Supplement Analysis
for the
Columbia River Basin Tributary Habitat Restoration EA
(DOE/EA-2126/SA-42)

Foley Creek Floodplain Restoration
BPA project number 1994-042-00
BPA contract number 84041 REL 17

Bonneville Power Administration
Department of Energy

Introduction

In December 2020, Bonneville Power Administration (BPA) completed the Columbia River Basin Tributary Habitat Restoration Environmental Assessment (Programmatic EA) (DOE/EA-2126). The Programmatic EA analyzed the potential environmental impacts of implementing habitat restoration actions in the Columbia River Basin and its tributaries.

Consistent with the Programmatic EA, this supplement analysis (SA) analyzes the proposed funding of a joint project between the Oregon Department of Fish and Wildlife and the Jefferson Soil and Water Conservation District (collectively "the Sponsor") to restore the historic floodplain of Foley Creek in Jefferson County, Oregon. The Foley Creek project would increase the available spawning habitat for resident and migratory fish, including Endangered Species Act (ESA)-listed salmonids.

This SA analyzes the site-specific impacts of these activities to determine if the action is within the scope of the analysis considered in the Programmatic EA. It also evaluates whether the proposed action presents significant new circumstances or information relevant to environmental concerns that were not addressed by the EA. The findings of this SA determine whether additional National Environmental Policy Act (NEPA) analysis is needed pursuant to 40 Code of Federal Regulations (C.F.R.) § 1502.9(d) and 10 C.F.R. 1021 *et seq*.

Proposed Actions

BPA is proposing to fund the Sponsor to reconnect the historic floodplain, restore fish passage, and improve habitat complexity along roughly one mile of Foley Creek in southeastern Jefferson County, Oregon. These actions would support conservation of ESA-listed species considered in the 2020 consultation with the National Marine Fisheries Service (NMFS) on the Operation and Maintenance (O&M) of the Columbia River System. This funding would also be provided to mitigate the effects of the Columbia River System pursuant to the Pacific Northwest Electric Power Planning and Conservation Act of 1980 (Northwest Power Act) (16 United States Code (U.S.C.) 839 *et seq*.).

Foley Creek is an intermittent (seasonal) stream in southeastern Jefferson County with a total drainage area of 34.3 square miles. It is a tributary to Trout Creek, the largest east-side tributary of the Lower Deschutes River. Trout Creek and its tributaries provide important spawning and rearing habitat for resident fish species and ESA-listed Middle Columbia steelhead trout (*Oncorhynchus mykiss*). Like many smaller streams on the east side of the Deschutes basin, Foley Creek is seasonal, fed by snowmelt in the

winter and spring and typically dry by mid-July. Intensive logging and ranching have heavily impacted the area surrounding the creek over the last century, severely degrading fish and wildlife habitat in the watershed.

The proposed project site is a narrow valley located entirely on private land roughly half a mile upstream from the confluence of Foley and Trout Creeks (see: Appendix A, Figure 1). Foley Creek runs down the center of the valley from the southwest to the northeast. Near the southern end of the valley, two smaller tributaries—Big Log Creek and Dutchman Creek—converge with Foley Creek. The three streams diverge outside the project area, Dutchman Creek and Big Log Creek running south while Foley Creek continues westward. The total project area, including access, is roughly 20 acres. The average elevation of the project area is 3,300 feet above sea level and the local ecology is typical of the Oregon high desert.

Access to the site is blocked by a gate and fence at the northeastern end of the project area. The landowner keeps the gate locked, restricting public access to the property. A private dirt road runs from the gate through the center of the valley alongside the Foley Creek channel. The road is primarily used by the landowner for recreation and access, with occasional use by other parties for logging and wildfire suppression efforts. The road runs down the center of the valley in the historic floodplain of Foley Creek and crosses the creek with unimproved fords four times. At the convergence of Foley Creek, Big Log Creek, and Dutchman Creek, two corrugated metal culverts run under the road to carry the streams.

The raised road prism and its location at the center of the historic floodplain has profoundly affected the natural flow of Foley Creek, forcing the stream channel to the sides of the valley to make room for the road, and confining and disconnecting the creek from the historic floodplain. The channel has been straightened and become highly incised in some areas, scouring the streambed as deep as the bedrock. This incision has caused stream flows in the channel to become flashy and has also increased their velocity, further reducing the riparian vegetation development, sediment retention, and habitat availability for fish species.

Additionally, the culverts at the confluence of the three streams have degraded and created a barrier to fish passage. The culverts are five-foot-diameter corrugated metal pipe culverts that are beginning to rust through and are preventing fish from passing through at lower flows. The culverts are undersized for the volume of the streams and too steep for small fish to pass through in higher flows. The location of the culverts has also shifted the natural confluence of the streams. Historically, Big Log Creek and Dutchman creek met roughly four hundred feet upstream of the current confluence, with the combined stream then meeting Foley Creek at the current confluence. This confluence was moved to the location of the culverts and Dutchman creek is now confined to a straight ditch running along the road prism instead of its historical path.

The Sponsor would improve the current conditions in the Foley Creek valley by restoring roughly one mile of stream channel, re-contouring 11 acres of historic floodplain, removing the two culverts and replacing them with a bridge, and moving roughly 0.4 miles of roadway out of the floodplain. Implementation is scheduled to be conducted over two sequential in-water work windows: July 2023 to November 2023 and July 2024 to November 2024, with final site remediation to be completed by spring 2025.

The work during the 2023 in-water work window would be concentrated at the southern end of the project site. Following staging materials and equipment on-site in late July, the Sponsor would begin

work once the streams are dry. The Sponsor would start by excavating a new channel for Dutchman Creek. The channel would move the stream's confluence with Big Log Creek to its historical location roughly four hundred feet south of the current location. The sponsor would place large woody debris composed of logs, rootwads, and slash fill throughout this new channel to form habitat pools for fish and help sort and retain sediment. The wood structures would be ballasted into the bank using spoils from the excavation of the new channel.

The new channel for Dutchman Creek would run across the roadway at the southern edge of the project area. After excavation of the new channel is complete, the Sponsor would relocate a 50-foot-long pre-stressed concrete bridge for this new crossing. The bridge is currently located near the northern end of the project site. The bridge was installed on the property in the early 1990s but has not been functional since changes to the course of the Foley Creek channel in 1996 left it perched outside of the path of both the road and stream. The sponsor would relocate the bridge to the new crossing and place it on cast-in-place concrete footers installed on the bank outside of the creek channel (see: Appendix A, Figure 3). The total width of the Dutchman Creek channel would be roughly nine feet at the crossing. The footers would be placed at either end of the bridge, roughly 45 feet apart. The large width of the bridge relative to the channel would allow for ample space beneath the bridge and would permit fish passage at all flow levels.

Following the installation of the bridge, which would be completed by the end of October, the Sponsor would seed any disturbed areas with native grass and forb seed. Additional native riparian vegetation like willow (*Salix spp*.) and yarrow (*Achilla millefolium*) would be planted along the new channel. All work for the 2023 implementation window would be complete by the end of November.

The following year, project actions would focus on the downstream reach. Beginning in July of 2024, the Sponsor would relocate the road from its current location in the center of the floodplain to the eastern side of the valley. The current road prism would be excavated and the area in which it sits re-graded to match the natural slope and characteristics of the rest of the floodplain. A new road would be constructed along the eastern edge of the valley using the materials from the existing road prism. Moving the road out of the center of the valley would open up the historic floodplain for Foley Creek, as well as eliminate the five stream crossing fords. The side of the new road prism closest to the stream would be protected from erosion using bioengineering methods (vegetation planting, large wood placement, etc.) to protect it from washouts during high flow events.

Following removal of the road, the Sponsor would excavate a new channel for Foley Creek down the center of the valley. The channel would have increased sinuosity and a more gradual slope and shallower channel than the current highly-incised channel in order to reduce stream velocity and improve interaction with the floodplain. Woody habitat structures similar to that placed in Dutchman Creek would be placed along the new channel in order to add roughness, retain water and sediment, and form habitat pools for fish and wildlife.

All excavation and construction activities would be complete by the end of October 2024. In the following months and continuing through the spring of 2025, the Sponsor would re-seed and plant vegetation throughout the project site in order to both remediate disturbed areas and establish desirable riparian conditions along the new stream channels. Grass and forb seed would be spread across disturbed areas. Nursey-grown trees would be planted throughout the project area to increase the amount of large vegetative cover. Species which would be planted include willow, water birch (*Betula occidentalis*), white alder (*Alnus rhombifolia*), and black cottonwood (*Populus balsamifera*). All

planting would be complete by April of 2025. The area would be monitored in future years to ensure vegetative regrowth and to control any invasive or undesirable species which are outcompeting native vegetation.

Environmental Effects

The typical environmental impacts associated with the project actions contemplated by the Programmatic EA are described in Chapter 3 of the EA and summarized in this document. Below is a description of the potential site-specific impacts of the Foley Creek floodplain restoration project and an assessment of whether these impacts are consistent with those described in the Programmatic EA.

1. **Fish**

The effects of the proposed actions are consistent with the analysis in the Programmatic EA, Section 3.3.1, which concluded that the adverse impacts on fish species would be moderate in the short-term but provide beneficial long-term improvements, making the overall impacts to fish species low.

All project actions would be conducted subject to the mitigation measures prescribed in BPA's Habitat Improvement Program Programmatic Biological Opinion (NMFS 2020 and USFWS 2020, collectively the "HIP4 BiOp"), and all work would be conducted to minimize the impacts to ESA-listed fish species, and thereby most other species of fish present in the project area. All project actions were reviewed in accordance with the HIP4 BiOp review process during project development (HIP PNF#2023071). The Sponsor would follow general project and species-specific conservation measures included in the HIP4 BiOp when carrying out project actions, and any deviations from the limitations contained in the HIP4 BiOp would be reported to BPA Environmental Compliance staff.

Trout Creek and its tributaries, including Foley Creek, host extensive spawning and rearing habitat for ESA-listed Middle Columbia steelhead trout (PSMFC 2023). No other anadromous or resident ESA-listed fish species have been recorded at the project site (PSMFC 2023, USFWS 2023a), nor have any separately listed Oregon state-listed species been documented in Jefferson County (ODFW 2023). Non-listed fish species have been observed in Foley Creek by the Sponsor during fish surveys conducted prior to project design, including resident rainbow trout (*Oncorhynchus mykiss*). Project actions are aimed at improving the habitat for these fish species and would have long-term beneficial effects.

Section 3.3.1.2.2.2 of the Programmatic EA analyzes the effects of channel reconstruction and stream restoration activities on aquatic species. Consistent with this section of the Programmatic EA, the short-term effects on fish from project actions would be outweighed by the long-term benefits. In order to mitigate the effects on fish to the greatest practical extent, the Sponsor would only conduct construction activities within the channel of Foley Creek during the time of year when it is dry. Foley Creek is an intermittent (seasonal) stream that is typically completely dry during the proposed project implementation timeframe in the late summer and autumn. It is expected that all fish which are present in the stream during its flows would have migrated into nearby perennial streams like Trout Creek before this natural de-watering. As a result, it is highly unlikely that project actions in the channel and floodplain of Foley Creek would have any effects on fish. The long-term effects of project actions would be beneficial to fish. Project actions are focused on improving the interaction of Foley Creek with its historic floodplain, reducing channel velocity, and creating additional habitat features throughout the reach, all of which would improve stream conditions for fish. Additional habitat would further be opened to fish by removing the culverts at the confluence of the three streams and replacing them with a bridge that would not act as a passage barrier as the current culverts do.

There would be no effects on fish species from project actions in the short-term and beneficial effects in the long-term. Taken together, the overall effects on fish from project actions would therefore be low, consistent with the conclusions of the Programmatic EA.

2. **Wildlife**

The effects of the proposed actions are consistent with the analysis in the Programmatic EA, Section 3.3.5, which concluded that the adverse effects on wildlife would be moderate to high for individuals that are harmed or killed by construction activites, but would be lower for larger animals that may only be displaced from habitats rendered unsuitable for occupancy for a period of time in the short-term, while the long-term the effects would be beneficial, making the overall effects low.

No ESA-listed terrestrial or avian wildlife species are found in the project area (USFWS 2023a). No separately listed Oregon state-listed terrestrial or avian species are found in the project area (ODFW 2023). Non-listed species in the area include those common to the Oregon high desert biome, including a variety of birds, small mammals, and deer.

There would be minor negative effects on any wildlife present at the project site during implementation. Wildlife would be disturbed by human presence and noise from project actions, particularly that caused by construction machinery and equipment. These effects would be limited in duration to the time it takes to implement project actions. Additionally, the scope of these effects would be limited to the roughly twenty-acre project site and would not affect wildlife outside of the project area. Wildlife in the area would likely relocate outside the project area during implementation due to the disturbance, but would not be otherwise affected. The project would not require capturing, trapping, or relocating animals. Project actions would also take place outside of nesting season for most bird species to further minimize impacts to any local avian wildlife. The long-term effects of restoring the historic floodplain of Foley Creek would have little effect on wildlife species beyond positive effects from the restoration of more extensive vegetation to the area. The area along the restored stream channels would host a more complex riparian vegetation system than the current, laterally confined channels. This vegetation would provide additional shade, habitat, and forage for small animals and birds in the area. However, because of the arid nature of the area, the relatively small project area, and the seasonal nature of Foley Creek, these effects would be confined mostly to the banks of the streams.

The effects on wildlife from project actions would be low in the short-term and beneficial in the long-term. Taken together, the overall effects on wildlife from project actions would therefore be low, consistent with the conclusions of the Programmatic EA.

3. **Water Resources**

The effects of the proposed actions are consistent with the analysis in the Programmatic EA, Section 3.3.2, which concludes that the adverse impacts on water resources would be low.

Section 3.3.2.2.1 of the Programmatic EA analyzes effects on water quantity. There would be no effect on overall water quantity as a result of the proposed actions. The project would cause minor changes to the current hydrology of Foley Creek by re-integrating the historic floodplain and reducing the current channel incision. This would allow the area to retain more water than it does under current conditions. It would also be consistent with historical conditions in the area prior to anthropogenic changes caused

by road construction and channelization. These changes would not alter the overall flow volume of Foley Creek or its tributaries and there would accordingly be no effect on water quantities, consistent with the Programmatic EA's conclusions.

Section 3.3.2.2.2 of the Programmatic EA analyzes effects on water quality. Foley Creek is an intermittent stream and implementation would only occur during periods when the stream is dry. Impacts to Foley Creek's water quality during implementation from project actions that are typical of channel reconstruction work analyzed in the Programmatic EA, such as increased turbidity, would therefore be nonexistent. There may be increased sediment flow in the new stream channel during the first winter flows following project implementation as the stream flushes out loose dirt and dust left in the channel from construction. This potential increase in turbidity would be short-lived, cause no long-term impacts to water quality in the area, and be largely consistent with the current hydrology of the system, which already accumulates loose dust during the months when Foley Creek is dry and washes out in early winter. The long-term effects of project actions would be mildly beneficial to water quality. Reduced channel incision, habitat forming woody debris, and increased sinuosity would help retain sediment and reduce scour in Foley Creek and its tributaries. Increased floodplain interaction and the growth of associated riparian vegetation would also help improve water quality by further retaining sediment and reducing channel erosion and incision. As a result, the overall effects on water quality would be low, consistent with the conclusions of the Programmatic EA.

4. **Vegetation**

The effects of the proposed actions are consistent with the analysis in the Programmatic EA, Section 3.3.3, which concluded that short-term impacts on vegetation would be moderate but outweighed by long-term positive effects, making the overall effects moderate.

No ESA-listed plant species are found in the project area (USFWS 2023a). No separately listed Oregon state-listed plants are present in Jefferson County (ODA 2023). Non-listed vegetation in the project area is typical of the Oregon high desert. The valley floor is dominated by bunchgrasses and small shrubs typical of the local upland biome. The slopes of the valley are forested with a variety of tree species, including white alder (*Alnus rhombifolia*) and black cottonwood (*Populus trichocarpa*). Western juniper (*Juniperus occidentalis*) is also commonly found in the area and is currently being monitored and removed regularly to prevent it from further outcompeting other native vegetative species.

The proposed actions would have some moderate adverse effects on vegetation in the project area. Complex riparian vegetation along the Foley Creek channel is limited due to the highly incised channel and high velocity of the stream, consisting mainly of grasses, forbs, and small shrubs. Excavation would unavoidably destroy some vegetation in the project area. Areas of the floodplain which are re-graded following construction of the new channel for Foley Creek would have existing vegetation removed. Juniper trees in the area would be harvested for use as habitat forming woody habitat structures and bank stabilizing elements. The Sponsor would minimize impacts to vegetation by limiting excavation to the smallest extent needed to accomplish the project goals. Larger plants would be salvaged and relocated prior to excavation and replanted in areas which would not be disturbed by project actions as much as possible. Additional salvage of willow and sedge would be conducted to relocate clumps of the plants with rootwads attached to interweave into wood bank structures during construction of the structures to provide additional stability. No chemical (herbicide) removal of vegetation would occur and no vegetation outside of the project area would be removed. Due to the nature of the work, the short-term effects on vegetation in the project area would be severe to individual plants which are

removed and destroyed. However, the limited number of plants that would need to be removed and the mitigation measures employed by the Sponsor would help to minimize these impacts. As a result, the overall short-term adverse impacts to vegetation during project implementation would be moderate.

The long-term benefits to vegetation in the project area would outweigh the short-term negative impacts. Relocation of the road, reducing the incision of the Foley Creek channel, and increasing the channel sinuosity would help restore the historic interaction of Foley Creek with its floodplain. This would improve the conditions for riparian vegetation in the project area. The Sponsor would also seed and plant disturbed areas following construction. Native grass and forb seed mixture would be spread across the floodplain and upland areas to ensure desirable vegetation grows in these areas. Additional plantings of nursey-grown trees and large shrubs would be added in appropriate areas to further enhance the vegetative complexity of the area. All vegetation would be monitored to ensure successful regrowth, and invasive, noxious, and undesirable weeds would be removed as appropriate by the Sponsor in future years until a self-sustaining riparian ecosystem is present in the area. The long-term effects of the proposed project actions would be to replace the current conditions with a vibrant riparian ecosystem.

While the short-term effects on vegetation from project action would require removal of some individual plants and be moderate overall, the long-term effects would be beneficial to vegetation in the project area. Taken together, the overall effects on vegetation from project actions would therefore be moderate, consistent with the conclusions of the Programmatic EA.

5. **Wetlands**

The effects of the proposed actions are consistent with the analysis in the Programmatic EA, Section 3.3.4, which concluded that the overall impacts on wetlands would be low.

There are currently no mapped wetlands present on or near the project area (USFWS 2023b).

The long-term effects of project actions would improve the hydrology of the project area and potentially create new ephemeral wetlands in the Foley Creek floodplain. The current channel incision and resultant high velocity of the stream is not conducive to retaining water and supporting riparian wetlands during high flow periods. By reducing the incision of the channel and increasing the sinuosity of the stream, project actions would increase water retention and interaction with the floodplain potentially establishing new ephemeral wetlands in the Foley Creek floodplain. However, the climate in the project area is typical of the Oregon high desert. Low rainfall, high summer temperatures, and the nature of native vegetation would make the establishment of extensive wetlands in the project area unlikely. Additionally, the seasonal nature of Foley Creek and its tributaries would limit the scope of any potential new wetlands. Were any wetlands to form as a result of project actions, they would likely be limited in scope and complexity, consistent with the overall ecology of the area.

There would be no effects on wetlands in the short-term and mildly positive effects in the long-term. Taken together, the overall impacts from project actions on wetlands would therefore be mildly beneficial, consistent with the conclusions of the Programmatic EA.

6. **Geology and Soils**

The effects of the proposed actions are consistent with the analysis in the Programmatic EA, Section 3.3.6, which concluded that the short-term effects on geology and soils would range from low to high depending on the actions undertaken.

Project actions would require earthmoving and would affect soil at the project site. Given the nature of the floodplain restoration, road relocation, and channel reconstruction actions, soil would necessarily be disturbed and moved. Relocating the road would require removing the current road prism, which is comprised of packed dirt and soil. This soil would be moved to the location of the realigned road and used to construct the new road prism. The area in which the old road ran would then be graded to fit the historical slope and depth of the channel and floodplain of Foley Creek, which would require further earthmoving. Additional excavation in this area would also be needed in areas where woody habitat structures would be placed. Soil would be removed, the logs and rootwads placed in the excavated area, and the removed soil then backfilled in order to ballast the logs into place. Removal and replacement of the culverts at the confluence of the three streams would also require that the culverts be excavated from underneath the existing road prism. The Sponsor would minimize effects on geology and soils in the project area to the greatest extent possible. Excavation would be limited to the smallest area needed to accomplish project goals. All work would take place during the driest part of the year so that soils remain as compacted as possible and to limit the potential of large-scale runoff or washouts during rain. Disturbed areas would be re-seeded with native grass and forb seed following construction to establish ground cover and reduce erosion. These effects on geology and soils, due to the nature of the actions, would be high, but mitigation measures would reduce these impacts to the greatest extent possible.

In addition to soil disturbance from project actions, human presence and machinery would affect the top layer of soil in the project area. Equipment and machinery used for project actions would compress and disturb the top layer of the ground while moving throughout the project area. The Sponsor would mitigate these effects as much as practicable by limiting equipment movement to established access and staging areas and areas which would be disturbed by project actions. Access to the project area is along an already established private dirt and gravel road and cause no new ground disturbance. Ground disturbance from equipment, machinery, and human presence is therefore expected to be minor.

Although there would be unavoidable effects on geology and soils as a result of project actions, the project's long-term benefits would include improved soil quality in the project area. The current channel for Foley Creek is highly incised. High velocity in the stream has scoured the channel and little riparian vegetation grows in the reach. Flattening the planform of the channel and re-integrating it with the historic floodplain would improve sediment retention in the stream and floodplain. Additionally, the Sponsor would plant riparian shrubs, plants, and trees in this newly re-integrated floodplain, further improving sediment and soil retention. Long-term effects of project actions on soil and geology in the area would be positive.

The effects of the proposed actions on soils and geology would be high in the short-term and positive in the long-term. Taken together, the overall impacts from project actions on soils and geology would therefore be moderate, consistent with the conclusions of the Programmatic EA.

7. **Transportation**

The effects of the proposed actions are consistent with the analysis in the Programmatic EA, Section 3.3.7, which concluded that the impacts to transportation would be low.

The project area is located on private land in rural Oregon with no access to the public. The road which would be relocated is privately owned and maintained. The road is primarily used for access and recreation by the landowner, with occasional use for logging and wildfire suppression activities, and its closure would not disrupt access to any residences, businesses, or emergency services. The public has no access to the area and access to the road and project area is behind a locked gate and fence. The Sponsor obtained written permission from the landowner for conducting project actions, including closing the road in order to relocate it. While project actions would impact the use of the road by the landowner and their authorized users, these disruptions have been contemplated and agreed-to and would have no effect on the public.

There would be no long-term impacts to transportation from project actions. The road relocation would not change access or the overall route of the road, merely reposition it from the center of the valley to one side for less than half a mile of its length. Additionally, relocating the road and reducing the number of stream fords would potentially improve access to the project area during periods when Foley Creek is experiencing high flow and crossing is difficult. No other long-term impacts would be expected. There would be minor increases to traffic along public roads by workers commuting to the project site during work days and occasional deliveries of supplies and equipment. These effects would be minor, require no short-term road closures or changes in traffic patterns, and cause no long-term disruption to public transportation along these roadways.

The effects of the proposed actions on transportation would therefore be low, consistent with the conclusions of the Programmatic EA.

8. **Land Use and Recreation**

The effects of the proposed actions are consistent with the analysis in the Programmatic EA, Section 3.3.8, which stated that land use practices underlying project sites would not be changed for most projects and concluded that effects to recreation would be low.

There would be no change to underlying land use of the project site as a result of these actions. The project site is located on private land. This ownership would not change. Project actions would prevent the landowner and their authorized users use the area during implementation, but this disruption would only be temporary and has been contemplated in the Sponsor's agreement with the landowner. The long-term use of the area would not change as a result of the actions.

One of the regular uses of the project area is for private recreation by the landowner. While there would be short-term disruption to the ability for the owner and their authorized users to access the land, there would be no long-term changes to their ability to use the land for recreation. The road relocation would not change access or the overall route of the road, merely reposition less than half a mile of the road and would therefore not affect access to the area for recreation. The quality of the local environment would be improved in the long-term by the floodplain and channel restoration actions, which would potentially improve the area for recreation purposes by attracting more fish and wildlife.

The effects of the proposed actions on land use and recreation would therefore be low, consistent with the conclusions of the Programmatic EA.

9. **Visual Resources**

The effects of the proposed actions are consistent with the analysis in the Programmatic EA, Section 3.3.9, which concluded that the impacts to visual resources would be low but evaluated on a site-specific basis for each project.

The current visual condition of the project area is typical for upland areas in the Oregon high desert ecoregion. The project area lacks complex vegetation due to historic cattle grazing and logging activities. The valley floor is dominated by bunchgrasses and small forbs. Trees grow along the valley walls. The incision of the current channel of Foley Creek and the seasonal nature of the stream has reduced the complexity of habitat in the area. Project actions would have minor effects on the current visual quality of the area but would not substantially alter it. Re-integrating the historic floodplain with the channel of Foley Creek, along with other project actions like planting native plants, would create more complex riparian vegetation and restore the historic visual quality of the area. No major changes to the nature of the area would occur. The project is not publicly accessible or visible and, as a result, any changes to the area's visual quality would not affect the public's aesthetic enjoyment of the area.

The effects of the proposed actions on the visual quality of the area would therefore be low, consistent with the conclusions of the Programmatic EA.

10. **Air Quality, Noise, and Public Health and Safety**

The effects of the proposed actions are consistent with the analysis in the Programmatic EA, Section 3.3.10, which concluded that the impacts to air quality, noise, and public health and safety would be low.

Project actions would have little effect on public health and safety. The project area is located on private land behind a locked gate and fence with no access to the public. Members of the public would not be permitted in the project area during implementation. The project area is located in rural Oregon, making it even less likely that members of the public would be on or near the project site during implementation. There may be some risks to implementation personnel from general construction activities, such as from machinery and materials. All personnel would use best practices to ensure worker safety during construction. All equipment would be operated by trained and licensed personnel. The implementation window is structured to allow for construction to proceed at a deliberate and careful pace to reduce the danger of injury from rushed implementation. The effects of the proposed actions on public health and safety would therefore be low, consistent with the conclusions of the Programmatic EA.

Project actions would temporarily affect air quality and generate noise in the project area. Excavation and earthmoving would require the use of construction machinery like excavators, which would generate exhaust and noise during use. Other equipment, such as trucks and skid steers would also contribute to these effects. Excavation and machinery would also produce dust as dirt and soil is moved. These effects would be temporary in duration and limited to the project site and nearby area. No project actions would result in long-term changes to air quality or increases in noise. The effects of the proposed actions on air quality and noise would therefore be low, consistent with the conclusions of the Programmatic EA.

11. **Cultural Resources**

The effects of the proposed actions are consistent with the analysis in the Programmatic EA, Section 3.3.11, which concluded that the impacts to cultural resources from project actions would be low impacts because cultural resources would be avoided by project construction and effects would be appropriately resolved through the process set forth in Section 106 of the National Historic Preservation Act (Section 106 process).

BPA initiated the Section 106 process for project actions in October of 2020 (BPA CR Project No. OR 2020 119). BPA identified an area of potential effects (APE) for the project site, access roads, and staging areas totaling roughly 20 acres. BPA cultural resources staff conducted background research into past cultural resources surveys conducted nearby and inventories of any known cultural resources within the APE. Additionally, BPA staff conducted an intensive field survey of the APE. Based on this research and survey, one historic site was identified within the APE, consisting of sparse historic refuse scatter around a bench. No project actions would take place on or near this site, and the site would be flagged prior to implementation to reduce the potential for inadvertent disturbance of the site. On March 30, 2021, BPA made a determination that the project actions would result in no historic properties affected. Consulting parties were the Oregon State Historic Preservation Office and the Confederated Tribes of the Warm Springs Reservation of Oregon. No responses were received from either consulting party. The consultation period ended on April 30, 2021 with no comments received.

12. **Socioeconomics and Environmental Justice**

The effects of the proposed actions are consistent with the analysis in the Programmatic EA, Section 3.3.13, which concluded that impacts to socioeconomics and environmental justice would be low to moderate.

The project is located on private land in Jefferson County, Oregon. Jefferson County is highly rural, with a population density of less than 12 people per square mile and nearly a third of the total county population concentrated within the limits of the city of Madras. The closest major population center to the project site is Madras, which lies roughly 22 miles west of the site. However, because of geographic factors, travel to the project area from Madras can take upwards of 90 minutes, and as a result the area surrounding the project site is highly isolated and rural with few residences and businesses. Additionally, the project site itself is locked behind a fence and private gate and barred to access by the public, further isolating it.

Project actions would not have a disproportionately high or adverse effect on any population, including underserved or minority populations. There are no environmental justice populations present on the private land of the project site. Project actions would not require new permanent employees or require individuals to leave the area or relocate within it. There would be no effect on housing or property appropriate for housing available for local populations. While there may be some short-term cash inputs for businesses in Madras and other local towns from workers commuting to the project site and purchasing fuel and meals, the effects would be minor because of the remoteness of the project site.

The effects of the proposed actions on socioeconomics and environmental justice would therefore be low, consistent with the conclusions of the Programmatic EA.

13. **Climate Change**

The effects of the proposed actions are consistent with the analysis in the Programmatic EA, Section 3.3.14, which concluded that impacts to climate change would be low.

Effects on climate change from project actions would be limited to exhaust produced by machinery like excavators, skid steers, and trucks. These effects would be minor and limited in duration. Moreover, the Sponsor would avoid running equipment when not in use to conserve fuel and reduce exhaust emissions. Overall, the project would have a low level of effect on climate change from short-term emissions from motorized equipment operations during implementation of the restoration actions, but these would be offset to some degree by the ameliorating effects of restored floodplain function such as increased water table inputs, increased carbon sequestration in expanded and improved riparian vegetation, and decreased water temperatures from improved instream and riparian habitat conditions. No long-term generation of greenhouse gasses would occur as a result of the project actions. Given the short duration of project actions, the small number of vehicles and equipment used, the impacts to climate change from these exhaust emissions would be low.

Findings

BPA finds that the types of actions and the potential impacts related to the proposed habitat enhancement project are similar to those analyzed in the Columbia River Basin Tributary Habitat Restoration EA (DOE/EA-2126) and Finding of No Significant Impact. There are no substantial changes in the EA's Proposed Action and no significant new circumstances or information relevant to environmental concerns bearing on the EA's Proposed Action or its impacts within the meaning of 10 C.F.R. § 1021.314(c)(1) and 40 C.F.R. § 1502.9(d). Therefore, no further NEPA analysis or documentation is required.

/s/ Thomas DeLorenzo
Thomas DeLorenzo
Environmental Protection Specialist

Concur:
KATEY GRANGE
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Appendix A: Figures

Figure 1: Current conditions

Figure 2: Proposed final conditions

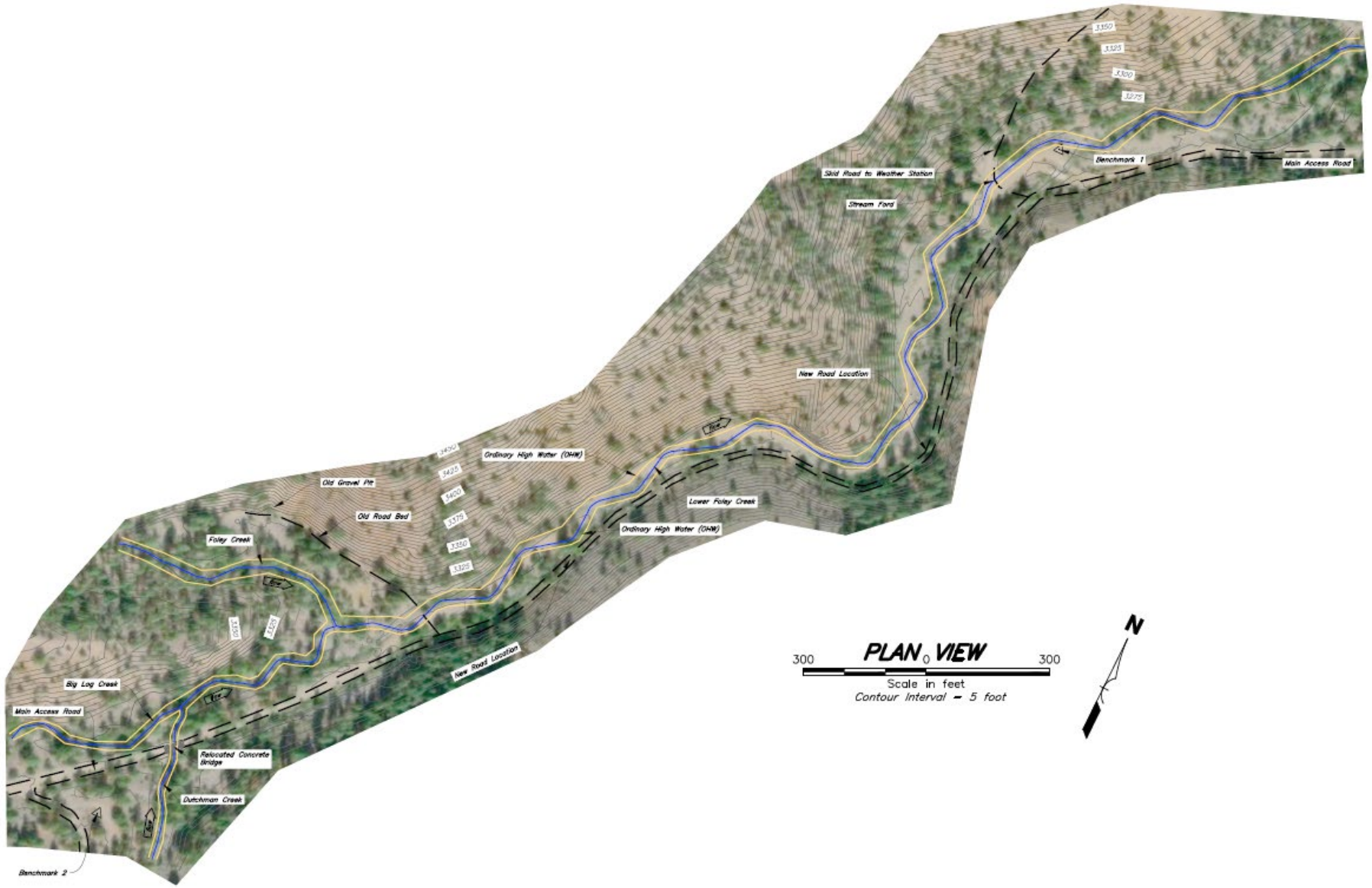
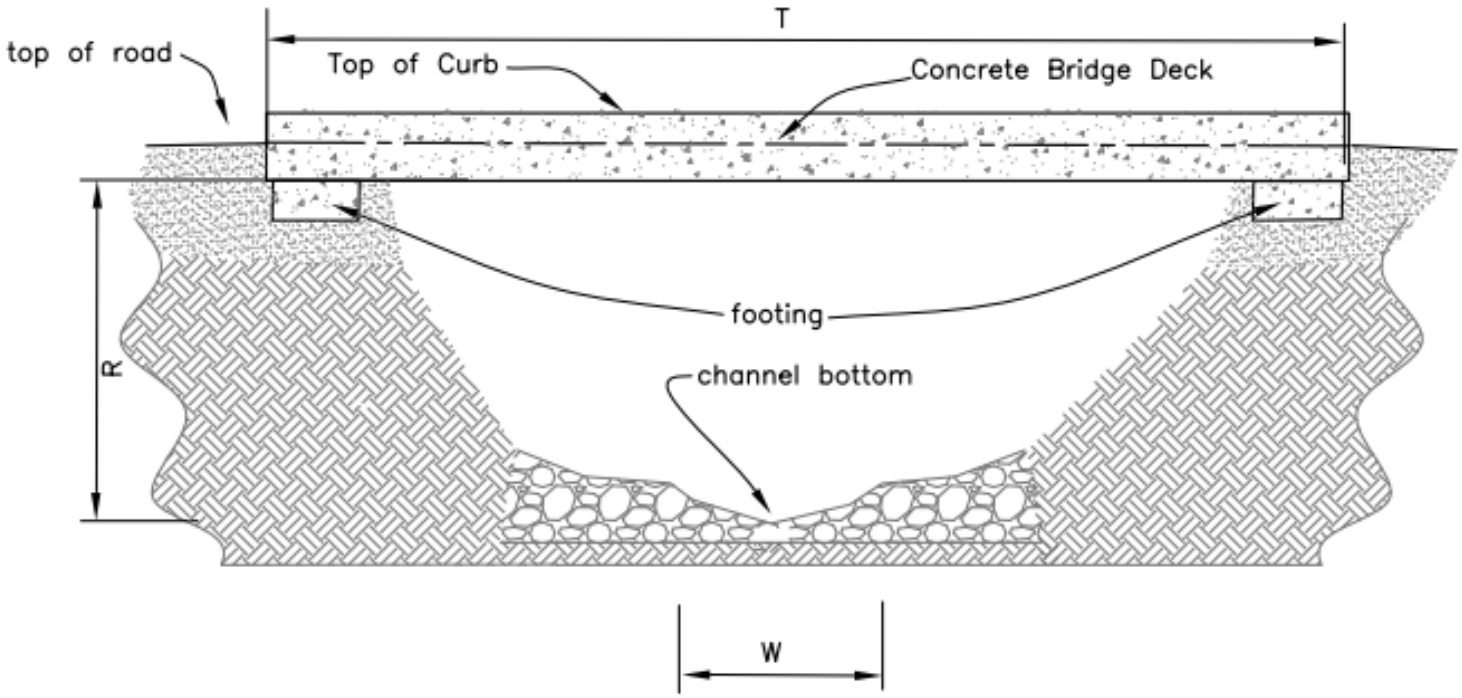


Figure 3: Cross-section of bridge over Dutchman Creek



TYPICAL BRIDGE SECTION

DIMENSIONS

R =	5.4 (ft)	elev. A =	3326.07
T =	50 (ft)	elev. B =	3319.40
W =	9 (ft)	elev. C =	3318.43