
APPENDIX P

**Pacific Connector's Proposed Modifications to FERC Staff's Plan
and Procedures**

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Site-Specific Variances to FERC's Wetland and Waterbody Procedures and Upland Plan

MP	Wetland	Cowardin Type	TEWA	Environmental Alignment Sheet	Variance Rationale
Variances Requested for Temporary Extra Work Areas (TEWAs) Located within or within 50 feet of Wetlands or Waterbodies and Areas Where the Construction Right-of-Way is Greater than 75 feet Wide					
1.60R	J	PEMA	TEWA 1.46 Construction ROW > 75 feet	1	<p>Previously Disturbed Area - Industrial Site The pipeline alignment has been routed based on the design of the South Dunes Power Plant and is confined to the very southern portion of the North Spit. The alignment is routed to an area of Wetland J. The proposed alignment crosses the railroad at MP 1.69, which will be bored, requiring temporary impacts to portions of Wetland J. Pacific Connector will restore the wetland to original contours/grade according to the ECRP..</p> <p>Although TEWA 1.46 and the Weyerhaeuser Cove Pipe Yard encompass portions of Wetland J, Pacific Connector does not intend to affect all areas of Wetland J by additional construction activities which would occur in the TEWA, or the Yard. Because of the limited space available on the North Spit south of the South Dunes development activities, a 50-foot buffer from the wetland is not proposed within this previously disturbed industrial area. Pacific Connector would flag the wetland boundary, install sediment barriers, and, if necessary as determined by the EI, install safety fence around the wetland. All areas of disturbance associated with the bored railroad crossing will be restored to the approximate original contours and revegetated as outlined in the ECRP.</p>
1.71	K	PFOC	TEWA 1.46	1	<p>TEWA 1.46 encompasses the southern portion of Wetland K. The TEWA is necessary for staging of the in-water lay activities associated with the crossing of Haynes Inlet. Pacific Connector has realigned the pipeline approximately 150 feet to the south, since the 2009 FEIS route, to accommodate the proposed South Dunes Power Plant. Pacific Connector will minimize impacts to this wetland by confining Project activities, as much as possible to the previously disturbed/graded area immediately adjacent to the pipeline within TEWA 1.46. However, to stage the Haynes Inlet in-water lay activities and facilitate the bored crossing of the railroad at MP 1.69R, impacts to Wetland K from TEWA1.46 are necessary. Erosion control and revegetation will be implemented as outlined in the ECRP to minimize potential sedimentation and to restore any temporary wetland disturbance.</p>
1.74R to 4.14R	NE-26	E1UBL	TEWA 4.13-N TEWA 4.13-W Construction ROW > 75 feet	1, 2 & 3	<p>The PCGP Project's Coos Bay Water Route across Haynes Inlet requires the construction right-of-way to be 250 feet in width and TEWAs to be located in the bay. The construction right-of-way and location of the TEWAs have been designed to encompass all areas that may be affected by project activities during construction. These activities include trench excavation, pipe laying from a barge, trench backfilling activities, and temporary spoil containment. These workspace requirements are based on bed material/sediment characteristics, the benthic topography, current velocities and other factors that could potentially affect the footprint of the project disturbance. The Coos Bay Water Route Construction Plan (see stand alone report 9-JPA) details the rationale/necessity for the construction right-of-way width and TEWAs. The construction plans provides the BMPs that would be used to minimize adverse impacts from in-water activities.</p>

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MP	Wetland	Cowardin Type	TEWA	Environmental Alignment Sheet	Variance Rationale
5.74	GSI-26	R4	TEWA 4.63-W	4	TEWA 4.63-W was extended across this small headwater ephemeral drainage to accommodate construction in a steep ravine where the alignment traverses side slopes. The drainage was delineated for concurrence by the Army Corps of Engineers or Oregon Department of State Lands; however, the delineators considered it unlikely to be regulated by these agencies (see Table N-1a of the DEIS). Appropriate erosion control and restoration BMPs will be utilized, as specified in the ECRP, to minimize potential sedimentation impacts and to restore habitat.
6.21R to 6.49R	(GW027) (EE-4A (NW-117) EE-6, EE-6A W1-02 SS-003-008	PEM	TEWA 6.02-W TEWA 6.22-N TEWA 6.25-W TEWA 6.28-W TEWA 6.34-N TEWA 6.34-W Construction ROW >75 feet	5	<p>Agricultural Wetland - Disturbed Emergent Pasture The alignment across the Kentuck Slough floodplain traverses approximately 1,060 feet of emergent pasture wetlands. The crossing of Kentuck Slough is proposed as a bore which requires TEWAs 6.02-W, 6.22-N, 6.25-W, 6.28-W, 6.34-N, and 6.34-W for installation of bore pits, dewatering areas, storage of topsoil and spoil materials and installation of the pipeline across the floodplain by conventional methods. The construction right-of-way across the floodplain is also 95 feet in width and cannot be narrowed.</p> <p>The right-of-way width cannot be narrowed and the TEWAs cannot be eliminated within these wetland pastures because the trench width may become excessively wide due to the high groundwater table and the unconsolidated and saturated soils in the wetland. The right-of-way width and TEWAs are necessary because the trench will be wider in the wetland due to concrete coating of the pipeline. The pipeline will be coated with several inches of concrete to compensate for pipeline buoyancy which increases the overall pipe diameter. The pipeline in the pasture will have 5 feet of cover compared to the standard 3 feet of cover in non-agricultural uplands. It will be difficult to contain/confine saturated trench spoil materials within the wetland because these materials typically lack sufficient strength for stacking or piling.</p> <p>Pacific Connector will utilize appropriate low-ground pressure equipment or will operate equipment off of mats to minimize potential rutting or compaction impacts as specified in FERC's Wetland and Waterbody Procedures. Appropriate BMPs will be utilized, as specified in the ECRP to minimize potential sedimentation impacts. All of the affected wetlands are disturbed emergent pasture wetlands and impacts associated with the project activities are expected to be temporary and short-term with the restoration measures outlined in the ECRP.</p>
8.26R & 8.31R to 8.35	EE-7 W1-04	R2 PEM	TEWA 8.35-W TEWA 8.27-N Construction ROW >75 feet	7	<p>Previously Disturbed Area – Agricultural Pasture TEWA 8.27-N is required for topsoil salvage within the upland pasture and for the county road crossing. The landowner (Sweet) allowed survey access to the property to accommodate his requested alignment change, which identified wetland W1-04 and allowed survey of the Willanch Slough channel. TEWA 8.27-N would extend up to Willanch Slough (EE-7) without affecting riparian vegetation. The 95-foot construction right-of-way was maintained and TEWA 8.27-N placed through disturbed emergent pasture wetland (W1-04) so that additional TEWA was not necessary to accommodate the crossing of Willanch Slough and to salvage topsoil within Wetland W1-04. The EI would also ensure that appropriate erosion control, temporary construction mats, and restoration measures are utilized, as outlined in the ECRP, to ensure potential effects to Wetland W1-04 are minimized.</p>

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MP	Wetland	Cowardin Type	TEWA	Environmental Alignment Sheet	Variance Rationale
8.45R to 8.68R	Ditch GDX030	R4	TEWA 8.46-N TEWA 8.44-N	7	The alignment in this area traverses an upland pasture entering a powerline corridor along a side hill on the ridgeline opposite the pasture. TEWA 8.44-N is within 50 feet of ditch GDX030, but would not affect any woody vegetation adjacent to the ditch. TEWA 8.46-W is within 50 feet of GDX030 and is designed to accommodate the additional spoil storage associated with side hill construction requirements and the PI at MP 8.45. Appropriate erosion control and restoration measures, as outlined in the ECRP, would be utilized to minimize potential sedimentation to the ditched tributary (GDX-30).
10.95R to 11.06R	WW-100-001	PEMAh	TEWA 10.96W TEWA 10.71W Construction ROW >75 feet	9	Agricultural Wetland - Disturbed Emergent Pasture The construction right-of-way is greater than 75 feet and TEWAs 10.96W and 10.71W are required within this disturbed, emergent wetland pasture/hayfield interpreted from (NWI) to complete the Coos River HDD installation. Additionally they are required for conventional pipeline installation to ascend/descend the slope to the west. The 2009 FEIS Route was realigned to the Proposed Route in this area to incorporate the Brun Schmid WRP2 Avoidance alternative.
11.52R to 8.75	WW-222-002 WW-222-003 SS-222-002 SS-100-004 SS-100-005 SS-100-006 SS-100-007 SS-100-002a SS-100-008 SS-222-001 WW-100-002 BW111 BW110	PEM R4UB1Cx PEMC R2UBHx R4SBx	TEWA 11.27-W TEWA 11.27-N TEWA 11.30-N TEWA 11.31-W TEWA 11.32-N TEWA 11.41-W TEWA 11.53-W TEWA 11.53-N TEWA 11.77-W TEWA 11.77-N TEWA 11.92-W TEWA 11.91-N TEWA 11.97-W TEWA 11.97-N TEWA 12.08-W TEWA 12.08-N TEWA 12.21-W TEWA 12.24-N Construction ROW >75 feet	9 10 11	Agricultural Wetland - Disturbed Emergent Pasture The construction right-of-way, which is 95 feet in width and the listed TEWAs are required for the Coos River HDD installation, conventional pipeline installation across the floodplain, topsoil salvaging/storage within this agricultural wetland pasture, and for spoil storage/containment requirements. Wetland WW-100-002 is an extensive (> 1.0 mile) disturbed emergent wetland floodplain pasture that cannot be avoided by the project alignment. The 2009 FEIS Route was realigned to the Proposed Route in this area to incorporate the Brun Schmid WRP2 Avoidance alternative. The construction right-of-way cannot be narrowed and the TEWAs cannot be eliminated because the trench width may become excessively wide within the wetland pasture. This is due to the high groundwater table and unconsolidated and saturated soils in the wetland. The trench width will be wider in the wetland because the pipeline will be weight-coated with several inches of concrete to compensate for pipeline buoyancy in the wetland. This increases the overall pipe diameter. The burial depth of the pipeline in the pasture will have 5 feet of cover over the top of the pipe compared to the standard 3 feet of cover in non-agricultural uplands. It may be difficult to contain/confine the saturated trench spoil materials because these materials typically spread out when stacked due to insufficient strength. Pacific Connector will utilize appropriate low-ground pressure equipment or will operate equipment off of mats to minimize potential rutting or compaction impacts in the pasture wetland as specified in FERC's Wetland and Waterbody Procedures. Wetlands WW-100-002 and BW111 are disturbed emergent pasture wetland and, therefore, impacts to the wetland are expected to be temporary and short-term, with implementation of the erosion control and restoration BMPs outlined in the ECRP.

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MP	Wetland	Cowardin Type	TEWA	Environmental Alignment Sheet	Variance Rationale
8.75	BDX109 BDX 109A BW110	R4UB3Cx PFOC	Construction ROW >75 feet	11	The 95-foot construction right-of-way was maintained through wetland BW-100 so that additional TEWAs were not required in the forested wetland (BW110) to cross BDX 109 and BDX-109A. TEWA 8.76-W is located within 50 feet of wetland BDX109 (drainage ditch) and wetland BW110. This TEWA is required for construction staging across wetlands BW111, BDX109, and BW110. This TEWA has been located entirely within a previous forest clear-cut and currently supports trees less than 20 years old. Moving the TEWA back to ensure a 50-foot setback would push this TEWA into a mature forest. The drainage ditch and wetland would be protected from sedimentation by the use of BMPs and restoration measures outlined in the ECRP.
9.33, 9.44	DW-1	PEMC	Construction ROW >75 feet	12	The full width of the construction right-of-way (95 feet) is maintained through this narrow sloped emergent wetland to minimize overall project disturbance and disturbance to adjacent forested areas by eliminating TEWAs. TEWAs are generally required for construction staging purposes on either side of right-of-way neckdown areas. With elimination of the neckdown, TEWAs are not required.
10.04 to 10.40	NW-16 BW-86 BL-84 SS-222-003 SS-222-005 WW-222-004 DA-5X BSP-88 BDX-87	PEM PEMC R2UBHx R4SBx PEMC PUBYx R4UB3Cx	TEWA 10.03-N TEWA 10.08-W TEWA-10.21-W TEWA-10.33-W TEWA-10.33-N TEWA-10.37-W Construction ROW >75 feet	12	Agricultural Wetland - Disturbed Emergent Pasture Survey access to NW-16 and WW-222-004 was denied and the wetland delineation is preliminary. The alignment across the Monkey Ranch Gulch and Stock Slough floodplains was routed from the 2009 FEIS Route to minimize impacts to rural residences to provide a better road crossing of Stock Slough Rd and avoid a crossing of Stock Slough. To avoid residential impacts and structures, the alignment must traverse approximately 2,100 feet of emergent pasture wetlands. The TEWAs located in the floodplain pasture wetlands are required for the slough crossing, a road crossing, topsoil segregation within the agricultural wetlands, three sharp PIs, and three road crossings. TEWA 10.33-W is required for project staging in this area. The construction right-of-way, which is 95 feet in width, cannot be narrowed and the TEWAs cannot be eliminated within these wetlands because the trench width may become excessively wide during excavation in the wetland pasture due to the high groundwater table and excavation through unconsolidated saturated alluvial soils. The pipeline will be weight-coated with several inches of concrete to compensate for pipeline buoyancy which increases the overall pipe diameter. The pipeline in the pasture will have 5 feet of cover over the top of the pipe compared to the standard 3 feet of cover in non-agricultural uplands. It may be difficult to contain/confine the saturated trench spoil materials within the wetland because these materials typically spread out when stacked due to insufficient strength. Pacific Connector will utilize appropriate low-ground pressure equipment or will operate equipment off of mats to minimize potential rutting or compaction impacts as specified in the FERC's Wetland and Waterbody Procedures. Appropriate best management practices will be utilized, as specified in the ECRP to minimize potential sedimentation impacts. Wetlands WW-222-004, NW-16, and BW-86 are disturbed emergent pasture wetlands and impacts associated with the project activities are expected to be temporary and short-term. With the restoration measures outlined in the ECRP, impacts from project activities within these wetlands are expected to be temporary and short-term because these wetlands are emergent pasture conditions.

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MP	Wetland	Cowardin Type	TEWA	Environmental Alignment Sheet	Variance Rationale
10.95 to 11.40	BW-85 BDX-80 BDX-81 BDX-82 BDX-83 BDX-85 BSP-79 BW-117 BDX-118 BDX-116	PEMC R4UB1Cx R2OWN PEMC R4UB1Cx	TEWA 10.80-N TEWA 11.04-W TEWA 11.14-N TEWA 11.14-W TEWA 11.30-N Construction ROW >75 feet	13	<p>Agricultural Wetland - Disturbed Emergent Pasture The alignment across the Catching Slough floodplain traverses approximately 2,000 feet of emergent pasture wetlands. The crossing of Catching Slough (BSP079) is proposed as a bore which requires TEWAs 10.80-N, 11.04-W, 11.14-W, and 11.14-N for installation of bore pits, storage of topsoil and spoil materials and installation of the pipeline across the floodplain by conventional methods. TEWA 11.30-N is required for topsoil storage. The construction right-of-way across the floodplain is also 95 feet in width and cannot be narrowed.</p> <p>The right-of-way width cannot be narrowed and the TEWAs cannot be eliminated within these wetland pastures because the trench width may become excessively wide due to the high groundwater table and the unconsolidated and saturated soils in the wetland. The right-of-way width and TEWAs are necessary because the trench will be wider in the wetland due to concrete coating of the pipeline. The pipeline will be coated with several inches of concrete to compensate for pipeline buoyancy which increases the overall pipe diameter. The pipeline in the pasture will have 5 feet of cover compared to the standard 3 feet of cover in non-agricultural uplands. It will be difficult to contain/confine saturated trench spoil materials within the wetland because these materials typically lack sufficient strength for stacking or piling these materials.</p> <p>Pacific Connector will utilize appropriate low-ground pressure equipment or will operate equipment off of mats to minimize potential rutting or compaction impacts as specified in FERC's Wetland and Waterbody Procedures. Appropriate BMPs will be utilized, as specified in the ECRP to minimize potential sedimentation impacts. All of the affected wetlands are disturbed emergent pasture wetlands and impacts associated with the project activities are expected to be temporary and short-term.</p>
12.27 to 12.68	NSI-92 NSI-93 NSI-94 NSI-95 NSI-97 NSI-98 BSP-120 BSP-121	R4SBC R2SB3C	TEWA 12.06-N TEWA 12.08-W TEWA 12.27-W TEWA 12.28-N TEWA 12.31-N TEWA 12.31-W TEWA 12.39-N TEWA 12.40W TEWA 12.45-N TEWA 12.47-W TEWA 12.53-N TEWA 12.53-W Construction ROW >75 feet	14 & 15	<p>Previously Disturbed Area – Forest Clear-Cut The alignment was rerouted to this location based on landowner concerns with the original route which was within 200 feet of two residences. Therefore the alignment was realigned in this location after on-site geotechnical surveys verified potential geologic hazards were not a significant concern. These TEWAs are required because the alignment traverses undulating and sidehill topography which will require grading and temporary fills slopes. The waterbodies traversed by the alignment in this area are intermittent drainages within recently clear cut areas and lack developed riparian vegetation.</p>

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15.74	EW-79	PEM	TEWA 15.45-W TEWA 15.70-N Construction ROW >75 feet	18	Agricultural Wetland - Disturbed Emergent Pasture The alignment in this area has been adjusted from the original route based on geologic hazards evaluations. Further topographic evaluation and constructability evaluations of the rerouted alignment in the area between MPs 15.31 and 16.03 required additional alignment adjustments. The pipeline was realigned outside the original survey corridor. Based on previous survey work, photo interpretation and review of existing data (NWI and soil surveys), an emergent wetland is suspected in this pasture at MP 15.74. TEWAs 15.45-W and 15.70-N were located in the level wetland pasture because of critical staging needs in this area. Existing access is available at this location and the project alignment is remote and rugged both to the north and south. To minimize impacts to this wetland pasture, Pacific Connector proposes to use the area primarily in the dry season and use construction mats as necessary; topsoil would be salvaged from the entire TEWAs, if requested by the landowner; and the area would be scarified (ripped) during restoration efforts and revegetated according to the ECRP. Compaction testing would occur according to FERC's Upland Plan to ensure that compaction impacts are properly mitigated. Impacts to this wetland from project use are expected to be temporary and short-term.
18.93 & 19.06	NSP-42 NSP-43	R3SB1H R3SB1H	TEWA 18.51-W TEWA 18.96-N TEWA 18.96-W TEWA 19.06-N TEWA 19.06-W Construction ROW >75 feet	21	Due to the steep topographic conditions at these two waterbody crossings, these TEWAs could not be located 50 feet or more from the waterbodies. These TEWAs have been located at least 20 feet from the waterbodies to minimize potential impacts. The measures outlined in the ECRP will be utilized to minimize potential sedimentation impacts and to ensure that disturbed riparian areas are appropriately revegetated with woody riparian species.
20.32	ESI-28		TEWA 20.02-N	23	The alignment is co-located with a powerline easement across undulating and side slope topography. TEWA 20.02-N was placed across ESI-28 to accommodate the additional spoils storage area that will be required along this area. During construction staking, Pacific Connector's EI will determine if the TEWA can be removed and set back from the waterbody crossing based on site-specific topographic and channel conditions in this area. Appropriate BMPs will be utilized as outlined in the ECRP to minimize potential sedimentation.
22.78	NW-40	PEMC	TEWA 22.59-N Construction ROW >75 feet	25	Agricultural Wetland - Disturbed Emergent Pasture This TEWA is necessary to segregate and store topsoil within this agricultural hayfield/pasture. The affected disturbed emergent wetland is associated with an excavated drainage ditch within the pasture and therefore impacts to this feature will be negligible.
23.36	CW-10	PFOC	TEWA 23.09-W TEWA 23.40-W Construction ROW >75 feet	26	The construction right-of-way could not be necked down through this wetland because the side hill alignment requires the full 95-foot construction right-of-way. Although TEWAs were removed from the wetland, TEWAs 23.09-W and 23.40-W could not set back 50 feet from the wetland to accommodate the necessary cut and fills and contain all trench/right-of-way spoil. Disturbed areas in this forested wetland would be replanted as described in the ECRP, which includes reestablishment with tree and shrub species, and appropriate BMPs would be installed to minimize potential sedimentation.

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28.87	BSP-77	R3SB1F	TEWA 28.5-W TEWA 28.83-N	31	TEWAs 28.50-W and TEWA 28.783-N were not located 50 feet back from BSP-77 but were located back from the mature riparian forested vegetation in the young regenerating forested area. The alignment at this crossing descends and ascends steep and side sloping terrain, and the drainage crossing is incised requiring the TEWAs for cut and fill and spoil storage. During construction staking, the EI's will ensure the TEWAs are appropriately set back to minimize mature riparian tree clearing at the crossing. Appropriate erosion control and restoration BMPs, as outlined in the ECRP, will be implemented to minimize potential sedimentation and to restore habitats.
29.19	NSI-99	R4UBC	TEWA 29.20-W	31	Previously Disturbed Area – Forest Clear-cut The alignment between MPs 29.05 and 29.49 was rerouted to minimize impacts to Lone Rock Timberland's planned subdivision development. The reroute avoids impacts to a number of lots within the proposed subdivision. TEWA 29.20W has been set back 50 feet from the intermittent stream (NSI-99) in most areas but because of the meander of the stream the setback cannot be maintained in all areas. The TEWA is necessary for ingress/egress, stream crossing and steep slope staging and for installation of the acute angle of the PI.
29.49	BSI-73	R3SB1H	TEWA 29.45-W	31	Previously Disturbed Area – Road & Forest Clear-cut The alignment between MPs 29.05 and 29.49 was rerouted to minimize impacts to Lone Rock Timberland's planned subdivision. The reroute would avoid impacts to a number of lots within the proposed subdivision. TEWA 29.45-W has been set back behind the existing road that parallels the intermittent stream and wetland in this area. The TEWA is in a previous clear-cut devoid of mature trees. This TEWA is required for the road and stream/wetland crossing as well as steep slope staging, and it is not feasible or reasonable to set this TEWA farther back from these features.
29.54	BSI-76	R4SB1C	TEWA 29.543-N TEWA 29.56-W	31	Previously Disturbed Area – Forest Clear-cut These TEWAs are needed for ingress/egress, road crossing, staging, spoil storage, and parking. The TEWAs are located within a recent clear cut with regenerating trees between 5 and 10 years of age. The location of the TEWAs will not affect any riparian areas associated with this intermittent stream which is expected to be dry at the time of construction. Pacific Connector will utilize the measures outlined in the ECRP to minimize potential sedimentation impacts and to ensure that disturbed areas are appropriately revegetated with woody riparian species.
29.52	BW-72	PEMC	Construction ROW >75 feet	31	Agricultural Wetland - Disturbed Emergent Pasture The full 95-foot construction right-of-way is maintained through this wetland to provide adequate space for topsoil segregation/storage and to deeper pipeline burial depths (5-foot) across this pasture/hayfield. Pacific Connector will utilize the measures outlined in the ECRP to minimize potential sedimentation impacts and to ensure that disturbed areas are appropriately revegetated.

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29.85	BSP-71	R3OWH	TEWA 29.48-N TEWA 29.78-W TEWA 29.87-W Construction ROW >75 feet	31	Previously Disturbed Area – Pasture The alignment across the East Fork Coquille River was adjusted to provide a perpendicular crossing to minimize the crossing length of the river, avoid Wetland BW-250, and to avoid two potential MAMU stands along the river. TEWAs 29.48-N, 29.78-W, and 29.87-W were positioned to abut the existing riparian vegetation along the river banks within the pasture and hayfield but are located within 50 feet of the river.
31.64	BSI-70	R4UB1C	TEWA 31.01-W	33	The TEWA was not set back from this incised 1' wide intermittent headwater stream because the alignment traverses side slopes requiring additional grading and spoil storage requirements. The alignment is also co-located with a road with the spoil storage (non-working) side of the construction right-of-way paralleling and overlapping the road in some areas, which restricts the area for spoil storage. During construction staking, the EI will determine if the TEWA can be removed from the drainage crossing to minimize tree clearing based on the site-specific topographic conditions. The EI will also implement appropriate, erosion control and restoration BMPs, as outlined in the ECRP, to minimize potential project effects.
32.40	BSP-57	R3RB2H	TEWA 32.46-W	34	This TEWA is required for the crossing of waterbody BSP-57, a road crossing, and a PI. The TEWA was tapered to the extent feasible and avoids older riparian vegetation, but a small area extends to within 50 feet of BSP-57. Pacific Connector will utilize the measures outlined in the ECRP to minimize potential sedimentation impacts and to ensure that disturbed riparian areas are appropriately revegetated with woody riparian species.
32.50	BSI-59 BSI-58	R4UB4C R3RB2H	TEWA 32.48-N	34	This TEWA is needed for ingress/egress, staging, and spoil storage associated with the road crossing and PI. Due to site-specific topographic conditions, it is not feasible to provide a 50-foot setback from the waterbodies, although the TEWA will be offset at least 10 feet from the intermittent drainage which should be dry at the time of construction. Pacific Connector will utilize the measures outlined in the ECRP to minimize potential sedimentation impacts and to ensure that disturbed riparian areas are appropriately revegetated with woody riparian species.
33.02	BSP-50	R3SB1C	TEWA 33.02-W	35	Previously Disturbed Area – Forest Clear-cut Although this TEWA has been located 20 feet from the waterbody, maintaining a 50-foot setback is not feasible due to the location of Waterbody BSP-49. This TEWA is required during the crossing of Waterbody BSP-49 and therefore additional setbacks to maintain a 50-foot setback from Waterbody BSP-50 would make this TEWA impractical during the crossing of Waterbody BSP-49. During construction staking, Pacific Connector's EI will ensure the extent of the TEWA remains only within the recent clear-cut area and does not affect riparian vegetation. Pacific Connector will utilize the measures outlined in the ECRP to minimize potential sedimentation impacts and to ensure that disturbed riparian areas are appropriately revegetated with woody riparian species.
34.45	CW-6 CSP-5	PEMC R3SB1H	TEWA 34.41-W TEWA 34.47-W	36	Due to the steep incised topographic conditions at this stream crossing, these TEWAs cannot be located 50 feet or more from the wetland/waterbody. These TEWAs will be set back a minimum of 10 feet from the waterbody. Pacific Connector will utilize the measures outlined in the ECRP to minimize potential sedimentation impacts and to ensure that disturbed riparian areas are appropriately revegetated with woody riparian species.

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35.87	BLM 35-87 (CSP-2)	R4SB	TEWA 35.79-N	37	To minimize effects to an Occupied MAMU stand, the alignment is co-located with a road, traversing sidesloping topography. TEWA 35.79-N was extended across the intermittent drainage to accommodate staging for the in-road lay construction area between MPs 35.34 and 36.12, and to replace/repair the existing culverted crossing of the drainage. Pacific Connector will utilize the measures outlined in the ECRP to minimize potential sedimentation impacts and to ensure that disturbed riparian areas are appropriately revegetated with woody riparian species.
37.31	ESP-19	R4UB1J	TEWA 37.14-N	38	The alignment in this area follows a narrow ridge line to the crossing of ESI-19. Although TEWA 37.14-N was set back 50-feet from ESI-19 at the crossing, the upstream channel alignment of ESI-19 meanders to the west and flows parallel through regenerating forest habitat within 50 feet of TEWA 37.14-N. TEWA 37.14-N is important to facilitate the crossing of both ESI-19 and ESP-20 (Trib to Big Creek) as well as construction/grading requirements for traversing the narrow ridgeline which will encounter sideslopes. During construction staking, the EI will ensure that TEWA 37.14-N is setback at least 10 feet from ESI-19 and will ensure that appropriate BMPs, outlined in the ECRP, are implemented to minimize potential sedimentation and to ensure that disturbed riparian areas are appropriately revegetated with woody riparian species. (This variance situation is not depicted on the ESA-38 because it is based on Pacific Connector's February 2015 Proposed alignment/right-of-way configuration)
51.71	SS-222-006	R4SBx	TEWA 51.30-W	51	SS-222-006 is a narrow disturbed ephemeral drainage within a pasture/hay field that is expected to be dry during construction. The ephemeral drainage was delineated after establishment of the construction right-of-way, based on a landowner (Standley) requested reroute in this area. During construction staking, the EI will remove the portion of TEWA 51.30-W that crosses the ephemeral drainage and establish a 10-foot minimum TEWA set back from the drainage. (This variance situation is not depicted on the ESA because it is based on Pacific Connector's February 2015 Proposed alignment/right-of-way configuration and 2014 wetland verification surveys which is not depicted on ESA-51).
52.23	GW39	PEM	TEWA 52.23-N	52	Previously Disturbed Area – Quarry: Wetland GW39 is a small man-made pond within a borrow pit/quarry located within TEWA 52.23-N. The small excavated pond is unlikely to be a jurisdictional feature. TEWA 52.23-N was selected for use as a potential rock disposal area and for staging.
55.90 55.94	BSI-202 BSI-203	R4SB3C	TEWA 55.92-N TEWA 55.89-W	56	Previously Disturbed Area – Pasture These TEWAs are located in previously disturbed pastures and will not affect any riparian areas. They are required for topsoil segregation/storage in the pastures and will be set back a minimum of 10 feet from the intermittent drainages which should be dry during construction. Pacific Connector will utilize the measures outlined in the ECRP to minimize potential sedimentation impacts and to ensure that disturbed areas are appropriately revegetated.

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Site-Specific Variances to FERC's Wetland and Waterbody Procedures and Upland Plan

MP	Wetland	Cowardin Type	TEWA	Environmental Alignment Sheet	Variance Rationale
56.28 56.34	DA-13 DA-14	RWSB	TEWA 56.20-W	56	DA-13 and DA-14 are narrow intermittent drainages that are expected to be dry during construction. These intermittent drainages are interpreted from available data on denied access properties. During construction staking, the EI will remove the portion of TEWA 56.20-W that crosses these drainages and establish a 10-foot minimum TEWA setback from the drainages and ensure that appropriate BMPs, outlined in the ECRP, are implemented to minimize potential sedimentation.
56.65	DA-15	PFO	TEWA 56.69-W TEWA 56.72-N	56	Survey access to this parcel was denied and the wetland delineation is preliminary. However, these TEWAs are required for the open cut crossing of Ireland Road (Douglas Co. Road 140). Ireland Road is elevated with 4-5 feet of gravel fill at the pipeline crossing, therefore this material will need to be temporary stored and replaced during restoration. Pacific Connector will utilize the measures outlined in the ECRP to minimize potential sedimentation impacts and to ensure that disturbed areas are appropriately revegetated.
56.75	BW-160 BW-161	PFOC	TEWA 56.74-W TEWA 56.75-N TEWA 56.79-N	56	These TEWAs are required for ingress/egress, the crossing of Ireland Road, and topsoil and spoil storage. They are located in the wetland and cannot be adjusted to be 50 feet or more from the wetlands and still be useful to complete the required construction activities. Impacts to the wetland from TEWA 56.74-W would mostly occur to emergent wetland areas. Portions of TEWA 56.75-N have been located to utilize an existing road which bisects the wetlands. TEWA 56.79-N has been located within previously disturbed emergent areas within wetland BW-161.
56.92	BW-163	PFO/PEMC	TEWA 56.79-N Construction ROW >75 feet	57	Agricultural Wetland - Disturbed Emergent Pasture This TEWA is required to segregate and store topsoil within this disturbed emergent pasture wetland. Impacts to this wetland from project construction are expected to be temporary and short-term.
57.11 to 57.30	BSI-140 BW-142 BW-141 BSI-138	R4SB1C PEMC	TEWA 56.79-N TEWA 57.11-N TEWA 57.25-W TEWA 57.31-N Construction ROW >75 feet	57	Agricultural Wetland - Disturbed Emergent Pasture TEWAs 57.11-N and TEWA 57.25-W are required to segregate and store topsoil within this disturbed, emergent wetland pasture (BW-142/BW-141). The full 95-foot construction right-of-way will be maintained through this wetland because impacts will be temporary, minor, and short-term. The TEWAs located in or adjacent to BSI-140 and BSI-138 (intermittent drainages) are also located in previously disturbed areas or are required for spoil/topsoil storage associated with the road crossing and the PI. This intermittent drainage is expected to be dry during construction and Pacific Connector will utilize the measures outlined in the ECRP to minimize potential sedimentation impacts and to ensure that disturbed areas are appropriately revegetated.

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Site-Specific Variances to FERC's Wetland and Waterbody Procedures and Upland Plan

MP	Wetland	Cowardin Type	TEWA	Environmental Alignment Sheet	Variance Rationale
58.01 to 60.48	BW-150 BSI-151 BDX-157 BW-158 BSP-159 BSP-155 BW-154 BSI-132 BSI-129 BW-126 BW-127 NSP-13	R4SB3CPE MC R4UB3Cx R2SB1H R3SB1H	TEWA 57.91-N TEWA 58.21-N TEWA 58.56-N TEWA 58.65-W TEWA 58.79-N TEWA 58.79-W TEWA 59.30-N TEWA 59.31-W TEWA 59.66-N TEWA 60.01-N TEWA 60.05-W TEWA 60.35-W TEWA 60.44-N Construction ROW >75 feet	57, 58, 59, 60	Previously Disturbed Area – Pasture These TEWAs have not been located 50 feet or more from these waterbodies and wetlands because they have been located within existing disturbed pasture areas. They will not affect any riparian areas. Pacific Connector will utilize the measures outlined in the ECRP to minimize potential sedimentation impacts and to ensure that disturbed areas are appropriately revegetated.
63.96	BSP-240 BSI- 241	R2UB1H R4UB1J	TEWA 63.93-W, 63.99-W TEWA 63.99-N	64	The steep topography immediately east of Kent Creek prevents location of these TEWAs 50 feet or more from these waterbodies. Setbacks greater than 10 feet from Kent Creek (BSP-240 and its tributary (BSI 241) are not feasible considering the space requirements necessary to clear the construction right-of-way, deck and haul timber, cross Kent Creek Road (County Rd 100), and cross the creek using the dry open cut crossing method. TEWA 63.93-W was also configured to utilize existing pasture areas to minimize tree clearing. Pacific Connector will utilize the measures outlined in the ECRP to minimize potential sedimentation impacts and to ensure that disturbed riparian areas are appropriately revegetated with woody riparian species.
66.95	BSP-168 BSP-169 BSP-230	R3SB1C R4SB3J R4SB1J	TEWA 66.85-W TEWA 66.89-N TEWA 66.89-W TEWA 66.97-W TEWA 66.98-N TEWA 67.03-W DG105 MP 67.00	66	Previously Disturbed Area – Pasture All of these TEWAs have been located within previously disturbed pastures and will not affect existing riparian areas associated with Willis Creek (BSP-168). Due to the topographic conditions and the project alignment along the intermittent drainage (BSI-230), this drainage could not be avoided by the right-of-way or TEWA66.89-W. Pacific Connector will utilize the measures outlined in the ECRP to minimize potential sedimentation impacts and to ensure that disturbed riparian areas are appropriately revegetated.
69.57	SS-100-014	R4	TEWA 69.54-W	69	TEWA 69.54-W is necessary for the PI and spoils storage in an area where the alignment traverses sideslopes along a ridgeline. Intermittent drainage SS-100-014, which crosses this TEWA, was photo-interpreted in the headwater area using aerial photography and the USGS National Hydrography Dataset since the drainage was inaccessible during surveys because of dense blackberry/poison oak thickets. This potential intermittent waterbody is expected to be dry during construction; however, appropriate erosion control and restoration BMPs, as outlined in the ECRP, would be implemented to minimize sedimentation and to restore this intermittent drainage, if present.

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Site-Specific Variances to FERC's Wetland and Waterbody Procedures and Upland Plan

MP	Wetland	Cowardin Type	TEWA	Environmental Alignment Sheet	Variance Rationale
71.11	SS-100-015 WW-005-002	PEM R4	TEWA 71.06-N TEWA 71.04-W	71	SS-100-015 is an interpreted intermittent waterbody (NWI) that is encompassed within TEWA 71.06-N which is required for the Direct Pipe crossing of I-5, South Umpqua River, Dole Road and the railroad. This waterbody is expected to be dry at the time of the crossing. As defined by Section I. B.1. of FERC's Wetland and Waterbody Procedures, these features are not considered waterbodies and are therefore protected under FERC's Upland Plan. During restoration the site/feature would be restored to the approximately preconstruction contour and appropriate erosion control BMPs would be installed as determined by the EI.
71.25	BSP-26 SS-100-016	R3OWH PSS1C	TEWA 71.25	71	The purpose of the TEWA is for hydrostatic test water withdrawal and has been located to primarily occupy existing cleared/disturbed areas. Pacific Connector will utilize the measures outlined in the ECRP to minimize potential sedimentation
71.41	EDX-02	R4SB3Cx	TEWA 71.36-W TEWA 71.43-N	71	Intermittent drainage EDX-02, which is crossed by TEWA 71.36-W and within 50 feet of TEWA 71.43-N, was photo-interpreted using aerial photography and the USGS National Hydrography Dataset since the drainage was inaccessible during surveys because of dense blackberry/poison oak thickets. This potential intermittent waterbody is expected to be dry during construction; however, appropriate erosion control and restoration BMPs, as outlined in the ECRP, would be implemented to minimize sedimentation and to restore this intermittent drainage, if present. (This variance situation is not depicted on the ESA because it is based on Pacific Connector's February 2015 Proposed alignment/right-of-way configuration and 2014 wetland verification surveys which is not depicted on ESA-71).
73.69	WW-005-006	PEM	TEWA 73.68-W Construction ROW > 75'	74	The 95-foot construction right-of-way was maintained through Wetland WW-005-006, and TEWA 73.68-W is located within 50 feet of the wetland because of the side sloping alignment in this area. The TEWA is located in previously disturbed herbaceous uplands adjacent to the wetland to facilitate construction at the acute PI. Erosion control and restoration BMPs, as outlined in the in the ECRP, would be utilized to minimize potential sedimentation and to ensure disturbed areas are appropriately restored. (This variance situation is not depicted on the ESA because it is based on Pacific Connector's February 2015 Proposed alignment/right-of-way configuration and 2014 wetland verification surveys which is not depicted on ESA-74).
74.12	SS-004-003	R3SB	TEWA 74.09-W	74	TEWA 74.09-W was placed across drainage SS-100-022 at this acute angled PI because the alignment crosses side slopes and the TEWA is necessary to accommodate additional spoil storage and facilitate installation of the PI. Appropriate erosion control and restoration BMPs would be implemented as outlined in the ECRP to minimize sedimentation and restore forested habitats.
74.16	WW-100-006	PEM	Construction ROW > 75'	74	Because of the sideslopes in this area, the 95-foot construction right-of-way was maintained and TEWAs eliminated through this emergent wetland. Pacific Connector proposes to utilize the measures outlined in the ECRP to minimize potential sedimentation impacts to this wetland and to ensure that disturbed areas are appropriately revegetated.
76.38	BSP-1	PFO1A	TEWA 76.36-N TEWA 76.36-W	77	Previously Disturbed Area – Pasture These TEWAs have not been located 50 feet or more from this waterbody because they are located within existing pastures and forested riparian areas will not be disturbed. Pacific Connector will utilize the measures outlined in the ECRP to minimize potential sedimentation impacts and to ensure that disturbed areas are appropriately revegetated.

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Site-Specific Variances to FERC's Wetland and Waterbody Procedures and Upland Plan

MP	Wetland	Cowardin Type	TEWA	Environmental Alignment Sheet	Variance Rationale
76.69	BW-2	PEMC	TEWA 76.66-N Construction ROW >75 feet	77	The full 95-foot construction right-of-way and TEWA 76.66-N are necessary in this wetland because the pipeline traverses steep topography and narrow ridgelines in this area. The TEWA is necessary for steep slope construction staging and spoil storage associated with the PI, and other potential grading activities necessary to safely install the pipeline. Pacific Connector will utilize the measures outlined in the ECRP to minimize potential sedimentation impacts and to ensure that disturbed areas are appropriately restored and revegetated.
77.93 & 78.02	BSI-8 BSI-10	R3SB1H R4SB3C	TEWA 77.72-N TEWA 77.95-W	78	Previously Disturbed Area – Pasture & Intermittent Stream These TEWAs are necessary for staging and pipe storage in an area of the project which traverses rugged and remote terrain with limited access and limited areas suitable for staging. These TEWAs are located in a level, previously disturbed pasture where access is available in the Little Lick Creek drainage. The TEWAs encompass the intermitted drainages which are expected to be dry during construction. Elimination of these drainages from the TEWAs and applying a 50-foot setback would exclude significant areas of these critical staging TEWAs. Pacific Connector will limit project activities within these intermittent tributaries and will also use existing access across the drainages or will use construction mats over these drainages as necessary to minimize potential channel disturbance. Pacific Connector will utilize the measures outlined in the ECRP to minimize potential sedimentation impacts and to ensure that disturbed areas are appropriately restored and revegetated.
79.12	NSP-38	R3SB1H	TEWA 79.13-N TEWA 79.14-W	79	These TEWAs have been located 50 feet from North Myrtle Creek (NSP-37); however, this setback pushes these TEWAs into NSP-38 (Trib. N. Myrtle Creek). These TEWAs cannot be set back further to allow a 50-foot offset from NSP-38 due to the extremely steep slopes immediately east of the creek (left bank). These TEWAs are needed for the crossing of Myrtle Creek, the crossing of the tributary (NSP-38) as well as for construction up the long steep slope adjacent to NSP-398. This slope is approximately 1,300 feet in length and has an average slope of approximately 40 percent. Pacific Connector's EI will monitor clearing and construction activities at the crossing of NSP-38 to mark/flag any vegetation that can potentially be protected within the clearing limits. The EI will review these clearing limits (vegetation protection) with Pacific Connector's Chief Inspector to ensure that the crossing can be safely constructed. Pacific Connector will utilize the measures outlined in the ECRP to minimize potential sedimentation impacts to this tributary as well as to North Fork Myrtle Creek and to ensure that disturbed areas are appropriately restored and revegetated including woody riparian vegetation.
81.19	BSP-172	R3OWH	TEWA 81.16-W TEWA 81.16-N	82	TEWA 81.16-N is located in an overgrown hayfield pasture and will be offset at least 10 feet from South Fork Myrtle Creek. No woody riparian vegetation will be impacted immediately adjacent to the creek except for Himalayan blackberries. TEWA 81.16-W is required for ingress/egress and the crossings of South Fork Myrtle Creek and Myrtle Road. Although this TEWA has been set back 20 feet or more from the creek, an increased setback to maintain a 50-foot offset from the creek is not feasible because of the narrow upland area between the creek and the Myrtle Road and the steep embankment that must be graded/filled to provide safe access. Pacific Connector will utilize the measures outlined in the ECRP to minimize potential sedimentation impacts to the South Fork Myrtle Creek and to ensure that disturbed areas are appropriately restored and revegetated including woody riparian vegetation.

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Site-Specific Variances to FERC's Wetland and Waterbody Procedures and Upland Plan

MP	Wetland	Cowardin Type	TEWA	Environmental Alignment Sheet	Variance Rationale
81.38	BSP-259	R3SB1H	TEWA 81.21-W	82	Previously Disturbed Area – Pasture TEWA 81.21-W is located in a hayfield/pasture within 50 feet of BSP 259, but it would not disturb any riparian vegetation associated with BSP 259. Appropriate BMPs, as outlined in the ECRP, would be installed as necessary to minimize potential sedimentation.
84.19	EW-26 EW-24 EW-25	PEMC	TEWA 84.18-W	85	TEWA 84.18-W is required for staging in a remote area where the project traverses steep and rugged terrain and where level areas for large staging and access are extremely limited. Although TEWA 84.18-W entirely encompasses these emergent wetlands, they will be avoided by project activities. The EI will delineate the boundaries of these wetlands with silt fence and ensure that these sites are protected from disturbance.
88.16 & 88.27	BS-I236 BSI-238	R4SB1J	TEWA 88.07-N TEWA 88.26-W	89	This intermittent drainage, which is expected to be dry during construction, is confined to a road ditch and cannot be avoided by TEWA 88.07-N because of the project's alignment, location of the PIs, and parallel road alignment. These TEWAs are required for ingress/egress, the road crossing, and staging and spoil storage. Pacific Connector will utilize the measures outlined in the ECRP to minimize potential sedimentation impacts and to restore the ditch/drainage.
88.48	BSP-232	R3SB1H	TEWA 88.26-W TEWA 88.49-N TEWA 88.49-W	90	Previously Disturbed Area – hayfield/pasture These TEWAs have not been located 50 feet or more from this waterbody (Fate Creek) because these TEWAs have been located in agricultural hayfields/pastures and will not disturb woody riparian areas immediately adjacent to the creek. Pacific Connector will utilize the measures outlined in the ECRP to minimize potential sedimentation impacts and to ensure that disturbed areas are appropriately revegetated.
88.62	BSP-233	R3SB1H	TEWA 88.61-W	90	Previously Disturbed Area – hayfield/pasture A small portion of this TEWA is located within 50 feet or more from this waterbody (Days Creek) because this TEWAs has been located in agricultural hayfields/pastures and will not disturb woody riparian areas immediately adjacent to the creek. Pacific Connector will utilize the measures outlined in the ECRP to minimize potential sedimentation impacts and to ensure that disturbed areas are appropriately revegetated.
92.62	ASP-303	R3RB2H	TEWA 92.57-N TEWA 92.57-W TEWA 92.63-W TEWA 92.62-N TEWA 92.62	94	The steep side sloping topography on the west side (right bank) of St John's Creek prevents locating TEWA 92.57-N and TEWA 92.57-W 50 feet or more from this waterbody. The slope on the west side of the creek is over 1,800 feet in length and has an average slope of greater than 40 percent. Similarly, on the east side (left bank) of the creek, steep slopes limit setbacks of 50 feet or more for TEWAs 92.63-W and TEWA 92.62-N. Further, an existing road provides access to the east side of the creek and the road is incorporated within these work areas. All of these TEWAs will be set back a minimum of 10 feet from the creek. Pacific Connector will utilize the measures outlined in the ECRP to minimize potential sedimentation impacts and to ensure that disturbed riparian areas are appropriately revegetated with woody riparian species.

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Site-Specific Variances to FERC's Wetland and Waterbody Procedures and Upland Plan

MP	Wetland	Cowardin Type	TEWA	Environmental Alignment Sheet	Variance Rationale
94.50 to 94.66	AW-197 H3-01 H3-02 H3-03	PEMC	TEWA 94.52-N TEWA 94.56-W Construction ROW >75 feet	96	Previously Disturbed Emergent Wetland These previously disturbed seasonal emergent wetland and ponds are located in a previously reclaimed barrow/fill area that currently supports a pasture. The alignment has been selected to provide the best crossing location for the South Umpqua River. These TEWAs have been selected as the Milo Yard, a proposed pipe storage and contractor yard. This site is a significant staging area for project activities because of the proximity of the pipeline alignment to a large level area (previous industrial site) with excellent access from Highway 227. These TEWAs are also necessary for ingress/egress, the crossing of Highway 227, spoil storage, and parking. The ponds within the TEWA/yard would not be disturbed and would be protected with silt fence. To restore these wetlands, Pacific Connector would utilize the procedures outlined in the ECRP to restore these disturbed wetlands.
94.72	ASP-196 (South Umpqua River)	R2OWH	TEWA 94.69-N TEWA 94.69-W Construction ROW >75 feet	96	These TEWAs and full construction right-of-way width are required for the diverted open cut crossing of the South Umpqua River, a major waterbody with an ordinary high water mark (OHWM) greater than 100 feet in width. The width of the flowing water is significantly less than the OHWM in the summer, when the crossing is proposed. These TEWAs are required to install the temporary portable in-stream diversions so that the crossing can be completed in the dry. The crossing procedures are described in Resource Report 2. The ECRP outlines the measures that will be utilized to restore banks and woody riparian vegetation.
94.84	ASI-193 AW-195 AW-194	R4SB3C PEMC PEMC	TEWA 94.86-N TEWA 94.69-N TEWA 95.04-N	96, 97	Agricultural Wetland - Disturbed Emergent Pasture These TEWAs are required for topsoil segregation/storage and are located in or within 50 feet of the intermittent tributary to the South Fork Umpqua River (ASI-193). These TEWAs are located in the pasture and will not disturb any woody riparian vegetation associated with the intermittent drainage.
103.91	CW-55	PEMC	TEWA-103.92-N TEWA 103.92-W Construction ROW >75 feet	106	Previously Disturbed Area – Forest Clear-cut These TEWAs are located in a recent forest clearcut which includes the entire wetland swale. Because this wetland was previously disturbed, the TEWAs were located within 50 feet of the wetland. These TEWAs are necessary for ingress/egress, log storage during clearing, staging and temporary spoil storage associated with the road crossing. Pacific Connector will use the measures outlined in the ECRP to minimize potential sedimentation impacts to the wetland and to ensure that the area is appropriately restored and reforested.
109.15	GDX-15 GW-14 (FS-HF-C) WW-111-001	R4 PSS	TEWA 109.10-W Construction ROW >75 feet	111	The side hill alignment, location of the road crossing (FS 3200500), and PI prevent eliminating TEWA 109.10-W and narrowing of the construction right-of-way to 75 feet at the crossing of Wetland GW-14 and road side ditch (GDX-5). These conditions also prevent a 50-foot setback. The road crossing (minimum 5 feet of cover), side hill construction and PI will require additional excavation and spoil storage. To minimize potential impacts to the wetland, the EI and Chief Inspector will determine at the time of construction what measures can be accommodated in the TEWA configuration based on site-specific conditions (i.e., topographic, slope grading requirements).

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MP	Wetland	Cowardin Type	TEWA	Environmental Alignment Sheet	Variance Rationale
109.33	GS-16 (FS-HF-F)	R4	TEWA 109.19-N	112	TEWA 109.19-N is located within 50 feet of this intermittent drainage that is expected to be dry at the time of construction. The alignment traverses side slopes requiring the TEWA for additional grading and spoil storage. To minimize riparian effects associated with the intermittent drainage, the EI and Chief Inspector will determine at the time of construction what measures can be accommodated in the TEWA configuration/setback based on site-specific conditions (i.e., topographic, slope grading requirements). Pacific Connector will use the measures outlined in the ECRP to minimize potential sedimentation impacts to the drainage and to ensure that the area is appropriately restored and reforested.
109.68	GSP-22	R2	TEWA 109.68-N	112	TEWA 109.68-N is located along FS Road 3200500 and across the culverted crossing of East Fork Cow Creek (GSP-22). The TEWA was aligned to minimize impacts to riparian vegetation. The configuration of TEWA 109.68-N was designed to allow the removal of the culvert for potential restoration purposes if the road is not required for future use by the Forest Service. Pacific Connector and the Forest Service discussed the potential removal of the culvert for mitigation purposes during an on-site meeting in the summer of 2008.
110.73	EW-69 ESI-68	PUB3C R4SB1H	TEWA 110.73 Peavine Quarry	113	Previously Disturbed Area – Quarry This TEWA encompasses an existing quarry on the Umpqua National Forest. Although wetland features EW-69 and ESI-68 are located in the quarry and were created by quarry activities, PCGP Project activities will not disturb these features.
110.95	FS-HF-N (ESI-68)	R4SB1H	TEWA 110.96-N	113	The project alignment was modified in this area to minimize impacts to this intermittent drainage and its upstream source. The alignment modification moved the alignment down slope adjacent to the road to minimize the sideslope cuts. The right-of-way was necked down on the working side and TEWA 110.96-N on the non-working side adjacent to the road to provide ingress/egress and to facilitate installation of the Pls at MPs 110.95 and 110.98. Pacific Connector will use the measures outlined in the ECRP to minimize potential sedimentation impacts to the drainage and to ensure that the area is appropriately restored and reforested. (This variance situation is not depicted on the ESA because it is based on Pacific Connector's February 2015 Proposed alignment/right-of-way configuration and 2014 wetland verification surveys which is not depicted on ESA-113).
118.89	ASP-202	R2SB1H	TEWA 118.70-W TEWA 118.83-W TEWA 118.89-W	121	Previously Disturbed Area – Pasture These TEWAs are required for the crossing of West Fork Trail Creek, ingress/egress, and topsoil segregation/storage. They have been located within 50 feet of this stream within a previously disturbed pasture. Woody riparian vegetation associated the waterbody will not be disturbed. Pacific Connector will use the measures outlined in the ECRP to minimize potential sedimentation and to ensure that the pasture and riparian areas are appropriately revegetated.
120.83	AW-204	PEMC	TEWA 120.73-N TEWA 120.85-N	123	Previously Disturbed Area – Residential yard/pasture These TEWAs have been located within 50 feet of this wetland because they are located in the previously disturbed area (residential yards/pasture) and will not disturb any woody riparian vegetation associated the waterbody. Pacific Connector will use the measures outlined in the ECRP to minimize potential sedimentation and to appropriately revegetate the pasture and riparian areas within the construction right-of-way.

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Site-Specific Variances to FERC's Wetland and Waterbody Procedures and Upland Plan

MP	Wetland	Cowardin Type	TEWA	Environmental Alignment Sheet	Variance Rationale
122.00 & 122.6	ESI-70 ESI-71 ESI-72 ESI-73 ESI-74 ASP-235	R4SB1C R4SB2C R3UBH	TEWA 121.95-W TEWA 122.62-W	124	These TEWAs are required for the Rogue River (ASP-235) HDD, pipe pull-back areas, and to access the river for a water source (Hydrostatic, HDD, dust abatement) and for potential frac out response. Although TEWA 121.95-W is located across these intermittent drainages, which are expected to be dry during construction and the HDD, ground-disturbing activities will be minimized through the use of rollers and temporary bridges to span these drainages. The EI will locate appropriate BMPs to minimize sediment delivery to these intermittent drainages and will work with the HDD contractor to minimize construction-related disturbance to these drainages.
128.60	AW-278 ASP-310	PEMC/ R3UB3 R3SB1H	TEWA 128.55-W TEWA 128.55-N TEWA 128-68-W Construction ROW >75 feet	131	Agricultural Wetland - Disturbed Emergent Irrigated Pasture These TEWAs have been located outside of this heavily grazed irrigated pasture wetland, except portions of TEWA 128.55-N which are required for topsoil segregation and storage. The full 95 foot right-of-way will be maintained in the wetland because impacts to this disturbed emergent irrigated pasture wetland will be temporary and short-term. Pacific Connector will use the measures outlined in the ECRP to minimize potential sedimentation and to ensure that the pasture is appropriately revegetated.
130.83	AW-244 AW-245 ASI-246	R4SB1C PSSC R4UB1C	TEWA 130.81-W Construction ROW > 75'	133	This TEWA is required for ingress/egress and the crossing of Crowsfoot Road. It cannot be moved out of this wetland and still efficiently accomplish the road crossing. TEWA 130.81-W is bisected by an existing road that intersects with Crowsfoot Road within the construction right-of-way. Narrowing the construction right-of-way to 75 feet would not minimize disturbance to these wetlands because additional TEWAs would be needed to provide the necessary workspace for the road crossing. The portion of TEWA 130.81-W that is within 50 feet of ASI-246 would not disturb woody riparian vegetation. Pacific Connector will use the measures outlined in the ECRP to minimize potential sedimentation and to ensure that the disturbed areas are appropriately revegetated.
131.25	AW-248	PEMC	TEWA 131.03-N	134	TEWA 131.03-N was reduced in size and located in an area primarily dominated by emergent vegetation with very few shrubs. Moving the TEWA back to allow a 50 foot setback would disturb more shrub vegetation; therefore, the TEWA was not set back 50 feet. The construction right-of-way was necked down to minimize disturbance to this wetland. Pacific Connector will use the measures outlined in the ECRP to minimize potential sedimentation impacts and to ensure that the wetland and uplands are appropriately revegetated.
132.08 & 132.12	W2-02 ASP-252	PEM R4SB1C	TEWA 131.88-N Construction ROW > 75'	134	Previously Disturbed Area – Hayfield TEWA 131.88-N and the full 95-foot construction right-of-way are maintained through the pasture/and hayfield because topsoil salvaging and five feet of cover are required in the pasture. Because of the 5-foot depth of cover, additional area is required for spoil and topsoil storage. The TEWA is located with a 10-foot minimum setback from Neil Creek (ASP-252) because it is located in an irrigated hayfield and riparian vegetation will not be affected by its location. Pacific Connector will use the measures outlined in the ECRP to minimize potential sedimentation and to ensure that the hayfield is appropriately revegetated.

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Site-Specific Variances to FERC's Wetland and Waterbody Procedures and Upland Plan

MP	Wetland	Cowardin Type	TEWA	Environmental Alignment Sheet	Variance Rationale
132.42 132.57	AW-243 W5-01	PEMC	TEWA 132.26-W 132.45-W 132.46-N 132.52-W 132.52-N Construction ROW > 75'	135	Agricultural Wetland – Hayfield/ Pasture The alignment in this area was rerouted based on a landowner request (Schott), which significantly reduces the crossing length/effects within Wetland AW243. However, the full 95-foot construction right-of-way and TEWAs are required in these wetlands to cross the Butte Falls Hwy (elevated road fill), for ingress/egress, and installation of Block Valve #11 – Launcher/Receiver in the upland area at MP 132.46. In addition, five feet of cover and topsoil salvage are required in the pasture. Because of the 5-foot depth of cover, additional area is required for spoil and topsoil storage. Pacific Connector will use low-ground-weight equipment or operate equipment off of mats to minimize rutting and compaction impacts. The measures outlined in the ECRP will be used to minimize potential sedimentation impacts and to ensure that the wetlands are appropriately revegetated.
132.70 & 132.71	AW-242	PEMC	TEWA 132.68-N TEWA 132.69-W TEWA 132.72-W	135	Wetland AW-242 was extended to the west across the modified alignment in this area based on landowner request (Schott). Although the right-way was necked down to 75 feet through the wetland, TEWAs 132.68-N, 132.69-W, and 132.72-W could not be set back 50 feet from this wetland because of the PI at MP 132.71 and the established setback of TEWA 132.72-W from wetland AW-264. Pacific Connector will use the measures outlined in the ECRP to minimize potential sedimentation and to ensure that the TEWAs are appropriately revegetated. (This variance situation is not depicted on the ESA because it is based on Pacific Connector's February 2015 Proposed alignment/right-of-way configuration and 2014 wetland verification surveys which is not depicted on ESA-135).
133.05 – 133.14	AW-263	PEMC	Construction ROW > 75'	135	The 95-foot construction right-of-way was maintained through this emergent wetland so that added TEWAs were not required in the forested areas adjacent to the wetlands which would have greater long-term habitat impacts. Pacific Connector will use low-ground-weight equipment or operate equipment off of mats to minimize rutting and compaction impacts. The measures outlined in the ECRP will be used to ensure that the wetland is appropriately restored.
133.30	ASP-241 ASP-240	R3UB3H R3UB3x	TEWA 133.24-N TEWA 133.28-W TEWA 133.39-N	136	Waterbody ASP-241 is formed from leakage from the Medford Aqueduct (ASP-240) which is to be crossed by conventional boring. TEWA 133.24-N is required for the bore pit installation and boring operations. The TEWA cannot be moved back to avoid the wetland considering the bore length (~300 feet) and the topography in this area. If the waterbody is flowing at the time of construction, the flow will be diverted around activities as necessary to avoid water quality impacts. TEWAs 133.28-W and TEWA 133.39 cannot be set back 50 feet from the waterbodies because they are critical to minimize the length of the bore to minimize boring risk/failure.
138.50	AW-209	PEMC R4UB1C	TEWA 138.47-W Construction ROW > 75'	141	Previously Disturbed Area – Pasture This TEWA has not been set back 50 feet from the wetland and waterbody because it has been located in a clearing and will not impact any large riparian tree vegetation. The construction right-of-way has not been narrowed to 75 feet through these wetlands because a neckdown on the working side of the right-of-way would only minimize temporary and short-term impacts to the emergent pasture wetlands. Pacific Connector will use the measures outlined in the ECRP to minimize potential sedimentation and to ensure that the pasture is appropriately revegetated.

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Site-Specific Variances to FERC's Wetland and Waterbody Procedures and Upland Plan

MP	Wetland	Cowardin Type	TEWA	Environmental Alignment Sheet	Variance Rationale
139.07 & 139.14	AW-213 ASI-214	PEMC R4UB1C	TEWA 139.01-N TEWA 139.01-W TEWA 139.08-N TEWA 139.08-W	141	The location of wetland AW-213 in relation to the gravel access road prevents a 50-foot set back from wetland AW-213 to complete both road and wetland crossings. These TEWAs have been located with a setback of approximately 20 feet or more to minimize riparian vegetation impacts. TEWA 139.08-W is required for ingress/egress, and staging. This TEWA is accessed by an existing private graveled road in a remote area which is level and provides an ideal staging location. A 50-foot set back from AW-213 and ASI-214 was not provided because TEWA 139.08-W was located entirely within a rangeland pasture and would not affect woody riparian vegetation.
139.50 to 139.83	AW-225 ASI-226 ASI-228 AW-230 ASI-232	PEMC R4SB1C R4EMC	TEWA 139.57-N TEWA 139.55-W TEWA 139.69-N TEWA 139.82-W Construction ROW > 75'	142	The alignment in this area traverses a slightly sloping rangeland pasture which is bisected by numerous intermittent drainages, and emergent wetlands. The alignment was routed through the pasture to minimize forested impacts and was necked down to minimize impacts to these features where feasible. Although these TEWAs have been located to minimize impacts to these wetland/waterbody features, where possible, it is not feasible to set back TEWAs 139.57-N or TEWA 139.55-W 50 feet from these features. TEWA 139.69-N and TEWA 139.82-W, which are required for the PIs and spoil storage, are located within several of these intermittent drainages and emergent wetlands. The intermittent drainages are expected to be dry during construction and impacts to these features will be temporary and short-term and fully mitigated through implementation of the measures outlined in the ECRP (topsoil salvage, scarification and reseeding).
140.98	EW076 EW077 EW078	PEMC	TEWA 140.98	143	Previously Disturbed Area – Reservoir Dam TEWA 140.98 is required for water withdrawal proposed at Star Lake Reservoir. Water withdrawal activities for dust or fire control would not require any excavation or ground disturbance at this site. Where traffic is required across these emergent wetlands, the travel route will be matted if the wetlands are saturated to minimize potential compaction impacts.
141.49	ASI-188	R4SB1	TEWA 141.44-W TEWA 141.52-W	143, 144	The route in this area was slightly modified to avoid the parallel alignment of the intermittent drainage ASI 188 within the construction right-of-way, and the right-of-way (working sides) was reconfigured because of sideslopes. To accomplish this alignment/right-of-way modification, two PI were included at MPs 141.46 and 141.5, which required TEWAs to store spoil for the side sloping alignment. Although the TEWAs were set back from the intermittent drainage, which is not expected to be flowing at the time of construction, a 50-foot setback could not be maintained. Pacific Connector will use the measures outlined in the ECRP to minimize potential sedimentation and to ensure that the disturbed areas are appropriately revegetated. (This variance situation is not depicted on the ESA because it is based on Pacific Connector's February 2015 Proposed alignment/right-of-way configuration and 2014 wetland verification surveys which is not depicted on ESA-143 & 144).

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Site-Specific Variances to FERC's Wetland and Waterbody Procedures and Upland Plan

MP	Wetland	Cowardin Type	TEWA	Environmental Alignment Sheet	Variance Rationale
142.28 to 142.65	EDX-32 EW-33 EW035 ESP-34 ESI-31 EDX-36	R4SB3Cx PEMC R3SB3H	TEWA 142.17-N TEWA 142.51-W TEWA 142.58-W TEWA 142.58-N Construction ROW > 75'	144, 145	Agricultural Wetland – Irrigated Emergent Pasture The full 95-foot construction right-of-way is maintained and the TEWAs are located within this irrigated pasture wetland because impacts to this disturbed emergent wetland are expected to be temporary and short-term. The TEWAs are required for topsoil segregation/storage and are needed for staging during the crossing of Salt Creek. These TEWAs have been located within the wetland pasture but outside of woody riparian areas immediately adjacent to the creek. The full right of way width is maintained because of the required 5-foot depth of cover over the top of the pipe in the pastures, which requires additional area for topsoil and spoil storage. Impacts to these features will be fully mitigated through implementation of the measures outlined in the ECRP (topsoil salvage, and reseeding) and the use of low-ground weight equipment or operating equipment off of equipment mats if needed to minimize rutting and compaction impacts.
143.73	EL-41 ESI-38 ESI-39 ESI-40	PEMKx	TEWA 143.69-W	146	Agricultural Wetland – Stock Pond The alignment and location of the PI prevents setting the TEWA outside the stock pond (wetland EL041). The alignment on the C2 Ranch was rerouted based on landowner recommendations, but the TEWA could not be located to avoid the excavated pond. During construction Pacific Connector will minimize disturbance to the stock pond as much as feasible and will repair any damage to the pond during restoration.
144.70	GSP-5	R4	TEWA 144.59-N TEWA 144.70-W	146	Waterbody GSP-5, a confined stream reach flowing immediately adjacent to BLM Road 36-2E-19 (Salt Creek Road), also runs through TEWA 144.59-N and is within 50 feet of TEWA 144.70-W. The alignment in this location was dictated by the landowner (C2 Ranch), and the acute angle (PI) of the pipeline requires the need for TEWAs 144.59-N and TEWA 144.70-W. The configuration of the alignment and the road made it impractical to avoid the stream with the TEWA in the project design. However, during construction the stream would be flagged by the EI and project activities/disturbance would minimize/avoid impacts to the stream to the extent practical. The EI would assure that appropriate BMPs are installed to protect the stream reach in this area.
145.54	ESI-61 EW-63 EDX-64	R4SBC PEMC R4UBx	TEWA 145.38-N TEWA 145.53-W	147	The bored crossing of Highway 140 will require these TEWAs for ingress/egress to excavate the bore pit, store spoil, and for equipment staging. Therefore, a 50-foot setback on this intermittent drainage was not feasible considering the location of the highway in proximity to the intermittent stream. Further the shrub/tree riparian area is very limited along this intermittent stream and impacts to this riparian area will be replanted after construction.
145.60	EW-67	PEMC	TEWA 145.58-W TEWA 145.58-N	147	Agricultural Wetland – Irrigation Ditch Wetland EW-67 is an irrigated wetland pasture with associated ditches located immediately adjacent to Highway 140. The TEWAs are not set back 50 feet because the TEWAs will not disturb any riparian vegetation. Further the highway crossing will be bored and the location of the sharp PI makes it infeasible to include TEWA setbacks from the irrigated field and ditches.
152.31	AL-169	PUBfx	TEWA 152.29-N	155	Previously Disturbed Area – Excavated pond This man made pond may be used as a water source for dust/fire control if allowed by the landowner.

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Site-Specific Variances to FERC's Wetland and Waterbody Procedures and Upland Plan

MP	Wetland	Cowardin Type	TEWA	Environmental Alignment Sheet	Variance Rationale
171.07	EW-85	PEMC	TEWA 171.08-N TEWA 171.08-W	173	Previously Disturbed Area - Existing Road TEWA 171.08-N and TEWA 171.08-W were not placed 50 feet back from wetland EW085 because an existing road is located along the southern edge of the wetland. These TEWAs were located on the northern edge of the road shoulder adjacent to the wetland in the previously disturbed road area. Sediment barriers would be placed along the TEWAs adjacent to the wetland to ensure that sediment is contained within the construction right-of-way.
171.56	GSP-7	R2	TEWA 171.08-N	173	The linear TEWA 171.08-N was maintained in this area because of the sidesloping alignment that is confined/co-located with Clover Creek Road. The right-of-way has been narrowed to slightly less than 75 feet in this area, but the TEWA is needed to facilitate sideslope construction and the crossing of GSP-7. Pacific Connector will implement BMPs, outlined in the ECRP, to minimize potential sedimentation and ensure that all disturbed areas are appropriately restored. (This variance situation is not depicted on the ESA because it is based on 2014 wetland verification surveys which is not depicted on ESA-173).
176.54	ESI-69	R4SB2	TEWA 176.49-N	178	TEWA 176.49-N was located across intermittent drainage (ESI-69) because of the side slope construction requirements, and required PI locations in this area. The PIs (pipe bend angles) are required based on the slope contours. Prior to clearing, the EI will flag trees for salvage/saving trees within TEWA 176.38-N, where feasible, to minimize riparian disturbance.
179.50	GW-12	PEM	TEWA 179.50-W	181	Disturbed Emergent Wetland This wetland is located within the ROW of Clover Creek Road at the inlet of a culvert crossing on the road. The alignment has been co-located as close as possible with Clover Creek Road as recommended by the Forest Service and BLM (see Resource Report 10 Section 10.6.16). Sediment barriers would be placed along the TEWAs adjacent to the wetland to ensure that sediment is contained within the construction right-of-way/TEWA.
188.9	SS-100-025	R4EM2	TEWA 188.82-W	189	TEWA 188.82-W was extended across this intermittent waterbody, which is located in a steep, incised drainage, adjacent to an access road crossing, PIs, and steep sidesloping topography. The waterbody is expected to be dry at the time of construction and all appropriate erosion control and revegetation BMPs, as outlined in the ECRP, will be installed to minimize sedimentation. Prior to clearing, the EI will flag trees to be protected within TEWA 188.82-W, where feasible, to minimize riparian disturbance.

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Site-Specific Variances to FERC's Wetland and Waterbody Procedures and Upland Plan

MP	Wetland	Cowardin Type	TEWA	Environmental Alignment Sheet	Variance Rationale
191.45 to 198.16	Multiple Agricultural Hayfield/Pasture Wetlands and drainage Ditches/canals	PEMC R4UB3Cx	Multiple TEWAs and Construction ROW > 75 feet	192 – 198	<p>Active Agricultural Wetland – Hayfield/Pastures The full 95-foot construction right-of-way was maintained between MPs 191.5 and 198.20 through the many and extensive hayfields/pastures wetlands in this area. Additionally, multiple TEWAs have been located in these hayfield/pasture wetlands in this area and are located immediately adjacent to the many drainage ditches/canals that are crossed. The construction right-of-way design is based on the expected high groundwater levels and the need to have the necessary space to contain the topsoil and excavated spoil. The trench width may become excessively wide because of the high groundwater table and the unconsolidated and saturated soils in the wetland. The right-of-way width and TEWAs are necessary because the trench will also need to be wider in the wetland because the pipeline will be weight-coated with several inches of concrete to compensate for pipeline buoyancy which increases the overall pipe diameter. In addition, the burial depth of the 36-inch pipeline in the pasture will have 5 feet of cover over the top of the pipe compared to the standard 3 feet of cover in non-agricultural uplands. Additionally, it will be difficult to contain/confine saturated trench spoil materials within the wetland because these materials typically lack sufficient strength for stacking or piling. The alignment for much of this area parallels a paved private access road which is provided by TEWAs 192.13-W. Ingress/egress from this road will be critical for project activities.</p> <p>Trench dewatering will be an important component of the project construction activities in this area because of the high groundwater table. Therefore, to ensure that discharge from dewatering activities does not flow into the construction footprint, TEWAs have been located south of the private access road that parallels the alignment which is down slope of the alignment. These dewatering TEWAs include: 193.50-N, 193.69-N, 193.88-N, 194.07-N, 194.26-N, 195.53-N, 194.72-N, 194.91-N, 195.08-N, and 195.28-N.</p> <p>Pacific Connector will utilize appropriate low-ground pressure equipment or will operate equipment off of mats to minimize potential rutting or compaction impacts as specified in FERC's Wetland and Waterbody Procedures. Appropriate BMPs will also be utilized, as specified in the ECRP, to minimize potential sedimentation impacts. All of the affected wetlands are disturbed emergent pasture wetlands and impacts associated with the project activities are expected to be temporary and short-term.</p>
198.99	AL-44	PABGh	TEWA 199.01-W	198	<p>Disturbed Industrial Yard TEWA 199.01-W is required for the HDD crossing of the Klamath River and is located within a previously disturbed industrial yard. The EI will ensure appropriate sediment controls are installed to minimize potential sedimentation of the pond.</p>

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Site-Specific Variances to FERC's Wetland and Waterbody Procedures and Upland Plan

MP	Wetland	Cowardin Type	TEWA	Environmental Alignment Sheet	Variance Rationale
199.28 to 199.77	AW-156 AW-157 AW-158 AW-159 AW-160	L1UBHh R4UB3x PEMC	TEWA 199.58-W TEWA 199.60-N	199	<p>Active Agricultural Wetland – Hayfield/Pastures TEWAs 199.60-N and 199.58-W are required for the HDD crossing of the Klamath River. These TEWAs may also be used for staging of all project activities east of the Klamath River and will be used to move all spread equipment around the Klamath River.</p> <p>Wetland AW-159 is an agricultural drainage ditch as well as a depressional emergent pasture wetland. Impacts to this wetland have been avoided, but TEWA 199.58 could not be offset 50 feet from the wetland and be fully functional for the Klamath River HDD. Pacific Connector will implement the measures outlined in the ECRP to minimize potential sedimentation and to appropriately restore all disturbed areas.</p>
199.99 to 200.22	AW-312 AW-255	PEMC	TEWA 199.58-W TEWA 199.97-N TEWA 200.09-N TEWA 200.09-W TEWA 200.18-W Construction ROW > 75 feet	200	<p>Agricultural Wetland – Hayfield/Pastures The construction right-of-way and TEWA requirements in this hayfield/pasture wetland were designed in consideration of the railroad crossing, the two sharp PIs in the alignment and the required 5-foot of cover over the top of the 36-inch diameter pipeline. The railroad will be bored and because of the length of the wetland the bore pits could not be placed outside the wetland. The two PIs will require additional workspace to install the radius bend or fitting and to contain the additional spoil materials associated with these PIs. Because of the location of the PIs the TEWAs could not be placed outside the wetland. In this area, the trench width may become excessively wide due to the high groundwater table and the unconsolidated and saturated soils in the wetland. Therefore the full 95-foot construction right-of-way was maintained through these wetland pastures. The right-of-way width and TEWAs are necessary because the trench will be wider in the wetland because the pipeline will be weight-coated with several inches of concrete to compensate for pipeline buoyancy which increases the overall pipe diameter. Further, the excavated trench spoil material will be difficult to contain/confine because they are expected to be saturated and will be spread out when stacked because these saturated materials typically lack sufficient strength. Project impacts to these agricultural wetlands will be temporary and short-term, and Pacific Connector will apply the appropriate measures outlined in the ERCP to minimize potential sedimentation and to restore these areas.</p>
201.29 to 212.08	AW093 AW095 AW098 AW102 AW108 AW122 AW132NSP001	PEMC R3UBH R4UB3x	Multiple TEWAs Construction ROW > 75 feet	200-211	<p>Agricultural Wetland – Hayfield/Pastures and Previously Disturbed Areas -Pastures The agricultural wetlands and numerous ditches and canals that are crossed in this area require the full 95-foot construction right-of-way and the TEWAs to be located in the wetlands and immediately adjacent to the ditches/canals. In these areas, the pipeline will require a 5-foot depth of cover and topsoil will be segregated in these areas. The topsoil and additional spoil material that will be excavated and stored in these areas will require the full construction right-of-way width and TEWAs. The TEWAs are required for ingress/egress as well as the multiple road and canal/ditch crossings in this area. The TEWAs have been located immediately adjacent to the canals and ditches because the adjacent fields/pasture will not affect any riparian vegetation. Project impacts to these agricultural wetlands will be temporary and short-term and Pacific Connector will apply the appropriate measure outlined in the ERCP to restore these areas.</p>

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Site-Specific Variances to FERC's Wetland and Waterbody Procedures and Upland Plan

MP	Wetland	Cowardin Type	TEWA	Environmental Alignment Sheet	Variance Rationale
212.48 to 212.73	EW-86 EW-87 ESI-52 EDX-54 EDX-55	PEMC R4UB3Cx R4SBC	TEWA 212.08-N TEWA 212.49-W TEWA 212.53-N TEWA 212.53-W TEWA 212.67-N TEWA 212.69-W Construction ROW >75 feet	211	Previously Disturbed Area – Railroad right-of-way/Irrigation Canal/Irrigated Hayfield These TEWAs are required for the bore of the Burlington Railroad at MP 212.52 and the crossing of the irrigation canal at MP 212.72. The wetlands are previously disturbed emergent wetlands. Project impacts to these agricultural wetlands will be temporary and short-term, and Pacific Connector will apply the appropriate measures outlined in the ECRP to control erosion and to restore these areas.
216.1 216.3 216.43	ASI-51 ASI-50 ASI-49	R4SBC	TEWA 219.98-W TEWA 216.10-W TEWA 216.31-W TEWA 216.44-W	216	The alignment in this area is co-located with a powerline easement which crosses undulating and sidesloping topography. The TEWAs are required for additional spoil storage associated with sidehill construction. Although the TEWAs have been removed from the intermittent drainages, which are expected to be dry during construction, they could not be set back 50 feet from the channel because of construction requirements. Pacific Connector will apply the appropriate measures outlined in the ECRP to control erosion and to restore these areas.
219.69	AW-292 ASI-291 NL-116 Excavated Pond	PEMC R4UB3C PABGx	TEWA 218.80-W TEWA 219.70-W TEWA 219.69	219	Previously Disturbed Area – Power Line Corridor These TEWAs are located in a previously disturbed powerline corridor and their location will not impact any riparian vegetation. These TEWAs have been offset a minimum of 10 feet from Wetland AW-292 and intermittent stream (ASI-291). Pacific Connector will utilize the measures outlined in the ECRP to minimize the potential for sedimentation and to ensure that adjacent areas are appropriately revegetated. TEWA 219.69 encompasses an excavated pond (NL-116) for water withdrawal purposes for potential dust control. All required appropriation/withdrawal permits and landowner approvals would be acquired prior to withdrawals.
221.77	ASI-138	R4UB3C	TEWA 221.27-N TEWA 221.78-N	221	Previously Disturbed Area – Hayfield/Pasture These TEWAs are located in a hayfield/pasture and their location will not impact any riparian vegetation. These TEWAs have been offset a minimum of 10 feet from this intermittent stream. Pacific Connector will utilize the measures outlined in the ECRP to minimize the potential for sedimentation and to ensure that adjacent areas are appropriately revegetated.
222.83	EL-77	PABGx	UCSA 222.80-N	222	Previously Disturbed Area – Excavated Pond UCSA 222.08 encompasses this approximate 1.5-acre pond for potential water source/withdrawal purposes. If the pond is used as a water source for dust control or other purposes, all withdrawals would be permitted as necessary with the Oregon Department of Water Resources or landowner agreements.
223.19	ADX-139	R4SB2x	TEWA 222.97-N TEWA 223.13-W TEWA 223.20-N TEWA 223.21-W	223	Previously Disturbed Area – Hayfield/Pasture These TEWAs are located in a hayfield/pasture and their location will not impact any riparian vegetation. These TEWAs have been offset a minimum of 10 feet from this intermittent stream. Pacific Connector will utilize the measures outlined in the ECRP to minimize the potential for sedimentation and to ensure that adjacent areas are appropriately revegetated.

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Site-Specific Variances to FERC's Wetland and Waterbody Procedures and Upland Plan

MP	Wetland	Cowardin Type	TEWA	Environmental Alignment Sheet	Variance Rationale
225.00	ESI-50 ESI-51		Rock Source/Disposal MP 224.95	224	Previously Disturbed Area Rock Source/Disposal Site MP 224.95 is located in an existing quarry site and the boundaries were based on the site's existing limits. Pacific Connector will not affect these two small intermittent drainages with project activities at the site.
226.78 227.30	NW-112 NDX-111	PEMC R4SB2x	TEWA 225.15-N TEWA 226.80-W TEWA 227.25-W Construction ROW > 75 feet	226, 227	Previously Disturbed Area – Irrigated Hayfield The 95-foot construction right-of-way was maintained through this agricultural pasture wetland, and TEWAs 225.15-N and 226.84-W were not set back from the wetland because impacts to this low quality emergent wetland and irrigation ditch will be temporary, short-term and minor. TEWA 225.15-N is required for topsoil salvage and TEWA 226.84-W is necessary for the PI located at MP 226.87. TEWA 227.25-W is not set back from NDX-111 because of the associated PI. Pacific Connector will minimize disturbance to irrigation ditch NW-111 and will assure that the ditch and wetland are fully restored during restoration.
Project-wide	Waterbodies and Wetlands	Various	Various Uncleared Storage Areas (UCSA)	1 - 228	Pacific Connector requests a variance for the location of the uncleared storage areas (UCSAs) to be allowed within 50 feet of wetlands or waterbodies so that large woody debris can be stored on site and in close proximity to where it will be redistributed during restoration efforts. As defined in Resource Report 1 (Section 1.5.1) the UCSAs will be used to store forest slash, stumps, and dead and downed log materials that will be scattered across the right-of-way after construction. Pacific Connector requests this variance because forest and vegetation clearing and ground disturbance will not occur in these areas, therefore the potential for sedimentation to a wetland or waterbody is greatly minimized. Pacific Connector requests that the UCSAs be used to store large wood debris such as dead and downed logs and stumps which will be scattered over the right-of-way after construction. Other than large woody debris, woody material generally less than 8 inches in diameter would not be stored in the UCSA's within 50 feet of a wetland or waterbody. Pacific Connector expects that most of the existing large woody debris material may be sufficiently decayed, therefore minimizing the moving and handling of this material would be important so this material is not lost through the handling process.
Project-wide	Various ditches and intermittent streams		Various	1 - 228	The project crosses numerous road ditches and intermittent streams that are not expected to be flowing at the time of construction. As defined by Section I. B.1. of FERC's Wetland and Waterbody Procedures, these features are not considered waterbodies and are therefore protected under FERC's Upland Plan. Pacific Connector will comply with this definition, except for intermittent streams on federal lands covered under the Northwest Forest Plan. Pacific Connector has generally provided minimum setbacks from these types of features and the TEWAs have been located outside these features where practical.
Project-wide but concentrated in the Klamath Basin 191 to 230.9	Numerous agricultural irrigation canals ditches and canals	R4UB3x	Various	192 - 228	A significant number of agricultural ditches and canals are traversed by the project in the Klamath Basin within agricultural croplands, pastures, and hayfields. These canals and ditches do not support riparian vegetation and adjacent areas are disturbed emergent and actively cultivated hayfields and pastures. Therefore, consistent with FERC's Wetland and Waterbody Procedures (Section V. B. 2. a.), the locations of TEWAs have been located immediately adjacent to these waterbodies without a 50-foot setback to facilitate these crossings.

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Site-Specific Variances to FERC's Wetland and Waterbody Procedures and Upland Plan

MP	Wetland	Cowardin Type	TEWA	Environmental Alignment Sheet	Variance Rationale
Project-wide	Refueling/Parking Various			1-228	Pacific Connector and their contractors will attempt to park all equipment overnight and fuel equipment at least 100 feet from waterbodies or in upland areas at least 100 feet from wetland boundaries. On BLM and Forest Service managed lands Pacific Connector would increase parking and refueling setbacks to 150 feet. These activities will only occur closer if the Environmental Inspector finds, in advance, no reasonable alternative and the contractors have taken appropriate steps (including secondary containment structures) to prevent spills and provide for prompt cleanup in the event of a spill and the procedures outlined in Pacific Connector's SPCC plan is followed. On BLM and Forest Service manage lands any setback closer than 150 feet would require prior approval of an authorized USFS representative.
Project-wide	Various Hydrostatic/Dust Water Source Withdrawal TEWAs	Various	Various	1-228	Various TEWAs at the potential water source locations for hydrostatic test or dust control (see Table 1.6-2 in Resource Report 1 and Table 2.2-12) have been located within 50 feet of the source water to allow staging of necessary pumping equipment. Procedures outlined in the SPCC Plan would be implemented to ensure pumping equipment is adequately contained and refueling operations are properly controlled. Appropriate sediment control measures, as outlined in the ECRP will also be appropriately implemented, if necessary during these activities.

Treatment of Forest Slash and Variance From Section IV. F. 3. e. of FERC's Upland Plan

Slash from timber clearing will be salvaged on or at the edge of the right-of-way and scattered/redistributed across the right-of-way during final cleanup and reclamation according to BLM and Forest Service fuel loading specifications to minimize fire hazard risks. This material will be pulled back onto the right-of-way during final cleanup after seeding. **If during final redistribution significant disturbance occurs to seeded areas the EIs will ensure that supplemental hand broadcast seeding occurs to ensure adequate seed coverage for erosion control.** Where it is not feasible to pull the slash back onto the right-of-way after seeding, seeding in these areas (broadcast or hydroseeding) will occur with specifications to ensure adequate seed coverage. Scattering the slash across the right-of-way will hinder Off Road Vehicle (ORV) traffic on the right-of-way and will act as a natural mulch to minimize erosion.

Because more than 1 ton per acre of woody material (logs, slash and chips) may be scattered across the right-of-way during final cleanup in many areas, **Pacific Connector requests a variance from Section IV. F. 3. e. of FERC's Upland Plan.** Pacific Connector will utilize the fuel loading standards of the BLM and the Forest Service as the limit for the quantity of woody debris that will be distributed across the right-of-way to minimize fire hazard risks for this variance request. **Section IV. F. 3. e. of FERC's Upland Plan** states that if wood chips are used as mulch to not use more than 1 ton per acre of chips and to add an equivalent of 11 lbs of available nitrogen where chips are used as mulch. The purpose of Section IV.F.3.e. of FERC's Upland Plan is to ensure that revegetation efforts are not hindered due to the decaying process of large amounts of wood chips which can bind-up soil nitrogen and impede revegetation. Pacific Connector requests this variance because it will be impractical and infeasible to remove this material from the right-of-way and it is a typical silvicultural practice in the project area (i.e., forest slash left in logged areas). Furthermore, it is expected that the woody slash material will not deplete soil nitrogen in the short-term, during revegetation establishment, because the size of the woody material that will be scattered on the right-of-way will be large and will not readily decay in the short-term. The Forest Service and BLM fuel loading requirements that Pacific Connector would follow are provided in Section 1.6.1 of Resource Report 1.

Topsoil Salvaging on Forest Lands Where Requested by Landowner

Along the alignment where topsoil segregation is proposed, Pacific Connector has requested 10 feet of temporary extra work area in addition to the 95-foot construction right-of-way to effectively conduct topsoil salvaging on level terrain. The purpose of this temporary extra work area is to ensure that the topsoil is segregated and kept separate from the trench subsoil. In steep forested landscapes, it is impractical to salvage topsoil based on topographic and vegetation conditions (i.e., large trees/stumps that would have to be removed in order to accomplish the task). The Forest Service has requested that topsoil be salvaged on NFS lands. However, Pacific Connector is **requesting a variance from Section IV.B.1 (4) of FERC's Upland Plan which specifies that topsoil be salvaged according to landowner requests.** Pacific Connector requests this variance on all forest lands managed by the Forest Service, BLM, or private landowners. The purpose of the variance is to prevent the need for additional temporary extra work areas (and associated disturbance) on NFS lands to conduct the topsoil segregation. The alignment mainly traverses forested habitats through NFS lands which are primarily designated as LSR. Resource Report 8 provides a more detailed discussion of LSRs.

According to Forest Service Standards and Guidelines, LSRs are managed with an objective to protect and enhance habitat for late-successional and old-growth related species. Limited silvicultural treatments are permitted in LSRs. It is Pacific Connector's opinion that widening the proposed 95-foot construction right-of-way to 105 feet, and likely even more on steep terrain, to accommodate topsoil salvaging, would create more long-term impacts in these habitats than is practical or warranted. The construction footprint has been purposefully restricted in LSRs to minimize overall project disturbance. This has been accomplished by reducing the total number of temporary extra work areas in LSRs and limiting these work areas to the minimum size necessary.

In forested habitats, the temporary extra work area that would be required to segregate the topsoil on NFS lands would be considered a long-term impact because of the time required to reestablish LSR forest stand characteristics. In forested areas, topsoil would be segregated from the trench line and spoil storage areas, and this topsoil would be returned to the same area after trench backfilling. This topsoil segregation area would coincide with the 50-foot permanent easement and the 30-foot corridor centered over the pipeline that would be maintained in a shrub or herbaceous state to facilitate corrosion and leak surveys and for aerial surveillance according to DOT regulations (192.705 Transmission lines: Patrolling and 192.706 Transmission lines: Leakage surveys). Creating long-term impacts to LSR habitats by enlarging the construction right-of-way to segregate topsoil does not provide a benefit compared to the habitat lost. This is because the topsoil that would be segregated occurs in the area that would become the permanent easement. This area will be maintained in a shrub or herbaceous state. Again, Pacific Connector believes that creating long-term impacts from cutting additional forested areas and causing added disturbance in order to segregate topsoil is not reasonable or advantageous.

Pacific Connector will comply with Section VI. B. 2. h. of the FERC Procedures that specifies that the topsoil will be segregated in wetlands, except in areas where standing water is present or soils are saturated. Pacific Connector will comply with this measure in all wetlands crossed by the project including those in forested areas.

Pacific Connector acknowledges and understands the importance of the soil and topsoil resource and would comply with the Forest Service and BLM's request to salvage topsoil if practical on forestlands. However, for the reasons stated above, this request is unreasonable. Pacific Connector would apply the measure outlined in the ECRP to minimize adverse impacts to soil resources, minimize erosion and potential sedimentation, and to appropriately revegetate or reforest all disturbed areas. Pacific Connector will only maintain the 30-foot area centered over the pipeline during long-term operations with these activities typically occurring about every 3 to 5 years. Pacific Connector believes that by utilizing the measures outlined in the ECRP that impacts to site productivity will be minimized and the disturbed areas associated with the right-of-way will be restored. The 30 foot area centered over the pipeline, would be converted to a non-forested condition through project maintenance activities. This area would coincide with the typical topsoil salvaging area, therefore, any loss of soil productivity in this area from soil mixing should not inhibit the vegetation communities that Pacific Connector would maintain on the right-of-way (i.e., herbaceous and shrub vegetation). Further, as described in the Resource Reports and the ECRP, slash from forest

clearing operations including dead and downed logs and other woody material that occur within the right-of-way would be salvaged on the edge of the construction right-of-way for redistribution during restoration. This material would provide effective ground cover for erosion control, provide important organic matter for nutrient cycling and provide habitat for all forest species including moss, lichen, fungi and mollusks species, among others.

The use of clean gravel or native cobbles in coldwater fisheries

According to Section V.C.1. of FERC's Wetland and Waterbody Procedures, clean gravel or native cobbles for the upper 1 foot of trench backfill is required in all waterbodies that contain coldwater fisheries, regardless of stream substrate materials. Pacific Connector requests a variance from this Section of the Wetland and Waterbody Procedures in fish bearing streams that do not have gravel, cobble or other rock substrates. Many of these streams crossed by the project are remote and steep valley or ravine bottoms therefore hauling rock to these streams would create more disturbance and is impractical, especially where these streams do not have these substrate characteristics. In these waterbodies, Pacific Connector would backfill the trench with the native material excavated from the trench.