

3.9 WETLANDS AND RIPARIAN AREAS

Wetlands are defined for regulatory purposes as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR Part 328.3, 40 CFR Part 230.3). Wetlands are important ecological resources that perform many functions including groundwater recharge, flood flow attenuation and conveyance, erosion control, and water quality improvement. They also provide habitat for many plants and animals, including threatened or endangered species (see Sections 3.7 – Special Status Plants and 3.11 – Special Status Wildlife and Fish Species).

Riparian areas are unique vegetation communities that occur adjacent to waterways and wetlands, and provide habitat for numerous plant and animal species. They generally occupy transitional areas between aquatic and upland habitats, and may function as vegetative buffers for aquatic resources. Although riparian habitats are often combined with wetlands (as a result of their intimate relationship to the hydrological regime), riparian areas differ from wetlands in that they are generally linear, more terrestrial (less hydric), and are often dependent on a natural disturbance regime relating to flooding and stream dynamics (Naiman et al. 2005). This section includes but is not limited to waters that would be jurisdictional under Section 404 of the CWA (waters of the United States) and areas considered by each state to be “waters of the state.”

The BLM’s Preferred Routes for each segment of the Project are listed below. Where applicable, the preferred route identified by another federal agency or a county or state government is also noted.

- **Segment 1W:** The BLM’s Preferred Route is the Proposed Route (Figure A-2). This route is also the State of Wyoming’s preferred route.
- **Segment 2:** The BLM’s Preferred Route is the Proposed Route (Figure A-3). This route is also the State of Wyoming’s preferred route.
- **Segment 3:** The BLM’s Preferred Route is the Proposed Route, including 3A (Figure A-4). This route is also the State of Wyoming’s preferred route.
- **Segment 4:** The BLM’s Preferred Route is the Proposed Route (Figures A-5 and A-6) except within the Caribou-Targhee NF. The portion of this route in Wyoming is also the State of Wyoming’s preferred route. The Forest Service’s preferred route is the Proposed Route within the NF incorporating Alternative 4G (Figure A-6).
- **Segment 5:** The BLM’s Preferred Route is the Proposed Route incorporating Alternatives 5B and 5E, assuming that WECC reliability issues associated with 5E are resolved (Figure A-7). Power County’s preferred route is the Proposed Route incorporating Alternatives 5C and 5E (Figure A-7).
- **Segment 6:** The BLM’s Preferred Route is the proposal to upgrade the line voltage from 345 kV to 500 kV (Figure A-8).
- **Segment 7:** The BLM’s Preferred Route is the Proposed Route incorporating Alternatives 7B, 7C, 7D, and 7G (Figure A-9). The Proposed Route in the East

Hills and Alternative 7G will be microsited to avoid sage-grouse PPH. Power and Cassia Counties' preferred route is Alternative 7K (Figure A-9).

- **Segment 8:** The BLM's Preferred Route is the Proposed Route incorporating Alternative 8B (Figure A-10). This is also IDANG's preferred route.
- **Segment 9:** The BLM's Preferred Route is the Proposed Route incorporating Alternative 9E, which was revised to avoid PPH and the community of Murphy (Figure A-11). Owyhee County's preferred route is Alternative 9D (Figure A-11).
- **Segment 10:** The BLM's Preferred Route is the Proposed Route (Figure A-12).

3.9.1 Affected Environment

This section describes the existing wetland and riparian areas that would be impacted by the Project. The discussion will first define the Analysis Area. It will then outline the issues that were raised during public scoping, followed by a description of the laws and regulations in place to manage wetlands and riparian areas. This section will then conclude by describing the methods used to assess impacts to wetlands and riparian areas, and a description of the existing conditions of wetlands and riparian areas crossed by the Project.

3.9.1.1 Analysis Area

The Project would cross a portion of the Intermountain West region, in southern Wyoming and Idaho. Grass and shrublands are the most common vegetation type found in this region, with only a few areas that contain forests or woodlands. Wetlands and riparian areas are limited within this region, with the most abundant types consisting of herbaceous and shrub wetlands that are associated with drainage features.

The Analysis Area used to determine wetland impacts is a minimum of 250 feet on either side of the transmission line centerline for Proposed and Alternative Routes, a minimum of 25 feet on either side of the centerlines of roads mapped for Proposed and Alternative Routes, and a minimum of 50 feet around the perimeter of other Project features such as multipurpose yards, laydown yards, fly yards, substations, and regeneration stations. This area, based on preliminary or indicative engineering, allows for a comparison of impacts among alternatives. The Analysis Area for assessing impacts to wetlands encompasses approximately 133,054 acres, of which 1,471 acres (1.1 percent) were mapped as wetland or riparian areas.

3.9.1.2 Issues Related to Wetlands and Riparian Areas

Issues identified during public scoping (Tetra Tech 2009) and comments on the Draft EIS included the following:

- What the effects on permanent and seasonal wetlands would be;
- Whether riparian areas would be affected; and
- Whether equipment staging and/or refueling areas can be kept away from wetlands and riparian areas.

3.9.1.3 Regulatory Framework

The USACE regulates the discharge of dredge and fill material into “waters of the United States” under Section 404 of the CWA. In addition, the Swampbuster Provision of the Food Security Act of 1985 requires that landowners who receive USDA program benefits comply with wetland requirements.

The USACE jurisdiction over non-tidal waters of the United States extends to the “ordinary high water mark provided the jurisdiction is not extended by the presence of wetlands” (33 CFR Part 328.4); and under Title 40 CFR Part 230.3 (s)(1). Waters of the United States are defined earlier in this Final EIS in Section 1.2.3 in Chapter 1.

Many wetlands are protected under the CWA as waters of the United States and special aquatic sites. Wetlands are defined by the USACE based on the presence of wetland vegetation, wetland hydrology, and hydric soils. In addition, EO 11990, Protection of Wetlands (42 *Federal Register* 26961), directs all federal agencies to minimize the destruction, loss, or degradation of wetlands, and to enhance the natural and beneficial values of wetlands. Federal regulation and management of wetlands follows a “no net loss” policy.

Under Section 404, the USACE issues a number of nationwide permits for different types of activities that result in minimal individual and cumulative adverse effects on the aquatic environment. Nationwide Permit 12 authorizes construction, maintenance, and repair of utility lines in all waters of the United States provided that there is no change in preconstruction contours. This nationwide permit also authorizes related facilities including substations (provided they do not result in the loss of more than 0.5 acre of waters of the United States), structure foundations of overhead utility lines (provided they cover the minimum size necessary), and access roads (provided the discharges do not cause the loss of greater than 0.5 acre of non-tidal waters of the United States). These limitations for Nationwide Permit 12 include all losses at a single crossing of a wetland or stream, or cumulative losses from multiple crossings of the same wetland or stream.

A pre-construction notification must be sent to the USACE if any of the following situations would occur: mechanized clearing of forested wetlands, a Section 10 permit is required under the Rivers and Harbors Act for work in navigable waters, a loss of more than 0.1 acre of jurisdictional wetlands or other waters, permanent access roads are constructed above grade for more than 500 feet, or permanent access roads are constructed of impervious materials (77 *Federal Register* 10271-10272). Compensatory mitigation would be required for all losses if they exceed 0.1 acre. Losses that exceed 0.5 acre are not authorized by Nationwide Permit 12.

There are no specific laws protecting riparian areas; however, the land management plans of federal agencies provide protections for riparian areas including BLM’s no net loss of wetland/riparian habitat policy.¹ Federal agency management goals are to maintain, restore, and improve riparian areas to protect water quality, improve water

¹ The “no net loss” policy has been an overarching federal objective since the Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation Under Clean Water Act Section 404(b)(1) Guidelines (Feb. 6, 1990).

retention and groundwater recharge, provide wildlife habitat, support biodiversity, and other goals. The BLM and Forest Service evaluate the functional condition of riparian areas using a qualitative method called assessment of proper functioning condition (Pritchard 1998). “Properly functioning” means the hydrological, vegetation, and soil erosion/deposition components on a stream system are in working condition, are resilient to disturbance, and provide adequate vegetation, landform, or debris to protect water resources, habitat, and biodiversity. Proper functioning condition can be applied for both lotic (streams) and lentic (ponds, wetlands) systems. The evaluation procedures for delineating the condition of these areas are different for each system and are more clearly defined in the BLM technical documents (Burton et al. 2008; Smith 2008). The assessment of proper functioning condition should be used in conjunction with more quantitative methods; it is not a substitute for monitoring but a tool for identifying smaller scale areas (step-down process).

Depending on the National Forest, the NFS has identified Water Influence Zones (WIZs) or Riparian Conservation Zones (RCZs), which are based on a specific width on either side of a stream depending on flow regime and do not specifically require the physical presence of mapped riparian or wetland vegetation. These areas provide a buffer between a stream or waterbody and the upland areas, and can influence water quality. The Caribou-Targhee NF has delineated about 63,000 acres of Aquatic Influence Zones (AIZs) on its 1.1 million acres (Forest Service 2003e). Based on methodology provided by the Medicine Bow-Routt NFs, about 13,619 acres of WIZs on its 174,300 acres has been delineated within the southern portion of the Douglas Ranger District.

3.9.1.4 Methods

The location of wetlands and riparian areas within the Analysis Area was determined based on remote sensing techniques, which consisted of acquiring Project-specific aerial images of the Analysis Area, segmentation of images into GIS polygons, classification of polygons into vegetation types (i.e., photo interpolation), and limited field verifications to ensure that photo interpolation was conducted accurately. The National Wetland Inventory (NWI) and National Hydrography Dataset GIS databases were also referenced to assist in vegetation mapping. A more detailed description of the remote sensing mapping methods can be found in the Vegetation and Habitat Mapping Baseline Technical Report (Tetra Tech 2010a).

To determine the acreage of impacts that could potentially occur to wetland and riparian areas, the Project’s construction and operations footprints were overlaid onto the wetlands and riparian areas that were identified and mapped during the remote sensing effort (using ArcGIS). Areas where the Project’s construction or operations footprints were co-located with mapped wetlands or riparian areas were considered to be a direct impact and the acreage of impact was calculated via GIS analysis. Examples of wetlands and riparian areas found along the Proposed Route and Route Alternatives are shown in Figures E.9-1 through E.9-4 in Appendix E.

The estimates of impacts determined through these methods are based on preliminary engineering. As a result, they likely overestimate the impacts that would actually occur due to Project construction and operations, because Project components (including structures, roads, multi-use yards, and fly yards) would be sited outside of wetlands

during final engineering design whenever possible (as is a standard engineering practice). In addition, the estimated impacts resulting from tower pads were determined using a standard buffer around the proposed pad location. However, construction is not likely to impact the entire extent of this buffer when wetlands or riparian areas are present because the construction area around the tower pad would be reshaped to exclude these areas as a standard construction practice as well as an impact minimization measure.

Wetlands were identified using the vegetation mapping data, which used one of the three parameters (vegetation) required for an area to be considered a jurisdictional wetland. Therefore, the actual number and acreages of wetlands that could be jurisdictional wetlands (which would be determined during wetland delineation) may be different than those presented within this EIS if the area of hydric soils and/or wetland hydrology is different than the area of hydrophytic vegetation identified by remote sensing. More exact estimates of the area of impact to jurisdictional wetlands would be made as part of final design and CWA Section 404 permitting. Wetland delineations have not yet been conducted for this Project but must be performed prior to construction to support CWA Section 404 permitting and to minimize Project impacts. The delineation would identify both wetland and non-wetland waters of the United States that would be affected by the Project.

As used in this EIS, the term “construction impacts” includes all areas that would be disturbed during construction. Some of these areas would remain disturbed for the life of the Project (such as the bases of transmission structures, substation foundations, and access road beds, i.e., operations impacts), while others would be restored following final construction. All of the operations impacts would be initiated during construction.

3.9.1.5 Existing Conditions

As stated earlier, the identification of areas as wetlands is preliminary and based on photo interpretation. The actual area of jurisdictional wetlands and the type of wetlands that occur within the Analysis Area would be determined during wetland delineations that would be required prior to construction. The wetland mapping study was intended to be conservative and include all potential areas of wetlands and riparian vegetation.

Wetlands and riparian vegetation occupy only a small portion of the Analysis Area. They represent about 1.3 percent of the miles crossed by the centerline of the Proposed Route and Route Alternatives (Appendix D, Table D.6-1). They occupy about 1.1 percent of the total Analysis Area. Wetlands and riparian areas are more common in some portions of the Analysis Area, such as along Segment 1W and portions of Segment 4, and less common in other areas such as Segments 7 through 10. Wetlands and riparian areas are most common in and near the mountainous portions of the Analysis Area and are scarce in southwestern Idaho and in the arid parts of Wyoming. Copeland et al. (2010) indicated most wetlands in Wyoming are temporary (67 percent) or semi-permanent (27 percent) with only 5 percent classified as permanent.

Four types of wetlands were mapped in the Analysis Area. For reference purposes, the Cowardin system (used by NWI to classify wetlands) will be listed when appropriate; however, this system was not used for this analysis.

- Herbaceous wetlands (i.e., palustrine emergent, or PEM in the Cowardin system [Cowardin et al. 1979]) are dominated by erect, rooted, herbaceous species, such as cattails (*Typha* spp.), bulrushes (*Scirpus* spp.), sedges (*Carex* spp.), rushes (*Juncus* spp.), spikerushes (*Eleocharis* spp.), and various grasses and forbs. Herbaceous wetlands make up more than half of the wetlands mapped in the Analysis Area, and are most abundant on Segment 4 (Table D.9-1 in Appendix D), where they occupy large areas on private lands along the Hams Fork and Bear River in southwestern Wyoming and the Bear River in southeastern Idaho.
- Shrub wetlands (i.e., palustrine scrub-shrub or PSS in the Cowardin system [Cowardin et al. 1979]) include wetlands dominated by woody vegetation less than 20 feet tall. These wetlands are commonly dominated by species such as coyote willow (*Salix exigua*), other willows, and other shrubs such as water birch (*Betula occidentalis*) and red-osier dogwood (*Cornus sericea*). Shrub wetlands often have an understory and openings dominated by herbaceous wetland species. Shrub wetlands are the second most common type found within the Analysis Area and are found predominantly along Segments 1W through 5 (Table D.9-1 in Appendix D).
- Forested wetlands (i.e., palustrine forested, or PFO in the Cowardin system [Cowardin et al. 1979]) are wetlands dominated by trees. Common species include plains cottonwood (*Populus deltoides*), narrowleaf cottonwood (*Populus angustifolia*), peachleaf willow (*Salix amygdaloides*), and Russian olive (*Elaeagnus angustifolia*). This type of wetland is relatively uncommon in the Analysis Area and is only found along Segments 1W and 4 (Table D.9-1 in Appendix D).

Mixed wetlands (not defined by the Cowardin system) are areas with a mix of shrub and herbaceous wetlands, or a mix of trees, shrub, and herbaceous; they represent areas that could not be readily assigned to a single wetland type during photo interpretation. The mixed wetlands type was slightly less common than the shrub wetlands type, and is predominantly found along Segment 4 (Table D.9-1 in Appendix D). In addition, four types of riparian areas were mapped within the Analysis Area:

- Herbaceous riparian areas included regions dominated by herbaceous species along perennial and intermittent streams that were not identified as wetlands during remote sensing efforts. They are abundant along Segments 1W, 4, and 7 (Table D.9-1 in Appendix D).
- Shrub riparian areas included regions dominated by species such as willows, black greasewood (*Sarcobatus vermiculatus*), rubber rabbitbrush (*Chrysothamnus nauseosus*), and other species along perennial or intermittent streams. This is the most common riparian type found within the Analysis Area; it can be found along all segments but is most common along Segment 4.

- Mixed riparian areas consisted of non-wetland areas that contained elements of the three riparian types identified above. This type is uncommon within the Analysis Area, predominantly found along Segment 4 (Table D.9-1 in Appendix D).
- Forested riparian areas included mesic regions dominated by trees or shrubs and were located along rivers or streams. These areas are typically dominated by plains cottonwood in the lowlands and by narrowleaf cottonwood, aspen (*Populus tremuloides*) and conifers in the mountains, and by shrub species such as willows, chokecherry (*Prunus virginiana*), skunkbush sumac (*Rhus trilobata*), and snowberry (*Symphoricarpos* spp.). Forested riparian areas often have an open tree canopy and an herbaceous understory of grasses and forbs. This riparian type is relatively uncommon in the Analysis Area, predominantly found along Segments 1W and 4 (Table D.9-1 in Appendix D).

3.9.2 Direct and Indirect Effects

This section is organized to present effects to wetlands from construction, then operations, followed by decommissioning activities for the proposed Project. Route Alternatives are discussed in Section 3.9.2.3.

In May 2011 (revised December 2012), the Proponents submitted a Framework for Compensatory Mitigation for and Monitoring of Unavoidable Impacts to Waters of the U.S. (Appendix C-2 of this EIS). EPMs are presented in detail within this section only if it is the first time they have been discussed in Chapter 3; all other measures are referenced or summarized. A comprehensive list of all EPMs, and the land ownership to which they apply, can be found in Table 2.7-1 of Chapter 2.

Plan Amendments

Proposed amendments to BLM RMPs and MFPs are summarized in Table 2.2-1 of Chapter 2, while BLM plan amendments associated with other routes are summarized in Table 2.2-2. BLM plan amendments are discussed in detail in Appendices F-1 and G-1. Proposed amendments to Forest Plans are summarized in Table 2.2-3 of Chapter 2 and discussed in detail in Appendices F-2 and G-2. Amendments are needed to permit the Project to cross various areas of BLM-managed lands and NFS lands. Effects described for areas requiring an amendment in order for the Project to be built would only occur if the amendment were approved. Amendments that alter land management designations could change future use of these areas. An amendment is proposed for the Medicine Bow Forest Plan that would allow the Project to cross wetland habitat that could be considered known or historic habitat for the northern leopard frog. Another amendment is proposed for the Caribou Forest Plan that would create a new utility corridor, designating the Project ROW as Management Prescription 8.1 – Concentrated Development Area. No impacts to wetlands and riparian areas resulting from approving the amendments beyond the impacts of the project are anticipated.

3.9.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of Gateway West and the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of

this Project. No Project-related impacts to wetland or riparian areas would occur; however, impacts would continue as a result of natural events (such as fire, drought, and severe weather) as well as from existing and planned developments within the Analysis Area and from other projects, including wind farms, mining, agricultural, or other competing land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.3, Proponents' Objectives for the Project, would not be met with this Project and the area would have to turn to other proposals to meet the transmission demand. Under No Action, impacts similar to those described below may occur due to new transmission lines built to meet the increasing demand in place of this Project.

3.9.2.2 Effects Common to All Action Alternatives

Construction

The primary impact to wetland and riparian areas would result from the clearing of vegetation. Removal of vegetation could alter various functions provided by these areas, including their ability to serve as wildlife habitat (see Sections 3.10 – General Wildlife and Fish and 3.11 – Special Status Wildlife and Fish Species), as well as their ability to trap sediment and nutrients. Soil disturbances and removal of vegetation within a wetland or riparian area could alter the area's ability to moderate flood flow, control sediments, or facilitate surface water flow. Removal of vegetation could also increase water and soil temperatures and alter the species composition within these areas.

Increased soil disturbances can lead to invasions by exotic plant species, which can alter the composition and function of wetlands and riparian areas. Any blasting that may occur within or adjacent to a wetland could fracture the bedrock and alter the hydrology of a perched water table, thereby leading to drier conditions and impairment of revegetation efforts. Withdrawal of water for use during construction may have temporary effects on wetlands adjacent to streams, by reducing the water input that they would receive. Failure to restore disturbed areas to their preconstruction conditions (contours, hydrology, segregation and restoration of topsoil), could impede the re-establishment of wetland and riparian vegetation during revegetation efforts. A summary of the direct impacts (i.e., vegetation removal and soil disturbances) that would result from construction of the Project (broken down by segment and alternative) is provided in Table D.9-1 of Appendix D.

Although some Project-related disturbances would be temporary and confined to the construction phase, impacts would continue through the operations phase in areas where construction sites are located within forested wetlands or riparian areas, because of the time required to restore forested habitats. Construction impacts in forested wetlands and forested riparian areas would generally involve a conversion to a different wetland type (i.e., a change to shrub or herbaceous type), rather than a loss of wetland or riparian acreage. It is likely that recovery would be fairly rapid in herbaceous and shrub wetlands, and construction in these types is not likely to cause a conversion to a different type. Impacts could result from soil compaction or alteration of surface or subsurface water movement in wetlands and riparian areas, or springs and seeps.

Impacts could also result if areas that once contained wetlands or riparian areas (prior to construction) become occupied by Project facilities (such as tower pads, substations, and access roads).

During construction and for routine and emergency operations, access across wetlands to each structure location is necessary. The Proponents evaluated various methods, as noted below, of minimizing impact to wetlands but do not propose to utilize these alternatives, because they do not provide expeditious year-round access to each structure site:

- Constructing at-grade roads with geotextiles and road materials that allow for water through-flow. This type of road would be below water during certain times of the year, which would make locating the roads difficult, and the depth of the water over the drivable surface may make travel over the submerged road surface impractical or not feasible.
- Constructing towers using helicopters in wetlands. The single-circuit 500-kV towers will be designed such that they can be erected by helicopter if needed. In each case, the use of ground-based vehicles is still required, thus not eliminating the need for an access road to each structure to complete construction or to conduct inspections and live-line maintenance activities.

The Proponents propose to utilize a combination of methods for road construction in wetlands as follows:

- Construction of permanent above-grade roads that would be utilized during construction, operations, and maintenance. This method will typically entail placement of permanent fill in wetlands that would cause the travel surface to be higher in elevation than the ordinary high water level. The construction of above-grade access roads allows for the use of the types of equipment described above and the most flexibility for construction, operations, maintenance, and expedited access for emergency restoration throughout the year.
- Construction or use of temporary roads during construction, followed by restoration of the disturbance after construction. Where feasible, construction equipment may travel overland if the area is dry. If construction occurs when the ground is solidly frozen, ice roads could be constructed.

The Proponents have stated that they would only utilize temporary roads in the wetlands of the Bear River Plain. In that area only, temporary matting materials would be installed to allow access for heavy vehicles and equipment. The mats typically come in the form of heavy timbers bolted together. They are often used over a geotextile that is applied directly over the wet soil surface. When construction use is complete, the mats are removed and the geotextile taken up. This approach would be used where feasible, since it further reduces vegetation damage and compaction and reduces the time for full restoration. Mats spread the concentrated axle loads from equipment over a much larger surface area than the tires alone, thereby reducing the bearing pressure on fragile soils. While there may be short-term seasonal impacts to wetlands from matting, these areas quickly recover to existing conditions once the mats are removed. Matting has a limited service life before replacement is required and it must be stored for maintenance and emergency restoration activities. Table 3.9-1 shows an estimate

of miles of temporary roads for construction access in the three largest wetland areas crossed by the Proposed Route. Though exact locations may change during final design, the Proponents are committed to using temporary crossings wherever feasible in these three wetland areas.

Where temporary road access is utilized, road areas would be rehabilitated after construction. Any geotextiles and matting used would be removed and wetland vegetation allowed to return. No permanent roads would be available for routine operations inspections or repairs in the floodplain crossings identified in Table 3.9-1. Operational inspections and repairs would be scheduled for times when the ground is dry or frozen and access would be overland along the road alignment by ATV. For emergency repairs requiring heavy equipment, access to the damaged area would be made using matting if necessary. After emergency repairs are completed, matting would be removed and the wetland areas allowed to restore naturally.

Table 3.9-1. Miles of Roads Associated with Three Floodplain Crossings of the Proposed Route in Segment 4

Location	Segment 4 Mileposts	Approximate Miles of New or Improved Access Road	Approximate Miles Proposed for Permanent Fill	Approximate Miles Proposed for Temporary Access
Cokeville	123.0-126.8	2.2	0.0	0.9
Bear River	133.5-134.5	1.8	0.0	1.8
Montpelier	148.0-153.6	7.9	0.0	2.8

All waterbody and wetland disturbances would be completed under the terms of a USACE CWA Section 404 permit, the NPDES Construction Stormwater Permit (CWA 402), and State 401 water quality certification requirements that govern activities within any waters of the United States. In Idaho, there is an additional requirement for a stream channel alteration permit for activities in stream beds. See also Appendix C-2 of this EIS for the Proponents’ mitigation framework.

To further minimize the impacts that could occur to wetlands and other habitats, the Proponents have proposed a Reclamation, Revegetation, and Weed Management Plan and are developing a SWPPP and a Spill Prevention, Containment, and Countermeasures (SPCC) Plan. These plans would include measures to ensure that disturbed areas are revegetated and restored to preconstruction conditions, and that toxic substances or increased sedimentation do not impact waterbodies. These plans are discussed in more detail below and the preliminary measures that would be included in these plans are provided in Appendix B.

Reclamation, Revegetation, and Weed Management Plan

The Framework Reclamation Plan (see Appendix B) provided by the Proponents addresses measures to be undertaken to ensure reclamation and revegetation of disturbed areas that are not occupied by permanent Project facilities, as well as to prevent the accidental introduction or transport of noxious weeds or exotic species in the Project Area along the ROW during and after construction. This Plan, as proposed, would include site-specific restoration measures, procedures for preconstruction treatment of noxious weeds and invasive plants, topsoil treatment, ROW restoration

(recontouring, decompaction, and cleanup), seedbed preparation, seeding methods, preliminary seed mixes, road reclamation, monitoring, and remedial actions. Project-specific seed mixes would be developed in consultation with the public land manager or private landowner. Reclamation efforts would be scheduled for late fall to early winter, where feasible, to facilitate seedling establishment when snow and rainfall are more likely. A detailed reclamation schedule would be prepared as part of the Final Reclamation, Revegetation, and Weed Management Plan for each segment.

Reclamation actions would meet short- and long-term reclamation objectives by:

- Conducting preconstruction weed surveys, applying preconstruction weed control measures where appropriate, controlling weed introduction and spread during construction, and conducting postconstruction weed monitoring and control activities where needed (REC-1 to REC-15);
- Using proper soil management techniques, including stripping, stockpiling, and reapplying topsoil material at temporarily disturbed areas to restore soil horizons and establish surface conditions that would allow for rapid re-establishment of vegetation (REC-16 to REC-18);
- Re-establishing topography compatible with the surrounding landscape (REC-19 and REC-20);
- Establishing stable soil surface and drainage conditions, which would minimize surface erosion and sedimentation (REC-20 to REC-22);
- Re-vegetating disturbed areas with plant species adapted to site conditions to establish long-term, productive, self-maintaining plant communities compatible with existing land uses; and concurrently minimize the chances for noxious weeds and invasive plant species to replace species that are native to the area (REC-24 through REC-26);

This plan would minimize the impacts that would occur to wetlands and riparian areas by providing measures for restoring vegetation and site characteristics. As a result of this plan, the majority of impacts to wetlands would occur due to impacts related to occupancy of a wetland or riparian area by operations facilities, or through the maintenance of forested vegetation below the height of the transmission lines (addressed in more detail below, within the Operations and Maintenance discussion).

Stormwater Pollution Prevention Plan

The Proponents have developed EPMs to minimize erosion and sediment transport to adjacent waterbodies. These measures would be included in the SWPPP, which would be finalized prior to construction. Preventing sediment from entering waterbodies (including wetlands) is essential, because these sediments can alter the function of wetlands or riparian areas (as described above). The following are EPMs related to the preliminary SWPPP (see Appendix B) that are applicable to wetlands and riparian areas:

- WQA-1 The appropriate NPDES permits for construction activities that disturb one acre or more of land will be obtained from the Department of Environmental Quality and USEPA or their designees.

- WQA-4 The SWPPPs will be modified as necessary to account for changing construction conditions.
- WQA-5 The SWPPPs will identify areas with critical erosion conditions that may require special construction activities or additional BMPs to minimize soil erosion. (Descriptions of stormwater BMPs are available at USEPA [2008]).
- WQA-6 Stormwater BMPs will be maintained on all disturbed lands during construction activities, as described in the SWPPP.
- WQA-7 Approved sediment and erosion control BMPs will be installed and maintained until disturbed areas meet final stabilization criteria.
- WQA-8 Temporary BMPs will be used to control erosion and sediment at staging areas (equipment storage yards, fly yards, laydown areas) and substations.
- WQA-9 The construction schedule may be modified to minimize construction activities in rain-soaked or muddy conditions.
- WQA-10 Damaged temporary erosion and sediment control structures will be repaired in accordance with the SWPPP.
- WQA-11 Upon completion of construction, permanent erosion and sediment BMPs will be installed along the transmission line within the ROW, at substations, and at related facilities in accordance with the SWPPPs.
- WQA-28 Migration of construction-related sediment to all adjacent surface waterbodies will be prevented.

Spill Prevention, Containment, and Countermeasures Plan

The Proponents have developed EPMs to minimize the possibility of accidental spills of toxic substances into or adjacent to waterbodies (including wetlands). These measures would be included in the SPCC Plan, which would be finalized prior to construction. The following are EPMs related to the preliminary SPCC Plan (see Appendix B) that are applicable to wetlands and riparian areas:

- WQA-13 Construction industry standard practices and BMPs will be used for spill prevention and containment.
- WQA-14 Construction spills will be promptly cleaned up and contaminated materials hauled to a disposal site that meets local jurisdictional requirements.
- WQA-15 All staging areas will contain fueling areas with containment. Where fueling must be conducted along the ROW, the plan will specify BMPs.
- WQA-16 If an upland spill occurs during construction, berms will be constructed with available equipment to physically contain the spill. Absorbent materials will be applied to the spill area. Contaminated materials will be excavated and temporarily placed on and covered by plastic sheeting in a

containment area a minimum of 100 feet away from any wetland or waterbody, until proper disposal is arranged.

WQA-18 For spills in standing water, floating booms, skimmer pumps, and holding tanks will be used as appropriate by the contractor to recover and contain released materials on the surface of the water.

WQA-21 Materials such as fuels, other petroleum products, chemicals, and hazardous materials including wastes will be located in upland areas at least 500 feet away from streams, 400 feet for public wells, and 200 feet from private wells.

Permitting and Mitigation Requirements

As part of the Section 404 permitting process, the USACE would evaluate whether wetlands have been avoided to the extent practical and whether losses have been adequately mitigated. The permitting process would also identify additional requirements, as necessary, to comply with USACE regulations. These would include the necessity for compensatory mitigation for any permanent loss of wetland area or wetland function. Compensatory mitigation could include the creation, enhancement, or restoration of wetlands to replace the lost wetland function/acreage. Other potential options include purchasing credits from a mitigation bank or in-lieu fee programs. The type of compensatory mitigation would be determined by the USACE as part of the Section 404 permitting process.

Compensatory mitigation involves actions taken to offset unavoidable adverse impacts to wetlands, streams and other aquatic resources authorized by CWA Section 404 permits and other USACE permits. Compensatory mitigation is a critical tool in helping the federal government meet the longstanding national goal of “no net loss” of wetland acreage and function. It is the Proponents’ responsibility to take all appropriate and practicable steps to avoid and minimize adverse impacts to waters of the United States.

In addition to the compensatory mitigation required by the USACE (discussed in the Operation and Maintenance section below) and the Proponents’ EPMs, the following EPMs will be followed to further protect wetlands and riparian areas during construction:

WET-1 Impacts on wetland and riparian areas will be avoided unless physically or economically infeasible. Land management agencies’ plans (RMPs, MFPs, and Forest Plans) that have standards, guidelines, stipulations, or avoidance buffers will be adhered to. Where these do not exist, Inland Fish Strategy (INFISH) buffers will be followed.

WET-2 Wetland delineations will be performed prior to construction to support CWA Section 404 permitting and to minimize Project impacts. The delineation will identify both wetland and non-wetland waters of the United States that would be affected by the Project.

WET-3 Where impacts on wetlands are not avoidable, site-specific crossing plans and measures to mitigate impacts will be submitted to the appropriate regulatory agency, as well as the land managing agency. The Proponents

will obtain all necessary permits prior to discharging dredged or fill material to waters of the U.S. and state.

Operations

During siting, routing, and construction, the Proponents committed to avoiding wetlands and riparian areas to the maximum extent practicable, minimizing impacts by reducing clearing and road width to the minimum needed for safe operation, and restoring construction disturbance. Wetland losses could be reduced by restoring the original contours and wetland area, by minimizing the area of impact during construction by use of mats or other techniques (allowing heavy equipment to pass over while protecting wetland soils below), or by avoiding or minimizing placement of structures in wetlands during final design.

However, there would still be residual impacts in some areas from Project operations and maintenance. These unavoidable impacts to wetlands and riparian areas would include permanent fill to support transmission structures, permanent 8-foot-wide roads to each structure, and safety vegetation maintenance in the ROW, including removal of trees that could interfere with the conductors or use of the roads. Table D.9-2 in Appendix D lists the acreage of permanent impacts that would occur during operations by segment and alternative.

If permanent operations facilities are located within a wetland or riparian area, this would result in a permanent loss of wetland or riparian area. The Proponents have asserted that final Project design would avoid these areas to the extent practical.

The Proponents would use Integrated Vegetation Management on the ROW to reduce the risk of fire and maintain safe access to the line and associated facilities. In general, this would involve removing or trimming tall-growing trees so that they do not come into contact with the line. Impacts to wetlands and riparian areas would occur where trees are cut to meet wire clearance requirements (see Section 3.6.2.2). Removal of trees would result in conversion of forested wetland or forested riparian areas to shrub or herbaceous types. This vegetation management would be initiated during construction and would continue during the operations phase of the Project.

Maintenance of the access roads and work areas (blading of roads to restore surface conditions, and weed management conducted near permanent structures) could result in minor direct and indirect impacts to wetlands or riparian areas. Vehicle traffic in wetlands and riparian areas has the potential to permanently alter soil characteristics and drainage patterns unless proper precautions are taken. Indirect impacts during maintenance may include compaction of soils, alteration of drainage patterns, erosion, and sedimentation. Erosion control and sedimentation measures such as water bars, culverts, sediments basins, or perimeter control would be installed as required to minimize erosion.

Compensatory Mitigation

The USACE recognizes three mechanisms for providing compensatory mitigation. Listed in order of most favorable (preferred by the USACE) to least favorable, these include mitigation banks, in-lieu fee programs, and permittee-responsible compensatory mitigation. Both mitigation banks and in-lieu fee programs involve off-site compensation

activities that are conducted by a mitigation bank sponsor or an in-lieu fee program sponsor. Permittee-responsible mitigation is the most traditional form of compensation and continues to represent the majority of compensation acreage provided each year (73 *Federal Register* 19594–19705). As its name implies, the permittee retains responsibility for ensuring that required compensation activities are completed and successful. Compensatory projects can be located at or adjacent to the impact site (i.e., on-site compensatory mitigation) or at another location generally within the same watershed as the impact site (i.e., off-site compensatory mitigation).

The USACE prefers the use of mitigation banks but has indicated that the Project does not fall within the service areas of any approved and operational mitigation banks or existing in-lieu fee programs (Johnson 2010; Joyner 2010). In addition, it is unlikely any approved mitigation banks will be operational within service areas appropriate for this Project in the foreseeable future. Therefore, it is the Proponents' responsibility to develop a suitable compensatory mitigation program. The framework of the Proponents' plan is found in the Framework Stream, Wetland, Well, and Spring Protection Plan in Appendix B of this EIS.

In the absence of mitigation banks and where feasible, the Proponents plan to develop one or more in-lieu fee programs to conduct, monitor, and provide for in-perpetuity management of any wetland creation, restoration, or enhancement project proposed to compensate for Project impacts. The Proponents prefer in-lieu fee programs because they meet the requirements for compensatory mitigation and allow for the establishment of an endowment fund to provide for long-term management without having to develop such management in-house.

The following activities are proposed to develop an in-lieu fee program and sponsor(s):

- The Proponents would work with USACE to determine the amount of mitigation required as well as the geographic service areas in which mitigation should occur;
- Potential entities/sponsor(s) for an in-lieu fee program would be identified; and
- The Proponents would work with potential in-lieu fee entities/sponsor(s) to determine pre-plan needs (fiscal, structure, governance).

Suitable sponsors for an in-lieu development program might include national organizations such as Ducks Unlimited, Trout Unlimited, or the Rocky Mountain Elk Foundation; state organizations such as the Wyoming Wildlife Federation; or more grass roots organizations such as local land trusts.

The Project's largest area of impacted wetlands is in the Bear River floodplain near Cokeville, Wyoming, and Montpelier, Idaho. These impacts will likely be addressed by a Proponent-sponsored program because of the availability of on-site specialized staff of a sister company, PacifiCorp Energy, that will allow for long-term monitoring, reporting, and management of the wetland mitigation project. The rest of the impacts, while unavoidable, are relatively small and limited to road crossings or ROW maintenance of riparian or small stream-related wetland areas.

Site-Specific Compensatory Mitigation Planning (Bear River Floodplain)

PacifiCorp Energy owns several large parcels of land west of Montpelier, Idaho, as part of the Bear River Hydroelectric Project. Relicensed for 30 years in 2003, the Bear River Project is subject to a Settlement Agreement. The Settlement Agreement and new license require the provision of recreational enhancements, in-stream flows to benefit aquatic resources, and various funds to conserve and benefit natural resources near the project. Therefore, PacifiCorp Energy has dedicated staff and resources that already manage various natural resources projects in the vicinity of the Project. One of the properties owned by PacifiCorp Energy and leased for meadow hay and grazing operations to a local rancher, is found on Ovid Creek, to the west of the main Bear River channel but within the larger Bear River floodplain.

The property was purchased in the 1980s to allow PacifiCorp Energy to better control the flooding in the Bear River floodplain that occurred during very high runoff periods. Ovid Creek, from which PacifiCorp Energy owns irrigation water rights, runs adjacent to and through the parcel. The parcel is flood irrigated every spring/summer using those rights. Water is conveyed through ditches and by manipulation of water levels at the Bern Dam control structure. The lessee manages irrigation to produce one or two cuttings of hay. During the fall and winter months, the parcel is used to graze and winter cattle.

Through PacifiCorp's Hydro Resources Management group, PacifiCorp Energy approved a Property Transaction Notice and Approval Form in late 2010 to allow a portion of this property to be transitioned from its current land use to use as a site for wetland restoration and enhancement. As part of its commitment to develop this portion of the property as a wetland mitigation site to compensate for unavoidable adverse impacts to waters of the U.S. within the Bear River drainage, the Proponents have begun the following activities:

- Install a series of piezometers across the parcel to periodically monitor shallow groundwater (December 2012);
- Research existing water rights owned by PacifiCorp Energy to determine if any changes in beneficial use or location need to be recorded to assure a perpetual supply of water for the proposed wetland restoration project (December 2012);
- Conduct a detailed topographic survey of the parcel (one-foot contour interval) to assist in the development of a mitigation site plan (March–May 2013);
- Conduct a wetland delineation on the parcel (May–June 2013); and
- Conduct a functions and values assessment of the parcel (May–June 2013).

The report that results from these activities will form the basis of a site-specific mitigation plan (as outlined in the section below). That plan will also include a written commitment from PacifiCorp Energy to monitor and maintain the restored wetland so that it continues to provide the established functions and values into the future.

Other Proponent-Owned Properties

There are properties owned by the Proponents near the Dave Johnston Power Plant and also near the Jim Bridger Power Plant in the vicinity of impacts from Segments 1

and 4, respectively. These properties include wetlands that have been degraded by open livestock grazing and other historic land uses. There are possibilities for improvements, restoration, enhancement, or creation of wetlands on these properties. Unlike the properties in the Bear River Plain, there is no equivalent in-house natural resource staff to manage long-term monitoring, reporting, and management. Pursuit of projects on these properties will be accompanied by long-term conservation easements or similar legal instruments with third parties to provide for such long-term services as well.

Compensatory Mitigation Plan Outline

The Proponents would propose one or more compensatory mitigation projects in a comprehensive mitigation plan. This plan would include the specifications sections and sub-plans outlined below.

1. **Objectives**—This section would discuss:
 - The resource type(s) and amounts that would be provided by the mitigation project;
 - The method of compensation (i.e., restoration, establishment, enhancement, and/or preservation); and
 - The manner in which the resource functions of the mitigation project would address the needs of the watershed, ecoregion, physiographic province, or other geographic area of interest.
2. **Site Selection**—This section would discuss the factors considered during the site selection process, such as:
 - Needs of affected watersheds,
 - On-site alternatives (where applicable), and
 - The practicability of accomplishing an ecologically self-sustaining aquatic resource at mitigation project site.
3. **Site Protection Instrument**—This section would describe measures that would be used to ensure the long-term protection of the mitigation project site; including legal arrangements and instrument, as well as site ownership.
4. **Baseline Data**—This section would discuss or include:
 - Historic and existing plant communities of the proposed mitigation site and the impact site(s);
 - Historic and existing hydrology of the proposed mitigation site and the impact site(s);
 - Soil conditions of the proposed mitigation site and the impact site(s);
 - Map(s) showing the locations of the impact and mitigation site(s) or the geographic coordinates for those site(s); and
 - Other site characteristics appropriate to the type of resource proposed as compensation, including delineation.
5. **Determination of Credits**—This section would describe the number of credits to be provided, including a brief explanation of the rationale for this determination.

6. **Monitoring**—This section would include the following:
 - A description of parameters to be monitored in order to determine if the mitigation project is on track to meet performance standards, or if adaptive management is needed.
 - A schedule for monitoring and reporting to the responsible agency.
 - A description of the length of the monitoring period and responsible party.
7. **Financial Assurances**—This section would describe the financial assurances in-place and how these assurances are sufficient to ensure a high level of confidence that the mitigation project would be successfully completed, in accordance with its performance standards. The USACE may require additional information as necessary to determine the appropriateness, feasibility, and practicability of the mitigation project.
8. **Ecological Performance Standards**—This section would describe the ecologically-based standards that would be used to determine whether the mitigation project is achieving its objectives.

The following sub-plans would also be included:

1. **Work Plan**—This plan would describe the following:
 - Geographic boundaries of the Project;
 - Construction methods, timing, and sequence;
 - Source(s) of water, including connections to existing waters and uplands;
 - Methods for establishing the desired plant community;
 - Plans to control invasive plant species;
 - Proposed grading plan, including elevations and slopes of the substrate;
 - Soil management; and
 - Erosion control measures.
2. **Maintenance Plan**—This plan would include a description and schedule for the maintenance requirements aimed at maintaining the continued viability of the resource once initial construction is completed.
3. **Long-Term Management Plan**—This plan would include a description of how the mitigation project will be managed after performance standards have been achieved in order to ensure the long-term sustainability of the resource, including long-term financing mechanisms and the party responsible for long-term management.
4. **Adaptive Management Plan**—This plan would include a description of how the mitigation plan would be revised and implemented if changes arise. This plan would also identify the party or parties responsible for implementing adaptive management measures.

In addition, other relevant information concerning waters of the United States would be included in the mitigation plan, covering such topics as plan-form geometry, channel form (typical channel cross-sections), watershed size, design discharge, and riparian

area plantings. The following EPM would be followed to further protect wetlands and riparian areas during operations:

- WET-4 To meet USACE requirements for CWA 404 permitting, the Proponents will submit a mitigation plan that is accepted by the USACE. The framework for this plan is included in the Final EIS.

Decommissioning

Decommissioning of the Project could result in impacts to wetlands and riparian areas. These impacts would include increased sedimentation, erosion, soil compaction, and limited direct removal of vegetation (if some vegetation areas needed to be cleared to remove structures from the site).

3.9.2.3 Comparison of Alternatives by Segment

Tables D.9-1 (Construction Impacts) and D.9-2 (Operations Impacts) in Appendix D provide details of impacts to wetlands and riparian areas by ecological type for the Proposed and Alternative Routes across all segments. In the analysis by segment below, the impacts are summarized and compared across Route Alternatives for that segment. The quantitative analysis of impacts is based on the following conservative assumptions:

- Areas identified and mapped as wetlands from remote sensing may not be jurisdictional under Section 404 of the CWA; therefore, wetland impacts may be overstated.
- Impacts are assessed based on preliminary design and do not include the avoidance and minimization of impacts that would occur as part of final design.

Segment 1W

The preferred routes in Segment 1W are as follows:

Segment	Preferred Route	Agency
Segment 1W(a)	Proposed Route (Figure A-2)	BLM and State of Wyoming
Segment 1W(c)	Proposed Route (Figure A-2)	BLM and State of Wyoming

Segment 1W is composed of Segments 1W(a) and 1W(c), both of which consist of single-circuit 230-kV transmission lines. Generally, Segment 1W(a) would be a new 73.8-mile-long transmission line, and 1W(c) would involve reconstruction of a 73.6-mile-long portion of the existing Dave Johnston – Rock Springs 230-kV transmission line. However, in the area approximately 5 miles to the north and south of Ice Cave Mountain, the lines shift east to avoid the ice cave. In this area, 1W(a) would be the reconstruction of the existing line and 1W(c) would be the new line. Segment 1W(a) has one alternative, Alternative 1W(a)-B, which is located north and west of the town of Glenrock and was the Proponents’ initial proposal. However, the Proposed Route was revised following the Draft EIS public comment period in order to avoid the more populated area around Glenrock. Figure A-2 in Appendix A shows the location of the Segment 1W routes.

The Analysis Area for Segment 1W consisted of approximately 11,466 acres of mapped vegetation, which included 216 acres (1.9 percent) of wetland and riparian areas.

Approximately 2.3 acres of wetlands and riparian areas were located on the Medicine Bow-Routt NFs, based on habitat mapping conducted specifically for this Project. The primary types present are shrub and herbaceous wetlands and riparian areas.

Table 3.9-2 lists the impacts that would occur to wetlands and riparian areas along Segment 1W(a) and 1W(c).

Table 3.9-2. Comparison of Wetland/Riparian Impacts for Segment 1W(a) and 1W(c) Preferred/Proposed Route and Alternative 1W(a)-B

Segment/Alternative	Construction Impacts to Wetlands (acres)	Construction Impacts to Riparian (acres)	Operations Impacts to Wetlands (acres)		Operations Impacts to Riparian (acres)	
			Due to Operations Facilities	Due to ROW Maintenance in Forests	Due to Operations Facilities	Due to ROW Maintenance in Forests
Preferred/Proposed 1W(a) Total Length	5.6	4.9	0.6	1.8	0.9	1.3
Preferred/Proposed – Comparison Portion for Alternative 1W(a)-B	2.2	0.8	0.1	1.8	0.1	1.2
Alternative 1W(a)-B	0.1	0.1	t ^{1/}	–	t ^{1/}	–
Preferred/Proposed 1W(c) Total Length	5.6	5.9	0.5	2.2	0.4	1.7

1/ Value is less than 0.1 acre.

Note: Data based on habitat mapping conducted specifically for this Project.

Construction

The impacts from construction of the Segment 1W(a) Preferred/Proposed Route and Route Alternative are presented in Table 3.9-2. About 5.6 acres of wetlands and 4.9 acres of riparian areas would be affected by construction of the Preferred/Proposed Route 1W(a) and about 5.6 acres of wetlands and 5.9 acres of riparian areas would be affected by construction of Preferred/Proposed Route 1W(c). Construction would affect 1.9 acres of forested wetlands on Segment 1W(a) and would affect 2.4 acres of forested wetlands on 1W(c), and 1.4 and 2.0 acres of forested riparian areas on 1W(a) and 1W(c), respectively. Alternative 1W(a)-B would have considerably fewer impacts to wetland and riparian areas than the comparison portion.

Medicine Bow-Routt National Forests Crossed by Segment 1W

Segments 1W(a) and 1W(c) would cross the WIZ of three and two streams, respectively, on the Medicine Bow-Routt NFs. Less than 0.1 acre of wetlands would be impacted by construction on the NFs, based on habitat mapping originally conducted for this Project. Vegetation data provided by the Medicine Bow-Routt NFs and the USFWS (USFWS 2013b) indicate that no wetlands would be directly impacted by the Project on the Medicine Bow-Routt NFs. A wetland delineation would be conducted along the Project prior to construction (as required by the CWA) to determine actual acreage and impact values for wetlands.

Operations

The impacts from operations and maintenance of the Segment 1W Preferred/Proposed Route and Route Alternatives are presented in Table 3.9-2. About 0.6 acre of wetlands and 0.9 acre of riparian areas would be occupied by operations facilities on Segment

1W(a) and about 0.5 acre of wetlands and 0.4 acre of riparian areas would be occupied by operations facilities on Segment 1W(c). Operations facilities affecting wetlands and riparian areas would include structure pads and new and improved access roads. ROW maintenance would convert 2.2 acres of forested wetland to herbaceous or shrub wetland on 1W(c), and would similarly affect 1.3 and 1.7 acres of riparian forests on 1W(a) and 1W(c), respectively. Most of the wetland impacts would occur in herbaceous and forested wetlands and in shrub and forested riparian areas.

The acreage of operations impacts to wetlands and riparian areas that would occur along Alternative 1W(a)-B would be similar to the comparison portion for this alternative.

Medicine Bow-Routt NF Crossed by Segment 1

Less than 0.1 acre of wetlands would be impacted by operations on the Medicine Bow-Routt NFs, based on habitat mapping conducted specifically for this Project. However, vegetation data provided by the Medicine Bow-Routt NFs indicate that no wetlands would be directly impacted by the Project on the Medicine Bow-Routt NFs. As discussed previously, a wetland delineation would be required along the Project prior to construction (as required by the CWA) to determine actual acreage and impact values for wetlands.

Segment 2

The preferred route in Segment 2 is as follows:

Preferred Route	Agency
Proposed Route (Figure A-3)	BLM and State of Wyoming

Segment 2 consists of one single-circuit 500-kV transmission line between the proposed Aeolus Substation and the location of the originally planned Creston Substation near Wamsutter, Wyoming (a new substation at Creston is no longer needed due to changes in anticipated demand for oil and gas field electricity). The Preferred/Proposed Route has been revised to incorporate Alternative 2C, as analyzed in the Draft EIS. Segment 2 would be approximately 91.9 miles long. Alternative 2A is being considered by the BLM because this alternative route is within the WWE corridor. Alternative 2B was initially the Proponents' Proposed Route before they responded to local suggestions and relocated the Proposed Route farther to the south. Figure A-3 in Appendix A shows the location of the Segment 2 routes.

The Analysis Area for Segment 2 consisted of approximately 8,433 acres of mapped vegetation, which included 112 acres (1.3 percent) of wetland and riparian areas. The primary wetland types present are herbaceous wetlands, shrub wetlands, and shrub riparian areas.

Construction

The impacts from construction of the Preferred/Proposed Route and Route Alternatives in Segment 2 are presented in Table 3.9-3. About 4.1 acres of wetlands would be affected by construction. Most of the impacts would occur from construction of structure pads and new and improved roads. Most of the wetland impacts would occur in herbaceous wetlands. Construction would not affect any forested wetlands.

Alternative 2A would have more than twice the impact to wetlands than the comparison portion, while Alternative 2B would have considerably more wetland impact than the comparison portion. Both alternatives would have considerably more impact to riparian areas than their comparison portions.

Operations

The impacts from operations and maintenance of the Preferred/Proposed Route and Route Alternatives in Segment 2 are presented in Table 3.9-3. About 0.2 acre of wetlands and 1.4 acres of riparian areas would be occupied by operations facilities. Operations facilities affecting wetlands and riparian areas would include structure pads and new and improved access roads. Most of the wetland impacts would occur in herbaceous wetlands and shrub riparian areas.

Table 3.9-3. Comparison of Wetland/Riparian Impacts for Segment 2 Proposed Route and Alternatives 2A and 2B

Segment/ Alternative	Construction Impacts to Wetlands (acres)	Construction Impacts to Riparian (acres)	Operations Impacts to Wetlands (acres)		Operations Impacts to Riparian (acres)	
			Due to Operations Facilities	Due to ROW Maintenance in Forests	Due to Operations Facilities	Due to ROW Maintenance in Forests
Preferred/ Proposed Segment 2 – Total Length	4.1	4.7	0.2	–	1.4	–
Preferred/ Proposed – Comparison Portion for Alternative 2A	3.6	0.1	0.2	–	t ^{1/}	–
Alternative 2A	7.9	9.3	0.2	–	0.3	3.9
Preferred/ Proposed – Comparison Portion for Alternative 2B	3.6	0.1	0.2	–	t ^{1/}	–
Alternative 2B	13.0	7.9	0.1	–	0.1	2.9

1/ Value is less than 0.1 acre.

Segment 3

The preferred route in Segment 3 is as follows:

Preferred Route	Agency
Proposed Route, including 3A (Figure A-4)	BLM and State of Wyoming

A single-circuit 500-kV line would link the former location of the Creston Substation, approximately 2.1 miles south of Wamsutter, Wyoming, to the proposed Anticline Substation near the existing Jim Bridger Power Plant. Segment 3 would be approximately 45.9 miles long. This segment also includes a 5.1-mile segment of 345-kV line to connect to the existing Jim Bridger Power Plant Substation (Segment 3A).

There are no alternatives proposed along Segment 3. Figure A-4 in Appendix A shows the location of the Segment 3 routes.

The Analysis Area for Segment 3 consisted of approximately 3,599 acres of mapped vegetation, which included 47 acres (1.3 percent) of wetland and riparian areas. The primary wetland types present are herbaceous wetlands and shrub riparian areas.

Construction

The impacts from construction of the Preferred/Proposed Route in Segment 3 are presented in Table 3.9-4. About 1.6 and 0.7 acres of wetlands would be affected by construction on Segment 3 and 3A, respectively. Most of the impacts would occur from construction of structure pads and new access roads. Most of the wetland impacts would occur in herbaceous wetlands.

Table 3.9-4. Wetland/Riparian Impacts for Segment 3 and 3A Preferred/Proposed Routes

Segment/ Alternative	Construction Impacts to Wetlands (acres)	Construction Impacts to Riparian (acres)	Operations Impacts to Wetlands (acres)		Operations Impacts to Riparian (acres)	
			Due to Operations Facilities	Due to ROW Maintenance in Forests	Due to Operations Facilities	Due to ROW Maintenance in Forests
Preferred/ Proposed Segment 3 – Total Length	1.6	2.0	0.2	–	0.2	–
Preferred/ Proposed Segment 3A – Total Length	0.7	1.2	–	–	0.2	–

Operations

The impacts from operations and maintenance of the Preferred/Proposed Route in Segment 3 are presented in Table 3.9-4. About 0.2 acre of wetlands and 0.2 acre of riparian areas would be occupied by operations facilities. Impacts from operations facilities would mostly occur from structure pads and new or improved access roads. Most of the wetland impacts would occur in herbaceous wetlands and shrub riparian areas. No impacts to forested wetlands or riparian areas would occur during operations along this segment.

Segment 4

The preferred routes in Segment 4 are as follows:

Preferred Route	Agency
Proposed Route (Figures A-5 and A-6) except within the Caribou-Targhee NF (see below)	BLM, State of Wyoming, and Lincoln County
Proposed Route within the NF incorporating Alternative 4G (Figure A-6)	Forest Service

Segment 4 would link the proposed Anticline Substation and the existing Populus Substation near Downey, Idaho, with a single-circuit 500-kV line. Its proposed length is

approximately 197.6 miles. The Segment 4 BLM-Preferred/Proposed Route was revised to follow Alternative 4A, as analyzed in the Draft EIS, based on public comments. This segment generally follows an existing transmission line corridor. Segment 4 has five Route Alternatives in the middle portion of its route; however, the first 52 miles to the east and the last 61 miles to the west (in Idaho) do not have any route alternatives. The middle section of the BLM-Preferred/Proposed Route, for which alternatives are presented, is approximately 85.2 miles long, and its alternatives vary from approximately 87.5 to 102.2 miles long. Alternatives 4B through 4E were proposed by the BLM Kemmerer FO (with input from various cooperating agencies), with the intent to avoid impacts to cultural resources to the extent practical. Alternative 4F was proposed by the Proponents to avoid impacts to cultural resources while still remaining north of the existing Bridger Lines. Alternative 4G was proposed by the Forest Service in order to avoid unstable soils identified along the Proposed Route during the 2012 soil assessment (it is located within Sections 1 and 2, Township 12 South, Range 41 East). Figures A-5 and A-6 in Appendix A show the location of the Segment 4 routes in Wyoming and Idaho, respectively.

The Analysis Area for Segment 4 consisted of approximately 26,229 acres of mapped vegetation, which included 686 acres (2.6 percent) of wetland and riparian areas. Approximately 4.4 acres of wetlands and riparian areas that were mapped were located on the Caribou-Targhee NF. The primary wetland types present are herbaceous wetlands and shrub riparian areas. This segment would make several crossings of broad irrigated and sub-irrigated valleys associated primarily with the Bear River as well as some other smaller streams. Much of the valley floor is mapped as a complex of herbaceous wetlands and riparian areas, and the length of the crossings of these complexes ranges from about 0.5 mile to several miles.

Construction

The impacts from construction of the BLM-Preferred/Proposed Route and Route Alternatives in Segment 4 are presented in Table 3.9-5. About 70.4 acres of wetlands and 38.7 acres of riparian areas would be affected by construction of the BLM-Preferred/Proposed Route. Most of the impacts would occur from construction of structure pads, new access roads, and improvements made to existing access roads.

The Proponents have proposed to use matting while constructing the transmission line in the broad floodplains of the Bear River crossings, reducing the construction impacts to wetlands by approximately 19.7 percent. Most of the wetland impacts would occur in herbaceous wetlands and most of the riparian impacts would occur in shrub riparian areas.

All of the alternatives would have fewer impacts to wetlands and riparian areas than the comparison portions of the BLM-Preferred/Proposed Route. Of the Alternative Routes, Alternative 4F would have the most construction-related impacts to wetland and riparian areas.

Table 3.9-5. Comparison of Wetland/Riparian Impacts for Segment 4 Preferred/Proposed Route and Alternatives 4B through 4F

Segment/ Alternative	Construction Impacts to Wetlands (acres)	Construction Impacts to Riparian (acres)	Operations Impacts to Wetlands (acres)		Operations Impacts to Riparian (acres)	
			Due to Operations Facilities	Due to ROW Maintenance in Forests	Due to Operations Facilities	Due to ROW Maintenance in Forests
Preferred/ Proposed Segment 4 – Total Length	70.4	38.7	0.8 ^{1/}	1.7	3.2	3.4
Preferred/ Proposed – Comparison Portion for Alts. 4B–F	44.3	27.3	2.7	0.1	1.6	2.3
Alternative 4B	27.8	22.1	1.5	–	1.0	0.5
Alternative 4C	25.6	21.3	1.2	–	0.9	0.5
Alternative 4D	28.4	21.6	1.7	–	1.0	0.5
Alternative 4E	26.3	20.9	1.4	–	0.9	0.5
Alternative 4F	33.1	25.6	1.6	0.7	1.0	2.2

1/ This number was manually changed from the GIS analysis. It was reduced by 5.3 acres based on matting techniques as described in Section 3.9.2.2.

Caribou-Targhee National Forest Crossed by Segment 4

There are two routes considered across the Caribou-Targhee NF, the Proposed Route and Alternative 4G. The Forest Service soils assessment, which was completed in 2012, identified steep slopes and potentially unstable soils along a portion of the Proposed Route that crosses the Caribou-Targhee NF (Sections 1 and 2, Township 12 South, Range 41 East). The Forest Service therefore identified Alternative 4G, which avoids these areas. Alternative 4G is 2.6 miles long compared to 2.3 miles for the comparison portion of the Proposed Route (Figure 2.4-3 in Chapter 2). The Forest Service's Preferred Route for the portion of Segment 4 within the Caribou Targhee NF is the Proposed Route with the inclusion of Alternative 4G.

The Caribou-Targhee NF has identified AIZs associated with many of the stream segments on the NF. Streams are buffered by set distances depending on the stream type and limit development in these buffer areas to protect streams from impacts such as erosion, sedimentation, temperature increases, and other water quality-related issues. The Proposed Route would cross the AIZ of multiple perennial and intermittent streams on the Caribou-Targhee NF. Approximately 28.1 acres of AIZs on the Caribou-Targhee NF would be impacted on the Proposed Route by construction activities. Alternative 4G would impact approximately 2.0 acres of AIZ while the comparison portion of the Proposed Route would impact approximately 3.7 acres. As a result, the BLM/Forest Service Preferred Route (which includes Alternative 4G) would impact approximately 26.4 acres of AIZ. With the application of the SWPPP and the Reclamation, Revegetation, and Weed Management Plan, construction of Segment 4 within the Caribou-Targhee NF is not expected to result in a reduction or loss of function for the AIZ streams within the Project area. Site-specific crossing plans and measures to mitigate impacts would be submitted to the Caribou-Targhee NF for approval prior to construction in these areas.

Operations

The impacts from operations and maintenance of the BLM-Preferred/Proposed Route and Route Alternatives in Segment 4 are presented in Table 3.9-5. About 0.8 acre of wetlands and 3.2 acres of riparian areas would be occupied by operations facilities on the BLM-Preferred/Proposed Route, of which less than 0.1 acre of impact would occur on the Caribou-Targhee NF. Operations facilities affecting wetlands and riparian areas would include structure pads and new and improved access roads. By using matting, approximately 5.3 acres (87 percent) of permanent impacts to wetlands will not occur. ROW maintenance would convert 1.7 acres of forested wetlands to herbaceous or shrub wetland types, and 3.4 acres of forest riparian areas to herbaceous or shrub riparian areas on the BLM-Preferred/Proposed Route. Most of the operations impacts would occur in herbaceous wetlands and forested riparian areas.

Caribou-Targhee National Forest Crossed by Segment 4

Approximately 2.4 acres of AIZs on the Caribou-Targhee NF would be impacted on the Proposed Route by operations and maintenance activities. Alternative 4G, the Forest Service’s Preferred Route, would impact approximately 0.5 acre of AIZ, the same as the comparison portion of the Proposed Route.

Segment 5

The preferred routes in Segment 5 are as follows:

Preferred Route	Agency
Proposed Route incorporating Alternatives 5B and 5E ^{1/} (Figure A-7)	BLM
Proposed Route incorporating Alternatives 5C and 5E (Figure A-7)	Power County

1/ Assumes that Western Electricity Coordinating Council reliability issues associated with 5E are resolved.

Segment 5 would link the Populus and Borah Substations with a single-circuit 500-kV line that would be approximately 55.7 miles long. There are five Route Alternatives to portions of the Proposed Route in Segment 5. Alternatives 5A and 5B were proposed by the BLM to avoid crossing the Deep Creek Mountains. Alternative 5C, which crosses the Fort Hall Indian Reservation, was proposed as the preferred route by Power County, however, the Fort Hall Business Council has voted not to permit the Project across the Reservation. Alternative 5D was originally the Proponents’ Proposed Route. Alternative 5E was proposed by Power County as an alternative approach to the Borah Substation. The BLM has identified a Preferred Route that includes portions of the Proposed Route with Alternative Routes 5B and 5E (with the assumption that reliability issues associated with 5E can be resolved). The Segment 5 Preferred Route is 73.3 miles long, compared to 55.7 miles for the Proposed Route. Figure A-7 in Appendix A shows the location of the Segment 5 routes.

The Analysis Area for Segment 5 consisted of approximately 12,176 acres of mapped vegetation, which included 72 acres (0.5 percent) of wetland and riparian areas. Riparian shrub areas are the most abundant type present.

Construction

The impacts from construction of the Preferred Route, Proposed Route, and Route Alternatives in Segment 5 are presented in Table 3.9-6. Approximately 0.9 acre of wetlands and 6.5 acres of riparian areas would be affected by construction of the

Table 3.9-6. Comparison of Wetland/Riparian Impacts for Segment 5 Preferred and Proposed Routes and Alternatives 5A through 5E

Segment/ Alternative	Construction Impacts to Wetlands (acres)	Construction Impacts to Riparian (acres)	Operations Impacts to Wetlands (acres)		Operations Impacts to Riparian (acres)	
			Due to Operations Facilities	Due to ROW Maintenance in Forests	Due to Operations Facilities	Due to ROW Maintenance in Forests
Preferred Segment 5 – Total Length	0.9	6.5	0.1	–	0.7	1.0
Proposed Segment 5 – Total Length	1.1	5.3	0.1	–	0.5	–
Proposed- Comparison Portion for Alternatives 5A, 5B	0.2	0.1	t ^{1/}	–	t ^{1/}	–
Alternative 5A	0.1	1.3	t ^{1/}	–	0.2	0.4
Alternative 5B	0.1	2.1	t ^{1/}	–	0.2	1.0
Proposed- Comparison Portion for Alternative 5C	0.2	2.9	t ^{1/}	–	0.5	–
Alternative 5C	3.6	3.1	t ^{1/}	–	0.1	1.3
Proposed – Comparison Portion for Alternative 5D	–	4.3	–	–	0.5	–
Alternative 5D	–	3.6	–	–	0.2	1.4
Proposed – Comparison Portion for Alternative 5E	–	1.4	–	–	t ^{1/}	–
Alternative 5E	–	0.2	–	–	t ^{1/}	–

1/ Value is less than 0.1 acre.

Preferred Route. About 1.1 acres of wetlands and 5.3 acres of riparian areas would be affected by construction of the Proposed Route. Impacts on both the Preferred and Proposed Routes would result mostly from construction of structure pads and new and improved roads. Most of the wetland impacts would occur in herbaceous and mixed wetlands and most of the riparian impacts would occur in shrub riparian areas.

Alternatives 5A and 5B would have fewer wetland but more riparian impacts compared to the comparison portion of the Proposed Route. Alternative 5C would impact more wetlands and riparian areas than the comparison portion of the Proposed Route. Alternative 5D would have similar wetland but more riparian impacts than the comparison portion of the Proposed Route for construction-related impacts. Alternative 5E and the comparison portion of the Proposed Route would not affect wetlands; however, 5E would have fewer impacts to riparian areas from construction than the comparison portion. All of the Route Alternatives would have fewer wetland and

riparian impacts than the Preferred Route except for Alternative 5D, which would have more riparian impacts.

Operations

The impacts from operations and maintenance of the Segment 5 Preferred Route, Proposed Route, and Route Alternatives are presented in Table 3.9-6. Approximately 0.1 acre of wetlands and 0.7 acre of riparian areas would be occupied by operations facilities on the Preferred Route. Somewhat fewer, about 0.1 acre of wetlands and 0.5 acre of riparian areas, would be occupied by operations facilities on the Proposed Route. For both the Preferred and Proposed Routes, impacts would mostly result from new and existing improved access roads. The wetland impacts would occur in herbaceous wetlands and most of the riparian impacts would occur in herbaceous and shrub riparian areas. Operations facilities and ROW clearing would affect approximately 1.0 acre of forested riparian areas associated with the Preferred Route.

Segment 6

The preferred route in Segment 6 is as follows:

Preferred Route	Agency
The proposal to upgrade the line voltage from 345-kV to 500-kV (Figure A-8)	BLM

Segment 6 is an existing transmission line linking the Borah and Midpoint Substations; it is now operated at 345 kV but would be changed to operate at 500 kV. This segment has no route alternatives. Existing support structures would be used and impacts would be limited to within approximately 0.25 mile from each substation to allow for moving the entry point into the substation to the new 500-kV bay. Changes at the Borah and Midpoint Substations would allow Segment 6 to be operated at 500 kV. Figure A-8 in Appendix A shows the Preferred/Proposed Route for Segment 6. This segment would have no impacts on wetlands or riparian areas.

Segment 7

The preferred routes in Segment 7 are as follows:

Preferred Route	Agency
Proposed Route incorporating Alternatives 7B, 7C, 7D, and 7G (Figure A-9). The Proposed Route in the East Hills and Alternative 7G will be microsited to avoid Preliminary Priority Sage-grouse Habitat (PPH).	BLM
Alternative 7K (Figure A-9)	Power and Cassia Counties

Segment 7 would link the Populus Substation and the proposed Cedar Hill Substation with a single-circuit 500-kV line that would be approximately 118.2 miles long. Several alternatives to the Proposed Route are being considered. Alternatives 7A and 7B have been proposed by the BLM to avoid crossing the Deep Creek Mountains. Alternatives 7C, 7D, 7E, 7F, and 7G were proposed by local landowners to avoid private agricultural lands. Alternative 7K (also called the Goose Creek Alternative) was identified during the public comment period as a shorter alternative to the Proposed Route than either Alternatives 7I or 7J (refer to Chapter 2 of the Draft EIS for a description of these routes). The alignment for Alternative 7K was developed in cooperation with Cassia County. Alternatives 7H, 7I and 7J, which were analyzed in the Draft EIS, are no longer

under consideration. The BLM has identified a Preferred Route that includes portions of the Proposed Route with Alternatives 7B, 7C, 7D, and 7G. The Segment 7 Preferred Route is 130.2 miles long, compared to 118.2 miles for the Proposed Route. Figure A-9 in Appendix A shows the location of the Segment 7 routes.

The Analysis Area for Segment 7 consisted of approximately 24,892 acres of mapped vegetation, which included 108 acres (0.4 percent) of wetland and riparian areas. The most common types present are herbaceous wetland and riparian.

The USFWS expressed concerns regarding project impacts from the Proposed Route on the Six S Ranch Partners for Wildlife wetland project funded by the USFWS and other partners to promote the conservation of migratory birds. The Proponents report that they have met with the landowner to review an alignment that avoids wetland impacts and reduces direct and indirect impacts on migratory birds, specifically waterfowl, but would require negotiations with adjacent property owners to avoid the parcel. Adjustment of the present alignment to avoid the parcel would also require further design review due to an existing pipeline ROW, an existing 230-kV transmission line, and distribution line tap from a substation.

Construction

The impacts from construction of the Segment 7 Preferred Route, Proposed Route, and Route Alternatives are presented in Table 3.9-7. About 2.5 acres of wetlands and 5.2 acres of riparian areas would be affected by construction of the Preferred Route. About 2.7 acres of wetlands and 3.4 acres of riparian areas would be affected by construction of the Proposed Route. For both the Preferred and Proposed Routes, the wetland impacts would occur in herbaceous, shrub, and mixed wetlands and most of the riparian impacts would occur in herbaceous and shrub riparian areas.

Alternative 7A would result in more impacts to wetland areas, while Alternative 7B would also result in fewer impacts to wetlands but more impacts to riparian areas than the comparison portion of the Proposed Route. Alternatives 7C through 7G and their corresponding portions of the Proposed Route would have no or minimal wetland and riparian impacts with the exception of 7D, which has 1.4 acres of impacts to wetlands and 2.6 acres of impacts to riparian areas. Alternative 7K has more wetland and riparian impacts than the comparison portion. Only Alternative 7K has more impacts to wetlands and riparian areas than the Preferred Route when comparing the Preferred Route to all the Segment 7 Alternatives.

Sawtooth National Forest Crossed by Segment 7

Alternative 7K would cross the Sawtooth NF. The Sawtooth NF has identified RCZs, which are based on a specific width on either side of a stream depending on flow regime and do not specifically require the physical presence of mapped riparian or wetland vegetation. These areas provide a buffer between a stream or waterbody and the upland areas, and can influence water quality. Construction of this alternative would impact about 52.6 acres of RCZs on the Sawtooth NF (see Table 3.9-7).

Table 3.9-7. Comparison of Wetland/Riparian Impacts for Segment 7 Preferred and Proposed Routes and Alternatives 7A through 7G and Alternative 7K

Segment/ Alternative	Construction Impacts to Wetlands (acres)	Construction Impacts to Riparian (acres)	Construction Impacts to RCZs on Sawtooth NF (acres)	Operations Impacts to Wetlands (acres)		Operations Impacts to Riparian (acres)	
				Due to Operations Facilities	Due to ROW Maintenance in Forests	Due to Operations Facilities	Due to ROW Maintenance in Forests
Preferred Segment 7 – Total Length	2.5	5.2	–	0.1	–	0.4	–
Proposed Segment 7 – Total Length	2.7	3.4	–	0.2	–	0.3	–
Proposed – Comparison Portion for Alternative 7A,7B	0.2	0.7	–	0.1	–	0.1	–
Alternative 7A	6.3	2.6	–	0.3	–	0.3	0.4
Alternative 7B	–	1.5	–	–	–	0.2	–
Proposed – Comparison Portion for Alternative 7C	0.1	–	–	t ^{1/}	–	t ^{1/}	–
Alternative 7C	–	–	–	–	–	–	–
Proposed – Comparison Portion for Alternative 7D	1.4	2.2	–	t ^{1/}	–	0.1	–
Alternative 7D	1.4	2.6	–	t ^{1/}	–	0.1	–
Proposed – Comparison Portion for Alternative 7E	–	–	–	–	–	–	–
Alternative 7E	–	–	–	–	–	–	–
Proposed – Comparison Portion for Alternative 7F	0.4	0.1	–	t ^{1/}	–	t ^{1/}	–
Alternative 7F	–	0.1	–	–	–	t ^{1/}	–
Proposed – Comparison Portion for Alternative 7G	0.1	–	–	t ^{1/}	–	–	–
Alternative 7G	0.1	1.0	–	t ^{1/}	–	–	–
Proposed – Comparison Portion for Alternative 7K	2.7	3.3	–	0.2	–	0.3	–
Alternative 7K	6.1	10.3	52.6	0.5	–	1.6	1.4

1/ Value is less than 0.1 acre.

3.9-30

Operations

The impacts from operations and maintenance of the Segment 7 Preferred Route, Proposed Route, and Route Alternatives are presented in Table 3.9-7. Approximately 0.1 acre of wetlands and 0.4 acre of riparian areas would be occupied by operations facilities along the Preferred Route of Segment 7. About 0.2 acre of wetlands and 0.3 acre of riparian areas would be occupied by operations facilities along the Proposed Route of Segment 7. Operations facilities affecting wetlands and riparian areas would include structure pads and new and improved access roads. Most of the impacts would occur in herbaceous and shrub wetlands and herbaceous and shrub riparian areas. ROW maintenance would not affect any forested wetland or forested riparian areas; however, ROW maintenance would impact these areas along Alternatives 7A and 7K.

Segment 8

The preferred routes in Segment 8 are as follows:

Preferred Route	Agency
Proposed Route incorporating Alternative 8B (Figure A-10)	BLM and IDANG

Segment 8 would link the Midpoint and Hemingway Substations. This 131.5-mile single-circuit 500-kV transmission line would stay north of the Snake River generally parallel to an existing 500-kV transmission line, before ending at the Hemingway Substation. There are five Route Alternatives to the Proposed Route. Alternative 8A follows the WWE corridor but crosses the Snake River and I-84 twice (while the Proposed Route would stay north of this area). Alternatives 8B and 8C were originally proposed by the Proponents as parts of the Proposed Route but were later dropped from the Proposed Route to avoid planned developments near the cities of Kuna and Mayfield, respectively. Alternative 8D would rebuild a portion of an existing 500-kV transmission line to move it away from the National Guard Maneuver Area. Alternative 8D would be constructed within the ROW currently occupied by the existing line. Alternative 8E was proposed by the BLM in order to avoid crossing the Halverson Bar non-motorized portion of a National Register Historic District (see the discussion of 8E under Segment 9). The BLM has identified a Preferred Route that includes portions of the Proposed Route with Alternative 8B and generally avoids the SRBOP. The Segment 8 Preferred Route is 132.0 miles long, compared to 131.5 miles for the Proposed Route. Figure A-10 in Appendix A shows the location of the Segment 8 routes.

The Analysis Area for Segment 8 consisted of approximately 17,975 acres of mapped vegetation, which included 92 acres (0.5 percent) of wetland and riparian areas. The most common types present are herbaceous wetland and shrub riparian areas.

The USFWS expressed concerns regarding project impacts from the Proposed Route (also the BLM Preferred Route) on the Spring Cove Ranch Partners for Wildlife wetland project funded by the USFWS and other partners to promote the conservation of migratory birds. The Preferred Route parallels an existing 230-kV line across the Spring Cove Ranch parcel. The Proponents report that they have had no discussions with the landowner. Negotiations with other private landowners to the north would likely be required to avoid this parcel.

Construction

The impacts from construction of the Segment 8 Preferred/Proposed and Route Alternatives are presented in Table 3.9-8. Approximately 6.3 acres of wetlands and 2.7 acres of riparian areas would be occupied by construction of the Preferred Route of Segment 8. Approximately 1.7 acres of riparian areas would be affected by construction of the Proposed Route. For both the Preferred and Proposed Routes, most of the wetland impacts would occur in herbaceous wetlands and most of the riparian impacts would occur in herbaceous riparian areas. For the Proposed Route, construction would not affect any forested wetlands but would affect about 0.2 acre of forested riparian areas.

Table 3.9-8. Comparison of Wetland/Riparian Impacts for Segment 8 Preferred and Proposed Routes and Alternatives 8A through 8E

Segment/ Alternative	Construction Impacts to Wetlands (acres)	Construction Impacts to Riparian (acres)	Operations Impacts to Wetlands (acres)		Operations Impacts to Riparian (acres)	
			Due to Operations Facilities	Due to ROW Maintenance in Forests	Due to Operations Facilities	Due to ROW Maintenance in Forests
Preferred Segment 8 – Total Length	6.3	2.7	0.4	–	0.4	0.5
Proposed Segment 8 – Total Length	7.3	1.7	0.3	–	0.4	0.1
Proposed – Comparison Portion for Alternative 8A	1.6	0.5	0.1	–	0.1	0.1
Alternative 8A	0.7	6.3	0.2	–	0.2	5.5
Proposed – Comparison Portion for Alternative 8B	–	1.0	–	–	0.2	–
Alternative 8B	6.3	2.0	0.1	–	0.2	0.4
Proposed – Comparison Portion for Alternative 8C	–	0.2	–	–	t ^{1/}	–
Alternative 8C	–	0.1	–	–	t ^{1/}	–
Proposed – Comparison Portion for Alternative 8D	–	–	–	–	–	–
Alternative 8D	–	–	–	–	–	–
Proposed – Comparison Portion for Alternative 8E	–	–	–	–	–	–
Alternative 8E	–	0.2	–	–	–	–

1/ Value is less than 0.1 acre.

Alternative 8A would have less impacts to wetlands and more impacts to riparian areas than the comparison portion of the Proposed Route. Alternative 8B would have more impacts than the corresponding portion of the Proposed Route to both wetlands and riparian areas. Alternative 8C would have no impacts to wetlands and only minor impacts to riparian areas. No impacts to wetlands or riparian areas would occur along Alternatives 8D and 8E. All of the Alternatives would have fewer wetland and riparian impacts than the Preferred Route.

Operations

The impacts from operations and maintenance of the Segment 8 Preferred Route, Proposed Route, and Route Alternatives are presented in Table 3.9-8. Nearly similar acreages (about 0.3 to 0.4 acre of wetlands and 0.4 acre of riparian areas) would be occupied by operations facilities along the Preferred and Proposed Routes. Operations facilities affecting wetlands and riparian areas would primarily include structure pads; however, some impacts would occur from new and improved access roads. Most of the impacts would occur in herbaceous wetlands and riparian areas. ROW maintenance would convert 0.5 and 0.1 acre of forested riparian areas to herbaceous or shrub riparian areas along the Preferred and Proposed Routes, respectively.

Segment 9

The preferred routes in Segment 9 are as follows:

Preferred Route	Agency
Proposed Route incorporating Alternative 9E, which was revised to avoid PPH and Murphy (Figure A-11)	BLM
Alternative 9D (Figure A-11)	Owyhee County

Segment 9 would link the Cedar Hill and Hemingway Substations with a 162.2-mile single-circuit 500-kV transmission line that skirts the Jarbidge and Owyhee Military Operating Areas to the north, then follows the WWE corridor just north of the Saylor Creek Air Force Range, passing through Owyhee County before entering the Hemingway Substation. There are eight Route Alternatives proposed. Alternative 9A was the Proponents’ Proposed Route until that route was revised to avoid the Hollister area. Alternative 9B is being considered by the BLM because it follows the WWE corridor and parallels existing utility corridors. Alternative 9C was the Proponents’ Proposed Route until that route was revised to avoid the Castleford area. Alternatives 9D through 9G were proposed by the Owyhee County Task Force to reduce impacts to private land. Alternatives 9F and 9H were proposed to avoid crossing the non-motorized area south of C.J. Strike Reservoir and as an alternate route if Alternative 8E is selected. The BLM has identified a Preferred Route that includes portions of the Proposed Route with Alternative 9E. Figure A-11 in Appendix A shows the location of the Segment 9 routes. A portion of Alternative 9D/F uses the same path as Alternative 8E in Segment 8; therefore, 8E and 9D/F could not both be selected. Alternative 9E has been revised to avoid sage-grouse PPH and to incorporate a recommended route change submitted by Owyhee County that avoids a planned subdivision near Murphy. The Segment 9 Preferred Route is 171.4 miles long, compared to 162.2 miles for the Proposed Route.

The Analysis Area for Segment 9 consisted of approximately 25,809 acres of mapped vegetation, which included 134 acres (0.5 percent) of wetland and riparian areas. The most common types present are shrub riparian and mixed riparian areas.

The USFWS expressed concerns regarding project impacts from the Proposed Route (not the BLM Preferred Route) on the Bruneau River Ranch Partners for Wildlife wetland project funded by the USFWS and other partners to promote the conservation of migratory birds. The Proponents report that they have met with the landowner to review an alignment that avoids wetland impacts on private property and reduces direct and indirect impacts on migratory birds, specifically waterfowl. The Proponents report that if BLM changes its Preferred Route to the Proposed Route, negotiations with additional private property landowners would be required to avoid this parcel.

Construction

The impacts from construction of the Segment 9 Preferred Route, Proposed Route, and Route Alternatives are presented in Table 3.9-9. Approximately 5.6 acres of wetlands and 2.1 acres of riparian areas would be affected by construction of the Preferred Route of Segment 9. Approximately 6.0 acres of wetlands and 4.3 acres of riparian areas would be affected by construction of the Proposed Route of Segment 9. For both the Preferred and Proposed Routes, most of the impacts would occur from construction of structure pads and access roads. Most of the wetland impacts would occur in herbaceous wetlands and most of the riparian impacts would occur in shrub and mixed riparian areas. For the Proposed Route, construction and ROW clearing would not affect any forested wetlands and only minor portions of forested riparian areas.

Alternatives 9A and 9C and the corresponding comparison portions of the Proposed Route would have little or no impacts to wetlands, but Alternative 9A would result in greater impacts to riparian areas. Alternative 9B would not impact wetlands but would impact more riparian areas than the comparison portion of the Proposed Route. Alternatives 9D through 9H would have varying degrees of impacts (more and less) to wetlands than the comparison portion of the Proposed Route. Two alternatives (9D and 9G) would result in slightly less impacts to riparian areas than the comparison portion of the Proposed Route, whereas the other two alternatives (9F and 9H) would have slightly more impact. Alternative 9E (revised) would have fewer wetland and riparian impacts than the comparison portion.

Table 3.9-9. Comparison of Impacts for Segment 9 Preferred and Proposed Route and Alternatives 9A through 9H

Segment/ Alternative	Construction Impacts to Wetlands (acres)	Construction Impacts to Riparian (acres)	Operations Impacts to Wetlands (acres)		Operations Impacts to Riparian (acres)	
			Due to Operations Facilities	Due to ROW Maintenance in Forests	Due to Operations Facilities	Due to ROW Maintenance in Forests
Preferred Segment 9 – Total Length	5.6	2.1	0.2		0.2	t ^{1/}
Proposed Segment 9 – Total Length	1.7	4.3	0.3	–	0.7	t ^{1/}
Proposed– Comparison Portion for Alternative 9A	–	–	–	–	t ^{1/}	–
Alternative 9A	–	0.3	–	–	t ^{1/}	–
Proposed– Comparison Portion for Alternative 9B	–	0.4	–	–	t ^{1/}	–
Alternative 9B	–	0.6	–	–	0.4	0.3
Proposed– Comparison Portion for Alternative 9C	–	0.3	–	–	t ^{1/}	–
Alternative 9C	–	–	–	–	–	–
Proposed– Comparison Portion for Alts. 9D,F,G,H	1.4	3.7	0.3	–	0.6	–
Alternative 9D	0.7	1.9	t ^{1/}	–	t ^{1/}	–
Alternative 9F	1.6	5.1	0.3	–	0.3	–
Alternative 9G	1.4	2.5	0.2	–	t ^{1/}	–
Alternative 9H	2.3	5.0	0.5	–	0.3	–
Proposed– Comparison Portion for Alt. 9E (revised)	1.4	3.7	0.2	–	0.6	–
Alt. 9E (revised)	1.0	1.5	0.1	–	0.1	–

1/ Value is less than 0.1 acre.

Operations

The impacts from construction of Segment 9 Preferred Route, Proposed Route, and Route Alternatives are presented in Table 3.9-9. About 0.2 acre of wetlands and riparian areas, respectively, would be impacted during operations from the Preferred Route. About 0.3 acre of wetlands and 0.7 acre of riparian areas along the Proposed Route would be impacted during operations. For both the Preferred and Proposed Routes, operations facilities affecting wetlands and riparian areas would include structure pads and new and existing, improved access roads. Most of the impacts would occur to shrub wetland and shrub riparian areas. ROW maintenance would not

affect forested wetlands and only minor amounts of riparian areas along the Proposed Route.

Segment 10

The Preferred Route in Segment 10 is as follows:

Preferred Route	Agency
Proposed Route (Figure A-12)	BLM

Segment 10 would link the Cedar Hill and Midpoint Substations with a 34.4-mile single-circuit 500-kV line. Segment 10 would follow a WWE corridor for most of the route. The Preferred/Proposed Route would also be adjacent to the existing 345-kV line most of this length and has been sited to follow the same alignment of the planned SWIP. Either the SWIP or Gateway West would be built, but not both. There are no Route Alternatives proposed along this segment. Figure A-12 in Appendix A shows the location of the Preferred/Proposed Route in Segment 10.

The Analysis Area for Segment 10 consisted of approximately 2,389 acres of mapped vegetation, which included 3 acres (0.1 percent) of wetland and riparian areas.

Construction/Operations

A total of 0.8 acre of shrub riparian area would be impacted by construction. There would be about 0.1 acre of impact to riparian areas from operations.