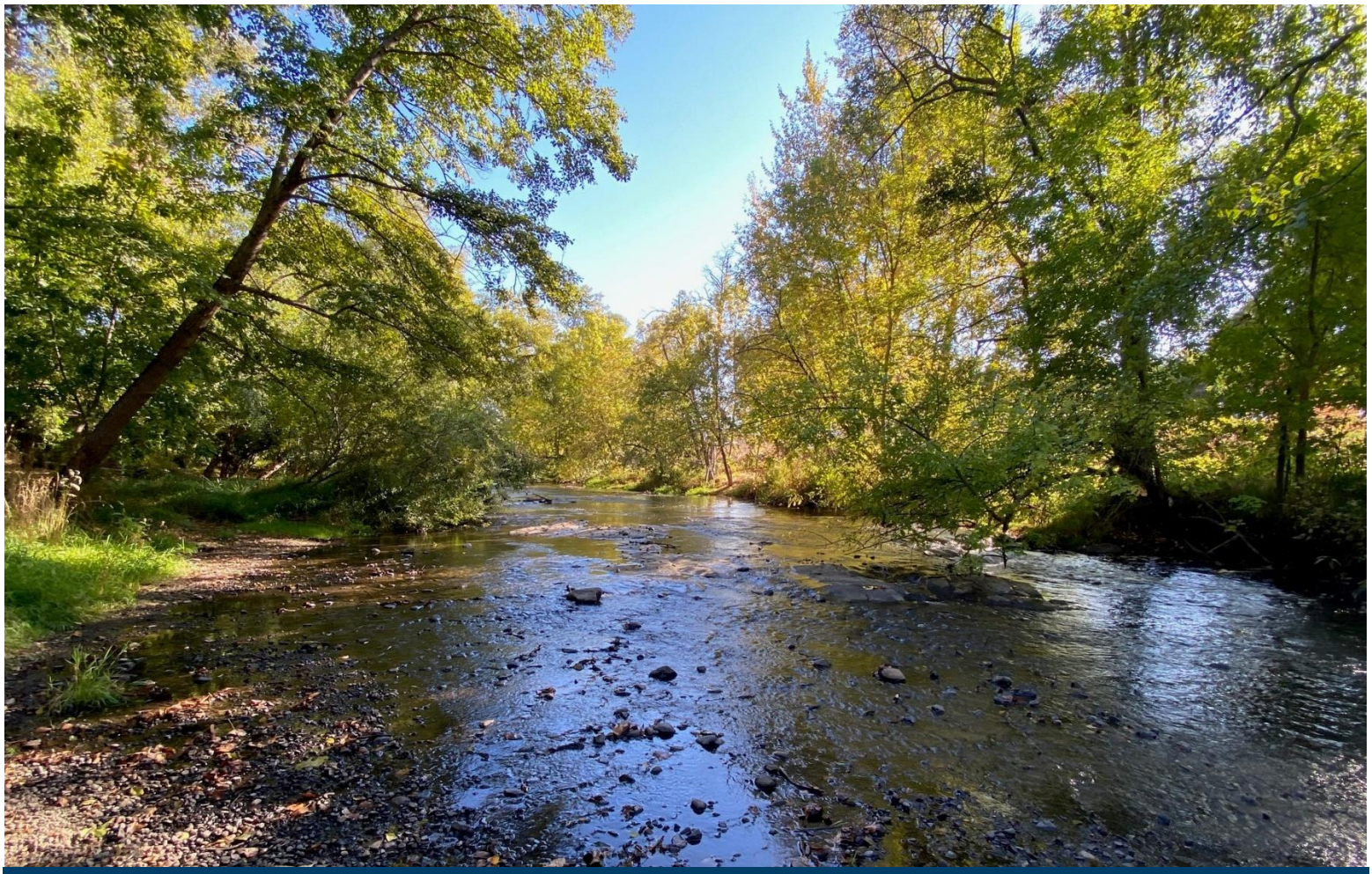

City of Medford, Oregon

Medford Hazardous Fuels Reduction Project

Draft Environmental Assessment Appendices

April 2025

Grant No.: 4562-24
Subapplicant: City of Medford, Oregon

FEMA

LIST OF APPENDICES

The Federal Emergency Management Agency (FEMA) has worked to ensure that this Environmental Assessment (EA) is accessible to persons with disabilities, in compliance with Section 508 of the Rehabilitation Act of 1973. Regarding the appendices, this EA has reported what was done and how those results affect the decision that will be made based on the totality of the findings provided in the EA. In case any of these appendices poses a challenge to be read electronically by persons with disabilities, each appendix is briefly described and summarized below, rather than being simply listed.

Appendix A. Agency and Tribal Coordination and Consultation. This appendix includes a 1-page letter dated December 6, 2024 from the Oregon State Historic Preservation Office (SHPO) regarding the no effect determinations made by FEMA for historic built resources and buried archaeological resources at Prescott Park. The Oregon SHPO concurred that there will be no historic properties affected for the undertaking at Prescott Park provided that a 20 meter buffer be placed around all unevaluated resources and certain conditions are met related to the use of handheld tools, vegetation waste management, and prohibiting burning, chipping, and mechanical activity. Further, this appendix includes a 2-page letter dated February 6, 2024, which was sent to the Cow Creek Band of Umpqua Tribe of Indians. This letter notified the Tribe of the undertaking and FEMA's determination that the undertaking will result in no adverse effects to historic properties at Prescott Park. A similar letter was sent to the Confederated Tribes of the Grande Ronde, the Confederated Tribes of the Siletz Indians of Oregon, and Tolowa Dee-ni' Nation. No further comments were received.

The appendix also includes a letter dated August 29, 2024, which was sent to the Oregon SHPO regarding the historic built resources and buried archaeological resources along the Bear Creek Greenway. This letter included the determination that the undertaking along the Bear Creek Greenway will result in no adverse effects to historic properties and buried archaeological resources provided FEMA protects unexpected discoveries of historic or archeological resources during treatment work. Further, this appendix includes a 2-page letter dated August 29, 2024, which was sent to the Cow Creek Band of Umpqua Tribe of Indians. This letter notified the Tribe of the undertaking and FEMA's determination that the undertaking will result in no adverse effects to historic properties along the Bear Creek Greenway. A similar letter was sent to the Confederated Tribes of the Grande Ronde, the Confederated Tribes of the Siletz Indians of Oregon, and Tolowa Dee-ni' Nation. No further comments were received.

Appendix B. Biological Assessment. This appendix includes the Final Biological Assessment for the Project, which determined the Project was determined to may affect, not likely to adversely affect Franklin's bumble bee (FRBB) in the short- and long-term. It determined the Project would have no effect on the other Endangered Species Act (ESA) listed species. This appendix also includes a letter dated February 5, 2024 from the United States Department of the Interior Fish and Wildlife Service regarding the may affect, but is not likely to adversely affect FRBB and a no effect determination for the vernal pool fairy shrimp, Cook's lomatium, Gentner's fritillary, large-flowered woolly meadowfoam, northern spotted owl, gray wolf, and the Pacific marten coastal distinct population segment. Further, this appendix includes the National Marine Fisheries Services Action Implementation Worksheet Action Notification.

Appendix C. List of Hazardous Materials Sites. This appendix includes a list of hazardous material sites present within one mile of the two proposed treatment areas that make up the Project.

Appendix D. FEMA FIRM Floodplains Panels. This appendix includes five FEMA Flood Insurance Rate Maps (FIRM) Panels that show the Special Flood Hazard Areas and Other Areas of Flood Hazard within the vicinity of the Project area.

Appendix E. Floodplains and Wetlands Eight-Step Process. This appendix includes the Executive Order 11988 Floodplain Management Checklist (44 CFR Part 9) for the Medford Hazardous Fuels Reduction Project.

Appendix A: Agency Correspondence/Consultation

Oregon
Tina Kotek, Governor

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

December 6, 2024

Collin Markstrom
FEMA
Region X
130 228th Street SW
Bothell, WA 98021-9796

RE: SHPO Case No. 24-1370
FEMA, FEMA Hazard Mitigation Grant Program 4562-24, City of Medford Prescott Park Hazardous Fuels Reduction
Hazardous fuels reduction in Prescott Park.
-122.7871 LONG, 42.3652 LAT, Jackson County

Dear Collin Markstrom:

Thank you for submitting information for the undertaking referenced above. Oregon SHPO concurs that Prescott Park, Prescott Park Restroom, and North Roxy Overlook Shelter are not eligible for listing in the National Register of Historic Places (NRHP) based on the registration requirements of the Oregon New Deal MPD. Our office also concurs that archaeological resources 15891.01-03 through 15981.06, and 15891.10i are not eligible for listing in the NRHP. We concur that archaeological resources 35JA 00146, 15891.01-01, 15891.01-.02, 15891.01.-0.7, 15891.01-08i, and 15891.09i are unevaluated for listing in the NRHP.

Finally, we concur that there will be **no adverse effect** to historic properties for this undertaking provided that a 20 meter buffer be placed around all unevaluated resources and the following conditions from FEMA are met:

(1) All project activities conducted within the buffers are done with handheld tools.
(2) Vegetation waste is carried outside of buffer areas, not dragged.
(3) No burning or chipping occurs within the buffers.
(4) No mechanized activity takes place within the buffer areas.

This concludes consultation with our office under Section 106 of the National Historic Preservation Act (per 36 CFR Part 800) and Oregon Revised Statutes (ORS) 358.905-961, ORS 358.653, and ORS 97.740-760 for archaeological resources. Based on the information provided, our office assumes that meaningful consultation has been conducted between the lead federal agency and all appropriate Native American tribes.

If the undertaking design or effect changes or if additional historic properties are identified, further consultation with our office will be necessary before proceeding with the proposed undertaking. Additional consultation regarding this case must be sent through Go Digital. In order to help us track the undertaking accurately, reference the SHPO case number above in all correspondence.

Our office has assigned the report SHPO biblio number 35036. Details will be available in the bibliographic database.

Please contact our office if you have any questions, comments or need additional assistance.

Sincerely,

Aspen Kemmerlin
Special Projects Archaeologist

Aspen.Kemmerlin@oprd.oregon.gov

U.S. Department of Homeland Security
FEMA Region 10
130 228th Street, SW
Bothell, WA 98021-8627

FEMA

August 12, 2024

Ben Steward
Tribal Historic Preservation Officer
Cow Creek Band of Umpqua Tribe of Indians
2371 NE Stephens Street
Roseburg, Oregon 97470
Sent via email

RE: FEMA Hazard Mitigation Grant Program 4562-24, City of Medford Prescott Park Hazardous Fuels Reduction, Jackson County

Dear Mr. Steward:

Please consider this a follow up to our letter dated February 6, 2024. The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) proposes to fund the City of Medford (Applicant), through the Oregon Department of Emergency Management (OEM), for hazardous fuels reduction in Prescott Park (Undertaking). This funding is available from FEMA's Hazard Mitigation Grant Program (HMGP). The proposed Undertaking is being reviewed pursuant to Section 106 of the National Historic Preservation Act, as amended. The City of Medford contracted Dudek to complete a cultural resources assessment for the Undertaking. The cultural resources assessment report for this Undertaking, prepared by Dudek, is enclosed.

Proposed Undertaking
The proposed Undertaking is located in the City of Medford, Jackson County, Oregon. The project will consist of the hazardous fuels reduction of 650-acres located in Prescott Park on the east side of Medford (around Latitude 42.3652, Longitude -122.7871), as illustrated in Figures 1 and 2 of the enclosed report. The Almeda and Table Road Rock fires of 2020 burned over 3,000-acres in this area, prompting the need to reduce natural wildfire hazards. The fuels reduction treatments at Prescott Park would include thinning understory vegetation, removing ladder fuels, reducing flammable vegetation fuels, and replacing flammable vegetation with fire-resistant vegetation to protect life, property, and at-risk buildings and structures. These activities would provide a break in the forest canopy, which would force a fire to the ground where wildland firefighters can more safely and easily manage suppression. The Undertaking would reduce wildfire risk through three management prescriptions: fuels reduction around critical facilities and structures, fuels reduction within the forest and woodland habitat, and targeted removal and control of invasive species. The management prescriptions at Prescott Park will include handheld tools such as chainsaws. Vegetative material will then be piled and burned or taken to a chipper and spread.

Area of Potential Effects
FEMA has determined that the Area of Potential Effects (APE) for the Undertaking, as shown on Figures 1 and 2 of the enclosed report, includes the 650-acres located in Prescott Park on the east side of Medford, which was broken into seven survey units (Survey Units 1-7). Access and staging to the project treatment areas would be provided by existing improved surfaces such as roads and pathways.

Historic Property Identification and Evaluation

The City of Medford contracted Dudek to complete a cultural resources assessment for the Undertaking, which included a pedestrian archaeological surface survey and a reconnaissance-level survey for built-environment resources. A review of available cultural resources information from the Oregon Archaeological Records Remote Access (OARRA) indicated that the APE for the Prescott Park project area included previously documented site 35JA00146 (precontact lithic scatter), as well as three previously recorded built-environment resources: 41601 (Prescott Park Spring House), 41602 (Prescott Park Restroom), and 41603 (Prescott Park Picnic Shelter). Survey methods consisted of pedestrian transects spaced no greater than 20 meters apart, depending on the landform and previous disturbances. In total, 610 acres of the 650-acre APE were surveyed, resulting in 40 acres remaining unsurveyed due to being located on very steep slopes. Surface visibility was poor to moderate and varying from approximately 0 to 30 percent due to dense grasses and oak and pine duff obscuring the ground surface. Some portions of the APE in the vicinity of roads, established hiking trails, and high-density rodent back dirt piles allowed for upwards of 70 to 100 percent surface visibility.

The field survey revisited several previously identified built-environment resources and identified Prescott Park as a historic designed landscape, the Prescott Park Historic Designed Landscape (BE-15891-PP). The Prescott Park Prescott Park Restroom (41602/ BE-15891-02) was previously recorded, and Dudek completed an updated evaluation as part of this undertaking. The Prescott Park Picnic Shelter (41603) was previously recorded but found to be no longer extant, with only the foundation remaining, and the Prescott Park Spring House (41601/BE-15891-01) was found to be in ruins. They were recorded within archeological site 15891.01-02. The North Roxy Overlook Shelter (BE-15891-3) was newly recorded as part of this undertaking.

Dudek assessed Prescott Park as a potential historic designed landscape because of the park's history as a recreational park designed by the Civilian Conservation Corps (CCC). While Prescott Park as a historic designed landscape has components of historic age and was constructed during a finite period of development in the 1930s during the New Deal era and CCC park construction, the park does not retain the necessary integrity to be eligible for the NRHP.

The Prescott Park Restroom, constructed in 1936, is located in the Roxy Ann Picnic Area along Loop Road within Prescott Park. The Prescott Park Restroom was previously inventoried in 1979 and again in 1991. No formal determination was made for the NRHP eligibility, but it is considered eligible/contributing on the OHSD online portal. However, The Prescott Park Restroom no longer retains sufficient integrity to convey its significant association.

The North Roxy Overlook area is a rocky cliff-lined lookout area with two constructed benches and a timber overhang structure and was newly recorded as part of this undertaking. The structure, likely constructed in 1936, is evaluated within the historic context of the CCC construction of Prescott Park. The Prescott Park North Roxy Overlook Shelter has retained the integrity of design and workmanship as it is documented and exemplifies known CCC construction plans and building types. The cedar benches and stone step construction appear original; however, the Prescott Park North Roxy Overlook Shelter has diminished integrity of materials as the roof was replaced with standing seam metal. Overall, the Prescott Park North Roxy Overlook Shelter is recommended not eligible for listing in the NRHP due to a failure to convey significance under any of the criteria.

Eleven (11) archaeological resources were identified during the pedestrian survey: one previously recorded archaeological site (35JA146), seven newly identified archaeological sites (15891.01-01,

15891.01-02, 15891.01-03, 15891.01-04, 15891.01-05, 15891.01-06, and 15891.01-07), and three newly identified archaeological isolates (15891.01-08i, 15891.01-09i, and 15891.01-10i).

Previously recorded precontact site 35JA146 consists of a sparse lithic material scatter. The site was relocated by Dudek using previous survey maps, but no artifacts were observed during this survey. However, a digital boundary was created by Dudek using previous survey maps. The lack of artifacts identified in the current survey may be due to the destruction of the site by recreational use, or due to poor conditions for soil visualization. Site 35JA146 should be considered unevaluated for listing in the NRHP until resurveying can be completed with better soil surface visibility to delineate horizontal boundaries and subsurface testing to delineate vertical boundaries.

Historic-period archaeological site 15891.01-01 comprises the Madrone Ledge Picnic Area, a large and rustic picnic area constructed by the Civilian Conservation Corps (CCC) between 1936 and 1939. Sixteen remnant CCC-era features were identified and include three stone fireplaces (Features 1, 11, and 16), six circular galvanized metal-lined holes in the ground (Features 2, 4, 7, 9, 12, and 13), three mortared-stone stoves (Features 3, 6, and 8), one building foundation (Feature 5), two rock alignments (Features 10 and 14), and the original Madrone Ledge Picnic Area sign (Feature 15). The site is significant under Criterion A based on its association with The New Deal and the CCC; however, the Prescott Park Historic Designed Landscape (BE-15891-PP), of which Site 15891.01-01 is a part, is recommended not eligible because it does not retain the necessary integrity to convey its significance under Criterion A.

Historic-period site 15891.01-02 comprises the rustic, CCC-constructed day-use/picnicking facilities on the northwest slope of Roxy Ann peak, built between 1936 and 1939. Four remnant CCC-era features were identified and include a mortared-stone stove (Feature 1), the original Roxy Ann Picnic Area Sign (Feature 2), the foundation of the Picnic Shelter (Feature 3), and the Prescott Park Spring House (Feature 4). Site 15891.01-02 also contains a built-environment resource, the Prescott Park Restroom (BE-15891-02). The site is significant under Criterion A based on its association with The New Deal and the CCC Company; however, the Prescott Park Historic Designed Landscape (BE-15891-PP), of which Site 15891.01-02 is a part, is recommended not eligible because it does not retain enough integrity to convey its significance under Criterion A.

Historic-period site 15891.01-03 comprises a historic refuse scatter of five “Olympia Beer” cans with crimped ends, interlocking side seams, and pull-tab openings, which were in use between 1965 and 1975. Given the site’s close proximity to the CCC Trail, it is possible the site represents one or more expedient dumping events from passing hikers during the mid-1960s to the mid-1970s. Site 15891.01-03 is recommended not eligible for listing in the NRHP due to a failure to convey significance under any of the criteria.

Historic-period site 15891.01-04 consists of a concrete foundation measuring 13.5 feet long by 10.5 feet wide. A metal anchor with an attached wire fragment was observed protruding from the southwest portion of the foundation. Site 15891.01-04 is possibly the remnants of one of the first concrete block structures and associated microwave relay towers constructed on Roxy Ann Peak in the late 1950s. The site is recommended to be not eligible for the NRHP due to its failure to convey significance under any of the four criteria.

Historic-period Site 15891.01-05 comprises two small concrete foundations situated approximately 60 feet north of a modern telecommunications facility and 10-15 feet west of a transmission line pole. Three iron bar or rebar fragments were observed protruding from the surface of the northeastern-most foundation. This foundation also bears indeterminate symbols incised across its surface. Site 15891.01-04

is also possibly the remnants of one of the first concrete block structures and associated microwave relay towers constructed on Roxy Ann Peak in the late 1950s. The site is recommended to be not eligible for the NRHP due to its failure to convey significance under any of the four criteria.

Historic-period Site 15891.01-06 comprises a debris scatter of fifteen (15) amber glass beer bottles, five (5) glass food jars, two (2) condiment bottles, and more than three-hundred (300) cans. The site's average artifact density is 1-2 per square meter while the maximum artifact density is 8-10 per square meter. The variety of can types suggests that it had been in use as a roadside dump for a considerable period, from the 1930s to 1960s. Site 15891.01-06 is recommended not eligible for listing in the NRHP due to a failure to convey significance under any of the criteria.

Precontact lithic material site 15891.01-07 comprises a lithic scatter of greater than 120 CCS flakes identified within and alongside an equestrian trail that measures 3 meters wide and between 5 and 40 centimeters below the surrounding and unaltered ground surface. An intermittent drainage was observed flowing generally northwest/southeast through the Equestrian Trail and some flakes were identified within the drainage and in shallow pools of standing water. The artifact assemblage consisted of approximately 65%-70% biface thinning flakes and 30%-35% core reduction flakes. The artifacts are generally concentrated in the central portion of the site with the scatter becoming more diffuse towards the northwest and southeast edges. No formed tools or ground stone were identified on the surface within the site. Site 15891.01-07 possibly provides evidence of a toolmaking site. It is likely that more material and/or cultural features could be found with subsurface testing. As no subsurface testing has been conducted, the horizontal and vertical boundaries of the site have not been established. This site should be considered unevaluated for listing in the NRHP.

Precontact Isolate 15891.01-08i comprises one yellow CCS flake measuring 3.5 cm long, 2.8 cm wide, and 0.7 cm thick. As no subsurface testing has been conducted in the vicinity of the isolate, the horizontal and vertical boundaries of the isolate have not been established. This isolate should be considered unevaluated for listing in the NRHP.

Precontact Isolate 15891.01-09i comprises one tan and grayish blue CCS flake measuring 4.5 cm long, 3.5 cm wide, and 0.8 cm thick. As no subsurface testing has been conducted in the vicinity of the isolate, the horizontal and vertical boundaries of the isolate have not been established. This isolate should be considered unevaluated for listing in the NRHP.

Historic-period Isolate 15891.01-10i comprises one partially crushed oil can. The can bears intact lithography that reads "New Premium STP" on the front and "distributed by chemical compounds division of Studebaker Corporation St. Joseph Missouri copyright 1962" on the back. The observed lithography and STP's history suggest the can was produced in or after 1962.The isolate is recommended to be not eligible for the NRHP due to its failure to convey significance under any of the four criteria.

As a result of this survey, eleven total archaeological sites were identified by Dudek. Five archaeological resources (15891.01-03, 15891.01-04, 15891.01-05, 15891.01-06, and 15891.01-10i) are recommended not eligible for the NRHP and do not need to be avoided by the project. FEMA concurs that these sites are not eligible for listing in the NRHP. Six archaeological resources (35JA146, 15891.01-07, 15891.01-01, 15891.01-02, 15891.01-08i and 15891.01-09i) are recommended unevaluated for listing in the NRHP and should be avoided by the project. FEMA concurs that these sites are unevaluated and thus potentially eligible for listing in the NRHP. Additionally, it is recommended that all built environment resources within the APE, including the Prescott Park Historic Designed Landscape (BE-15891-PP), the Prescott Park Restroom (41602/BE-15891-2), and the North Roxy Overlook Shelter (BE-15891-4), are not eligible

for listing in the NRHP. FEMA concurs that these resources are not eligible for listing in the NRHP. To avoid potential adverse effects, a 20-meter buffer will be placed around the six (6) archaeological sites that remain unevaluated (35JA146, 15891.01-07, 15891.01-01, 15891.01-02, 15891.01-08i and 15891.01-09i). Project activities related to wildfire fuels mitigation work can occur within these buffers under the conditions that 1) all activity will be done with handheld tools, 2) vegetation waste will be carried out and not dragged for disposal outside of these buffers, 3) no burning or chipping will occur within these buffers, and 4) there will be no mechanized vehicle activity allowed in these areas. Additionally, work will be done during dry conditions to minimize ground disturbance.

Determination of Effects
Barring additional information from the Tribe and based on the assessment results, FEMA has determined that the Undertaking will result in No Adverse Effects to Historic Properties. Additionally, FEMA will condition its approval of the Undertaking to protect any unexpected discoveries of historic or archaeological resources during treatment work. We respectfully request your review of the enclosed report and, if appropriate, your concurrence with FEMA's findings or additional comment. Should you have any questions, please contact Collin Markstrom at (202) 615-8521 or collin.markstrom@fema.dhs.gov. Thank you in advance.

Sincerely,

COLLIN J MARKSTROM
Digitally signed by COLLIN J MARKSTROM
Date: 2024.08.12 08:10:48 -07'00'

For

Science Kilner
Regional Environmental Officer

Enclosures:
Dudek Cultural Resources Assessment Report

Cc:
Jennifer Bryant, Culture Education Program Manager

U.S. Department of Homeland Security
FEMA Region 10
130 228th Street, SW
Bothell, WA 98021-8627

FEMA

August 29, 2024

Ms. Christine Curran
Deputy Oregon State Historic Preservation Officer
Oregon Parks and Recreation Department
725 Summer Street NE, Suite C
Salem, Oregon 97301-1266
Sent via email

RE: FEMA Hazard Mitigation Grant Program 4562-24, City of Medford Bear Creek Greenway Hazardous Fuels Reduction, Jackson County

Dear Ms. Curran:

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) proposes to fund the City of Medford (Applicant), through the Oregon Department of Emergency Management (OEM), for hazardous fuels reduction in the Bear Creek Greenway (Undertaking). This funding is available from FEMA's Hazard Mitigation Grant Program (HMGP). The proposed Undertaking is being reviewed pursuant to Section 106 of the National Historic Preservation Act, as amended and the Programmatic Agreement (Agreement) in effect with your office and OEM. The City of Medford contracted Dudek to complete a cultural resources assessment for the Undertaking and the report is enclosed. Note FEMA is in the process of preparing an Environmental Assessment per the National Environmental Policy Act for this project.

Proposed Undertaking
The proposed Undertaking is located in the City of Medford, Jackson County, Oregon and will consist of hazardous fuels reduction of 350-acres in the Bear Creek Greenway (around Latitude 42.3206, Longitude -122.8592) as illustrated on Figures 1 and 2 of the enclosed report. The Almeda and Table Road Rock fires of 2020 burned over 3,000-acres in this area, prompting the need to reduce natural wildfire hazards. The fuels reduction treatments at the Bear Creek Greenway would include thinning understory vegetation, removing ladder fuels, reducing flammable vegetation fuels, and replacing flammable vegetation with fire-resistant vegetation to protect life, property, and at-risk buildings and structures on public and private property. The Undertaking would provide a break in the forest canopy, which would force a fire to the ground where wildland firefighters can more safely and easily manage suppression. The project area encompasses a combination of public City-owned property as well as the edges of privately owned residential and commercial parcels which are adjacent to the Bear Creek Greenway.

Bear Creek Greenway fuels reduction treatments would occur on a 350-acre area that runs adjacent to the 7-mile riparian corridor within the city. Fuels reduction methods include three management prescriptions: fuels reduction around structures and select properties along the riparian corridor of Bear Creek, fuels reduction within the forest and woodland habitats along the riparian corridor, and targeted removal and control of invasive species. Fuels reduction methods would vary at public and private property along the riparian corridor and upland areas within the Bear Creek Greenway

depending on ground conditions. The management prescriptions at Bear Creek include the following fuel treatment types: manual methods (thinning, pruning, brush piling and chipping); mechanical methods (mowing and chipping), and chemical methods (herbicide application).

Area of Potential Effects
FEMA has determined that the Area of Potential Effects (APE) for the Undertaking, as shown on Figures 1 and 2 of the enclosed report, includes the 350-acre area located in the Bear Creek Greenway. Access and staging to the project treatment areas would be provided by existing improved surfaces such as roads and pathways.

Historic Property Identification and Evaluation
The City of Medford contracted Dudek to complete a cultural resources assessment for the Undertaking, which included a pedestrian survey and archaeological subsurface testing. Dudek's archaeological subsurface testing for this project was conducted under SHPO Permit No. AP-3864. A review of available cultural resources information from the Oregon Archaeological Records Remote Access (OARRA) indicated that ten (10) previously recorded resources are within the APE, six (6) of which are precontact (35JA500 (Heitkamp 1), 35JA660, 35JA1087 (DeBunce Site), SOULA 2022.08-P2(IF), SOULA 2022.08-P3(IF), SOULA 2022.08-P4(IF)) and four (4) of which are historic (SH-BC-01, SH-BC-02, SH-BC-03, 35JA1086). Site 35JA1087 (DeBunce Site), located near the southern end of the APE, is unevaluated for the National Register of Historic Places (NRHP). The remaining nine (9) resources are not eligible for listing in the NRHP. Given the nature of the project and its location in a natural area along Bear Creek, the APE did not contain any built environment resources.

Dudek conducted a pedestrian survey across the entire 350-acre APE in 20-meter transect intervals except in areas of heavily vegetated riparian forests along the Bear Creek channel. Dudek identified three (3) new archaeological resources on the surface during the pedestrian survey, one (1) of which is prehistoric (Site 15891.02-01), and two (2) of which are historic (Site 15891.02-02 and Isolate 15891.02-07i). In addition, Dudek updated three (3) of the ten (10) previously recorded archaeological resources (prehistoric site 35JA1087 and Isolate SOULA 2022.08-P2(IF) (combined with Site 15891.02-01, and historic site SH-BC-01).

The hydrology and geomorphology of the Bear Creek floodplain indicate a low probability of intact subsurface archaeological deposits in the immediate vicinity of the creek channel. However, the APE encompasses some higher-elevation terraces that are located above the current floodplain. Therefore, Dudek archaeologists identified twenty-three (23) high-probability areas (HPAs) where the background research and field reconnaissance suggested there may be intact sediments and where project-related ground-disturbing activities are planned. In total, Dudek archaeologists conducted subsurface testing through the excavation of one hundred and seventy-nine (179) shovel probes (SPs) in these identified HPAs. SPs were also excavated to delineate newly recorded isolate and site boundaries. All SPs measured at least 30 cm in diameter and were excavated in 10 cm stratigraphic levels to a depth of at least 50 cm below the surface. All soils were screened through a 0.25- or 0.125-inch mesh screen. In total, twelve (12) SPs (SPs 21, 88, 89, 95, 102, 107, 110, 111, 117, 119, 121, and 144) produced precontact and historic cultural materials.

Of the twenty-three (23) identified HPAs, three (3) were located on private property within the APE buffer (HPA R-07, HPA R-08, and HPA R-11) where the City instructed Dudek to avoid subsurface

testing with SPs. Therefore, only a surface survey was conducted throughout these three areas with no cultural resources identified on the surface. No project-related ground disturbing activities are planned within these HPAs which include a portion of a manicured golf course, the cleared and graded edge of a sporting complex, and an area previously cleared for the development of Highland Drive.

Previously recorded site 35JA1087 (DeBunce Site), a precontact habitation site, is located within the southern third of the APE on an upper terrace of Bear Creek. Dudek relocated 35JA1087 using the spatial data available on OARRA. Dudek archaeologists identified one surface artifact, a cryptocrystalline silicate (CCS) core approximately 20 meters east of the existing site boundary, and the site boundary was expanded to include it. A total of 18 shovel probes (SPs 01-13, 18, and 34-37) were excavated east of the site boundary within HPA-Z-01 with no additional cultural resources identified. Site 35JA1087 should be considered unevaluated for listing in the NRHP until a formal analysis of artifacts is completed and testing is conducted within the boundaries of the site to assess integrity. The only proposed project-related activity within the site is to continue to mow the long grasses. No ground disturbances are proposed.

Precontact lithic material site 15891.02-01 is in the southern portion of the APE on a terrace 0.05 miles west of Bear Creek. Previously recorded precontact isolate SOULA 2022-08-P2 (IF) (two CCS flakes and three mammal bone fragments) has been combined and incorporated into Site 15891.02-01 due to its proximity to newly identified cultural material. Following the pedestrian survey, Dudek excavated nine shovel probes to delineate the horizontal boundaries of the site. One of these radial shovel probes (SP 21), was positive for cultural materials consisting of a CCS core fragment collected from a depth of 30-40 cm. No additional cultural materials were identified during subsurface testing. Site 15891.02-01 is a low-density precontact lithic scatter comprising 15 artifacts (10 CCS flakes, 1 CCS biface midsection, 1 CCS core fragment, and 3 mammal bone fragments). Site 15891.02-01 should be considered unevaluated for listing in the NRHP until its vertical boundary is delineated and the distribution and association of cultural materials within the site can be assessed. The only proposed project-related activity within the site is to continue to mow the long grasses. No ground disturbances are proposed.

Historic-period site 15891.02-02 was identified in the northern portion of the APE on the east and west banks of Bear Creek between I-5 and Biddle Road. The site includes two pieces of a steel bridge support structure (railroad bridge girder) and hundreds of pieces (large slabs and boulder-sized chunks) of concrete rubble lining on both sides of the creek as rip rap. Site 15891.02-02 is a historic object (pre-WWII railroad bridge girder) that appears to have been repurposed in the late-1970s as the span for an access road bridge used by ODOT to construct I-5. The site is not yet 50 years old, but the railroad bridge girder was manufactured prior to World War II. These types of railroad bridge girders were common during the mid-twentieth century and many are still in use or have been repurposed as expedient or temporary horizontal support structures for other types of bridges. Site 15891.02-02 is recommended not eligible for listing in the NRHP due to a failure to convey significance under any of the applicable criteria. Therefore, further archaeological work for this resource and avoidance by the project is not necessary.

Site 15891.02-03 is a sparse, historic debris scatter located in the central third of the APE on the edge of a lower terrace approximately 150 feet east of Bear Creek. The site contains a total of thirty (30) fragmented and mostly structural or industrial historic-period artifacts, none of which retain enough

diagnostic features to assign a specific temporal range, nor do they appear to be functionally related to one another. In addition, soils identified in the vicinity of the site consisted of fill and flood deposits. It is likely that the area represents secondarily deposited materials from the nearby urban development associated with commerce and transportation. Based on the surface finds, it is not possible to place the site into a historic context and assign a historic theme, and the fragmentary nature of the debris and lack of features indicate that the site is missing key aspects of integrity, such as materials, design, workmanship, association, setting, and feeling. Dudek recommends Site 15891.02-03 to be not eligible for the NRHP. Therefore, further archaeological work for this resource and avoidance by the project is not necessary.

Site 15891.02-04 is a historic debris scatter with 45 pieces of historic-period refuse and one obsidian flake located in the central third of the APE on the edge of a lower terrace approximately 150 feet east of Bear Creek and 100 feet north of where Lazy Creek flows into Bear Creek. The historic-period component includes fragmented metal (possible disintegrating bottle cap with cork lining, a metal spring clip, five pieces of metal wire, one round wire nail, one piece of metal foil, one large bolt with a washer, one square washer fragment, one latch or hook fragment, and one cap fragment possibly part of a gas cap), glass (fragments of colorless glass, fragments of colorless vessel body, an amber glass fragment, and a fragment of green vessel body), concrete slab fragments, a red brick fragment, faunal bone, and plastic items. The precontact component of the site is one early-stage biface reduction flake with cortex covering its dorsal surface. No additional precontact artifacts were identified within the site. None of the artifacts in the assemblage retain enough diagnostic features to assign a specific temporal range, nor do they appear to be functionally related to one another. Fill and flood deposit soils in the vicinity of the site likely represent secondarily deposited materials from the nearby urban development. Dudek recommends Site 15891.02-04 to be not eligible for the NRHP and that further archaeological work for this resource and avoidance by the project is not necessary.

Precontact Isolate 15891.02-05i was identified during subsurface testing in the central portion of the APE along a broad terrace approximately 42 meters south of Bear Creek. The isolate consists of one piece of red CCS debitage identified during subsurface testing at a depth of 30-40 cm within SP 102. A total of four shovel probes were excavated at cardinal directions around the isolate to delineate its boundaries, and other sampling shovel probes were excavated along the same landform as the isolate, outside of these radials but no additional cultural materials were identified. Isolate 15891.02-05i is recommended not eligible for listing in the NRHP due to a failure to convey significance under any of the criteria. Therefore, further archaeological work for this resource and avoidance by the project is not necessary.

Historic-period Isolate 15891.01-06i was identified during subsurface testing in the northern third of the APE in HPA-Z-05 situated on a broad lower terrace west of I-5 and bounded between Bear Creek Greenway and Bear Creek. The isolate is an intact, colorless bottle identified at a depth of 0-20 cm in SP 144. The bottle base carries the Owens-Illinois makers mark used from 1954 to the present, with a date code corresponding to 1955. A total of four radial shovel probes were excavated at cardinal directions 5 meters from the isolate to delineate its boundaries, and several other sampling shovel probes were excavated outside of these radials in HPA-Z-05 north of the isolate, but no additional cultural materials were identified. Isolate 15891.02-06i is recommended not eligible for listing in the NRHP due to a failure to convey significance under any of the criteria. Therefore, further archaeological work for this resource and avoidance by the project is not necessary.

Historic-period archaeological isolate 15891.02-07i consists of one artifact, the car body of a 1953 Dodge Coronet, found with a heap of recent modern trash and transient camp debris located approximately 15 meters southwest of the left bank of Bear Creek, south of the Medford Sports Park baseball fields in an active floodplain. No subsurface testing was conducted in the vicinity of the isolate. Isolate 15891.02-07i is recommended not eligible for listing in the NRHP due to a failure to convey significance under any of the criteria. Therefore, further archaeological work for this resource and avoidance by the project is not necessary.

FEMA concurs with Dudek that historic-period sites 15891.02-02 and 15891.02-03, multicomponent site 15891.02-04, precontact isolate 15891.02-05i, and historic-period isolates 15891.02-06i and 15891.02-07i are not eligible for the NRHP, should not be considered historic properties, and do not need to be avoided by the project. Additionally, FEMA concurs with Dudek that precontact sites 35JA1087 and 15891.02-01 should remain unevaluated for NRHP listing. To avoid potential adverse effects, a 30-meter buffer will be placed around the two (2) archaeological sites that remain unevaluated (sites 35JA1087 and 15891.02-01). Project activities related to wildfire fuels mitigation work can occur within these buffers under the conditions that 1) all activity will be done with handheld tools, 2) vegetation waste will be carried out and not dragged for disposal outside of these buffers, 3) no burning or chipping will occur within these buffers, and 4) there will be no mechanized vehicle activity allowed in these areas. Additionally, work will be done during dry conditions to minimize ground disturbance.

FEMA has also conducted consultation with the Cow Creek Band of Umpqua Tribe of Indians, the Confederated Tribes of the Grand Ronde, the Confederated Tribes of Siletz Indians of Oregon, and the Tolowa Dee-ni' Nation. We have also provided a copy of Dudek's report to the Tribes for review.

Determination of Effects
Barring additional information from your office or the Tribes and based on the assessment results, FEMA has determined that the Undertaking will result in No Adverse Effects to Historic Properties. Additionally, FEMA will condition its approval of the Undertaking to protect any unexpected discoveries of historic or archaeological resources during treatment work. We respectfully request your review of the enclosed report and, if appropriate, your concurrence with FEMA's findings or additional comment. Should you have any questions, please contact Collin Markstrom at (202) 615-8521 or collin.markstrom@fema.dhs.gov. Thank you in advance.

Sincerely,
SCIENCE A KILNER
Digitally signed by SCIENCE A KILNER
Date: 2024.08.29 07:33:58 -07'00'
Science Kilner
Regional Environmental Officer

Enclosures:
Dudek Cultural Resources Assessment Report
Oregon SHPO Submittal Form
APE Shapefile

U.S. Department of Homeland Security
FEMA Region 10
130 228th Street, SW
Bothell, WA 98021-8627

FEMA

August 29, 2024

Mr. Ben Steward
Tribal Historic Preservation Officer
Cow Creek Band of Umpqua Tribe of Indians
2371 NE Stephens Street
Suite 100
Roseburg, Oregon 97470-1399
Sent via email

RE: FEMA Hazard Mitigation Grant Program 4562-24, City of Medford Bear Creek Greenway Hazardous Fuels Reduction, Jackson County

Dear Mr. Steward:

Please consider this a follow up to our letter dated February 6, 2024. The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) proposes to fund the City of Medford (Applicant), through the Oregon Department of Emergency Management (OEM), for hazardous fuels reduction in the Bear Creek Greenway (Undertaking). This funding is available from FEMA's Hazard Mitigation Grant Program (HMGP). The proposed Undertaking is being reviewed pursuant to Section 106 of the National Historic Preservation Act, as amended. The City of Medford contracted Dudek to complete a cultural resources assessment for the Undertaking and the report is enclosed. Note FEMA is in the process of preparing an Environmental Assessment per the National Environmental Policy Act for this project.

Proposed Undertaking
The proposed Undertaking is located in the City of Medford, Jackson County, Oregon and will consist of hazardous fuels reduction of 350-acres in the Bear Creek Greenway (around Latitude 42.3206, Longitude -122.8592) as illustrated on Figures 1 and 2 of the enclosed report. The Almeda and Table Road Rock fires of 2020 burned over 3,000-acres in this area, prompting the need to reduce natural wildfire hazards. The fuels reduction treatments at the Bear Creek Greenway would include thinning understory vegetation, removing ladder fuels, reducing flammable vegetation fuels, and replacing flammable vegetation with fire-resistant vegetation to protect life, property, and at-risk buildings and structures on public and private property. The Undertaking would provide a break in the forest canopy, which would force a fire to the ground where wildland firefighters can more safely and easily manage suppression. The project area encompasses a combination of public City-owned property as well as the edges of privately owned residential and commercial parcels which are adjacent to the Bear Creek Greenway.

Bear Creek Greenway fuels reduction treatments would occur on a 350-acre area that runs adjacent to the 7-mile riparian corridor within the city. Fuels reduction methods include three management prescriptions: fuels reduction around structures and select properties along the riparian corridor of Bear Creek, fuels reduction within the forest and woodland habitats along the riparian corridor, and targeted removal and control of invasive species. Fuels reduction methods would vary at public and

private property along the riparian corridor and upland areas within the Bear Creek Greenway depending on ground conditions. The management prescriptions at Bear Creek include the following fuel treatment types: manual methods (thinning, pruning, brush piling and chipping); mechanical methods (mowing and chipping), and chemical methods (herbicide application).

Area of Potential Effects
FEMA has determined that the Area of Potential Effects (APE) for the Undertaking, as shown on Figures 1 and 2 of the enclosed report, includes the 350-acre area located in the Bear Creek Greenway. Access and staging to the project treatment areas would be provided by existing improved surfaces such as roads and pathways.

Historic Property Identification and Evaluation
The City of Medford contracted Dudek to complete a cultural resources assessment for the Undertaking, which included a pedestrian survey and archaeological subsurface testing. Dudek's archaeological subsurface testing for this project was conducted under SHPO Permit No. AP-3864. A review of available cultural resources information from the Oregon Archaeological Records Remote Access (OARRA) indicated that ten (10) previously recorded resources are within the APE, six (6) of which are precontact (35JA500 (Heitkamp 1), 35JA660, 35JA1087 (DeBunce Site), SOULA 2022.08-P2(IF), SOULA 2022.08-P3(IF), SOULA 2022.08-P4(IF)) and four (4) of which are historic (SH-BC-01, SH-BC-02, SH-BC-03, 35JA1086). Site 35JA1087 (DeBunce Site), located near the southern end of the APE, is unevaluated for the National Register of Historic Places (NRHP). The remaining nine (9) resources are not eligible for listing in the NRHP. Given the nature of the project and its location in a natural area along Bear Creek, the APE did not contain any built environment resources.

Dudek conducted a pedestrian survey across the entire 350-acre APE in 20-meter transect intervals except in areas of heavily vegetated riparian forests along the Bear Creek channel. Dudek identified three (3) new archaeological resources on the surface during the pedestrian survey, one (1) of which is prehistoric (Site 15891.02-01), and two (2) of which are historic (Site 15891.02-02 and Isolate 15891.02-07i). In addition, Dudek updated three (3) of the ten (10) previously recorded archaeological resources (prehistoric site 35JA1087 and Isolate SOULA 2022.08-P2(IF) (combined with Site 15891.02-01, and historic site SH-BC-01).

The hydrology and geomorphology of the Bear Creek floodplain indicate a low probability of intact subsurface archaeological deposits in the immediate vicinity of the creek channel. However, the APE encompasses some higher-elevation terraces that are located above the current floodplain. Therefore, Dudek archaeologists identified twenty-three (23) high-probability areas (HPAs) where the background research and field reconnaissance suggested there may be intact sediments and where project-related ground-disturbing activities are planned. In total, Dudek archaeologists conducted subsurface testing through the excavation of one hundred and seventy-nine (179) shovel probes (SPs) in these identified HPAs. SPs were also excavated to delineate newly recorded isolate and site boundaries. All SPs measured at least 30 cm in diameter and were excavated in 10 cm stratigraphic levels to a depth of at least 50 cm below the surface. All soils were screened through a 0.25- or 0.125-inch mesh screen. In total, twelve (12) SPs (SPs 21, 88, 89, 95, 102, 107, 110, 111, 117, 119, 121, and 144) produced precontact and historic cultural materials.

Of the twenty-three (23) identified HPAs, three (3) were located on private property within the APE buffer (HPA R-07, HPA R-08, and HPA R-11) where the City instructed Dudek to avoid subsurface testing with SPs. Therefore, only a surface survey was conducted throughout these three areas with no cultural resources identified on the surface. No project-related ground disturbing activities are planned within these HPAs which include a portion of a manicured golf course, the cleared and graded edge of a sporting complex, and an area previously cleared for the development of Highland Drive.

Previously recorded site 35JA1087 (DeBunce Site), a precontact habitation site, is located within the southern third of the APE on an upper terrace of Bear Creek. Dudek relocated 35JA1087 using the spatial data available on OARRA. Dudek archaeologists identified one surface artifact, a cryptocrystalline silicate (CCS) core approximately 20 meters east of the existing site boundary, and the site boundary was expanded to include it. A total of 18 shovel probes (SPs 01-13, 18, and 34-37) were excavated east of the site boundary within HPA-Z-01 with no additional cultural resources identified. Site 35JA1087 should be considered unevaluated for listing in the NRHP until a formal analysis of artifacts is completed and testing is conducted within the boundaries of the site to assess integrity. The only proposed project-related activity within the site is to continue to mow the long grasses. No ground disturbances are proposed.

Precontact lithic material site 15891.02-01 is in the southern portion of the APE on a terrace 0.05 miles west of Bear Creek. Previously recorded precontact isolate SOULA 2022-08-P2 (IF) (two CCS flakes and three mammal bone fragments) has been combined and incorporated into Site 15891.02-01 due to its proximity to newly identified cultural material. Following the pedestrian survey, Dudek excavated nine shovel probes to delineate the horizontal boundaries of the site. One of these radial shovel probes (SP 21), was positive for cultural materials consisting of a CCS core fragment collected from a depth of 30-40 cm. No additional cultural materials were identified during subsurface testing. Site 15891.02-01 is a low-density precontact lithic scatter comprising 15 artifacts (10 CCS flakes, 1 CCS biface midsection, 1 CCS core fragment, and 3 mammal bone fragments). Site 15891.02-01 should be considered unevaluated for listing in the NRHP until its vertical boundary is delineated and the distribution and association of cultural materials within the site can be assessed. The only proposed project-related activity within the site is to continue to mow the long grasses. No ground disturbances are proposed.

Historic-period site 15891.02-02 was identified in the northern portion of the APE on the east and west banks of Bear Creek between I-5 and Biddle Road. The site includes two pieces of a steel bridge support structure (railroad bridge girder) and hundreds of pieces (large slabs and boulder-sized chunks) of concrete rubble lining on both sides of the creek as rip rap. Site 15891.02-02 is a historic object (pre-WWII railroad bridge girder) that appears to have been repurposed in the late-1970s as the span for an access road bridge used by ODOT to construct I-5. The site is not yet 50 years old, but the railroad bridge girder was manufactured prior to World War II. These types of railroad bridge girders were common during the mid-twentieth century and many are still in use or have been repurposed as expedient or temporary horizontal support structures for other types of bridges. Site 15891.02-02 is recommended not eligible for listing in the NRHP due to a failure to convey significance under any of the applicable criteria. Therefore, further archaeological work for this resource and avoidance by the project is not necessary.

Site 15891.02-03 is a sparse, historic debris scatter located in the central third of the APE on the edge of a lower terrace approximately 150 feet east of Bear Creek. The site contains a total of thirty (30) fragmented and mostly structural or industrial historic-period artifacts, none of which retain enough diagnostic features to assign a specific temporal range, nor do they appear to be functionally related to one another. In addition, soils identified in the vicinity of the site consisted of fill and flood deposits. It is likely that the area represents secondarily deposited materials from the nearby urban development associated with commerce and transportation. Based on the surface finds, it is not possible to place the site into a historic context and assign a historic theme, and the fragmentary nature of the debris and lack of features indicate that the site is missing key aspects of integrity, such as materials, design, workmanship, association, setting, and feeling. Dudek recommends Site 15891.02-03 to be not eligible for the NRHP. Therefore, further archaeological work for this resource and avoidance by the project is not necessary.

Site 15891.02-04 is a historic debris scatter with 45 pieces of historic-period refuse and one obsidian flake located in the central third of the APE on the edge of a lower terrace approximately 150 feet east of Bear Creek and 100 feet north of where Lazy Creek flows into Bear Creek. The historic-period component includes fragmented metal (possible disintegrating bottle cap with cork lining, a metal spring clip, five pieces of metal wire, one round wire nail, one piece of metal foil, one large bolt with a washer, one square washer fragment, one latch or hook fragment, and one cap fragment possibly part of a gas cap), glass (fragments of colorless glass, fragments of colorless vessel body, an amber glass fragment, and a fragment of green vessel body), concrete slab fragments, a red brick fragment, faunal bone, and plastic items. The precontact component of the site is one early-stage biface reduction flake with cortex covering its dorsal surface. No additional precontact artifacts were identified within the site. None of the artifacts in the assemblage retain enough diagnostic features to assign a specific temporal range, nor do they appear to be functionally related to one another. Fill and flood deposit soils in the vicinity of the site likely represent secondarily deposited materials from the nearby urban development. Dudek recommends Site 15891.02-04 to be not eligible for the NRHP and that further archaeological work for this resource and avoidance by the project is not necessary.

Precontact Isolate 15891.02-05i was identified during subsurface testing in the central portion of the APE along a broad terrace approximately 42 meters south of Bear Creek. The isolate consists of one piece of red CCS debitage identified during subsurface testing at a depth of 30-40 cm within SP 102. A total of four shovel probes were excavated at cardinal directions around the isolate to delineate its boundaries, and other sampling shovel probes were excavated along the same landform as the isolate, outside of these radials but no additional cultural materials were identified. Isolate 15891.02-05i is recommended not eligible for listing in the NRHP due to a failure to convey significance under any of the criteria. Therefore, further archaeological work for this resource and avoidance by the project is not necessary.

Historic-period Isolate 15891.01-06i was identified during subsurface testing in the northern third of the APE in HPA-Z-05 situated on a broad lower terrace west of I-5 and bounded between Bear Creek Greenway and Bear Creek. The isolate is an intact, colorless bottle identified at a depth of 0-20 cm in SP 144. The bottle base carries the Owens-Illinois makers mark used from 1954 to the present, with a date code corresponding to 1955. A total of four radial shovel probes were excavated at cardinal directions 5 meters from the isolate to delineate its boundaries, and several other sampling shovel probes were excavated outside of these radials in HPA-Z-05 north of the isolate, but no additional cultural materials were identified. Isolate 15891.02-06i is recommended not eligible for listing in the

NRHP due to a failure to convey significance under any of the criteria. Therefore, further archaeological work for this resource and avoidance by the project is not necessary.

Historic-period archaeological isolate 15891.02-07i consists of one artifact, the car body of a 1953 Dodge Coronet, found with a heap of recent modern trash and transient camp debris located approximately 15 meters southwest of the left bank of Bear Creek, south of the Medford Sports Park baseball fields in an active floodplain. No subsurface testing was conducted in the vicinity of the isolate. Isolate 15891.02-07i is recommended not eligible for listing in the NRHP due to a failure to convey significance under any of the criteria. Therefore, further archaeological work for this resource and avoidance by the project is not necessary.

FEMA concurs with Dudek that historic-period sites 15891.02-02 and 15891.02-03, multicomponent site 15891.02-04, precontact isolate 15891.02-05i, and historic-period isolates 15891.02-06i and 15891.02-07i are not eligible for the NRHP, should not be considered historic properties, and do not need to be avoided by the project. Additionally, FEMA concurs with Dudek that precontact sites 35JA1087 and 15891.02-01 should remain unevaluated for NRHP listing. To avoid potential adverse effects, a 30-meter buffer will be placed around the two (2) archaeological sites that remain unevaluated (sites 35JA1087 and 15891.02-01). Project activities related to wildfire fuels mitigation work can occur within these buffers under the conditions that 1) all activity will be done with handheld tools, 2) vegetation waste will be carried out and not dragged for disposal outside of these buffers, 3) no burning or chipping will occur within these buffers, and 4) there will be no mechanized vehicle activity allowed in these areas. Additionally, work will be done during dry conditions to minimize ground disturbance.

Determination of Effects
Barring additional information from the Tribe and based on the assessment results, FEMA has determined that the Undertaking will result in No Adverse Effects to Historic Properties. Additionally, FEMA will condition its approval of the Undertaking to protect any unexpected discoveries of historic or archaeological resources during treatment work. We respectfully request your review of the enclosed report and, if appropriate, your concurrence with FEMA's findings or additional comment. Should you have any questions, please contact Collin Markstrom at (202) 615-8521 or collin.markstrom@fema.dhs.gov. Thank you in advance.

Sincerely,

COLLIN J MARKSTROM
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Date: 2024.08.29 09:36:57 -07'00'

For

Science Kilner
Regional Environmental Officer

Enclosures:
Dudek Cultural Resources Assessment Report

Cc:
Jennifer Bryant, Culture Education Program Manager

Appendix B: Biological Assessment

Medford Hazardous Fuels Reduction Project

Biological Assessment

Medford, Oregon

January 2024

FEMA

Table of Contents

Tables

Figures

Acronyms and Abbreviations

BA	Biological Assessment
CFR	Code of Federal Regulations
CWPP	Community Wildlife Protection Plan
DCH	Designated Critical Habitat
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
ESA	Endangered Species Act of 1973
ESU	Evolutionary Significant Unit
FEMA	Federal Emergency Management Agency
ft	Foot/Feet
HMGP	Hazard Mitigation Grant Program
LSR	Late-successional Reserve
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Service
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NSO	Northern Spotted Owl
ODFW	Oregon Department of Fish and Wildlife
OEM	Oregon Department of Emergency Management
OHWM	Ordinary High-Water Mark
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
WUI	Wildland Urban Interface

Glossary

- **Brush:** A collective term that refers to stands of vegetation dominated by shrubby, woody plants, or low growing trees.
- **Buffer:** Untreated areas, also referred to as setbacks, along a waterway or around a wetland or drainage feature where surface runoff enters streams within which certain treatment methods are prohibited (e.g., herbicides are not permitted in these areas). Buffers also refer to the distance perpendicular to the bankfull elevation for streams, the upland boundary for wetlands, or the upper bank for roadside ditches that would be flagged as no-application zones for herbicide application.
- **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.
- **Conifer Trees:** Conifer trees are types of common softwood trees that are identified by pine-like needle leaves and seed-producing cones.
- **Diameter at Breast Height:** DBH is the standard for measuring trees. DBH refers to the tree diameter measured at approximately 4.5 feet above the ground.
- **Disaster:** An occurrence of a hazard that causes a negative outcome.
- **Ground Fuel:** All combustible materials below the surface litter, including duff, tree or shrub roots, punchy wood, peat, and sawdust, that normally support a glowing combustion without flame.
- **Hardwood Trees:** Trees with broad, flat leaves as opposed to conifer or needled trees.
- **Hazard:** Something that is potentially dangerous or harmful, and is often the root cause of an unwanted outcome.
- **Hazardous Fuels Reduction:** Includes thinning vegetation, removing ladder fuels, reducing flammable vegetative materials, and replacing flammable vegetation with fire-resistent vegetation for the protection of life and property. Targeted vegetation may include excess fuels or otherwise flammable species.
- **Ladder Fuels:** Includes shrubs, small trees, down wood or brush, and low limbs that may provide a route for a fire to climb from ground fuels up into the forest canopy.
- **Setback:** Untreated areas, also referred to as buffers, along a waterway or around a wetland or drainage feature where surface runoff enters streams. Herbicides are not permitted in these areas.

- **Slash:** Debris left after logging, pruning, thinning, or brush cutting; includes logs, chips, bark, branches, stumps, and broken understory trees or brush.
- **Thinning:** Removal of some trees, branches, or shrubs from a forest stand.
- **Wildfire:** Any uncontrolled fire that spreads through vegetative fuels such as forests, shrubs, or grasslands, exposing and possibly consuming structures.
- **Wildland Urban Interface:** The geographical area where buildings and structures and other human development meet or intermingle with wildland or vegetative fuels.

Executive Summary

The City of Medford (City) has applied for funding from the U.S. Department of Homeland Security's Federal Emergency Management Agency Hazard Mitigation Grant Program (HMGP) for financial assistance for the Hazardous Fuels Reduction Project (Project) in Jackson County. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288, as amended, 42 U.S.C. §§ 5121-5207), and is administered by the Oregon Department of Emergency Management. These HMGP funds are available from Presidential major disaster DR-4562-OR Wildfires and Straight-Line Winds declared in 2020. The purpose of the HMGP is to help communities implement hazard mitigation measures following a Presidential major disaster declaration.

A biological assessment (BA) of the potential effects of the Project on Endangered Species Act (ESA)-listed species and critical habitats is required by Section 7 of the ESA (16 U.S.C. § 1536). The ESA-listed species (including proposed and candidate species) that could occur in the region were obtained from the U.S. Fish and Wildlife Service's Information for Planning and Consultation (IPaC) website on Sep, 30, 2023.

There are eight ESA-listed species (and 1 candidate) that occur in the region, but only Franklin's bumble bee (FRBB) is expected to occur within the action area and be affected by project actions. Critical habitat has not been designed for the FRBB. However, the project area does occur within a FRBB High Priority Zone. The potential impacts of the Project on these ESA-listed species or their habitats within the action area were evaluated as part of this BA. The evaluation was based on the existing habitat conditions and suitability for the life history requirements of the identified ESA-listed species.

A summary of potential effects from the Project on all regional ESA-listed species and designated critical habitats is provided in Table ES-1. The Project was determined to **may affect, not likely to adversely affect** FRBB in the short- and long-term. The Project would have **no effect** on the other ESA-listed species.

Table ES-1. Executive Summary of Determination for ESA-Listed species in the Region

Species Name	*Status*	*Potential Short-term Effects on Species*	*Potential Long-term Effects on Species*	*Potential Effects on DCH*
Insects				
Franklin's Bumble Bee (*Bombus franklini*)	E	May affect, not likely to adversely affect	May affect, not likely to adversely affect	No DCH
Monarch Butterfly (*Danaus plexippus*)	C	No Effect	No Effect	No DCH
Crustaceans				
Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)	T	No Effect	No Effect	No Effect
Plants				
Cook's Lomatium (*Lomatium cookii*)	E	No Effect	No Effect	No Effect
Gentner's Fritillary (*Fritillaria gentneri*)	E	No Effect	No Effect	No DCH
Large-flowered Woolly Meadowfoam (*Limnanthes pumila grandiflora*)	E	No Effect	No Effect	No Effect
Birds				
Northern Spotted Owl *(Strix occidentalis caurina)*	T	No Effect	No Effect	No Effect
Mammals				
Gray Wolf (*Canis lupus*)	E	No Effect	No Effect	No Effect
Pacific Marten *(Martes caurina)*	T	No Effect	No Effect	No Effect

Note: Green highlighted species and/or DCH are expected to occur in the action area.

1. Introduction

The City of Medford (City) through the Oregon Department of Emergency Management (OEM) has applied for funding from the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) to conduct hazardous fuels reduction within public and private property within the City (Project). The City is proposing to treat up to 700 acres out of 1,219 acres along the Bear Creek Greenway [southern project extent approximately 42.2878699, -122.8237365; northern extent approximately 42.3654284, -122.8875444] and up to 650 acres out of 1,740 acres at Prescott Park in Jackson County, Oregon [southern extent approximately 42.3452401, -122.7905525; northern extent approximately 42.3745756, -122.7846616]. The proposed fuels reduction and vegetation management treatments would reduce the volume of hazardous trees and fuels, control invasive species, and decrease the overall risk for wildfire ignition and spread.

FEMA has prepared this Biological Assessment (BA) in order to evaluate potential effects of the Project under the Endangered Species Act (ESA) of 1973 (16 U.S.C. § 1531–1544) on species that are listed as endangered or threatened, or are proposed for listing, and their designated critical habitat (DCH). The ESA is regulated by the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS). Potential effects on ESA-listed species and DCH within Jackson County are evaluated in accordance with Section 7 of the ESA. Essential fish habitat (EFH), as designated under the Magnuson-Stevens Act of 1996, is under the jurisdiction of NMFS.

This BA will acknowledge the presence of all USFWS managed ESA listed species that may occur in the immediate region (see **Section 3**). All NMFS managed ESA-listed species, their DCH, or EFH will be consulted upon separately through the existing FEMA Endangered Species Programmatic (NMFS 2018) and will not be discussed further in this BA. Those species which are not expected to be within the action area or otherwise not affected by Project actions will include a short discussion as to why they will be excluded from further analysis. Only the species that are expected to be present in the action area will be included in the Species Effects Analysis (see **Section 4**).

1.1. Project Proponent and Federal Nexus

The City has applied for federal financial funding assistance under the FEMA Hazard Mitigation Grant Program (HMGP). The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288, as amended, 42 United States Code (U.S.C.) §§ 5121-5207). HMGP grants are awarded by FEMA to the Oregon Department of Emergency Management (OEM) and are then administered to the sub-recipient (City). Under the HMGP, federal funds pay 75 percent of the project cost, and the remaining 25 percent comes from non-federal funding sources. The HMGP funds were made available from the Presidential major disaster DR-4562-OR Wildfires and Straight-Line Winds for the Almeda Fire in 2020, targeted for projects that reduce the increased risk of future wildfires. The Project is specifically numbered as 4562-24-OR.

1.2. Project Purpose

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 location.

Specifically, the purpose of the proposed fire safety and resiliency measures associated with the proposed action is to reduce vegetative fuels and decrease the likelihood of a wildfire within the Wildland-Urban Interface (WUI) in the City. The need for these measures is driven by the increase in wildfire hazards and recorded fire history in the region that has resulted from the combination of long-term changes in environmental conditions, dry fire seasons, rugged terrain, and an uptick in urban development in or near wildlands, which increases the risk of fires in the WUI (Josephine and Jackson Counties 2019). Prescriptive landscape hazardous fuels reduction within the two treatment areas within Prescott Park and along Bear Creek Greenway may contribute to containment by reducing the intensity and extent of wildfires within Medford, which would ultimately reduce the risks to people living in the wider vicinity of the treatment areas.

According to the 2018 Jackson County Multi-Jurisdictional Natural Hazard Mitigation Plan (MJNHMP), the probability of Jackson County experiencing a wildfire is “high,” meaning a significant incident is likely to occur within the next 10 to 35 years. The 2019 Rogue Valley Integrated Community Wildfire Protection Plan (CWPP) identifies a large portion of both Josephine and Jackson counties, including the Rogue Valley and the entirety of Medford, as a community at risk as well as a WUI area adjacent to forested federal lands (Josephine and Jackson Counties 2019). Additionally, the City has a considerable number of low-income communities that are financially unable to implement substantial fire mitigation activities in the absence of funding assistance.

The influence and effects of wildfire have changed as attempts have been made to suppress it. Past fire exclusion policies, as well as other historic and existing land management practices, have resulted in the loss of historic burn mosaics, reductions in forest diversity, and the accumulation of more continuous, dense wildland fuels. Uninterrupted (continuous) fuels have led to larger, more intense wildfires, which are increasingly difficult and expensive to suppress, especially during periods of very dry and/or windy weather, or episodes of widespread lightning activity. These conditions can quickly overwhelm local, state, and federal firefighting resources (Josephine and Jackson Counties 2019).

The City is still highly vulnerable to increased wildfire risks, both socially and economically, that would result from a large devastating wildfire. After the impacts of the 2020 Almeda and Table Rock Road Fires, it was evident that treated and restored areas (where riparian restoration and fuels reduction treatments were in-place prior to the fires) significantly changed the progression of the fire by slowing the spread and reducing the severity (BCRI 2023). It is therefore important that the City continue to address wildfire risk through fuels reduction and vegetation management.

1.3. Consultation History

There is no known prior consultation history associated with the Project location. FEMA submitted a draft version of this BA to the USFWS for review on December 6, 2023; USFWS responded with comments on Jan 03, 2024. This final BA, submitted Jan 10, 2024, was informed by the USFWS' review.

1.4. Study Method

This BA relies on available information on species presence and distribution based on review of the following sources:

- USFWS Information for Planning and Consultation (IPaC) Official Species List.
- ESA listings and DCH extents.
- Oregon Biodiversity Information Center (ORBIC) distribution data.
- U.S. Forest Service 2016 Northwest Forest Plan northern spotted owl distribution data.

On October 27, 2022, representatives from FEMA met with City staff for a site visit to confirm scope of work, project area extents, and confirm existing site conditions.

2. Proposed Action

2.1. Project, Action, and Evaluation Area

2.1.1. PROJECT AREA

The Project is located in the geographic area known as the Rogue Valley, a rain shadow between the Cascade Range and Siskiyou Mountains within the Middle Rogue and Upper Rogue sub-basins and within the Lower Antelope Creek (HUC 171003070811), Larson Creek-Bear Creek (HUC 171003080110), and Whetstone Creek-Rogue River (HUC 171003080202) sub-watersheds which are part of the Southern Oregon Coastal basin. Much of the area remains sparsely settled with the only major urban areas in the Rogue Valley consisting of Ashland, Medford, and Grants Pass. The two fuel reduction treatment areas are in portions of the Bear Creek Greenway and Prescott Park within the City of Medford in Jackson County, Oregon.

The Bear Creek Greenway is a continuous greenbelt with a 20-mile paved multi-use trail that runs parallel to Bear Creek for approximately 7 miles through the City of Medford. This greenway links the regional cities of Ashland, Talent, Phoenix, and Central Point to the Dean Creek Frontage Road near Seven Oaks Interchange on Interstate 5 (I-5), north of the City of Central Point. Prescott Park is a 1,740-acre park located on the east side of Medford, approximately 7 miles from the nearest Bear Creek Greenway fuels reduction treatment area (Hillcrest Road and off Roxy Ann Road near the Eagle Trace Subdivision). Prescott Park sits at an elevation of 3,571 feet and is more than 2,000 feet above the valley floor near the Bear Creek Greenway.

The City is proposing to treat up to 700 acres (project area) out of 1,219 acres along the Bear Creek Greenway and up to 650 acres (project area) within a total area of 1,740 acres at Prescott Park in Jackson County, Oregon. **Figure 1** identifies the project areas in relation to the City as a whole. Both proposed project treatment areas are within highly vulnerable Wildland-Urban Interface (WUI) areas, adjacent or proximate to natural areas, waterways, and open spaces that contain large areas of highly flammable, non-native vegetation, stands of dead trees, and vertical ladder fuels. Proposed treatment activities are intended to assist the City in meeting its public health and safety goals as outlined in the Environmental Element of the City's Comprehensive Plan and the City Natural Hazards Mitigation Plan (NHMP) regarding WUI fires and preparation for and prevention of wildfires by implementing mitigation strategies to reduce wildfire risk at Prescott Park and along the Bear Creek Greenway, while maintaining appropriate vegetation management to promote fish and wildlife habitat.

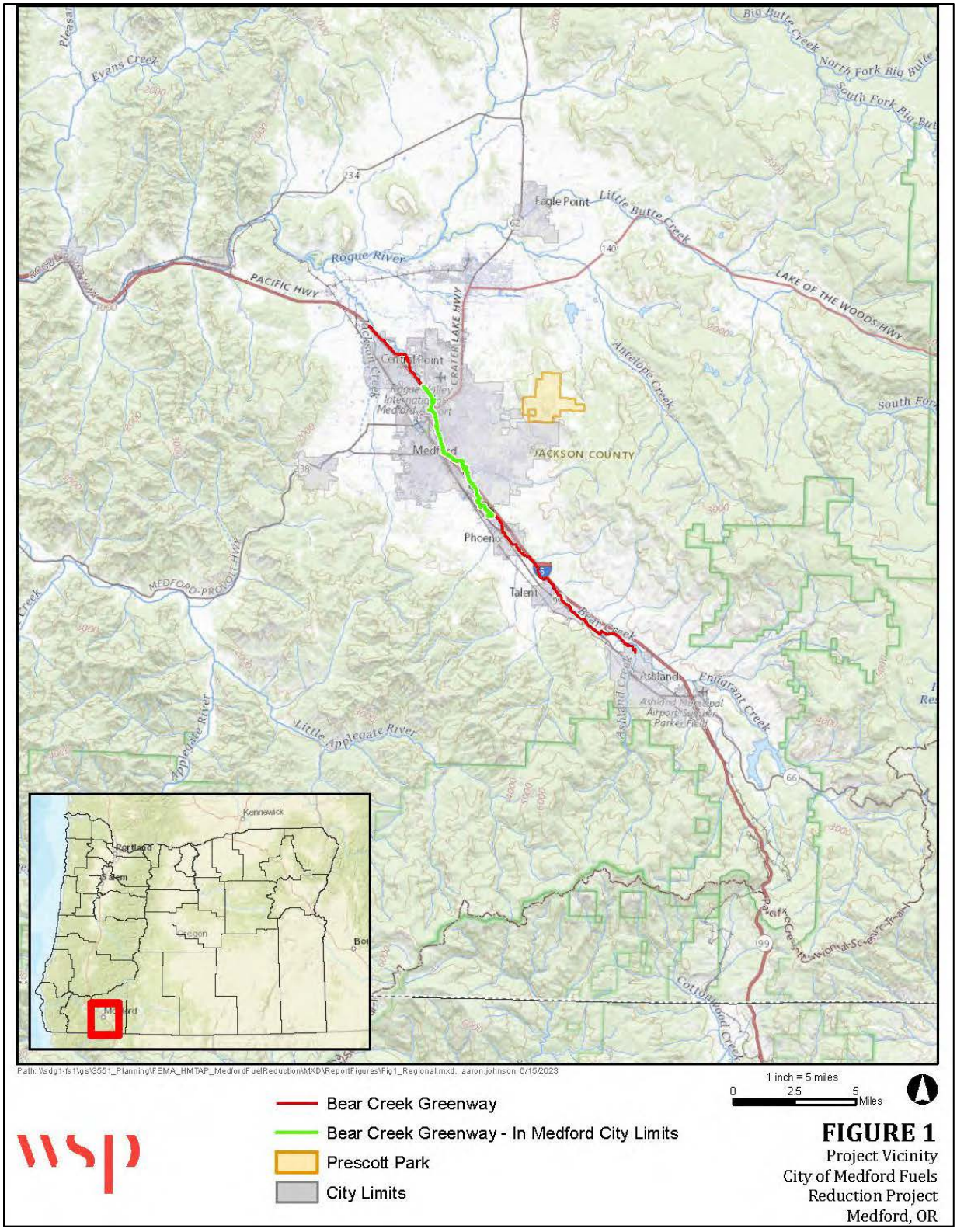


Figure 1: Location and Vicinity Map

2.1.2. ACTION AREA

The action area is defined 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). In delineating the action area, we evaluated the farthest reaching physical, chemical, and biotic effects of the action on the environment.

The largest extent of expected Project impact outside of the project area will be short term noise primarily generated from equipment such as hand-held chainsaws, chippers, rubber tracker machines, a rubber tracked skid steer, and a brush hog. To account for potential noise impacts, the action area consists of a 0.25-mile buffer zone, extended from the Project area. Other anticipated impacts such as direct vegetation removal and wind drift from herbicide application would occur within the 0.25-mile project area buffer. The resultant action area is depicted in **Figure 2**. This action area was used as input information into IPaC to inform the development of the species list that may be affected by the proposed Project.

2.1.3. EVALUATION AREA

Evaluation area is specific to those species that may occur in the action area and may be affected by project actions. Due to the variety of species mobility and variety of impacts, evaluation areas can often differ from the action area and need to be tailored to the species.

Franklin's Bumble Bee

USFWS 2023 (p10) states that assumed dispersal distance of FRBB is 3km (1.86 mi), which means that is possible for individual bees from outside the action area to enter and be exposed to project actions. However, the majority of this evaluation area had been modified for urban and agricultural usages and the Project already acknowledges the potential presence of FRBB within the action area. The Project has implemented mitigation measures (avoid herbicide use during flight season, after flower season) to avoid direct impacts, and minimize indirect impacts.

There is also the potential for application drift. Dexter (1993) found that fine spray droplets can drift travel 44 feet, when falling 10 feet in elevation in a 3-mph wind. Even though spot spraying will occur at 1 to 2 feet above the ground and have a substantially lesser potential drift extent, going with the larger extent will accommodate any unaccounted variables. Therefore, the potential drift zone was set at a 50 feet buffer around the Project Area to fully account for herbicide application drift.

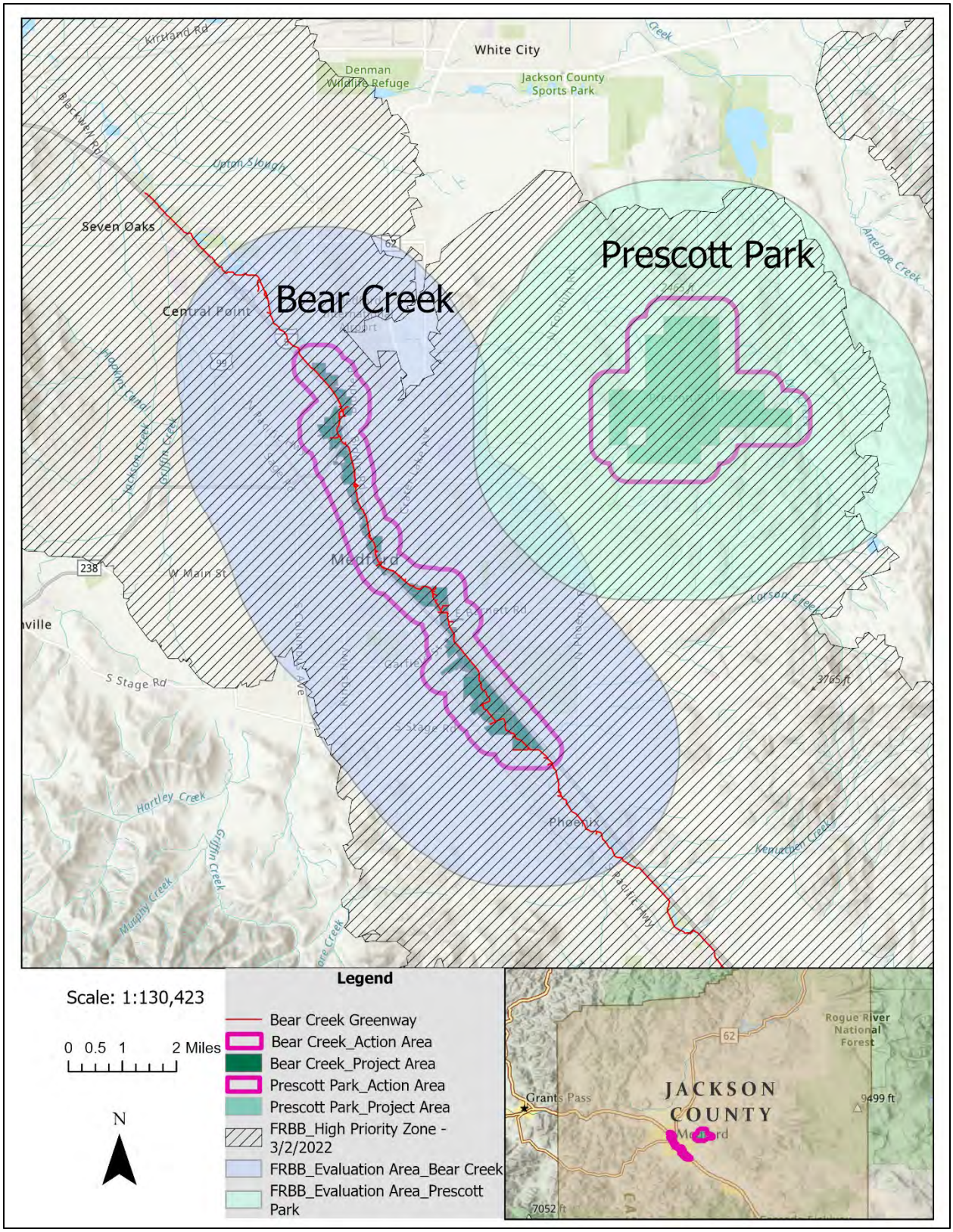


Figure 2. Project Area, Action Area, FRBB Evaluation Areas, and FRBB HPZ.

2.1.4. ENVIRONMENTAL TRENDS

Southern Oregon can be classified as warm and temperate with winter seasons experiencing significantly higher levels of precipitation than during summer months (Climate Data 2023). As in the case across western Oregon, most precipitation falls during the winter months of November through March. Furthermore, total precipitation is influenced by elevation, with precipitation levels increasing steadily at higher elevations. The driest areas are generally the lowest valley locations, including Medford (Taylor 1993).

Increasing global and regional temperatures are expected to result in drier summers and earlier snowmelt. A decrease of mountain snowpack would cause higher winter and lower summer stream flows (USEPA 2016). The combination of drier summers, higher temperatures, and earlier snowmelt is projected to increase the frequency and severity of wildfires across the State of Oregon (Kunkel 2022).

Reasonably foreseeable environmental trends include an increase in severity and frequency of wildfires, decreased snowpack with earlier snowmelt, increased severity in droughts and flooding, higher elevation transition from snow to rain, increasing stream temperatures, and biogeographic shifts in species' ranges (Myer 2013). As aridity increases, the likelihood of extreme fire weather is increasing, as wildfires are now spreading into higher elevations that were historically cool and moist enough to deter fire expansion. Increasing nighttime temperatures have also contributed to more severe and frequent wildfires. The Sixth Oregon Climate Assessment published by the Oregon Climate Change Research Institute (OCCRI) states that the annual area burned in Oregon has increased during the last 35 years. Numerous projections of future wildfire or fire weather and ignitions have been made over the last several years, all of which forecast an increase in the area burned by human- and lightning-caused fires in central Oregon in addition to the increase in risk from weather and climate change (OCCRI 2023).

At the end of the 2020 wildfire season – one of the most severe in Oregon's history – more than 1.1 million acres had burned in Oregon, affecting more than 4,300 homes. By mid-August in the 2021 wildfire season, Oregon wildfires had burned over a million more acres than they had by that time the prior year (NWCC 2020). According to the Oregon Department of Forestry (ODF), there were a total of 2,027 fires in the state during the 2020 fire season (including the devastating Almeda and Table Rock Road Fires), a significant increase over the prior 10-year average of 783 fires annually (ODF 2020). Fires in the Medford area are also common; between 1992 and 2019, 18 percent of all fires were caused by lightning and 82 percent were caused by human activity.

2.2. Description of the Proposed Action

The fuels reduction treatments at both the Bear Creek Greenway and Prescott Park project areas would include thinning understory vegetation, removing ladder fuels, reducing flammable vegetation fuels, and replanting fire-resistant vegetation to protect life, property, and at-risk buildings and structures. These activities would provide a break in the forest canopy, which would force a fire to the ground where wildland firefighters can more safely and easily manage suppression.

While untreated forest would remain within and adjacent to each of the treatment areas, the hazardous fuels reduction within the treatment areas would contribute to containment by reducing the intensity and extent of wildfires, which would ultimately reduce the risks to people living in the wider vicinity of the treatment area around the City. Together these treatments would change the composition (i.e., species mix) and density (i.e., trees per acre) and increase the structural diversity of the conifer and woodland forests along Bear Creek and at Prescott Park. The proposed fuels reduction treatment methods would favor healthier and larger trees as well as more unique and rare species. Each of these factors would contribute to reduced wildfire danger in the City and the Rogue Valley. The following sections detail the proposed action components.

2.2.1. PROPOSED FUELS REDUCTION TREATMENTS

The proposed action includes fuels reduction around structures and select properties, fuels reduction within the forest and woodland habitats, and targeted removal and control of invasive species. This proposed action will be completed with four treatment types: manual methods (thinning, pruning, brush piling and chipping); mechanical methods (mowing and chipping); chemical methods (herbicide application); and pile burning. The proposed treatment types, equipment types, timing, and location are summarized in **Table 1** below.

Table 1: Proposed Fuels Reduction Treatments

Treatment Type	Treatment Activity	Equipment Types	Timing
Manual (at both sites)	Strategic vegetation trimming, thinning, pruning, and brush piling by hand	Chainsaws, Hand Saws, Brush Cutters	October 1 – April 14
Mechanical (only at Bear Creek Greenway)	Skidding, mastication, and routine mowing using power-operated equipment.	Tractors/Skidders, Mowers, Masticators, Biomass Chipper	October 1 – April 14
Chemical (only at Bear Creek Greenway)	Direct herbicide application treatments that target and limit the growth of invasive plant species	Aquatic glyphosate for hand selective or spot spraying use 5 feet from waterline, or Aquatic Imazapyr for spot spray treatment use 15 feet from waterline and for hand selective use 5 feet from waterline	October 1 – April 14
Pile Burning (only at Prescott Park)	Burning hand-piles of woody vegetative debris (slash) remaining after hand-piling and thinning or cutting of trees and vegetation	Fire Blowers, Industrial Fans	October 1 – April 14

2.2.2. DEFENSIBLE SPACE MAINTENANCE

Bear Creek

The City would maintain 30 feet of defensible space around all structures (up to 589 properties) within the Bear Creek Greenway. This would involve cutting grass to 10 inches or less while avoiding exposing soil, limbing tree branches up to 10 feet from the ground, maintaining shrubs and climbing vines by clearing dead or dying materials and clearing trees from structures. The City would maintain 10-foot minimum clearances around roads and the Greenway. The City would remove all portions of trees within 10 feet of chimney or stovepipe outlets; they would also maintain all trees adjacent to or overhanging a structure free of dead or dying wood and cut the trees back and remove dead or dying wood.

Prescott Park

Within Prescott Park, there are no structures requiring maintenance of defensible space.

2.2.3. VEGETATION THINNING AND TREE REMOVAL

Bear Creek and Prescott Park

Within both project areas, tree removal is proposed if the trees are less than 10 inches diameter at breast height (dbh). In the Bear Creek project area, only trees less than 10 inches dbh and at least 40 feet away from Bear Creek are proposed to be removed. The City would focus tree removal on non-native trees and would replant with native tree species. Tree removal would also only occur after a tree survey that verifies the species and size of trees proposed for removal and confirmation. The City would then follow-up with a post-removal survey to confirm all flagged trees were removed. The City has identified a handful (<10) of hazard trees larger than 10 inch DBH that pose a risk to trails or general use of either location; these hazard trees would be targeted for removal.

When work crews are addressing the hazard trees, the City will attempt to achieve the general guidance of retaining four nest snags that measure greater than 31 inches (best for cavity nesting) per every 5 acres and 30 snags that measure between 10 and 28 inches dbh (for general foraging) per every 5 acres. Retained snags would support wildlife habitat and nesting provided a certified arborist or forester determines the snag does not present a hazard to the general public or the property owner. Partial snags would also be left if the City can retain at least 20 feet of the tree (high topping) without an increased danger due to instability or falling. The City also proposes to retain these “safe snags” (i.e., top removed, trunk retained standing) in locations where a limb fall would not pose a hazard to life or property, and where access is sufficient for a boom truck to reach the tree. At Bear Creek, where access is not sufficient, the City would request to fell, buck up limbs, and retain full logs on the floodplain for habitat in coordination with the ODFW.

Further, the City would remove all tree limbs and branches within 10 feet of the ground or at a minimum one-third the total height of the tree. Dead and dying vegetation and any combustible material would also be removed from both City-owned and private property parcels included in the

treatment area. This includes removal of ladder fuels to the fullest extent possible (i.e., up to 10 feet or one-third the height of the existing trees) to reduce the potential for crown fires. Vegetation would then be chipped and appropriately disposed to prevent further spread of invasive species. These reductions in stand density and accompanying treatments would be implemented to protect critical infrastructure, mitigate fire risk, protect valuable mature trees, and improve stand and tree-level vigor.

2.2.4. PILE BURNING

Bear Creek

Pile burning is not proposed within the Bear Creek Greenway project area.

Prescott Park

Piles would not be assembled or burned within 10 feet of trees or on steep slopes. Piles are generally burned during the wet season to reduce damage to residual trees and to confine the fire to the footprint of the pile. Approximately 8 to 12 months would be allowed for the vegetative material to dry out in order to produce less overall smoke by burning hot and clean. Piles would be assembled throughout Prescott Park as hand crews thin, prune, and mow vegetation, and would be no larger than 6 feet by 6 feet by 4 feet. The exact number of piles would be dependent on the amount of vegetation removed, but approximately 10 to 15 piles per acre would be constructed and eventually burned. With the Project proposing vegetation management activities on up to 650 acres within Prescott Park, this would equate to an approximate range of 6,500 to 9,750 piles over the entire life of the Project (a span of three years; see Section 2.3).

An ODF burn permit would be obtained and the City would register the treatment units in the ODF Medford – Smoke Management program. The Smoke Management Program for industrial slash burning on forestlands, authorizes burning under acceptable atmospheric conditions and manages the smoke produced from the pile burns so as not to negatively impact smoke sensitive receptor areas. A Notification of Operation or Permit to Use Fire or Power-Driven Machinery (PDM) is required to be enrolled in the Smoke Management Program.

2.2.5. INVASIVE SPECIES REMOVAL AND HERBICIDE APPLICATIONS

Bear Creek

Along Bear Creek Greenway, herbicide applications would be limited to direct treatments targeting non-native plant species, such as Himalayan blackberry (*Rubus armeniacus)* and other noxious weeds. Herbicide use would be conducted in a manner consistent with the product lists, buffers, and application methods and rates set forth in the FEMA Endangered Species Programmatic (NMFS 2018) guidelines and Oregon Department of Agriculture (ODA) Pesticide Program, as well as The Freshwater Trust (TFT) Herbicide Use and Restriction Guidelines (TFT 2017). Spot spraying and hand selective herbicide applications using aquatic glyphosate would be restricted to a minimum of 5 feet

from the Bear Creek waterline (i.e., OHWM). Spot spraying using aquatic imazapyr would be restricted to a minimum of 75 feet from the Bear Creek waterline, and hand selective herbicide applications using aquatic imazapyr would be restricted to a minimum of 5 feet from the Bear Creek waterline. No herbicide use would be permitted in areas within 5 feet from the Bear Creek waterline. The waterline will be marked accordingly with avoidance flagging. Limited use would be permitted beyond the 5-foot buffer. The current plan is to use the TFT buffers which are more restrictive than what is allowed by the FEMA Endangered Species Programmatic (FESP) Biological Opinion (NMFS 2018); however they may elect to use the allowed buffers as established by the FESP. Table 2 shows the expected applied buffer distances.

Table 2: Proposed Herbicide Buffer Distances by Formula, Stream Type, and Application Method

Herbicide	No-Application Buffer Width	
	Spot Spraying	Hand Selective
Aquatic Glyphosate	5 feet from waterline/1	5 feet from waterline
Aquatic Imazapyr	75 feet from waterline	5 feet from waterline

/1 – Waterline is defined as the Ordinary High-Water Mark (OHWM).

Prescott Park

Invasive species would be removed and managed through manual brush removal, piling, and pile burning. Herbicide application is not proposed at Prescott Park.

2.2.6. ACCESS AND STAGING AREAS

Access to both project treatment areas would be provided via existing roads and pathways. Neither work location would require a staging area, as crews and equipment would be removed daily.

Bear Creek

Within the Bear Creek Greenway project area, crews of 6 to 10 people would utilize the paved path that runs along the entire Greenway to transport crew members, vehicles, and biomass chippers. These vehicles would have rubber tires and would use current access pathways and trails along the Greenway. Where vegetation is unable to be chipped, it would be hauled offsite. Existing access pathways and trails would also be used to facilitate work and future access for invasive species control and emergency response. For areas with limited accessibility, any disturbance to understory vegetation and soils would be restored with the application of loose straw mulch (approximately 50 percent coverage) and native grass seeding. The City would also implement preventative erosion control measures with vegetation removal activities on any slope that exceeds 20 percent or greater grade. Select erosion control measures would also comply with local guidance and specific agency input.

Prescott Park

Within the Prescott Park project area, service roads would be utilized to transport hand crews. Vehicular access to Prescott Park would be provided via Hillcrest Road and Roxy Ann Road and the approximate 18- to 20-foot-wide dirt and gravel loop road that travels through the park. The City would also use existing service roads, such as a single-lane spur road to the summit located on the east slope of Roxy Ann Peak to transport hand crews. Hand crews would also walk to specific work sites, as needed. None of the illegal off-road vehicle trails that have been established around Prescott Park would be used for fuels reduction activities.

2.3. Revegetation

The City intends to plant disturbed areas with native fire resistant shrubs and trees via seedling plugs, and 1- and 5-gallon potted stock. The Project does not currently include reseeding with native flowering perennial flowers, but this action has been recommended to the City for incorporation into the Project.

2.4. Timing and Duration of Proposed Action

The proposed fuels reduction treatment activities would span three years and would involve five different work activities, including: 1) vegetation management and hazard tree identification, 2) manual and mechanical fuels reduction of non-native vegetation, 3) herbicide applications (only on the Bear Creek Greenway), 4) pile burning (only at Prescott Park), and 5) ongoing public participation and outreach efforts. While some of these activities would be conducted simultaneously, other activities would occur dependent on the time of year given that these activities cannot be completed during the fire season, wildlife migration periods (e.g., Franklin's bumble bee flight window), or nesting bird seasons. These time-dependent activities include fuel treatments involving invasive species controls and herbicide applications and would occur between October 1 and April 14. Initial outreach efforts would focus on proposed fuels reduction treatments at public and privately owned parcels along Bear Creek Greenway.

During the first year, the City would conduct outreach with property owners near the Bear Creek Greenway located south of Barnett Road in the southern portion of Medford, followed by staging and site preparation work on City-owned parcels along the Bear Creek Greenway in southern Medford. The City would also initiate fuels treatment at Prescott Park, which is expected to take 10-12 months to complete.

During the second year, the City would treat vegetative fuels on City-owned and privately owned property further along Bear Creek, primarily between Barnett Road and Crater Lake Highway (State Route 62). The work activities during the second year are anticipated to take approximately six months (October 1 to April 14) to complete.

During the third year, the City would continue to conduct fuels reduction activities on private and public property between Barnett Road and Crater Lake Highway (see **Figures 2, 3 and 4**). The work

activities during the third year are anticipated to take approximately six months (October 1 to April 14) to complete.

2.5. Avoidance and Minimization Measures

Activities in the treatment areas would be carried out according to the methodology described in **Section 2.2**, Proposed Action. The following avoidance and minimization measures would be incorporated into the proposed action:

1. **All Fuel Reduction Treatments:**
    a. **Bear Creek Greenway and Prescott Park:**
        i. All proposed fuel reduction treatments will occur from October 1 to April 14, outside of general migratory nesting bird season (April 15 – July 31) and the Franklin's bumble bee (*Bombus franklini*) active flight season (May 15 – September 30).
2. **Herbicide Use:**
    a. **Bear Creek Greenway Only:**
        i. The use of herbicides would be conducted in a manner consistent with the guidelines outlined in the FEMA Endangered Species Programmatic and the Oregon Department of Agriculture (ODA) Pesticide and Fertilizer Program.
        ii. The use of herbicides would be site-specific, targeting non-native or invasive plant species and limited to hand spraying or spot spraying without the use of broad spraying.
        iii. Herbicide would only be applied by certified, licensed applicators. Applicators would remain-up to-date on current laws and regulations and would be provided field training, as needed.
        iv. Use of field maps, Geographic Positioning Systems (GPS), Geographic Information Systems (GIS), and other spatial field tools would ensure avoidance of areas that are flagged as no-application buffer zones or setbacks.
        v. Herbicide carriers would be limited to water or specifically labeled vegetable oil, and a non-hazardous indicator dye would be used when applying herbicides within 100 feet of waterways.
        vi. Spot spraying and hand selective herbicide applications using aquatic glyphosate would be restricted to a minimum of 5 feet from the Bear Creek waterline (i.e., OHWM). Spot spraying using aquatic imazapyr would be restricted to a minimum of 15 feet from the Bear Creek waterline, and hand selective herbicide applications using aquatic imazapyr would be restricted to a minimum of 5 feet from the Bear Creek waterline.

3. **Tree removal:**
    a. **Both Bear Creek Greenway and Prescott Park:**
        i. Tree removal is proposed if the trees are less than 10 inches diameter at breast height (dbh).
        ii. Select hazard trees larger than 10 inches diameter at breast height may need to removed during the Project (<10 total).
            1. Any standing hazard tree will be retained if a certified arborist or forester determines that the snag/limbs does not present a hazard to the public or property.
            2. The City would retain "safe snags" in locations where a limb fall would not pose a threat and where accessible by equipment.
            3. Attempt to retain at least four or more nest snags greater than 30 inches diameter at breast height (dbh) per every five acres for habitat.
            4. Attempt to retain 30 foraging snags between 10 to 28 inches dbh per every 5 acres for habitat.
            5. Attempt high topping at approximately 20 feet height if full retention not possible.
        iii. Remove all limbs within 10 feet of the ground or at a minimum one-third the total height of the tree.
        iv. Within 20 feet of the waterline, limitations would be placed on ladder limb removal for native trees to allow for canopy creek cover.
    b. **Bear Creek Greenway Only:**
        i. Small tree removal (<10 inch dbh) would occur as described above and at least 40 feet away from Bear Creek.
        ii. Tree removal would only occur after a tree survey that verifies the species and size of trees proposed for removal.
        iii. The City would focus on removal of non-native trees and would replant with native species.
        iv. The City would follow-up with a post-removal survey to confirm all flagged trees were removed.

3. Environmental Setting

3.1. Environmental Baseline

This section describes the general habitat conditions in the action area with respect to the listed species with potential to occur and the primary constituent elements (PCEs) or physical and biological features (PBFs) of DCH for listed species. The baseline discussion summarizes the actions that have occurred and continue to occur in the action area and describes how these actions have

influenced environmental conditions and the status of the species in the action area. Baseline conditions are described in terms of terrestrial and aquatic habitat generally across the action area.

3.1.1. ROGUE RIVER VALLEY

The Project is in the geographic area known as the Rogue Valley, a rain shadow between the Cascade Range and Siskiyou Mountains within the Middle Rogue and Upper Rogue sub-basins which are part of the Southern Oregon Coastal basin. Much of the area remains sparsely settled with the only major urban areas in the Rogue valley consisting of Ashland, Medford, and Grants Pass. The two fuel reduction treatment areas are in portions of the Bear Creek Greenway and Prescott Park within the City of Medford in Jackson County, Oregon.

3.1.2. PROJECT AREA HABITAT

The Bear Creek Project Area includes various categories of land cover but primarily consists of tree canopy (approximately 186 acres) and grassland (approximately 71 acres). Prescott Park consists of predominantly shrub/scrub with evergreen forest in the center of the park at higher elevations.

A portion of Prescott Park (approximately 650 acres) and portions of the Bear Creek Corridor (south of the project area) burned during the 2020 wildfires. The fire burned at high severity through most of its path killing most of the trees and shrubs. In the second year after the fire, vegetation growth was robust as is typical in post-fire ecosystems given the nutrient enriched soils and abundant sunlight. The Bear Creek Corridor Post-Almeda Fire Vegetation Assessment was conducted in 2022 and describes the post-fire vegetation as occasional remnant trees that survived the fire, resprouting native trees and shrubs, abundant invasive species, barley planted for erosion control, and a mix of planted and naturally seeded forbs (RVCOG 2022). The vegetation assessment surveyed a 279-acre area at a ratio of one plot per half acre and captured remnant canopy cover of trees post-fire, cover of native tree and shrub species, a list of the three most abundant herbaceous species, invasive species cover, and cover of barley. While the survey area overlaps the action area, the vegetation assessment includes the entirety of the Bear Creek Greenway and not only the action area. It is important to note, only 11 percent of the survey area had plots with greater than or equal to 25 percent remnant native tree canopy cover. That percentage will likely decline further as severely burned trees die over time.

Bear Creek

Vegetation within the Bear Creek Greenway includes several invasive species including Himalayan blackberry (*Rubus armeniacus*) (HBB) and English ivy (*Hedera helix*), as well as several native hardwood and conifer species including black cottonwood (*Populus trichocarpa*), bigleaf maple (*Acer macrophyllum*), Douglas fir (*Pseudotsuga menziesii)*, incense cedar (*Calocedrus decurrens*), Oregon ash (*Fraxinus latifolia*), Oregon white oak (*Quercus alba*), ponderosa pine (*Pinus ponderosa*), and white alder (Alnus rhombifolia). Vegetation proposed to be removed within the City-owned and privately owned parcels includes these native conifer and hardwood species. Non-native and invasive species proposed for removal include Himalayan blackberry, English ivy, puncture vine (*Tribulus terrestris*) (also called goat head), tamarisk (*Tamarix* species), purple loosestrife (*Lythrum*

salicaris), and reed canary grass (*Phalaris arundinacea*). **Figure 3** is an example of the greenway with dense HBB in the riparian openings.

Figure 3. Bear Creek Greenway Dominated by Invasive Species, October 2022

Prescott Park

Vegetation within the Prescott Park project area is characterized by a mixture of grasslands, shrub canopy, oak savannah, oak chaparral, oak woodland, pine woodland, and mixed conifer/hardwood forest. Vegetation proposed to be removed consists of mixed conifer and hardwood trees, such as ponderosa pine (*Pinus ponderosa)*, Douglas fir (*Pseudotsuga menziesii)*, California black oak (*Quercus velutina)*, Oregon white oak (*Quercus alba)*, and Pacific madrone (*Arbutus menziesii)*. Understory shrubs, such as buck brush (*Ceanothus cuneatus*) and whiteleaf manzanita (*Arctostaphylos viscida*) would be thinned and removed, as would herbaceous grasses in the understory. **Figure 4** shows the relative open and uncomplex understory of Prescott Park in 2024.

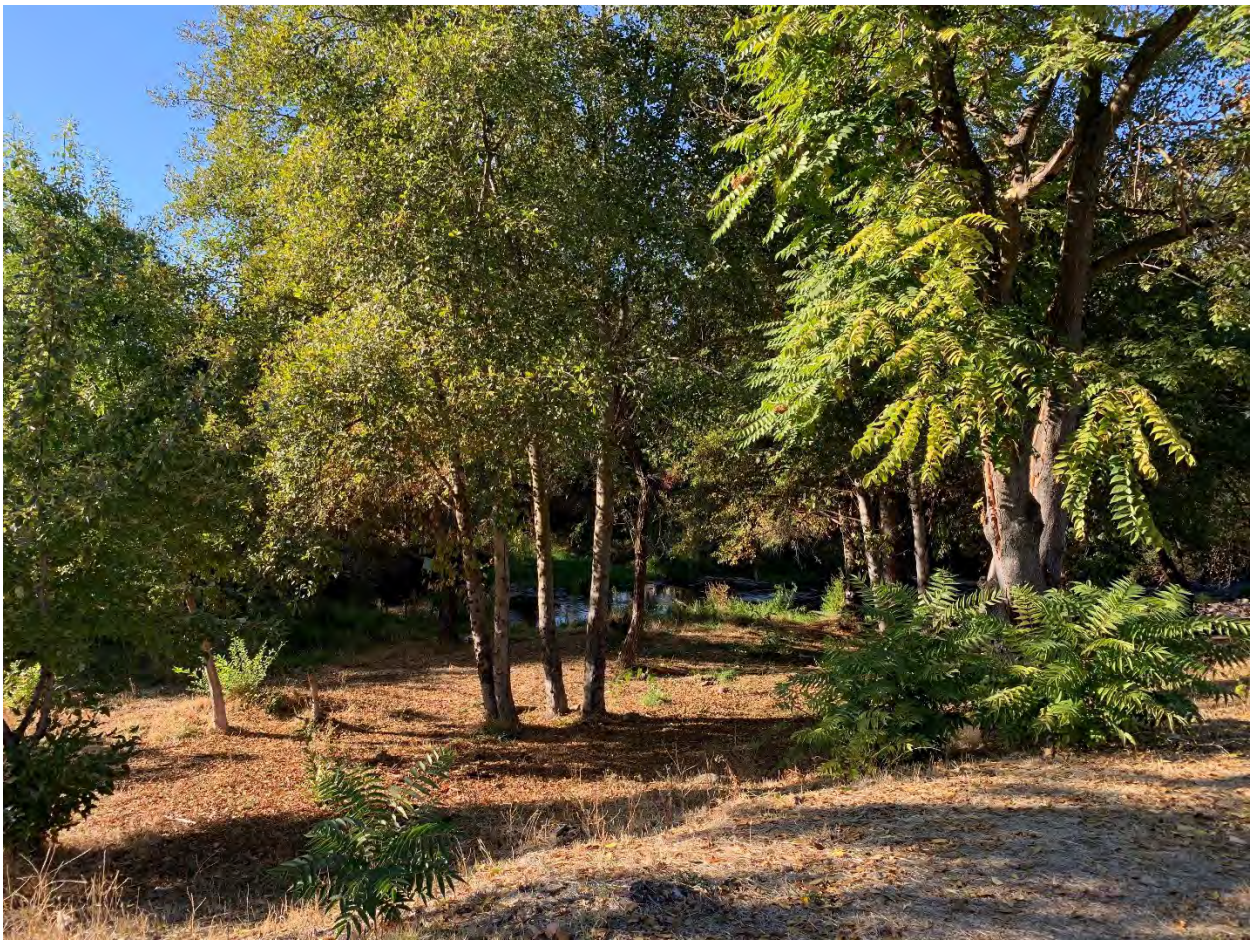


Figure 4. Prescott Park Understory, October 2022

3.2. ESA listed Species and Designated Critical Habitat

A list of USFWS managed ESA-listed species that may occur in the general region was obtained from the USFWS Information for Planning and Consultation (IPaC) website on Sep 30, 2023. Most of these species are unlikely to be present within the action area. Table 3 summarizes this information, federal status, and the presence of the species or their DCH within the action area.

Table 3. Federally Listed Species within the Region

Agency	*Species Name*	*Federal Status*	*Presence within Action Area*	
			Species	*DCH*
USFWS	**Insects**			
	Franklin's Bumble Bee (*Bombus franklini*)	Endangered (9/23/2021)	Potential	N/A
	Monarch Butterfly (*Danaus plexippus*)	Candidate	Potential	N/A
	Crustaceans			
	Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)	Threatened (9/19/1994)	No	No
	Plants			
	Cook's Lomatium (*Lomatium cookii*)	Endangered (11/7/2002)	No	No
	Gentner's Fritillary (*Fritillaria gentneri*)	Endangered (12/10/1999)	No	N/A
	Large-flowered Woolly Meadowfoam (*Limnanthes pumila grandiflora*)	Endangered (11/07/2002)	No	No
	Birds			
	Northern Spotted Owl (*Strix occidentalis caurina)*	Threatened (6/26/1990)	No	No
	Mammals			
	Gray Wolf (*Canis lupus*)	Endangered (3/9/1978)	No	No
	Pacific Marten - Coastal DPS (*Martes caurina*)	Threatened (11/09/2020)	No	No

Source: USFWS Official Species List Dated October 30, 2023, OSU 2023

Note: Green highlighted species and/or DCH are expected to occur in the action area and be affected by project actions.

3.2.1. FRANKLIN'S BUMBLE BEE

Franklin's bumble bee (FRBB) was first identified in 1921 and currently is believed to have the most limited distribution of any North American bumble bee. It is found in the Siskiyou Mountains between Oregon and California, an area roughly 190 miles long and 70 miles wide. Two important needs have been identified including sufficient floral resources for nectaring throughout the colony cycle and relatively protected areas for breeding and shelter, however there is no established DCH for FRBB.

Flight season is mid-May to the end of September, though some historical encounters include sightings in October. In the spring solitary queens emerge from hibernation and seek suitable nest sites. The queens' eggs are then fertilized from mating the previous fall. The queen is responsible for food collection and care of the eggs and larvae at the early stages of colony development. As the colony grows, workers assume those duties while the queen remains within the nest and produces eggs. Colonies may contain 50 to 400 workers, along with the founding queen. Near the end of the colony cycle, newly produced queens (gynes) usually mate with one male and build up fat before entering hibernation. At the end of the colony cycle, all the workers and males die along with the founding queen and only the inseminated hibernating gynes carry on to the following year (USFWS 2018a). Table 4 shows the ecological requirements at 4 adult life stages.

Table 4. The ecological requisites for survival and reproductive success of FRBB life stages

Life Stage	*Winter*	*Spring*	*Summer*	*Autumn*
Queen	-	Diverse floral resources. Suitable nest habitat	Diverse floral resources. Suitable nest habitat	Diverse floral resources; suitable nest habitat
Worker Females	-	Diverse floral resources in close proximity to nest	Diverse floral resources in close proximity to nest	Diverse floral resources in close proximity to nest
Males	-	-	Diverse floral resources. Suitable mating habitat	Diverse floral resources; suitable dispersal/mating Habitat
Gynes (new foundress queens)	Suitable diapause sites	-	Diverse floral resources	Diverse floral resources; suitable dispersal/mating habitat

Source: USFWS 2018a

FRBB habitat is characterized by the resources on which the species directly relies as shown in Table 5 below. Substantial Floral Resources (SFRs) should contain a diverse and abundant group of insecticide-free native flowering plants that provide both pollen and nectar throughout the colony's active flight period. FRBB is a generalist forager, looking for flowering plants to collect pollen and nectar. FRBB needs a constant and diverse supply of flower blooms that are present for the duration of the lifecycle, which would be found in open damp meadows. While this species may utilize other plants as well, Franklin's bumble bee has been directly observed collecting pollen from lupine (*Lupinus spp*.) and California poppy (*Eschscholzia californica*) and collecting nectar from horsemint or nettle-leaf giant hyssop (*Agastache urticifolia*), mountain monardella (*Monardella odoratissima*), and vetch (*Vicia ssp.*) (USFWS 2018a).

Table 5. Resources upon which Franklin's bumble bee relies.

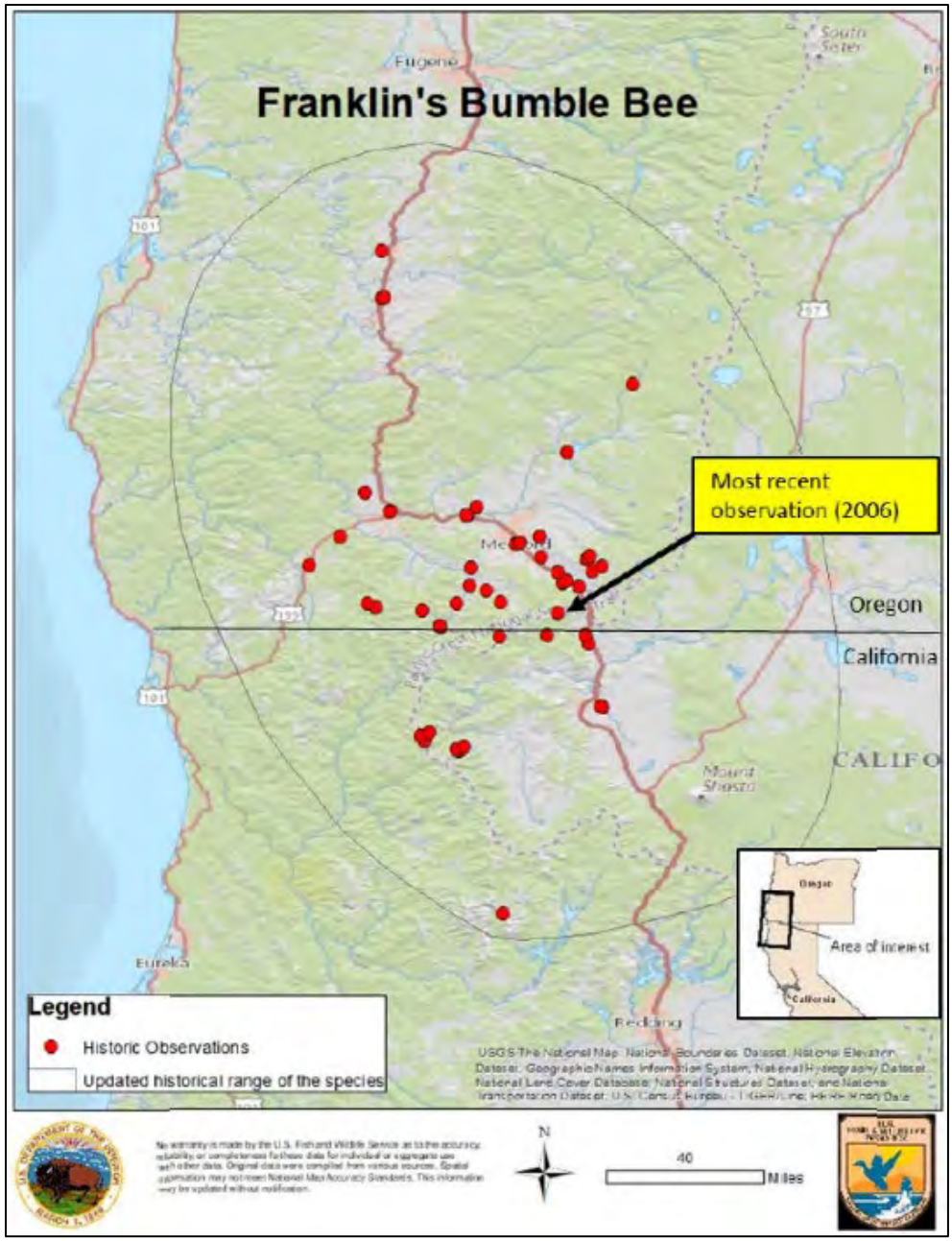
Resource	*Description*
Substantial Floral Resources (SFRs; SFR habitat)	High-quality forage habitat capable of supporting a colony throughout all life stages; defined by the presence of a diverse and abundant group of insecticide-free native flowering plants that provide both pollen and nectar throughout a colony's active flight period (May 15 – September 30). A varied assortment of plant species with staggered floral senescence must be present in abundance (i.e., no monocultures), as floral forage must be available throughout the active flight season. Exemplified by existing meadow systems.
Nesting habitat	Abandoned rodent burrows, bunch grasses, rock piles; nests may occur within SFR habitat or within 100 meters of SFRs. Nesting is not reasonably certain to occur in locations containing these features beyond 100 m from SFRs.
Overwintering habitat	Chambers 2-15 centimeters below the ground's surface, within loose organic material; typically, in shaded areas under trees, lacking dense vegetation and with loose, well-drained soil; likely within 100 m of SFRs. Overwintering is less reasonably certain to occur in locations beyond 100 m from SFRs.

Source: USFWS 2023

Nesting habitat includes abandoned rodent burrows, bunch grasses, and rock piles likely occurring within 328 feet (100 meters) of SFRs. This provides rest and shelter, food storage, and colony growth opportunities. Since FRBB requires constant and diverse blooming flowers from spring to autumn, preferred sites would be in open (non-forested) meadows near seeps and wet meadow environments.

Overwintering habitat generally consists of protected sites for the queens to hibernate, such as within loose organic material (rotting logs), or chambers up to 6 inches underground dug by queens in loose well-drained soil, in shaded areas near trees and lacking dense vegetation likely within 328 feet (100 meters) of SFRs (USFWS 2018a, 2023).

As of 1992, there were 38 recorded occurrences of FRBB. However, 25 of these documented sighting locations were of 5 or less bees, and only a single encounter in 1968 counted more than 12 individuals at a single site. Additionally, the methods of this documentation are not clearly described, so may not be fully inclusive of all FRBB that were present at the time. Contemporary annual surveys started in 1998 with limited observations of FRBB. The last documented sighting was a lone worker in 2006 on Mt. Ashland, several miles away from the project area (USFWS 2018a) (**Figure 5**). The project area and action area are within a delineated FRBB High Priority Zone (HPZ), which encompasses all of Medford, Oregon, and ORBIC data indicates historic occurrences for the species occurred across both project areas.



Source: USFWS 2018a

Figure 5. All known occurrences of *Bombus franklini* (1923-2017).

While the Bear Creek Greenway and Prescott Park have not previously been surveyed for FRBB, existing pollinator data do not indicate presence of other sensitive pollinators that co-occur with FRBB. The Xerces Society Bumble Bee Watch is a collaborative effort to track North American bumble bees of all species gathered by volunteers who observe and document sightings in the online database. Based on review of the Bumble Bee Watch data as shown in **Figure 6** below, there are no observations of bumble bees within the Bear Creek Greenway or Prescott Park action areas. There are eight documented occurrences of bumble bees within the Bear Creek and Prescott Park evaluation areas but outside of the action area. The closest occurrence was approximately 0.8 miles

south of the Prescott Park action area of a 2014 sighting of the yellow-faced bumble bee (*Bombus vosnesenskii*). The closest occurrence from the Bear Creek action area is approximately 1.3 miles west of a 2014 sighting of another yellow-faced bumble bee. These occurrences overlap residential areas within the City where bumble bees are likely foraging in open vegetated areas such as parks or gardens.

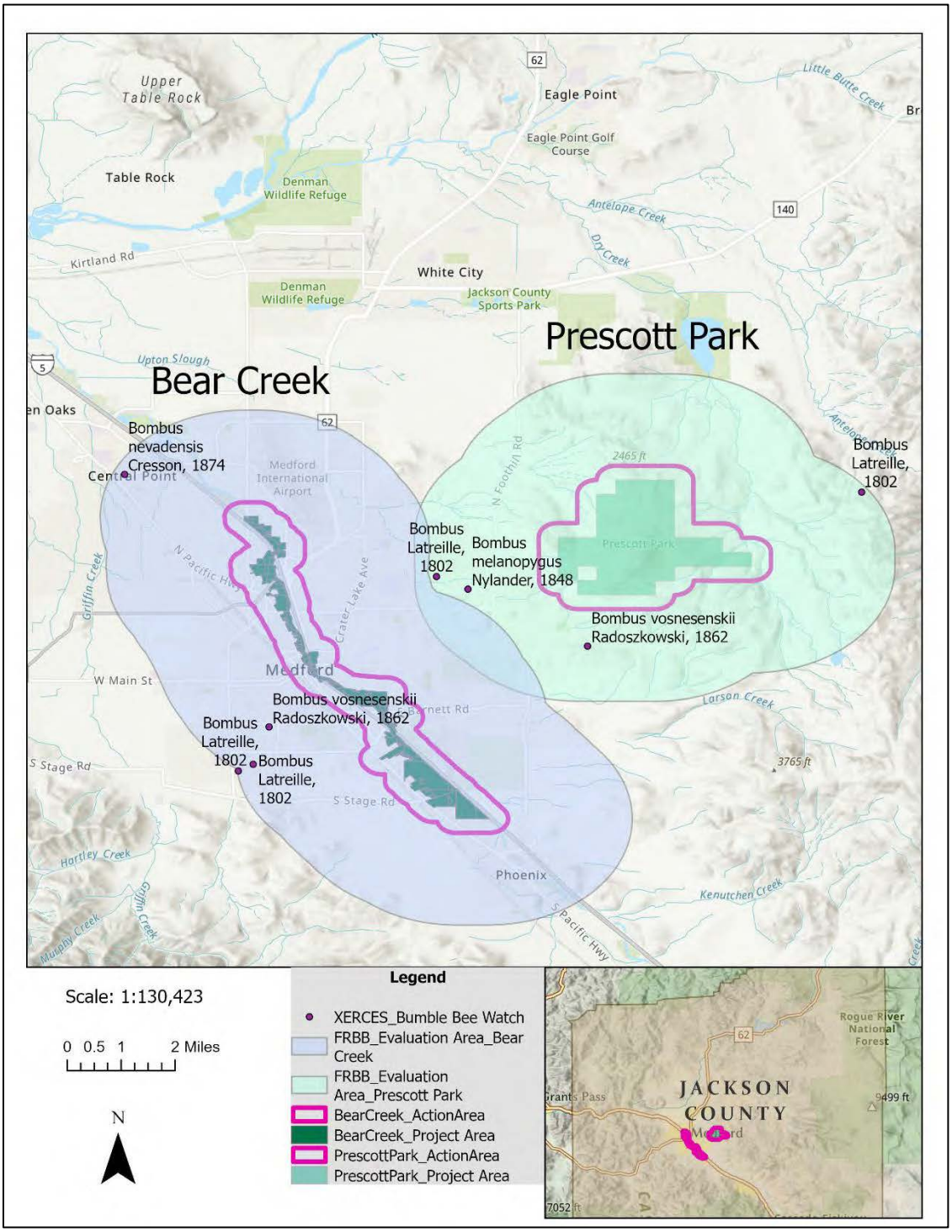


Figure 6: Xerces Bumble Bee Watch Data, November 30, 2023

3.2.2. MONARCH BUTTERFLY

Western North American monarch butterflies (*Danaus plexippus*) spend their summers in the northern United States and Canada and complete their migration to California during the winter. Monarchs will fly between 2,000 to 3,000 miles to an overwintering site. Total migration takes about three to four generations of butterflies before they arrive back at the starting point (Nature Works 2021). The monarch's summer habitat includes open fields and meadows that contain milkweeds, where adults lay their eggs.

The monarch butterfly has four distinct life stages: egg, larva, pupa, and adult. The total time from egg to adult is between 22 to 37 days under the right temperatures (USFS 2023). Most butterflies will live 2 to 6 weeks. Butterflies will mate in summer habitat where females lay their eggs on milkweed plants. The eggs hatch in about 3 to 15 days. Larvae will attach themselves to a twig at the end of about 2 weeks and change into a chrysalis (Nature Works 2021). After spending two weeks in the chrysalis, a full-grown monarch emerges.

Due to a loss of habitat, the monarch population has declined significantly. Genetically modified crops, overuse of herbicides and insecticides, and destruction of natural areas due to overdevelopment are some of the leading causes of this species' decline (Xerces 2021).

Since the monarch butterfly is currently listed as a candidate species, no effects determination or consultation is needed, and therefore this species is not discussed further in this BA. However, the expectation is that the project will not impact monarch butterfly since they are not expected to be present during proposed work windows and work will not be affecting milkweed plants.

3.2.3. VERNAL POOL FAIRY SHRIMP

The vernal pool fairy shrimp (*Branchinecta lynchi*) was identified in 1990 and is currently found in 28 counties in California and in Jackson County, Oregon. The Agate Desert in Jackson County represents the northern extent of this species' known range. This species is found on alluvial fan terraces associated with Agate-Winlo soils and in the Table Rocks area on Randcore-Shoat soils underlain by lava bedrock (USFWS 2005).

Vernal pool fairy shrimp are found only in vernal pools and are not associated with riverine, marine, or other permanent bodies of water. Vernal pools form when water fills up small depressions for a variable period of time, usually occurring seasonally, forming in winter and spring and drying up in summer and fall. Water collects where there is underlying bedrock or impervious soils. Vernal pools are sometimes connected to each other by small drainages known as vernal swales, forming complexes (EPA 2023). Although the vernal pool fairy shrimp is more widely distributed than most other fairy shrimp species, it is generally uncommon throughout its range, and rarely abundant where it does occur (USFWS 2005).

The vernal pool fairy shrimp closely resembles the Colorado fairy shrimp but can be distinguished by the presence and size of several mounds on the male's second antennae, and by the female's short, pyriform brood pouch (USFWS 2005). The vernal pool fairy shrimp ranges in length from 0.4 to 1.0 inch.

According to Oregon State University (2023) ORBIC GIS data, the nearest known location of vernal pool fairy shrimp occurs north of Medford, approximately 4.5 miles north of the Bear Creek Greenway action area and 3.5 miles north of the Prescott Park action area. This documented location is the same as the mapped DCH for the fairy shrimp. There are no known occurrences of fairy shrimp within the project area and no known locations of vernal pools. There is potential that small rain fed vernal pools could form during winter and spring months when work is occurring. However, hazardous fuel treatment is not anticipated to occur in vernal pools and will not alter hydrology in the area. Herbicide treatment will avoid wetlands with a 3-foot minimum buffer around all wetland boundaries that will be flagged or marked prior to application.

Therefore, due to not being present in the project area and no DCH adjacent to the project areas; there is **no effect** to vernal pool fairy shrimp or its DCH, which will be removed from further consideration in this BA.

3.2.4. COOK'S LOMATIUM

Cook's lomatium (*Lomatium cookii*) is a perennial forb of the carrot family that grows between 6 to 20 inches, with smooth basal leaves and yellow flowers. This plant is endemic to southern Oregon and can be found in the Rogue River Valley of Jackson and Josephine Counties in southwest Oregon and the Illinois River Valley of Josephine County, Oregon. This species can be found in vernal pools, seasonally wet meadows within oak and pine forests, and locations with adequate soil moisture. The Recovery Plan for Rogue and Illinois Valley Vernal Pool and Wet Meadow Ecosystems describes that this plant is typically associated with Agate-Winlo silty clay loam series soils, characteristic of deep, poorly drained soils present in depressions in alluvial stream terraces. Additionally, this plant occurs on seasonally wet serpentine-derived grassland meadows, sloped mixed-conifer forest openings, and along roadside edges in shrub dominated plant communities on soil formations characterized by Brockman clay loam, Abegg clay loam, Eightlar extremely stony clay, Josephine gravelly loam, Pollard loam, Takilma cobbly loam, and Newberg loam in the Illinois Valley (USFWS 2012).

Soil data for the action area shows that approximately 75 acres (5 percent) of the Bear Creek action area includes Agate-Winlo soils. However, the Bear Creek Greenway is considered developed ranging from low intensity to high intensity along with woody wetlands and emergent herbaceous wetlands according to the Multi-Resolution Land Characteristics Consortium (MRLC) National Land Cover Database (NLCD). The Prescott Park action area includes shrub and evergreen forest with minimal development. The project area is not expected to contain habitat suitable for the Cook's lomatium. Any small sections of wetlands and surrounding meadows are not anticipated to be impacted and hazardous fuel treatment is not anticipated to alter hydrology in the project area. Herbicide treatment within the Bear Creek Greenway will target invasive and non-native plants with spot

spraying and will avoid impacts to wetlands and surrounding vegetation with a 3-foot minimum buffer around all wetland boundaries that will be flagged or marked prior to application.

According to Oregon State University (2023) ORBIC GIS data, the nearest known location of Cook's lomatium occurs east of the Medford International Airport which also contains a portion of DCH for Cook's lomatium, approximately 1.6 miles away from the northeastern edge of the Bear Creek corridor and 4 miles away from the Prescott Park boundary.

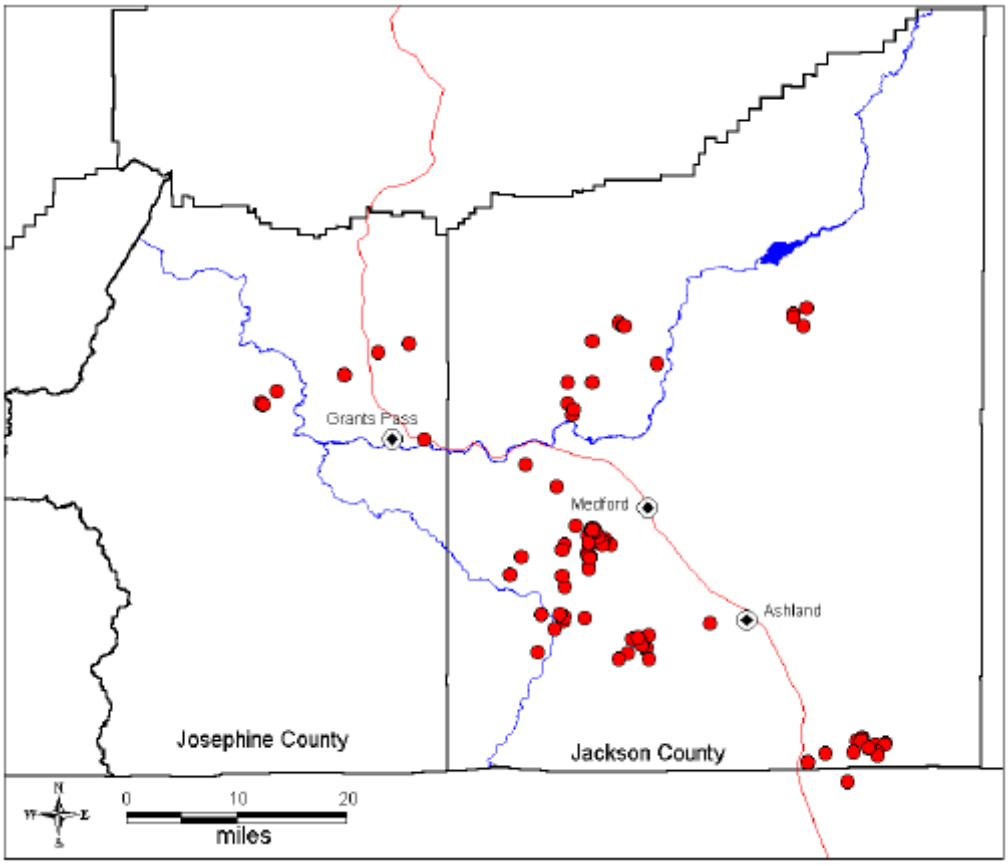
Therefore, due to not being present in the project area and no DCH adjacent to the project areas; there is **no effect** to Cook's lomatium, which will be removed from further consideration in this BA.

3.2.5. GENTNER'S FRITILLARY

Gentner's fritillary (*Fritillaria gentneri*) is a perennial herb of the Liliaceae (lily) family with deep red to maroon bell-shaped flowers produced on a single stalk ranging from 40 to 70 centimeters tall. Gentner's fritillary resembles two more common and geographically widespread *Fritillaria* species: *Fritillaria recurva* (scarlet fritillary) and *Fritillaria affinis* (chocolate lily). However, Gentner's fritillary can be distinguished by deep red to maroon flowers and flowers that flare at the tips rather than recurve as seen in the *Fritillaria recurva (*ODA, 2023*).*

This plant occurs in the rural foothills of the Rogue and Illinois River valleys in Jackson and Josephine Counties, Oregon and occurs in a variety of habitats from shaded riparian areas to open grasslands, but is typically associated with areas between meadow and oak woodland habitats. From previous surveys, it is estimated that this species occurs at elevations ranging from approximately 1,004 to 5,064 feet above sea level. The species is often found in grassland and chaparral habitats within, or on the edge of, dry, open woodlands. Gentner's fritillary is often associated with shrubs where it is somewhat protected from the effects of wind and sun. The blooming season generally extends from April through June. This species is highly localized within about a 30-mile radius of the Jacksonville Cemetery in Jacksonville, Oregon. The majority of known individuals (about 73 percent) occur within an 11-kilometer (7-mile) radius of the Jacksonville Cemetery (USFWS 2003). **Figure 7** shows the known geographic distribution of Gentner's fritillary in Jackson and Josephine Counties as of 2001.

According to 2023 ORBIC GIS dataset, the nearest known location of Gentner's fritillary occurs approximately 5.5 miles west of the Bear Creek Greenway and approximately 10.5 miles west of Prescott Park. Additionally, the project actions will be focused on removing potential fuels from the area (treating invasive plants, larger shrubs, and ladder fuels) which would not target perennial herbs. Therefore, due to no known populations within the project area and no DCH adjacent to the project areas, there is **no effect** to Gentner's fritillary, which will be removed from further consideration in this BA.



Source: USFWS 2003

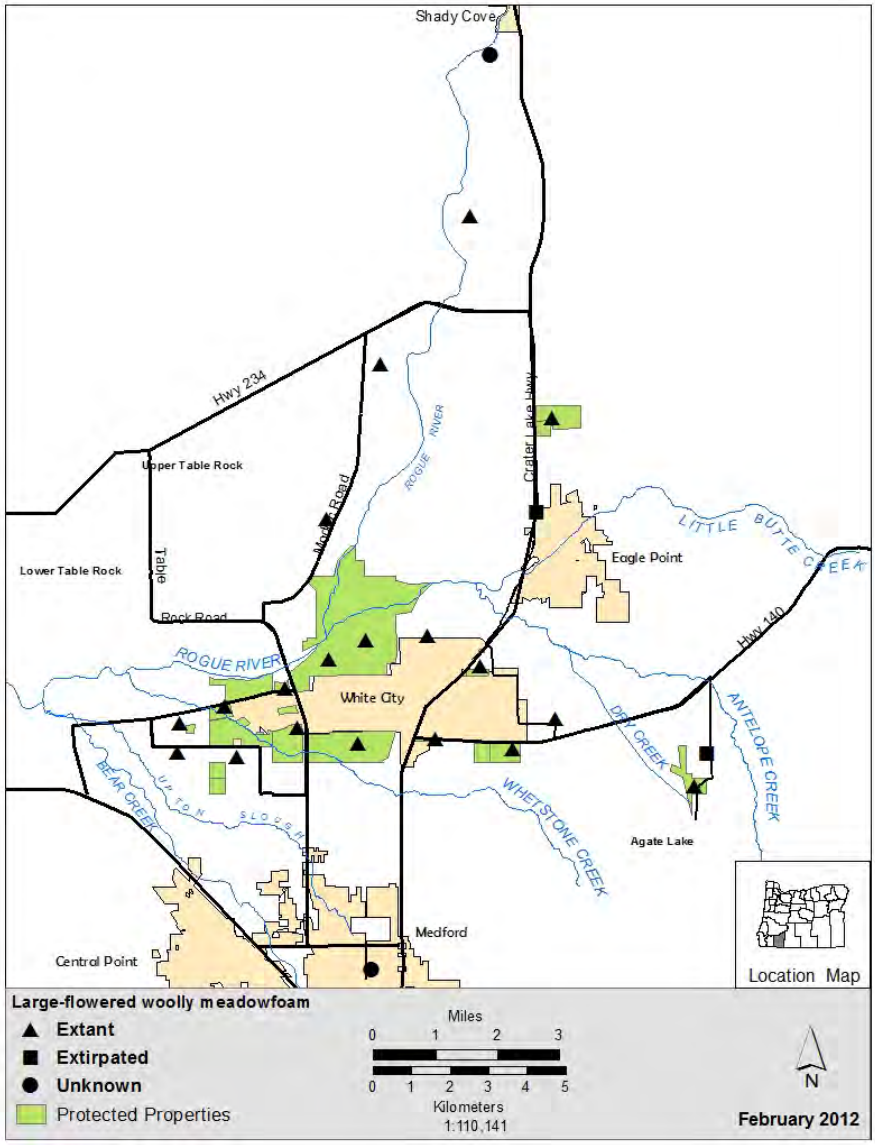
Figure 7. Geographic distribution of known extant *Fritillaria gentneri* occurrences (indicated by dots).

3.2.6. LARGE-FLOWERED WOOLLY MEADOWFOAM

Large-flowered woolly meadowfoam (*Limnanthes pumila grandiflora*) is an annual herbaceous forb in the meadowfoam family (*Limnanthaceae*) and grows 2 to 6 inches tall with stems and leaves that are sparsely covered with short, fuzzy hairs. The flowers consist of five yellowish to white petals densely covered with woolly hairs. This plant flowers in the early spring, from March to mid-April and fruits from mid-May or when the soil becomes dry (USFWS 2012). This species is endemic to the Rogue Valley within Jackson County at elevations between 1,200 to 1,310 feet within the Agate Desert. There have never been documented occurrences of this species outside of that range (USFWS 2012).

A genetic study conducted at Oregon State University focused on inbreeding systematics and gene flow within previously named *Limnanthes floccosa* subspecies (Meyers 2010). This research used hybridization trials and molecular data to evaluate genetic relationships of the various *Limnanthes* subspecies in the Rogue Valley. Researchers determined that ssp. *grandiflora* is reproductively isolated from *L. floccosa* ssp. *floccosa* and is more closely aligned with ssp. *pumila*, and therefore proposed transferring ssp. *grandiflora* from *L. floccosa* to *L. pumila* under the more accurate scientific name *Limnanthes pumila* ssp. *grandiflora*.

There is DCH (Critical Habitat Unit Number RV7) for the meadowfoam approximately 3 miles north of the Prescott Park action area (USFWS 2010). The primary constituent elements found within DCH include vernal pool habitat, dominant native plant association of this habitat, and hydrology and soils that provide adequate soil moisture. The closest documented occurrence is 0.9 miles from the Bear Creek action area, east of Highway 62. **Figure 8** shows known occurrences of large-flowered woolly meadowfoam in Jackson County, Oregon.



Source: USFWS 2013

Figure 8. Occurrences of large-flowered woolly meadowfoam in Jackson County, Oregon.

As mentioned above, the Bear Creek Greenway is considered developed ranging from low intensity to high intensity along with woody wetlands and emergent herbaceous wetlands according to the NLCD. The Prescott Park action area includes shrub and evergreen forest with minimal development. The project area is not expected to contain habitat suitable for the woolly meadowfoam. Any small

sections of wetlands and surrounding meadows are not anticipated to be impacted and hazardous fuel treatment is not anticipated to alter hydrology in the project area. Herbicide treatment within the Bear Creek Greenway will target invasive and non-native plants with spot spraying and will avoid impacts to wetlands and surrounding vegetation with a 3-foot minimum buffer around all wetland boundaries that will be flagged or marked prior to application.

Therefore, due to not being present in the project area and not having DCH; there is **no effect** to large-flowered woolly meadowfoam, which will be removed from further consideration in this BA.

3.2.7. NORTHERN SPOTTED OWL

The northern spotted owl (NSO) (*Strix occidentalis caurina*) is a medium sized owl found in the Cascades and surrounding forested foothills. The species inhabits forests with dense, closed canopies of mature and old-growth trees, abundant logs, standing snags, and live trees with broken tops. Northern spotted owls prefer older forest stands with a variety of tree ages, sizes, and structures, but will use areas with a variety of habitat types. This species often uses the open space among lower tree branches to allow flight under the forest canopy. Forests with a range of old growth, closed canopies, standing and fallen trees, and lower open areas for flight may not exhibit these combined characteristics until they are at least 150 to 200 years old (WDFW 2015, USFWS 2017a).

The NSO feeds nocturnally on small mammals within arboreal habitat. This species typically nests within tree cavities and broken treetops in both living and dead trees. Breeding, nesting, and young rearing takes place from February through June. Incubation of the egg takes about 30 days, and young are able to leave the nest within 3 to 6 weeks. Parents may continue to feed the young for several months following fledging (WDFW 2015, USFWS 2017a).

Typically, NSO nesting, roosting, foraging (NRF) habitat is contiguous forest (>5 acres) with moderate to high canopy closure (60 to 90 percent), several tree species of varying sizes and age (multi-layer canopy), >20 inches dbh for nesting trees, large overstory trees, and sufficient open spaces amongst lower branches to fly under the canopy (Buchanan et al 1993, WDFW 2005, USFWS 2019). Contiguous forest is a forested area dominated by conifer that is separated from other forest by at least 328 feet (100 meters) or is otherwise surrounded by non-habitat. The Conservation Strategy for Northern Spotted Owl Appendix P - Assuring Successful Dispersal states “Standards and guidelines in this conservation strategy also specify that at least 50 percent of the forest matrix outside HCAs be maintained in stands of timber with a mean dbh of 11 inches or greater, with at least 40% canopy closure” (Thomas et al. 1990).

The project occurs along Bear Creek (urban riparian zone) within the city limits of Medford and in Prescott Park which is just east of Medford. The nearest documented NSO site is 3 miles east of Prescott Park (OSU 2023), and the nearest NSO DCH (per November 2011 update) is 6 miles to the southeast. Additionally, the habitat conditions along Bear Creek are highly modified, and likely occupied by various corvid species or the occasional Barred Owl, which would make utilization by NSO unlikely.

Prescott Park is outside city limits but still within the urban growth boundary. NSO habitat conditions at Prescott Park and surrounding terrain is largely unsuitable for NSO, however there are two separated stands (each about 2 acres) in Prescott Park that is modeled as Highly Suitable, and a 7 acre stand of Marginal habitat to the south. There are 2 miles of unsuitable habitat between Prescott Park and the next nearest stand of suitable habitat, which would be just outside the established NSO site to the east. During further investigation of owl use of Prescott Park, a travel/hiking blog (Derwoodynck 2022) was discovered to have photographed a Great Horned Owl chick and presumably one of the parents on Oak Trail, May 30, 2022 (**Figure 9**). This recent documentation of Great Horned Owls at Prescot Park makes it highly unlikely that NSO, much less any other owl, are nearby.

Source: Derwoodynck 2022

Figure 9: GHOW chick and partially obscured adult on Oak Trail, Prescott Park

Therefore, due to no expectation of NSO being present within the action area and no DCH within the project area, FEMA has concluded there is **no effect** to NSO.

3.2.8. GRAY WOLF

The gray wolf (*Canis lupus*) is a large (40 to 175lbs) wide ranging member of Canidae family, which are found worldwide and are present in Oregon. Recent ODFW data indicates the known extent of gray wolf packs within Oregon, with the Rogue pack nearest to the project area. While gray wolves are known to occur in Jackson County (**Figure 10**), the known extent is a substantial distance away from Medford and the project area (**Figure 11**). Even with undocumented adults ranging outside of the currently known extents, it is highly unlikely that adults would enter the urban area and be present at the worksite during project work.

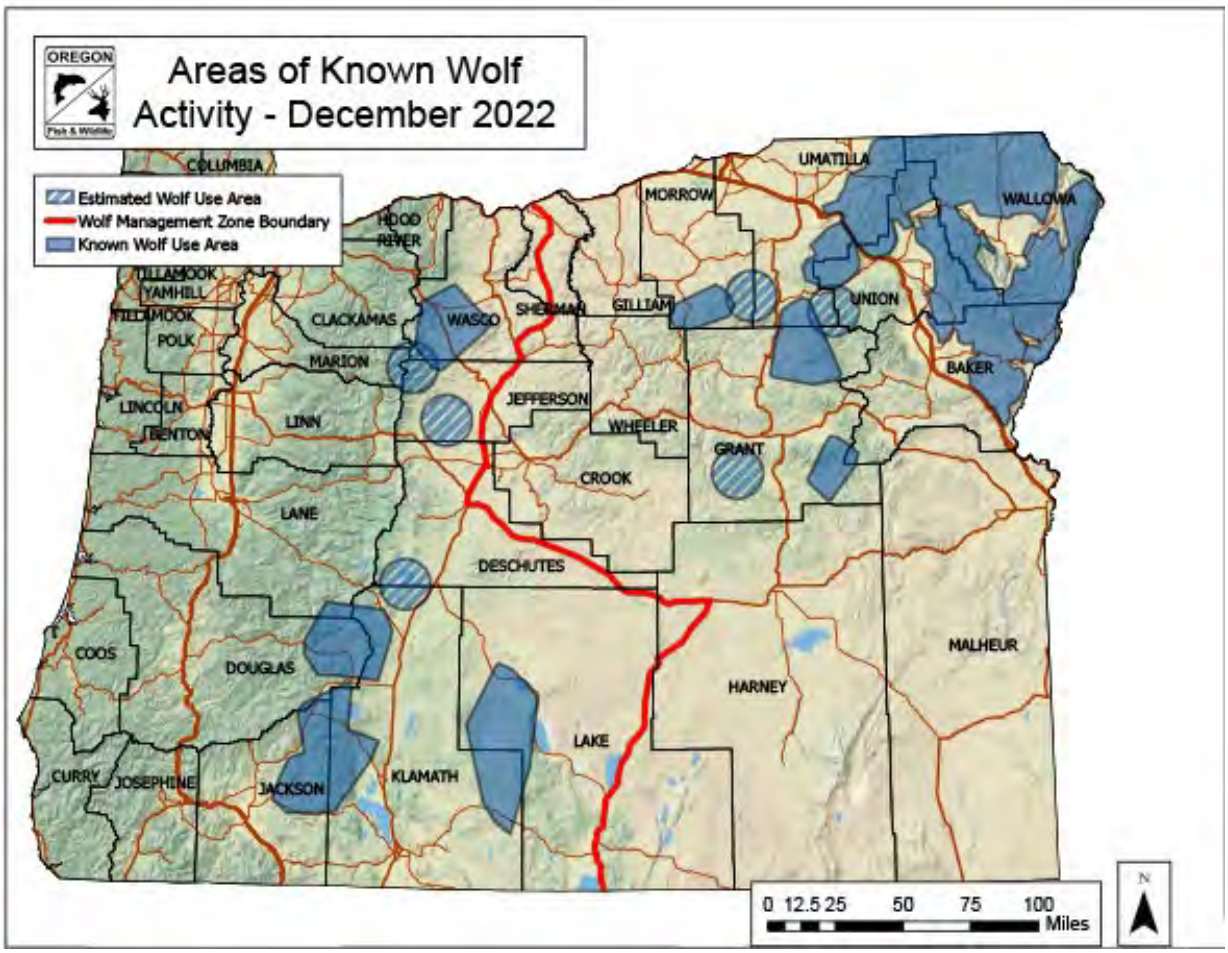


Figure 10: ODFW gray wolf areas of known wolf activity – December 2022

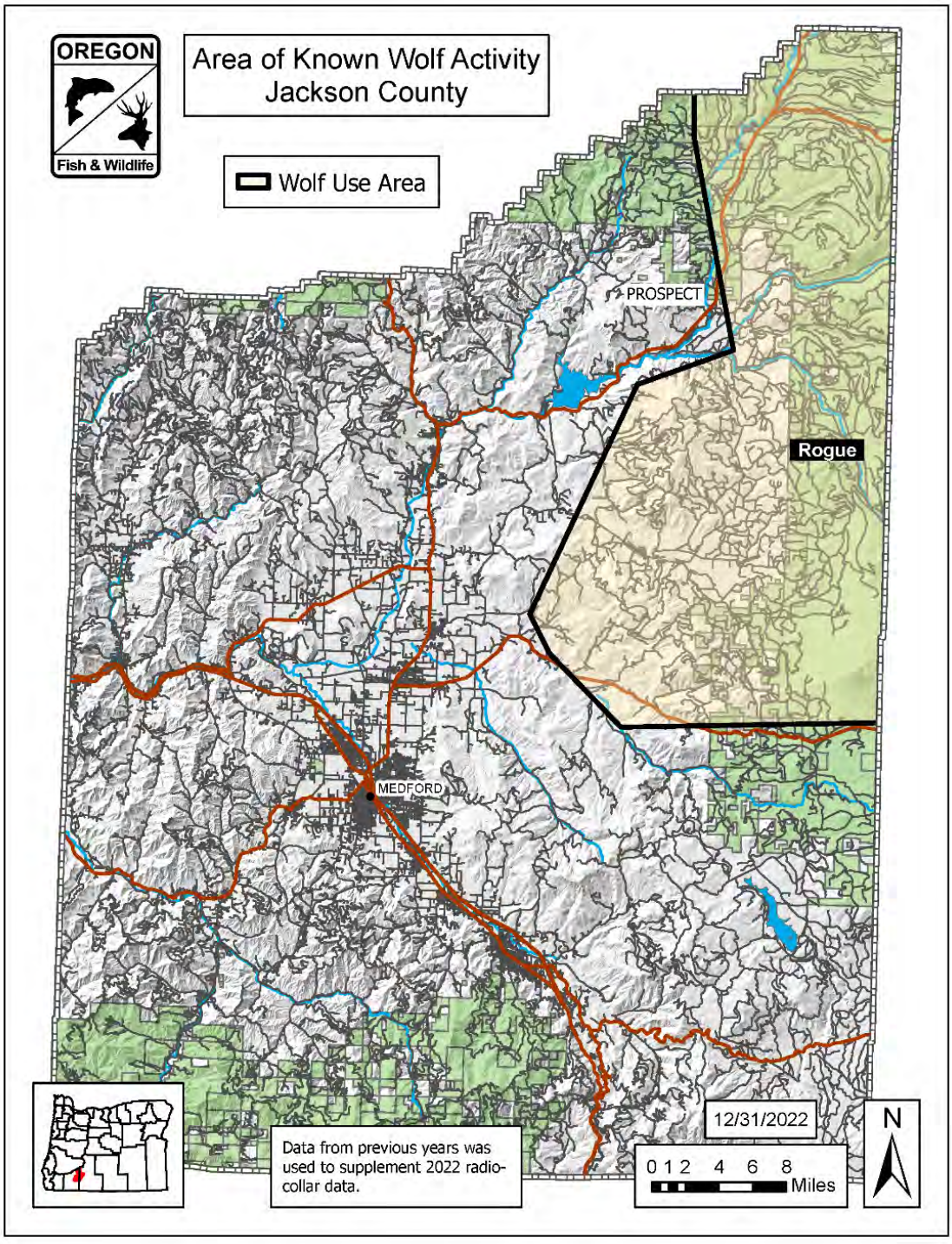


Figure 11: ODFW gray wolf areas of known wolf activity, Jackson County, December 2022

Therefore, due to no expectation of gray wolves being present within the action area and no gray wolf DCH in Jackson County, Oregon, FEMA has concluded there is **no effect** to the gray wolf which will be removed from further consideration in this BA.

3.2.9. PACIFIC MARTEN– COASTAL DPS

The coastal distinct population segment of Pacific marten (*Martes caurina*; coastal marten) is a medium sized carnivore that historically occurred throughout the coastal forests of northwestern California and Oregon. There are two coastal Oregon populations separated by their geographic locations, the Central Coastal Oregon population and the Southern Coastal Oregon population.

Coastal martens can be in found in older forests that have a mixture of old and large trees, multiple canopy layers, snags and other decay elements, dense understory development, and biologically complex structure and composition (USFWS 2018b). Large-diameter trees with large horizontal limbs, standing snags with cavities or chambers, and downed hollow logs provide resting habitat. These structures are used for rest between foraging activities and provide protection from predators. Martens select stands of forest with adequate prey populations and that provide foraging and resting micro-habitats. Denning occurs within large diameter live and dead trees with cavities. Martens may pick den sites where suitable foraging habitat is within proximity. Stands that martens occupy typically have dense shrub cover, a dominant overstory, and provide habitat structures (USFWS 2018b).

While Coastal marten may be present in Jackson County as shown in **Figure 12** below, there is no documented occurrence of coastal marten within the action area. According to the 2023 ORBIC GIS dataset, the nearest known location of the Pacific marten is over 30 miles east of Medford, Oregon. The project area does not overlap the currently proposed coastal marten Critical Habitat, nor does it particularly contain large extents of dense understory or otherwise complex habitat features.

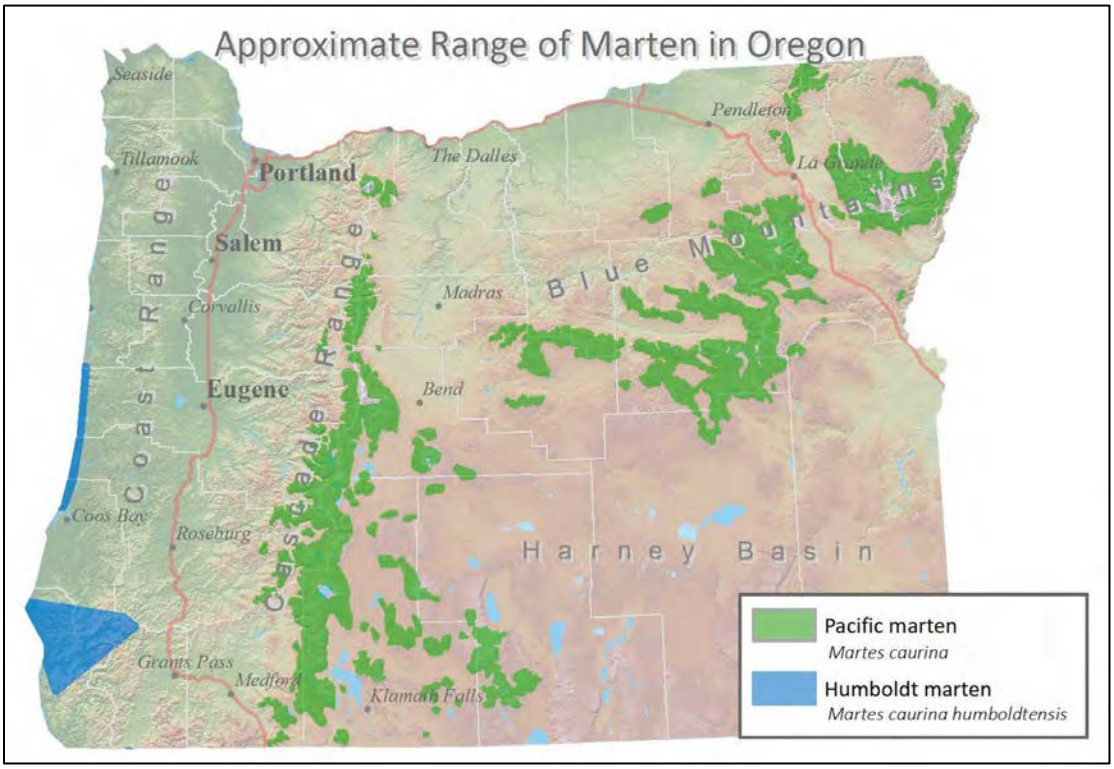


Figure 12: Approximate Range of Marten in Oregon, U.S. Forest Service, April 2019

Therefore, due to not being present in the project area and no proposed Critical Habitat adjacent to the project areas; there is **no effect** to coastal marten, which will be removed from further consideration in this BA.

4. Species Effects Analysis

FRBB may occur within the action area and has potential to be affected by the project actions. This section will analyze both the direct and indirect impacts of the project on this species and its habitat.

4.1. Methodology

This effects analysis considers the existing condition (environmental baseline) of the action area and how the proposed action would change (or not change) the existing condition with regard to effects on threatened and endangered species. The approach considers both short-term, direct effects (i.e., during implementation), longer term effects, indirect effects, and possible cumulative effects. Direct effects are those that occur at, or very close to, the time of the action itself. Indirect effects are those that occur later in time but are still reasonably certain to occur as a result of the proposed action. Indirect effects may occur outside of the area directly affected by the proposed action.

The effects analysis will consider the potential effects to each species and habitat from the proposed action, the nature and extent of the species' response(s) within the context of the environmental baseline conditions and will describe the rationale for the resulting effects determinations.

4.2. Franklin's Bumble Bee

The project action area fall entirely within a delineated FRBB High Priority Zone (USFWS 2022). Proposed fuels treatments within the project areas (Bear Creek and Prescott Park) may have potential to affect individuals and suitable nest habitat.

4.2.1. DIRECT EFFECTS TO THE SPECIES

FRBB are presumed to be extremely rare and there are no known populations of FRBB across any level of ecological conditions or spatial extent (USFWS 2023). The last known observation of FRBB at any location in the region occurred in 2006 (USFWS 2018a). Therefore the presence of FRBB occurring within the action area (nesting or distributing from outside the action area) is highly unlikely but due to the difficulty with observation and documentation of bumble bees along with their long distribution range, FRBB presence in the action area is not impossible. Additionally, the action area falls entirely within a FRBB HPZ, where FRBB may be most likely to occur based on proximity to historical detection locations and modeled habitat. The HPZs are used to prioritize pollinator and habitat surveys, consultation, and conservation in these areas. Mechanical treatment actions will not generally result in direct effects to FRBB, however bumble bees are known to be severely impacted by herbicide treatments when application overlaps with bumble bee presence/activity.

While herbicides primarily function to reduce protein synthesis required for plant growth, studies have shown herbicides such as glyphosate may result in negative acute impacts to invertebrates including bees (Henderson et al., 2010). Direct impacts to individuals normally occur through oral ingestion of herbicides or through contact exposure of herbicide residue on plants. Oral ingestion and contact exposure of glyphosate have been shown to reduce longevity of non-apis bees at 50 percent and 100 percent of recommendation field dose (Belsky and Joshi 2020). Healthy core microbiota in bees can make them more resistant to parasites, changes in metabolism, and decreases overall mortality, however Helander et al. (2023) showed that roughly a third of bumble bee microbiota was sensitive to glyphosate exposure. The Xerces Society states "*causing subtle yet concerning effects on reproduction, navigation and memory and high-profile incidents when pesticides kill bees*." (Xerces 2023c). FRBB are most vulnerable to adverse effects during the active flight season from May 15 to September 30 because individuals need to traverse between nest sites and floral resources (USFWS 2023).

To mitigate any potential direct impacts to any incidental FRBB presence, all work actions will occur outside of the active flight season thus avoiding the possibility direct impacts to individuals or active nests. With use of the timing restriction, direct impacts to individuals will be avoided as all the workers and males will not be present and the hibernating gynes will already be established within overwintering habitat.

4.2.2. DIRECT EFFECTS TO HABITAT

As discussed in Section 3.2.1, there are three major habitat requirements to sustain FRBB throughout its life cycle: SFRs, nesting habitat, and overwintering habitat.

Substantial Floral Resources

FRBB is a generalist pollinator, looking for flowering plants to collect pollen and nectar. FRBB needs a constant and diverse supply of flower blooms that are present for the duration of the active flight season, which can be found in open meadows in proximity to seeps and other wet meadow environments. The lack of sightings within the Bear Creek or Prescott Park action areas may indicate lack of suitable SFRs based on the land cover and type of habitat expected (overrun with invasives) or may be indicative of selection for areas less frequented/modified by human activity.

Per the National Land Cover Database, the Bear Creek Greenway project and action areas are considered developed; ranging from low to high intensity development. The Bear Creek project area includes various categories of land cover but primarily consists of tree canopy (approximately 186 acres) and grassland (approximately 71 acres), which is likely modified and maintained. There is riparian canopy cover (<25 percent) that includes trees typical of the region and the understory is overrun with invasives such as HBB, English ivy, puncture vine, tamarisk, and purple loosestrife. SFRs are not anticipated to be present in the Bear Creek Greenway project area, due to the predominance of these invasive plants in the understory. These invasive plants may provide limited marginal floral resources, but they crowd out native plants that are more physiologically adapted for pollinators of the region and which provide staggered floral availability throughout the active flight

season, compared to invasive monocultures with a limited blooming window. Any intact habitat if it were present, is segmented by moderate development and unlikely utilized by FRBB which typically stays within 3 kilometers of high quality SFRs (USFWS 2023).

The Prescott Park action area includes shrub and evergreen forest with minimal development. Vegetation within the Prescott Park action area is characterized by a mixture of grasslands, shrub canopy, oak savannah, oak chaparral, oak woodland, pine woodland, and mixed conifer/hardwood forest and may contain interspersed habitat types suitable for FRBB foraging and nesting. The 2020 fire season resulted in ecological disturbance causing clearing in ground cover and sections of tree mortality. The City provided a GIS layer showing that approximately 650 acres within Prescott Park burned with low to high severity. It is expected that large scale and high temperature wildfires would cause loss of individual bees and result in negative effects to a colony, if not outright loss of the colony entirely (USFWS 2018a). However, fire is a primary factor in the maintenance of grassland and meadow habitat that supports *Bombus* species (USFWS 2018a). In the years following a wildfire, it is expected that secondary succession plants have begun to colonize the previously disturbed area resulting in an increase in floral resources following the fire that attract foraging bees from the surrounding area. It is unclear how long it takes for bees to return following a severe disturbance but may depend on proximity of nearby colonies and severity of the disturbance.

Herbicide applications within the Bear Creek Greenway would be limited to direct treatment uses that target and control flammable non-native plant species and noxious weeds. Herbicide will only be applied to HBB and other invasives plants in late fall, when local plants are done flowering and would no longer be potentially used as a floral forage resource. This will avoid any potential impact to floral forage resources pollinators may be using, as well as allowing limited regrowth of Himalayan blackberry (HBB) so that foliar application of herbicide (spot spray, dabbing) can occur in October (after the FRBB flight season) before HBB retracts nutrients and absorbed herbicide from the above ground vegetation into the root system for winter dormancy.

There is potential that SFRs may exist in small sections within the Prescott Park evaluation area. Project impacts to potential SFRs may include temporary loss of floral resources that leads to nutritional stress, avoidance of an area, deterioration in body condition, and reduced reproductive output due to need to find appropriate nesting habitat elsewhere. With use of a timing restriction for work to occur outside of the active flight season, direct impacts to SFRs when they would be utilized by FRBB would be avoided. Effects would be altogether discountable. Any potential loss of SFRs would be temporary and hazardous fuels management would result in a long-term beneficial effect to SFRs with increases in open forest habitat (allowing increased light to foster growth of floral resources), removal of invasive species, increase of native plant diversity, and increasing fire resiliency on the landscape resulting in less severe fire impacts when fire does occur.

Nesting Habitat

Nesting occurs during the active flight season in abandoned rodent burrows, bunch grasses, or rock piles. Nests may occur within SFR habitat or within 100 meters of SFRs. Nesting is not reasonably certain to occur in locations containing these features beyond 100 meters from SFRs.

With use of a timing restriction for work to occur outside of the active flight season, direct impacts to active FRBB nest sites would be avoided in both project areas. Additionally, project impacts to potential nest sites that can be utilized during the active flight season are minimal. High quality SFRs likely do not appear present within the Bear Creek project area due to the high density of invasive vegetation dominating the understory; as such, FRBB nesting is not anticipated to occur in the Bear Creek project area. Further, crushing of any potential nest sites from heavy equipment from mechanical fuel treatment within Bear Creek Greenway is not likely as equipment will utilize existing compacted pathways and trails. Within Prescott Park habitat types, there is potential that SFRs may exist in small sections throughout the project area. Hand crews will conduct manual fuels treatment and will likely not cause any compaction of potential nesting sites that could be used during a future active flight season, as heavy equipment that could cause soil compaction will be avoided. The USFWS does not consider nest sites to be a limiting resource (USFWS 2023, p. 30). Project impacts to FRBB would be discountable as project impacts would likely not result in a loss of nesting habitat and work would occur outside of the active flight season, when nests would potentially be occupied.

Overwintering Habitat

Overwintering habitat is essential for gynes to hibernate through winter to emerge in spring to form colonies the following year. Overwintering habitat is defined as chambers 2-15 centimeters below the ground's surface, within loose organic material; typically, in shaded areas under trees, lacking dense vegetation and with loose, well-drained soil. Overwintering habitat is likely within 100 meters of SFRs and is less reasonably certain to occur in locations beyond 100 meters from SFRs.

It is unlikely FRBB overwintering occurs within the action area due to the low number of historic observations of FRBB individuals or nest sites, no observed individuals within the action area, and lack of recent sightings for the species anywhere within its range since 2006. Therefore, the expectation of FRBB overwintering sites at either project area is altogether unlikely and is not reasonably certain. Compression or crushing of overwintering sites will be avoided when mechanical equipment within Bear Creek Greenway utilizes existing compacted pathways and trails; further, overwintering is not anticipated to occur within the Bear Creek Greenway project area due to a lack of SFRs.

Within Prescott Park, there is potential that pockets of SFRs may exist in small sections throughout the project area. However, Prescott Park is characterized as shrub/evergreen forest dominated by grasslands, oak savannah, and chaparral, and does not contain meadow ecosystems in close proximity to seeps or other wet meadow environments; as such, presence of SFRs is unlikely. Even if limited pockets of SFRs exist, areas targeted for fuels treatment within Prescott Park are not likely to be used for FRBB overwintering. This is because hand crews will conduct manual fuels treatments targeting areas of dense vegetation; overwintering is anticipated in shaded areas *lacking* dense vegetation, with enough canopy to provide thermal cover (this canopy cover is less likely to be available in areas that have burned at moderate to high severity, as with portions of the Prescott Park project area). Additionally, suitable duff layers (i.e., loose organic material) necessary to support overwintering may be lacking in previously burned areas (even at low severity), due to such materials being consumed in the burn. For these reasons, hand crews will likely not cause any compaction of

potential overwintering sites. Therefore, crushing any overwintering habitat causing immediate death or harm of individuals (queens) present in potential overwintering sites is not likely or reasonably certain to occur as a consequence of the proposed action.

Designated Critical Habitat

No critical habitat has been designated for the Franklin's bumble bee.

4.2.3. INDIRECT EFFECTS

There is potential for indirect effects from use of herbicides within Bear Creek Greenway due to amount of time chemicals are expected to remain in the ecosystem. The project involves use of two herbicides, aquatic glyphosate and aquatic imazapyr. The median half-life of glyphosate in soil has been reported ranging from 2 to 197 days with a typical half-life of 47 days and the median half-life of imazapyr is approximately 10 days in soil. The half-life of Glyphosate in leaf litter is 8 to 9 days (Henderson et al., 2010). Glyphosate is immobile in soil and is broken down by soil microbial decomposition rather than chemical and photo decomposition. Conversely, imazapyr is mobile in soil and broken down by microbes and sunlight (WSDOT 2017). Therefore, the half-life depends heavily on soil and climate conditions with faster rates of decomposition occurring in productive soils.

Herbicide application would target invasive plant species such as HBB through spot spraying and selective application without the need for broadcast spraying. Herbicides are expected to target invasive plant root systems and not expected to occur within proximity to SFRs. Once applied, herbicides will not be highly mobile within the soil, and it is unlikely they will reach overwintering or underground nests if any were present; however, within Bear Creek Greenway, nesting and overwintering is not anticipated to occur given the lack of SFRs and domination of the understory by a monoculture of invasive HBB. Long-term residual chemicals from herbicide application are expected to decompose in place within the soil not expected to remain in the ecosystem until the next FRBB flight season.

There is also the potential for application drift which was noted and defined in Section 2.1.3. With a potential drift zone set at a 50 feet buffer around the Project Areas to fully account for herbicide application drift, this yields a maximum potential drift zone of up to 400 acres around the project area. This area would be a mix of urban residential structures, manicured grass yards, and roads which is not ideal for SFRs, which leaves residential ornamentals as potential draw for pollinators in the spring/summer.

However, the majority of the herbicide treatments will most likely occur across the project area, not solely at the project area edges, which would mean most of the potential drift zone identified above would remain within the project area and already be potentially treated. This plus the reality of actual herbicide drift when applied at 1 to 2 feet height, severely limits the extent and potential of incidental drift exposure. This minimal risk, coupled with the mitigation measure to avoid the FRBB flight season, reduces indirect impacts to negligible levels.

Additional long term indirect effects to FRBB and its habitat are expected to be mostly beneficial. The proposed action for fuels reduction will reduce the severity of the next wildfire that passes through the area. Additionally, fuels reduction will benefit overall habitat quality. Reducing tree density will reduce competition and stressors which will encourage tree growth. Targeting of invasive species will allow native species to establish and provide perennial floral resources.

4.2.4. EFFECTS SUMMARY

The proposed action is to reduce hazardous fuels within the Bear Creek Greenway and within Prescott Park. Fuels treatment includes removal of small understory trees, removal of ladder fuels, and targeted removal of invasive plants through chemical applications. The avoidance and minimization measure conditions (**Section 2.4**) establish that work will occur outside of the flight season for the Franklin's bumble bee thus avoiding direct impacts to worker or male individuals or queens within nests.

Due to low number of historical observations of FRBB individuals or nest sites, no observed individuals within the action area, and lack of recent sightings anywhere within the species' range since 2006, FRBB is altogether unlikely to occur within the action area. Because the last confirmed sighting of FRBB occurred well outside of the action area, and because the project area only contains individual or patchy SFRs and not extensive meadows systems needed to support a colony of FRBB, it is considered very unlikely that FRBB would be present in the project area; if the species were to occur in the project area, numbers would be extremely minimal. Further, project actions will be conducted in a manner to avoid and/or minimize adverse impacts to FRBB (if present); therefore, this project **may affect, but is not likely to adversely affect** FRBB.

5. Effects Determination

Determination of effects for all the species included in this report and their respective assessment areas are listed in **Table 6**. The basis for these determinations is summarized below.

Table 6. Determination of Effects

Species	*Effect on Species*	*Effect on DCH*
Franklin's Bumble Bee	May affect, not likely to adversely affect	N/A

5.1. Franklin's Bumble Bee

The proposed project is determined to **may affect, not likely to adversely** affect FRBB because:

- The potential for direct impacts to individuals will be avoided.
  - Work will occur from October 1 to April 14, outside of the FRBB flight season.
  - Work occurring between October 1 to April 14 is not anticipated to occur within suitable overwintering habitat.

- The potential for direct impacts to suitable habitat will be minimized.
  - Physical fuels treatment would occur after floral resources are done flowering for the season.
  - Herbicide application will be hand applied or spot treatments directly to HBB and other invasive non-native plants outside of flowering season.
- Project actions will result in long term benefits to FRBB habitat.
  - Reducing risks for stand devastating crown fires.
  - Project will plant native fire-resistant trees and shrubs in disturbed areas.
  - Removal of invasive monocultures will remove competition to the expansion diverse native perennial floral resources.

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Roseburg Field Office
777 N.W. Garden Valley Boulevard
Roseburg, OR 97471
Phone: (541) 957-3474 FAX: (541) 440-4948

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TS Number: 24-123
ECOSphere: 2024-0043479
Doc Type: Informal Consultation

February 5, 2024

Science Kilner, Regional Environmental Officer
Federal Emergency Management Agency
Region 10
Department of Homeland Security
130 228th Street SW
Bothell, WA 98021

Subject: Informal Consultation on the FEMA Hazard Mitigation Grant Program 4562-24-OR Medford Hazardous Fuels Reduction Project, City of Medford, Jackson County, OR.

Dear Ms. Kilner:

This document transmits the U.S. Fish and Wildlife Service's (Service) Letter of Concurrence (Concurrence) addressing the City of Medford (City) Hazardous Fuels Reduction Project (Project or proposed action), as proposed by the Federal Emergency Management Agency (FEMA). At issue are the effects of the proposed action on the endangered Franklin's bumble bee (*Bombus franklini*). This Concurrence was prepared in accordance with the requirements of section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.).

This Concurrence is based on information provided in FEMA's Biological Assessment (FEMA 2024, entire; Assessment) dated and received by our office January 10, 2024, incorporated by reference herein. A complete decision record for this consultation is on file with the Service's Roseburg Field Office.

FEMA has documented a *No Effect* determination for the vernal pool fairy shrimp (*Branchinecta lynchi*), Cook's lomatium (*Lomatium cookii*), Gentner's fritillary (*Fritillaria gentneri*), large-flowered woolly meadowfoam (*Limnanthes pumila grandiflora*), northern spotted owl (*Strix occidentalis caurina*), gray wolf (*Canis lupus*), and the Pacific marten coastal distinct population segment (*Martes caurina*; coastal marten); these species will not be addressed further in this document.

Consultation History

FEMA submitted an initial draft Assessment for this proposed action to the Service on December 6, 2023; the Service responded with comments on January 3, 2024. FEMA submitted a final Assessment with a request for informal consultation to the Service on January 10, 2024.

Overview

The multipart Action Area for the Project totals 7,587 acres and includes two geographically separate project areas located within the city limits of Medford, OR, each buffered by a 0.25-mile. The first portion of the Action Area (4,744 acres) encompasses a project area along the urban Bear Creek Greenway, parallel to Interstate 5, while the second portion of the Action Area (2,843 acres) encompasses a project area within Prescott Park, located on the east side of Medford.

The Assessment describes a proposal whereby hazardous fuels reduction efforts will be conducted across both project areas: the City is proposing to treat up to 700 acres in the Bear Creek Greenway project area, and up to 650 acres in the Prescott Park project area. The FEMA proposal would contribute to wildfire risk reduction in the wildland urban interface by reducing hazardous fuels on a total of 1,350 acres in the Action Area (across both project areas) within City limits to protect nearby residential neighborhoods, restore plant communities to their natural range of variation, and increase ecological resistance and resilience.

Description of the Proposed Action

Proposed treatment activities will span three years, with all hazardous fuels reduction occurring between October 1 and April 14 each year. Fuels reduction treatments will consist of thinning understory vegetation, removing ladder fuels, reducing flammable invasive weeds, and replanting native fire-resistant vegetation to protect life and property. Four treatment methods will be employed: manual methods (thinning, pruning, brush piling); mechanical methods (mowing and chipping); chemical methods (herbicide application); and pile burning. Access to all fuels reduction sites will utilize existing roads and trails within the project areas.

Defensible Space Maintenance

The proposed action includes maintenance of 30 feet of defensible space around all structures (up to 589 properties) within the Bear Creek Greenway project area. This will include cutting grass to 10 inches or less (avoiding exposing the soil), clearing dead/dying vegetative material, limbing trees up to 10 feet from the ground, and removing all portions of trees within 10 feet of chimney or stovepipe outlets. A minimum of 10 feet of clearance around roads and the Greenway trail will be maintained. There are no structures requiring defensible space maintenance within the Prescott Park project area.

Vegetation Thinning and Tree Removal

Manual vegetation management using chainsaws, handsaws, and brush cutters will occur within both project areas. This will include removal of trees less than 10 inches diameter at breast height (DBH), in addition to a select few (< 10) hazard trees larger than 10 inches DBH posing a risk to the general public. Select ladder fuels will be removed via thinning, pruning, limbing, sawing, or brush cutting. All tree limbs and branches within 10 feet of the ground (or a minimum of one-third of the total tree height) will be removed. Chainsaws will be used to process wooded debris. Select snags and nursery logs will be left on-site, to provide wildlife habitat. Mechanical methods will be employed within the Bear Creek Greenway project area only, and will include skidding, mastication, chipping, and mowing using power-operated equipment.

Pile Burning

In the Prescott Park project area, slash piles of woody debris will be assembled from thinned and pruned vegetation. Piles will be no larger than 6 x 6 x 4 feet, and approximately 10 to 15 piles per acre are anticipated. Piles will be allowed to dry for approximately 8 to 12 months, and then will be burned in accordance with Oregon Department of Forestry burn permits. Burning will be conducted during the wet season. Pile burning is not proposed within the Bear Creek Greenway project area.

Invasive Species Removal and Herbicide Application

In the Prescott Park project area, invasive species will be removed manually through brush removal, piling, and pile burning; herbicide application is not proposed within this project area. Chemical methods will be used within the Bear Creek Greenway project area only. This will include spot spraying and hand selective herbicide application treatments targeting invasive weeds such as the highly flammable Himalayan blackberry (*Rubus armeniacus*), which can function as a flash wildfire fuels source when left unchecked. Other invasive species proposed for removal include English ivy (*Hedera helix*), puncture vine (*Tribulus terrestris*), tamarisk (*Tamarix* spp.), purple loosestrife (*Lythrum salicaris*), and reed canary grass (*Phalaris arundinacea*).

Once hazardous fuels reduction treatments are completed across both project areas, disturbed areas will be re-forested and re-seeded with fire-resistant, native vegetation, consisting of a diverse assortment of trees and shrubs.

Effects to Species and Critical Habitat

Critical habitat is not designated for Franklin's bumble bee; therefore, no analysis of critical habitat is warranted for this species.

There are currently no known populations of Franklin's bumble bee on the landscape. Contemporary surveys specifically focused on this species began in 1998 and continue annually, but Franklin's bumble bee has not been observed since 2006. The last known observation was documented on Mt. Ashland, over 10 miles to the south of either portion of the Action Area. Surveys for Franklin's bumble bee have not occurred within the Action Area, but Oregon Biodiversity Information Center data indicate historic observations for the species occurred within both project areas (Assessment, p. 21). Existing contemporary pollinator data from the Xerces Society Bumble Bee Watch do not show any documented bumble bee observations within either the Bear Creek Greenway or the Prescott Park portions of the Action Area, although bumble bee (*Bombus* spp. other than *B. franklini*) observations have been documented within 3 km of the proposed treatment units. These occurrences overlap residential areas within the City where bumble bees are likely foraging in open vegetated areas such as parks or gardens (Assessment, p. 23).

The Service considers a defining habitat characteristic for Franklin's bumble bee to be the presence of Substantial Floral Resources (SFRs) – defined as a diverse and abundant group of insecticide-free native flowering plants that provide both pollen and nectar throughout a Franklin's bumble bee colony's active flight period (May 15 – September 30). A varied assortment of plant species with staggered floral senescence must be present in abundance (i.e., no monocultures), as floral forage must be available throughout the active flight season. This is typically exemplified by existing meadow systems, especially in proximity to seeps or other wet meadow environments.

To delineate where Franklin's bumble bee may be most likely to occur, High Priority Zones (HPZs) have been identified by the Service and contain all known historic observation locations of Franklin's bumble bee, supplemented by additional modeling of SFRs and other habitat characteristics most likely to support the species within its historic range. HPZs also include a 1.86-mile (3 km) buffer around each historic Franklin's bumble bee observation, thus encompassing a buffer area the species is considered most likely to utilize for foraging, nesting, dispersal, and overwintering (USDI FWS 2023, p. 11).

The Action Area entirely overlaps a delineated HPZ; the proposed project footprints would treat 1,350 acres within this HPZ across both project areas. While HPZs are informed by the species' historic observation locations, it should be noted that potential habitat within HPZs has been initially identified via aerial photo review and supplemental modeling of SFRs and other habitat characteristics likely to support the species; many portions of HPZs have yet to be field-verified, and in several cases, also contain parcels within that do not function as Franklin's bumble bee habitat (i.e., areas with dense forest canopy, lacking openings or meadows that may contain SFRs).

The Bear Creek Greenway project area consists of a mixture of grassland and urban riparian greenway consisting of dense vegetative cover; the tree canopy is comprised of several hardwood and conifer species, with an understory dominated by an invasive monoculture of Himalayan blackberry interspersed with other invasive vegetation. While some floral resources may be present, offering marginal foraging opportunities, plant diversity is limited and is not expected to sustain a colony of bees throughout its life cycle. Further, any reduction in these marginal foraging resources would occur outside the active flight season for Franklin's bumble bee, and post-floral senescence when such resources no longer provide foraging opportunities. This timing of treatments would also avoid exposure of individual bees to targeted herbicide application. Given the predominance of dense invasive vegetation in the understory, SFRs are not anticipated to be present in this project area. Due to a lack of SFRs, nesting and overwintering is not expected to occur (USDI FWS 2023, Table 1, p. 9). As such, impacts to nests or overwintering individuals from ground disturbing activities are not expected in the Bear Creek Greenway project area.

The Prescott Park project area is characterized by a mixture of grasslands, shrub canopy, oak savannah, oak chaparral, oak and pine woodlands, and mixed conifer/hardwood forest. While SFRs have not been documented in Prescott Park, field-verification/habitat evaluation surveys throughout the project area have not been conducted. Accordingly, it is possible some sections of the project area may contain pockets of SFRs; the understory is more open compared to the dense invasive vegetation-dominated understory of the Bear Creek Greenway project area. However, the Prescott Park project area does not contain meadow ecosystems near seeps or other wet meadow environments (Assessment, p. 37) – as such, presence of SFRs is unlikely. Any potential impact to SFRs would be temporary, short in duration, and seasonally timed to avoid potential effects to individuals and colonies. Hazardous fuels reduction is expected to reduce invasive species, increase native plant diversity, and open the forest canopy, allowing increased light penetration to foster the growth of native floral resources in the long-term while also increasing fire resiliency of the landscape. Because treatments will not occur during the active flight season for Franklin's bumble bee, fuels reduction activities would not reduce any floral resources that may be used by foraging bees.

Additionally, any pile burning or thinning treatments would not impact active nests, if present, as nesting occurs during the active flight season. Because no heavy mechanical equipment will be used in the Prescott Park project area, crushing of potential nest sites outside the flight season (thereby reducing their availability for use in subsequent seasons) will be avoided. Further, areas targeted for fuels reduction within Prescott Park are not likely to be used for overwintering, as fuels treatments will be

conducted in areas with dense vegetation and ladder fuels (Assessment, p. 37); overwintering is anticipated in shaded areas *lacking* dense vegetation, and in close proximity to SFRs (USDI FWS 2023, Table 1, p. 9). Therefore, impacts to individuals in potential overwintering sites are not likely or reasonably certain to occur as a consequence of the proposed action.

Summary and Conclusion

The Service believes the proposed action will result in discountable effects for the following reasons:

- All hazardous fuels reduction treatments will occur between October 1 and April 14, avoiding the active flight season for Franklin's bumble bee.
- Treatments will not occur within meadow ecosystems near seeps or other wet meadow environments, where high-quality Franklin's bumble bee foraging habitat is expected to occur.
- All equipment will utilize existing compacted pathways, trails, and roads, avoiding impact to any potential nesting or overwintering sites.
- Herbicide application will target individual invasive plants in late fall (outside the Franklin's bumble bee active flight season) when plants are done flowering and would no longer function as a potential forage resource. Therefore, any potential floral resources that could be utilized are not expected to be reduced during the foraging period by the proposed action, and individual bees are not expected to be exposed to herbicide application.

In summary, the Service concurs with FEMA's determination that the proposed action *may affect, but is not likely to adversely affect* Franklin's bumble bee. The treatment prescription conservation measures and project design features outlined above minimize potential impacts to individuals of the species, and support future development of important habitats while managing for fire resiliency. For these reasons, the effects of the action are discountable to Franklin's bumble bee. This concludes informal consultation pursuant to section 7 of the ESA.

Reinitiation Notice

This Concurrence remains valid for the term of the proposed action as discussed and analyzed herein. In accordance with the implementing regulations for section 7 at 50 CFR § 402.16(a), reinitiation of consultation on the proposed action is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of exempted incidental take is exceeded (no incidental take is exempted in this case, thus reinitiation would be required if incidental take were to occur); (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not considered in this Concurrence; (3) the action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in this Concurrence; or (4) a new species is listed or critical habitat designated that may be affected by the action. When consultation is reinitiated, the provisions of section 7(d) of the ESA apply.

If you have any questions about this consultation, please contact Trinity Harvey of the Service's Roseburg Field Office at (541) 957-3472.

Sincerely,

JAMES THRAILKILL

Digitally signed by JAMES THRAILKILL
Date: 2024.02.05 13:51:06 -08'00'

Jim Thrailkill
Field Supervisor

cc: Office Files, FWS-RFO, Roseburg, Oregon
Michael Asch, USFWS, Roseburg, Oregon (e)

Literature Cited

FEMA. 2024. Biological Assessment, 4562-24 Medford Hazardous Fuels Reduction Project

USDI FWS (U.S. Fish and Wildlife Service). 2023. Franklin's Bumble Bee (*Bombus franklini*) Endangered Species Act Section 7(a)(2) Voluntary Implementation Guidance. Version 1.0 for Oregon, Portland, OR.

Action Implementation Worksheet
Action Notification

DATE OF REQUEST:	2/13/2024	**NMFS TRACKING #: WCR-2016-6048**	
TYPE OF REQUEST:	☒ ACTION NOTIFICATION (NO VERIFICATION) ☐ ACTION NOTIFICATION (VERIFICATION REQUIRED)		
Statutory Authority:	☐ESA Only ☐EFH Only ☒ ESA & EFH Combined		
Lead Action Agency:	**Federal Emergency Management Agency**	FEMA Action ID #: 4562-24	Corps Action ID# (if any): N/A
Action Agency Contact:	Erin Legge, Environmental Protection Specialist (202) 412-4585 / Erin.Legge@fema.dhs.gov		
Project Name:	HMGP 4562-24-OR: City of Medford Hazardous Fuels Reduction Project		
6th Field HUC & Name:	171003080110 - Bear Creek/Larson Creek Sub Watershed (Bear Creek)		
Proposed Construction Period (*over 3-year timeframe*):	**Start Date**: October 1	**End Date**: April 14	
Proposed Length of Channel and/or Riparian Modification in linear feet:	Treatment of up to 700 acres (project area) of vegetation out of 1,219 acres along 6.67 miles (35217.6 lineal feet) of the Bear Creek Greenway.		
Proposed Area of Herbicide Application in riparian area in linear feet:	Up to Treatment of up to 700 acres (project area) of vegetation along 6.67 miles (35,217 lineal feet) of the Bear Creek Greenway.		

Project Description

Introduction

The City of Medford (City) has proposed to conduct invasive plant and hazardous fuels reduction at two locations within public and private property. The City is in central Jackson County, Oregon. This geographic area is known as the Rogue Valley, a rain shadow between the Cascade Range and Siskiyou Mountains within the Middle Rogue and Upper Rogue sub-basin and in the Larson Creek-Bear Creek (HUC 171003080110) sub watershed, part of the Southern Oregon Coastal basin. Bear Creek flows northwesterly through Medford and joins the Rogue River near Table Rocks.

Every year, thousands of acres burn within and around the Rogue Valley. Some of the most devastating include the: Biscuit Fire of 2002 which burned 500,000 acres; Deer Ridge Fire of 2009 which burned 633 acres at the base of Roxy Ann Peak (the area is surrounded by Prescott Park and several densely populated subdivisions); Alameda Fire of 2020 which pushed into the southern portion of Medford and devastated the communities of Talent and Phoenix (the fire utilized the fuel source within the Bear Creek Greenway). These fires underscore the importance of this project request and the need for wildfire hazard mitigation.

Both project locations lie within the Wildland-Urban Interface (WUI) area, adjacent or proximate to natural areas that contain large areas of highly flammable, non-native invasive vegetation. The project is intended for the City to meet its public health and safety goals regarding WUI fire preparation prevention to reduce wildfire risk while maintaining native vegetation to promote fish and wildlife habitat.

The first location is in Prescott Park, a forested city park located approximately 7 miles from Bear Creek. No perennial water resources are present within this site. There is exposed grassy hillside and a large band of urban residential development between Prescott Park and Bear Creek & tributaries. Selective vegetative thinning at Prescott Park will not have an effect of the fisheries resources of Bear Creek or tributaries, whereas a devastating crown fire would pose risk of land slides into the tributaries. Informal consultation with the U.S. Fish and Wildlife Service for Franklin's Bumble Bee (T) has already been completed for the project.

The second project location is the Bear Creek Greenway, which runs along both sides of Bear Creek [southern project extent approximately 42.2878699, -122.8237365; northern extent approximately 42.3654284, -122.8875444] and includes treatment within the riparian zone and floodplain of Bear Creek.
Even though the City has implemented stronger ordnances addressing both vegetation management and prohibited camping along the Greenway there has been an increased number of human caused fires occurring within Bear Creek Greenway. Additionally, there is secondary fire risk is from discarded cigarettes and overheated vehicles on Interstate-5 which runs parallel to the Greenway.

The City is proposing to treat up to 700 acres for hazardous fuels (out of the total 1,219 acres of the Greenway). Hazardous fuels reduction includes the select removal of flammable shrubs, ladder fuels, and small trees (<10inch dbh), up to an established "partial no-cut buffer", which extends 40ft from OHWM. There is exemption of this no-cut buffer for the mechanical and chemical removal of invasive plants as per PDC 34 guidelines. Bear Creek includes Southern Oregon/Northern California Coast (SONC) Coho Salmon (*Oncorhynchus kisutch)* and EFH for Chinook Salmon and Coho Salmon. The project has incorporated Project Design Criteria (PDC's) outlined in the FESP and other best management practices and design consideration to avoid and minimize adverse modification of fishery resources.

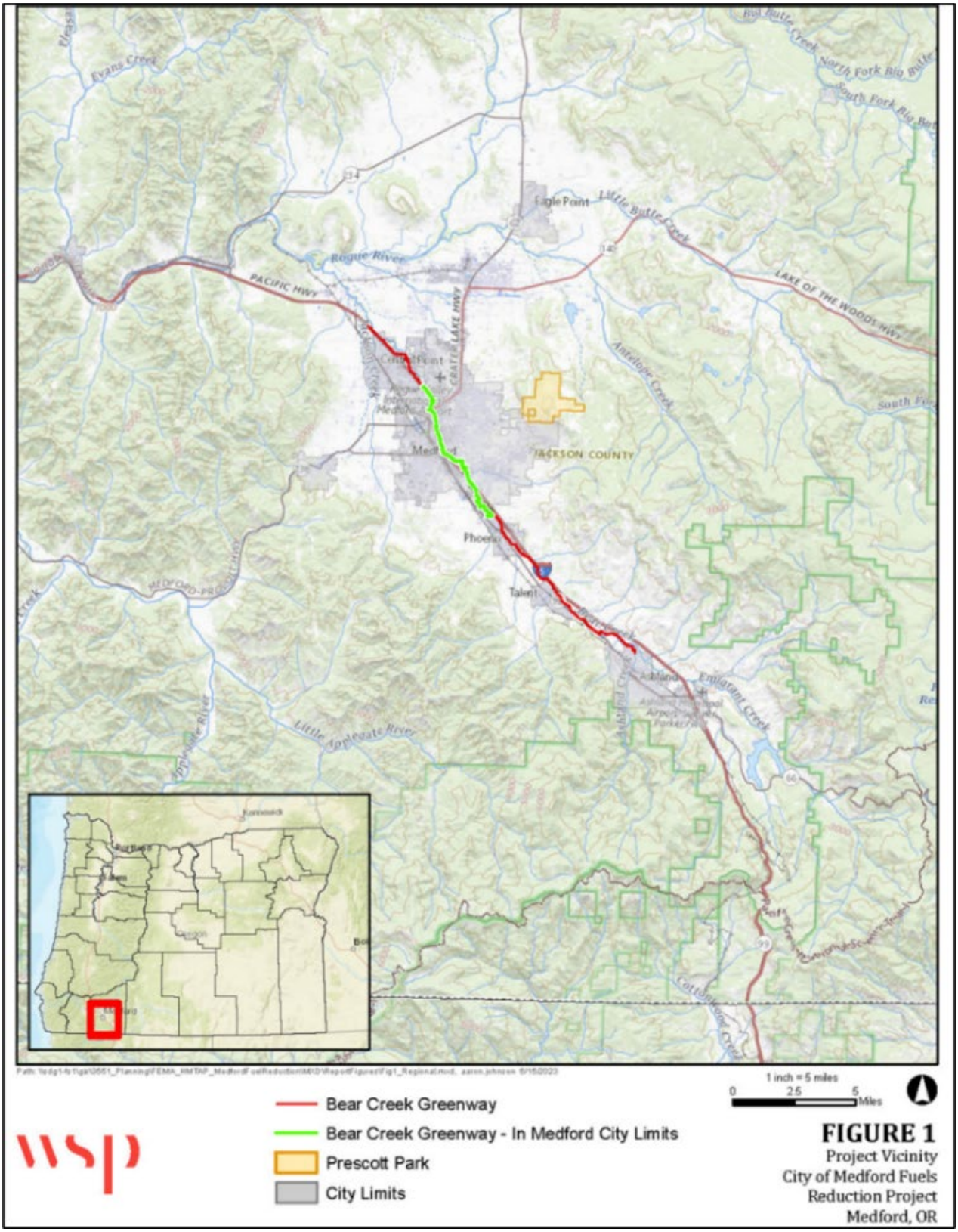

Figure 1: Location and Vicinity Map.

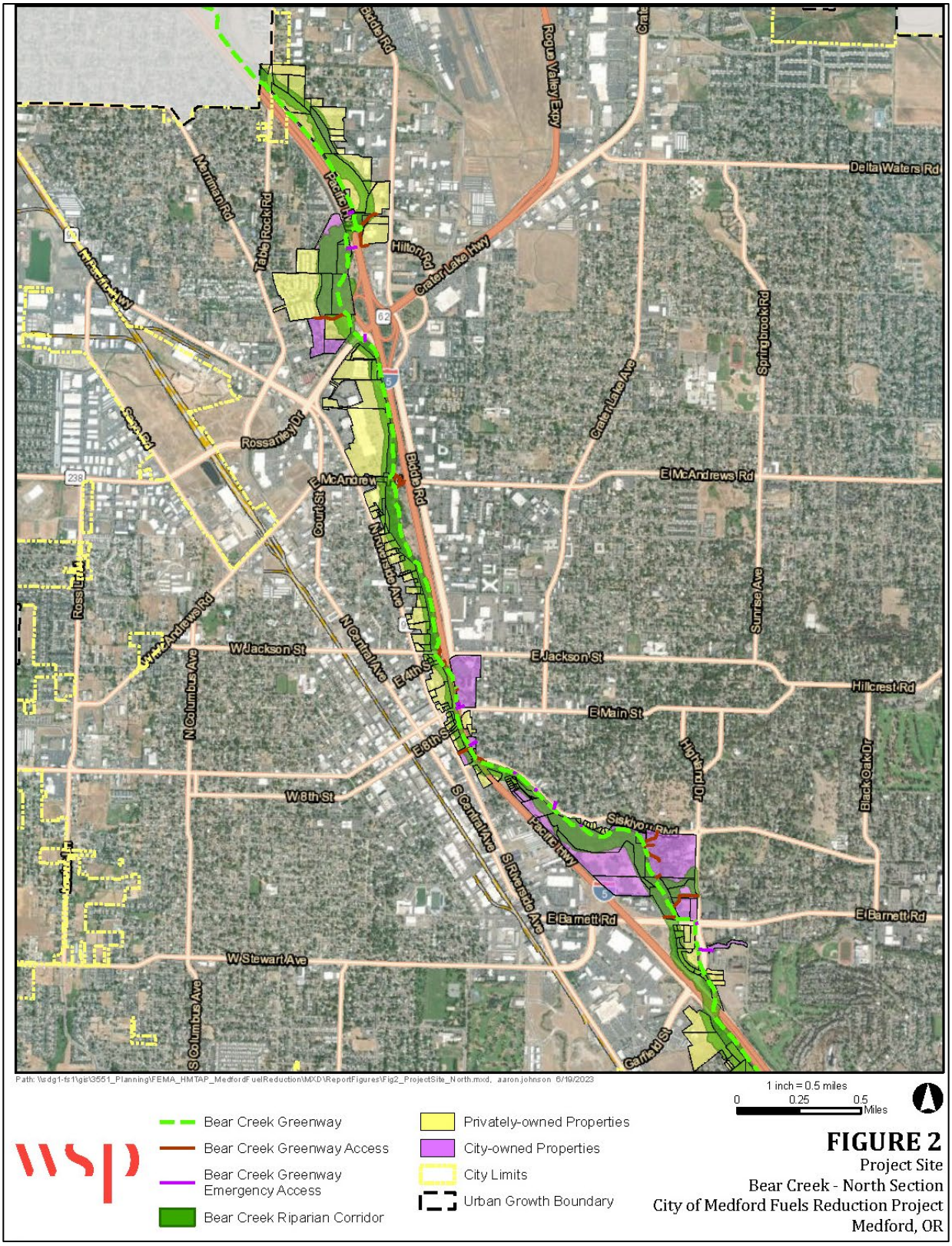

Figure 2: Bear Creek Greenway Location and Vicinity Map (North Section).

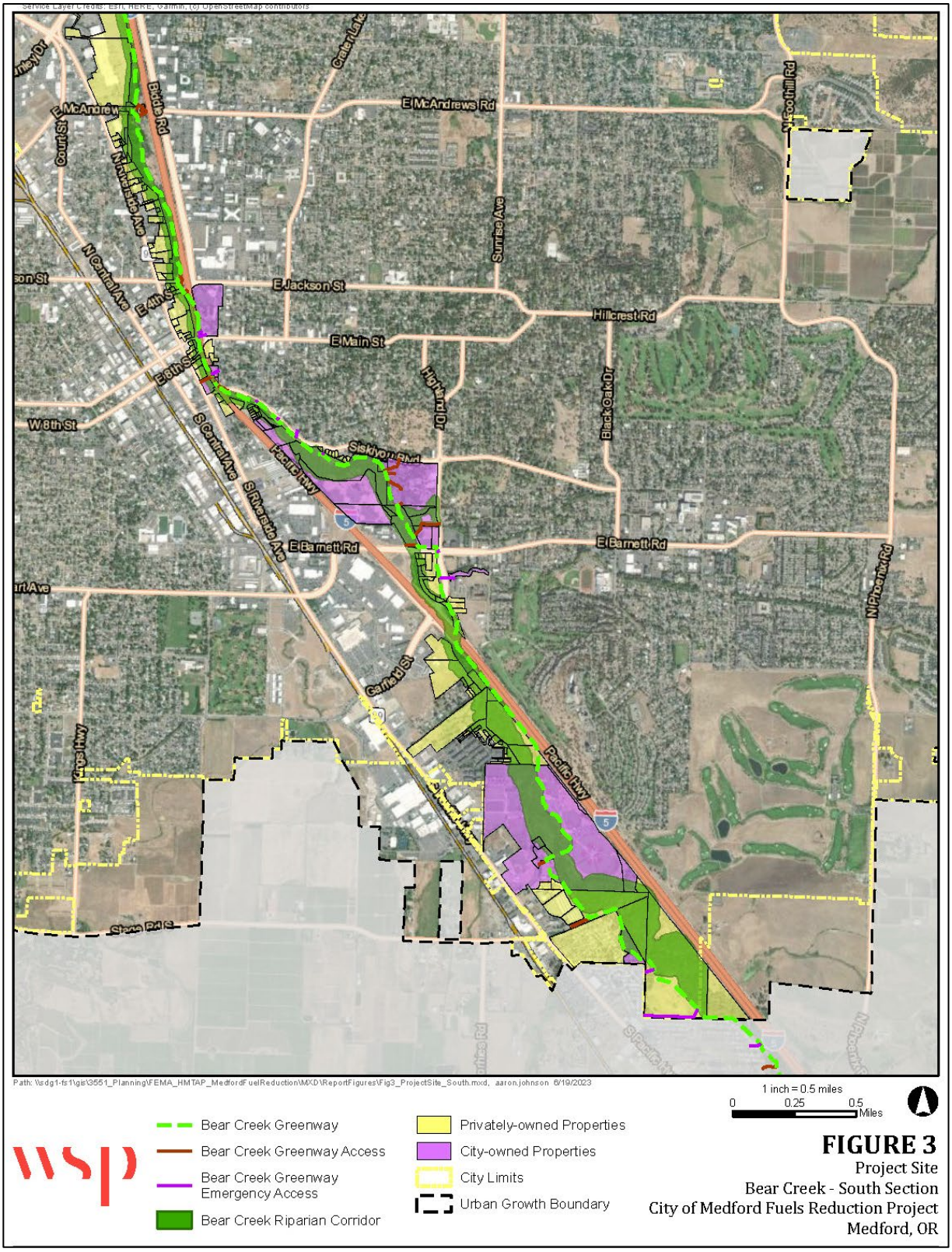

Figure 3: Bear Creek Greenway Location and Vicinity Map (South Section).

Project Actions

Construction Staging and Access

Access to the treatment areas in the Bear Creek Greenway would be provided via existing roads and pathways; no staging area is required as crews and equipment would be removed daily. Crews of 6 to 10 people would utilize the paved path that runs along the creek to transport crew members, vehicles, and biomass chippers. These vehicles have rubber tires and would use existing pathways. Invasive vegetation and other undesirable vegetation would be hauled offsite. Existing pathways would also be used to facilitate work and future access for invasive species control.

Treatment Actions

The fuels reduction treatments include the control of highly flammable invasive plants, and the thinning understory vegetation outside of the no cut buffer (ladder fuels, reducing flammable vegetation) and replanting with fire-resistant native vegetation. Ladder fuels are those that allow a groundfire to climb into the tree canopy layer. The proposed treatment would favor healthier and larger trees as well as native and rare species. The proposed action includes fuels reduction around structures and select properties, within woodland habitats, and targeted removal and control of invasive plants. As stated before, the Project will also include a 40ft no cut (interior) buffer (exception for non-native removal) to maintain stream shading. The proposed project actions would also maintain canopy coverage for the rest of the project area, removing ladder fuels (small understory trees, lower branches).

Work will be completed with three treatment types: manual methods (thinning, pruning, brush piling and chipping); mechanical methods (mowing and chipping); and chemical methods (herbicide application). The Bear Creek Greenway area includes Bear Creek; the riparian canopy cover (<25 percent) includes trees typical of the region and an understory overrun with invasive species such as Himalayan Blackberry, English ivy, Puncture Vine, Tamarisk, and Purple Loosestrife. There are various categories of land cover present, but the area primarily consists of tree canopy (approximately 186 acres) and maintained grassland (approximately 71 acres). The proposed treatment types, equipment, general timing, and location are summarized in **Table 1** below.

Table 1. Proposed Fuels Reduction Treatments/Timing.

Treatment Type	Treatment Activity	Equipment Types	Timing
Manual	Strategic vegetation trimming, thinning, pruning, and brush piling by hand	Chainsaws, Hand Saws, Brush Cutters	October 1 – April 14
Mechanical	Skidding, mastication, and routine mowing using power-operated equipment	Tractors/Skidders, Mowers, Masticators, Biomass Chipper	October 1 – April 14
Chemical	Direct herbicide application treatments that target and limit the growth of invasive plant species	Aquatic glyphosate for hand selective or spot spraying use 5 feet from waterline/1, or Aquatic Imazapyr for spot spray treatment use 15 feet from waterline and for hand selective use 5 feet from waterline	October 1 – April 14

/1 Waterline is defined as the Ordinary High-Water Mark (OHWM)

Defensible Space Maintenance:

The City would maintain 30 feet of defensible space around all structures (up to 589 properties) within the Bear Creek Greenway. This would involve cutting grass up to 10 inches or less while avoiding exposing soil, limbing tree branches up to 10 feet from the ground, maintaining shrubs and climbing vines by clearing dead or dying materials and clearing trees from structures. The City would maintain 10-foot minimum clearances around roads and the Greenway. The City would remove all portions of trees within 10 feet of chimney or stovepipe outlets; they would also maintain all trees adjacent to or overhanging a structure free of dead or dying wood and cut the trees back and remove dead or dying wood.

Vegetation Thinning and Tree Removal:

Only trees less than 10 inches in diameter at breast height (dbh) and more than 40 feet away from Bear Creek OHWM are proposed to be removed. The City would focus tree removal on non-native trees and would replant with native tree species. Tree removal would only occur after a tree survey verifying species and size of trees proposed for removal. The City would then follow-up with a post-removal survey to confirm flagged trees were removed. The City with assistance of a qualified arborist has identified a handful (<10) of hazard trees larger than 10 inch DBH that pose a risk to trails or general use. Hazard trees, if not retained as high-topped snags, would be left on site as full logs on the floodplain or banks.

Further, the City would remove all tree limbs and branches within 10 feet of the ground or at a minimum one-third the total height of the tree when more than 40 feet away from Bear Creek. Dead and dying vegetation and any combustible material would also be removed from both City-owned and private property parcels included in the treatment area. Vegetation would then be chipped and appropriately disposed to prevent further spread of invasive species and serve as additional ground cover and erosion control (**PDC 19**)

Invasive Species Removal and Herbicide Applications:

Herbicide applications would be limited to direct treatments targeting non-native plant species and noxious weeds. Herbicide use would be conducted in a manner consistent with the product instructions, buffer distances, and application methods and rates set forth in the Oregon Department of Agriculture (ODA) Pesticide Program and The Freshwater Trust (TFT) Herbicide Use and Restriction Guidelines (TFT 2017) which meet or exceed FESP **PDC 34** guidelines.

Spot spraying and hand selective herbicide applications using Aquatic Glyphosate would be restricted to a minimum of 5 feet from the Bear Creek waterline (i.e., OHWM). Spot spraying using Aquatic Imazapyr would be restricted to a minimum of 75 feet from the Bear Creek waterline, and hand selective herbicide applications using Aquatic Imazapyr would be restricted to a minimum of 5 feet from the Bear Creek waterline. No herbicide use would be permitted within 5 feet of the Bear Creek waterline. The waterline will be marked accordingly with avoidance flagging (**PDC 11**) before spraying. Limited use would be permitted beyond the 5-foot buffer. The current plan is to use the TFT buffers which are more restrictive than what is allowed by the FESP Biological Opinion (NMFS 2018); however, they may elect to use the allowed buffers as established by the FESP. **Table 2** shows the expected applied buffer distances.

Table 1: Proposed Herbicide Buffer Distances by Formula, Stream Type, and Application Method.

Herbicide	**No-Application Buffer Widths**	
	Spot Spraying	Hand Selective
Aquatic Glyphosate	5 feet from waterline	5 feet from waterline
Aquatic Imazapyr	75 feet from waterline	5 feet from waterline

Herbicide application would target invasive plant species through spot spraying and selective application without the need for broadcast spraying. Glyphosate works by inhibiting the action of a plant enzyme that plays a role in the synthesis of three amino acids named phenylalanine, tyrosine, and tryptophan. Glyphosate is absorbed into plants primarily through its leaves, and only tiny amounts of it are absorbed into the roots. Once applied, these herbicides will not be highly mobile within the soil. Long-term residual chemicals from herbicide application are expected to decompose in place within the soil.

Erosion Control and Site Disturbance

The City would also implement preventative erosion control measures (**PDC 19**) with vegetation removal activities on any slope that exceeds 20 percent or greater grade. This is in conjunction with the plan to chip removed vegetation and spread as ground cover. Select erosion control measures would comply with local guidance, required permits and agency input. For areas with limited accessibility, any disturbance to understory vegetation and soils would be restored with the application of loose straw mulch (approximately 50 percent coverage) and native grass seeding.

Revegetation

The Project does not currently include reseeding with native flowering perennial flowers, but the City intends to plant disturbed areas (**PDC 37**) with native fire resistant shrubs and trees via seedling plugs, and 1- and 5-gallon potted stock. Any disturbed areas in the riparian area will be restored or improved with native plantings with a high probability of remaining vigorous, bare soil areas will be small and well-dispersed, and all project-related waste shall be removed upon each phase of project completion (**PDC 36**).

Project Timing

The proposed fuels reduction treatment activities would span three years and involve vegetation management and hazard tree identification, fuels reduction and ongoing public participation and outreach efforts. While some of these activities would be conducted simultaneously, other activities would occur dependent on the time of year given that these activities cannot be completed during the fire season, wildlife migration periods (e.g., Franklin's bumblebee flight window), or nesting bird seasons (see Table 1). These time-dependent activities include fuel treatments involving invasive species controls and herbicide applications and would occur between October 1 and April 14.

During the first year, the City would conduct outreach with property owners near the Bear Creek Greenway located south of Barnett Road in the southern portion of Medford, followed by staging and site preparation work on City-owned parcels along the Bear Creek Greenway in southern Medford. During the second year, the City would treat vegetative fuels on City-owned and privately owned property further along Bear Creek, primarily between Barnett Road and Crater Lake Highway (State Route 62).

During the third year, the City would continue to conduct fuels reduction activities on private and public property between Barnett Road and Crater Lake Highway

Type of Action:
Identify the type of action proposed.

Actions Requiring **No Verification** from NMFS:

- ☐ Routine Road Maintenance
- ☐ Utility Line Crossing (non-Directional Boring Operations
- ☐ Boulder Placement
- ☒ Streambank Restoration
- ☐ LW Placement that occupies <25% of the bankfull cross sectional area
- ☒ Debris Removal

Actions Requiring **Verification** from NMFS:

- ☐ Temporary Bypass Channels
- ☐ Alluvium placement in >50% channel bed or > 25% of the bankfull cross-sectional area.
- ☐ Blasting
- ☐ Compensatory Mitigation
- ☐ Engineered Log Jams
- ☐ Fish Screens for Diversions >3 cfs
- ☐ Grade Stabilization
- ☐ LW placement that occupies >25% of the bankfull cross section area
- ☐ New or upgraded stormwater outfalls
- ☐ Off-and side-channel habitat restoration
- ☐ Pile Installation
- ☐ Road-stream crossing replacement or retrofit
- ☐ Set-back of an existing berm, dike, or levee
- ☐ Stormwater facilities
- ☐ Water control structure removal
- ☐ In-water Over-water Structure
- ☐ Access maintenance
- ☐ Streambank and Channel Stabilization
- ☐ Minor project modification

ESA Species/Designated Critical Habitat Present in Action Area:
Identify the species found in the action area:

NMFS ESA Species (FESP)

- ☐ -PS Chinook
- ☐ -UWR spring-run Chinook
- ☐ -UWR steelhead
- ☐ -LCR Chinook
- ☐ -LCR steelhead
- ☐ -LCR coho
- ☐ -Eulachon
- ☐ -MCR steelhead
- ☐ -PS Steelhead
- ☐ -UCR spring-run Chinook
- ☐ -UCR steelhead
- ☐ -HC summer chum
- ☐ -Columbia River chum
- ☐ -SR sockeye
- ☐ -Lake Ozette sockeye
- ☐ -OC coho
- ☒ -SONCC coho
- ☐ -SR spring/summer Chinook
- ☐ -SR fall run Chinook

NMFS EFH Species

- ☒ - Salmon, Chinook
- ☒ - Salmon, coho
- ☐ - Salmon, pink
- ☐ - Pacific Coast ground fish

USFWS ESA Species (FESP-BT)

- ☐ -USFWS Bull Trout
- ☐ -USFWS NSO
- ☐ -USFWS MAMU

Project Design Elements & Best Management Practices:

Check the Project Design Elements and Best Management Practices from the biological opinion that will be for this proposed action. Please attach all appropriate plan(s) for this proposed action including, but not limited to design plans, any revegetation or compensatory mitigation plans, and any related stormwater treatment design plans. In general, a minimum of at least 30% completed design plan(s) plans are required for projects that do not involve any in-water work, and a minimum of at 50% completed design plan(s) is typically required for any projects that include in-water work. Some projects that involve complex designs or extensive disturbance may require near 100% design. When in doubt of what is required, it is recommended that applicants contact FEMA and/or NMFS staff for direction.

Pre-Construction Measures PDCs:

12. Project Design.

17. Site Layout and Flagging.

19. Pollution and Erosion Control.

20. Hazardous Material Safety.

Construction Measures PDCs:

24. Equipment, Vehicles and Power Tools.

Post-Construction Measures PDCs:

34. Invasive and Non-native Control

36. Site Restoration.

37. Revegetation.

Specific Action PDCs:

43. Streambank restoration.

PDC Checklist:

Administrative

- [x] Electronic notification
- [ ] Site assessment for contaminants
- [ ] Site access
- [ ] Salvage notice

General Construction Measures

- [ ] In-water work timing
- [ ] Fish capture and release
- [ ] Work area isolation
- [ ] Fish screens
- [x] Equipment, vehicles, power tools
- [x] Site layout and flagging
- [ ] Staging, storage, and stockpile areas
- [x] Pollution and erosion control
- [ ] Hazardous material safety
- [ ] Pile installation
- [ ] Pile removal
- [ ] Broken or intractable pile
- [ ] Fish passage
- [ ] Surface water withdrawal
- [ ] Dust abatement
- [ ] Construction discharge water
- [ ] Temporary access roads and paths
- [ ] Temporary stream crossings
- [ ] Drilling and boring
- [ ] Pesticide and preservative-treated wood
- [ ] Barge use
- [x] Invasive and non-native plant control
- [ ] Post-construction stormwater management
- [x] Site restoration
- [x] Revegetation
- [ ] Compensatory mitigation

1. Road Maintenance / Rehab/ Replacement

- [ ] Design criteria
- [ ] Road/culvert/bridge maintenance
- [ ] Grade stabilization
- [ ] Structure stabilization
- [ ] Permanent stream-road crossing replacement
- [ ] Vegetated riprap with LW
- [ ] Roughened toe
- [ ] Rock structures

2. Stormwater Management Plan

- [ ] Design criteria
- [ ] Low Impact Development
- [ ] Water quality BMPs
- [ ] Water quantity BMPs
- [ ] Maintenance plan
- [ ] Monitoring and reporting

3. Utility Stream Crossings

- [ ] Design criteria

4. Streambank/ Channel Stabilization

- [ ] Alluvium placement
- [ ] Large wood (LW) placement
- [ ] Vegetated riprap with LW
- [ ] Woody plantings
- [ ] Herbaceous cover
- [ ] Streambank shaping
- [ ] Coir logs
- [ ] Soil reinforcement
- [ ] Engineered log jams
- [ ] Floodplain flow spreaders
- [ ] Fertilizer
- [ ] Fencing
- [ ] Filling scour hole
- [ ] Slope stabilization with rock

5. Streambank Restoration

- [x] Non-herbicide methods
- [x] Power equipment
- [x] Herbicide applicator qualifications
- [ ] Transportation and safety plan

6. Boulder Placement for Habitat Restoration

- [ ] Site selection
- [ ] Installation

7. Large Wood Placement

- [ ] Large wood condition

8. Off- and Side-Channel Habitat

- [ ] *Needs NMFS Verification*

9. Set-back Berm, Dike, and Levee

- [ ] *Needs NMFS Verification*

10. Water Control Structure Removal

- [ ] *Needs NMFS Verification*

11. In-water Over-water structures

- [ ] Boat ramps
- [ ] Replacement floats
- [ ] Relocation of existing structures
- [ ] Repair/replacement of covered moorage/boat houses

12 & 13 Dredging

- [ ] Maintenance dredging
- [ ] Vessel access dredging

14. **Debris Removal**

- [ ] Design criteria

Invasive and Non-native Plant Control

- [x] Non-herbicide methods
- [x] Power equipment
- [x] Herbicide applicator qualifications
- [x] Herbicide transportation and safety plan
- [x] Approved herbicides
- [x] Approved herbicide adjuvants
- [x] Approved herbicide carriers
- [ ] Herbicide mixing
- [x] Approved herbicide application rates
- [x] Approved herbicide application methods
- [x] Minimize herbicide drift and leaching
- [x] Required herbicide buffer distances

Appendix C: List of Hazardous Material Sites

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Rite Aid #6776	110069289763	404 N MAIN ST	Phoenix	OR	97535	42.27644	-122.81801	Hazardous Waste
Rite Aid No 6776	110070207995	636 N MAIN	Phoenix	OR	97535	42.27853	-122.82027	Hazardous Waste
Horizon Mobile Home Park	110071402440	4074 S. PACIFIC HWY 99	Phoenix	OR	97535	42.280371	-122.825327	Water Discharge
Coleman Creek Estates Reconstruction (FEMA)	110071094429	135 NORTH Phoenix ROAD	Phoenix	OR	97501	42.2806	-122.8212	Water Discharge
Dsu Peterbilt & Gmc Truck	110004799059	3727 N Phoenix RD	Medford	OR	97504	42.2808	-122.8169	Hazardous Waste
Royal Oaks Mobile Manor Rebuild	110071401881	4069 S PACIFIC HWY	Medford	OR	97501	42.281847	-122.823224	Water Discharge
The Home Depot Hd8557	110031287471	3345 N Phoenix RD	Phoenix	OR	97535	42.28188	-122.81445	Hazardous Waste
Pacific Village Mobile Home Community Fire Restoration	110071402528	3966 SOUTH PACIFIC HIGHWAY	Medford	OR	97526	42.282573	-122.830665	Water Discharge
Carefree Village	110071400060	3848 S. PACIFIC HIGHWAY	Medford	OR	97501	42.283525	-122.831883	Water Discharge
ODOT	110021016915	I-5 MP 28.19 THRU 29.08 VIADUC	Medford	OR	97501	42.28501	-122.81901	Hazardous Waste
Arrowhead Ranch/ODOT Fern Valley	110069582945	2909 N. Phoenix ROAD	Phoenix	OR	97504	42.28598	-122.81761	Water Discharge

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Oregon Trail Campers	110004779687	3724 S PACIFIC HWY	Medford	OR	97501	42.286233	-122.831777	Hazardous Waste
Medford Estates Reconstruction	110071093287	3555 S PACIFIC HIGHWAY	Medford	OR	97551	42.2879	-122.8287	Water Discharge
UAP Northwest Medford	110010754086	17 S STAGE RD	Medford	OR	97501	42.29305	-122.84286	Biennial Reporting
Tyree Oil Inc.	110071335002	20 SOUTH STAGE ROAD	Medford	OR	97501	42.293242	-122.84383	Air Pollution
Modoc Orchard Co	110006538657	3050 S PACIFIC HWY	Medford	OR	97501	42.2935	-122.8402	Hazardous Waste
2hawk Winery Processing Facility	110069600097	4415 CAMPBELL RD	Medford	OR	97504	42.294767	-122.811122	Water Discharge
Tucker Sno-Cat	110004779366	2872 S PACIFIC HWY	Medford	OR	97501	42.2966	-122.8439	Hazardous Waste
Matt Loop RV Park	110071401542	MATT LOOP	Medford	OR	97501	42.29802	-122.844634	Water Discharge
Commercial Documentation Services	110001657895	2661 SOUTH PACIFIC HIGHWAY	Medford	OR	97501-8761	42.298365	-122.846249	Hazardous Waste
Northwest Printed Circuits	110004783137	2655 S PACIFIC HWY	Medford	OR	97501	42.298458	-122.846344	Hazardous Waste
Commercial Documentation Services	110004772336	2603 S PACIFIC HWY	Medford	OR	97501	42.299264	-122.847164	Hazardous Waste

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Harry And David	110064866042	2518 S PACIFIC HWY	Medford	OR	97501-8724	42.3009	-122.849	Water Discharge
Jackson And Perkins Co	110020977031	2518 S PACIFIC HWY	Medford	OR	97501-8724	42.3009	-122.849	Hazardous Waste
Cedar Hotel	110071094679	2399 S PACIFIC HWY	Medford	OR	97501	42.3028	-122.8509	Water Discharge
Journey Church	110001657564	2399 OR-99	Medford	OR	97501	42.303283	-122.84962	Hazardous Waste
Browns Auto Body & Paint	110004781219	2201 S PACIFIC HWY	Medford	OR	97501	42.304271	-122.85218	Hazardous Waste
Skinner Buick Cadillac Inc	110004795428	2177 S PACIFIC HWY	Medford	OR	97501	42.3048	-122.8509	Hazardous Waste
Panera Site	110071093549	GARFIELD ST + ANTON DRIVE	Medford	OR	97501	42.306	-122.8561	Water Discharge
Kogap Manufacturing Site	110002149602	2080 OR-99	Medford	OR	97501	42.306162	-122.856114	Hazardous Waste
Rogue Valley Manor - Memory Care	110070230921	1200 MIRA MAR LAKE VILLAGE DR.	Medford	OR	97504	42.3066	-122.8333	Water Discharge
Rogue Valley Manor	110001655156	1200 MIRA MAR AVENUE	Medford	OR	97504-8546	42.30763	-122.83836	Hazardous Waste
Rough Grading Tax Lot 100	110069560344	INT. OF GARFIELD RD AND CENTER DRIVE	Medford	OR	97501	42.3086	-122.8513	Water Discharge
Ecolube Recovery LLC	110070912146	1890 S PACIFIC HWY	Medford	OR	97501	42.308757	-122.857479	Hazardous Waste

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Hays Oil Company	110071334959	1890 S PACIFIC HIGHWAY	Medford	OR	97501	42.308757	-122.857479	Air Pollution
Kogap Electrical	110045418213	1501 MYERS LN	Medford	OR	97501-3682	42.30878	-122.86297	Hazardous Waste
Columbia Care - Juanipero	110070231793	JUANIPERO & GOLF VIEW DRIVE	Medford	OR	97501	42.30936	-122.82291	Water Discharge
Center Drive Hotel	110070227278	1375 CENTER DRIVE	Medford	OR	97501	42.309394	-122.853826	Water Discharge
Rogue Community Credit Union	110069562128	1370 CENTER DRIVE	Medford	OR	97504	42.30954	-122.85403	Water Discharge
Stewart Meadows Village-Hansen Creek Improvements	110069594031	MYERS LANE	Medford	OR	97501	42.3098	-122.8606	Water Discharge
Walmart Supercenter #2069	110046404066	1360 CENTER DRIVE	Medford	OR	97501	42.31055	-122.85451	Hazardous Waste
Oregon National Guard	110014227112	1701 SOUTH PACIFIC HIGHWAY	Medford	OR	97501-7914	42.3114	-122.8576	Hazardous Waste
ODEQ Cleanup Prog Weldon’s Cleaning Ctr	110064256549	711A STEWART AVE	Medford	OR	97501	42.312793	-122.878247	Hazardous Waste
Fred Meyer South Medford	110004817093	1301 CENTER DR	Medford	OR	97501	42.31284	-122.85639	Hazardous Waste
Weldon’s Cleaning Center	110004798755	711 STEWART AVE	Medford	OR	97501-4001	42.31287	-122.87833	Hazardous Waste
Qwest Corporation 760	110004788800	150 STEWART AVENUE	Medford	OR	97501-3662	42.31287	-122.86458	Hazardous Waste

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Southern Oregon Sales, Inc.	110006661273	18 STEWART AVE.	Medford	OR	97501	42.31287	-122.86184	Water Discharge
Hilton Garden Inn	110069570431	1000 WELCOME WAY	Medford	OR	97504	42.3136	-122.848	Water Discharge
St. Mary's School Improvements	110070229953	816 BLACK OAK DRIVE	Medford	OR	97504	42.31418	-122.83565	Water Discharge
Larson Creek Trail Ii (M653)	110070528180	HILLDALE AVENUE 600 +/-SOUTH OF BARNETT	Medford	OR	JACKSON	42.3147	-122.8415	Water Discharge
Prescription Compounding Solutions	110045430262	940 ELLENDALE DR	Medford	OR	97504	42.31498	-122.84564	Hazardous Waste
Discount Tire	110071403178	1293 CENTER DR	Medford	OR	97501	42.31528	-122.857559	Water Discharge
Pacific Power & Light	110000817046	925 SOUTH GRAPE STREET	Medford	OR	97501-3630	42.31543	-122.86637	Hazardous Waste
Barnett Rd Commercial	110070048298	BARNETT RD (TAX LOT 3700)	Medford	OR	97501	42.3157	-122.86857	Water Discharge
Unocal Ss 5347	110004798292	309 BARNETT RD	Medford	OR	97501-7929	42.3157	-122.867791	Hazardous Waste
Penske Auto Center Medford	110004809814	251 E BARNETT RD	Medford	OR	97501-7927	42.31576	-122.86019	Hazardous Waste
McDonald’s Medford Relocation	110070626344	295 EAST BARNETT ROAD	Medford	OR	97501	42.31576	-122.859772	Water Discharge

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Chevron Service Station 93753	110004802429	417 EAST BARNETT ROAD	Medford	OR	97501-7931	42.31576	-122.85867	Hazardous Waste
Omnicare Of Medford No 48328	110070207998	259 E BARNETT RD, NUMBER L	Medford	OR	97501	42.315762	-122.860072	Biennial Reporting
Si Casa Flores	110022435391	235 E BARNETT RD SUITE 104	Medford	OR	97501-7903	42.31577	-122.86173	Hazardous Waste
Black Oak Cleaners	110013969642	2620 K E BARNETT ROAD	Medford	OR	97504-8383	42.31629	-122.83509	Hazardous Waste
Rogue Valley Rx	110045419187	2900 E BARNETT RD	Medford	OR	97504-8380	42.31646	-122.82842	Hazardous Waste
Surgery Center Of Southern Oregon	110045430486	2798 E BARNETT RD	Medford	OR	97504-8343	42.31648	-122.83268	Hazardous Waste
Lube N Car Wash Developers Dba Quench & Drench Ii	110039076576	1024 S RIVERSIDE AVE	Medford	OR	97501	42.31683	-122.86354	Hazardous Waste
Msdec Middle School	110071094101	815 S OAKDALE	Medford	OR	97501	42.317	-122.873	Water Discharge
Rogue Valley Oil Co	110001655174	1000 SOUTH CENTRAL AVENUE	Medford	OR	97501-7824	42.31709	-122.86419	Biennial Reporting
Spiegelberg Stadium	110071400587	730 KENYAN ST.	Medford	OR	97501	42.317219	-122.869897	Water Discharge
Kadee Metal Products Co	110004802866	720 S GRAPE ST	Medford	OR	97501	42.31722	-122.86769	Hazardous Waste
General Equip Co Aka Hotsy Inc	110004806782	950 S CENTRAL	Medford	OR	97501	42.31733	-122.86452	Hazardous Waste

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Medford School District 549c	110004786072	500 MONROE STREET	Medford	OR	97501-3522	42.31751	-122.87242	Hazardous Waste
Medford Plating Inc	110001659679	702 S GRAPE ST	Medford	OR	97501	42.317801	-122.867816	Hazardous Waste
Tree Top	110001655147	690 S GRAPE ST	Medford	OR	97501	42.31819	-122.86861	Hazardous Waste
Rogue Valley Medical Center	110014282187	2825 E. BARNETT ROAD/BLACK OAK DRIVE	Medford	OR	97504	42.3185	-122.8297	Hazardous Waste
Miller Paint Company Inc	110012256566	803 S CENTRAL	Medford	OR	97501-7819	42.31948	-122.86597	Hazardous Waste
Rrmc Parking Structure	110070265054	SISKIYOU BLVD. AND MURPHY ROAD	MEFORD	OR	97504	42.31968	-122.82884	Water Discharge
Northwest Chemical Corp Medford	110004777279	609 S FIR ST	Medford	OR	97501	42.320105	-122.869224	Hazardous Waste
Medford Fire Station 3	110070232341	530 HIGHLAND DRIVE	Medford	OR	97501	42.32027	-122.8499	Water Discharge
Fresh Express	110037796891	706 S CENTRAL AVE	Medford	OR	97501	42.32031	-122.86652	Hazardous Waste
Jackson County DA's Office	110069558302	815 10TH STREET	Medford	OR	97501	42.32124	-122.879834	Water Discharge
Helena Agri Enterprises LLC Dba Helena C	110004789220	511 S FIR	Medford	OR	97501	42.32141	-122.869836	Hazardous Waste

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
MPD Headquarters	110069598956	219 S. IVY ST.	Medford	OR	97501	42.322375	-122.875116	Water Discharge
Rogue River National Forest	110004776644	333 W 8TH ST	Medford	OR	97501	42.32363	-122.87548	Hazardous Waste
Dollar Gmc Oldsmobile	110004819867	325 S RIVERSIDE	Medford	OR	97501-7238	42.32364	-122.86796	Hazardous Waste
Saturn Of Southwest Oregon	110014189001	400 RIVERSIDE DRIVE	Medford	OR	97501-4603	42.323682	-122.86799	Hazardous Waste
Conger Morris Funeral Directors	110004795785	715 WEST MAIN STREET	Medford	OR	97501-2924	42.32373	-122.87956	Hazardous Waste
Archies Cleaners	110004797881	702 W MAIN ST	Medford	OR	97501	42.32373	-122.87951	Hazardous Waste
Grape Street	110071089086	101-113 SOUTH GRAPE STREET	Medford	OR	97501	42.324006	-122.873656	Brownfields
ODEQ Medford Drug Lab	110044948625	105 OAKDALE	Medford	OR	97501	42.324573	-122.878461	Hazardous Waste
Paul Phillips Pontiac	110004786526	225 S RIVERSIDE AVE	Medford	OR	97501	42.32471	-122.86871	Hazardous Waste
Southern Oregon Subaru Volvo Mitsubishi	110004788481	227 E 9TH ST	Medford	OR	97501	42.32518	-122.87011	Hazardous Waste
James A. Redden Courthouse	110004821104	310 WEST 6TH STREET	Medford	OR	97501-2766	42.32526	-122.87704	Hazardous Waste

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Rogue Community College Riverside Campus	110045418632	202 S RIVERSIDE AVE	Medford	OR	97501-7237	42.32534	-122.86915	Hazardous Waste
Sherwin-Williams Co - Medford	110004777741	122 S CENTRAL	Medford	OR	97501	42.325544	-122.87127	Hazardous Waste
San Sierra Business Systems	110004786973	143 S RIVERSIDE AVE	Medford	OR	97501	42.32561	-122.86935	Hazardous Waste
Medford Mail Tribune Production Center	110004774012	33 NORTH FIR STREET	Medford	OR	97501-2714	42.32583	-122.87459	Hazardous Waste
Jackson County Tax Lot 371w30bb4300	110039060725	315 5TH STREET	Medford	OR	97501	42.326167	-122.87763	Brownfields
Union Pacific Railroad	110037821462	147 N FRONT ST	Medford	OR	97501	42.32722	-122.87413	Hazardous Waste
Budge-McHugh Property	110070556319	132 W. 4TH STREET, 125 W. 4TH STREET, 160 N. FIR STREET	Medford	OR	97501	42.327591	-122.876973	Brownfields
Medford Municipal Stormwater, Ms4	110058285136	MUNICIPAL STORMWATER AREA	JACKSON	OR	97504	42.3278	-122.8667	Water Discharge
Jackson County Tax Lot 371w30bb7800	110039060477	313 6TH STREET	Medford	OR	97501	42.32784	-122.87211	Brownfields
300 N Fir Street	110071089443	300 NORTH FIR STREET	Medford	OR	97501	42.32803	-122.87669	Brownfields
Jackson County Tax Lot 371w30bb7900	110039060618	323 E. 6TH STREET	Medford	OR	97501	42.32808	-122.87165	Brownfields

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Pennzoil	110045418142	145 N CENTRAL AVE	Medford	OR	97501-5925	42.32811	-122.87371	Hazardous Waste
Jackson County Tax Lot 371w30bb7600	110039060716	128 N. BARTLETT STREET	Medford	OR	97501	42.32811	-122.87243	Brownfields
Spearco Graphics LLC.	110045418133	330 N FIR ST	Medford	OR	97501-2601	42.32836	-122.87701	Hazardous Waste
Jackson County Tax Lot 371w30bb8100	110039060663	129 N. RIVERSIDE AVE.	Medford	OR	97501	42.32878	-122.87156	Brownfields
Lithia Dodge Annex	110004790913	222 N BARTLETT	Medford	OR	97501	42.328806	-122.873103	Hazardous Waste
Jackson County Tax Lot 371w30bb5000	110039060609	212 N. BARTLETT STREET	Medford	OR	97501	42.32882	-122.87312	Brownfields
Jackson County Tax Lot 371w30bb4700	110039060501	236 N. BARTLETT STREET	Medford	OR	97501	42.328925	-122.873213	Brownfields
Jackson County Tax Lot 371w30bb4900	110039060422	220 N. BARTLETT STREET	Medford	OR	97501	42.32897	-122.87325	Brownfields
Lithia Corporate Office	110045421833	244 N BARTLETT ST	Medford	OR	97501-6017	42.328993	-122.873276	Hazardous Waste
Jackson County Tax Lot 371w30bb7500	110039060556	324 E. 5TH ST.	Medford	OR	97501	42.329	-122.87222	Brownfields
Jackson County Tax Lot 371w30bb7700	110039060431	324 E. 5TH ST.	Medford	OR	97501	42.329	-122.87222	Brownfields
Jackson County Tax Lot 371w30bb8200	110039060672	324 E. 5TH STREET	Medford	OR	97501	42.329	-122.87222	Brownfields

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Medford Dodge Dba Lithia Dodge	110004792840	324 E 5-B ST	Medford	OR	97501	42.329	-122.8706	Hazardous Waste
Jackson County Tax Lot 371w30bb4800	110039060654	224 N. BARTLETT STREET	Medford	OR	97501	42.32913	-122.87341	Brownfields
Lithia Corporate Office	110045421842	224 N BARTLETT ST	Medford	OR	97501-6017	42.32913	-122.87341	Hazardous Waste
Jackson County Tax Lot 371w30bb5300	110039060707	235 N. BARTLETT STREET	Medford	OR	97501	42.32929	-122.87355	Brownfields
A L Clay Dmd	110004820490	41 HAWTHORNE ST	Medford	OR	97504	42.32931	-122.86728	Hazardous Waste
Jackson County Tax Lot 371w30bb2200	110039060690	310 N. BARTLETT STREET	Medford	OR	97501	42.32959	-122.87383	Brownfields
Jackson County Tax Lot 371w30bb2100	110039060681	NEQ N. BARTLETT ST. & E. 4TH ST. LOT 2100	Medford	OR	97501	42.32978	-122.8762	Brownfields
Jackson County Tax Lot 371w30bb4600	110039060592	SWQ E. 4TH ST. & APPLE ST. LOT 4600	Medford	OR	97501	42.32978	-122.8762	Brownfields
Apple Street	110039060397	APPLE STREET BETWEEN E 3RD ST. AND E 4TH ST.	Medford	OR	97501	42.32978	-122.87256	Brownfields
Jackson County Tax Lot 371w30bb4200	110039060468	NEQ APPLE ST. & E. 5TH ST. LOT 4200	Medford	OR	97501	42.32978	-122.87135	Brownfields
Jackson County Tax Lot 371w30bb4400	110039060538	NWQ APPLE ST. & E. 5TH ST. LOT 4400	Medford	OR	97501	42.32978	-122.87135	Brownfields

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Jackson County Tax Lot 371w30bb4500	110039060510	SWQ APPLE ST. & E. 4TH ST. LOT 4500	Medford	OR	97501	42.32978	-122.87135	Brownfields
Jackson County Tax Lot 371w30bb7200	110039060529	NWQ BARTLETT ST. & 6TH ST. LOT 7200	Medford	OR	97501	42.32978	-122.87135	Brownfields
Jackson County Tax Lot 371w30bb8000	110039060734	NWQ N. RIVERSIDE AVE. & E. 6TH ST. LOT 8000	Medford	OR	97501	42.32978	-122.87135	Brownfields
Jackson County Tax Lot 371w30bb3100	110039060583	401 E. 4TH STREET	Medford	OR	97501	42.32994	-122.87274	Brownfields
Jackson County Tax Lot 371w30bb2000	110039060440	326-344 N. BARTLETT STREET	Medford	OR	97501	42.32998	-122.87421	Brownfields
Jackson County Tax Lot 371w30bb3000	110039060636	334 APPLE STREET	Medford	OR	97501	42.33041	-122.87333	Brownfields
Jackson County Tax Lot 371w30bb3400	110039060645	309 N. RIVERSIDE AVE.	Medford	OR	97501	42.33043	-122.87231	Brownfields
Bp Service Station	110004814247	348 N RIVERSIDE AVE	Medford	OR	97501	42.33049	-122.87234	Hazardous Waste
U S West Communications	110014222858	502 N CENTRAL	Medford	OR	97501-5813	42.33059	-122.87607	Hazardous Waste
Jackson County Tax Lot 371w30bb2800	110039060486	345 APPLE STREET	Medford	OR	97501	42.33059	-122.8735	Brownfields
Jackson County Tax Lot 371w30bb3500	110039060547	315 N. RIVERSIDE AVE.	Medford	OR	97501	42.33062	-122.8724	Brownfields
Nayra Inc. Dba Shell #311	110071334958	525 N. CENTRAL AVE	Medford	OR	97501	42.330798	-122.876638	Air Pollution

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Jackson County Tax Lot 371w30bb3700	110039060413	333 N. RIVERSIDE AVE.	Medford	OR	97501	42.33094	-122.87253	Brownfields
Lithia Americas Car & Truck Store	110045420834	360 E JACKSON ST	Medford	OR	97501-5825	42.33112	-122.87416	Hazardous Waste
Lithia Toyota Lincoln Mercury	110004783734	360 E JACKSON ST	Medford	OR	97501	42.33112	-122.87416	Hazardous Waste
Firestone Complete Auto Care 6651	110004808174	613 E JACKSON ST	Medford	OR	97504	42.33114	-122.86657	Hazardous Waste
Kayser Auto Refinishing	110006854724	600 N CENTRAL	Medford	OR	97501	42.33136	-122.87679	Hazardous Waste
Jackson County Tax Lot 371w30bb2300	110039060404	NWQ APPLE ST. & E. 4TH ST. LOT 2300.	Medford	OR	97501	42.33158	-122.87255	Brownfields
Santos Center	110004773656	701 NORTH COLUMBUS AVENUE	Medford	OR	97501-2343	42.33165	-122.89018	Hazardous Waste
Medford School District Purchasing Dept	110007741480	750 NORTH COLUMBUS AVENUE	Medford	OR	97501-2344	42.33167	-122.89018	Hazardous Waste
Sears Roebuck And Company Incorporated	110004820873	501 Medford CENTER	Medford	OR	97504-6788	42.33186	-122.8673	Hazardous Waste
Poly Clean Center	110004799166	608 Medford CENTER	Medford	OR	97504-6795	42.33186	-122.866598	Hazardous Waste
Southern Oregon Antifreeze Recyclers	110004813747	723 OAK ST	Medford	OR	97501	42.33191	-122.88442	Hazardous Waste
Lithia Honda	110004789186	700 N CENTRAL	Medford	OR	97501-5817	42.33255	-122.87792	Hazardous Waste

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Options For Southern Oregon	110070229629	700 N CENTRAL AVE	Medford	OR	97501	42.33255	-122.87792	Water Discharge
Dahl House Crossing	110071400336	MAPLE PARK DRIVE	Medford	OR	97501	42.3331	-122.8934	Water Discharge
Jackson County Tax Lot 371w30bb2400	110039060565	SWQ APPLE ST. & E. 3RD ST. LOT 2400	Medford	OR	97501	42.33338	-122.87134	Brownfields
Jackson County Tax Lot 371w30bb2500	110039060627	SWQ APPLE ST. & E. 3RD. ST. LOT 2500	Medford	OR	97501	42.33338	-122.87134	Brownfields
Jackson County Tax Lot 371w30bb2600	110039060574	SWQ APPLE ST. & E. 3RD ST. LOT 2600	Medford	OR	97501	42.33338	-122.87134	Brownfields
Jackson County Tax Lot 371w30bb2700	110039060459	SWQ APPLE ST. & E. 3RD. ST. LOT 2700	Medford	OR	97501	42.33338	-122.87134	Brownfields
Anm, Inc	110070122565	130 W CLARK ST	Medford	OR	97501	42.33339	-122.88197	Hazardous Waste
Shell Chemical Lp Spill Site	110022530073	LAT 42.3335, LONG -122.8835	Medford	OR	97501	42.3335	-122.8835	Biennial Reporting
Willamette Graystone - Medford, Or Block Plant	110071433933	727 W MCANDREWS RD	Medford	OR	97501	42.333853	-122.888885	Toxic Release
Micheals	110004799004	997 Medford CENTER	Medford	OR	97504	42.333881	-122.86604	Hazardous Waste
Safeway Store No525	110062923591	1003 Medford CTR	Medford	OR	97504	42.333904	-122.86604	Hazardous Waste
Rite Aid 5384	110045987134	981 Medford CTR	Medford	OR	97504	42.33394	-122.86604	Hazardous Waste

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Lithia Volkswagen Isuzu	110012256977	801 N RIVERSIDE	Medford	OR	97501-4610	42.33447	-122.87415	Hazardous Waste
Unocal Refining Market	110014274882	600 BIDDLE ROAD	Medford	OR	97504-6115	42.33474	-122.87057	Hazardous Waste
Auto Body Clinic	110004784797	844 W RIVERSIDE AVE	Medford	OR	97501	42.33497	-122.87439	Hazardous Waste
Kids Unlimited Of Oregon	110070048353	821 NORTH RIVERSIDE	Medford	OR	97501	42.33521	-122.8745	Water Discharge
Bedslide	110070559051	111 TAFT ST	Medford	OR	97501	42.335417	-122.883278	Hazardous Waste
Star Body Works	110004781200	1024 SUMMIT AVENUE	Medford	OR	97501-2364	42.33542	-122.88704	Hazardous Waste
Ramseys Cleaners	110004798700	1006 COURT ST	Medford	OR	97501	42.3357	-122.8805	Hazardous Waste
Ecs Regenesys	110032966324	407 BOARDMAN ST	Medford	OR	97501-5723	42.33608	-122.87947	Hazardous Waste
Jmb Hi Tech Plating	110012256717	1111 N CENTRAL AVE UNIT F	Medford	OR	97501	42.33618	-122.88137	Hazardous Waste
Rogue Valley Circuit Site	110002149611	1111 N CENTRAL AVE	Medford	OR	97501	42.33618	-122.88137	Hazardous Waste
Saddle Ridge Subdivision Phases 4 And 5	110071093210	SADDLE RIDGE DRIVE	Medford	OR	97504	42.3364	-122.7808	Water Discharge
Silver Eagle Company	110004782735	501 W MCANDREWS RD	Medford	OR	97501	42.337364	-122.884946	Hazardous Waste

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Naumes Carpenter Shop	110045423939	1311 N CENTRAL AVE	Medford	OR	97501-5772	42.33742	-122.88256	Hazardous Waste
Gandee Printing Center Inc	110004806684	625 MARKET ST	Medford	OR	97504	42.33754	-122.87025	Hazardous Waste
Unocal Bulk Plant 0416	110004798167	103 WEST MCANDREWS ROAD	Medford	OR	97501	42.337584	-122.884687	Hazardous Waste
Corp - Medford Rail Yard	110070263724	2 EAST MCANDREWS ROAD	Medford	OR	97501	42.33776	-122.88447	Water Discharge
Scales Automotive	110045431109	1101 COURT ST	Medford	OR	97501-5729	42.33781	-122.88048	Hazardous Waste
Lighthouse Worldwide Solutions	110045432509	1221 DISK DR	Medford	OR	97501-6638	42.33819	-122.89479	Hazardous Waste
Berkeley Hills - College Hill Addition	110067191103	SPRING STREET & BERKELEY WAY	Medford	OR	97504	42.3382	-122.85053	Water Discharge
Sally Beauty Supply #2298	110071139925	950 BIDDLE RD	Medford	OR	97504	42.33858	-122.87184	Hazardous Waste
Thermal Supply	110070625536	553 PARSONS DRIVE	Medford	OR	97501	42.338634	-122.892654	Water Discharge
Medford Fabrication	110004802027	1109 COURT STREET	Medford	OR	97501-5729	42.33867	-122.88048	Hazardous Waste
Macs Radiator & Repair Incorporated	110004812622	705 BEATTY STREET SUITE B	Medford	OR	97501-5790	42.33901	-122.87866	Hazardous Waste
Valley Heating & Sheet Metal	110031470655	705 BEATTY STREET SUITE B	Medford	OR	97501-5790	42.33901	-122.87866	Air Pollution

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Timber Products Co. Limited Partnership	110000488589	25 E. MCANDREWS	Medford	OR	97501-1640	42.339181	-122.887874	Air Pollution
Hewitts Auto Body & Paint	110004795115	1127 COURT STREET	Medford	OR	97501-5729	42.33932	-122.88049	Hazardous Waste
Providence Medford Medical Center	110004784975	1111 CRATER LAKE AVENUE	Medford	OR	97504-6241	42.33968	-122.86106	Biennial Reporting
Merry X-Ray Chemical Corporation	110024831486	826 BEATTY ST	Medford	OR	97501-5718	42.33982	-122.87866	Hazardous Waste
Western States Environmental Services Inc	110039592321	877 BEATTY ST	Medford	OR	97501	42.34004	-122.87865	Hazardous Waste
Lithia Toyota Of Medford	110012257823	1420 N RIVERSIDE	Medford	OR	97501-4623	42.340501	-122.877306	Hazardous Waste
Alba Village	110071162704	101 ROSSANLEY DRIVE	Medford	OR	97501	42.34056	-122.8827	Brownfields
Cooper-Davis LLC	110024436270	688 ROSSANLEY DR STE 3	Medford	OR	97501-6613	42.34068	-122.89768	Hazardous Waste
Gerald W. Burns	110045422333	1744 E. MCANDREWS ROAD	Medford	OR	97504	42.34112	-122.85958	Hazardous Waste
Ritchie Brothers Trucking	110071093600	N. CENTRAL AVENUE	Medford	OR	97501	42.3415	-122.887	Water Discharge
M And M Automotive Paint Supply	110070225280	1513 N RIVERSIDE AVE	Medford	OR	97501	42.34169	-122.87805	Hazardous Waste

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Picture People The	110004801974	1600 NORTH RIVERSIDE SUITE 2035	Medford	OR	97501-4665	42.34198	-122.87825	Hazardous Waste
Cascade Electric Motor Service	110004801929	1225 COURT STREET	Medford	OR	97501-1603	42.34219	-122.88049	Hazardous Waste
Rogue Coach Conversions	110045427356	682 BRIAN WY	Medford	OR	97501	42.34227	-122.89822	Hazardous Waste
Northgate Apartments	110071404998	101 ROSSANLEY DRIVE	Medford	OR	97501	42.342392	-122.882207	Water Discharge
Northgate Office Park - Phase 2	110071399675	100 ROSSANLEY DR	Medford	OR	97501	42.343131	-122.884698	Water Discharge
Darigold Medford Site	110002149595	1300 COURT ST	Medford	OR	97501	42.343138	-122.879891	Toxic Release
Macy's #385 - Medford Rogue Valley	110056333908	1800 N RIVERSIDE DR	Medford	OR	97501	42.3432	-122.87909	Hazardous Waste
Aspen Dental	110070122542	1759 N RIVERSIDE AVE	Medford	OR	97501-4628	42.343213	-122.879096	Hazardous Waste
New Stage Collision	110004799503	1314 COURT ST	Medford	OR	97501	42.34343	-122.88051	Hazardous Waste
Colvin Oil 1 LLC/Gp Energy Dba Medford #2	110014071397	1325 COURT ST	Medford	OR	97501	42.34354	-122.88053	Air Pollution
Cosmoprof #8825	110071139761	1390 BIDDLE RD #102	Medford	OR	97504	42.34359	-122.87349	Hazardous Waste

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Northgate Office Park	110070227684	1900 N PACIFIC HIGHWAY	Medford	OR	97501	42.3447	-122.8841	Water Discharge
Mountain Top Village Phase 1 At Vista Pointe Pud	110070625085	E SIDE OF THE 425 FEET OF BORDEAUX AVE.	Medford	OR	97504	42.3449	-122.8076	Water Discharge
Gordon Trucking, Inc.	110004789257	1923 SAGE RD	Medford	OR	97501	42.34503	-122.89623	Hazardous Waste
Eastman Kodak Company	110004814782	2065 LARS WAY	Medford	OR	97501	42.34532	-122.89928	Hazardous Waste
Linder Fabricating And Industrial Coatin	110045429719	2074 LARS WAY	Medford	OR	97501	42.34554	-122.89927	Hazardous Waste
Medford International Holdings	110002058709	1901 OR-99	Medford	OR	97501	42.34588	-122.88292	Hazardous Waste
Medford Radiator Service	110045422538	999 CREWS RD	Medford	OR	97501	42.34636	-122.88157	Hazardous Waste
Shell Service Station 120830	110004805845	1968 CRATER LAKE HWY	Medford	OR	97504-4161	42.34651	-122.88053	Biennial Reporting
Rogue Valley Exxon	110004801938	1901 CRATER LAKE HWY	Medford	OR	97501	42.34653	-122.8808	Hazardous Waste
Pat S Body & Paint Inc	110004795384	1927 ELM AVE	Medford	OR	97501	42.34683	-122.88573	Hazardous Waste
Target Store T0613	110022818272	2000 CRATER LAKE HWY	Medford	OR	97504	42.347602	-122.878266	Biennial Reporting
Ovs Oregon Vineyard Supply Co	110069459099	640A MASON WAY	Medford	OR	97501-1340	42.34819	-122.89641	Hazardous Waste

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
United Parcel Service, Inc.	110004791164	901 MASON WAY	Medford	OR	97501	42.3482	-122.90194	Hazardous Waste
First Student, Inc. #20237 - Medford	110069569773	813 MASON WAY UNIT 2	Medford	OR	97501	42.3482	-122.90168	Water Discharge
Poly Carb Inc	110044947047	813 MASON WAY	Medford	OR	97501	42.3482	-122.90168	Hazardous Waste
Mike Linder Motor Sports	110045429693	598 MASON WAY	Medford	OR	97501	42.3482	-122.89714	Hazardous Waste
Willamette Valley Company	110004815772	736 MASON WAY	Medford	OR	97501	42.348202	-122.899683	Hazardous Waste
Hi Tech Of Oregon Incorporated	110014075641	1701 PANORAMA DRIVE	Medford	OR	97504-5638	42.34835	-122.81391	Hazardous Waste
Roseburg Forest Products Medford	110000488561	2685 N PACIFIC HWY	Medford	OR	97501	42.34844	-122.89048	Air Pollution
Bartholomew Painting, Inc.	110045420576	1705 PANORAMA DR	Medford	OR	97504	42.3488	-122.81163	Hazardous Waste
Chevron U.S.A. Inc.	110014221449	2231 BIDDLE ROAD	Medford	OR	97504	42.34903	-122.874	Hazardous Waste
Larry Redler	110031386266	2250 CRATER LAKE HWY	Medford	OR	97504-4830	42.349142	-122.878051	Hazardous Waste
Safety-Kleen Systems, Inc	110037439698	2190 JOSEPH ST	Medford	OR	97501-1337	42.3496	-122.90201	Hazardous Waste
Panorama Heights	110069576211	CADET DRIVE	Medford	OR	97504	42.34975	-122.81783	Water Discharge

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Mike Hurt Construction	110011004000	525 BERRYDALE AVE	Medford	OR	97501-1619	42.34982	-122.88758	Water Discharge
Weatherly Court	110070230391	2184 POPLAR DRIVE	Medford	OR	97504	42.349846	-122.869451	Water Discharge
United States Postal Service	110045430388	2195 SAGE RD	Medford	OR	97501-1357	42.34997	-122.89922	Hazardous Waste
Medford Fire Station #4	110069581679	2208 TABLE ROCK ROAD	Medford	OR	97501	42.349999	-122.884327	Water Discharge
Cds Publications, Inc.	110039076335	2205 JOSEPH ST	Medford	OR	97501-1344	42.35061	-122.90201	Hazardous Waste
Annapolis Drive Estates	110069584364	ANNAPOLIS DRIVE: NORMIL TERR	Medford	OR	97504	42.35066	-122.81783	Water Discharge
Penske Truck Leasing Co Lp	110004815718	2208 JOSEPH ST	Medford	OR	97501	42.35068	-122.90201	Hazardous Waste
Willig Freight Lines, Inc.	110004796178	100 WILLIG WAY	Medford	OR	97501	42.35229	-122.89717	Hazardous Waste
Rogue Regency South Lot	110070628017	ROGUE REGENCY SOUTH LOT	2276 BIDDLE ROAD (OLD BID	OR	97504	42.3525	-122.8745	Water Discharge
Withams Truck Stop	110004781228	2343 BIDDLE RD	Medford	OR	97504	42.352653	-122.87627	Hazardous Waste
G.I. Trucking Company	110037742618	2309 SAGE RD	Medford	OR	97501-1364	42.352682	-122.898363	Water Discharge

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Fred Meyer Inc Medford	110004821006	2424 CRATER LAKE HWY	Medford	OR	975044103	42.35301	-122.87189	Hazardous Waste
Estes West #243 Med/Medford	110071318877	2309 SAGE RD	Medford	OR	97501	42.353159	-122.897352	Hazardous Waste
Air Liquide America Corp	110004781175	3100 N PACIFIC HWY	Medford	OR	97501	42.353474	-122.898836	Hazardous Waste
Prescott Park	110069566035	ROXY ANN ROAD	Medford	OR	97504	42.3538	-122.7861	Water Discharge
Roberts Motor Inc Of Oregon	110004781193	3230 N PACIFIC HWY	Medford	OR	97501	42.3549	-122.8985	Hazardous Waste
Sherwin Williams #8157	110039076567	2560 CRATER LAKE HWY #A	Medford	OR	97504-4172	42.35532	-122.86815	Hazardous Waste
New Millennium Lighting Signs & Recyc	110006855260	2584 BULLOCK RD UNIT 14	Medford	OR	97504	42.35541	-122.87049	Hazardous Waste
Crater Lake Ford Lincoln-Mercury	110004791459	2611 BIDDLE RD	Medford	OR	97504	42.35554	-122.87553	Hazardous Waste
Lithia Body & Paint	110004813113	2665 BULLOCK RD	Medford	OR	97504	42.35563	-122.87041	Hazardous Waste
Fish The Paint Pro	110045427187	2686 CRATER LAKE HWY # 1	Medford	OR	97504-5008	42.35603	-122.86703	Hazardous Waste
Peterson Machinery Co‎	110004783636	2600 BIDDLE RD	Medford	OR	97504	42.35609	-122.87553	Hazardous Waste
K & B Autocomplex	110045561502	2690 CRATER LAKE HWY	Medford	OR	97504-4790	42.3564	-122.86641	Hazardous Waste

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Hyster Sales Co	110004784582	2720 BIDDLE RD	Medford	OR	97504	42.35668	-122.87553	Hazardous Waste
Mckenzie Village Subdivision	110070528300	MIDWAY ROAD	Medford	OR	97501	42.35672	-122.88234	Water Discharge
Nansen Industrial Building	110071096525	1800 KNUTSEN AVE	Medford	OR	97504	42.3571	-122.8713	Water Discharge
Ici Dulux Paint‎	110004772425	2720 CRATER LAKE HWY	Medford	OR	97504-4792	42.35715	-122.86518	Hazardous Waste
In Office Refinishing Of Oregon Inc	110004790566	1150 KNUTSEN	Medford	OR	97504	42.35746	-122.87274	Hazardous Waste
Medford Battery	110004781184	2770 CRATER LAKE HWY	Medford	OR	97504	42.35756	-122.8645	Hazardous Waste
Daves Import Svc Inc	110045419891	1903 SKY PARK DR #105	Medford	OR	97504-4735	42.35762	-122.86057	Hazardous Waste
Kdrv Tv	110004794731	1090 KNUTSON AVE	Medford	OR	97504	42.35775	-122.87384	Hazardous Waste
Empire Lockers Mini Storage	110070228771	2878 NANSEN DRIVE	Medford	OR	97504	42.35825	-122.87201	Water Discharge
Howard View Subdivision	110070627889	285 MACE ROAD	Medford	OR	97501	42.35828	-122.89084	Water Discharge
Creekside Village Apartments	110071094235	1791 SKYPARK DR	Medford	OR	97501	42.3585	-122.8569	Water Discharge
Medford School District 549c	110004795071	2801 MERRIMAN ROAD	Medford	OR	97501-1271	42.35877	-122.8901	Hazardous Waste

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Bear Creek Landing Subdivision	110071404903	2825 CUMMINGS LANE	Medford	OR	97501	42.358851	-122.882778	Water Discharge
Oregon Tire	110012256744	2850 CRATER LAKE HWY	Medford	OR	97504	42.35895	-122.86217	Hazardous Waste
Discount Tire - Medford	110069570422	2865 CRATER LAKE HIGHWAY	Medford	OR	97504	42.359022	-122.862056	Water Discharge
Table Rock Gardens	110071405497	2928 TABLE ROCK	Medford	OR	97501	42.359371	-122.884966	Water Discharge
General Machine Works	110004800476	2990 BIDDLE RD	Medford	OR	97504	42.35994	-122.87552	Hazardous Waste
Triple A R.V. Center, Inc.	110045423074	938 CHEVY WAY	Medford	OR	97504-4100	42.36007	-122.87755	Hazardous Waste
Delta Waters Mini-Storage	110071096970	1884 DELTA WATERS ROAD	Medford	OR	97504	42.36027	-122.85784	Water Discharge
Pennzoil	110045429817	3012 CRATER LAKE HWY.	Medford	OR	97504	42.36065	-122.85937	Hazardous Waste
1 2 3 Sticker	110045422299	922 CHEVY WAY	Medford	OR	97504-4154	42.3607	-122.87881	Hazardous Waste
Iah Oregon LLC	110070559049	910 CHEVY WAY	Medford	OR	97504	42.36084	-122.87899	Hazardous Waste
Airport Chevrolet	110004790780	3001 BIDDLE ROAD	Medford	OR	97504-4118	42.36127	-122.87551	Hazardous Waste
Southern Oregon Subaru Expansion	110071095337	3101 BIDDLE RD	Medford	OR	97504	42.3615	-122.8769	Water Discharge

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Crater Lake Motors Body Shop	110004819251	943 AUTOMATION WAY SUITE K	Medford	OR	97504-4039	42.36155	-122.87819	Hazardous Waste
Maaco Auto Painting & Bodyworks	110004819750	943 AUTOMATION WAY	Medford	OR	97504	42.36155	-122.87819	Hazardous Waste
Rogue Valley Microdevices Inc	110054858285	943 AUTOMATION WAY STE F	Medford	OR	97504-4192	42.36155	-122.87819	Hazardous Waste
Safeway Store No 1643	110062923083	3169 CRATER LAKE HWY	Medford	OR	97504	42.36155	-122.85791	Hazardous Waste
USDOI BLM Medford District Office	110004776396	3040 BIDDLE RD	Medford	OR	97504	42.36168	-122.87549	Hazardous Waste
Southern Oregon Mitsubishi	110004817191	3103 BIDDLE RD	Medford	OR	97504	42.36222	-122.87545	Hazardous Waste
Oregon Dept Of Environmental Quality	110006430861	3282 BURSELL ST	CENTRAL POINT	OR	97501	42.363828	-122.90287	Hazardous Waste
Sanitech Commercial Building Maintenance	110070231319	687 GILMAN ROAD	Medford	OR	97504	42.36461	-122.88129	Water Discharge
Federal Express Corporation	110004796720	3600 TERMINAL SPUR ROAD	Medford	OR	97504	42.364979	-122.872528	Hazardous Waste
FedEx	110069560086	3600 TERMINAL SPUR RD	Medford	OR	97504-3101	42.364979	-122.872528	Water Discharge
Rogue Valley International Airport	110070385394	3570 FIRE STATION SPUR	Medford	OR	97504	42.365514	-122.872593	Water Discharge
Horizon Air Industries-Medford	110069459071	3590 FIRE STATION SPUR STE 102	Medford	OR	97504	42.36592	-122.8728	Hazardous Waste

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Navigator's Landing Office	110070267096	841 O'HARE PARKWAY	Medford	OR	97501	42.36599	-122.88006	Water Discharge
Springhill Suites	110071093587	3519 HEATHROW WAY	Medford	OR	97504	42.3666	-122.8793	Water Discharge
Snow Removal Equipment (Sre) Building	110069596360	TERMINAL LP PKWY, ROGUE VLY INT'L AIRPOR	Medford	OR	97504	42.36735	-122.87402	Water Discharge
View Crest Subdivision	110071096452	794 PITTVIEW AVENUE	CENTRAL POINT	OR	97502	42.3678	-122.9013	Water Discharge
Horizon Air Industries Maintenance	110043417193	3650 BIDDLE RD, BOX 9	Medford	OR	97501-4155	42.368518	-122.87788	Hazardous Waste
Jet Center Mfr	110045422912	3650 BIDDLE RD	Medford	OR	97504-4155	42.368518	-122.87788	Hazardous Waste
New Airport Tower Medford Airport	110006855108	3650 BIDDLE ROAD	Medford	OR	97504-4155	42.368518	-122.87788	Hazardous Waste
USDOT FAA Medford Ssc Office	110004776886	3650 BIDDLE ROAD	Medford	OR	97504-4155	42.368518	-122.87788	Hazardous Waste
My Place Hotel	110071096645	580 AIRPORT ROAD	Medford	OR	97504	42.3692	-122.8793	Water Discharge
Mercy Flights	110045420852	2020 MILLIGAN WAY	Medford	OR	97504	42.37066	-122.87765	Hazardous Waste
Million Air	110070379419	2040 MILLIGAN WAY	Medford	OR	97504	42.37083	-122.8783	Water Discharge
Erickson Incorporated	110070491000	2080 MILLIGAN WAY	Medford	OR	97504	42.37247	-122.88033	Hazardous Waste

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Project Murphy	110071404505	601 FEDERAL WAY	CENTRAL POINT	OR	97502	42.372708	-122.888077	Water Discharge
Xpo, Inc. - Umo	110071424439	375 ICE CREAM DR	CENTRAL POINT	OR	97502	42.37423	-122.891487	Hazardous Waste
Knife River Materials Hamrick	110001654941	3959 HAMRICK RD	CENTRAL POINT	OR	97502	42.374423	-122.894644	Hazardous Waste
Costco Wholesale - Central Point	110070228721	3075 HAMRICK ROAD	CENTRAL POINT	OR	97502	42.37538	-122.88741	Water Discharge
Costco Wholesale No 1287	110070207997	3075 HAMRICK RD	CENTRAL POINT	OR	97502	42.37538	-122.88741	Hazardous Waste
Erickson, Inc.	110070122564	4002 CIRRUS DR	Medford	OR	97504	42.37619	-122.88156	Hazardous Waste
ODOT Hwy Division Central Point	110014275667	4141 HAMRICK ROAD	CENTRAL POINT	OR	97502-2812	42.37703	-122.89288	Hazardous Waste
Medford Air Tanker Base	110071139808	600 NEBULA WAY	Medford	OR	97504	42.37712	-122.87977	Biennial Reporting
Erickson Incorporated	110004812365	601 NEBULA WAY	Medford	OR	97504-4784	42.37722	-122.88154	Hazardous Waste
Premier Car Wash	110071096873	4245 TABLE ROCK RD.	CENTRAL POINT	OR	97502	42.3778	-122.887	Water Discharge
Tail Light	110071095068	4801 BIDDLE ROAD	CENTRAL POINT	OR	97504	42.3782	-122.8907	Water Discharge
Steve Green-Aircraft Painting - Jet Ctr.	110039076451	5000 CIRRUS DR	Medford	OR	97504	42.37917	-122.88038	Hazardous Waste

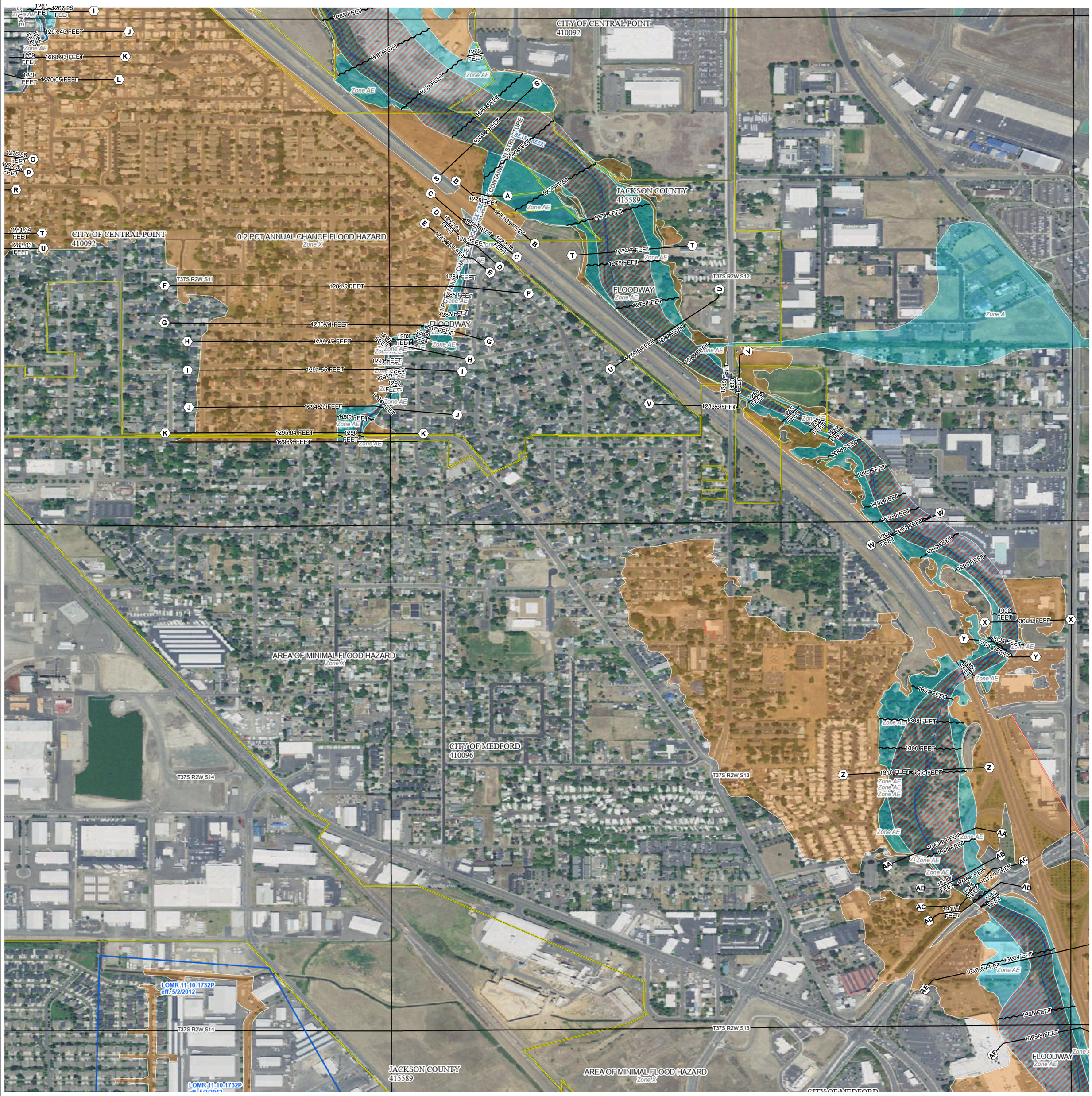
Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Dry Creek Landfill And Energy Project	110043786695	6260 DRY CREEK RD	EAGLE POINT	OR	97524	42.380897	-122.774588	Air Pollution
UAP Northwest Medford	110010754086	17 S STAGE RD	Medford	OR	97501	42.29305	-122.84286	Hazardous Waste
Omnicare Of Medford No 48328	110070207998	259 E BARNETT RD, NUMBER L	Medford	OR	97501	42.315762	-122.860072	Hazardous Waste
Rogue Valley Oil Co	110001655174	1000 SOUTH CENTRAL AVENUE	Medford	OR	97501-7824	42.31709	-122.86419	Hazardous Waste
Shell Chemical Lp Spill Site	110022530073	LAT 42.3335, LONG -122.8835	Medford	OR	97501	42.3335	-122.8835	Hazardous Waste
Timber Products Co. Limited Partnership	110000488589	25 E. MCANDREWS	Medford	OR	97501-1640	42.339181	-122.887874	Hazardous Waste
Providence Medford Medical Center	110004784975	1111 CRATER LAKE AVENUE	Medford	OR	97504-6241	42.33968	-122.86106	Hazardous Waste
Shell Service Station 120830	110004805845	1968 CRATER LAKE HWY	Medford	OR	97504-4161	42.34651	-122.88053	Hazardous Waste
Target Store T0613	110022818272	2000 CRATER LAKE HWY	Medford	OR	97504	42.347602	-122.878266	Hazardous Waste
Roseburg Forest Products Medford	110000488561	2685 N PACIFIC HWY	Medford	OR	97501	42.34844	-122.89048	Hazardous Waste
Medford Air Tanker Base	110071139808	600 NEBULA WAY	Medford	OR	97504	42.37712	-122.87977	Hazardous Waste
Journey Church	110001657564	2399 OR-99	Medford	OR	97501	42.303283	-122.84962	Toxic Release

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Kogap Manufacturing Site	110002149602	2080 OR-99	Medford	OR	97501	42.306162	-122.856114	Toxic Release
Tree Top	110001655147	690 S GRAPE ST	Medford	OR	97501	42.31819	-122.86861	Toxic Release
Rogue Valley Circuit Site	110002149611	1111 N CENTRAL AVE	Medford	OR	97501	42.33618	-122.88137	Toxic Release
Medford International Holdings	110002058709	1901 OR-99	Medford	OR	97501	42.34588	-122.88292	Toxic Release
Knife River Materials Hamrick	110001654941	3959 HAMRICK RD	CENTRAL POINT	OR	97502	42.374423	-122.894644	Toxic Release
Timber Products Co. Limited Partnership	110000488589	25 E. MCANDREWS	Medford	OR	97501-1640	42.339181	-122.887874	Toxic Release
Roseburg Forest Products Medford	110000488561	2685 N PACIFIC HWY	Medford	OR	97501	42.34844	-122.89048	Toxic Release
Medford Air Tanker Base	110071139808	600 NEBULA WAY	Medford	OR	97504	42.37712	-122.87977	Toxic Release
Tucker Sno-Cat	110004779366	2872 S PACIFIC HWY	Medford	OR	97501	42.2966	-122.8439	Water Discharge
Tree Top	110001655147	690 S GRAPE ST	Medford	OR	97501	42.31819	-122.86861	Water Discharge
Medford Fabrication	110004802027	1109 COURT STREET	Medford	OR	97501-5729	42.33867	-122.88048	Water Discharge
Timber Products Co. Limited Partnership	110000488589	25 E. MCANDREWS	Medford	OR	97501-1640	42.339181	-122.887874	Water Discharge

Name	Reg_ID	Address	City	State	Zip Code	Latitude	Longitude	Program Type
Darigold Medford Site	110002149595	1300 COURT ST	Medford	OR	97501	42.343138	-122.879891	Water Discharge
Gordon Trucking, Inc.	110004789257	1923 SAGE RD	Medford	OR	97501	42.34503	-122.89623	Water Discharge
Roseburg Forest Products Medford	110000488561	2685 N PACIFIC HWY	Medford	OR	97501	42.34844	-122.89048	Water Discharge
Knife River Materials Hamrick	110001654941	3959 HAMRICK RD	CENTRAL POINT	OR	97502	42.374423	-122.894644	Water Discharge
Dry Creek Landfill And Energy Project	110043786695	6260 DRY CREEK RD	EAGLE POINT	OR	97524	42.380897	-122.774588	Water Discharge

Appendix D: FEMA FIRM Floodplain Panels

122°54'22.98"W 42°22'36.63"N



122°52'29.62"W 42°20'30.95"N

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

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To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by USDA, Farm Service Agency (FSA). This information was derived from NAIP, dated April 11, 2018.

This map was exported from FEMA's National Flood Hazard Layer (NFHL) on **12/20/2024 8:18 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/118418

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SCALE

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: NAVD88
For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

N

1 inch = 500 feet 1:6,000

0 250 500 1,000 1,500 2,000 Feet

0 50 100 200 300 400 Meters

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

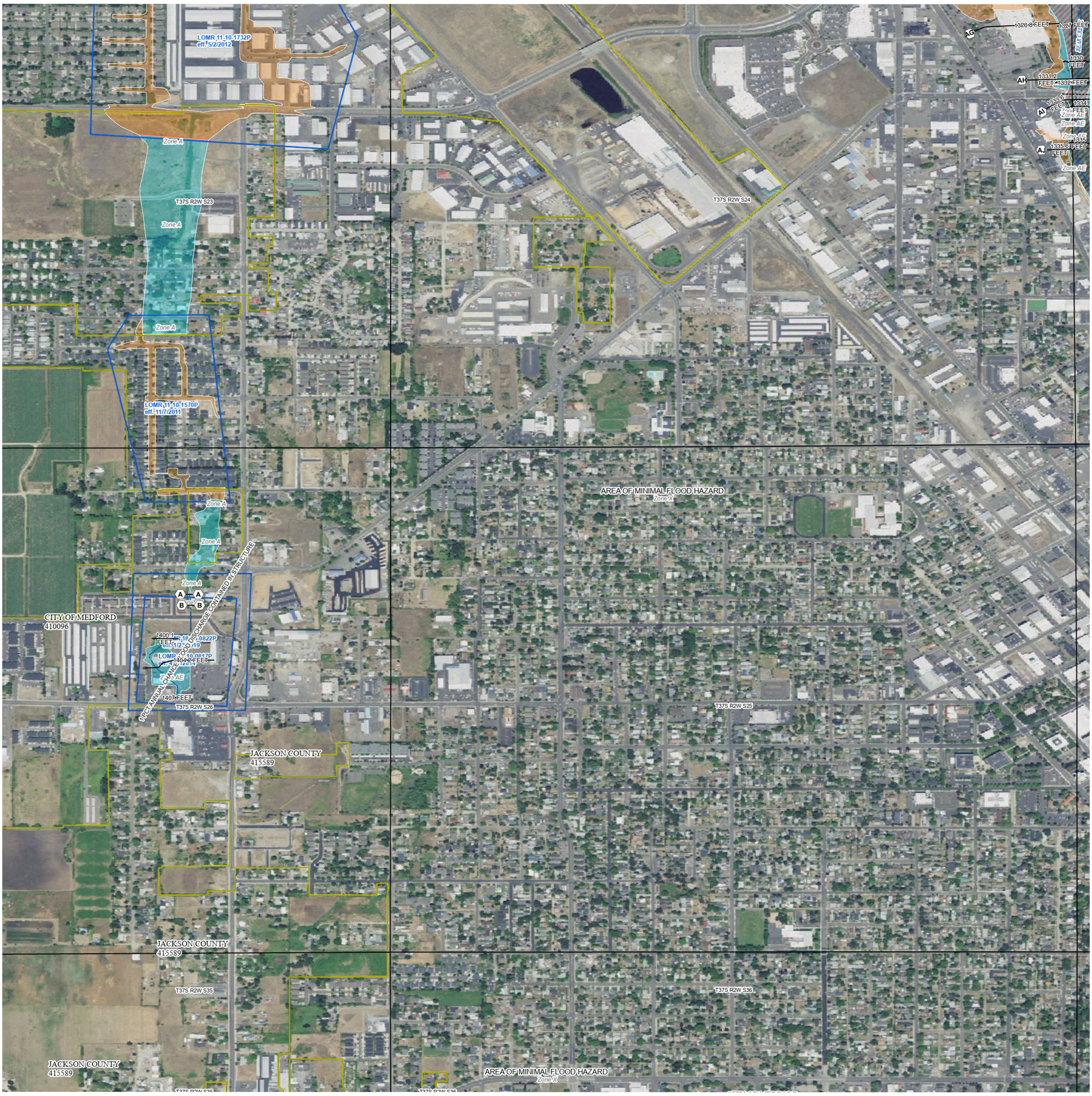
PANEL **1957** OF **2327**

Panel Contains:

COMMUNITY	NUMBER	PANEL
JACKSON COUNTY	415589	1957
CITY OF CENTRAL POINT	410092	1957
CITY OF MEDFORD	410096	1957

MAP NUMBER
41029C1957F
EFFECTIVE DATE
May 03, 2011

122°54'22.98"W 42°20'44.13"N



122°52'29.62"W 42°18'38.45"N

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

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SCALE

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: NAVD88

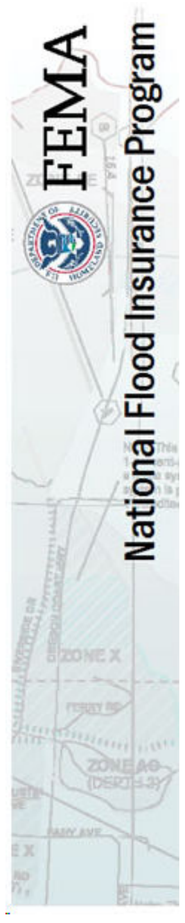
For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

N

1 inch = 500 feet 1:6,000

0 250 500 1,000 1,500 2,000 Feet

0 50 100 200 300 400 Meters



NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

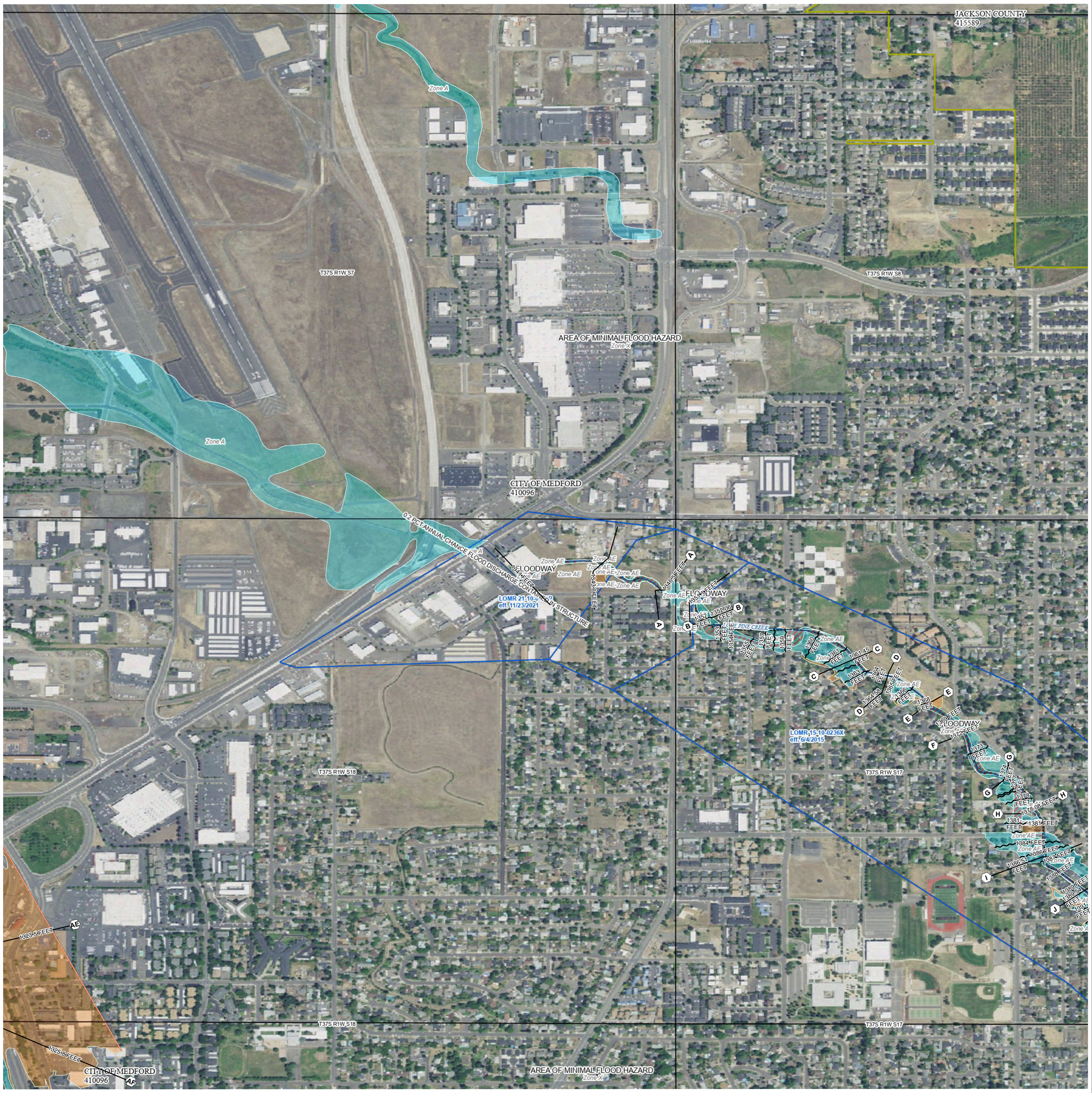
PANEL **1959** OF **2327**

Panel Contains:

COMMUNITY	NUMBER	PANEL
JACKSON COUNTY	415589	1959
CITY OF MEDFORD	410096	1959

MAP NUMBER
41029C1959F
EFFECTIVE DATE
May 03, 2011

122°52'30.48"W 42°22'36.63"N



122°50'37.12"W 42°20'30.95"N

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- 8 Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

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For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by USDA, Farm Service Agency (FSA). This information was derived from NAIP, dated April 11, 2018.

This map was exported from FEMA's National Flood Hazard Layer (NFHL) on **12/20/2024 8:22 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/118418

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SCALE

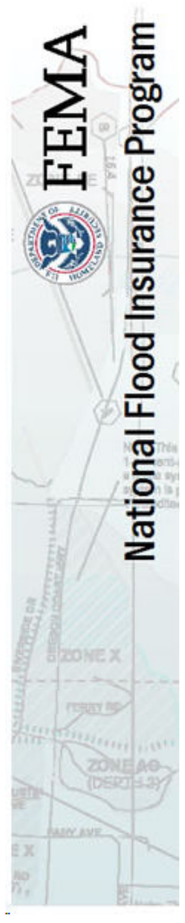
Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: NAVD88
For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

N

1 inch = 500 feet 1:6,000

0 250 500 1,000 1,500 2,000 Feet

0 50 100 200 300 400 Meters



NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

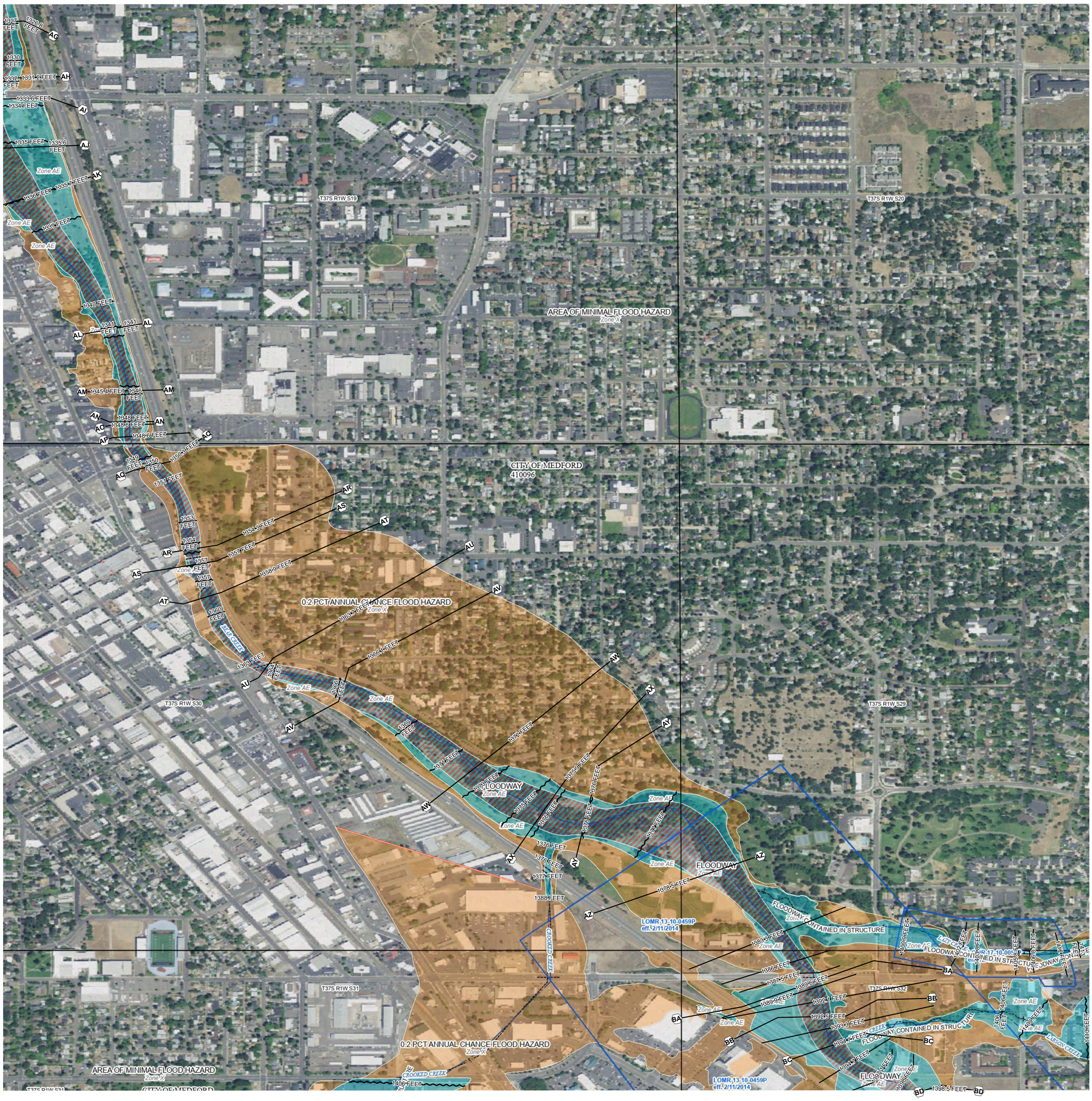
PANEL **1976** OF **2327**

Panel Contains:

COMMUNITY	NUMBER	PANEL
JACKSON COUNTY	~~415589~~	~~1976~~
CITY OF MEDFORD	410096	1976

MAP NUMBER
41029C1976F
EFFECTIVE DATE
May 03, 2011

122°52'30.48"W 42°20'44.13"N



122°50'37.12"W 42°18'38.45"N

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

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For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by USDA, Farm Service Agency (FSA). This information was derived from NAIP, dated April 11, 2018.

This map was exported from FEMA's National Flood Hazard Layer (NFHL) on **12/20/2024 8:23 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/118418

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SCALE

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: NAVD88

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N

1 inch = 500 feet 1:6,000

0 250 500 1,000 1,500 2,000 Feet

0 50 100 200 300 400 Meters

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

PANEL **1978** OF **2327**

Panel Contains:

COMMUNITY	NUMBER	PANEL
CITY OF MEDFORD	410096	1978

MAP NUMBER
41029C1978F
EFFECTIVE DATE
May 03, 2011

122°48'45.48"W 42°22'36.66"N

122°46'52.12"W 42°20'30.98"N

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- 8 Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

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For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

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SCALE

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: No elevation features on this FIRM
For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

N

1 inch = 500 feet 1:6,000

0 250 500 1,000 1,500 2,000 Feet

0 50 100 200 300 400 Meters

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

PANEL **1981** OF **2327**

Panel Contains:

COMMUNITY	NUMBER	PANEL
JACKSON COUNTY	415589	1981
CITY OF MEDFORD	410096	1981

MAP NUMBER
41029C1981F
EFFECTIVE DATE
May 03, 2011

122°52'30.48"W 42°18'51.63"N

122°50'37.12"W 42°16'45.95"N

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- 8 Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

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SCALE

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: NAVD88

For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

N

1 inch = 500 feet 1:6,000

0 250 500 1,000 1,500 2,000 Feet

0 50 100 200 300 400 Meters

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

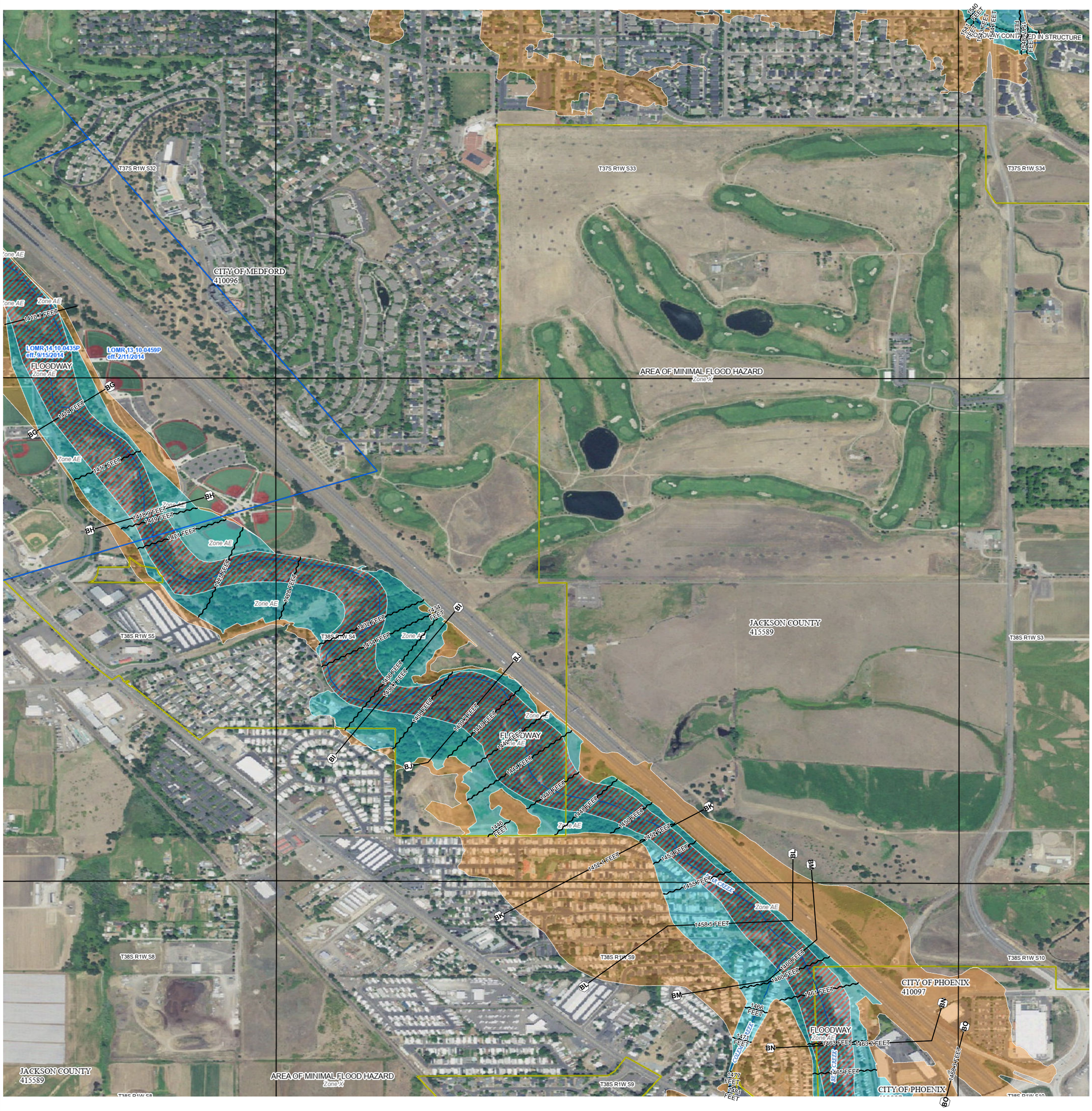
PANEL **1986** OF **2327**

Panel Contains:

COMMUNITY	NUMBER	PANEL
JACKSON COUNTY	~~415589~~	~~1986~~
CITY OF MEDFORD	410096	1986

MAP NUMBER
41029C1986F
EFFECTIVE DATE
May 03, 2011

122°50'37.98"W 42°18'51.66"N



122°48'44.62"W 42°16'45.98"N

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by USDA, Farm Service Agency (FSA). This information was derived from NAIP, dated April 11, 2018.

This map was exported from FEMA's National Flood Hazard Layer (NFHL) on **12/20/2024 8:25 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/118418

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards. This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date.

SCALE

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: NAVD88

For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

N

1 inch = 500 feet 1:6,000

0 250 500 1,000 1,500 2,000 Feet

0 50 100 200 300 400 Meters

NATIONAL FLOOD INSURANCE PROGRAM

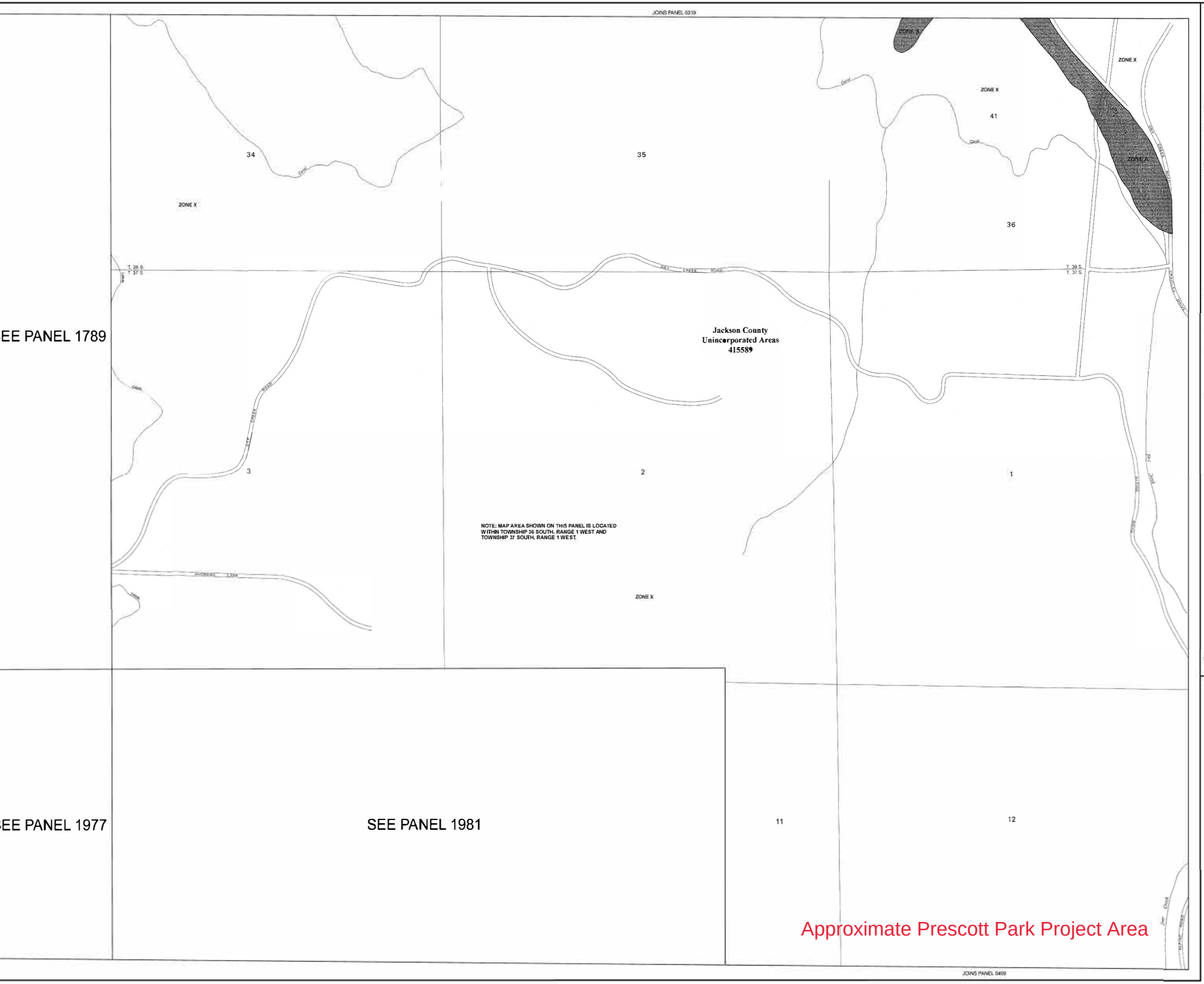
FLOOD INSURANCE RATE MAP

PANEL 1987 OF 2327

Panel Contains:

COMMUNITY	NUMBER	PANEL
JACKSON COUNTY	415589	1987
CITY OF PHOENIX	410097	1987
CITY OF MEDFORD	410096	1987

MAP NUMBER
41029C1987F
EFFECTIVE DATE
May 03, 2011



LEGEND

SPECIAL FLOOD HAZARD AREAS (
SUBJECT TO INUNDATION BY TH
ANNUAL CHANCE FLOOD

ZONE A
ZONE AE
ZONE AH
ZONE AO
ZONE AR
ZONE A99
ZONE V
ZONE VE

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

ZONE X

OTHER AREAS

ZONE X
ZONE D

COASTAL BARRIER RESOURCES S
AREAS

OTHERWISE PROTECTED AREAS (

MAP REPOSITORY
INITIAL IDENTIFICATION:
April 11, 1978
FLOOD HAZARD BOUNDARY MAP RE
FLOOD INSURANCE RATE MAP EFFE
April 1, 1982
FLOOD INSURANCE RATE MAP REVI
May 2, 2011: to change special flood hazard area

MAP SCALE 1" = 500'

PANEL 040

FIRM

FLOOD INSURANCE

JACKSON CO
OREGON
AND INCORPORAT

PANEL 407 OF 23

CONTAINS:

COMMUNITY
JACKSON COUNTY

COMMUNITY

Federal Emergency Manag


JOINS PANEL 0407
10
11
12
ZONE C
15
14
13
Approximate Prescott Park Project Area
ZONE C
JOINS PANEL 0438
22
City of Medford
AREA NOT INCLUDED
23
24
ROGUE AIR ROAD
60
ZONE C
NORTH PHOENIX ROAD
Lea Creek
ZONE A
ZONE C
LIMIT OF DETAILED STUDY
A3
1591
1586
ZONE B
HILLCREST ROAD
22
ZONE C
58
27
26
25
HILLCREST ROAD
JOINS PANEL 0417

Appendix E: Floodplains and Wetlands Eight-Step Analysis

Executive Order 11988 Floodplain Management Checklist (44 CFR Part 9)

Project Information

Project Title: **Medford Hazardous Fuels Reduction Project**
Location: **Parts of Bear Creek Greenway and Prescott Park in Jackson County, Oregon**
Description of Proposed Action: **City of Medford is proposing to reduce wildfire fuel and manage vegetation in up to 700 acres out of 1,219 acres along the Bear Creek Greenway and up to 650 acres within a total project area of 1,740 acres at Prescott Park in Jackson County, Oregon.**

Applicability

Actions which have the potential to affect floodplains or their occupants, or which are subject to potential harm by location in floodplains.

Will the proposed action potentially adversely affect the floodplain or support floodplain development? **Yes. Portions of the project areas where site work will occur are floodplain. The proposed fuels reduction and vegetation management treatments would reduce the volume of hazardous trees and fuels, control invasive species, and decrease the overall risk for wildfire ignition and spread.**

Will the proposed action potentially be adversely affected by the floodplain? **No. The proposed does not involve any new construction or existing structure modifications. Fuels reduction and vegetation management treatments would reduce the volume of hazardous trees and fuels, control invasive species, and decrease the overall risk for wildfire ignition and spread.**

Critical Action

Determine whether the proposed action is an action for which even a slight chance of flooding is too great. Critical actions must be reviewed against the 500-year floodplain.

Is the action a critical action? **No.**

Step 1: Determine Proposed Action Location

Determine whether the proposed action is located in the 100-year floodplain (500-year floodplain for critical actions); and whether it has the potential to affect or be affected by floodplain or wetland (44 CFR Section 9.7).

Floodplain Determination

Flood Hazard Data

Is the project located in a 100-year floodplain as mapped by FEMA FIRM? **Yes.**

The Bear Creek treatment area is shown on FEMA Flood Insurance Rate Map (FIRM) Panel Numbers 41029C1957F, 41029C1959F, 41029C1978F, 41029C1986F, and 41029C1987F, effective September 3, 2011. Bear Creek and the land immediately adjacent to it is all mapped as a Special Flood Hazard Area (SFHA), Regulatory Floodway (Zone AE). An additional 0- 1,000 feet of land (depending on topographic features) bordering sides of the creek are mapped as an SFHA with Base Flood Elevation (BFE) ranging from 1,283.7 to 1,463.2 feet. Outside of these zones in the Creek's close vicinity, land is either mapped as Zone X, Area of Minimal Flood Hazard, or Zone X, 0.2-percent Annual Chance Flood Hazard (500-year flood).

The Prescott Park treatment area fall within FIRM Panel Numbers 41029C1981F and 4155890407C, both dated May 3, 2011, and 4155890409B, effective April 1, 1982. Panels 41029C1981F and 4155890407C fall entirely within Zone X, Area of Minimal Flood Hazard; Panel 4155890409B falls entirely within Zone C, Area of Minimal Flood Hazard.

Is the project located in a 500-year floodplain as mapped by a FEMA FIRM? **Yes, portions of the project areas are located in a 500-year floodplain mapped by a FEMA FIRM.**

Floodway/Coastal High Hazard Area

Is the project located in a floodway or coastal high hazard area? **Yes, part of the Bear Creek project area contains a floodway, however no project activities are occurring in the floodway.**

Wetland Determination

Is the project in a wetland as mapped by the National Wetlands Inventory? **Yes. According to the USFWS National Wetland Inventory (NWI) maps, there are several potential wetlands that occur throughout the proposed project areas. Wetland classifications within the project areas include riverine, freshwater forested/shrub wetland, and freshwater pond. Within the project areas, there are eight wetlands designated by the City of Medford as locally significant or potentially significant. The Proposed Action would not involve in-water activities and would reduce the risk that a major wildfire would spread throughout the proposed treatment areas and damage nearby wetland vegetation; therefore, there would be long-term, minor beneficial impacts on wetlands.**

Scope

All 8 Steps required.

Step 2: Early Public Notice

Notify the public at the earliest possible time of the intent to carry out an action in a floodplain and involve the affected and interested public in the decision-making process. (44 CFR Section 9.8).

Was notice provided as part of a disaster cumulative notice? **No**

Was a project specific notice provided? **Project specific notice is part of the Public Notice of the publication of the draft Environmental Assessment.**

Step 3: Analysis of Practicable Alternatives

Identify and evaluate practicable alternatives to locating the proposed action in a floodplain (including alternate sites, actions, and the "no action" option). If a practicable alternative exists outside the floodplain, FEMA must locate the proposed action at the alternative site (44 CFR Section 9.9).

Portions of the project areas identified as in need of treatments and vegetation management are located in floodplains and since the purpose of the proposed action is to reduce wildfire spread and damage risks in those areas, there is no practicable alternative outside the floodplain.

Alternative Options

Is there a practicable alternative site location outside the 100-year floodplain (or 500-year floodplain for critical actions?) **No.**

Is there an alternative action which has less potential to affect or be affected by the floodplain? **No. Alternatives were considered but dismissed from further analysis because they did not meet the project's purpose and need.**

Is the "no action" alternative the most practicable alternative? **No.**
Under the No Action Alternative, FEMA's Hazard Mitigation Grant Program (HMGP) would not fund the proposed fuels reduction activities along Bear Creek Greenway or within Prescott Park. Under this alternative, the City would continue to pursue federal and state assistance for hazardous fuels reduction, various private property owners may conduct independent fuels reduction, and wildfire mitigation would continue as the City requires for new construction or development.

Step 4: Identify Impacts

Identify the potential direct and indirect impacts associated with the occupancy or modification of the floodplains and the potential direct and indirect support of floodplain development that could result from the proposed action (44 CFR Section 9.10).

Is the proposed action based on incomplete information? **No.**

Is the proposed action in compliance with the NFIP? **The City of Medford participates in FEMA's National Flood Insurance Program (NFIP) and will be responsible for the issuance of the permits required when working in the Special Flood Hazard Area (SFHA).**

Does the proposed action increase the risk of flood loss? **No. The Proposed Action would help reduce the risk of wildfire ignition and spread, as well as associated erosion, surface runoff, and flooding that could adversely impact floodplains. Therefore, there would be long-term, minor beneficial impacts on floodplains in and around the proposed treatment areas.**

Will the proposed action result in an increased base discharge or increase the flood hazard potential to other properties or structures? **No. Proposed Action would result in short-term, minor adverse impacts on floodplains related to the potential for erosion and sedimentation during initial treatment activities and longer-term maintenance activities.**

Does the proposed action minimize the impact of floods on human health, safety, or welfare? **Yes. The Proposed Action would help reduce the risk of wildfire ignition and spread, as well as associated erosion, surface runoff, and flooding that could adversely impact floodplains. Therefore, there would be long-term, minor beneficial impacts on floodplains in and around the proposed treatment areas.**

Will the proposed action induce future growth and development, which will potentially adversely affect the floodplain? **No. The Proposed Action would not directly or indirectly support development on the floodplain, given that the Bear Creek project area consists of developed parcels and designated recreation areas.**

Does the proposed action involve dredging and/or filling of a floodplain? **No.**

Will the proposed action result in the discharge of pollutants into the floodplain? **The Proposed Action would result in short-term, minor adverse impacts on floodplains related to the potential for erosion and sedimentation during initial treatment activities and longer-term maintenance activities. However, project conditions and mitigation measures such as riparian protection zones, restricted herbicides applications, spill prevention protocols; will protect water quality during the treatment periods.**

Does the proposed action avoid the long- and short-term impacts associated with the occupancy and modification of floodplains? **N/A. The project does not change occupancy or modification of the floodplain.**

Will the proposed action forego an opportunity to restore the natural and beneficial values served by floodplains? **No. The implementation of the Proposed Action would change the composition and density of the tree stands, and increase the structural diversity of the conifer and woodland forests along Bear Creek and at Prescott Park, favoring healthier and larger trees and unique or native species.**

Will the proposed action result in an increase to the useful life of a structure or facility? **N/A. The project does involve any facility work nor change occupancy or modification of the floodplain.**

Will the action encroach on the Floodway in a manner that causes any increase of flood levels within the community during the occurrence of the base flood discharge? **While there may be minimal treatment within the floodway-fringe, the Proposed Action would not encroach on the floodway. Therefore, the Proposed Action would not cause an increase in flood levels.**

Step 5: Minimize Impacts

Minimize the potential adverse impacts and support to or within floodplains as identified under Step 4; restore and preserve the natural and beneficial values served by floodplains (44 CFR Section 9.11).

Minimization Measures

Were flood hazard reduction techniques (see NFIP technical bulletins) applied to the proposed action to minimize flood impacts? Note: New construction or substantial improvement of a structure (i.e., walled, or roofed building) requires elevation or flood proofing (non-residential), except for listed Historic Structures. **N/A**

Identify any flood hazard reduction techniques required as a condition of the grant: **N/A**

Were avoidance and minimization measures applied to the proposed action to minimize the short-term and long-term impacts on the floodplain? **Yes as described above in Step 4 regarding Permitting, Project Conditions, and Mitigation Measures.**

Were measures implemented to restore and preserve the natural and beneficial values of the floodplain? **Yes. The Proposed Action would change the composition and density of the tree stands, and increase the structural diversity, of the conifer and woodland forests along Bear Creek and at Prescott Park, favoring healthier and larger trees and unique or native species. The Proposed Action would also help reduce the risk of wildfire ignition and spread, as well as associated erosion, surface runoff, and flooding that could adversely impact floodplains. Therefore, there would be *long-term, minor beneficial impacts* on floodplains in and around the proposed treatment areas.**

Step 6: Reevaluate Practicable Alternatives

Reevaluate the proposed action to first determine if it is still practicable in light of its exposure to flood hazards, the extent to which it will aggravate the hazards to others, and its potential to disrupt floodplain values. Second, evaluate if alternatives preliminarily rejected at Step 3 are practicable in light of the information gained in Steps 4 and 5. FEMA shall not act in a floodplain unless it is the only practicable location (44 CFR Section 9.9).

Is the action still practicable at the floodplain site in light of the exposure to flood risk and ensuing disruption of natural values? **Yes.**

Is the floodplain site the only practicable alternative? **Yes.**

Is there any potential to limit the scope or size of the action to increase the practicability of previously rejected non-floodplain sites or alternative actions? **Yes.**

Can minimization of harm to or within the floodplain be achieved using all practicable means? **Yes.**

Does the need for action in a floodplain clearly outweigh the requirements of Executive Order? **Yes.**

Step 7: Final Public Notice

Prepare and provide the public with a finding and public explanation of any final decision that the floodplain is the only practicable alternative (44 CFR Section 9.12).

Was notice provided as part of a disaster cumulative notice? **No**

Was a project specific notice provided? **This will be completed as part the release of the final National Environmental Policy Act documentation.**

If yes, select the type of notice:

Step 8: Implementation

Review the implementation and post-implementation phases of the proposed action to ensure that the requirements stated in 44 CFR Section 9.11 are fully implemented. Oversight responsibility shall be integrated into existing processes.

Was grant conditioned on review of implementation and post-implementation phases to ensure compliance of Executive Order 11988? **Yes, conditions will be incorporated as part of the grant's award.**

The following conditions are not reflected in the Scope of Work and are required: **N/A**