Supplement Analysis
for the
Columbia Estuary Ecosystem Restoration Program EA
(DOE/EA-2006/SA-09)

John Day Crossing Tidal Restoration Project
BPA project number 2010-004-00
BPA contract number 82217

Bonneville Power Administration
Department of Energy

Introduction

Bonneville Power Administration (BPA) and the U.S. Army Corps of Engineers (USACE) are partners in the Columbia Estuary Ecosystem Restoration Program (Program), which is a collaboration intended to evaluate, protect, monitor, and restore fish and wildlife habitat in the Columbia River Estuary. In July 2016, BPA and USACE completed the Columbia Estuary Ecosystem Restoration Program Environmental Assessment (DOE/EA-2006) (Programmatic Estuary EA). The Programmatic Estuary EA streamlines the environmental review of routine actions with well understood and predictable environmental impacts common to restoration projects in the Columbia River estuary. The purpose of this Supplement Analysis (SA) is to provide site-specific information about an individual restoration project proposed under the Program.

Consistent with the Programmatic Estuary EA, this SA analyzes the proposed John Day Crossing Tidal Restoration Project, which would remove two undersized culverts beneath John Day River Road acting as fish passage barriers to restore hydrologic connectivity with 22 acres of tidal wetlands for ESA-listed salmonids and other fish species utilizing the Lower Columba River Estuary within Clatsop County. This SA analyzes the site-specific impacts of the project to determine if the project is within the scope of the analysis considered in the Programmatic Estuary EA. It also evaluates whether the proposed project 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 NEPA analysis is needed pursuant to 40 Code of Federal Regulations (CFR) § 1502.9(c).

Proposed Action

The tidal reaches of the John Day River historically provided a breadth of estuarine habitat-forming processes and functions. Due to anthropogenic changes in the watershed (in areas including the project site) historical tidal wetlands were gradually converted to pastureland by a system of dikes and water control structures. In 2005, the tidegates on the culverts beneath John Day River Road on an unnamed tributary to the John Day River ("John Day Creek") deteriorated to the point of no longer functioning. Clatsop County subsequently replaced the culverts, but did not replace the tidegates. As a result, the pastureland upstream of the culverts began to revert to the tidal wetlands. However, the presence and size of the new culverts restricts the natural hydrologic processes of the tidal wetlands upstream of John Day River Road, and continue to act as an artificial fish passage barrier.

BPA proposes to fund the community organization, Columbia River Estuary Study Taskforce (CREST), to remove two 60-inch culverts beneath John Day River Road and replace them with a 61-foot by 16-foot single span bridge. Replacing the undersized culverts with a single span bridge would restore historical tidal connectivity between 22 acres of tidal wetlands upstream of John Day River Road with the Lower Columbia

River Estuary. The removal of the fish passage barrier would improve access to the tidal wetlands for ESA-listed salmonids and other fish species. Improving access and enhancing the naturally functioning, dynamic wetland system would help to address the key limiting factors for habitat needs of juvenile salmonids and wildlife species in the region. A naturally functioning wetland system would have immediate habitat benefits for a variety of aquatic species, as well as provide habitat areas resilient to a changing climate and a rising sea level. The goal also involves reestablishing native plant communities and protecting existing coastal grassland/prairie habitat on the island.

The proposed project has three overarching objectives, which are shown below. The bullets below each objective demonstrate what actions would be taken to ensure each objective is met.

Objective 1: Re-establish hydrologic connectivity between 22-acre wetland complex and the Columbia River

- Increase access and restore natural tidal processes by removing undersized culverts at the John Day River Road crossing.
- Recontour channel geometry to facilitate channel development and improve sediment transport regimes.

Objective 2: Improve fish access to foraging and rearing habitat

- Increase fish ingress/ egress to off-channel tidal wetland habitat through the removal of 2 artificial fish passage barriers.
- Expand total acreage of accessible estuarine tidal wetland areas to increase overall habitat availability for juvenile salmonids and other aquatic species.
- Increase and improve intertidal wetland habitat diversity and function to improve foraging and food web productivity to support wildlife and juvenile salmonids.
- Enhance foraging interface and prey production through native wetland vegetation planting.
- Retain existing overstory and riparian habitat along channel edges.

Objective 3: Increase estuarine wetland habitat capacity and function

- Expand/enhance natural tidal processes to project site by removing undersized culverts.
- Increase and improve intertidal wetland habitat diversity and function to improve foraging and food web productivity to support wildlife and juvenile salmonids.
- Increase estuarine wetland function through increased nutrient exchange and improved estuarine food web productivity.
- Enhance foraging interface and prey production through native wetland vegetation planting.
- Retain existing overstory and riparian habitat along channel edges.

The proposed actions would improve habitat for salmon and steelhead listed as threatened or endangered under the Endangered Species Act (ESA), as well as other fish and wildlife. The proposed actions are consistent with those considered in the Programmatic Estuary EA, including the following categories of action:

- Plant and protect native vegetation.
- Channel excavation and grading with localized effects on hydrology. Channel work would usually include excavation in floodplains to restore historical tidal channels previously modified through grading, drainage tiles, and linear drainage ditch networks.
- Long-term maintenance of completed estuary restoration projects.
- Levee and dike removal and breaching. This work entails the removal of water-excluding structures that result in the flooding of previously dewatered lands. It also includes the removal of flow-controlling structures not associated with dewatered sites. These actions restore hydrologic

processes during high flow (riverine or tidal) and may include entire removal, or strategically located breaches, with the intent that natural erosional processes would complete the action.
- Restoration related ground disturbance and earthwork associated primarily with levee removal, ditch filling, and tidal channel creation.
- Tide gate and culvert removal/replacement.
- Construction-related in-water work.

The proposed action is also consistent with the Columbia River Estuary (CRE) Module management actions, developed by National Marine Fisheries Service to aid in the recovery of salmon and steelhead throughout the region listed below.

- CRE-1: Protect intact riparian areas in the estuary and restore riparian areas that are degraded.
- CRE-9: Protect remaining high-quality off-channel habitat from degradation and restore degraded areas with high intrinsic potential for high-quality habitat.
- CRE-10: Re-establish or improve access to off-channel habitats.
- CRE-15: Reduce the introduction and spread of invasive plants.

The John Day Crossing Tidal Restoration Project has been in the planning and design stage for the last three years. The design was developed by CREST with input from the following agencies and technical groups: the North Coast Watershed Association (NCWA); the National Marine Fisheries Service (NMFS); the U.S. Fish and Wildlife Service (USFWS); the Expert Regional Technical Group (ERTG); BPA; and Clatsop County Public Works. The consensus by these various agencies is that the project would provide an overall environmental benefit through the removal of two undersized culverts to reduce seasonal flooding of John Day River Road, and to improve connectivity between the Columbia River and the existing 22 acres of wetland habitat along the tributary upstream of the road crossing.

Proposed work for this restoration project includes the construction of a temporary one-lane traffic bypass; excavation and removal of portions of the roadway/berm; installation of temporary shoring, pilings, abutments, wing walls, rip rap, and bridge superstructure; removal of two 60-inch culverts; excavation and grading of the roadway/berm prism and channel geometry; and revegetation of disturbed areas with native species.

Prior to construction, a traffic management plan provided by the contractor and reviewed and approved by the project partners would be implemented to separate construction activities from a planned temporary traffic bypass road and ensure safety throughout construction. Closed off sections of John Day River Road (within the road prism) are planned to be used as staging areas during construction for heavy construction equipment, vehicles, and materials. The existing culverts are planned to serve as the temporary stream bypass during bridge construction through the existing roadway/berm and temporary bypass road.

Construction activities would begin with the construction of a 12-foot wide temporary bypass road on the south side of John Day River Road from approximately 30 feet west of the westernmost bridge construction impact to 40 feet east of the easternmost bridge construction. The temporary access road would be constructed at a lower elevation within the road prism than the existing road grade (top of temporary road bypass is planned to be 10 feet (NAVD88) and stabilized with a temporary retaining wall. The temporary road bypass is planned to include 65 cubic yards (CY) of road fill to be placed within the existing road prism. A temporary retaining wall would be installed along the southern extent of the road bypass, and temporary traffic barriers would be placed between the traffic bypass and the location of construction-related activities. The road would be extended temporarily 9 feet from the edge of the existing pavement south within the road prism.

Temporary shoring would then be installed to accommodate pile cap construction. The remainder of the existing roadway (not serving as the bypass route) would be excavated down to approximately Mean Higher High Water (MHHW) elevation (9 feet). A total of six pilings (16 inch by 3/8th inch) would be driven at both

bridge abutment locations. The cast-in-place concrete bridge abutments would then be constructed to set the bridge foundation. Rock walls would be installed downstream on a six inch aggregate base to serve as bridge wingwalls, and are planned to be set at Mean High Water (MHW) elevation (8.52 feet). To minimize in-water work and minimize the duration of impacts to wetlands during construction, the roadway/berm would then be excavated down to maintain the culverts and a portion of the berm at a level that is not over-topped during construction during the summer (above 9.5 feet NAVD88). Rip rap protection would be placed above MHW along the bridge abutment/channel slope under the bridge, and placed around the bridge abutments above tide levels. The installation of the pre-fabricated bridge super structure would then occur, using a crane to set the bridge on to the bridge abutments. Following completion of the bridge, road, and guardrails, traffic would be rerouted over the new bridge and the temporary bypass road decommissioned.

Remaining rip rap and rock wingwalls would be installed during low tide to minimize turbidity impacts. The workplace would be isolated, a turbidity curtain would be installed downstream from the excavation, and fish salvage would be conducted as needed. Excavation of the remaining berm and channel to planned dimensions would occur during a single tidal cycle to limit the duration of the in-water work. Excavators would work from the roadway to avoid impacts to adjacent wetlands and channel slopes.

Post-construction, a short-term revegetation effort is planned to use native plant species on all disturbed areas, including the temporary bypass road, staging areas, and the excavated berm and channel slopes. Short-term stabilization measures may include the use of sterile seed mix and weed-free certified straw, jute matting, hydro seeding/tackifier and other similar techniques during any periods of inactivity or between phases until the planting and seeding plan is implemented.

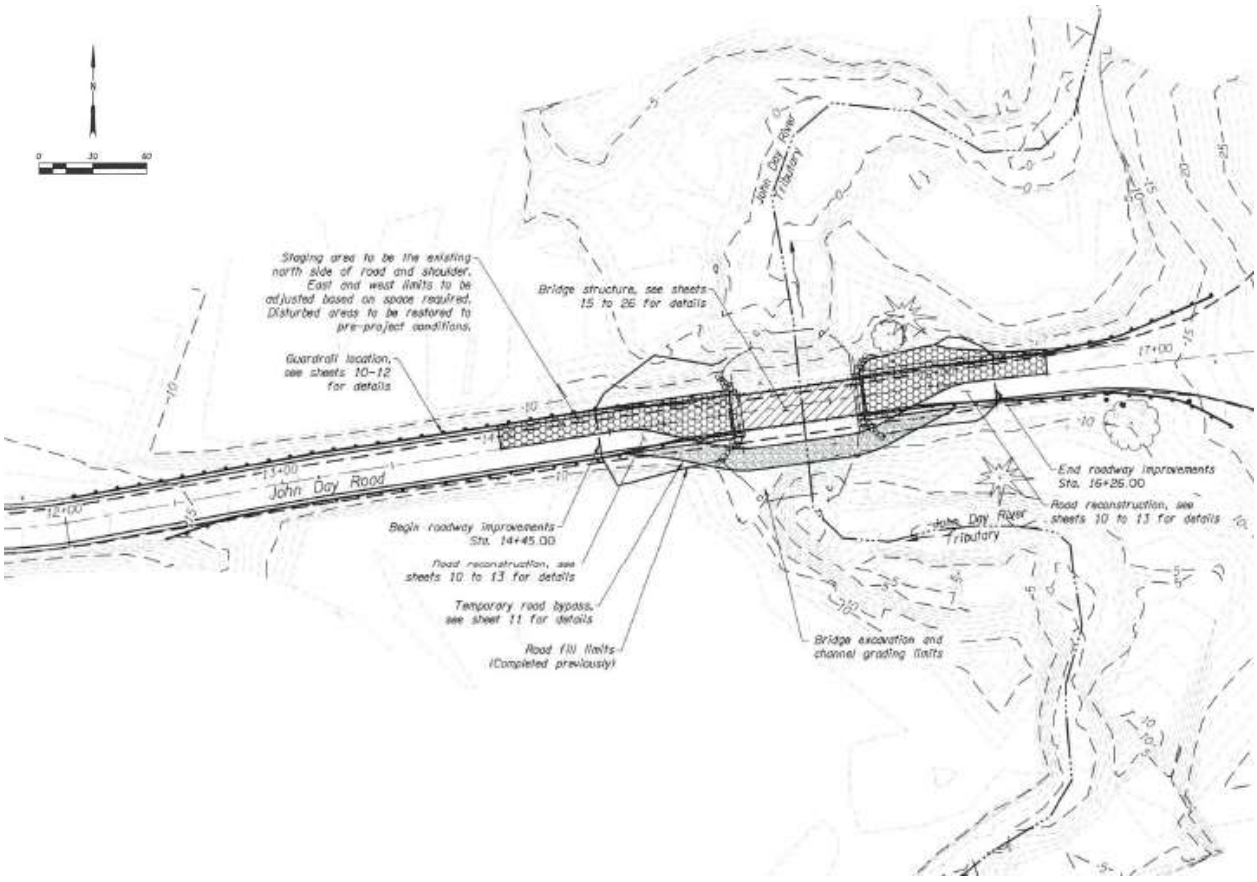

Figure 1. John Day Crossing Tidal Restoration Project

Environmental Effects

The typical environmental impacts associated with the Columbia Estuary Ecosystem Restoration Program are described in Chapter 3 of the Programmatic Estuary EA, and are incorporated by reference and summarized in this document. Below is a description of the potential site-specific impacts of the John Day Crossing Tidal Restoration Project (project) and an assessment of whether these impacts are consistent with those described in the Programmatic Estuary EA.

Much of the site-specific analysis cited in the environmental impacts section below comes from several sources: Habitat Restoration Design and Implementation Project Application for the Expert Regional Technical Group (ERTG), Columbia Pacific Engineering LLC's John Day Crossing Restoration 100% Design Plan Set, and CREST's Final Basis of Design Report.

1. Fish

While the project would have temporary, short-term adverse impacts to individual fish, overall the action would result in a net benefit to individual fish, fish populations, and fish habitat. ESA-listed fish in the project area include chum, coho, Chinook, steelhead, and green sturgeon. In the project vicinity, the John Day River is designated critical habitat for coho and green sturgeon, and is essential fish habitat for coho and Chinook, per the Magnuson-Stevens Fishery Conservation and Management Act. The following paragraphs describe the impacts to fish and fish habitat in more detail.

Temporary, short-term impacts to fish and fish habitat could occur due to in-water construction work, including increased turbidity from the driving of bridge support piles, removal of the roadway/berm and two undersized culverts, and channel excavation. During or immediately after construction is completed, when rainfall or surface flow first enters onto newly disturbed soil in the temporary access road, channel slopes, and roadway/berm removal area, turbidity could be elevated temporarily in John Day Creek and John Day River. Efforts to avoid and minimize construction-related turbidity would include timing all in-water work to be completed during the in-water work window, the use of siltation curtains to establish workplace isolation, fish salvage prior to in-water work, and completion of all channel excavation, roadway/berm removal, and culvert removal occurring below MHHW during one tidal cycle. As a result of these efforts, fish injury or mortality is unlikely to occur due to the limited duration and spatial extent of the impact, the erosion control measures used to limit sediment discharges, and the high dilution levels that would be provided by the John Day River and the Columbia River. Therefore, turbidity impacts to fish and fish habitat are expected to be temporary and low.

The use of tracked machinery and vehicles during construction could pose a risk of accidental spills of fuel, lubricants, hydraulic fluids, or other contaminants. A spill would have the potential to carry contaminants downstream to the John Day River and Columbia River, exposing fish and fish habitat to toxic substances. However, Best Management Practices (BMPs) would be employed to avoid or minimize the potential for construction-related spills or discharges. These BMPs would include, but not be limited to: implementation of a Spill and Pollution Containment and Control Plan, adherence to terms and conditions of permits and other environmental authorizations, daily inspections of powered equipment for leaks, equipping tracked machinery and vehicles with 'diapers' and vegetable-based non-toxic hydraulic fluid, and washing tracked machinery and vehicles prior to arrival on site. Since the work would use BMPs and adhere to permit conditions, construction-related water quality impacts to fish and fish habitat would be temporary and low.

The project proposes to establish a full hydraulic connection between the tidal wetland complex upstream of the John Day River Road crossing and the John Day River. Water levels in the wetlands would rise and fall with the water levels on the John Day River. The connection and inundation of the wetlands would be variable, with a range of water depths. Some years the hydraulic connection would be established in early spring, other years it would be established in late spring. This variability and frequency of wetland inundation would make the wetlands less predictable and dependable as a possible food source for

waterbirds, and therefore unlikely to attract colonies of piscivorous waterbirds. In addition, anadromous fish are thought to follow the water levels into and out of off-channel habitat as the water levels fluctuate, so they are not anticipated to be utilizing the upstream tidal wetland complex when the water levels are low and more prone to avian predation. Impacts to fish from avian predation are not anticipated to increase measurably from pre-construction levels.

Overall, the project is expected to have moderate, beneficial effects on fish. Beneficial effects would far outweigh the temporary adverse impacts. These include: increased tidal hydrologic connection between the Columbia River and the tidal wetland complex upstream of the John Day River Road crossing; increased access to food, resting, and growth areas for juvenile salmonids and other native fish within the upstream tidal wetland complex (22 acres); improved fish passage through removal of two undersized culverts and sections of the roadway/berm preventing connection between the upstream tidal wetlands and John Day River; and sediment flushing and increased detrital inputs to the island interior wetland complex.

These impacts are consistent with the analysis in the Programmatic Estuary EA, Section 3.2.4, which concludes that impacts to fish would be moderate and beneficial because of the increased food web support, conversion of vegetation to more natural conditions, restored and improved hydrology, and enhanced water quality.

2. Hydrology and Hydraulics

Hydrology and hydraulic modeling were completed for the project to determine flow paths, water depths, and the inundation duration. The purpose of the modeling was to ensure that the project would achieve the habitat goals while protecting existing resources, adjacent property, and infrastructure. In addition to being designed by a professional engineer, this project has been reviewed by a BPA hydrologic engineer to ensure that the design would achieve the restoration goals. Expected impacts to the upstream tidal wetland complex, John Day Creek, and the John Day River from the modeling results are discussed below.

Replacing two undersized culverts with a full-channel-spanning bridge would restore hydraulic control to a normative, unmanaged state. The bridge and channel were designed using the stream simulation approach; that is, matching the slope of the existing channel upstream and downstream of the crossing. The greatly expanded new bridge opening would allow high tides to drive water to the upstream tidal wetland complex in unimpeded flows until water-surface elevations are in equilibrium with the Columbia River. The probability of catastrophic damage to aquatic habitats associated with undersized culverts during extreme high flows and movement of large debris would also be greatly reduced. Temporary erosion control measures would be installed prior to construction to protect the newly excavated channel, channel slopes, and riparian areas and would remain in place until the site is stabilized following construction. These measures would include, but not be limited to, fiber wattles, silt fences, jute matting, wood fiber mulch and soil binder, and geotextiles. Adverse impacts to hydrology and hydraulics are therefore expected to be moderate.

Impacts from construction-related turbidity and potential sediment plumes would be mitigated by timing all in-water work to be completed during the in-water work window in coordination with ebbing and low tides, the use of siltation curtains to establish workplace isolation, fish salvage prior to in-water work, and completion of all channel excavation, roadway/berm removal, and culvert removal occurring below MHHW during one tidal cycle. The amount of sediment would be negligible relative to the vast area, high dilution levels, and existing sediment loading downstream of the project area in the John Day River and the Columbia River, and adverse impacts would therefore be temporary and low.

These impacts are consistent with the analysis in the Programmatic Estuary EA, Section 3.3.3, which concludes that impacts to hydrology and hydraulics would be moderate. The impacts discussed in the Programmatic Estuary EA, Section 3.3.3 include: erosion, scour, and in-channel deposition; increased

frequency and duration of inundation; localized changes in velocity, flow, and circulatory patterns; reconnection of channel habitats; and increased instream flows.

3. Water Quality

Over the long term, water quality in John Day Creek and the upstream tidal wetland complex is expected to improve due to the reestablishment of unimpeded flows upstream of the John Day River Road crossing. Reestablishing tidal connections is expected to aid the transition from pastureland back to the tidal wetland habitat originally present upstream of the crossing. The increase in daily brackish tidal inundation would increase detrital export and flux that contributes to the food web for native fish species in John Day Creek and the tidal wetland complex upstream of the John Day River Road crossing. This increased flow and flushing effect should also enhance nutrient exchange, increase wetland types, and increase habitat complexity for juvenile salmon and other estuarine aquatic species. Additionally, the improved circulation is expected to improve dissolved oxygen and pH conditions and to reduce algal blooms.

The use of tracked machinery and vehicles during construction could pose a risk of accidental spills of fuel, lubricants, hydraulic fluids, or other contaminants. A spill would have the potential to carry contaminants to the John Day River and the Columbia River. Since the work would use BMPs, such as the implementation of a Spill and Pollution Containment and Control Plan, and daily inspections of powered equipment for leaks, and adhere to the terms and conditions of Regional General Permit 6 for BPA-Funded Habitat Improvement Projects within the Columbia River Basin in Oregon (RGP-6), construction-related water quality impacts to water quality would be temporary and low. In the short term, during first re-watering after construction, slight, localized increases in suspended sediment could occur within John Day Creek and downstream of the John Day River Road crossing, but these impacts would be short in duration, diluted by high flows, and mitigated by following an erosion and sediment control plan developed in accordance with the regulations specified by the Oregon Department of Environmental Quality (Oregon DEQ).

The temporary and low impacts to water quality associated with the project are consistent with those described in the Programmatic Estuary EA, Section 3.4.3, which concludes that effects to water quality would be low to moderate and mitigated by sediment and erosion control practices. The impacts discussed in the Programmatic Estuary EA, Section 3.4.3 include: increased composition of native vegetation; increased riparian buffer width; increased vegetation cover; increased flows, tidal exchange, and flushing; increased channel complexity and alignment; and decreased composition, distribution, and quantity of invasive species.

4. Geomorphology, Soils, and Topography

Impacts to soils would result from temporary construction activities, including vegetation clearing, grading, and compaction of soils by heavy equipment during construction. Clearing and grading would remove both vegetation and topsoil. Compaction from heavy equipment degrades soil structure, reducing pore space needed to retain moisture and promote gas exchange.

Short-term construction-related impacts would include a temporary increase in soil erosion or temporarily elevated suspended sediments within the John Day Creek and John Day River. To minimize temporary and localized turbidity during driving of the bridge pilings, roadway/berm removal, culvert removal, and channel excavation, all work would be conducted during ebbing and low tides. Construction-related impacts would be additionally mitigated by the use of an erosion and sediment control plan designed in accordance with the regulations specified by the Oregon DEQ and implemented by a certified erosion control specialist.

Over the long term, impacts would be beneficial due to the restoration of the natural hydrological regime, soil-forming process, sediment flushing, and estuarine ecosystem function to the 22-acre tidal wetland complex upstream of the John Day River Road crossing.

Based on the impacts above, the project would have moderate temporary impacts in the short-term and long-term beneficial impacts to geomorphology, soils, and topography. Project impacts are consistent with those described in the Programmatic Estuary EA, Section 3.5.3, which predicted that construction would have moderate temporary effects, and that long-term impacts would be beneficial. The impacts discussed in the Programmatic Estuary EA, Section 3.5.3 include: temporary erosion and sedimentation; altered channel form, structure, and density; localized changes in velocity, flow, and circulatory patterns; restored sediment transport; and restored spatial and temporal connectivity of streams and wetlands.

5. Sediment Quality

Approximately 1,000 cubic yards of material from the roadway/berm would be excavated and transported to an approved upland disposal site. This action could temporarily loosen sediment within John Day Creek, which would later be suspended in the water column and redistributed within the estuary upon re-watering. Approximately 850 cubic yards of borrow material would be imported and placed as part of the bridge abutment installation and grading for the new roadway. Equipment would be selected, operated, and maintained to minimize adverse effects on sediment quality, including staging and access conducted from the existing roadway and equipping tracked machinery and vehicles with 'diapers' and vegetable-based non-toxic hydraulic fluid. Construction-related impacts would be additionally mitigated by the use of BMPs and an erosion and sediment control plan designed in accordance with the regulations specified by the Oregon DEQ and implemented by a certified erosion control specialist.

The impacts to sediment quality from the project would be low and are less than those described in the Programmatic Estuary EA, Section 3.6.3, which concluded that effects to sediment quality would be moderate. The impacts discussed in the Programmatic Estuary EA, Section 3.6.3 include: changing hydrologic flow patterns; floodplain and tidal reconnection; increasing organic materials in sediments; and introduction of pollutants.

6. Air Quality

Vehicle emissions during the transportation and operation of construction equipment could cause a minor temporary decrease in air quality for the duration of on-the-ground work. Impacts would be low and would not result in violations of state air-quality standards. As described in the Programmatic Estuary EA, Section 3.7.3, impacts on air quality would be low both in concentration and duration. The impacts discussed in the Programmatic Estuary EA, Section 3.7.3 include: temporary and localized increase in dust and pollutants, such as carbon monoxide, nitrogen dioxide, particulates, sulfur dioxide, ozone, or lead.

7. Wildlife

In the short term, noise and visual disturbance during construction would likely cause wildlife to avoid the project area during the construction period. If present during construction, nesting birds, smaller ground-dwelling mammals, reptiles, and amphibians could be harmed or killed incidentally during construction. Construction-related impacts to migratory birds and other wildlife are anticipated to be moderate and temporary, and would be minimized or avoided by observing timing restrictions and other measures developed by CREST, BPA, and NMFS. These measures were included in BPA's ESA consultation with NMFS concerning impacts to listed fish (concurrence received November 18, 2019).

The John Day River Road crossing project site is within the range of streaked horned larks, marbled murrelet and northern spotted owl, but suitable habitat for these species is not documented within or in the vicinity of the project area. There are no known occurrences of ESA-listed terrestrial wildlife species or critical habitat on or in the vicinity of the project site.

Bald eagles are known to occur throughout the estuary and it is possible individuals could use the project area for nesting, roosting, and foraging. There are no known occurrences of bald eagles or bald eagle nests on or in the vicinity of the project site.

Long-term effects to wildlife are expected to be beneficial. The project would improve breeding and feeding habitat for semi-terrestrial animals such as river otters, amphibians, waterfowl, shorebirds, and insect-eating birds by expanding the biodiversity at the 22-acre upstream tidal wetland complex through the inclusion of anadromous fish during periods of inundation. Likewise, wildlife that use riparian areas would benefit from the planting of native vegetation along the excavated channel and channel slopes at the project site.

These impacts from the project on wildlife would be moderate and beneficial and are consistent with the Programmatic Estuary EA, Section 3.8.3, which concluded that effects to wildlife would be moderate and beneficial. The impacts discussed in the Programmatic Estuary EA, Section 3.8.3 include: noise or visual disturbance to wildlife, displacement of individual animals, and habitat conversion.

8. Wetlands, Floodplains, and Vegetation

In the short term, construction would directly affect regulated waters in the project area. Approximately 1,000 cubic yards of material from the roadway/berm would be removed and transported to an approved upland disposal site. Disturbance to wetlands would be minimized to the extent practicable using BMPs and adherence to the terms and conditions of Regional General Permit 6 for BPA-Funded Habitat Improvement Projects within the Columbia River Basin in Oregon (RGP-6), issued on July 31, 2018, and verified by USACE in a letter dated January 23, 2020. Improving tidal connections between the stretch of John Day Creek upstream of the road crossing and the Columbia River is expected to aid the transition from pastureland back to the tidal wetland habitat historically present upstream of the crossing, prior to the installation of the culverts. It is anticipated that the plant community assemblages within 22-acre upstream tidal wetland complex that are more tolerant of increased levels of salinity and regular tidal inundation would continue to flourish and migrate throughout the wetland during the transition from pastureland to tidal wetlands. Additionally, upstream tidal wetland quality would improve due to the restoration of natural flow patterns, increased circulation, and enhanced nutrient exchange.

The removal of the two undersized culverts has potential to influence the hydrology of the John Day Creek and the upstream tidal wetland complex. CREST would monitor the project area post-project with water surface data loggers, bathymetric surveys, and drone-based observations to ensure that there is no observable change in wetland hydrology. If necessary, adaptive management actions would be applied to ensure wetland hydrology is maintained at the site.

Temporary, short-term impacts to vegetation within the project area are anticipated for the creation of the temporary access road, roadway/berm removal, bridge installation, and channel slope grading. Following construction, a short-term native revegetation effort would replant appropriate species in all areas disturbed during construction. Overall, the project would result in beneficial impacts due to the reduction of invasive species and an increase in native vegetation in the riparian and wetland areas.

These impacts are consistent with the Programmatic Estuary EA, Section 3.9.3, which predicted moderate and beneficial effects. The impacts discussed in the Programmatic Estuary EA, Section 3.8.3 include: alteration of wetland hydrology; restoration of wetland-forming processes; increased wetland area, habitat complexity, composition of native vegetation, riparian buffer area, vegetation cover, and quantity of tidal marsh habitat flows, tidal exchange, and flushing; and decreased composition, distribution, and quantity of invasive species.

Chapters 3, 4, and 5 of the Programmatic Estuary EA provide an assessment of impacts to floodplains and wetlands. Consistent with the Programmatic Estuary EA (including Section 3.9.9), the John Day Crossing Tidal Restoration Project would restore floodplain connectivity and function and improve wetland function and value, as described above. Additionally, the project would not result in floodplain development. While the project may impact wetlands in the short term, the overall long-term impacts would be beneficial, because the goal of the project is to create more wetland acreage and improve wetland quality, compared to the

current condition. This Floodplain Statement of Findings was prepared in accordance with the Department of Energy's NEPA implementing regulations and in compliance with Floodplain and Wetland Environmental Review Requirements (10 Code of Federal Regulations 1021 and 1022).

9. Land Use and Recreation

Project construction would temporarily affect small areas of recreational uses. To allow for construction access, some of the lands currently managed as riparian habitat would be temporarily transformed into a temporary access road and construction area.

All excavated material would be removed and transported to an approved upland disposal site. Clatsop County Public Works currently owns and manages the project site, and would continue to work with the project sponsor and partners post-project to adaptively manage invasive species until native vegetation is well established. The proposed project would therefore not encourage or influence land use changes at or in the vicinity of the project site.

As noted in the Programmatic Estuary EA, the Coastal Zone Management Act (CZMA) includes a federal consistency requirement for projects with potential impacts to coastal zones. As such, BPA coordinated with the Oregon Coastal Zone Management Office to document how the John Day Crossing Tidal Restoration Project's objectives and resource impacts to coastal zones are consistent with Oregon state planning goals, comprehensive plans, and other relevant state agency requirements. BPA received confirmation of federal consistency review completion from the Oregon Department of Land Conservation and Development on May 14, 2020.

John Day Creek and the upstream tidal wetland complex are not utilized for navigation and are not considered a popular waterway for recreation such as fishing. Currently, kayaks and duck boats/skiffs are the only watercraft that could potentially utilize the waterway below and above the culverts. Removal of the two undersized culverts may have long-term beneficial effects to recreation since kayak access under the new bridge during low and mean tides would be possible post restoration. Since the action would benefit fish, waterfowl, and other recreationally-managed species, fishing opportunities in the vicinity of the project could improve over time.

Based on the impacts above, the project would have low, temporary impacts in the short-term and long-term beneficial impacts to land use and recreation. These impacts are consistent with the Programmatic Estuary EA, Section 3.10, which described low to moderate impacts to land use and recreation. The impacts discussed in the Programmatic Estuary EA, Section 3.10.3 include: changes in land ownership, removal of drainage structures, and changes in access to recreational opportunities.

10. Cultural Resources

In a letter dated February 21, 2018, BPA initiated Section 106 consultation with the Confederated Tribes of Siletz Indians, the Cowlitz Indian Tribe, the Confederated Tribes of Grand Ronde, USACE, and the Oregon State Historic Preservation Office (SHPO). BPA received responses from Oregon SHPO in letters dated March 12 and 20, 2018, indicating concurrence with the Area of Potential Effects (APE).

BPA contract archaeologists conducted background research using the Oregon Archaeological Records Remote Access (OARRA) database which indicated that four previous archaeological surveys had been conducted within one mile of the John Day Crossing Tidal Restoration Project. None of these surveys identified resources within one mile of the project. The project site consists primarily of marsh lands not ideal for human occupation, and fill materials and channel sediments on the site are unlikely to contain significant cultural deposits. BPA therefore determined no historic properties would be affected in a letter to consulting parties dated February 19, 2019. While further cultural investigations were not recommended, BPA did recommend an archaeological monitor be present during all ground-disturbing activities. Oregon SHPO concurred with BPA's determination in letters dated March 13 and 14, 2019. The Confederated Tribes

of Grand Ronde concurred with BPA's determination in a letter dated March 29, 2019, and requested a copy of the cultural resources monitoring report once available.

Cultural resources impacts are consistent with the analysis in the Programmatic Estuary EA, Section 3.11.3. That is, the action would not impact historic sites, and impacts to cultural resources uncovered during construction would be mitigated by the use of Inadvertent Discovery Protocols. The impacts discussed in the Programmatic Estuary EA, Section 3.11.3 include: reestablishment of tidal channels, reestablishment of wetland and riparian plant communities, and removal of structures.

11. Socioeconomics

The project would result in small, temporary, beneficial impacts to socioeconomics by providing jobs for construction workers. Since fish access under the new bridge would be possible post-construction during low and mean tides, long-term benefits to fisheries are expected in the form of improvement to fish runs and increased fishing opportunities. The action would not displace residents or degrade residential suitability; nor would it cause changes to the tax base. The new stream channel would be considered a water of the State, and thus would be open to the public.

The expected socioeconomic impacts would be low, consistent with those described in the Programmatic Estuary EA, Section 3.12.3. The impacts discussed in the Programmatic Estuary EA, Section 3.12.3 include: short-term employment opportunities, local short-term traffic or lifestyle disruptions due to construction, land use conversion, and improvements to fisheries.

12. Visual Resources

The project area can be seen from John Day River Road and individuals in small craft in John Day Creek. Temporary visual impacts could occur during construction due to vehicles and heavy equipment being visible to individuals in small craft on the creek and commuters traveling along John Day River Road. In the short term, construction would temporarily leave areas of bare soil visible to people in these locations. However, this impact would be mitigated by the installation of erosion and sediment control devices, removal of invasive species, and replanting of all areas impacted during project construction.

In the long term, replacement of the undersized culverts with a bridge in John Day Creek would increase hydrologic connectivity with the Columbia River, resulting in an increase in the quality and size of the wetland complex upstream of the crossing. The project area would be revegetated with native plants and woody riparian vegetation, resulting in a more natural looking environment.

This impact is consistent with the visual resources analysis in the Programmatic Estuary EA, Section 3.13.3, which characterized these effects as low to moderate. The impacts discussed in the Programmatic Estuary EA, Section 3.13.3 include: short-term visual impacts related to construction and long-term impacts associated with changing the visual condition from a managed state to a more natural landscape.

13. Noise, Hazardous Waste, Public Health, and Safety

Noise level is expected to increase intermittently above ambient conditions during the construction period. The project would not result in any long-term effects to ambient noise levels during operation. Requirements to minimize these effects would be considered during the development of construction specifications.

Potential safety risks could be associated with increased area, elevation, and duration of flowing water in John Day Creek following the removal of the undersized culverts. The public could potentially access this water by small water craft during high flows. However, because water levels are expected to rise and fall slowly with the natural tides, safety risks are anticipated to be low.

This is consistent with the analysis in the Programmatic Estuary EA, Section 3.14.3, which described low effects to noise, hazardous waste, public health, and safety. The impacts discussed in the Programmatic

Estuary EA, Section 3.14.3 include: short-term noise during construction and maintenance, potential encounters with contaminated media during construction, and risks to safety due to change in hydrologic regime after construction.

14. Transportation and Infrastructure

The project would have temporary, short-term impacts on transportation and infrastructure during construction. Traffic would be routed around a temporary bridge from the time that the culverts and roadway/berm are removed until the time that the new bridge is built and operational (approximately 8 weeks, from July through mid-September). During that time, traffic delays are expected, especially during summer weekends when traffic is often heavy through the project area en route to Columbia River beaches. This would be mitigated by using traffic control and staging heavy equipment off of public roadways. In the long term, the project would benefit transportation, as the larger bridge opening would pass larger flows and larger debris, thus reducing the probability for catastrophic damage or failure of the crossing during high-water events (e.g., flooding). This is consistent with or less than the effects in the Programmatic Estuary EA, Section 3.15.3, which described moderate effects to transportation.

The project would not have any impacts on navigation on the Columbia River; however, John Day Creek would be navigable by small craft more frequently. This is consistent with or less than the effects in the Programmatic Estuary EA, Section 3.15.3, which described low effects to navigation. The impacts discussed in the Programmatic Estuary EA, Section 3.15.3 include: temporary increase in traffic, changes in navigation, and potential damage to infrastructure due to changes in flow patterns.

15. Climate Change

Vehicles and equipment operating during construction and maintenance of the project could have negative impacts to climate change. However, over the long term, effects are expected to be positive, as the restoration would enhance a carbon sink that would store carbon dioxide and help mitigate for the release of greenhouse gases.

Plantings would be adaptively managed to address long-term changes in climate (and resulting effects to salinity, surface-water elevation, and groundwater elevation). All areas disturbed during construction, including temporary access routes and riparian areas along the newly excavated channel would be replanted following construction, and would include short-term stabilization measures during any periods of inactivity or between construction phases until the planting and seeding can occur. These areas would be planted with a variety of native species appropriate for different elevation bands to allow plants to adapt to a range of water levels, salinities, and other fluctuating environmental conditions. CREST and project partners would monitor and maintain the plantings over the long term, replanting if necessary, and continuing to treat invasive species. Although climate change may increase temperatures, change precipitation patterns, cause more extreme weather events, and raise sea levels, these impacts would likely occur regardless of the John Day Crossing Tidal Restoration Project. Removal of the undersized culverts would pass larger flows without overtopping, flooding, and stranding fish. Likewise, improving access to, and the quality of, the upstream wetland complex would provide refuge areas to juvenile fish during more extreme flows in the Columbia River.

Overall, the long-term impacts on climate change from the project are expected to be low and beneficial, consistent with the impacts described in the Programmatic Estuary EA, Section 3.16.3. The impacts discussed in the Programmatic Estuary EA, Section 3.16.3 include: both the release and sequestration of greenhouse gases, and the buffering of sea-level rise, particularly during extreme flows.

Findings

This SA finds that the types of actions and the potential impacts related to the proposed John Day Crossing Tidal Restoration Project have been examined, reviewed, and consulted upon and are similar to those analyzed in the Columbia Estuary Ecosystem Restoration Program Environmental Assessment (DOE/EA-2006) and Finding of No Significant Impact. There are no substantial changes in the proposed action and no significant new circumstances or information relevant to environmental concerns bearing on the proposed action or its impacts within the meaning of 10 CFR § 1021.314(c)(1) and 40 CFR §1502.9(c). Therefore, no further NEPA analysis or documentation is required.

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Reviewed by:

/s/ Chad Hamel
Chad Hamel
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Concur:

/s/ Sarah T. Biegel Date: *June 4, 2020*
Sarah T. Biegel
NEPA Compliance Officer