Appendix C
Design Features

The following table lists design features that would be implemented to avoid and minimize impacts on resources during B2H Project construction, operation, and maintenance. The table shows when each design feature would be applied (i.e., design and engineering, construction, or operation and maintenance) and the resource impacts targeted by each feature. These design features may be called environmental protection measures, best management practices, or interagency operating procedures in other documents.

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This appendix could not be made fully Section 508 compliant. For help with any of its content, please contact the Bureau of Land Management, Vale District Office, at 541-473-3144. Please reference Appendix C of the December 2014 *Draft Environmental Impact Statement and Land Use Plan Amendments for the Boardman to Hemingway Transmission Line Project*.

		Application Phase (A = design feature would be applied during that project phase)			Resource Impacts Targeted by Design Feature (T = design feature would target impacts identified for that resource)										
Number	**Design Feature**	**Design/ Engineering**	**Construction**	**Operation/ Maintenance**	**Water Resources: Streams**	**Water Resources: Wetlands**	**Soils**	**Biological Resources: Wildlife**	**Biological Resources: Fish**	**Biological Resources: Plants**	**Cultural/ Paleo Resources**	**Visual Resources**	**Land Use**	**Air Quality**	**Public Safety**
Stormwater Pollution Prevention															
SW-1	A SWPPP and ESCP would be created and implemented to cover construction related ground disturbing activates associated with this project. The SWPPP and ESCP would specify Best Management Practices (BMPs) that would be implemented in order to minimize sediment and other pollutants from impacting waters of the US. ***Complies with 402 permitting requirements in both states and provides for storm water pollution prevention.***		A		T	T			T						
SW-2	A storm water team would be assembled to manage construction storm water issues, conduct the required inspections, provided guidance to construction crews, and maintain and update the SWPPP and ESCP as needed. ***The team would be responsible for ensuring that appropriate BMPs are selected, installed, and maintained, and would document compliance with permitting requirements.***		A		T	T			T						
SW-3	The SWPPP and ESCP would identify areas with critical erosion conditions that may require special construction activities or additional Best Management Practices (BMPs) to minimize soil erosion and would be modified as necessary to account for changing construction conditions and schedules. ***Allows for quick response to changing conditions during construction.***		A		T	T			T						
SW-4	Temporary and permanent BMPs would be used to control erosion, sediment and other pollutants associated with construction related activities. BMPs would be installed and maintained until disturbed areas meet final stabilization criteria. ***Complies with 402 permitting requirements in both states and provides for storm water pollution prevention***		A		T	T			T						
SW-5	Damaged temporary erosion and sediment control structures would be repaired in accordance with the SWPPP and ESCP. ***Provides explicit commitment for BMP maintenance and repair***		A		T	T			T						
SW-6	Upon completion of construction, permanent erosion and sediment BMPs would be installed in accordance with the SWPPP and ESCP. ***Provides for long-term post-construction erosion and sedimentation control.***			A	T	T			T						
SW-7	Apply BMPs from Instruction Memorandum OR-2011-074: Best Management Practices to Reduce Sediment Delivery from BLM Roads in Oregon. ***Provides explicit commitment for BMP maintenance and repair***		A	A	T	T	T		T						

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Spill Prevention															
SPC-1	A spill prevention containment countermeasures (SPCC) plan would be prepared and implemented as applicable for this project and would detail protective measures to prevent and contain oil and other petroleum products spills and leaks. ***Complies with 402 permitting requirements in both states and provides for spill prevention countermeasure and control.***		A	A	T	T			T						
SPC-2	Construction spills would be promptly cleaned up and contaminated materials would be transported to a disposal site that meets local, state, and federal requirements. ***Provides for prompt clean up and disposal of construction spills.***		A	A	T	T			T						
SPC-3	Fueling areas within staging area would be contained. If fueling is conducted in other areas along the right-of-way, BMPs would be implemented to prevent spills. ***Limits fuel spills from entering waterways.***		A		T	T			T						
SPC-4	If a spill occurs which is beyond the capability of on-site equipment and personnel, an Emergency Response Contractor would be identified and available to further contain and clean up the spill. ***All spills would be fully cleaned up.***	A	A	A	T	T			T						
SPC-5	For spills in standing water absorbent materials would be used as appropriate by the contractor to recover and contain released materials on the surface of the water. If the standing water is considered a water of the state, it would be reported immediately to the appropriate agency. ***Provides process for spills in standing water and agency reporting.***	A	A	A	T	T			T						
SPC-6	If pre-existing contamination is encountered during operations, work would be suspended in the area of the suspected contamination until the type and extent of the contamination is determined. The type and extent of contamination; the responsible party (if identifiable); and local, state, and federal regulations would determine the appropriate cleanup method(s) for these areas. ***Helps prevent the spread of existing contamination from project construction and protect workers from exposure to potentially hazardous materials.***	A	A	A	T	T			T						
SPC-7	Any oil spill to waters of the state/US are reportable. Oil spill notification is required for spills on land of 25 gallons or greater in Idaho. In Oregon, an oil spill on land of 42 gallons or greater requires notification. Notification is required for hazardous material spills of reportable quantities (quantities are listed in the Code of Federal Regulations). ***Notification of oil spills greater than 25 gallons in Idaho and 42 gallons in Oregon.***		A		T	T			T						

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SPC-8	Materials such as fuels, other petroleum products, chemicals, and hazardous materials including wastes would be located in upland areas away from streams or wells. ***Prevents fuel spills from entering waterways.***		A		T	T			T						
SPC-9	Pumps and temporary fuel tanks for the pumps would be stored in containment. ***Containment would prevent fuel spills from entering waterways.***		A		T	T			T						
SPC-10	Hazardous material would not be drained on to the ground or into streams or drainage areas. Totally enclosed containment would provided for all Project generated trash. All construction waste, including trash and litter, garbage, other solid waste, petroleum products, concrete curing fluid, and other potentially hazardous materials would be removed as necessary to a disposal facility authorized to accept such materials. ***Provides for hazardous material containment and disposal.***		A		T	T			T						
SPC-11	Refueling and storing potentially hazardous materials would not occur within a 100-foot radius of a water body, and 200-foot radius of all identified private water wells, and a 400-foot radius of all identified municipal or community water wells. Spill preventive and containment measures or practices would be incorporated as needed. ***Provides for protection of water bodies and water wells***		A		T	T			T						T
Restoration and Reclamation															
REC-1	Qualified company personnel and contractors would facilitate avoidance of noxious weed infestations where possible and identify new infestations (see Appendix G of the Construction POD). ***Provides for responsible parties for noxious weed and invasive plant identification and control.***	A						T		T			T		
REC-2	Preconstruction weed treatments would be limited to areas expected to have unavoidable ground-disturbing activities and have potential to spread weeds due to construction activities. Treatments would be conducted prior to the start of ground-disturbing activities. Preconstruction treatment may include (but is not limited to) using mechanical control and herbicides. The Reclamation Plan would discuss control options. It would also include appropriate times for pre-construction noxious weed treatments based on phased in-services dates for line segments. ***Limits weed control activities to areas to be disturbed only.***	A	A	A				T		T			T		

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REC-3	All herbicide applications would comply with label restrictions, federal, state and/or county regulation, and landowner agreements. No spraying would occur prior to notification and approval from the applicable land management agency or landowner. Private property would be sprayed only if written approval is obtained. State and federal herbicide recording requirements would be followed, including BLM and Forest Service recording requirements. The Reclamation Plan would contain a list of approved herbicides, target species and application times and rates. ***Specifies how, when, and with what limitations herbicides would be used***		A	A	T	T		T	T	T			T		
REC-4	Herbicides may be applied using a broadcast applicator mounted on a truck or all-terrain vehicle (ATV), backpack sprayers, or other sprayers as conditions dictate. Herbicide applications would be conducted by licensed operators or under the supervision of a licensed operator in accordance with state laws and BLM and USFS weed policies. ***Specifies that aerial application of herbicides would not be utilized.***		A	A	T	T			T	T					
REC-5	Herbicide use near special status species and water bodies would follow label requirements; state and federal law; and BLM and USFS recommendations. ***Provides for protection of water and fish.***		A	A	T	T			T						
REC-6	Project vehicles and equipment would arrive at the job site clean of soil and herbaceous material. When project vehicles demobilize from the job sites where noxious weeds are present, they would use appropriate decontamination measures as defined in the Reclamation Plan. ***Cost-effectively limits or eliminates construction-related weed spread.***		A	A	T	T		T	T	T					
REC-7	Project-related storage and staging yards, fly yards, and other areas subject to regular long-term disturbance would be treated for noxious weeds when construction activity levels allow. ***Ensures long-term disturbance does not result in establishment of weed populations.***		A					T		T			T		
REC-8	If topsoil is removed, care would be taken to ensure it is not mixed with the underlying subsoil. Topsoil would be stored in a separate stockpile. It would be returned to the area it was taken from and would not be spread in adjacent areas. If topsoil is not suitable for backfill, then it would be spread in another previously disturbed areas or transported to a predetermined offsite disposal area. ***Protects topsoil as a critical resource.***		A				T	T		T			T		
REC-9	Subsurface soils and waste rock would be spread where practicable and in close proximity to the disturbance (within the right-of-way). This material would be spread uniformly to match existing contours and covered with topsoil—when available—and re-seeded. ***Uses subsurface soils and rock to recontour.***		A				T								

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REC-10	Straw, hay, mulch, gravel, seed and other imported materials must be certified weed-free. If certified weed-free materials are not available then alternative materials would be used with agency approval. ***Provides for limitation of weed introduction through erosion control materials used.***		A					T		T			T		
REC-11	Temporarily disturbed lands within the right-of-way would be re-contoured to match surrounding landscapes. Re-contouring would emphasize restoration of the existing drainage patterns and landform to pre-construction conditions, to the extent practicable. (Tower pads and most roads would not be re-contoured.) ***Recontouring facilitates rehabilitation after construction.***		A				T					T	T		
REC-12	Areas within the right-of-way, lay-down or staging yards, and other areas of extensive vehicle travel and material storage may contain compacted soils. These soils would be de-compacted on a case-by-case basis. ***Decompaction reduces restoration time.***		A				T								T
REC-13	IPC may use soil amendments (e.g., fertilizer, wood or straw mulches, tackifying agents, or soil stabilizing emulsions) on a case-by-case basis. ***IPC would use soil amendments only where needed and permitted.***		A				T								T
REC-14	Reclamation seeding methods would include broadcast seeding, drill seeding or hydro seeding/hydro mulching (or a combination of methods). Seeding methods would be chosen based on the type of seed, disturbance level, soil type, terrain and precipitation levels for the area to be reclaimed. Seed mixtures and seeding methods would be reviewed and approved by the land management agency or private land owner. A reclamation and revegetation plan identifying reclamation stipulations would be developed and incorporated in the POD. ***Reseeding hastens restoration and limits spread of noxious weeds by providing appropriate plant cover quickly.***		A				T	T		T			T		
REC-15	Final cleanup would ensure all construction areas are free of construction debris including—but not limited to—assembly scrap metals, oil or other petroleum-based liquids, construction wood debris, and worker-generated litter. Permanent erosion control devices would be left in place. ***Removal of construction debris avoids contamination of soil and water and protects habitat.***		A		T	T	T	T	T	T			T		

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REC-16	In construction areas where recontouring is not required, vegetation would be left in place wherever possible, and original contour would be maintained to avoid excessive root damage and allow for resprouting. Vegetation not consistent with minimum clearance distances between trees and transmission line must be maintained for line safety and reliability (Required by North American Electric Reliability Corporation's Transmission Vegetation Management Program). ***Provides for vegetation management.***		A	A								T			T
Transportation															
TR-1	A Traffic and Transportation Management Plan would be developed, approved by the appropriate agency prior to the start of construction, and implemented to provide site-specific details showing how the B2H Project would comply with the transportation environmental protection measures (EPMs). This plan would be submitted to and approved by the appropriate federal, state, and local agencies with authority to regulate use of public roads, and approved, prior to the issuance of a Notice to Proceed with construction. ***Traffic and transportation management plan would help to reduce impacts to road systems and resources adjacent to roads and prevent safety hazards.***	A	A												T
TR-2	Dust suppression techniques would be applied, such as watering construction areas or removing dirt tracked onto a paved road as necessary to prevent safety hazards or nuisances on access roads and in construction zones near residential and commercial areas and along major highways and interstates. ***Provides for public safety through dust suppression and material removal from paved roads.***		A												T
TR-3	If the Project proposes to obtain water from wells or surface water sources to suppress dust, written approval from the landowner or regulatory agency would be obtained prior to appropriation. ***Written approval would be obtained prior to obtaining water for project use.***		A		T										T
TR-4	If a construction method requires the closure of a state- or county-maintained road, a traffic control plan would be developed to accommodate traffic as required by a county or state permit. ***Provides process for closure of state or county maintained roads for construction.***		A												T
TR-5	On county- and state-maintained roads, caution signs would be posted on roads, where appropriate, to alert motorists of construction and warn them of slow traffic. Traffic control measures such as traffic control personnel, warning signs, lights, and barriers would be used during construction to ensure safety and to minimize traffic congestion. ***Minimizes traffic congestion and ensure public and worker safety.***		A												T

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TR-6	To reduce traffic congestion and roadside parking hazards, an equipment yard would be provided for primary parking for construction employee personal vehicles. ***Reduces traffic congestion by providing parking for workers at centralized locations.***		A												T
TR-7	Unauthorized vehicles would not be allowed within the construction right-of-way during construction activities. ***No unauthorized vehicles in construction area.***		A												T
TR-8	Construction vehicles on un-posted project roads would travel at speeds that are reasonable and prudent for the conditions. ***Road used for construction without posted speed limits would be driven at speeds that reasonable and prudent for the conditions.***		A												T
TR-9	All temporary culverts and associated fill material would be removed from stream crossings after construction, and banks would be re-contoured and restored to their pre-disturbance conditions. ***Streams would be restored to their pre-disturbance conditions.***		A		T	T			T						
TR-10	Landowners in the project area would be notified prior to the start of construction. ***Ensures landowners would be notified.***	A											T		T
TR-11	Emergency vehicle access to private property would be maintained during construction and operation of the project. ***Provide for public safety by ensuring that emergency vehicle access would be maintained.***		A	A											T
TR-12	Roads in residential areas would be restored as soon as possible, and hazardous construction areas near residences would be fenced off at the end of the construction day. ***Provides for public safety through restoring roads and fencing construction areas in residential areas.***		A												T
TR-13	Existing roads negatively affected by construction and as identified by the agencies would be returned to preconstruction condition. ***Provides for road restoration to preconstruction conditions.***		A										T		T
TR-14	Temporary construction roads developed for this project would be reclaimed as specified in the Reclamation, Revegetation, and Weed Management Plan. ***Developed roads not needed after construction would be reclaimed***		A												T

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TR-15	Limit the number of vehicles on site to those necessary to perform, monitor, and inspect work. ***Provides for public safety.***		A	A											T
TR-16	Place “Wildlife Crossing” signage where applicable (e.g. near leks, brood-rearing habitat), to increase awareness of birds and wildlife in the area and encourage safe and responsible speeds. This may reduce direct loss due to vehicle collision. ***Provides for public safety.***		A	A				T							T
Cultural Resources															
CUL-1	All cultural resources work conducted for the Project would be performed by qualified archeologists. ***Qualified archeologists would conduct cultural resources work.***	A	A	A							T				
CUL-5	Where needed, cultural and historic sites would be flagged for avoidance prior to start of construction activities. Flagging would be removed once construction is completed in an area. ***Provides for marking of areas containing cultural resources so that they may be avoided during construction.***		A								T				
CUL-6	To minimize unauthorized collecting of archaeological material or vandalism to known archaeological sites, all workers would attend mandatory training on the significance of cultural resources and the relevant federal regulations intended to protect them. ***Education of construction work force on importance of cultural resource protection.***		A	A							T				
Paleontological Resources															
PALEO-1	All paleontological resources work conducted for the Project would be performed by certified paleontologists. ***Qualified paleontologists would perform all paleontological work.***	A									T				
PALEO-2	Geologic maps and other lines of evidence would be examined for the preferred alternative. Any areas with a high potential for paleontological resources would be inventoried. ***Provides process for determining areas to be inventoried for paleontological resources.***	A									T				

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PALEO-3	A Paleontological Monitoring and Mitigation Plan would be developed for areas with identified significant paleontological resources. The plan would include appropriate measures to mitigate adverse effects to significant paleontological resources, the preparation and curation of any fossil collected from federal lands, and for the preparation of a final report based on the data recovered for activities on federal lands. ***Provides for mitigation for adverse effects to significant paleontological resources.***	A	A								T				
PALEO-4	An Unanticipated Discovery Plan would be included as part of the Paleontological Monitoring and Mitigation Plan. This plan would specify what steps would be taken if a subsurface fossil is discovered during construction, including stopping construction in the vicinity of the find, notification of the appropriate land management agency, identification of a qualified paleontologist to conduct an evaluation of the find, and the development of an approved data recovery program or other mitigation measures. ***Provides a process for avoidance, notification, and mitigation of undiscovered paleontological.***	A	A								T				
PALEO-5	To minimize unauthorized collecting of significant paleontological resources , all workers would attend mandatory training on the significance of paleontological resources and the relevant federal regulations intended to protect them. ***Education of construction work force on importance of paleontological resource protection.***		A	A							T				
PALEO-6	Avoidance areas would be flagged prior to construction activities. Flagging would be removed once construction is completed in an area. ***Provides for marking of areas containing paleontological resources so that they may be avoided during construction.***		A								T				
PALEO-7	If fossil materials are discovered during Project construction, all surface-disturbing activities in the vicinity of the find would cease until notification to proceed is given by the authorized officer. The site would be protected to reduce the risk of damage to fossils and context. ***Provides for protection for fossil materials discovered during Project construction.***		A								T				
Blasting															
BLA-1	A project specific Blasting Plan that meets all State and Federal requirements shall be approved by the appropriate agency prior to the start of field activities and executed appropriately for the project. ***Blasting plan would be approved and executed appropriately.***		A												T

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BLA-2	If blasting occurs within 200 feet of any aboveground structure, the Contractor and IPC representative would inspect such structures before and after blasting. Contractor shall provide seismograph equipment to determine the peak particle velocity (PPV) at the aboveground facility. If the measured PPV at an existing pipeline or other structure exceeds the approved limits, the Contractor shall stop blasting activities immediately and notify IPC and in this event the Contractor's Blasting Plan must be modified to reduce the PPV prior to any further blasting. If damage occurs to an aboveground structure, the owner would be compensated. ***Provides for the protection of above ground structures and pipelines.***		A												T
BLA-3	If a water well is damaged, the well owner would be compensated for damages or a new well of comparable yield would be provided. An alternative potable water supply would be provided to the landowner until repairs to the well occur or a new well is drilled. ***Provides for protection of wells from blasting.***		A												T
BLA-4	Prior to any detonation of explosives in the vicinity of existing facilities such as pipelines, dwellings, structures, overhead or underground utilities, farm operations, or public crossings, a minimum of 48 hours notice shall be given to IPC, the appropriate authorities, and the owners or operators of any facilities that may be affected by the blasting. ***Provides notification requirements prior to blasting.***		A												T
BLA-5	In the vicinity of other electrical lines, the Contractor shall use approved blasting procedures to minimize the potential hazard of a premature detonation due to induced currents. ***Provides for prevention of premature detonation due to induced currents.***		A												T
BLA-6	All blasting shall include measures for prevention and suppression of wildfires in accordance with IPC's Fire Prevention and Suppression Plan. ***Provides fire protection.***		A												T
BLA-7	The Contractor shall have on-site approved lightning detectors capable of measuring the degree of electrical activity as a storm approaches, and the distance to the storm front from the instrument on the right-of-way. All loading and blasting activity shall cease and personnel in and around the blast area would retreat to secure positions away from the loaded holes when an approaching storm front is within 5 miles. Furthermore, workers shall not return to the work site until the storm has passed and the closest point of lightning activity has moved at least 5 miles beyond the drilling area. ***Provides for worker safety from premature detonation due to electrical storms.***		A						T	T	T					T

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BLA-8	The Contractor shall define procedures to prevent any unstable condition that may result from blasting operations. Blasting operations would be designed to mitigate unstable soil or geological conditions, which could result in hazards to people or property such as landslides, mudslides, and ground failure. ***Provides for public safety as a result of unstable condition caused by blasting.***		A				T								T
Agriculture															
AGRI-1	IPC will maintain an active program of liaison with landowners and tenants, including specific points of contact whose responsibilities shall include preconstruction inventory, notices, complaint resolution, damage assessment, and negotiation and compensation. ***Provides a process for land owner communication related to agricultural issues.***			A									T		
AGRI-2	Prior to any construction, IPC or their agent together with the landowner, the landowner's designate, and/or the tenant would examine each affected property to inventory crops, livestock, fences, irrigation systems, drain systems, etc. The landowner and/or tenant would be compensated for 100 percent of the damages caused to crops as a result of the construction and damaged improvements would be replaced or compensated. ***Land owners/tenants would be compensated 100 percent for damages to crops.***		A										T		
AGRI-3	IPC and the landowner would seek a mutual agreement concerning post-construction claims for damages or crop deficiencies. In the event IPC and the landowner are unable to reach a mutually satisfactory agreement, such claims would be assessed on an individual basis by a qualified agricultural specialist. The qualified agricultural specialist would be selected on a claim-by-claim basis by agreement of a representative designated by IPC and a representative designated by the party Farm Bureaus (or the landowner, at the election of the landowner). IPC shall pay the cost of retaining the qualified agricultural specialist. The agricultural specialist would review and evaluate claims of damages. If the agricultural specialist approves the claim, IPC would pay compensation for the claim in the amount determined by the agricultural specialist. Claims would be evaluated in a timely manner following notification of such damages or deficiencies from the landowner and/or tenant. ***If needed a qualified agricultural specialist would assess claims concerning damages to crops.***		A										T		
AGRI-4	Establish procedures for determining ingress and egress routes with landowners and tenants, protection methods for off-right-of-way roads over agricultural lands and on right-of-way pads. ***Provides procedures for access routes and other use of agricultural lands.***	A											T		
AGRI-5	Establish the location of temporary roads to be used for construction purposes through negotiation with the landowner, with existing farm lanes or two tracks as preferred temporary access roads. ***Provides for landowner involvement in the siting of temporary access roads for construction.***	A											T		

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AGRI-6	Contacting landowners and tenants to identify the location of irrigation systems and wells, underground irrigation water pipes, well systems, and drainage system that intersect the construction area. ***Provides a process for protection of agricultural related water systems.***	A											T		
AGRI-7	Restore affected agricultural land to the pre-construction condition or provide compensation. ***Restoration or compensation for damage to agricultural lands.***		A										T		
AGRI-8	On agricultural land, the right-of-way would be aligned, where practicable, to reduce the impact on farm operations and agricultural production. ***Provides for reduction of impact on farm and other agricultural operations.***	A											T		
AGRI-9	Fences, gates, and walls would be replaced, repaired, or reclaimed to their original condition as required by the landowner or the land-management agency in the event they are removed, damaged, or destroyed by construction activities. Temporary gates or enclosures would be installed only with the permission of the land owner or the land-management agency and would be removed/reclaimed following construction. Cattle guards or permanent access gates would be installed where new permanent access roads cut through fences on BLM- and USFS-administered lands. ***Provides for replacement or repair of damaged fences, gates, and walls.***	A											T		
AGRI-10	In cultivated agricultural areas, soil compacted by construction activities would be de-compacted. ***Provides decompaction of soils in cultivated areas.***	A											T		
AGRI-11	If livestock are displaced during Project construction, temporary water facilities would be provided during the time of displacement. ***Provides for temporary water facilities for livestock.***		A										T		
Fire															
FIRE-1	A Fire Prevention and Suppression Plan that meets all required State and Federal requirements shall be approved by the appropriate agency prior to the start of field activities and executed appropriately for the project. ***Fire Prevention and Suppression Plan shall be prepared.***	A	A					T	T	T					T
FIRE-2	Properly manage, dispose, and remove slash piles as a result of construction or maintenance activities. Slash piles may increase fire fuel loads in the area as well as provide cover for predators. ***Fire prevention.***		A	A				T							T

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Air Quality															
AIR-1	Minimize idling time for diesel equipment whenever possible. ***Reduces emissions from construction equipment.***		A	A										T	
AIR-2	Ensure that diesel-powered construction equipment is properly tuned and maintained and shut off when not in direct use. ***Reduces emissions from construction equipment.***		A	A										T	
AIR-3	Prohibit engine tampering to increase horsepower. ***Reduces emissions from construction equipment.***		A	A										T	
AIR-4	Reduce construction-related trips as feasible for workers and equipment, including trucks. ***Reduces emissions from construction equipment.***		A	A										T	
AIR-5	Project-related vehicles and construction equipment would be required to use low-sulfur diesel fuel as soon as it is commercially available. ***Reduces emissions from construction equipment.***		A	A										T	
AIR-6	All requirements of those entities having jurisdiction over air quality matters would be adhered to. Any necessary dust control plans would be developed and permits for construction activities would be obtained. Open burning of construction trash would not be allowed, unless permitted by appropriate authorities. ***Reduces emissions from dust and trash burning.***		A	A										T	
Noise															
NOISE-1	Identify and provide a public liaison before and during construction to respond to concerns of neighboring receptors, including residents, about noise construction disturbance. ***Provides for public liaison for project noise issues.***		A												T
NOISE-2	Establish a toll-free telephone number for receiving questions or complaints during construction and develop procedures for responding to callers. ***Provides process and procedures for questions or complaints related to project construction.***		A												T

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NOISE-3	Transmission line materials that have been designed and tested to minimize corona would be used. A bundle configuration and larger conductors would be used to limit audible noise, radio interference, and television interference due to corona. Tension would be maintained on all insulator assemblies to ensure positive contact between insulators, thereby avoiding sparking. Caution would be exercised during construction to avoid scratching or nicking the conductor surface, which may provide points for corona to occur. ***Provides process and procedures for questions or complaints related to project construction.***		A	A											T
Operation and Maintenance															
OM-1	IPC would comply with the road maintenance standards of the federal or state agency controlling the land. ***Provides for compliance with federal and state road maintenance standards.***			A									T		
OM-2	Roads that are the responsibility of IPC to maintain would be maintained to have crossroad drainage to minimize the amount of channeling or ditches needed. Water bars would be installed at all alignment changes (curves), significant grade changes, and as requested by the federal or state agency. ***IPC maintained roads would have crossroad drainage.***			A									T		
OM-3	If during the course of O&M activities or emergency response activities the existing service road drainage structures are damaged, they shall be repaired/restored as soon as possible. ***Damage to existing service roads would quickly repaired/restored.***			A											
OM-4	As agreed to by the parties involved, IPC would repair or replace existing improvements (fences, gates, etc.) if they are damaged by O&M activities. ***Provides for repair of existing improvements.***			A											
OM-5	The Agencies may restrict general public access to closed federal or state roads and service roads that IPC maintains. In cases of restricted access, IPC would physically close the road with a gate. Gates would be locked with an IPC lock and a federal-agency lock. This would be updated to reflect current road closures and gate locations as necessary. ***Provides a process for gating Project related roads on federal and state lands.***			A				T							T
OM-6	Before beginning an O&M project on federal or state land, IPC or its contractors shall comply with all appropriate Reclamation EPMs as appropriate to prevent the spread of noxious weeds. ***EMPs established to prevent the spread of noxious weeds would be complied with.***			A				T		T					

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OM-7	To help limit the spread and establishment of noxious-weed species in disturbed areas, desired vegetation needs to be established promptly after disturbance. IPC would rehabilitate significantly disturbed areas as soon as possible after ground-disturbing O&M activities and during the optimal period. IPC would not reseed areas within a 25-foot radius around structures to minimize potential damage from wildland fires. IPC would treat and reseed disturbed areas in accordance with the approved reclamation plan (Appendix G of the POD). ***Provides process for reestablishment of vegetation in disturbed areas to prevent the spread of noxious weeds.***			A				T		T					
OM-8	If noxious-weed species occur within IPC's right-of-way as a result of IPC activities, IPC would coordinate treatment with the BLM, USFS, or other land owner as applicable. Treatments would be in compliance with BLM and USFS land use plans and guidance. When determining whether treatment is necessary and whether it would produce the desired results, IPC would consider surrounding site conditions and whether weed-control activities would be conducted by other parties. IPC is only responsible for controlling noxious weeds to pre-disturbance levels. ***Provides process for coordination with agencies and land owners in treatment of noxious weeds, if treatment would be successful and responsible party for conducting the treatment.***			A				T		T					
OM-9	Routine and corrective O&M activities in streams with sensitive fish species would be conducted within the designated in-water work periods for each particular stream. ***Designated in-water work periods would be followed when possible.***			A	T	T			T						
OM-10	Woody vegetation management within 100 feet of streams would be completed by hand crews. ***Provides for protection of streams during vegetation management activities.***			A	T	T			T						
OM-11	Herbaceous plants and low-growing shrubs would be left in place if they do not interfere with the safe O&M of Project lines and equipment. ***Low growing vegetation would be left in place when possible.***			A											
OM-12	During O&M activities IPC would use existing stream crossings or new, permanent crossings that were approved as part of the Project, and IPC would not create additional crossings without prior agency permitting and approval. ***Additional stream crossings would not be created without agency permit and approval.***			A	T	T			T						
OM-13	Only herbicides approved by the land-managing agency as safe to use in aquatic environments and reviewed by IPC for effectiveness would be used within 100 feet of aquatic resources. ***Within 100 feet of streams only approved herbicides would be used.***		A	A	T	T			T						

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OM-14	Sensitive plant or wildlife populations that occur within or adjacent to the right-of-way and work areas would be marked on the ground, where practical, to ensure they are avoided. If species are discovered during work, IPC would establish a spatial buffer zone and immediately contact the appropriate land-managing agency. Unless IPC is informed otherwise, work outside the buffer area would continue. If IPC needs to work within the buffer area, it would work with the appropriate land-managing agency to develop a mutually acceptable solution that allows the work to be completed within the scheduled outage window and/or in a timely manner. After the project is complete or no longer poses a threat to the plant populations, any marking would be promptly removed to protect the site's significance and location from unwanted attention. ***Provides for the protection of sensitive plant and wildlife populations.***		A	A				T		T					
OM-15	If any sensitive plants or wildlife species require relocation, permission would be obtained from the appropriate land management agency and others as required. ***Provides for the relocation of sensitive plants or wildlife as an option for reducing impacts to these species.***		A	A				T		T					
OM-16	If sensitive wildlife species are killed or injured due to construction or O&M activities, the appropriate land management agency and the Oregon Department of Fish and Wildlife (ODFW) would be notified. ***Provides a process for the reporting of any sensitive wildlife species killed or injured as a result of Project activities.***		A	A				T							
OM-17	Nesting, roosting, and perching birds—especially osprey—can cause power outages if their feces or nesting materials interfere with conductors, insulators, or air gaps. IPC, in consultation with the U.S Fish and Wildlife Service (FWS), manages nesting on distribution line structures to reduce conflicts. Such management may include relocating nests, modifying structures, and providing nesting platforms. IPC would continue to consult with the FWS and the appropriate land management agency when a problem nest is located. ***Provides process for managing nesting, roosting, or nesting birds on transmission line structures.***			A				T							
OM-18	For purposes of compliance with the Migratory Bird Treaty Act of 1918 and the Bald and Golden Eagle Protection Act of 1940, IPC would adhere to its Avian Protection Plan (March 2011) that provides protocols for minimizing electrocution and collision events and managing nests, including the protection of nests during vegetation management activities. ***Provides for compliance with the Migratory Bird Treaty Act of 1918 and the Bald and Golden Eagle Protection Act of 1940.***	A	A	A				T							
OM-19	Reseed significantly disturbed areas with a non-invasive seed mix approved by the land-managing agency or property owner. ***Non-invasive seed mixtures would be used.***		A	A	T	T	T	T		T					

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OM-20	Employ appropriate interim erosion and/or sediment control measures if seeding cannot immediately take place. ***Where necessary, interim erosion and/or sediment control measures would be used.***		A	A	T	T	T	T							
OM-21	Restore temporarily disturbed areas as closely as practical to original contours. ***Areas temporarily disturbed would be returned to original contours.***		A	A			T								
OM-22	Use certified weed-free seed mixes and cover materials. ***Certified weed-free seed mixes would be used.***		A	A				T		T					
OM-23	IPC or its designated contractor would generically mark the known cultural or paleontological sites as an avoidance area prior to ground disturbance. After the project is complete or no longer poses a threat to cultural resources, marking would promptly be removed to protect the site's significance and location from unwanted attention. ***Provides for protection of cultural and historical resources.***		A	A							T				
OM-24	Upon discovery of any potential cultural or historical artifacts, work shall be stopped and IPC's archaeologist or designated archaeologist would make a preliminary assessment of the newly discovered resource in accordance with the approved Inadvertant Discovery plan attached to the Programmatic Agreement. ***Provides for protection of undiscovered cultural and historical resources.***		A	A							T				
OM-25	If the archaeologist determines the discovery represents a potential new cultural or historical site or an undocumented feature of a documented site, the appropriate federal or state agency would be notified. ***Provides for protection of undiscovered cultural and historical resources.***		A	A							T				
OM-26	O&M activities would not resume in the area of the new cultural or historic resource site until authorization to proceed has been received from the appropriate agency depending on land ownership. ***Provides for protection of undiscovered cultural and historical resources.***			A							T				
OM-27	Travel would be restricted to designated routes for crews and vehicles. Where a road intersects a known cultural or historical resource site, personnel shall be made aware that no off-road activity may occur. ***Provides for protection of known cultural and historical resources.***		A	A							T				

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OM-28	If human remains are discovered under any circumstances, the Proponents' representative would secure the location with appropriate security and avoidance measures. The Proponents would provide 24 hour on-site security regardless of land ownership. ***Provides a process for notification in the event that human remains are discovered during construction.***		A	A							T				
OM-29	O&M activities shall comply with all requirements of the approved Fire Protection and Suppression Plan. ***Project would comply with the approved Fire Protection and Suppression Plan.***			A				T							T
OM-30	Towers and/or conductors and/or shield wires would be marked with high-visibility devices (i.e., marker balls or other marking devices) where required by governmental agencies with jurisdiction (i.e., Federal Aviation Administration). All tower heights would be less than 200 feet to avoid the need for aircraft obstruction lighting. ***Provides for protection of known cultural and historical resources.***	A		A											T
Wildlife															
PRC-1	Seasonally, big game winter range and critical bighorn sheep lambing areas would be avoided during construction. ***Provides for avoidance of crucial bighorn sheep winter range and lambing areas.***		A					T							
PRC-2	No construction activities would take place in crucial elk winter range between November 15 and March 15. ***Provides for timing restrictions in crucial elk winter range.***		A					T							
PRC-3	No construction activities would take place in crucial mule deer winter range between November 15 and March 15. ***Provides for timing restrictions in crucial mule deer winter range.***		A					T							
PRC-4	Identified bald eagle nest sites within 0.75 mile of transmission line construction (access roads, tower platforms, and lay-down yards) would be surveyed for occupancy from April 1 to May 15. If a site is occupied, a seasonal restriction would be enacted through August 1. Two additional surveys of occupied sites would be conducted between June 15 and July 15 to determine success of nest site. If a nest site is not active (failed) by May 15, the seasonal restriction would be removed and construction can commence. ***Provides setback and timing restrictions for bald eagle nests.***		A					T							

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PRC-5	Suitable burrowing owl (nesting) habitat, or identified nesting areas would be surveyed for active burrowing owl nest sites between March 1 and April 15 within 0.50 miles from construction sites. If an active nest site is located, a seasonal closure would be enacted, starting March 1 and ending August 1. Two additional surveys of occupied sites would be conducted by May 1 and June 15 to determine success of nest site. If a nest site is not active (failed) by May 1, the seasonal restriction would be removed and construction can commence. ***Provides setback and timing restrictions for burrowing owl nests.***		A					T							
PRC-6	Suitable ferruginous hawk nesting habitat, or identified nesting areas would be surveyed for active ferruginous hawk nest sites between March 1 and April 1 within 0.25 miles from construction sites. If an active nest site is located, a seasonal closure would be enacted, starting March 15 and ending August 1. Two additional surveys of occupied sites would be conducted by May 1 and July 1 to determine success of nest site. If a nest site is not active (failed) by May 1, the seasonal restriction would be removed and construction can commence. ***Provides setback and timing restrictions for ferruginous hawk nests.***		A					T							
PRC-7	Suitable golden eagle nesting habitat, or identified nesting areas would be surveyed for active golden eagle nest sites between February 15 and April 15 within 0.75 miles from construction sites. If an active nest site is located, a seasonal closure would be enacted, starting March 15 and ending July 15. Two additional surveys of occupied sites would be conducted by May 1 and June 15 to determine success of nest site. If a nest site is not active (failed) by May 1, the seasonal restriction would be removed and construction can commence. ***Provides setback and timing restrictions for golden eagle nests.***		A					T							
PRC-8	Special status species, threatened and endangered species would be considered in accordance with management policies set forth by appropriate land-management agencies (i.e. BLM, USFS, USFWS, ODFW, IDFG, etc.). This would entail conducting pre-construction surveys for plant and wildlife species of concern along the Proposed Action and alternative, and associated facilities as agreed on by the agencies. In cases where such species are identified, appropriate action would be taken to avoid adverse impacts on the species and its habitat. These actions may include altering the placement of roads or towers, where practicable as approved by the landowner and compliance inspection contractor, as well as monitoring activities, implementation of Project speed limits and other restrictions. ***Provides for preconstruction surveys to avoid impacts to special status species.***		A					T	T	T					
PRC-9	Apply seasonal and spatial restrictions for blasting for sensitive wildlife species, such as Greater Sage-Grouse, raptors, and migratory birds. ***Provides restrictions for sensitive wildlife species.***		A					T							

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PRC-10	Avoid activities that could result in new noise levels at the perimeter of a lek above 10 dBA from 6:00 p.m. to 8:00 a.m. during the breeding season (March 1 – May 31). ***Provides timing and noise restrictions for protection of Greater Sage-Grouse.***		A	A				T							
PRC-11	In areas where corvid nesting and associated predation on sage-grouse nests and broods is a concern, consider methods to discourage nesting. This may include use of nest minimizing designs (e.g., monopoles, single crossarms, etc.) for new construction, or retrofitting existing structures where there is an identified problem nest. • Nest removal activities should be limited to those nests that pose a problem/risk (risk to birds or potential power outage), and as authorized by state and/or federal permits. • Removal of nest material may be necessary multiple times during nest building to discourage corvids (ravens) from nesting on power poles. Nest material removal may also be most effective when done in conjunction with other methods to discourage corvid nesting. • Migratory bird permits (e.g., utility SPUT permits) would typically authorize only the removal of inactive nests or active nests (excluding eagles and threatened/endangered species) that pose a safety, operational, or fire risk. Utilities should contact the USFWS and their state wildlife agency to determine if removal of an active corvid nest would be authorized. ***Provides guidance for perch and nest deterrents.***		A	A				T							
PRC-12	Identify and implement seasonal timing stipulations/restrictions for construction work. Consult federal land use plans and state sage-grouse conservation plans and/or strategies for specific dates and times. In the absence of specific dates and times: • Avoid active leks from 6:00 p.m. through 8:00 a.m. during the breeding ('lekking') season. • Breeding ('lekking')/Nesting season: 1 March – 31 May. • Brood-rearing season: 15 May – 31 July. • Winter Concentration Areas (WCA) or identified winter range: 1 December – 28 February. ***Provides timing restrictions for protection of Greater Sage-Grouse.***		A	A				T							
PRC-13	Where priority sage-grouse habitat cannot be avoided, implement no-disturbance buffers around leks and nesting habitat during breeding/ nesting season. ***Provides timing restrictions for protection of Greater Sage-Grouse.***		A	A				T							

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PRC-14	Minimize disturbance/removal of vegetation beneficial to sage-grouse (e.g. sage brush, forbs, and native grasses) in priority habitat by: • Siting staging areas out of priority habitat and minimize size/footprint of staging areas. • Siting pulling locations outside of priority habitat. • Siting equipment storage outside of priority habitat. • Minimizing development of new access roads by utilizing existing roads. • Upgrading roads to the minimum extent necessary. • Managing project access roads to limit public use in priority habitats. ***Provides guidance for minimizing impacts to Greater Sage-Grouse habitat.***		A	A				T							
PRC-15	Close exposed tower foundation holes at the end of the work day to prevent sage-grouse or other wildlife from falling in and becoming trapped. ***Provides guidance to minimize impacts to Greater Sage-Grouse.***		A					T							
PRC-16	In areas located within 2 kilometers of occupied leks, mark fences in high risk areas (for collision) with permanent flagging or other suitable deterrents. Identify and remove unnecessary fencing within 2 kilometers of occupied leks, within the analysis area. ***Provides guidance to reduce impacts to Greater Sage-Grouse.***		A	A				T							
PRC-17	In Greater Sage-Grouse PPH, vehicles will be limited to existing roads to prevent damage to Greater Sage-Grouse nesting areas. ***Provides guidance to minimize impacts to Greater Sage-Grouse.***		A	A				T							
PRC-18	Any wetland or ponded areas with suitable Columbia spotted frog (DPS) habitat will be surveyed, during the appropriate time frame, prior to construction activities or any activities potentially impacting spotted frog habitat. ***Provides for protections for Columbia spotted frog***														
Migratory Birds															
PAC-1	Avoid tree or shrub trimming and/or removal during the primary avian breeding season (April 1 – July 15), especially in sensitive habitat (i.e., riparian). Upland habitat suitable to nesting migratory birds would be surveyed prior to ground clearing between April 1 and July 15 for active nests. A 100 foot no construction buffer around active nests would be implemented. No seasonal restrictions would be imposed on clearing upland habitat between July 15 and February 15. Ground clearance in riparian habitats would be allowed between August 1 and March 30, with the exception of a seasonal constraint for impacts to fisheries resources. ***Provides timing restrictions for clearing of vegetation to protect nesting birds***		A					T							

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PAC-2	Federal wildlife staff would be consulted for any modifications to the preferred route or changes in the location of Project features resulting in construction locations outside the surveyed areas. Areas would be assessed and documented according to the protocols and methods defined in the construction POD. ***Provides process for assessing and documenting changes to the route or other project features where located outside of surveyed areas.***	A	A					T							
Special Status Plants															
PPC-1	Surface disturbance would be allowed in potential slickspot peppergrass habitat, but where ground surveys 1-year prior to construction have determined no populations or habitats are present. ***Provides guidelines for disturbance in slickspot peppergrass habitat.***		A							T					
PPC-2	Surface disturbance would be allowed in potential Howell's Spectacular Thelypody habitat, but only where ground surveys have been completed consecutively 1 to 3 years prior to construction and it has been determined no populations are present. ***Provides guidelines for disturbance in Howell's Spectacular Thelypody habitat.***		A							T					
Management Indicator Species															
MIS-1	Suitable northern goshawk nesting habitat, or identified nesting areas would be surveyed for active northern goshawk nest sites between March 15 and May 15 within 0.75 miles from construction sites. If an active nest site is located, a seasonal closure would be enacted, starting March 15 and ending August 1. Two additional surveys of occupied sites would be conducted between June 1 and July 1 to determine success of nest site. If a nest site is not active (failed) by May 15, the seasonal restriction would be removed and construction can commence. Survey crews will wear appropriate PPE while conducting northern goshawk breeding season surveys. ***Reduces the impacts of the project on northern goshawk habitat.***		A					T							
Visual Resources															
VIS-1	Dull-galvanized steel for lattice towers and either dull-galvanized steel or self-weathering steel for H-frames, along with nonspecular conductors, would be used to reduce visual impacts. In landscapes where the lattice towers would be seen against a terrain backdrop, color treatments would be applied to the steel to create a mottled, medium to dark brown color that would be effective in reducing color contrast created by the metal surfaces. ***Provides options for structures type and color to help reduce visual impacts.***			A								T			

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VIS-2	To the extent practicable, existing roads would be used in their current condition (without modification) to provide access for Project construction and operation. Existing roads would be improved or upgraded where necessary to provide safe, reliable means for Project access. New roads would be constructed only where existing roads or overland travel cannot provide suitable means for Project access. To the extent practicable, new access roads would be located to follow landform contours, to minimize the need for cutting and filling of slopes, side-casting of material from cuts, and the associated scarring of the landscape. ***Reduces the impacts of roads needed for the project on visual resources.***		A	A								T			
VIS-3	Best Management Practices included in the BLM manual *Best Management Practices [BMPs] for Reducing Visual Impacts of Renewable Energy Facilities on BLM Lands* (BLM 2013) were included in the design and siting of the Project. ***Provides guidelines for design and siting to help reduce the impact of the project on visual resources.***	A										T			
VIS-4	No paint or permanent discoloring agents indicating survey or construction limits would be applied to rocks, vegetation, fences, etc. ***Reduces the impacts of the project on visual resources.***	A	A	A								T			
Aquatic Resources															
AQ-1	Routine and corrective O&M activities in streams with sensitive fish species would be conducted within the designated in-water work periods for each particular stream.			A					T						
AQ-2	Woody vegetation management within 100 feet of streams would be completed by hand crews.		A	A					T	T					
AQ-3	During O&M activities IPC would use existing stream crossings or new, permanent crossings that were approved as part of the Project, and IPC would not create additional crossings without prior agency permitting and approval.			A					T						
AQ-4	Only herbicides approved by the land-managing agency as safe to use in aquatic environments and reviewed by IPC for effectiveness would be used within 100 feet of aquatic resources.		A	A					T						
AQ-5	Protection of special status species and threatened and endangered species would be implemented in accordance with management policies set forth by appropriate natural resource management agencies (i.e. BLM, USFS, USFWS, NOAA, ODFW, IDFG, etc.). This would entail conducting pre-construction surveys for special status fish species at proposed stream crossing locations and streams within 500 feet of ground disturbing activities as agreed on by the agencies. In cases where such species are identified, appropriate action would be taken to avoid adverse impacts on the species and its habitat. These actions may include avoiding ground disturbing activities in or near streams during spawning periods, isolating fish from areas of in-stream project activities, altering the placement of roads or stream crossings, work area isolation or conducting fish salvage operations to avoid direct fish mortality during construction.		A						T						

		Application Phase (A = design feature would be applied during that project phase)			Resource Impacts Targeted by Design Feature (T = design feature would target impacts identified for that resource)										
Number	**Design Feature**	**Design/ Engineering**	**Construction**	**Operation/ Maintenance**	**Water Resources: Streams**	**Water Resources: Wetlands**	**Soils**	**Biological Resources: Wildlife**	**Biological Resources: Fish**	**Biological Resources: Plants**	**Cultural/ Paleo Resources**	**Visual Resources**	**Land Use**	**Air Quality**	**Public Safety**
AQ-6	If specified by the jurisdictional agency, channel spanning structures would be designed and constructed to cross waterbodies identified as containing a sensitive fish species. The channel spanning structures would include installation of a large diameter culvert, arch culvert or shot span bridge with a stable road surface established over the structure for vehicle passage. Channel spanning structures would be designed and installed under the guidance of a qualified engineer who, in collaboration with a hydrologist and aquatic biologist would recommend placement locations; structure gradient, height, and sizing; and proper construction methods.	A	A						T						
AQ-7	At a minimum, new stream crossings on fish bearing streams must adhere to ODFW and IDGF fish passage design standards. The B2H Project would adhere to ODFW fish passage designs and to design features similar to the Agency Operating Procedures identified in the Programmatic Biological Opinion for Aquatic Restoration Activities in the States of Oregon, Washington and portions of California, Idaho and Nevada (ARBO II) (USFWS 2013).	A	A						T						
AQ-8	For culvert replacements or new culvert installations on all fish-bearing streams, project design criteria would include associated work area isolation and fish salvage prior to any new construction. If listed species are involved, NOAA Fisheries and ARBO II Agency Operating Procedures would apply.		A	A					T						
AQ-9	Construction in intermittent streams would be limited to dry periods.		A						T						

Table Abbreviations: ARBO II = aquatic restoration biological opinion II; BLM = Bureau of Land Management; BMP = best management practice; environmental protection measure; ESCP = erosion and sediment control plan; IDFG = Idaho Department of Fish and Game; IPC = Idaho Power Company; NOAA = National Oceanic and Atmospheric Administration; ODFW = Oregon Department of Fish and Wildlife; O&M = operation and management; POD = plan of development; SWPPP = stormwater pollution prevention plan; SPCC = spill prevention containment countermeasures; SPUT = special purpose utility (permit); USFS = U.S. Forest Service; USFWS = U.S. Fish and Wildlife Service.