Appendix C

Environmental Protection Plans and Measures

- Appendix C-1 – Revised Environmental Protection Measures and Plans
- Appendix C-2 – Revised Framework Reclamation Plan for Construction
- Appendix C-3 – Revised Proposed Plant and Wildlife Conservation Plan – Construction Activities
- Appendix C-4 – Revised Plan for Operations, Maintenance, and Emergency Response Activities
- Appendix C-5 – Greater Sage-grouse Avoidance, Minimization, and Mitigation Measures
- Appendix C-6 – Draft Framework for Compensatory Mitigation for and Monitoring of Unavoidable Impacts to Waters of the U.S.

Appendix C-1
Revised Environmental Protection Measures and Plans

(submitted to BLM by Idaho Power and Rocky Mountain Power October 2010)

Appendix C-1

Revised Environmental Protection Measures and Plans

Gateway West Transmission Line Project

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1.0 ENVIRONMENTAL PROTECTION MEASURES

This appendix specifies Environmental Protection Measures (EPM) that Idaho Power Company and Rocky Mountain Power (the Proponents) have incorporated as their best management practices and as part of the Project description. These measures have been developed by the Proponents to maintain environmental quality and meet requirements of various land management plans. These measures apply project-wide unless modified through negotiations with individual landowners or superseded by permits granted by federal, state, or local agencies. The Proponents will be responsible to ensure their contractors and employees will implement these measures. These EPMs apply to construction, operation, and maintenance as appropriate.

Additional environmental protection measures are proposed in:

- Appendix C-2 - Preliminary Reclamation Plan describing pre-construction planning, methods to limit erosion, a framework for the reclamation process and post construction monitoring and reporting standards to be followed.
- Appendix C-3 (R) – Revised Proposed Plant and Wildlife Conservation Plan – Construction Activities
- Appendix C-4 (R) - Revised Plan for Operations, Maintenance, and Emergency Response Activities

This appendix (Appendix C-1) contains five attachments. Each Attachment presents the EPMs that the Proponents are presenting as part of the Gateway West Transmission Line Project (Gateway West or Project). These include:

Attachment A, Traffic and Transportation Management, includes measures that require compliance with federal policies and standards relative to planning, siting, improvement, maintenance, and operation of roads for the Project.

Attachment B, Stormwater Pollution Prevention, includes measures for temporary and permanent erosion and sediment control that will be used during construction, operation, and maintenance of the transmission line and ancillary facilities.

Attachment C, Spill Prevention, Containment, and Countermeasures, includes measures for spill prevention practices, requirements for refueling and equipment operation near waterbodies, procedures for emergency response and incident reporting, and training requirements.

Attachment D, Cultural Resource and Paleontological Monitoring and Mitigation, presents the procedures undertaken to inventory, evaluate, and protect cultural resources, treatment of any eligible or listed resource that cannot be avoided, and inadvertent discoveries during construction, operation, and maintenance.

Attachment E, Blasting, outlines the procedures and safety measures for blasting activities.

2.0 ENVIRONMENTAL PROTECTION PLANS

Each of these attachments serves as the basis for one or more plans that the Proponents must produce and submit to the BLM, Forest Service, and other appropriate agencies with regulatory authority over lands within the Project, for review and approval before receiving a Notice to Proceed to construct. These plans will include site-specific means of implementing the measures listed in this appendix, and cannot be finalized until the preferred route is chosen and the final design is advanced. Each of the attachments specifies elements that the plan must address and sets the standards that the plans must meet in order to be approved.

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ATTACHMENT A
TRAFFIC AND TRANSPORTATION MANAGEMENT

Traffic and Transportation Management

This Attachment presents protection measures to be used to minimize impacts on roads, traffic, and other users of roads, and to reduce dust. The Proponents will prepare a Traffic and Transportation Management Plan, once the locations of access roads and crossings are known, that demonstrates how the measures specified herein will be implemented in the field.

TR-1 A Traffic and Transportation Management Plan will be developed and implemented to provide site-specific details showing how the Project will comply with the EPMs listed in this attachment. This plan will be submitted to and approved by the appropriate federal, state, and local agencies with authority to regulate use of public roads, and approved, prior to the issuance of a Notice to Proceed with construction.

TR-2 Dust suppression techniques will be applied, such as watering construction areas or removing dirt tracked onto a paved road as necessary to prevent safety hazards or nuisances on access roads and in construction zones near residential and commercial areas and along major highways and interstates.

TR-3 If the Project proposes to obtain water from wells or surface water sources to suppress dust, written approval from the landowner or regulatory agency will be obtained prior to appropriation.

TR-4 If a construction method requires the closure of a state- or county-maintained road for more than 1 hour, a plan will be developed to accommodate traffic as required by a county or state permit.

TR-5 On county- and state-maintained roads, caution signs will be posted on roads, where appropriate, to alert motorists of construction and warn them of slow traffic. Traffic control measures such as traffic control personnel, warning signs, lights, and barriers will be used during construction to ensure safety and to minimize traffic congestion.

TR-6 To reduce traffic congestion and roadside parking hazards, an equipment yard will be provided for primary parking for employee personal vehicles.

TR-7 Unauthorized vehicles will not be allowed within the construction right-of-way (ROW) or along roadsides near the ROW.

TR-8 Construction vehicles will follow a 25 mph speed limit on unposted project roads.

TR-9 All temporary culverts and associated fill material will be removed from stream crossings after construction, and banks will be recontoured to their pre-disturbance conditions.

TR-10 Landowners will be notified at least 48 hours prior to the start of construction within 0.25 mile of a residence.

TR-11 Emergency vehicle access to private property will be maintained.

TR-12 Roads in residential areas will be restored as soon as possible, and construction areas near residences will be fenced off at the end of the construction day.

TR-13 Roads negatively affected by construction and as identified by the Agencies will be returned to preconstruction condition.

TR-14 Roads developed specifically for this project that are identified by the Proponents as no longer necessary will be reclaimed as specified in the Reclamation, Revegetation, and Weed Management Plan.

ATTACHMENT B
STORMWATER
POLLUTION PREVENTION

Stormwater Pollution Prevention

This attachment addresses measures to be undertaken to prevent stormwater pollution. To comply with criteria in Environmental Protection Agency's (EPA's) Clean Water Act, all construction site operators engaged in clearing, grading, and excavating activities that disturb one acre or more, must obtain a National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges (Code of Federal Regulations, Title 40, Parts 122 and 123). NPDES permits (also called Construction General Permits) are issued by EPA or similar authorized state entity following submittal of a Notice of Intent (NOI) for construction activities, and preparation of a Stormwater Pollution Prevention Plan (SWPPP) that describes how erosion and sediment transport will be minimized to adjacent waterbodies. At a minimum, two SWPPPs will be necessary for Gateway West. Wyoming has its own stormwater control program; therefore construction stormwater plans in Wyoming will be submitted to Wyoming Department of Environmental Quality (DEQ).

Measures to assure that construction activities comply with state and EPA requirements for stormwater management to be incorporated into the SWPPP include:

SW-1 The appropriate NPDES permits for construction activities that disturb one acre or more of land will be obtained from DEQ and EPA or their designees.

SW-2 NPDES permit requirements will be met. This includes implementing and maintaining appropriate BMPs for minimizing impacts to surface water.

SW-3 One or more responsible persons will be designated to manage stormwater issues, conduct the required stormwater inspections, and maintain the appropriate records to document compliance with the terms of the NPDES permit.

SW-4 The SWPPPs will be modified as necessary to account for changing construction conditions.

SW-5 The SWPPPs will identify areas with critical erosion conditions that may require special construction activities or additional BMPs to minimize soil erosion.

SW-6 Migration of construction-related sediment to all adjacent surface waterbodies will be prevented.

SW-7 Stormwater BMPs will be maintained on all disturbed lands during construction activities, as described in the SWPPP.

SW-8 Approved sediment and erosion control BMPs will be installed and maintained until disturbed areas meet final stabilization criteria.

SW-9 Temporary BMPs will be used to control erosion and sediment at staging areas (equipment storage yards, fly yards, lay down areas) and substations.

SW-10 The construction schedule may be modified to minimize construction activities in rain-soaked or muddy conditions.

SW-11 Damaged temporary erosion and sediment control structures will be repaired in accordance with the SWPPP.

SW-12 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.

SW-13 In areas of droughty soils, the soil surfaces will be mulched and stabilized to minimize wind erosion and to conserve soil moisture in accordance with the SWPPPs.

ATTACHMENT C
SPILL PREVENTION, CONTAINMENT, AND COUNTERMEASURES

Spill Prevention, Containment, and Countermeasures

This attachment outlines spill prevention practices and requirements for refueling and equipment operation near waterbodies, procedures for emergency response and incident reporting, and training requirements. The Proponents will prepare a Spill Prevention, Containment, and Countermeasures Plan (SPCC Plan) for review and approval by the appropriate regulatory agencies. That plan will include site-specific implementation of cleanup procedures in the event of soil contamination from spills or leaks of fuels, lubricants, coolants, or solvents as outlined in this attachment.

SPC-1 Construction industry standard practices and BMPs will be used for spill prevention and containment.

SPC-2 Construction spills will be promptly cleaned up and contaminated materials hauled to a disposal site that meets local jurisdictional requirements.

SPC-3 All staging areas will contain fueling areas with containment. Where fueling must be conducted along the ROW, the plan will specify BMPs.

SPC-4 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.

SPC-5 If a spill occurs which is beyond the capability of on-site equipment and personnel, an Emergency Response Contractor will be identified and available to further contain and clean up the spill.

SPC-6 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.

SPC-7 If pre-existing contamination is encountered during operations, work will be suspended in the area of the suspected contamination until the type and extent of the contamination is determined. The type and extent of contamination; the responsible party; and local, state, and federal regulations will determine the appropriate cleanup method(s) for these areas.

SPC-8 The SPCC Plan will include details on the types and quantities of absorbent and protective materials (e.g., visqueen, booms) that must be readily available to construction personnel and requirements for the restocking of materials.

SPC-9 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.

SPC-10 Pumps and temporary fuel tanks for the pumps will be stored in secondary containment. Containment will provide a minimum volume equal to 110 percent of the volume of the largest storage vessel located in the yard.

ATTACHMENT D
CULTURAL RESOURCE AND PALEONTOLOGICAL MONITORING AND MITIGATION

Cultural Resource and Paleontological Monitoring and Mitigation

This attachment presents the procedures to be undertaken to inventory, evaluate, and protect cultural and paleontological resources. In addition to preparing a Cultural Resource and Paleontological Monitoring and Mitigation Plan, the Proponents will prepare and submit a Treatment Plan for any historic property eligible for or listed on the National Register of Historic Places (NRHP) that will be impacted by the Project. The plan will specify how each property will be treated, including mitigation measures. The Plan will include an Unanticipated Discovery Plan that details the steps to be taken during construction in response to a new find of an historic property potentially eligible for listing on the NRHP during construction.

CUL-1 All work conducted under the Cultural Resources and Paleontological Monitoring and Mitigation Plan will be performed by qualified paleontologists and archeologists with trained assistants.

CUL-2 An Unanticipated Discovery Plan will be included as part of the Cultural Resources and Paleontological Monitoring and Mitigation Plan. This plan will specify what steps will be taken if a subsurface cultural resource or fossil is discovered during construction, including stopping construction in the vicinity of the find, notification of the appropriate land management agency, identification of a qualified archaeologist or paleontologist to conduct an evaluation of the find, and the development of an approved data recovery program or other mitigation measures.

CUL-3 The Cultural Resource and Paleontological Monitoring and Mitigation Plan will include provisions for the preparation and curation of any fossil collections from federal lands and for the preparation of a final report based on the data recovered for activities on federal lands.

CUL-4 Class I and Class III surveys will be completed for cultural resources. Class I surveys will be conducted on public and private lands and will cover a study area of one mile on either side of the proposed and alternate transmission line alignments as well as areas identified for use as staging areas and access roads. Class III surveys will be conducted on 100 percent of federal and state lands, and for those private lands for which survey access is granted, prior to the completion of the National Environmental Policy Act (NEPA) process. A good-faith effort will be made to obtain survey permission prior to the completion of the NEPA process.

CUL-5 If construction will adversely affect any properties listed on, or eligible for listing on, the NRHP, mitigation will be required. Mitigation may include, but not be limited to, one or more of the following measures: a) avoidance through the use of relocation of structures through the design process, realignment of the route, relocation of temporary workspace, or changes in the construction and/or operational design; b) data recovery, which may include the systematic professional excavation of an archaeological site or the preparation of photographic and/or measured drawings documenting standing structures; and c) the use of landscaping or other techniques that will minimize or eliminate effects on the historic setting or ambience of standing structures.

CUL-6 Avoidance areas will be flagged prior to construction activities. Flagging will be removed once construction is completed in an area.

CUL-7 To minimize unauthorized collecting of archaeological material or vandalism to known archaeological sites, all workers will attend mandatory training on the

significance of cultural resources and the relevant federal regulations intended to protect them.

CUL-8 If remains are discovered, construction will be halted and the coroner will be notified. If human remains of Native American origin are discovered, or if associated grave goods, or objects of cultural patrimony are discovered on lands managed by a federal agency, the provisions of the Native American Graves Protection and Repatriation Act will be followed.

CUL-9 If fossil materials are discovered during Project construction, all surface-disturbing activities in the vicinity of the find will cease until notification to proceed is given by the authorized officer. The site will be protected to reduce the risk of damage to fossils and context. Appropriate measures to mitigate adverse effects to significant paleontological resources will be determined by the authorized officer.

ATTACHMENT E
BLASTING

Blasting

This attachment outlines the procedures and safety measures to be used if blasting activities are required during construction. The Proponents will prepare a site-specific Blasting Plan prior to construction that incorporates these measures and demonstrates how and where they will be applied in the field.

BLA-1 The Blasting Plan will identify blasting procedures including safety, use, storage, and transportation of explosives that will be employed where blasting is needed, and will specify the locations of needed blasting.

BLA-2 All blasting will be performed by registered licensed blasters who will be required to secure all necessary permits and comply with regulatory requirements in connection with the transportation, storage, and use of explosives, and blast vibration limits for nearby structures, utilities, wildlife, and fish (where blasting is conducted in waterbodies).

BLA-3 Appropriate flags, barricades, and warning signals will be used to ensure safety during blasting operations. Blast mats will be used when needed to prevent damage and injury from fly rock.

BLA-4 Blasting in the vicinity of pipelines will be coordinated with the pipeline operator, and will follow operator-specific procedures, as necessary.

BLA-5 Damages that result from blasting will be repaired or the owner fairly compensated.

Appendix C-2
Revised Framework Reclamation Plan for Construction Activities

(submitted to BLM by Idaho Power and Rocky Mountain Power October 2010)

Appendix C-2

Revised Framework Reclamation Plan for Construction Activities

Gateway West Transmission Line Project

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1.0 INTRODUCTION

Idaho Power and Rocky Mountain Power (the Proponents) are proposing to construct and operate approximately 1,188 miles of new 230-kilovolt (kV) and 500kV electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho (hereafter referred to as Gateway West or Project). The Project includes ground disturbing activities associated with construction of above-ground single and double circuit transmission lines involving towers, access roads, staging areas, fly yards, pulling sites as well as associated substations, communication sites and electrical supply distribution lines. The Project crosses private land and public lands administered by the Bureau of Land Management (BLM), US Forest Service (USFS) and the states of Idaho and Wyoming.

1.1 Reclamation Plan Purpose

This preliminary reclamation plan (framework) describes the framework for development of the final Reclamation, Revegetation, and Noxious and Invasive Weed Control Plan (final Reclamation Plan). The focus of this framework and the final Reclamation Plan is to restore areas that have been temporarily impacted by construction activities. The framework and final Reclamation Plan are applicable project wide and will be modified as per agreement with federal land managing agencies, states, counties or individual landowners. The final Reclamation Plan is intended to meet the ten reclamation requirements specified in BLM Instruction Memorandum (IM) No. WY-2009-022 and guidance contained in Chapter 2840 of the Forest Service Manual as applicable. The final Reclamation Plan will be based on the final selected location of all project facilities and will be submitted to the BLM and US Forest Service prior to the issuance of a right-of-way grant.

This framework and the final Reclamation Plan also incorporate by reference the Storm Water Pollution Prevention Plan(s) that will be developed to comply with Clean Water Act requirements and that will include measures to address erosion and sedimentation that could result from ground disturbing activities and the Proponents' proposed Environmental Protection Measures (Appendix B of the POD).

1.2 Reclamation Goals and Objectives

The primary goal of conducting reclamation activities is to restore temporarily disturbed areas to pre-construction conditions, to the extent practicable. BLM reclamation goals emphasize stabilization and the protection of existing vegetation; minimal disturbance of the environment; soil stabilization; and establishment of vegetation consistent and compatible with adjacent land uses. The goal of this framework is to provide a structure for developing and implementing the reclamation process. The reclamation process is designed to restore temporary impacts to vegetation and resident soils and meet the goals and objectives described below:

- Noxious and invasive weed control,
- Topsoil segregation and stockpiling,
- Right-of-way restoration,
- Seedbed preparation and re-seeding, and
- Road reclamation.

Reclamation goals can be achieved through both short- and long-term objectives. The short-term objectives for reclamation are to stabilize disturbed areas to minimize potential erosion and sedimentation, establish temporary vegetation cover; prevent or minimize the introduction and spread of noxious and invasive weed species; and conserve suitable topsoil for long-term reclamation activities. The long-term objective of reclamation is to establish permanent vegetation cover that is similar to pre-disturbance conditions, is self-sustaining, and where applicable, resistant to the introduction or spread of noxious and invasive weed species.

Measures to achieve both short- and long-term objectives and reclamation goals include:

- Using proper soil management techniques, including stripping, stockpiling, and re-applying topsoil material at temporarily disturbed areas to restore soil horizons, utilize the existing seedbank(s) and establish surface conditions that would allow for rapid re-establishment of vegetative cover.
- Establishing stable soil surface and drainage conditions and utilizing applicable Best Management Practices (BMPs) which would minimize surface erosion and sedimentation and facilitate plant establishment.
- Conducting pre-construction weed surveys, applying pre-construction weed control measures where appropriate, controlling weed introduction and spread during construction, and conducting post-construction weed monitoring and control activities where needed.
- Re-seeding disturbed areas with plant species adapted to site conditions and compatible with pre-construction conditions and surrounding vegetation in order to establish long-term, productive, self-maintaining plant communities and concurrently minimize the chances for noxious and invasive weeds to establish.
- Re-establishing topography to pre-construction conditions to the extent practicable.
- Annual monitoring (and active corrective action) for three years following construction to measure the achievement of reclamation objectives.
- Develop and implement contingency plan(s) in the event annual monitoring indicates lack of suitable progress towards achieving pre-defined success metrics.

2.0 Noxious and Invasive Weed Control

“Noxious weed” is a legal term, meaning any plant officially designated by a federal, state, or local agency as injurious to public health, agriculture, recreation, wildlife, or property (Sheley and Petroff, 1999). The more general term “invasive species” refers to species that are non-native to the ecosystem under consideration and whose introduction causes, or is likely to cause economic or environmental harm or harm to human health (National Invasive Species Information Center 2008). Invasive plant species include those that are legally designated as noxious, as well as additional species that may be considered noxious in some areas but not others, and other species that are already widespread.

Soil disturbances, such as those caused by construction of the Project could result in the establishment of new populations and spread of existing populations of noxious and invasive weeds. This section of the framework describes the known status of noxious weed species within the Project area, the regulatory agencies responsible for control of noxious and invasive weeds, and steps that the Proponents will take in preventing the establishment and spread of

noxious and invasive weed species that are the result of the Proponents construction activities. In addition to providing updated information contained within this framework, the final Reclamation Plan will include information on locations of significant weed populations within the Project footprint and proposed treatment methods, as applicable. ,

The focus of the Proponents noxious weed control efforts will be to prevent the spread of new infestations resulting from their activities, and to assist adjacent land owners in their weed control responsibilities by reducing/eliminating existing infestations in the Project area. Without concurrent control of weed infestations by land owners on surrounding lands, weed control efforts by the Proponents in the Project area will be short lived. Surrounding populations of noxious weeds would continue to spread and infest the transmission line construction corridor. The Proponents are only responsible for control or eradication of noxious weeds and invasive species that are a result of their construction related surface disturbing activities. The Proponents are not responsible for noxious weeds and invasive species that occur adjacent to Project areas and are not responsible for eradicating a species that was present prior to the Project. For example, cheatgrass *(Bromus tectorum)*, is widespread across large portions of the Project area. Eradication of these infestations is not the responsibility of the Proponents and would not be attempted.

The objectives of noxious weed control for the Project are: 1) to inventory the existing occurrence, distribution and abundance of noxious weeds in the Project area prior to construction, 2) to annually inventory the occurrence, distribution and abundance of noxious weeds in the Project area for a period of three (3) years following the completion of construction activities, 3) to reduce/eliminate infestations of noxious weeds caused by Project-related activities and to prevent the spread of new and existing populations within the Project area for a period of three (3) years, 4) to insure any populations of rare plants along the transmission line are not negatively impacted by weed control activities, 5) to coordinate and consult with designated BLM and personnel regarding all noxious weed inventory and control activities conducted by the Proponents.

2.1 Existing Conditions

Attachment A is a list of the noxious and invasive weed species that are known or expected to occur within the Project area, based on their recorded presence in the counties in which the Project is located. The BLM and Forest Service use the most current Idaho and Wyoming state noxious weed lists for managing weeds on federal lands, and the BLM in Wyoming also uses county declared species (Wyoming Weed and Pest Council 2008b). The final Reclamation Plan will include the most current noxious weed species lists produced by the two states and Wyoming counties available just prior to construction.

The State of Wyoming has designated 25 plant species as noxious (Wyoming Weed and Pest Council 2008a) and the Idaho State Department of Agriculture (ISDA) has designated 57 plant species as noxious. Idaho's noxious weeds are divided into three categories (ISDA 2008):

- Statewide Early Detection and Rapid Response (EDRR) List: If weeds on this list are identified, they will be reported to ISDA within 10 days, and eradicated in the same growing season as identified.
- Statewide Control List: This list contains species that are known to exist throughout the state. When identified, a control plan will be developed by the county, with active control methods to be employed in no more than 5 years.

- Statewide Containment List: Weed list: This list contains species that are known to exist throughout the state. Weed control efforts may be directed at reducing or eliminating new or expanding populations, while known populations may be managed by any approved weed control methodology, as determined by the county.

2.2 Pre-construction Surveys

Pre-construction vegetation surveys will be conducted to document the vegetation species, evaluate the presence or potential habitat for plant species of special concern (state and federally listed), the overall landscape condition relative to plant growth (healthy plants, over-grazed, previously disturbed, recently burned, etc.), and the presence and extent of noxious or invasive weeds. These vegetation surveys will be conducted during the growing season and prior to construction and will provide baseline data to plan for weed control and provide additional information to guide short- and long-term reclamation.

The locations of noxious weeds and invasive species would be documented with a hand-held global positioning system (GPS) instrument and used to develop a pre-construction map. The pre-construction map would be used to define the area(s) infested with noxious weeds before construction and would be used to document the weeds the Proponents' are responsible for introducing and/or spreading.

2.3 Pre-construction Treatment

Mapped noxious and invasive weed species locations may be treated prior to transmission line construction. In Idaho, weed species on the EDRR list will be treated prior to the start of ground disturbing activities. For other weed species, the decision to treat prior to the start of construction activities will be based on the nature and extent of the infestation, surrounding conditions (e.g., predominance of weeds outside of project areas), landowner permission, and the construction schedule. The intent is for Project construction activities to not be delayed to facilitate pre-construction treatment of noxious and invasive weeds. If pre-construction treatment is necessary, the following measures would be implemented:

REC – 1 Company personnel and their contractors will be trained on noxious and invasive weed identification to facilitate avoidance of infestations where possible or identification of new infestations.

REC – 2 Pre-construction weed treatment would be conducted prior to the start of ground-disturbing activities and at the time most appropriate for the target species.

REC – 3 Pre-construction weed treatment would be limited to the areas that are expected to have surface-disturbing activities. The final Reclamation Plan will include a schedule showing the phased in-service dates for different segments. Pre-construction weed treatment will be scheduled accordingly.

REC – 4 Pre-construction treatment may use mechanical control, hand spraying, grazing, or herbicides. The final Reclamation Plan will discuss those options, as applicable.

REC – 5 All herbicide applications would comply with label restrictions, federal, state and/or county regulation, and landowner agreements. No spraying would occur prior to notification of the applicable land management agency. On federal or state controlled lands, a herbicide use plan will be submitted prior to any

herbicide application as recommended in the BLM herbicide EIS http://www.blm.gov/wo/st/en/prog/more/veg_eis.html. The herbicide use plan will include the dates and locations of application, target species, herbicide, adjuvants, and application rates and methods (e.g., spot spray vs. boom spray). No herbicide would be applied to any private property without written approval of the landowner. The final Reclamation Plan will contain a list of herbicides that may be used, target species, best time for application, application rates, and if they are approved for use on BLM-managed and NFS lands.

REC – 6 Herbicides may be applied using a broadcast applicator mounted on a truck or all-terrain vehicle (ATV), backpack sprayers, or with hand sprayers as conditions dictate. Herbicide applications would be conducted only by licensed operators or under the supervision of a licensed operator. Where allowed, a broadcast applicator would likely be used. In areas where noxious weeds are more isolated and interspersed with desirable vegetation, noxious and invasive weeds would be targeted, thereby avoiding other plants. Pre-construction herbicide applications would not occur adjacent to known special status species or near water bodies.

REC – 7 All areas treated would be documented using GPS technologies and included in the annual report.

2.4 Weed Prevention and Control

The Proponents will implement BMPs to eliminate or minimize the introduction and spread of noxious weeds and invasive species during construction. These include:

REC – 8 Areas of existing noxious weeds and invasive species will be avoided where possible.

REC – 9 Project vehicles will arrive at the job site clean of all soil and herbaceous material.

REC – 10 When the contractors demobilize from the job site where identified infestations of noxious weeds are present, they will use appropriate decontamination measures as defined in the final Reclamation Plan.

REC – 11 Soil stockpiles from areas that did not have noxious weeds or invasive species present, will not be placed adjacent to populations of noxious weeds or invasive species, where practicable.

REC – 12 Areas disturbed by Project activities are susceptible to the establishment and spread of noxious weeds. Erosion control measures identified in the SWPPP(s) would also assist in preventing the establishment of weeds on exposed soils.

REC – 13 Project-related storage and staging yards, fly yards, and other areas that are subject to regular long-term disturbance will be kept weed-free through regular site inspections and herbicide applications, subject to the consent of the land owner.

REC – 14 Where pre-construction surveys have identified noxious or invasive weed species infestations, topsoil and other soils will be placed next to the infested area and clearly identified as coming from an infested area. Topsoil would be returned to the area it was taken from and will not be spread in adjacent areas. If the topsoil

is not suitable for backfill, then it will be spread in another previously disturbed area and clearly identified for future weed treatments as applicable.

REC -15 Straw or hay that may be used as a BMP to control erosion and sedimentation must be certified weed free. If certified weed-free materials are not available, then alternative BMPs will be used. The use of alternative BMPs will be coordinated with the construction storm water inspector.

2.5 Post-Construction Weed Control and Monitoring

Annual spraying will most likely occur during the months of May to June, however the potential for fall treatments, depending on the weed species, does exist. Following annual spraying, a monitoring survey will be conducted to verify locations of noxious weeds in the Project vicinity. These monitoring surveys are expected to occur in the fall (August-September) and will be conducted following the same methods as the pre-construction survey. The relative abundance (refer to Attachment B for abundance ratings) of each noxious weed will be recorded for the following three zones: 1) immediate area of disturbance (roadbed, lay-down yard, or pulling and tensioning site); 2) within 30 feet of the immediate area of disturbance; and 3) in the area greater than 30 feet from the immediate area of disturbance. Pedestrian surveys will be conducted in zones 1 and 2. Zone 3 will be surveyed at a reconnaissance level based on what is visible adjacent to the 30-foot buffer. Abundance will be recorded using the following eight abundance categories: rare, locally rare, occasional, locally occasional, frequent, locally frequent, abundant, and locally abundant. Abundance categories are defined in Appendix 1.

Using prior years' survey information, annual spraying will be planned by the Proponents and coordinated with the BLM to insure spraying will be conducted at the proper growing period, during favorable environmental conditions, and will use the appropriate chemicals to control targeted species. The chemicals used must be BLM approved.

Spraying will be conducted by the Proponents or a licensed qualified contractor. The intent of applying herbicide will be to treat only the areas that need treatment, rather than broad application. It is anticipated that most spraying will be conducted using ATV mounted spray equipment, supported by a one or more four wheel drive pickups equipped with water tanks. Pickups will carry necessary chemicals, dyes, fluid pumps, tools and water to provide a base station for refilling of ATV spray tanks. Spraying weed infestations within the weed control area will be conducted by ATV, using hand held spray guns with 25 to 50-foot hoses attached to spray tanks or by using 8 to 12-foot spray booms. The spray booms will be utilized for treating larger areas on roadbeds and gentle to moderately steep terrain.

The final Reclamation Plan will provide site-specific information on noxious and invasive weed species, relative abundance, and treatment methods.

3.0 TOPSOIL AND SPOIL TREATMENT

The Proponents and/or their contractor will minimize ground disturbance where practicable; however, there will still be extensive areas of soil disturbance due to the nature of the work and existing topography. The final Reclamation Plan will identify locations where management of topsoil is warranted, such as areas where topsoil supports native plant species or is important to a private landowner (e.g., agricultural soils). Generally, topsoil is considered the upper 6 to 12 inches, but this can vary by soil type. To protect topsoil, the following measures will be implemented where applicable:

REC – 16 The topsoil layer will be removed, taking care not to mix it with the underlying sub-soil. Where topsoil separation is employed, topsoil will be stored in a separate stockpile.

REC – 17 Certified weed-free straw, mulch, grave, and other BMPs as appropriate, will be used as described in the SWPPP to stabilize the stockpile and limit erosion and standing water, control dust, and control the establishment of noxious or invasive weeds in stockpiled soils.

REC – 18 Topsoil and sub-surface soils will be replaced in the proper order during reclamation.

The timing of topsoil replacement will be dependent upon project constraints, season, weather, and landowner/manager requirements.

During various construction activities, soil spoils will be generated along the Project route. The following measure will be implemented when soil spoils must be disposed of:

REC – 19 Where it is necessary to spread spoils (subsurface soils or waste rock resulting from excavations or foundation drilling), it will be done where practicable and in close proximity to where the disturbance occurred (within the ROW). Material will be spread uniformly to match existing contours and covered with topsoil when available and re-seeded.

4.0 RIGHT-OF-WAY RECLAMATION

Reclamation of temporarily disturbed areas will involve replacing stockpiled subsoil and topsoil (where applicable), restoring pre-existing contours, installing permanent erosion control structures (i.e., water bars), and re-establishing vegetation. These methods are further discussed below.

REC – 20 Re-contouring: Temporarily disturbed lands within the ROW will be re-contoured to blend with the surrounding landscape. Re-contouring will emphasize restoration of the existing drainage patterns and landform to pre-construction conditions, to the extent practicable. (Tower pads would not be recontoured.)

REC – 21 De-compaction: Areas within the ROW, laydown or staging yards, and other areas of extensive vehicle travel will typically contain compacted soils. These soils will be de-compacted on a case-by-case basis through negotiation with the landowner or land management agency.

REC – 22 Final Cleanup: Final cleanup will ensure that all construction areas are free of any construction debris including but not limited to: assembly scrap metals, oil or other petroleum based liquids, construction wood debris and worker generated litter. Permanent erosion control devices will be left in place.

Some areas may not have extensive vegetation before Project construction, such as areas of shallow bedrock, shallow topsoil, steep slopes, or dry desert soils. These areas will be identified during pre-construction surveys and will not be reseeded. Where appropriate, other reclamation activities (e.g., restoring pre-construction contours) will be conducted.

4.1 Seedbed Preparation

As part of the reclamation process, the Proponents will prepare the seedbed to facilitate the restoration of vegetation to pre-construction conditions. General measures are discussed below and habitat-specific seedbed measures will be provided in the final Reclamation Plan.

Soil amendments are intended to minimize soil erosion and subsequent sedimentation, conserve soil moisture, provide cover, and moderate temperatures to facilitate the germination of seeds.

REC – 23 The Proponents will utilize soil amendments (e.g., fertilizer, wood or straw mulches, tackifying agents, or soil stabilizing emulsions) on a case-by-case basis and with landowner or land management agency approval. Specific soil amendments would be identified in the final Reclamation Plan and be consistent with the SWPPP.

4.1.1 Seeding Methods

Unless otherwise directed, following seedbed preparation, seed will be applied using a broadcast spreader, drill, and/or hydroseeder. The method used will depend on site conditions and seed mix. Seeding will be done as soon after ground disturbing activities are complete and at the appropriate time of year; preferably in the fall or in the spring if fall is not an option. If there is a lag-time between the end of ground disturbing activities and seeding, BMPs from the SWPPP will be implemented. Measures regarding seeding methods are as follows:

REC – 24 Broadcast seeding will apply the seed directly on the ground surface. The type of broadcast spreader will depend on the size of the area to be seeded, and the terrain. Seed will be placed in direct contact with the soil, ideally at a depth of approximately 0.5 to 1-inch deep. It will then be covered by raking or dragging a chain or harrow over the seed bed; to remove air pockets.

REC – 25 Drill seeding would be used on areas of sufficient size with moderate or favorable terrain to accommodate mechanical equipment. Drill seeding provides the advantage of planting the seed at a uniform depth.

REC – 26 Hydroseeding, which is the spraying of seeds and water onto the ground surface, or hydroseeding/hydromulching, which is the spraying of seeds, mulch and water, may be implemented on steeper slopes. Tackifier may be added to facilitate adherence of hydromulch to slopes greater than 25%.

4.1.2 Seed Mixes

The choice of seed mixtures will be dependent upon the existing vegetation types, the availability of commercial, weed-free live seed at the time of seeding, and landowner approval. The final Reclamation Plan will identify proposed seed mixes based on specific vegetation communities (e.g., Wyoming sagebrush, grassland, etc.); this will include the species, cultivar (if applicable), percent seed mix, pure live seeds per acre, and application rate. Proposed mixes will not be applied prior to landowner/

The Proponents will reseed some permanently disturbed areas as well. Roads that are created for this project and that are necessary for the long-term operation and maintenance of the transmission line are considered a permanent impact; however, the Proponents will reseed these areas as an environmental protection measure. The intent of this reseeding differs from

the long-term objective of establishing plant communities and habitat. Therefore, the final Reclamation Plan will also include one or more seed mixes that will be used as a BMP for permanently disturbed areas.

5.0 POST-CONSTRUCTION MONITORING and REPORTING

The Proponents will conduct annual post construction surveys for a three year period following the conclusion of ground disturbing activities. Surveys will be conducted as described in Section 2.5 and would assess the effectiveness of weed control and seeding measures. Species, relative density, and location will be surveyed and compared to pre-construction and previous years' data. This information will also be used to develop the weed control treatment plan for the following year.

5.1 Monitoring Activities

Successful re-vegetation will be determined by monitoring reclaimed areas against existing conditions. Species and relative density will be assessed annually and will be compared to baseline data collected prior to the start of ground disturbing activities. Reclamation will be determined successful if the seeded areas have germinated and are demonstrating that they will, over time, achieve a distribution and diversity similar to pre-construction conditions. If, after a second growing season, problem areas have been identified (e.g., seed germination is lower than expected; prevalence of noxious weed species), the area will be treated and re-seeded. Treatment may include additional seedbed preparation, control of noxious weeds, use of soil amendments, and/or use of another appropriate seed mix. Monitoring of reclamation activities and remedial measures on private lands will be up to the landowner and agreements they negotiate with the Proponents.

5.2 Reporting

The Proponents will document pre-construction observations, construction reclamation activities, and post-construction monitoring on federally and state managed lands in an annual report. Monitoring on private lands will be as agreed with the landowner. Annual reports would be prepared for submittal to federal or state entities that administer public lands in the Project area. The reports will provide a summary of project reclamation activities and observations, and include recommendations for additional corrective actions, if necessary.

6.0 STORMWATER POLLUTION PREVENTION PLANS

SWPPPs will be completed for the project in accordance with federal and state construction stormwater requirements. The SWPPPs will include erosion and sediment control BMPs that are also relevant to reclamation. The SWPPPs will be prepared as standalone documents and are incorporated by reference to this document and the final Reclamation Plan.

7.0 PLAN UPDATES

Once the proposed route is selected and final engineering is completed a final Reclamation Plan will be prepared. The final Reclamation Plan will be updated prior to the start of construction on each of the proposed 10 segments. As the Proponents better define the construction order for segments and the segment-specific construction schedule, the final Reclamation Plan will be updated to include the schedule for baseline vegetation and weed

surveys, results of previous baseline surveys, identification of any areas for pre-construction noxious weed treatment, and a more detailed reclamation schedule and plan.

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ATTACHMENT A
INVASIVE AND NOXIOUS PLANTS IN PROJECT AREA

Attachment A. Invasive and Noxious Plant Species Potentially Present in the Gateway West Project Analysis Area

Common Name	Scientific Name	Invasive exotic species[1]	Listed as Noxious[2]			Segments in Which Known or Likely to Occur[2,3]	
			State of Wyoming (Designated)	Wyoming Counties (Declared)	State of Idaho[4]	Wyoming	Idaho
Species on Wyoming or Idaho Noxious Weed List							
Black henbane	*Hyoscyamus niger*	Yes	--	Albany, Converse, Lincoln, Natrona, Sweetwater	Control	All	All
Buffalobur	*Solanum rostratum*	Yes	--	Converse, Natrona	Control	All	8, 9
Canada thistle	*Cirsium arvense*	Yes	X		Containment	All	All
Common burdock	*Arctium minus*	Yes	X	--	--	1E, 1W, 2, 4	All
Common St. Johnswort	*Hypericum perforatum*	Yes	X	--	--	4	8
Common Tansy	*Tanacetum vulgare*	Yes	X	--	--	All	5, 7
Dalmatian toadflax	*Linaria dalmatica*	Yes	X	--	Containment	All	All
Diffuse knapweed	*Centaurea diffusa*	Yes	X	--	Containment	All	All
Dyer's woad	*Isatis tinctoria*	Yes	X	--	Control	All	All
Eurasian watermilfoil	*Myriophyllum spicatum*	Yes	--	--	Control	--	8
Field bindweed	*Convolvulus arvensis*	Yes	X	--	Containment	All	All
Hairy whitetop, Hoary cress	*Cardaria pubescens*	Yes	X	--	--	All	All
Houndstongue	*Cynoglossum officinale*	Yes	X	--	Containment	1E, 1W, 2, 4	4, 5, 7

Attachment A. Invasive and Noxious Plant Species Potentially Present in the Gateway West Project Analysis Area (continued)

Common Name	Scientific Name	Invasive exotic species[1]	Listed as Noxious[2]			Segments in Which Known or Likely to Occur[2,3]	
			State of Wyoming (Designated)	Wyoming Counties (Declared)	State of Idaho[4]	Wyoming	Idaho
Johnsongrass	*Sorghum halepense*	Yes	--	--	Control	--	5. 7, 8
Jointed goatgrass	*Aegilops cylindrica*	Yes	--	Converse	Containment	1E, 1W	All
Leafy spurge	*Euphorbia esula*	Yes	X	--	Containment	All	All
Matgrass	*Nardus stricta*	Yes	--	--	Control	--	5
Musk thistle	*Carduus nutans*	Yes	X	--	Control	All	All
Orange hawkweed	*Hieracium aurantiacum*	Yes	--	Converse	Control	--	5, 7, 8
Oxeye daisy	*Chrysanthemum leucanthemum*	Yes	X	--	Containment	1E, 1W, 2, 4	4, 7
Perennial pepperweed	*Lepidium lapathifolium*	Yes	X	--	Containment	All	All
Perennial sowthistle	*Sonchus arvensis*	Yes	X	--	Control	All	All
Meadow hawkweed, yellow hawkweed	*Hieracium pretense, H. caespitosum*	Yes	--	--	Control	--	7
Plumeless thistle	*Carduus acanthoides*	Yes	X	--	Control	1E, 1W	--
Poison hemlock	*Conium maculatum*	Yes	--	--	Containment	1E, 1W, 2, 3	All
Puncture vine	*Tribulus terrestris*	Yes	--	Natrona	Containment	1E, 1W, 2	All
Purple loosestrife	*Lythrum salicaria*	Yes	X	--	Containment	--	All
Quackgrass	*Agropyron repens*	Yes	X	--	--	All	All

Attachment A. Invasive and Noxious Plant Species Potentially Present in the Gateway West Project Analysis Area (continued)

Common Name	Scientific Name	Invasive exotic species[1]	Listed as Noxious[2]			Segments in Which Known or Likely to Occur[2,3]	
			State of Wyoming (Designated)	Wyoming Counties (Declared)	State of Idaho[4]	Wyoming	Idaho
Rush skeletonweed	*Chondrilla juncea*	Yes	--	Converse	Containment	--	5, 7, 8, 9, 10
Russian knapweed	*Acroptilon repens*	Yes	X	--	Control	All	All
Russian olive	*Elaeagnus angustifolia*	Yes	X	--	--	1E, 1W	All
Salt cedar, tamarisk	*Tamarix spp.*	Yes	X	--	Containment	All	All
Scotch broom	*Cytisus scoparius*	Yes	--	Converse	Control	--	5, 9
Scotch thistle	*Onopordum acanthium*	Yes	X	--	Containment	1E, 1W, 4	All
Skeletonleaf bursage	*Artemisia tomentosa*	Yes	X	--	Control	All	5, 7, 8, 10
Spotted knapweed	*Centaurea maculosa*	Yes	X	--	Containment	All	All
Silverleaf nightshade	*Solanum Elaeagnifolium*	Yes	--	--	Control	--	8, 10
Syrian beancaper	*Zygophyllum zabago*	Yes	--	Converse	EDRR	--	5
Tansy ragwort	*Senecio jacobaea*	Yes	--	Converse	Containment	--	5
Vipers blugloss	*Echium vulgare*	Yes	--	--	Control	--	8
Whitetop, hoary cress	*Cardaria draba*	Yes	X	--	Containment	1E, 1W, 2, 4	All
Yellow starthistle	*Centaurea solstitialis*	Yes	--	--	Containment	--	All
Yellow toadflax	*Linaria vulgaris*	Yes	X	--	Containment	1E, 1W, 2, 4	All

Attachment A. Invasive and Noxious Plant Species Potentially Present in the Gateway West Project Analysis Area (continued)

Common Name	Scientific Name	Invasive exotic species[1]	Listed as Noxious[2]			Segments in Which Known or Likely to Occur[2,3]	
			State of Wyoming (Designated)	Wyoming Counties (Declared)	State of Idaho[4]	Wyoming	Idaho
Other Species							
Absinth wormwood	*Artemisia absinthium*	Yes	--	Converse	--	1E, 1W	8
Baby's breath	*Gypsophila paniculata*	Yes	--	Converse	--	--	--
Bull thistle	*Cirsium vulgare*	Yes	--	Converse, Lincoln	--	All	All
Bur buttercup	*Ranunculus testiculatus*	Yes	--	Converse	--	All	All
Cheatgrass/downy brome	*Bromus tectorum*	Yes	--	Albany, Natrona	--	All	All
Chicory	*Cichorium intybus*	Yes	--	Converse	--	1E, 1W	All
Common cocklebur	*Xanthium strumarium*	Yes	--	Converse	--	All	All
Common crupina	*Crupina vulgaris*	Yes	--	Converse	--	--	--
Common mullein	*Verbascum thapsus*	Yes	--	Converse	--	All	All
Common sunflower	*Helianthus annuus*	Native	--	Converse	--	1E, 1W	--
Curlycup gumweed	*Grindelia squarrosa*	Native	--	Natrona	--	1W	--
Curly dock	*Rumex crispus*	Yes	--	Converse	--	All	All
Dames rocket	*Hersperis matronalis*	Yes		Converse	--	1E, 1W, 2, 4	4, 5, 7, 9
Foxtail barley	*Hordium jubatum*	Native	--	Sweetwater	--	3, 4	--
Geyer larkspur	*Delphinium geyeri*	Native	--	Albany, Carbon	--	1E, 1W, 2, 3	--

Attachment A. Invasive and Noxious Plant Species Potentially Present in the Gateway West Project Analysis Area (continued)

Common Name	Scientific Name	Invasive exotic species[1]	Listed as Noxious[2]			Segments in Which Known or Likely to Occur[2,3]	
			State of Wyoming (Designated)	Wyoming Counties (Declared)	State of Idaho[4]	Wyoming	Idaho
Goatsrue	*Galega officinalis*	Yes	--	Converse	--	--	--
Gorse	*Ulex europaeus*	Yes	--	Converse	--	--	--
Halogeton	*Halogeton glomeratus*	Yes	--	Carbon, Converse, Natrona,	--	All	5, 7, 8, 9
Iberian starthistle	*Centaurea iberica*	Yes	--	Converse	--	1E, 1W	--
Italian thistle	*Carduus pycnocephalus*	Yes	--	Converse	--	--	--
Japanese brome	*Bromus japonicus*	Yes	--	--	--	All	All
Lady's bedstraw	*Galium verum*	Yes	--	Converse	--	2, 3, 4	7
Locoweed	*Oxytropis spp.*	Native	--	Albany	--	1E	--
Meadow knapweed	*Centaurea nigrescens*	Yes	--	Converse	--	--	--
Medusahead	*Taeniatherum caput-medusae*	Yes	--	Converse	--	--	8
Mountain thermopsis	*Thermopsis montana*	Native	--	Sweetwater	--	3, 4	--
Musk mustard, blue mustard	*Chorispora tenella*	Yes	--	Converse	--	All	All
Plains pricklypear	*Opuntia polyacantha*	Native	--	Carbon	--	1E, 1W, 2, 3	--
Redstem filaree	*Erodium cicutarium*	Yes	--	--	--	1E	All
Russian thistle	*Salsola iberica*	Yes	--	--	--	All	All

Attachment A. Invasive and Noxious Plant Species Potentially Present in the Gateway West Project Analysis Area (continued)

Common Name	Scientific Name	Invasive exotic species[1]	Listed as Noxious[2]			Segments in Which Known or Likely to Occur[2,3]	
			State of Wyoming (Designated)	Wyoming Counties (Declared)	State of Idaho[4]	Wyoming	Idaho
Sandbur	*Cenchrus incertus*	Native	--	Converse	--	--	--
Scentless chamomile	*Tripleurospermum inodorum*	Yes	--	Converse	--	All	8, 9
Showy milkweed	*Asclepias speciosa*	Native	--	Converse	--	1E, 1W	--
Squarrose knapweed	*Centaurea virgata*	Yes	--	Converse	--	--	--
Sulfur cinquefoil	*Potentilla recta*	Yes	--	Converse	--	--	5, 7
Teasel	*Dipsacus fullonum*	Yes	--	Converse		--	All
Wild licorice	*Glycyrrhiza lepidota*	Native	--	Converse, Natrona	--	1E, 1W	--
Wild oats	*Avena fatua*	Yes	--	Lincoln	--	All	All
Wyeth's lupine	*Lupinus wyethii*	Native	--	Converse	--	1E, 1W	--

[1] Included in Invaders database (University of Montana-Missoula 2009).

[2] Source for status: ISDA 2008, Wyoming Weed and Pest 2008. "—"means not listed.

[3] Distribution based on Invaders database (University of Montana-Missoula 2009), Plants database (NRCS 2009), and Idaho State Department of Agriculture (2008). Distribution of native species is only shown for Wyoming counties where listed as noxious.

[4] Idaho listing categories are explained in text.

ATTACHMENT B
SPECIES ABUNDANCE RATINGS

ABUNDANCE RATINGS:

Rare:

Difficult to find; limited to one or very few individuals or colonies; < 1% of the total sample unit area; found in more than one place along the sample unit.

Locally Rare:

Difficult to find; limited to one or very few individuals or colonies; < 1% of the total sample unit area; found at only one site within the sample unit.

Occasional:

Widely scattered individuals or colonies, but not difficult to find; 1–5% of the total sample unit area; found in more than two sites within the sample unit.

Locally Occasional:

Scattered individuals or colonies, but not difficult to find; 1–5% of the total sample unit area; found in only one or two sites within the sample unit.

Frequent:

Easily found, but not dominant in any one place; 5–25% of the total sample unit area; a moderate number of occurrences over a good portion of the sample unit.

Locally Frequent:

Easily found, but not dominant in any one place; 5–25% of the total sample unit area; a moderate number of occurrences over a small portion of the sample unit.

Abundant:

Easily found; dominant or codominant in one or more areas; > 25% of the total sample unit; a high number of occurrences over most of the sample unit.

Locally Abundant:

Easily found; dominant or codominant in one or more areas; > 25% of the total sample unit; a high number of occurrences over a small portion of the sample unit.

Appendix C-3
Revised Proposed Plant and Wildlife Conservation Plan – Construction Activities

(submitted to BLM by Idaho Power and Rocky Mountain Power October 2010)

Appendix C-3

Revised Proposed Plant and Wildlife Conservation Plan – Construction Activities

Gateway West Transmission Line Project

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October 2010

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1.0 INTRODUCTION

This document presents the plan proposed by Idaho Power and Rocky Mountain Power (the Proponents) for avoidance and minimization of impacts to special status plant and wildlife species as related to construction activities for the Gateway West Transmission Line Project (the Project). This plan summarizes the avoidance and minimization conducted during siting and routing of the Project components and outlines specific conservation measures to be implemented in the event that state or Federally listed species, Bureau of Land Management (BLM) sensitive species, or Forest Service special status species or their habitats are identified within or adjacent to the Project right-of-way (ROW). The Proponents will prepare and submit a separate plan that addresses avoidance and minimization measures related to operation and maintenance activities and emergency activities.

1.1 Purpose of the Plan

The objectives of this plan are to recognize the substantial effort already invested by the Proponents in avoiding and minimizing impacts on special status plant and wildlife species, and in addition, to present a comprehensive, Project-specific plant and wildlife conservation plan that:

- Addresses avoidance and minimization of impacts to special status plant and wildlife species;
- Provide consistency across jurisdictions;
- Meet the intent of the current BLM and Forest Service management guidance for Federal lands; and
- Balance cost, practicality, and feasibility of Project implementation with avoiding or minimizing environmental impacts.

1.2 Contents of the Plan

The components of this plan include:

- Section 2: Brief background on the proposed transmission line and substation construction, operation and maintenance, and emergency response procedures (a complete description can be found in the August 2008 Gateway West Transmission Line Project Revised Plan of Development (POD), of which this plan is a part);
- Section 3: A list of the special status species that the Proponents and the agencies (BLM, Forest Service, U.S. Fish and Wildlife Service (USFWS), Idaho Department of Fish and Game (IDFG), and Wyoming Game and Fish Department (WGFD)) have identified as occurring or potentially occurring within the Project area, and explanations as to how the proposed measures are appropriate and will meet the intent of the BLM and Forest Service land management plan restrictions;
- Section 4: A summary of the avoidance and minimization measures used by the Proponents, in conjunction with the Agencies, during corridor and ROW routing and substation siting, and the assumptions made during that process; and
- Section 5: This section is the heart of the plan that would be implemented after all reasonable avoidance and minimization measures were imposed during routing and siting. It includes the temporal and spatial restrictions the Proponents propose to implement to avoid or minimize direct impacts to special status species, together with

the conditions under which the Proponents propose that restrictions could be limited or lifted, which includes the methods the Proponents propose to use to determine where and when the measures will apply across the project.

2.0 PROJECT CONSTRUCTION, OPERATION, AND MAINTENANCE

2.1 Project Components

The proposed Project, as described in the August 2008 Gateway West Transmission Line Project Revised POD and the September 2008 Gateway West Transmission Line Project Siting Study (Idaho Power and Rocky Mountain Power, 2008), includes the following major components:

- A total of 1,148 miles of transmission lines and associated support structures will be constructed, along with 71 miles to be re-conductored. Of this total:
    - Approximately 230 miles (1,265 support structures) will be single-circuit 230 kilovolt (kV) steel H-frame structures between 60 and 90 feet tall with a 700-foot average distance between structures; and
    - Approximately 918 miles (3,893 support structures) will be either single-circuit 500kV lattice steel structures between 145 and 180 feet tall with a 1,200 to 1,300-foot average distance between structures, or double-circuit 500kV lattice structures between 160 and 190 feet tall with a 1,200 to 1,300-foot average distance between structures.
- Nine substations, including three proposed new Project-specific substations, four substations that are planned for construction for other projects and that will be expanded for this Project, and two existing substations that will be expanded for this Project; and
- Ancillary facilities such as construction and permanent access roads, temporary construction staging areas, communications, power supply to new substations, and other similar facilities.
- The Proponents propose to acquire a permanent ROW up to 300 feet wide for construction and operation of the double-circuit sections of the Project, a 250-foot-wide ROW for the 500kV single-circuit sections of the Project, and a 125-foot-wide ROW for the 230kV single-circuit sections of the Project.

The POD (Idaho Power and Rocky Mountain Power, 2008) details the construction, operation, maintenance, and emergency response procedures that will be implemented during the course of the Project. The following section details the major aspects of the aforementioned components of the Project where conservation measures may be required to assess and avoid or minimize potential impacts to special status plant and wildlife species.

2.1.1 Construction

Various construction activities will occur during the construction process, with multiple construction crews operating simultaneously at different locations. The following key sections are described in detail in the POD:

- Staging areas associated with development of the transmission line
- On and off ROW access roads
- Transmission line construction
    - Site access and preparation

  - Soil Boring
  - Structure foundation installation
  - Support structure erection
  - Stringing of conductors, shield wire, and fiber optic ground wire
  - Communications facilities (regeneration sites)
  - Cleanup and site reclamation
- Substation construction
  - Access roads
  - Soil boring
  - Clearing and grading
  - Fencing
  - Foundation installation
  - Structure and equipment erection/installation
  - Landscaping and construction cleanup
  - Storage and staging yards
- Special construction techniques
  - Blasting
  - Helicopter construction
  - Temporary water use during construction
- Construction workforce
- Construction equipment and traffic
- Removal of facilities and waste disposal
- Construction schedule

2.1.2 Operation and Maintenance

The Proponents have prepared internal operation and maintenance policies and procedures designed to meet the requirements of the North American Electrical Reliability Corporation (NERC), Western Electricity Coordinating Council (WECC), and the state public utility/service commissions (PUCs), while remaining in compliance with the applicable codes and standards with respect to maintaining the reliability of the electrical system

Operation and maintenance activities will include transmission line patrols, climbing inspections, tower and wire maintenance, insulator washing in selected areas as needed, and access and service road repairs. Periodic inspection and maintenance is also a key part of operating and maintaining the electrical system. The following key sections are described in detail in the POD:

- Routine system inspection, maintenance, and repair
  - Transmission line maintenance
  - Hardware maintenance and repairs
  - Right-of-way repair

  - Vegetation management
- Substation and regeneration site maintenance

In order to meet requirements by NERC and WECC regarding reliability, rigorous operation and maintenance activities need to be conducted. A plan to address wildlife conservation measures during operation and maintenance as well as during emergency response has been prepared under separate cover (Gateway West Transmission Line Project - Proposed Plant and Wildlife Conservation Plan – Operations and Maintenance and Emergency Response).

3.0 SPECIES CONSIDERED FOR THE PLAN

The following steps were taken to determine which species and habitats needed to be considered for avoidance, minimization, and conservation measures. The Proponents:

- Identified potential habitats and special status species that may occur along the proposed corridor using available data from Federal and state wildlife agencies and from the BLM and Forest Service;
- Discussed habitat types and special status species at kickoff meetings with agency resource specialists to identify which species are of greatest concern in the Project area; and
- Refined the list of species and habitats to be addressed in Project plans through several subsequent meetings with state and Federal agency resource specialists.

Table 1 presents the special status species that were discussed during the screening process described above. This list of species identifies those to be addressed in the Biological Assessment (BA) or Biological Evaluation (BE) and those that are to be emphasized in other Project documents. Note that some species appear on this table because a local field office or ranger district or concurrence at the Level 1 meetings requested their inclusion in the BA for completeness, but they are not addressed further in this conservation plan because they are not expected to be adversely affected by the Project due to lack of occurrence in the Project area, lack of direct impact to the species or its habitats from the Project, or a low level of anticipated impact at the population level. Also note that other species that are not listed in this table will be analyzed in other Project documents but are not addressed further in this conservation plan because they were not identified as primary concerns for the Project.

Table 1
Species Protected in the Gateway West Species Conservation Plan

Species	Regulatory Status within Project Area	Analysis	Included in Conservation Plan?
Big Game			
Antelope (*Antilocapra americana*)	None	EIS	Yes
Bighorn sheep (*Ovis canadensis*)	None	EIS	Yes
Elk (*Cervus elaphus*)	None	EIS	Yes
Moose (*Alces alces*)	None	EIS	Yes
Mule deer (*Odocoileus hemionus*)	None	EIS	Yes

Table 1 Species Protected in the Gateway West Species Conservation Plan			
Species	**Regulatory Status within Project Area**	**Analysis**	**Included in Conservation Plan?**
Other Mammals			
Black-footed ferret (*Mustela nigripes*)	USFWS WY Endangered; USFWS Shirley Basin experimental population WY	BA and EIS	Yes
Black-tailed prairie dog (*Cynomys ludovicianus*)	USFWS removed as Candidate	BA and EIS	No
Canada lynx (*Lynx canadensis*)	USFWS WY and ID Threatened	BA and EIS	No
Gray wolf (*Canis lupus*)	USFWS WY and ID De-listed and Petitioned	BA and EIS	No
Northern Idaho ground squirrel (*Spermophilus brunneus*)	USFWS ID Threatened	BA and EIS	No
Preble's meadow jumping mouse (*Zapus hudsonius preblei*)	USFWS WY De-listed 2008	BA and EIS	No
Pygmy rabbit (*Brachylagus idahoensis*)	USFWS WY and ID Petitioned; WY BLM Sensitive; ID BLM Sensitive; ID USFS Sensitive	BA and EIS	Yes
Southern Idaho ground squirrel (*Spermophilus brunneus*)	USFWS ID Candidate	BA and EIS	No
White-tailed prairie dog (*Cynomys leucurus*)	USFWS WY Petitioned; WY BLM Sensitive	BA and EIS	Yes
Wolverine (*Gulo gulo*)	WY USFS Sensitive; ID USFS Sensitive	BE and EIS	No
Wyoming pocket gopher (*Thomomys clusius*)	USFWS WY Petitioned; WY BLM Sensitive	BA and EIS	No
Raptors			
Bald eagle (*Haliaeetus leucocephalus*)	USFWS De-listed WY and ID 2007; MBTA; BGEPA	EIS	Yes
Burrowing owl (*Athene cunicularia*)	WY BLM Sensitive; MBTA	BE and EIS	Yes
Ferruginous hawk (*Buteo regalis*)	WY BLM Sensitive; WY USFS Sensitive; ID BLM Sensitive; MBTA	BE and EIS	Yes
Flammulated owl (*Otus flammeolus*)	WY USFS Sensitive; ID BLM Sensitive; ID USFS Sensitive; MBTA	BE and EIS	Yes
Golden eagle (*Aquila chrysaetos*)	MBTA; BGEPA	EIS	Yes
Northern goshawk (*Accipiter gentilis*)	WY BLM Sensitive; WY USFS Sensitive; WY USFS MIS; ID BLM Sensitive; ID USFS Sensitive; MBTA	BE and EIS	Yes
All other raptors	MBTA	EIS	Yes
Other Avian			

Table 1 Species Protected in the Gateway West Species Conservation Plan			
Species	**Regulatory Status within Project Area**	**Analysis**	**Included in Conservation Plan?**
Columbian sharp-tailed grouse (*Tympanuchus phasianellus columbianus*)	WY BLM Sensitive; WY USFS Sensitive; ID BLM Sensitive; ID USFS Sensitive	BA and EIS	No
Greater sage grouse (*Centrocercus urophasianus*)	USFWS WY and ID Petitioned; WY BLM Sensitive; WY USFS Sensitive; ID BLM Sensitive; ID USFS Sensitive	BA and EIS	Yes
Greater sandhill crane (*Grus canadensis*)	MBTA	EIS	Yes
Long-billed curlew *(Numenius americanus)*	MBTA	EIS	Yes
Mountain plover (*Charadrius montanus*)	WY BLM Sensitive; MBTA	BE and EIS	Yes
Mountain quail (*Oreortyx pictus*)	ID BLM Sensitive	BE and EIS	No
Three-toed woodpecker (*Picoides dorsalis*)	ID USFS Sensitive; MBTA	BE and EIS	Yes
Western yellow-billed cuckoo (*Coccyzus americanus*)	USFWS Candidate WY and ID; WY BLM Sensitive; MBTA	BA and EIS	No
Amphibians			
Boreal toad (*Bufo boreas boreas*)	WY BLM Sensitive; ID BLM Sensitive	BE and EIS	No
Columbia spotted frog (*Rana luteiventris*)	USFWS WY and ID Candidate	BA and EIS	No
Great Basin spadefoot toad (*Spea intermontana*)	WY BLM Sensitive	BE and EIS	No
Northern leopard frog (*Rana pipiens*)	USFWS WY Petitioned; WY BLM Sensitive; WY USFS Sensitive; ID BLM Sensitive; ID USFS Sensitive	BA and EIS	No
Wyoming toad (*Bufo hemiophrys baxteri*)	USFWS WY Endangered	BA and EIS	No
Fish			
Bonneville cutthroat trout (*Oncorhynchus clarki utah*)	USFWS WY and ID Petitioned	BA and EIS	No
Bonytail (*Gila elegans*)	USFWS Endangered	BA and EIS	No
Bull trout (*Salvelinus confluentus*)	USFWS ID Threatened	BA and EIS	No
Colorado pikeminnow (*Ptychocheilus lucius*)	USFWS Endangered	BA and EIS	No
Humpback chub (*Gila cypha*)	USFWS Endangered	BA and EIS	No
Pallid sturgeon (*Scaphirhynchus albus*)	USFWS Endangered	BA and EIS	No
Razorback sucker (*Xyrauchen texanus*)	USFWS Endangered	BA and EIS	No
Invertebrates			
Bruneau Hot springsnail *(Pyrgulopsis bruneauensis)*	USFWS Endangered; ID BLM Sensitive	BA and EIS	No
Idaho springsnail *(Pyrgulopsis idahoensis)*	USFWS ID De-listed; ID BLM Sensitive	BA and EIS	No

Table 1 Species Protected in the Gateway West Species Conservation Plan			
Species	**Regulatory Status within Project Area**	**Analysis**	**Included in Conservation Plan?**
Plants			
Blowout penstemon (*Penstemon haydenii*)	USFWS WY Endangered	BA and EIS	Yes
Colorado butterfly plant (*Gaura neomexicana coloradensis*)	USFWS WY Threatened	BA and EIS	Yes
Desert yellowhead (*Yermo xanthocephalus*)	USFWS WY Threatened	BA and EIS	No
Goose Creek milkvetch (*Astragalus anserinus*)	USFWS ID Petitioned	EIS	No
Slickspot peppergrass (*Lepidium pappileferum*)	USFWS ID Threatened	BA and EIS	Yes
Ute ladies'-tresses orchid (*Spiranthes diluvialis*)	USFWS Threatened WY	BA and EIS	Yes

Notes:
BA = Biological Assessment
BE = Biological Evaluation
BGEPA = Bald and Golden Eagle Protection Act
EIS = Environmental Impact Statement
ID = Idaho
MBTA = Migratory Bird Treaty Act
WY = Wyoming
USFS = U. S. Forest Service
MIS = Management Indicator Species

4.0 DEVELOPMENT OF CONSERVATION PLAN

This section explains how the Proponents approached avoidance and minimization of impacts through data collection and careful routing and siting of the proposed facilities.

4.1 Avoidance and Minimization Development and Implementation

This section presents the data collection and analysis that have been and will be employed for the various stages of Project development. The stages of Project development addressed include the proposed corridor routing process, the proposed ROW routing process, the construction scheduling, operation and maintenance, and emergency response.

4.1.1 Proposed Corridor Routing and Substation Siting

Corridor evaluation was conducted in two phases. In the initial phase, the Proponents reviewed maps of the area to identify significant constraints and opportunities for selecting corridors between the proposed, planned and existing substations between the planned Windstar Substation near Casper, Wyoming and the proposed Hemingway Substation in Owyhee County, Idaho. Constraints included a wide array of natural resources and man-made features such as the Oregon Trail, sage grouse leks, airports, urban areas, rural residences, agricultural features (center pivot irrigation, feedlots, dairies), visual resource management areas (VRMs), areas of critical environmental concern (ACECs), National Monuments and National Wildlife Refuges (NWR). Opportunities include existing transmission corridors, West-wide Energy (WWE) corridors, pipelines, a USFS utility corridor, and railroads. Using these factors, the Proponents selected a proposed general corridor and then conducted a detailed evaluation of constraints to identify a proposed and alternate corridor between the above-referenced points of interconnection.

Corridors were identified with the goals of maximizing the use of opportunities and minimizing crossings of areas with higher-level constraints. This step took into account corridors defined by existing transmission lines and other linear facilities as well as any additional corridors identified to date by the BLM, the Proponents, and the WWE Corridor study. The Proponents evaluated each corridor for a variety of environmental and engineering factors to identify the proposed and alternate corridors. This approach included development and use of an attribute matrix, which established the relative importance of each attribute and, as appropriate, analysis tools. Analysis tools included GIS-based routing and weighting, aerial photography, topographic maps, and limited field reconnaissance. The proposed and alternative corridors were then presented at BLM sponsored scoping meetings. Following scoping, BLM Field Offices reviewed proposed and alternative routes to determine which should be carried forward for detailed analysis in the EIS.

Specifically, the Proponents acquired geographic information system (GIS) data and qualitative input from the USFWS, BLM, Forest Service, IDFG, and WGFD regarding known and potential locations of special status species and their habitats in the Project area. These data were used to develop the list of special status species of concern in the Project area.

At the request of these agencies, the Proponents conducted additional data collection in 2008 to fill certain data gaps in the Project area, including a sage grouse lek survey, a raptor nesting survey, and detailed habitat mapping.

The datasets described above were used during routing of the proposed corridor and substation siting. Certain plant and wildlife resources were identified as constraints to be avoided, including:

- A 0.25-mile “no surface occupancy” buffer of all greater sage-grouse leks, regardless of recent occupancy, was entirely avoided during routing;
- A 0.65-mile buffer of greater sage-grouse leks was avoided unless there was a compelling reason not to (e.g., a non-wildlife resource such as a home to be avoided);
- A 0.50-mile buffer of raptor nests was avoided unless there was a compelling reason not to (e.g., a non-wildlife resource to be avoided); and
- Special management areas established for the protection of plant or wildlife species were avoided, where possible.

Other plant and wildlife resources (such as big game winter range and calving and fawning areas) were not necessarily avoided during routing and siting but were considered a constraint and were taken into consideration during design of the proposed Project. Additionally, proximity of the corridor to urban areas, agricultural areas and rural residences were taken into consideration during the routing and siting.

The proposed and alternative routes are presented in the September 2008 Gateway West Transmission Line Project Siting Study (Idaho Power and Rocky Mountain Power, 2008), and Supplement Siting memo dated October 23, 2008. As site-specific environmental and engineering analyses are conducted along these routes, the proposed transmission line ROW will be refined to further avoid resources or minimize impacts upon them.

4.1.2 Planned Right-of-Way Refinement

The Proponents are conducting a comprehensive Project-wide habitat mapping effort that identifies habitats in the Project area and assesses the quality of those habitats for selected special status species. The habitat mapping is comprised of two field components: aerial

photography acquisition and field verification. Based on the results of the habitat mapping, the Proponents will identify areas within the corridor where species-specific surveys may be necessary to either inform ROW refinement or specify where and when conservation measures apply.

Based on preliminary evaluation of the habitat mapping, the Proponents may conduct where necessary, surveys prior to construction and in the appropriate season to meet agency survey and timing requirements for the following species:

- Black-footed ferret;
- Pygmy rabbit;
- White-tailed prairie dog; and
- Special status plants.

In addition to the avoidance and minimization accomplished through routing, the Proponents have developed additional conservation measures, which are presented in this conservation plan and the POD. Some involve seasonal restrictions on construction, discussed in general in Section 4.1.3 and detailed by species in Section 5. Many of the measures detailed in Section 5 require preconstruction surveys to determine if and when they apply.

4.1.3 Construction Scheduling and Monitoring

Avoidance can be geographic and/or temporal. Where disturbance during construction is of concern, construction is proposed to be limited to periods of species absence or reduced presence. In addition to limited operating seasons, which categorically restrict construction, environmental monitoring is also proposed where construction may be permitted but its conformance with minimization measures should be monitored and enforced.

Environmental oversight will be conducted for construction activities. Monitoring entails being present during these activities, communicating with contractors, taking daily notes, ensuring that all impacts occur within the designated limits, ensuring that the requirements of the Project Environmental Protection Measures (EPMs) that the Proponents have incorporated as part of the Project are being met, and using best professional judgment to ensure that Project activities do not adversely affect special status plant and wildlife species. A biological monitor has the authority to issue stop work where agreed conditions protecting wildlife or plant species are being violated by the construction contractor. A biological monitor will work with the construction contractor, the regulatory agencies, and the Proponents to resolve non-compliances. The details of the Proponents environmental compliance program including roles and responsibilities, preconstruction surveys, monitoring and reporting will be detailed in the construction POD.

4.2 Development of Conservation Measures

After taking into consideration wildlife and plant resources as well as other important resources during siting and routing, the Proponents recognized the need for additional measures to minimize the impact from construction of the Project. The Proponents used the following steps to develop the measures found in Section 5:

- Identified and reviewed the BLM and Forest Service land management plans applicable to the Project area (**Table 2**);
- For each land management plan, recorded the surface use stipulations specific to each species of concern;

- Provided to BLM and Forest Service resource specialists for their review a list of stipulations compiled from their jurisdiction;
- Incorporated BLM and Forest Service comments, which included clarifications and updates to stipulations provided in the land management plans;
- Distinguished between requirements and standards versus guidelines, recommendations, and BMPs;
- Distinguished between measures designed to avoid or minimize direct impacts to individuals and those designed for habitat management;
- Identified inconsistencies in requirements among jurisdictions;
- Determined exception or waiver criteria, if applicable;
- Identified data gaps, by species and by jurisdiction; and
- Evaluated the stipulations on a resource by resource basis and developed the proposed Project-wide temporal and spatial restrictions and exception criteria.

Table 2
Land Management Plans for the Gateway West Project

Jurisdiction	Plan Name	Plan Date/Status
Wyoming		
Casper BLM Field Office (FO)	Casper Resource Management Plan (RMP)	2007
Medicine Bow National Forest (NF)	Medicine Bow NF Revised Land and Resource Management Plan	2003
Rawlins BLM FO	Rawlins RMP	2008
Rock Springs BLM FO	Green River RMP	2004
Kemmerer BLM FO	Kemmerer RMP	1986
Idaho		
BLM Idaho Falls District, Pocatello FO	Pocatello RMP	1988
BLM Idaho Falls District, Pocatello FO	Malad Management Framework Plan (MFP)	1981
Caribou-Targhee NF, Caribou Administrative Unit	Caribou NF Revised Forest Plan (RFP)	2003
BLM Twin Falls District, Shoshone FO	Monument RMP	1986
BLM Twin Falls District, Shoshone FO	Bennett Hills/Timmerman Hills MFP	1980
Sawtooth National Forest	Sawtooth National Forest Revised Forest Plan	2003
BLM Twin Falls District, Burley FO	Cassia RMP	1985
Burley Field Office	Twin Falls MFP	1987
BLM Twin Falls District, Jarbidge FO	Jarbidge RMP	1987
BLM Boise District, Four Rivers FO	Kuna MFP	1983

Table 2 Land Management Plans for the Gateway West Project		
Jurisdiction	**Plan Name**	**Plan Date/Status**
BLM Boise District, Four Rivers FO	Cascade RMP	1987
BLM Boise District, Four Rivers FO	Snake River Birds of Prey National Conservation Area (NCA) RMP	2008
BLM Boise District, Bruneau FO	Bruneau MFP	1983
BLM Boise District, Owyhee FO	Owyhee RMP	1999
Nevada		
Wells Field Office	Wells RMP	1985

4.2.1 Land Management Plans

Wyoming land management plans within the Project area are recent, and overall, the specific temporal and spatial restrictions for a given species are consistent across these jurisdictions. Most of the relevant Idaho plans within the Project area are outdated, and additional information provided by the agencies in Idaho is very limited. In addition, these plans tend to have information gaps, contain restrictions that are not consistent across jurisdictions, and contain stipulation language that is not specific and require interpretation. RMPs from both states have phrases such as “avoidance where possible”, “request”, “recommend” “review on a case by case basis”, and “exceptions may be made” indicating many of the stipulations and restrictions need to be reviewed on a species by species basis within each field office.

4.2.2 Stipulation Selection

One set of measures is proposed for each species across the entire Project area. The Proponents propose Project-wide measures because they are easier to administer and explain to construction personnel. As a result, there are cases in which the proposed conservation measures deviate from those found in some of the land management plans.

Many of the stipulations are designed to assume species presence and, in the case of seasonal restrictions, to broadly bracket the interval of time in which there could be adverse impacts. The Proponents include conditions for those stipulations that allow for flexibility on a case by case basis based on species occupancy and other local conditions.

Finally, the Proponents did not include all measures found in all land management plans. Measures not included are those which are not specific enough to define a measurable stipulation, measures that describe general goals for the Federal lands but do not address new projects specifically, measures that address habitat management and treatment versus discrete temporal and spatial restrictions on project activities, cases in which the expectations of one land management plan extends well beyond that of the other plans, and measures that are not practical from a project design and development perspective.

4.2.3 Land Ownership

The Wyoming segments of the proposed Project cross a relatively large percentage of Federal land, and private lands tend to be unsigned and isolated sections of land in a checkerboard

pattern. Therefore, in these segments the temporal and spatial restrictions on Federal lands will be applied to the entire segment (i. e., including the private and state land) in order to have a Project conservation plan that is consistent and thus easier to plan and implement. Exceptions to this strategy are:

- The proposed substation and regeneration sites located on private land;
- Stipulations that are only applicable to National Forest System lands; and
- Variances on private property that are at the request of the property owner.

In Idaho, land ownership patterns vary by segment. The proposed corridors for Segments 6, 8, and 9 are largely Federal land, with private and state land interspersed. Segments 4, 5, 7 and 10 are predominantly private ownership in agriculture and other development, and for the most part, the Federal land in these segments is clustered. As with the Wyoming segments, the Proponents intend to implement the temporal and spatial restrictions for Federal land on all lands along these segments, with the exception of the proposed substation locations which will be on private land.

4.2.4 Species-Specific and Site-Specific Variation

The proposed Project conservation measures are framed with the understanding that the applicability of each measure is dependent upon species-specific and site-specific criteria. The Proponents have designed an intensive plan of habitat assessments, field surveys, and field monitoring that will identify the specific conditions under which each proposed measure must be implemented. This approach provides for protection of the species of concern while not unnecessarily limiting Project activities. The proposed conservation plan varies by species, based on factors such as:

- The anticipated prevalence of the species in the Project area;
- The sensitivity of the species to the activities that will be conducted in the Project area;
- The listing status of the species;
- The land management plan guidance and requirements regarding the presence of the species or its habitats; and
- The quality and extent of the existing data related to the species.

The proposed species conservation measures are presented in Section 5. Ultimately, the specific Project mileposts and schedule for which each measure applies will be identified. The POD will contain a plan that will provide the site-specific means of complying with the listed measures.

5.0 PROPOSED PLANT AND WILDLIFE CONSERVATION PLAN

The conservation measures that the Proponents propose to implement to avoid or minimize impacts to special status species in the Project area are presented below. This includes the special status species that have been identified by the Proponents and the Agencies as occurring or potentially occurring in the Project area, and presents the following information for each species:

- Regulatory status, if any, which may include: Federally listed, candidate, proposed, or petitioned; state listed (only relevant for Idaho); BLM Sensitive; Forest Service

Sensitive; Forest Service Management Indicator Species (MIS); Migratory Bird Treaty Act (MBTA); and Bald and Golden Eagle Protection Act (BGEPA);

- Proposed methods of data collection;
- Proposed temporal and spatial surface use stipulations; and
- Proposed exceptions to the proposed surface use stipulations.

Big Game

For all species of big game exceptions include areas where regular human activity occurs (e.g., along highways) which has acclimated animals to disturbance. If the animals are habituated to disturbance, the surface use stipulation will be waived for the entire season. Proposed game conservation (PGC) measures are found below.

Antelope Fawning Areas

PGC-1 No construction May 1 to May 30 in identified areas.

PGC-2 Weekly monitoring will commence May 15 and continue until PGC-3 is met. The Proponents will provide monitoring results to the appropriate land management agency.

PGC-3 If animals are present after May 15, no construction until two consecutive weekly monitoring[1] sessions show no animals present or until July 1 if animals are present.

Antelope Winter Range

PGC-4 Weekly monitoring will commence November 15 in identified areas (see PGC-5). The Proponents will provide monitoring results to the appropriate land management agency. .

PGC-5 Construction may continue past November 15 if no animals are detected, but contractor must be prepared to shut down once four or more antelope are seen in mapped habitat, and may not start work until March 1 at the earliest and if PGC-6 and -7 are met.

PGC-6 Weekly monitoring will be reinitiated, beginning February 15 and continue until PGC-7 is met. The Proponents will provide monitoring results to the appropriate land management agency.

PGC-7 If animals are present, no construction until May 1 or until two consecutive weekly monitoring sessions confirm no animals are present.

Bighorn Sheep Lambing Grounds

PGC-8 No construction May 1 to May 30 in identified areas.

PGC-9 Weekly monitoring will commence May 15 and continue until PGC-10 is met. The Proponents will provide monitoring results to the appropriate land management agency.

PGC-10 If animals are present after May 30, no construction until two consecutive weekly monitoring sessions show no animals present or until July 1 if animals are present.

[1] Monitoring constitutes two events per week with suitable weather conditions (no visual limitations – fog, precipitation) in a 1-mile buffer around active project facilities (for the following species: antelope fawning and winter range, big horn sheep lambing and winter range, elk calving and winter range, moose calving and winter range, and mule deer fawning and winter range).

Bighorn Sheep Winter Range

PGC-11 Weekly monitoring will commence November 15 in identified areas (see PGC-12).

PGC-12 Construction may continue past November 15 if no animals are detected, but contractor must be prepared to shut down once one or more big horn sheep are seen in mapped habitat, and may not start work until March 1 at the earliest, and if PGC-13 and -14 are met.

PGC-13 Weekly monitoring will be reinitiated beginning February 15 and continue until PGC-14 is met. The Proponents will provide monitoring results to the appropriate land management agency.

PGC-14 If animals are present, no construction until May 1, or until two consecutive weekly monitoring sessions confirm no animals are present.

Bighorn Sheep Year-long Habitat

PGC-15 Surface disturbance is prohibited year-round within mapped habitat.

Elk Calving Areas

PGC-16 No construction May 1 to May 30 in identified areas.

PGC-17 Weekly monitoring will commence May 15 and continue until PGC18 is met. The Proponents will provide monitoring results to the appropriate land management agency.

PGC-18 If animals are present after May 30, no construction until two consecutive weekly monitoring sessions show no animals present or until July 1 if animals are present.

Elk Winter Range

PGC-19 Weekly monitoring will commence November 15 (see PGC-20).

PGC-20 Construction may continue past November 15 if no animals are detected, but contractor must be prepared to shut down once four or more elk are seen in mapped habitat, and may not start work until March 1 at the earliest, and if the following conditions are met.

PGC-21 Weekly monitoring will be reinitiated beginning February 15 and continue until PGC-22 is met. The Proponents will provide monitoring results to the appropriate land management agency.

PGC-22 If animals are present, no construction until May 1 or until two consecutive weekly monitoring sessions confirm no animals are present.

Moose Calving Areas

PGC-23 No construction May 1 to May 30 in identified areas.

PGC-24 Weekly monitoring will commence May 15 and continue until PGC-25 is met. The Proponents will provide monitoring results to the appropriate land management agency.

PGC-25 If animals are present after May 30, no construction until two consecutive weekly monitoring sessions show no animals present or until July 1 if animals are present.

Moose Winter Range

PGC-26 Weekly monitoring will commence November 15 in identified areas (see PGC-27).

PGC-27 Construction may continue past November 15 if no animals are detected, but contractor must be prepared to shut down once one or more moose are seen in mapped habitat, and may not start work until March 1 at the earliest, and if the following conditions are met.

PGC-28 Weekly monitoring will be reinitiated beginning February 15 and continue until PGC-29 is met. The Proponents will provide monitoring results to the appropriate land management agency.

PGC-29 If animals are present, no construction until May 1 or until two consecutive weekly monitoring sessions confirm no animals are present.

Mule Deer Fawning Areas

PGC-30 No construction May 1 to May 30 in identified areas.

PGC-31 Weekly monitoring will commence May 15 and continue until PGC-32 is met. The Proponents will provide monitoring results to the appropriate land management agency.

PGC-32 If animals are present after May 30, no construction until two consecutive weekly monitoring sessions show no animals present or until July 1 if animals are present.

Mule Deer Winter Range

PGC-33 Weekly monitoring will commence November 15 in identified areas (see PGC-34).

PGC-34 Construction may continue past November 15 if no animals are detected, but contractor must be prepared to shut down once four or more mule deer are seen in mapped habitat, and may not start work until March 1 at the earliest, and if the following conditions are met.

PGC-35 Weekly monitoring will be reinitiated beginning February 15 and continue until PGC-36 is met. The Proponents will provide monitoring results to the appropriate land management agency.

PGC-36 If animals are present, no construction until May 1 or until two consecutive weekly monitoring sessions confirm no animals are present.

Other Mammals

Proposed mammal conservation (PMC) measures are found below.

Black-Footed Ferret (bff)

White-tailed prairie dog colonies that are larger than 200 acres are considered suitable habitat.

PMC-1 No surface disturbance will occur in black footed ferret non-block-cleared areas that are part of a white-tailed prairie dog complex that is greater than 200 acres and identified by USFWS as a potential black footed ferret reintroduction area (USFWS 1989) until cleared by species specific presence/absence protocol level surveys.

PMC-2 Pre-construction presence/absence protocol surveys (USFWS 1989) would be conducted in suitable habitat within mapped non-block-cleared areas, as necessary. Results of surveys would be valid for a 12-month period.

PMC-3 In the event that black-footed ferrets are documented, construction would cease within the vicinity of the documented occurrence and the USFWS would be notified. In addition, the transmission line or structures would be

relocated to minimize direct impacts to prairie dog colonies to the extent possible.

Pygmy Rabbit
No surface disturbance of active burrows will occur.

PMC-4 The year prior to construction, protocol level surveys (Ulmschneider 2004) would be conducted in suitable habitat (defined by both Project-specific mapping conducted in 2008 and agency habitat mapping) within 300 feet of and including the ROW. Survey results shall be provided to the appropriate land management agency. (A distance of 300 feet was chosen because burrow systems have been found to extend to approximately 300 feet [Bradfield 1974].)

PMC-5 During the protocol level surveys, any areas of occupied habitat will be mapped with a GPS unit. No surface disturbances of active burrows will occur.

PMC-6 Where feasible and if needed, the transmission line would be micro-sited to avoid occupied habitat.

PMC-7 Within 30 days prior to construction, previously occupied habitat would be re-visited to document presence using protocol level surveys (Ulmschneider 2004). Occupied habitat would be re-mapped electronically and flagged in the field to allow additional micro-siting to avoid the occupied habitat to the extent possible.

White-Tailed Prairie Dog
Where possible, occupied habitat will be avoided. See proposed conservation measures associated with the black-footed ferret.

Wyoming Pocket Gopher

PMC-8 Protocol level surveys (Keinath and Beauvais 2006) would be conducted within suitable habitat in segments 2, 3, and 4, in order to determine species presence in areas that could be impacted by Project components. Proponents will provide survey results to the appropriate land management agency.

PMC-9 All ground disturbances would be avoided to the extent practical where the Wyoming pocket gopher is documented.

PMC-10 Previously documented occurrences of the Wyoming pocket gopher would be avoided during operation and maintenance activities.

Exceptions include areas where regular human activity occurs (e.g., along highways) which has acclimated animals to disturbance. If the animals are habituated to disturbance, the surface use stipulation will be waived for the entire season.

Raptors

Proposed raptor conservation (PRC) measures are found below.

Bald Eagle
5.1.1.1.1.1.1 Active Nests

PRC-1 A pedestrian or aerial survey of known nest locations within a 1 mile buffer of active project facilities will be conducted no more than 2 weeks prior to

construction. The Proponents will provide survey results to the appropriate land management agency.

PRC-2 If nesting bald eagles are present, the USFWS will be notified and monitoring will be conducted until the young have fledged or the nest fails, at which point construction can begin.

PRC-3 If no nesting activity has been initiated by April 1, construction will be permitted for the remainder of the nesting season without further monitoring.

Exceptions include areas where regular human activity occurs (e.g., along highways) which has acclimated the birds to disturbance. If the birds are habituated to disturbance, the surface use stipulation will be waived for the entire season. In addition, if topography is such that the Project activities are out of line of sight of the nest, the surface use stipulation will be waived.

5.1.1.1.1.1.2

5.1.1.1.1.1.3 Winter Roosts

Known winter roosts will be monitored and exceptions based on bird occupancy:

PRC-4 If roosting activity has been initiated, then no construction will be initiated within the prescribed buffer; however, if no roosting activity has been initiated by January 1, then construction will be permitted for the remainder of the roosting season without further monitoring.

Exceptions include areas where regular human activity occurs (e.g., along highways) which has acclimated animals to disturbance. If the animals are habituated to disturbance, the surface use stipulation will be waived for the entire season. In addition, if topography is such that the Project activities are out of line of sight of the roost, the surface use stipulation will be waived.

Burrowing Owl

PRC-5 Within 30 days prior to construction, protocol level surveys (CDOW 2007) will be conducted in suitable or occupied habitat. Active burrows will be mapped electronically and flagged in the field to determine if transmission line features can avoid burrows. If avoidance is not feasible, construction will not begin until August 16. The Proponents will provide survey results to the appropriate land management agency.

Ferruginous Hawk

PRC-6 A pre-construction pedestrian or aerial survey will be conducted two weeks prior to construction, to identify active nests within 1 mile of the ROW.

PRC-7 If an active nest is present, monitoring will be conducted until the young have fledged or the nest fails, whichever occurs sooner, and no surface-disturbing activities will occur within 1 mile of the nest while the nest is active. Monitors will observe the nests from an appropriate distance to avoid disturbing birds.

PRC-8 If no active nests are detected during the pre-construction surveys construction will occur without further monitoring.

Exceptions include areas where regular human activity occurs (e.g., along highways) which has acclimated the birds to disturbance. If the birds are habituated to disturbance, the surface use stipulation will be waived for the entire season. In addition, if topography is such that the Project activities are out of line of sight of the nest, the surface use stipulation will be waived.

Flammulated Owl

PRC-9 Preconstruction protocol level surveys (USFS 1993, 2008) will be conducted during the appropriate seasonal timeframe prior to construction in suitable

habitat, to identify active nests within 0.25 of a mile of the ROW. Proponents will provide survey results to the appropriate land management agency.

PRC-10 If an active nest is found during the protocol level surveys, construction is prohibited within 0.25 mile of the nest until monitoring shows that the young have fledged or the nest fails, whichever occurs sooner.

PRC-11 If no active nests are detected during the pre-construction protocol surveys, construction will occur without further monitoring.

Exceptions include areas where regular human activity occurs (e.g., along highways) which has acclimated the birds to disturbance. If the birds are habituated to disturbance, the surface use stipulation will be waived for the entire season.

Golden Eagle

PRC-12 A pedestrian or aerial survey of known nest locations will be conducted weekly during the appropriate seasons, beginning no more than 2 weeks prior to construction. The Proponents will provide survey results to the appropriate land management agency.

PRC-13 If nesting eagles are present, monitoring will be conducted until the young have fledged or the nest fails, at which point construction can begin.

PRC-14 If no active nests are detected during the pre-construction surveys construction will occur without further monitoring.

Exceptions include areas where regular human activity occurs (e.g., along highways) which has acclimated the birds to disturbance. If the birds are habituated to disturbance, the surface use stipulation will be waived for the entire season. In addition, if topography is such that the Project activities are out of line of sight of the nest, the surface use stipulation will be waived.

Northern Goshawk

PRC-15 Pre-construction pedestrian surveys (USFS 1993, 2008) will be conducted during the appropriate seasonal timeframe prior to construction in suitable habitat, to identify active nests within 0.5 of a mile of the ROW within suitable habitat. Proponents will provide survey results to the appropriate land management agency.

PRC-16 If an active nest is found during the protocol level surveys, construction is prohibited within 0.25 mile of the nest until monitoring shows that the young have fledged or the nest fails, whichever occurs sooner, and no surface-disturbing activities will occur within 0.5 mile of the nest while the nest is active.

PRC-17 If no active nests are detected during the pre-construction surveys construction will occur without further monitoring.

Exceptions include areas where regular human activity occurs (e.g., along highways) which has acclimated the birds to disturbance. If the birds are habituated to disturbance, the surface use stipulation will be waived for the entire season.

All Other Raptors

PRC-18 Pre-construction surveys will be conducted during the appropriate seasonal timeframe prior to construction, to identify active nests within 0.5 of a mile of the ROW within suitable habitat. The Proponents will provide survey results to the appropriate land management agency.

PRC-19 If an active nest is found during the protocol level surveys, construction is prohibited within 0.5 mile of the nest until monitoring shows that the young have fledged or the nest fails, whichever occurs sooner. The Proponents will provide survey results to the appropriate land management agency.

PRC-20 If no active nests are detected during the pre-construction surveys construction will occur without further monitoring.

Exceptions include areas where regular human activity occurs (e.g., along highways) which has acclimated the birds to disturbance. If the birds are habituated to disturbance, the surface use stipulation will be waived for the entire season. In addition, if topography is such that the Project activities are out of line of sight of the nest, the surface use stipulation will be waived.

Other Avian

Proposed avian conservation (PAC) measures are found below. It should be noted, the Proponents are preparing a Sage grouse mitigation plan to be submitted under separate cover.

Columbian Sharp-tailed Grouse

PAC-1 All previously identified Columbian sharp-tailed grouse leks within 1 mile of the center line of the Project will be surveyed during the breeding season (March 15 to June 15) prior to construction to determine if the lek is active. If no lek activity is observed by April 15th, no further restrictions apply for that year. Measures PAC-2, -3, and -4 will not apply if lek is not active. The Proponents will provide survey results to the appropriate land management agency.

PAC-2 Surface disturbance will be prohibited year-round within 0.25 mile of previously documented leks.

PAC-3 No surface disturbance from 0.25 mile to 0.65 mile of a known active lek from March 1 to April 30. If no lek activity is observed by April 15th, no further restrictions apply for that year. If lek activity is observed, surface disturbance from 0.25 mile to 0.65 mile may not occur until after June 30.

PAC-4 Surface disturbance occurring more than 0.65 mile from the lek may occur at any time.

PAC-5 Notification will be placed in areas frequented by on-site personnel (such as break rooms) to advertise the importance of complying with these restrictions.

PAC-6 Operation and maintenance activities will be scheduled to avoid working within 0.65 mile of previously documented leks from March 15 to July 15.

Temporal and spatial restrictions do not apply when lek or nesting and brood rearing habitat is separated from Project activities by other forms of human disturbance (e.g., agriculture, highways) or by line of sight barriers.

Greater Sandhill Crane

PAC-14 A preconstruction aerial survey of suitable habitat and historic nest sites will be conducted.

PAC-15 Nesting pairs within 0.5 mile of the ROW will be monitored until the nest is vacated, the young are no longer dependent on the nest, or June 30, whichever occurs

sooner, and no surface-disturbing activities will occur within 0.5 mile of the nest while the nest is active.

PAC-16 If no nesting pairs are observed during pre-construction surveys, construction can begin.

PAC-17 In the event that the nest site is separated from the Project activities by other forms of human disturbance (e.g., a highway or active cropland), or by line of sight barriers, construction may start

Long-Billed Curlew

PAC-18 Within 30 days prior to construction, protocol level surveys will be conducted in known and occupied habitat within a 1 mile buffer of active project activities. Active nests will be mapped electronically and flagged in the field and monitored until the nest is vacated or June 30, whichever comes first, at which time construction can commence.

Mountain Plover

PAC-19 Preconstruction protocol level surveys (USFWS 2002) will be conducted during the appropriate seasonal timeframe prior to construction in suitable habitat, to identify active nests within 0.25 mile of the ROW. If no nests are found, construction can commence. The Proponents will provide survey results to the appropriate land management agency.

PAC-20 If an active nest is found during the protocol level surveys, monitoring will be conducted until the young have fledged or the nest fails, whichever occurs sooner, and no surface-disturbing activities will occur within 0.25 mile of the nest while the nest is active.

PAC-21 If no active nests are discovered during the preconstruction surveys (USFWS 2002), construction will be permitted for the remainder of the nesting season without further monitoring.

Exceptions include areas where regular human activity occurs (e.g., along highways) which has acclimated the birds to disturbance. If the birds are habituated to disturbance, the surface use stipulation will be waived for the entire season. In addition, if topography is such that the Project activities are out of line of sight of the nest, the surface use stipulation will be waived.

Three-Toed Woodpecker

PAC-22 Pre-construction protocol level surveys will be conducted during the appropriate seasonal timeframe prior to construction in suitable habitat, to identify active nests within the ROW.

PAC-23 If an auditory response is received and an active nest is found, monitoring will be conducted until the young have fledged or the nest fails, whichever occurs sooner, and no surface-disturbing activities will occur within 0.25 mile of the nest while the nest is active. The Proponents will provide survey results to the appropriate land management agency.

PAC-24 If no nests are discovered, construction will be permitted for the remainder of the nesting season without further monitoring.

Exceptions include areas where regular human activity occurs (e.g., along highways) which has acclimated the birds to disturbance. If the birds are habituated to disturbance, the surface use stipulation will be waived for the entire season.

Plants

Proposed plant conservation (PPC) measures are found below.

Blowout Penstemon (*Penstemon haydenii*)

PPC-1 Surface disturbance will be allowed in suitable habitat where species-specific surveys have determined that no populations are present. The species-specific surveys will be conducted the year prior to construction, and the proposed disturbance areas will be redesigned to avoid direct impact to populations.

Colorado Butterfly Plant (*Gaura neomexicana coloradensis*)

PPC-2 Surface disturbance will be allowed in suitable habitat where species-specific surveys have determined that no populations are present. The species-specific surveys will be conducted the year prior to construction, and the proposed disturbance areas will be redesigned to avoid direct impact to populations.

Slickspot Peppergrass (*Lepidium pappileferum*)

PPC-3 Surface disturbance will be allowed in suitable habitat where species-specific surveys have determined that no populations are present. The species-specific surveys will be conducted the year prior to construction, and the proposed disturbance areas will be redesigned to avoid direct impact to populations.

Ute Ladies'-Tresses Orchid (*Spiranthes diluvialis*)

PPC-4 Surface disturbance will be allowed in suitable habitat where species-specific surveys have determined that no populations are present. The species-specific surveys will be conducted the year prior to construction, and the proposed disturbance areas will be redesigned to avoid direct impact to populations.

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Appendix C-4
Revised Plan for Operations, Maintenance, and Emergency Response

(submitted to BLM by Idaho Power and Rocky Mountain Power October 2010)

Appendix C-4

Revised Plan for Operations, Maintenance, and Emergency Response

Gateway West Transmission Line Project

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1.0 INTRODUCTION

This document presents the plan proposed by Idaho Power and Rocky Mountain Power (the Proponents) for conducting routine and emergency operation and maintenance (O&M) activities for the Gateway West Transmission Line Project (Project). This plan is intended to ensure the following:

- O&M activities comply with applicable state and federal laws and policies;
- Consistency across and within federal jurisdictions;
- The Proponents are able to access the transmission line and ancillary facilities and implement the necessary O&M activities in a timely, cost effective and safe manner;
- Impacts to the environment are avoided where practicable or are minimized; and
- The Proponents comply with the North American Electric Reliability Corporation (NERC) and Western Electric Coordinating Council (WECC) reliability and service requirements.

NERC's mission is to ensure the reliability of the bulk power system in North America. To achieve that, NERC develops and enforces reliability standards; assesses adequacy annually via 10-year and seasonal forecasts; monitors the bulk power system; evaluates users, owners, and operators users for preparedness; and educates, trains, and certifies industry personnel. NERC works with eight regional entities to improve the reliability of the bulk power system. The members of the regional entities come from all segments of the electric industry: investor-owned utilities; federal power agencies; rural electric cooperatives; state, municipal and provincial utilities; independent power producers; power marketers; and end-use customers. These entities account for virtually all the electricity supplied in the United States, Canada, and a portion of Baja California Norte, Mexico.

The Western Systems Coordinating Council (WSCC) was formed with the signing of the WSCC Agreement on August 14, 1967 by 40 electric power systems. Those "charter members" represented the electric power systems engaged in bulk power generation and/or transmission serving all or part of the 14 Western States and British Columbia, Canada. The WECC was formed on April 18, 2002, by the merger of WSCC, Southwest Regional Transmission Association (SWRTA), and Western Regional Transmission Association (WRTA). WECC's interconnection-wide focus is intended to complement current efforts to form Regional Transmission Organizations (RTO) in various parts of the West.

WECC and the nine other regional reliability councils were formed due to national concern regarding the reliability of the interconnected bulk power systems, the ability to operate these systems without widespread failures in electric service, and the need to foster the preservation of reliability through a formal organization.

WECC members have long recognized the many benefits of interconnected system operation. During the mid 1960s, expansion of interconnecting transmission lines among systems in the western United States and western Canada resulted in the complete interconnection of the entire WECC region. As this expansion was taking place, systems generally adopted the Operating Guides of the North American Power Systems Interconnection Committee (NAPSIC) to promote consistent operating practices within the region. NAPSIC later became the NERC Operating Committee.

The reliability management system (RMS) was created as a way to enforce compliance. This contract obligates entities to abide by certain critical reliability standards and to provide the data needed to verify compliance. The contract also imposes sanctions, both monetary and non-monetary according to a set schedule, for violations of reliability criteria. Currently all control areas but one are signatories to the RMS agreement, and almost 90% of the customer load in the Western Interconnection is served under RMS.

The Proponents submitted the *Revised Proposed Plant and Wildlife Conservation Plan - Construction Activities* (Idaho Power and Rocky Mountain Power 2010) to the Bureau of Land Management (BLM) in January 2010. That document addressed avoidance and minimization measures during corridor and route selection and conservation measures, including temporal and spatial restrictions, to protect plant and wildlife species of concern during construction. The avoidance and minimization measures implemented during routing will also reduce the potential for adverse impacts during O&M activities. This Plan addresses routine, corrective and emergency response activities for operation and maintenance of the transmission line and its ancillary facilities. This Plan will be reviewed and updated as necessary and as agreed to by the Proponents and the Agencies.

2.0 OPERATION AND MAINTENANCE

The Proponents perform a number of activities to keep transmission lines operational and in good repair. Most of these activities, such as those for routine patrols, inspections, or scheduled maintenance, are planned in advance. However, there will be an occasional need for emergency response in cases where public safety and property are threatened, to prevent imminent damage to the transmission line and ancillary facilities, or to restore service in the event of an outage.

Routine, corrective, and emergency response activities will be conducted in accordance with this O&M Plan without previous notification or approval from the BLM, U.S. Forest Service, and Bureau of Reclamation (Agencies). Exceptions where prior notification and approval are required are described in Section 4. Maintenance activities outside of the right-of-way (ROW), outside of established service and access roads or other Project related ancillary facilities, or that are not identified in this Plan will not be conducted until approved by the Agencies. An exception to this would be when emergency action/maintenance is needed which requires some outside ROW work to be completed to ensure reliable power to customers.

Typical schedules and equipment used for the O&M activities are provided below. However, additional vehicles and equipment may be necessary depending on the terrain, site access, and necessary maintenance work. Work may also be conducted outside of the typical schedule; schedule changes may occur as a result of weather, manpower, equipment availability, budgets, and other factors.

2.1 Routine Maintenance (Preventative Maintenance)

Routine maintenance activities are conducted on a regular basis and have been carried out historically to identify and repair any deficiencies. These activities do not damage vegetation or soil outside of the ROW, and do not adversely impact sensitive resources — including known federal and state listed species, waters of the United States, and cultural resources — and do not require land manager approval. Personnel are generally present in any one area for less than one day. The following are examples of routine maintenance activities:

- Routine air patrols from a helicopter to inspect for structural and conductor defects, conductor clearance problems and hazardous trees.
- Routine ground patrols to inspect structural and conductor components. Such inspections generally require either an all-terrain vehicle (ATV) or pickup and possibly additional support vehicles traveling on access and service roads and may rely on either direct line-of-sight or binoculars. In some cases, the inspector may walk the ROW. Patrols are typically conducted in the spring and fall. Follow-up maintenance is scheduled depending on the severity of the problem — either as soon as possible or as part of routine scheduled maintenance.
- Climbing surveys may be necessary to inspect hardware or make repairs. Personnel generally access these structures by pickup, ATV, or on foot.
- Structure or conductor maintenance typically occurs from a bucket truck or boom truck. The maintenance vehicle may be located on or off a road, and no-to-minimal grading is necessary to create a safe work area.
- Cathodic protection surveys to check the integrity and functionality of the anodes and ground beds. These surveys typically require personnel to use an ATV or pickup and make brief stops.
- Routine cyclical vegetation clearing to trim or remove tall shrubs and trees to ensure adequate ground-to-conductor clearances. Vegetation clearing cycles vary from 3 to 10 years or as needed (dependent upon the vegetation present). Personnel generally access the area by pickup, ATV, or on foot; use chainsaws to clear the vegetation; and typically spend less than half a day in any one specific area. In some cases vegetation may be cleared using mechanical means.
- Removal of individual trees or snags (hazard trees) that pose a risk of falling into conductors or structures and causing outages or fires. Personnel generally access hazard trees by truck, ATV, or by foot from an access or service road, and cut them with a chainsaw or similar tool. Any felled trees or snags are left in place as sources of large woody debris or as previously directed by the land management agency. Felled green trees are limbed to reduce fire hazard.
- Wood poles are periodically treated to retard rotting and structural degradation. Wooden poles are limited to the distribution lines serving substations and regeneration stations on this Project. Personnel typically access structures by pickup, ATV, or on foot; inspect and test (including the subsurface) the poles; and then treat them by injecting preservatives into the poles if required. Wood pole inspections and treatments generally occur on a 10-year cycle.
- Routine road maintenance, such as blading (as needed) the road to improve surface condition and drainage, or removing minor physical barriers, such as rocks and debris. All initial road maintenance is performed by field crews which typically use ATVs, pickups, chainsaws, and hand tools. Trees and brush are cut off at grade to minimize damage to vehicles. Slash, deadfall, and boulders are placed at the edge of the road or down slope of the road bed, depending on site topography, to serve as a filtering windrow to minimize erosion and sedimentation. Smaller vegetation (e.g., grasses) is left in the road bed unless it is too tall, hinders access, or could be construed as a fire hazard to O&M vehicles.
- Vegetation removal may be required on service roads to allow the necessary clearance for access and provide for worker safety. Field crews access the service roads by pickup

or ATV and use chainsaws and hand tools to clear the vegetation. Where practicable and feasible, mechanical methods may be used.

- Installation of bird protection devices, bird perch discouragers, and the relocation or removal of bird problem nests posing imminent fire or outage risk.
- Noxious weed control and vegetation management activities that includes the use of herbicides. Herbicide use is based on agreement with the landowner or federal land management agency for the parcel in question and the chemicals used are agreed to in advance.

2.2 Corrective Maintenance

Corrective maintenance activities are relatively large-scale efforts that occur infrequently, may result in more extensive vegetation clearing or earth movement, and may include rehabilitation seeding and associated activities (e.g., measures to control noxious weeds). Personnel are generally present in any one location or area for a prolonged time, generally more than one day. The following are examples of corrective maintenance:

- Non-cyclical vegetation clearing to remove saplings or larger trees in the ROW.
- Structure or conductor maintenance in which earth must be moved, such as the creation of a landing pad for construction or maintenance equipment.
- Structure (e.g., cross-arm, insulator, structure) replacement.
- Road maintenance involving erosion control, water drainage installation or repair (such as culverts or rock crossings), road rehabilitation after major disturbances (such as slumping or a storm event), or other road maintenance requiring heavy equipment (not including routine grading).
- Follow-up restoration activities, such as seeding, noxious weed control, and erosion control.
- Conductor repair or replacement, which requires the use of several types of trucks and equipment and grading to create a safe work area to hang and pull the conductor into place.

3.0 EMERGENCY SITUATIONS

Emergency situations are those conditions that may result in imminent or direct threats to public safety or threaten or impair the Proponents' ability to provide reliable transmission service to its customers. Emergency situations may include:

- Failure of conductor splices.
- Damage to structures or conductors from wildfire, high winds, ice, or other weather-related conditions.
- Line or system outages or fire hazards caused by trees falling into conductors.
- Breaking or imminent failure of cross-arms or insulators, which could, or does, cause conductor failure.

- Damage to structures or conductors from vandalism

In the case of an emergency where life or substantial property is at risk or there is a potential or actual interruption in service, the Proponents will promptly respond to the emergency and conduct any and all activities, including emergency repair requiring heavy equipment access to the structures or other ancillary facilities, needed to remedy the emergency and will implement feasible and practicable Environmental Protection Measures (EPMs). Follow-up actions will follow this Plan.

4.0 ENVIRONMENTAL PROTECTION MEASURES

O&M activities are planned to minimize impacts to the environment. The following EMPs will be implemented by the Proponents during routine and corrective O&M activities and, to the extent possible, during emergency situations.

4.1 Site Access and Road Management

The Proponents describe roads necessary for the O&M of transmission lines as either access roads or service roads. The sole purpose of service roads is to provide maintenance crews access to the transmission lines. These roads would not exist if the transmission lines did not exist. In contrast, access roads serve a broader purpose, such as contributing to the federal, county or state road systems. Access roads provide direct or indirect access to the transmission lines, but that access is not their primary purpose. Public access to service roads is determined on a case-by-case basis by the appropriate federal land management agency. The Proponents are responsible for maintenance of roads that are closed to the public but accessible to federal personnel and the Proponents for maintenance purposes. Service and access roads are generally one of the following four types:

- Public roads, including state highways and county roads—These roads are for public use, and the appropriate state or county entity maintains them. The Proponents consider these access roads.
- Open roads on federal land—The appropriate federal agency (typically BLM or Forest Service) maintains these roads, which are open to the public. These roads, including drainage features, cuts and fill slopes, must be protected during O&M activities. The Proponents consider these access roads. The federal agency is responsible for maintenance.
- Closed federal land roads—These roads are still needed for administrative or emergency functions, but they have been closed to the public because of management policies to protect natural resources or reduce maintenance costs. If utilized during O&M activities, these roads, including drainage features, cuts, and fill slopes, must be protected. Parties wanting to use these roads for access must obtain approval from the applicable federal agency. Additionally, parties using these roads will be assigned some maintenance responsibility proportionate to their use of the closed road. Although these roads may serve a broader purpose, the Proponents agree to maintain them as needed for O&M activities. These are considered access roads.

- Transmission line service roads—These roads are necessary for access to, and maintenance of, transmission lines, structures or ancillary facilities, but they are not part of the public or federal network of roads. They are generally closed to the public. The Proponents will maintain these roads. They are considered service roads.

The Proponents typically perform two types of road maintenance activities: (1) vegetation and debris clearing to maintain safe access and (2) repairs using heavy equipment. Roads are inspected generally every three to six years and repairs are made as necessary. Typically, a small crew uses hand tools to cut small brush and trees (greater than 12-inches tall); remove dead-fall and debris; and repair and replace signs on access and service roads. Crews also prepare an inventory of road damage that will require ground disturbance (e.g., repair of a failed bank), and repair work is scheduled accordingly (typically the following year). Inspections and maintenance are typically conducted from spring through summer, when roads are clear of snow.

The Proponents will implement the following EPMs when maintaining roads:

OM-1 The Proponents will comply with the road maintenance standards of the federal or state agency controlling the land.

OM-2 Roads will be maintained to have crossroad drainage in order to minimize the amount of channeling or ditches needed. Water bars will be installed at all alignment changes (curves), significant grade changes, and as requested by the federal or state agency.

OM-3 All existing service road drainage structures will be maintained or repaired by the Proponents during O&M activities or emergency response.

OM-4 Although routine and corrective O&M is of limited duration and impact, the Proponents will attempt to adhere to specific closure periods and areas and are proposing not to conduct any routine and corrective O&M activities during the timeframes and at the locations identified in **Table 1** to the greatest extent practical. The federal or state agency will notify the Proponents of any spatial or temporal restrictions that are in effect for the Project area (e.g., fire restrictions).

OM-5 Existing improvements (fences, gates, etc.) will be repaired or replaced if they are damaged by O&M activities, as agreed to by the parties involved.

OM-6 The Agencies may restrict general public access to closed federal or state roads and service roads that the Proponents maintain. In cases of restricted access, the Proponents will physically close the road with a gate. Gates will be locked with both a lock supplied by the Proponents, and with a federal agency lock. This Plan will be updated as necessary to reflect current road closures and gate locations.

Table 1. Company Proposed Seasonal O&M Restrictions by Time and Location for Big Game Crucial Winter Range

Field Office	Seasonal Timing Description	Segment Proposed & Alternative	Species Mile Marker where Seasonal Restriction is Applicable (mileage)			
			Mule Deer	Elk	Antelope	Moose
BLM Casper Field Office	No surface-disturbing and wildlife-disturbing activities are allowed from November 15 through April 30 on all crucial big game winter ranges.	1E	None	21.2 – 22.2 (1)	3.6 -6.2 (2.6) 7.4 – 8.4 (1)	None
		1Wa	15.7 -21.6 (5.9)	None	3.5 – 6.9 (3.4)	None
		1Wb	15.7 – 22.1 (6.4)	None	3.8 – 6.8 (3)	None
		1Wc	14.8 – 20.2 (5.4)	None	2.4 – 6.6 (4.2)	None
BLM Rawlins Field Office	No surface disturbance and disruptive activities within big game crucial winter range are allowed from November 15 to April 30.	3	23.4 – 46 (21.6)	None	23.4 – 46 (21.6)	None
BLM Rock Springs Field Office	Big game winter ranges and parturition areas would be protected to ensure continued usability by limiting activities during crucial seasons of use and by limiting the amount of habitat disturbed.	4	0 – 1.7 (1.7) 5.2 – 16.6 (11.4) 19.8 – 20.7 (0.9) 25.4 – 31.7 (6.3)	None	0 – 1.7 (1.7) 6.9 – 16.6 (9.7) 19.8 – 20.7 (0.9) 25.4 – 31.7 (6.3)	None

Table 1. Continued

Field Office	Seasonal Timing Description	Segment Proposed & Alternative	Species Mile Marker where Seasonal Restriction is Applicable (mileage)			
			Mule Deer	Elk	Antelope	Moose
BLM Kemmerer Field Office	Big game crucial winter range closure occurs from January 1 to April 30 in Slate Creek, Rock Creek, and Bridger Creek.	4	121.7 – 128.2 (6.5)	118.9 – 124.2 (5.3)	52.5 – 58.5 (6.0)	105.3 – 107 (1.7)
				144.1 – 146.9 (2.7)	84.1 – 85.7 (1.6)	119.3 – 122.7 (3.4)
			136.9 – 141.8 (4.9)			123.9 – 125.5 (1.6)
		4A	0.4 – 6.5 (5.1)	61.6 – 66.8 (5.2)	0.4 – 6.5 (5.1)	53.2 – 54.8 (1.6)
			65 – 71.1 (6.1)		32 – 33.6 (1.6)	63.4 – 66.8 (3.4)
			82.5 – 85.1 (2.6)			
		4B	0.4 – 5.2 (4.8)	66.2 – 70.4 (4.2)	0.4 – 5.2 (4.8)	None
			63.7 – 70.4 (6.7)		15.5 – 19.8 (4.3)	
			96.8 – 100.2 (3.5)		20.1 – 23.2 (2.1)	
					43.5 – 47.5 (4.0)	
					68.9 – 71.8 (2.9)	
		4C	0.4 – 5.2 (4.8)	66 – 79.9 (13.9)	0.4 – 5.2 (4.8)	None
			63.7 – 83.5 (19.8)		15.5 – 19.8 (4.3)	
			98.2 100.6 (2.4)		20.1 23.2 (2.1)	
					43.5 – 47.5 (2.0)	
					68.8 – 70.7 (1.9)	
		4D	0.4 – 5.2 (4.8)	66.8 – 71 (2.2)	0.4 – 5.2 (4.8)	None
			64.3 - 71 (6.7)		15.5 – 19.8 (4.3)	
			97.4 – 100.8 (3.4)		20.1 23.2 (3.2)	
					43.5 – 47.5 (2.0)	
					69.5 – 72.4 (2.9)	
		4E	0.3 – 5.2 (4.9)	66.6 – 71.2 (4.6)	0.3 – 5.2 (4.9)	None
			64.3 – 70.7 (6.4)	71.7 – 80.6 (8.9)	15.4 – 19.9 (4.4)	
			73.2 – 73.6 (0.4)		20.1 23.2 (3.2)	
			78.8 – 84.2 (5.2)		43.5 – 47.5 (2.0)	
			98.7 – 102.2 (3.5)		69.4 – 71.3 (1.9)	
BLM Burley Field Office	Big game crucial winter range closure occurs from January 16 to March 15.	7	114.2 – 118 (3.8)			
		7G	0 – 3.2 (3.2)			

4.2 Vegetation Management

The Proponents manage vegetation within their ROWs and in access and service roads to minimize interference with the flow of electricity, to address safety issues, and to facilitate O&M activities. The vegetation management complies with the National Electric Safety Code, ANSI A300 Part 7: American Operations Integrated Vegetation Management and Electric Utility Rights-of-Way and the ISA Best Management Practices. Additionally, the Proponents comply with vegetation management standards required by the NERC and WECC Vegetation Management guidelines; failure to comply with these requirements can result in substantial financial penalties.

Objectives of Integrated Vegetation Management (IVM) on utility rights-of-way are to establish sustainable plant communities that are compatible with the electric facilities. The intent is to provide stable, low growing plant ecotypes that reduce fire risk and maintain safe access to the line and associated facilities. In general, this involves removing tall growing tree species. Establishment of vegetation will also reduce the potential for noxious weeds to become established in the ROW.

IVM has a series of control methods used to achieve the aforementioned objectives. These include, but are not limited to:

- Manual Control Methods: workers with hand-carried tools, including power tools, used in selective or environmentally sensitive areas.
- Mechanical Control Methods: conducted with a large variety of different types of machines that are efficient in clearing dense stands of vegetation.
- Chemical Control Methods:
    - Tree Growth Regulators that are designed to reduce the natural growth rates by interfering with natural plant processes.
    - Herbicides: Noxious or invasive weeds along with stumps and saplings of tall growing species may be controlled with EPA approved herbicides.
- Biological Control Methods: use of natural processes to control undesirable vegetation.
- Cultural Control Methods: take advantage of seed banks of native, compatible species lying dormant on-site; this encourages the establishment of early successional plant communities.

For the purposes of IVM, the ROW has been divided into the wire zone and the border zone as shown in **Figure 1** and as defined below:

- Wire Zone – The ROW portion directly under the wires and 10 feet beyond the outside phases.
- Border Zone – The outside edge of the wire zone to the edge of the ROW.

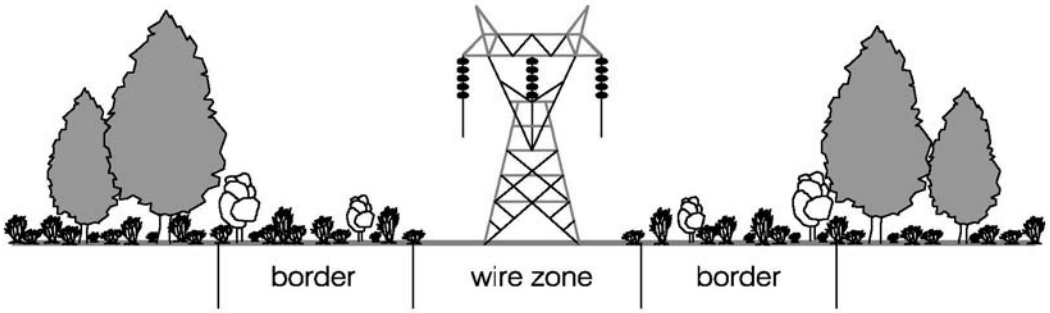


Figure 1: Transmission Line Vegetation Management Zones.

The IVM control method(s) implemented may be directed by the distance of the conductor to the ground surface (based on maximum calculated sag) as shown on **Table 2** and **Figure 2**, and is defined by region as follows: Region A, where the lines are less than 50 feet off the ground, Region B where the lines are 50 to 100 feet off the ground, and Region C where lines are greater than 100 feet off the ground. **Table 2** indicates the heights at which vegetation will be managed, based on zones and regions.

Table 2. IVM Recommended Management Heights in the Wire Zone and Regions

Zone	Region		
	Region A	**Region B**	**Region C**
Wire Zone	Remove All Trees	Remove all trees if less than 50 feet clearance between top of tree and conductor.	Remove all trees if less than 50 feet clearance between top of tree and conductor.
Border Zone	Remove all trees greater than 25 feet in height.	Removal of any hazard trees*.	Removal of any hazard trees*.

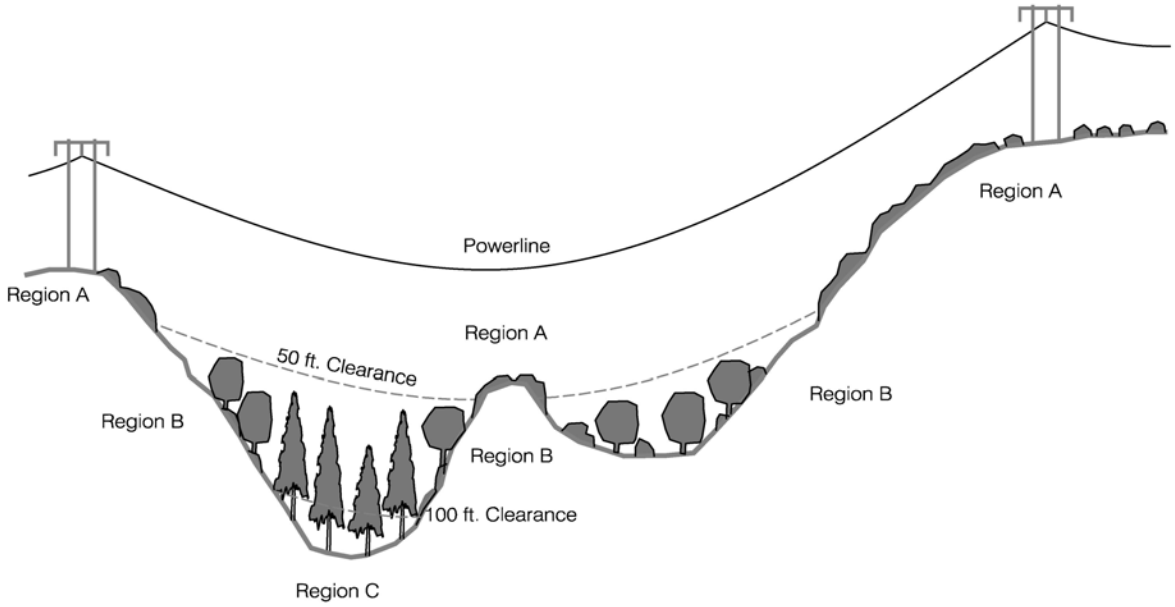
* Hazard tree is defined as any tree that is structurally unsound that could strike a target (any utility related infrastructure) when it falls. Hazard trees can occur outside of the ROW and are typically removed annually.

Generally, the Proponents propose to conduct IVM control methods/activities within the ROW every three to 10 years, depending on a variety of conditions such as topography, vegetation type and growth rates, and the potential for vegetation to interfere with safe operation of the line prior to the next clearing cycle. The Proponents propose to use a variety of IVM control methods and have developed the following EPMs for maintaining vegetation within the transmission line ROW.

OM-8 Any integrated vegetation management (IVM) control method including those listed on pages 9 and 10 may be used to control the growth of trees and tall shrubs to maintain clearances, the IVM recommended wire and border zones as indicated in **Table 2**, and improve access to facilities.

OM-9 Any IVM control method including those listed on pages 9 and 10 may be used to control the growth of additional vegetation to maintain clearances, the IVM

recommended wire and border zones as indicated in **Table 2**, and improve access to facilities.



Region Definitions:
Region A: Where conductor to ground distance is less than 50 feet.
Region B: Where conductor to ground distance is more than 50 feet, but less than 100 feet.
Region C: Where conductor to ground distance is greater than 100 feet.

Figure 2: Vegetation Management Regions Based on Line Height.

OM-10 Where possible, low-growing vegetation and small trees within the ROW that will not grow into the minimum required clearance distance will be left in place; trees may be removed on a subsequent maintenance cycle as they increase in size. Hazard trees are typically those trees or snags within or adjacent to the ROW that are likely to interfere with or fall into transmission lines or associated facilities. Hazard trees and other "hot spots" (high priority areas requiring vegetation management actions) are identified during routine line inspections and removed annually. In addition to hazard trees, other critical conditions that may require immediate attention include trees that interfere with transmission conductors and trees whose growth will not allow safe clearance until the next scheduled maintenance cycle.

OM-11 Any control method may be used for vegetation maintenance on access and service roads; this is typically scheduled at the same time as vegetation maintenance within the ROW. However, in cases where vegetation grows quickly, removal may occur annually. Vegetation that will not interfere with the safe operation of vehicles and equipment will be left in place.

OM-12 Slash will be lopped and scattered throughout the surrounding land. Stumps resulting from vegetation treatments will not be over 1 foot tall (unless the tree is not able to be safely cut at or below one foot from the ground surface), and

lopped slash will be left as close to the ground as possible. Lopped slash will be a maximum of 18 inches in length for small trees and limb wood. If the federal land managing agency determines that fuel levels are unacceptable, they shall notify the Proponents and develop a mutually agreed upon method to reduce fuels. This may include, but is not limited to, chipping.

OM-13 Hazard trees will be felled in a direction away from the ROW. Slash and limbs that fall within the ROW will be treated as described above; boles of trees greater than eight inches will be left in place.

OM-14 Any chemical control will be done in accordance with any applicable local, state, and federal rules and regulations. Herbicides or other chemical control will be selected from the BLM and Forest Service's list of previously approved herbicides and in accordance with any herbicide plans. If the federal land managing agency determines that a previously approved herbicide and/or plan is unacceptable, they shall notify the Proponents.

4.3 Noxious Weed Control

Maintenance vehicles, ATVs, and equipment have the potential to transport weed seeds from one area to another via dirt and debris that inadvertently collects on the equipment. The Proponents will implement the following EPMs:

OM-16 Before beginning an O&M project on federal or state land, the Proponents or their subcontractors will clean all equipment that will operate off-road or disturb the ground. Tracks, skid plates, and other parts that can trap soil and debris will be removed for cleaning when feasible, and the entire vehicle and equipment will be cleaned at an off-site location.

OM-17 To help limit the spread and establishment of noxious weed species in disturbed areas, desired vegetation needs to be established promptly after disturbance. The Proponents will rehabilitate significantly disturbed areas as soon as possible after ground-disturbing activities and during the optimal period. Seed and mulch will be certified "noxious weed free" and seed mix will be agreed to in advance by the landowner or land managing agency.

4.4 Protection Measures for Aquatic Resources

Streams or watercourses with definable streambeds or stream banks, regardless of whether there is flowing water, are important because they provide habitat for a variety of animal and plant species. The Gateway West transmission lines parallel and cross numerous waterways and riparian areas. Of critical importance is the protection of habitat for sensitive plant and animal species, including aquatic species. The Proponents propose the following EPMs to protect aquatic resources while maintaining vegetation in and around important aquatic resources.

OM-18 Routine and corrective O&M activities in streams with sensitive fish species will occur from July 1 to September 1 in an effort to minimize impact to spawning and migration activities. These activities include, but are not limited to, culvert installation and or replacement, stream bank stabilization. Fording streams at existing crossings on existing roads (e.g., dip, culvert, bridge) will occur as necessary throughout the year.

OM-19 Woody vegetation management within 50 feet of streams will be conducted by hand crews.

OM-20 Herbaceous plants and low-growing shrubs will be left in place if they do not interfere with the safe O&M of Project lines and equipment as described in **Table 2**.

OM-21 The Proponents will use existing stream crossings or new, permanent crossings that were approved as part of the Project, and will not create additional crossings without prior agency permitting and approval.

OM-22 Only herbicides approved by the land managing agency as safe to use in aquatic environments and reviewed by the Proponents for effectiveness will be used within 100 feet of sensitive aquatic resources.

4.5 Protection for Threatened, Endangered, and Sensitive Plant and Animal Species

The Proponents have taken a thorough, systematic approach in providing protection for threatened, endangered and sensitive plant and animal species. After taking into consideration wildlife and plant resources as well as other important resources during siting and routing, the Proponents recognized the need for additional measures to minimize the impact from construction of the Project and submitted a Wildlife Conservation Measures Plan.

The Proponents will implement the following measures to protect plant and animal species during routine and corrective O&M activities:

OM-23 Prior to the start of O&M activities, all supervisory personnel will be instructed on the protection of natural resources, including sensitive plant and wildlife species and habitats. If a contractor is used, the construction contract will address (a) the sensitive plant species that may be present in a particular area based on previous surveys and literature review; (b) the federal and state laws regarding protection of plants and wildlife; (c) the importance of these resources; (d) the purpose and necessity of protecting them; and (e) methods for protecting sensitive resources (e.g., Endangered Species Act, Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, and BLM wildlife policy).

OM-24 Sensitive plant populations that occur within or near the ROW and work areas will be marked on the ground, where practical, to ensure that they are avoided. If species are discovered during the work, the Proponents will establish a spatial buffer zone, will contact the appropriate Agency within 24 hours, and will continue with the O&M activities outside of the established buffer unless otherwise directed. The Agency may evaluate the adequacy of the buffer on a case-by-case basis. Unless the Proponents are informed otherwise, work outside of the buffer area will continue. If the Proponents need to work within the buffer area, the Agencies and Proponents will work together to develop a solution that is acceptable to both parties and will allow for the Proponents to complete the work in a timely manner or within the scheduled outage window, if applicable. After the project is complete or no longer poses a threat to the plant population, the marking (stakes), if used, will be promptly removed to protect the site's significance and location from unwanted attention. As needed, marking will be reinstated during the land rehabilitation period.

OM-25 If sensitive wildlife species are discovered during O&M activities, and the animals are not directly within ground disturbance areas, they will be protected by marking the edges of the ROW and service roads in the general vicinity to ensure that workers do not leave those areas. If the animals are within work areas that have, or will have, ground disturbance, the Proponents will establish an appropriate buffer zone and will contact the federal or state land manager immediately. The federal or state agency may evaluate the adequacy of the buffer on a case-by-case basis. Unless the Proponents are informed otherwise, work outside of the buffer area will continue. If the Proponents need to work within the buffer area, the Agencies and Proponents will work together to develop a solution that is acceptable to both parties and will allow for the Proponents to complete the work in a timely manner or within the scheduled outage window, if applicable. After the O&M activities are completed, or no longer pose a threat to the species, the marking (stakes) will promptly be removed to protect the site's significance and location from unwanted attention. As needed, marking will be reinstated during the land rehabilitation period.

OM-28 The Proponents will provide crews and contractors with maps showing avoidance areas; these maps will include work zones as well as ROW areas where overland travel will be avoided.

OM-29 In the event any sensitive plants require relocation, permission will be obtained from the federal agency. If avoidance or relocation is not practical, the topsoil surrounding the plants will be salvaged, stored separately from subsoil, and respread during the restoration process.

OM-30 If sensitive wildlife species are killed or injured due to O&M activities, the appropriate federal agency will be notified.

OM-31 All on-site personnel will be made aware that all birds of prey are protected by federal and state laws.

Nesting, roosting and perching birds can cause power outages if their feces or nesting materials interfere with conductors, insulators, or air gap. The Proponents, in consultation with the U.S Fish and Wildlife Service (USFWS), manage nesting on transmission line structures to reduce conflicts. Such management may include relocating nests, modifying structures, and providing nesting platforms. The Proponents will continue to consult with the USFWS, and when a problem nest is located on federal or state lands, the appropriate land management agency.

If an emergency occurs and access is immediately needed, the federal agency will be notified as soon as possible. Depending on the urgency, the agency may not have responded until after the repair work has begun. Timing restrictions may not be adhered to, but the other measures listed above will be followed to the extent possible.

4.6 Restoration and Revegetation

The Reclamation, Revegetation, and Weed Management Plan to be written by the Proponents and approved by the appropriate agency with regulatory authority over lands within the Project area, will include site-specific restoration measures, species to be replanted, and monitoring. It combines the Proponents' best management practices (BMPs) with site-specific mitigation developed in consultation with the agencies. After ground-disturbing maintenance activities, the Proponents propose to use the following EPMs presented in the Revised Plan of Development

(August, 2008) to assure that appropriate reclamation and revegetation is implemented, and to prevent accidental introduction or transport of noxious weeds along the ROW. Summaries of these EPMs are as follows:

RRW-1 Propose to use industry standard practices and BMPs for site stabilization and vegetation restoration.

RRW-2 Identify known occurrences of noxious and invasive weeds.

RRW-7 Employ appropriate interim erosion control measures if seeding cannot take place immediately.

RRW-8 Restore temporarily disturbed areas as closely as practicable to original contours.

RRW-11 Use of certified weed-free cover materials.

RRW-12 Seed mixes will be certified weed free.

4.7 Protection Measures for Cultural Resources

As part of the EIS preparation, and prior to any construction activities, a 100% pedestrian survey of the ROW and areas proposed for disturbance outside the ROW will have cultural and/or paleontological surveys conducted. All cultural and/or paleontological resources or historic or prehistoric sites or objects discovered by the Proponents, or their designated contractor, will be immediately reported. Additional surveys will not be conducted for O&M activities if the work area was previously surveyed prior to construction of the line and ancillary facilities.

If new probable historic, cultural, or paleontological resources are discovered during routine or corrective O&M activities, potentially destructive work within 300 feet of the find will be halted and the appropriate federal or state agency notified. The Proponents will also immediately implement the following measures:

a. Flagging will be erected to prohibit potentially destructive activities.
b. The Proponents' archaeologist or designated archaeologist will make a preliminary assessment of the newly discovered resource.
c. If the archaeologist determines that the discovery represents a potential new site or an undocumented feature of a documented site, the appropriate federal or state agency will be notified.
d. O&M will not resume in the identified area until cleared by the appropriate Agency.

Regarding routine and corrective O&M, the Proponents propose to use the following EPMs presented in the Revised Plan of Development (August, 2008) to assure that appropriate protection to cultural resources is given. Summaries of these EPMs are as follows:

CR-1 All Company personnel and contractors conducting the O&M activities will be instructed on the protection of cultural resources.

CR-2 Travel will be restricted to designated routes for crew and vehicles.

CR-3 The Proponents or their designated contractor will generically mark the known cultural or paleontological sites as an avoidance area prior to ground disturbance.

All human interments will be treated with the respect accorded them by state and federal laws applying to human remains. If human remains are discovered during O&M activities, the Proponents will stop all work in the immediate area to protect the integrity of the find and notify the appropriate law enforcement agency and the landowner or land management agency as soon as possible. In addition, the location of the find will be flagged or fenced off to protect it from further impacts. The law enforcement agency or coroner will determine the age of the human remains. If the remains are not modern, then the Proponents will work with the federal or state agency to determine what mitigation is necessary and, once the mitigation is complete, resume work in the area.

4.8 Fire Protection

Fire regulations on federally managed lands are generally in effect between April 1 and October 31 and at other times with unusual weather conditions. O&M activities will follow the requirements and procedures specified by the appropriate federal or state agency when conducted on federal or state lands.

The Proponents are responsible for inspecting the transmission lines for fire hazards. When working during fire season, the Proponents and/or their contractor will carry the following suppression tools and equipment:

- All power-driven equipment shall be equipped with one (1) fire extinguisher having a UL rating of at least 5 BC and one “D” handled or long handled round point shovel, size “0” or larger;
- Each motor patrol, truck, and passenger-carrying vehicle shall be equipped with a double-bit axe or Pulaski, 31/2 pounds or larger; and
- Each internal combustion engine shall be equipped with a spark arrester that meets the federal land managing agency’s standards.

The Proponents and the federal or state land manager will work cooperatively to evaluate request for Industrial Fire Precaution Level (IFPL) Waivers that would allow the Proponents and/or their contractors to continue working when certain fire restrictions are in place.3

Transmission lines in the western United States may be interconnected with the lines of other utilities. Continued operation of these lines provides stability to the entire interconnected Western transmission system. In addition, continuous operation of the transmission lines is necessary for the Proponents to supply electric service to their customers. Therefore, the federal or state agency will use its best efforts to avoid using fire suppression techniques that could take the lines out of service. If the federal or state land manager determines that it must use fire suppression techniques, they will notify the Proponents of any and all fire suppression efforts that could come into close proximity (2 miles) with the transmission lines prior to initiating those efforts.

The Agencies will notify the Proponents if they are planning a prescribed burn within two (2) miles of the transmission line or ancillary facilities.

4.9 Emergency Notification Procedures

If the Proponents become aware of an emergency situation that is caused by a fire on or threatening federal or state land that could damage the transmission lines or their operation, they will notify the appropriate federal contact. Likewise, if the federal or state land manager becomes aware of an emergency situation that is caused by a fire on or threatening federal or state land and that could damage the transmission lines or their operation, it will notify the Proponents.

5.0 O&M PLAN HISTORY

The O&M Plan is a living document and changes are anticipated after the plan's acceptance. Amendments will include the date on which changes were made, a brief description of those changes, and the signatures of authorized representatives of the Proponents and the agency accepting the changes.

This plan and its updates will be distributed to the following BLM and Forest Service field offices (see **Table 3**). Additionally, the Plan will be made available, as appropriate, to Company personnel and their contractors. The Proponents will be responsible for distributing updates when they are made. If the federal agencies identify additional parties that require a copy of the Plan, they are responsible for distribution and ensuring that party has the current plan.

In addition, the following items will become part of this section of the O&M plan:

- List of road closures, and gate locations.
- Maps containing known locations of sensitive plant and animal species mapped as "sensitive areas" without specifying the resource.
- Known locations of cultural features mapped as "sensitive areas" without specifying the resource.

Table 3. O&M Contact List

Department/Role	Contact Name	Telephone	Cell Phone	Email
Idaho BLM				
Boise District Office & Four Rivers Field Office 3948 Development Avenue Boise, ID 83706	John Sullivan	(208) 384-3338	(208) 841-1045	john_sullivan@blm.gov
Twin Falls District 440 W F Street Shoshone, ID 83352	Lori Armstrong	(208) 732-7227	(208) 308-2950	valori_armstrong@blm.gov
Bruneau Field Office 3948 Development Avenue Boise, ID 83706	Cecil Werven	(208) 384-3455	None	cecil_werven@blm.gov
Owyhee Field Office 20 First Avenue West Marsing, ID 83639	Kelley Moore	(208) 896-5917	None	kelly_moore@blm.gov
Jarbidge Field Office 440 W F Street Shoshone, ID 83352	Fred Pence	(208) 736-2360	None	fred_pence@blm.gov
Burley Field Office 15 East 200 South Burley, ID 83318	Scott Barker	(208) 677-6678	None	scott_barker@blm.gov

Department/Role	Contact Name	Telephone	Cell Phone	Email
Shoshone Field Office 440 W F Street Shoshone, ID 83352	Debbie Kovar	(208) 732-7201	None	debra_kovar@blm.gov
Idaho Falls District 4350 Cliffs Drive Pocatello, ID 83204	David Pacioretty	(208) 478-6341	None	david_pacioretty@blm.gov
Wyoming BLM				
Wyoming State Office PO Box 1828 Cheyenne, WY 82003	Tamara Gertsch	(307) 775-6115	None	tamara_gertsch@blm.gov
Rawlins Field Office PO Box 2407 Rawlins, WY 82301	Janelle Wrigley	(307) 328-4279	None	janelle_wrigley@blm.gov
Rock Springs Field Office 280 Highway 191 North Rock Springs, WY 82901	Patricia Hamilton	(307) 352-0334	None	patricia_hamilton@blm.gov
Lander Field Office PO Box 589 Lander, WY 82520	Leta Rinker	(307) 332-8405	None	leta_rinker@blm.gov
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Appendix C-5
Greater Sage-grouse Avoidance, Minimization, and Mitigation Measures

(submitted to BLM by Idaho Power and Rocky Mountain Power October 2010)

Greater Sage-grouse Avoidance, Minimization, and Mitigation Measures: Gateway West Transmission Line Project

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1.0 Introduction

This plan and its attached figures and tables are provided as a supplement to the August 2008 *Revised Plan of Development* (POD) for the Gateway West Transmission Line Project (Project). Idaho Power Company and Rocky Mountain Power (Companies) have developed this plan to identify:

- Specific measures that were applied during the development of the proposed corridor and route to avoid potential impacts to greater sage-grouse and their habitat1;
- Environmental protection measures (EPM) that the Companies have incorporated into the Project description that will minimize impacts to greater sage-grouse and their habitat; and
- Mitigation measures the Companies will implement to mitigate for adverse impacts to greater sage-grouse habitat.

This plan also describes how the proposed corridor and avoidance and mitigation measures comply with, and differ from, state-wide sage-grouse conservation plan and Bureau of Land Management (BLM) resource management plan (RMP) protection measures. Where they are available and where appropriate, local working group (LWG) plan measures are also incorporated into this plan.

[1] For purposes of this document, sage-grouse habitat is defined as those areas designated in Idaho's state-wide plan and core areas designated by the State of Wyoming. For Idaho, mapped sage-grouse habitats include key areas (K) and restoration areas (R1, R2, and R3). For Wyoming, mapped sage-grouse habitat includes the following core breeding areas (Version 2; 08/15/2008): East of Casper, Alcova, Hanna, NE Baggs, South Pass, Little America, and Sage.

The overall goal for this plan and all of the Companies' EPMs is to allow for fiscally responsible and timely construction, operation, and maintenance of the Project while avoiding, minimizing, or mitigating impacts to greater sage-grouse and their habitat.

Identification of protection and mitigation measures is based on threats and conservation issues identified in state conservation plans, existing literature, and Idaho Power's geographic information system (GIS) analysis of existing greater sage-grouse lek and transmission line data.

In response to this plan, the Companies anticipate that the BLM Interdisciplinary (ID) Team and cooperating agencies will:

- Consider the proposed measures when determining if the Project will impact greater sage-grouse and their habitat and the level of significance of the impact; and
- Consider the Companies need to construct the Project in a timely and fiscally responsible manner.

1.1 Existing Greater Sage-grouse Plans and Conservation Direction

1.1.1 State and Local Working Group Plans

Idaho and Wyoming have developed state-wide conservation plans for the greater sage-grouse (Idaho Sage-grouse Advisory Committee. 2006. and Wyoming Greater Sage-grouse Conservation Plan. June 2003.). Key issues, concerns, and mitigation measures are summarized below. Local working group (LWG) plans are also incorporated where available and applicable. How the Project's POD conforms with or deviates from the guidelines is presented in italics after the guideline.

1.1.1.1 CONSERVATION PLAN FOR THE GREATER SAGE-GROUSE IN IDAHO

The Idaho state-wide plan identifies the following management guidelines for power lines:

1. Use of guywires should be avoided.
   The proposed steel lattice structures are self-supporting and will not require a guy wire. The proposed H-frame steel structures are not expected to require guy wires, but guy wires may be necessary in very limited situations (e.g., steep topography).

2. Where existing utility lines, including smaller power distribution lines, telephone lines, or wireless communication towers are known to be causing adverse impacts locally, or where such impacts are likely, LWGs and/or land-management agencies should work closely with power companies and related entities in assessing problem areas and developing creative solutions.
   The Companies have not implemented measures to address this since we are only proposing distribution lines to the substations and regeneration sites. These lines will traverse short distances and are not expected to cause adverse impacts.

3. New above ground major power transmission lines should be sited in a manner that avoids sage-grouse habitat to the extent possible, or they should be buried.
   Refer to Section 2.1 for a detailed discussion of the measures that were implemented during development of the proposed corridor to avoid and minimize impacts to sage-grouse.

   While the technologies are emerging for placing 500kV underground, the following disadvantages significantly outweigh the advantages:

   - ***Limited experience*** *– Very little experience exists worldwide, let alone in the US for 500kV underground transmission.*
   - ***Less capacity and lengthy repairs*** *– Underground cables carry far less capacity than overhead lines and when repairs are needed, greater time constraints are required to find, excavate and fix the problems.*
   - ***More equipment*** *– Typically, more aboveground substations are required for underground lines.*
   - ***Environmental impact*** *– Underground transmission lines require large excavations through all habitat types. The right-of-way needs to remain free of all types of woody vegetation to prevent interference to the underground lines from tree roots. Underground systems tend to be less reliable than overhead installations due to a variety of environmental factors. These can include conductor heat buildup, underground water, and even attacks from bacteria. Road right-of-ways also need to be maintained for maintenance and repair.*
   - ***Cost*** *– Estimates vary widely, but the literature indicates costs could be as much as 10 to 20 times the cost of overhead transmission lines.*

4. New smaller distribution lines should be buried or sited as far as possible, preferably at least 3.2 km from occupied leks and other important sage-grouse seasonal habitats as determined locally.
   The Companies are only proposing distribution lines to the substations and regeneration sites. The same criteria used during routing of the transmission line will be used during routing of the distribution lines. Lek buffers of 0.25 miles will be avoided and the Companies will attempt to avoid lek buffers of 0.65 miles.

5. The placement of raptor perch deterrents on power poles and other structures, such as telephone poles, should be considered on a site-specific basis in areas where population impacts from raptors and ravens is likely or is a documented problem.
   To eliminate perching, all potential perching surfaces must have effective deterrents. There are currently no commercially available perch guards designed to keep raptors off an entire structure. Thus, perch deterrents reduce the number of birds perching, but do not completely eliminate perching (HawkWatch 2008, Lammers and Collopy 2007). The use of perch deterrents is not practicable on steel lattice structures. The Companies have also not proposed the use of perch deterrents on other structure types because the majority of the route is adjacent to other utilities and perch sites are not limited. This is consistent with HawkWatch (2008) which suggests that deterrent devices may be most

appropriate in extremely perch-limited (both natural and human-supplied) areas or to reduce use of specific pole perches in close proximity to a sage-grouse lek.

Two areas of concern in adding perch deterrents are 1) the lifespan of perch deterrents and 2) the increased safety risk associated with the addition of perch deterrents. Many of the products become brittle in the sunlight and break or can become contaminated and cause outages. Therefore, they require frequent maintenance. Transmission system configurations and loading often do not accommodate taking lines out of service for maintenance, therefore, maintenance personnel are often required to do cross arm and pole replacements with lines energized. This work, by nature, is extremely sensitive and requires high levels of skill and training. The introduction of additional attachments to structures complicates maintenance efforts and exposes personnel to a higher degree of risk. The normal maintenance process requires the attachment of lifting and stabilizing devices to unobstructed portions of the structure. Placement of these devices is dependent on load centers of gravity, required clearances from energized parts, and necessary component movements. Anything that restricts or prevents the proper placement or operation of these stabilizing devices has the potential to cause serious personnel injury or death. Crews will be required to remove or attempt to work around the deterrents, adding cost and risk to the job.

6. Utility companies should ensure access roads, rights-of-ways and disturbed areas associated with their facilities are managed in a manner that restores disturbed areas to perennial vegetative cover, and controls the spread of noxious weeds and invasive plant species. Coordinate with land-management agencies and others in selecting the most appropriate plant species. Consider the use of fire-resistant species in high fire frequency/cheatgrass areas. Encourage companies to participate in Coordinated Weed Management Areas. LWGs may be of assistance in helping to identify particular problem areas.
   As described in Section 2.3, the Companies EPMs will address revegetation of disturbed areas, use of fire resistant species, and noxious weed control.

7. Inspections, maintenance work, and related human activities at or near (1 km or 0.6 miles) **occupied** leks that results in, or will likely result in, disturbance to lekking birds should be avoided from approximately 6PM to 9AM. Utility companies should work closely with Idaho Department of Fish and Game (IDFG), land management agencies and landowners in scheduling such activities to minimize disturbance. In general this guideline should be applied annually from approximately March 15 to May 1 in lower elevation, and March 25 to May 15 in higher elevations.
   Section 2.4 describes the temporal and spatial measures the Companies have committed to implement.

Not all sage-grouse planning areas in Idaho have LWGs, and of those areas within the Project area that do have a LWG, only the Owyhee and Jarbidge LWGs have completed plans. The state-wide plan identifies threats on a broad scale and proposes measures that the LWG can use on a finer scale. The expectation is that where a LWG plan exists, it will be used for specific

guidance and the state-wide plan will be used when the LWG plan is silent on an issue or concern.

The Owyhee and Jarbidge sage-grouse conservation plans do not identify conservation measures specific to electric lines. The plans do identify the need for invasive and noxious weed control, habitat improvement, and predator control as tools to increase sage-grouse habitat and populations.

1.1.1.2 WYOMING GREATER SAGE-GROUSE CONSERVATION PLANS

The Wyoming state-wide plan identifies the following management guidelines for powerlines:

1. Avoid construction of overhead lines and other perch sites in occupied greater sage-grouse habitat. Where these structures must be built, or presently exist, bury the lines, locate along existing utility corridors or modify the structures to prevent perching raptors, where possible.
   The Companies did consider greater sage-grouse habitat, lek locations and buffers, and existing utility corridors when developing routes (see Section 2.1). Please refer to Section 1.1.1.1 for a more detailed discussion of perch deterrents and the feasibility of placing the line underground.

2. Control dust from roads.
   As described in Section 2.3, the Companies EPMs will address dust from roads and long-term BMPs.

LWG plans within Wyoming identified the following management guidelines:

Bates Hole/Shirley Basin Greater Sage-Grouse Conservation Plan

- Where possible, use the same corridor for all roads, pipelines and power lines.
  The Companies utilized, to the extent practicable, the designated West-Wide energy Corridors and other existing corridors.

- Raptor-proof power poles within 0.5 miles of any greater sage-grouse lek to prevent raptors from perching on the poles.
  Please refer to Section 1.1.1.1 for a more detailed discussion of perch deterrents. In addition to the information presented in Section 1.1.1.1 regarding perch deterrents, it is stated in the Southwest Wyoming Sage-grouse Conservation Assessment and Plan that "more research needs to be done to determine effectiveness of anti-perch devices…" This suggests that perch deterrents may not be as effective as perceived and that other methods of mitigation may be appropriate.

- Locate power line in areas to minimize potential avian collisions. Potential modifications include burying the lines, avoiding areas of high avian use (for example, wetlands, prairie dog towns, and grouse leks), and increasing the visibility of individual conductors.

Please refer to Section 1.1.1.1 for discussion regarding feasibility of placing the line underground. Refer to Section 2.1 for a detailed discussion of the measures that were implemented during development of the proposed corridor to avoid and minimize impacts to sage-grouse and other sensitive areas.

- When power lines are necessary within 3.4 miles of greater sage-grouse leks install underground power lines where feasible to minimize raptor perching/predation and collisions. Where practical, locate aboveground power lines at least 3.4 miles from any sage-grouse breeding or nesting grounds.
  Please refer to Section 1.1.1.1 for a more detailed discussion of the feasibility of placing the line underground. The Companies do not feel that there is substantial scientific evidence to support this restriction (please see Section 1.2). The Companies also acknowledge that there is not sufficient information to support an assertion that power lines do not have any effect on greater sage-grouse; therefore, our mitigation proposal does address indirect impacts of lines within one km or less of greater sage-grouse habitat.

Southwest Wyoming Greater Sage-Grouse Conservation Plan

- A controlled surface use stipulation is applied from March 1 to May 15 within 0.25 mile of the perimeter of active strutting grounds from 8 PM to 8 AM daily. Linear disturbances such as pipelines, seismic activity, could be granted exceptions.
  Please refer to Section 2.4 for temporal and spatial restrictions the Companies will implement; these are more restrictive than what is included in this conservation plan.

- Seasonal restrictions are applied through July 15, within an additional 1.75 mile (2 mile total) radius from the perimeter of leks to protect greater sage-grouse nesting habitat. Areas within that radius not used for nesting can be excepted, provided actual nesting areas are not affected.
  Please refer to Section 2.4 for temporal and spatial restrictions the Companies will implement.

- Seasonal stipulations for winter concentration areas can be applied on a case-by-case basis.

- Use common and existing corridors where possible to minimize overall disturbance to the landscape.
  The Companies utilized, to the extent practicable, the designated West-Wide energy Corridors. Corridors are also located adjacent to existing corridors, which decreases adverse impact to greater sage-grouse and habitat. Refer to Section 2.2 for more discussion.

- Install anti-perch structures in designated critical sage-grouse habitat.
  Please refer to Section 1.1.1.1 for a more detailed discussion of perch deterrents.

South Central Wyoming Greater Sage-Grouse Conservation Plan

- Avoid high profile structures from ¼ mile to 1 mile from lek perimeter (on case-by-case basis).
  Structures will not be located within 0.25 miles of a known lek and will be sited 0.65 miles from a known lek where practicable. Please refer to Section 2.1 for more discussion on route siting.

- Avoid human activity adjacent to leks during the breeding season between hours of 8 p.m. and 8 a.m.
  Please refer to Section 2.4 for temporal and spatial restrictions the Companies will implement.

- Avoid construction of overhead lines and other perch sites. Where these structures must be built, or presently exist, bury the lines, locate along existing utility corridors or modify the structures in key areas.
  Please refer to Section 1.1.1.1 for a more detailed discussion of perch deterrents and the feasibility of placing the line underground.

1.1.2 BLM Resource Management Plans

BLM Field Office (FO) RMP measures are summarized in Appendix A. Measures typically include temporal and spatial restrictions and these vary between RMPs. The Companies are not proposing to adopt all BLM RMP restrictions because of the variability between RMPs and differences with state requirements. Rather, our proposal incorporates aspects of the restrictions where appropriate and where they will allow the Companies to construct the Project in a timely and fiscally responsible manner.

1.1.3 State of Wyoming Governor's Order

On August 1, 2008 the Governor of Wyoming issued Executive Order (EO) 2008-2 entitled "Greater Sage-Grouse Core Area Protection." The intent of this EO is to demonstrate that the State of Wyoming is taking steps to prevent the listing of the greater sage-grouse. The State of Wyoming created a Governor's Sage-grouse Implementation Team, which developed a core population area strategy to consolidate the various efforts across the state to conserve the species.

The EO identifies 12 key objectives to the management of greater sage-grouse and the protection of its habitat. These objectives call for more restrictive measures when impacting habitat or the species within the core areas and encourage development outside the core areas. The most restrictive objective indicates that when development must occur within the core areas, it should only be authorized by the state agency when it demonstrates it will not cause declines in greater sage-grouse populations.

Stipulations for development in core sage-grouse population areas for transmission line rights of way states, "To the extent possible, new rights-of-way should be authorized parallel and adjacent to existing rights-of-way. Above ground towers should be designed to minimize raptor perching. Any new rights-of-way not sited parallel and adjacent to existing rights-of-way should be routed at least 750 m (0.5 miles) from the perimeter of occupied greater sage-grouse leks."

1.2 Idaho Power GIS Analysis

Transmission siting distance recommendations vary widely between federal agencies, states, LWGs, and among industries. Recommendations range from 0.25 to 5 miles distance from leks. The most common siting distance recommendation is that new power lines should be built at least 2 miles (3.2 km) from sage-grouse habitat. Because the scientific community has little information regarding the impact of transmission lines to greater sage-grouse or their habitat and there are several petitions pending for the listing of the species with the federal Endangered Species Act, the tendency among regulatory agencies is to err on the side of caution.

In response to this lack of data and to better understand the effect of power lines on greater sage-grouse, Idaho Power Company (IPC) conducted a spatial analysis using a GIS to evaluate the relationship between lek status and distance from existing power lines for both distribution and transmission poles within the Idaho portion our service territory. IDFG lek locations were overlayed with IPC's spatial data for power structures. Only leks that have had surveys conducted since 1965 were included. As of 2007, 598 sage-grouse lek locations are known to exist in Idaho Power's service territory: 238 active, 115 inactive, and 245 of unknown status.

IDFG defines an **active lek as a lek at which 2 or more sage-grouse have been observed attending in 2 or more of the previous 5 years. New leks (usually located during aerial surveys) receive an active status, even though they have not yet met the 5-year criteria. Some leks that are irregularly surveyed by air will receive an active status if displaying males are observed in at least 1 year out of 5. An inactive lek is one that was surveyed or censused at least 2 years in a 5 year period, but at which no male sage-grouse were observed. A lek with an unknown status does not meet either of the above criteria, usually because it is not regularly surveyed or censused. If a lek has not been surveyed in the past 5 years, it automatically receives an unknown status, regardless of its past status. Some leks with an unknown status were part of historical documents, for which the location or status of the leks has not been confirmed**. All reported leks in IPC's service territory are within 18 km of a power line.

Forty-two active leks and 27 inactive leks occur within 1 km of a power line (Table 1). The percentage of leks with known status that are active, categorized by distance from the nearest power pole, ranges from 40-84% (Table 1).

Table 1. The number of active and inactive leks, categorized by increasing distances from the nearest powerpole, Idaho Power Service Territory.

	Distance (km)										
Lek Status	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-18
Inactive	27	18	18	15	10	4	5	9	3	3	2
Active	42	36	45	31	23	21	14	12	4	2	8
% active	61	67	71	67	70	84	74	57	57	40	80

IPC evaluated active leks within 3 km of a power line to determine how many years following construction of a line leks have remained active. Within 3 km of a line, 110 leks have remained active for greater than 20 years after a line was built (Table 2). Ten leks within 300 m of a powerline have remained active a minimum of 28 years after a line was built (8 leks active longer than 43 years). These data indicate that leks can remain active for long periods of time following construction of a powerline.

Table 2. Active leks within 1, 2 and 3 km of a powerline, categorized by years since the nearest power pole was built within IPC service territory.

# of years lek has remained active following construction of a line	0-1 km	1-2 km	2-3 km	Total 0-3 km
< 10 years	4	1	0	5
10-19 years	4	1	3	8
20-29 years	7	9	7	23
30-39 years	2	5	4	11
≥40 years	25	20	31	76
Total	42	36	45	123

The average number of males observed at active leks (5-year average) ranged from 10.6 to 15.2, with the highest number observed in leks near the power lines (Table 3).

Table 3. Average number of males (5-year average, 2003-2007) observed at active leks, by distance category.

Lek Distance from Power Line	Av. No. Males/Active Lek
0-1 km	15.2
1-5 km	14.0
5-10	14.2
10-18 km	10.6

IPC evaluated 27 leks within 1 km of a powerline that have become inactive. We compared the year that a powerline was built, the last year that a lek was active, the first year that a lek was observed inactive, the percentage of land within 3.2 km of a lek that had recently burned or was converted to agriculture, and highways in close proximity to the lek. Several patterns emerged. Four leks became inactive prior to a line being built, eight leks became inactive after a line was built, five became inactive following extensive fires, six were located in areas with extensive agriculture and roads, and four were active 38 years or longer after a line was built before becoming inactive. From these data it is clear that many factors contribute to a lek becoming inactive and additional research is necessary to determine the role of power lines in greater sage grouse decline.

IPC data, indicating leks have remained active many years following line construction and the average number of males found at a lek is similar across IPC's service territory regardless of distance to powerlines, contradict conventional wisdom that greater sage-grouse instinctively avoid tall structures or leks quickly disappear when power lines are built in close proximity. Based on IPC data, we believe that a lek located more than1 km (0.65 mile) from the proposed powerline will be minimally affected by construction, operation, and maintenance.

2.0 Avoidance and Minimization Measures

The Companies, recognizing the importance of reducing or eliminating impacts to greater sage grouse habitat, took several important steps to avoid and minimize impacts, which are detailed in this section. In addition, the Companies are offering compensatory mitigation where all impacts could not be avoided or minimized. This mitigation is discussed in Section 3.0.

2.1 Routing and Siting

The first step in the routing and siting process was the collection of applicable data in order to identify opportunities and constraints in selecting a proposed corridor between fixed points such as substation locations. In January 2008, the Companies, with BLM approval and assistance, requested data from state and federal agencies and specific individuals. The most common data received were lek location and the most common original data source were state game and fish management agencies, often amended or supplemented by additional local data and redistributed by the BLM state, district, or field offices. In the Casper, Rock Springs, Rawlins, Kemmerer, Pocatello, Burley and Shoshone field offices, resource specialists felt existing data were not adequate and requested additional field surveys. Nearly 300 miles of protocol level aerial surveys were conducted in 2008 within the aforementioned field offices and did not identify any new lek locations (Tetra Tech, December 15, 2008).

In the routing and siting process, the data set used for greater sage-grouse leks included data on 1)active leks, 2) leks that had not been used for a number of years (inactive), and 3) leks known to be abandoned or "historic". Rather than attempt to sort the data set for active or recently active leks, all known lek location, including those known to be abandoned, were equally considered in the analysis and avoided, where possible, during the routing process. To avoid leks, the Companies applied a 0.25 mile buffer from the center of a lek to all leks and designated it as no surface occupancy (NSO). In other words, no land surface development or aerial encroachment could occur within 0.25 miles of the center of a lek. This buffer was applied to all mapped leks within the study areas and the Project was routed to avoid the buffered areas.

During the several months of the routing and siting process, the BLM staff indicated that a new Instructional Memorandum (IM) would be issued and that this would require a 0.65 mile buffer around leks. To avoid having to reroute once the IM was issued, the Companies applied a 0.65 mile radius buffer to each lek, and the routing made every attempt to avoid the larger area. Every proposed and alternate route the Companies presented to BLM for analysis in the EIS avoided, without exception, the 0.25 mile radius buffer on all mapped leks. In general, the proposed and alternate routes also avoided the 0.65 mile lek buffer, but there are cases where full avoidance was not practical given other constraints (e.g., residential or agricultural land use; visual resources). To date, the BLM has not issued an IM and a 0.65 mile buffer specific to transmission lines has not been established by the BLM.

Siting and routing are described in more detail in the *Siting Study* (Idaho Power and Rocky Mountain Power; September 2008) and an October 23, 2008 supplemental memo prepared by the Companies.

2.2 Conformance with State-wide Plans

Idaho and Wyoming state-wide plans identify the use of existing utility corridors and highway rights-of-way as a management guideline. As part of the routing and siting process, the Companies adopted an overall approach of conforming to existing rights-of-way unless there was a compelling reason not to. Table 4 summarizes the miles of the proposed corridor, by segment, that are within greater sage-grouse habitat and that are adjacent (within 1 km) to an existing corridor within greater sage-grouse habitat.

Of the approximately 1,144 miles of proposed corridor, 238.4 miles occur within designated greater sage-grouse habitat (either core in Wyoming or key and restoration in Idaho); this represents 21 percent of the total proposed corridor. Within designated greater sage-grouse habitat, 157 miles (66%) are adjacent to an existing transmission line and an additional 25.3 miles (11%) are adjacent to other corridors. Approximately 56.1 miles (23%) of the proposed corridor is not adjacent to an existing corridor within greater sage-grouse habitat.

Table 4. Sage-grouse habitat intersected by the Project corridor and adjacency to existing transmission lines and other corridors.

Line Segment	Total Segment Length(mile)	Total Length of Line w/in Designated Habitat (mile)	Adjacent to Other Transmission Line w/in Designated Habitat (mile)	Adjacent to Other Corridors w/in Designated Habitat[2] (mile)	Greater than 1 km From Any Corridor w/in Designated Habitat (mile)
Seg 01E	87.7	0.26	0.26	0.00	0.00
Seg 01Wa	72.1	15.16	15.16	0.00	0.00
Seg 01Wb	72.8	16.82	11.62	0.00	5.20
Seg 01Wc	70.7	14.79	14.79	0.00	0.00
Seg 02	93.7	50.50	22.4	13.47	14.63
Seg 03	55.1	0	0	0	0
Seg 04	200.6	52.00	35.22	3.21	13.56
Seg 05	53	0	0	0	0
Seg 06	No construction proposed for this segment				
Seg 07	117.4	30.32	0.80	8.63	20.90
Seg 08	130.9	38.24	37.53	0.00	0.71
Seg 09	157.6	8.69	8.69	0.00	0.00
Seg 10	32.9	11.61	10.51	0.00	1.11
Total	1144.5	238.39	156.97	25.31	56.11

[2] Other corridors include pipelines, railroads, road/highway, or a combination of these, but does not include transmission lines.

2.3 Environmental Protection Measures (EPM)

Appendix B of the POD specifies EPMs that the Companies have incorporated as their BMPs and as part of the Project description. These measures have been developed by the Companies to maintain environmental quality and meet requirements of various land management plans. These measures are applicable Project-wide unless modified through negotiations with individual landowners or superseded by permits granted by federal, state, or local agencies. The Companies would be responsible to ensure their contractors and employees will implement these measures. These EPMs apply to construction, operation, and maintenance as appropriate. Implementation of the EPMs will help the Companies to avoid or minimize impacts to greater sage-grouse and their habitat.

Appendix B of the POD contains the following attachments:

Attachment A, Traffic and Transportation Management, includes measures that require compliance with federal policies and standards relative to planning, siting, improvement, maintenance, and operation of roads for the Project. This plan will address the following measures from the Wyoming state-wide greater sage-grouse conservation plan:

- Consider developing travel management plans that would allow seasonal closure of roads for all but permitted uses (i.e., recreation and hunting) and encourage the reclamation of unnecessary or redundant roads.
- Control dust from roads and other surface disturbances within the population's season habitats.

Attachment B, Reclamation, Revegetation, and Weed Management, addresses construction mitigation, reclamation, and revegetation for lands crossed by the Project. This plan also outlines measures to prevent accidental introduction or transport of noxious or invasive weeds.

This plan will address the following recommendations from the Idaho state-wide greater sage-grouse conservation plan:

> "Utility companies should ensure access roads, right-of-ways and disturbed areas associated with their facilities are managed in a manner that restores disturbed areas to perennial vegetative cover, and controls the spread on noxious weeds and invasive plant species. Coordinate with land-management agencies and others in selecting the most appropriate plant species. Consider the use of fire-resistant species in high fire-frequency/cheatgrass areas. Encourage companies to participate in Coordinated Weed Management Areas".

Attachment C, Stormwater Pollution Prevention, includes measures for temporary and permanent erosion and sediment control that will be used during construction, operation, and maintenance of the transmission line and ancillary facilities.

Attachment D, Spill Prevention, Containment, and Countermeasures, includes measures for spill prevention practices, requirements for refueling and equipment operation near waterbodies, procedures for emergency response and incident reporting, and training requirements.

Attachment E, Cultural Resource and Paleontological Monitoring and Mitigation, describes the procedures undertaken to inventory, evaluate, and protect cultural resources, treatment of any eligible or listed resource that cannot be avoided, and inadvertent discoveries during construction, operation, and maintenance.

Attachment F, Blasting, outlines the procedures and safety measures for blasting activities.

Attachment G, Plant and Wildlife Species Conservation, outlines specific conservation measures to be implemented in the event state or federally listed species, BLM sensitive species, or Forest Service special status species or their habitat are identified within the Project area (including, but not limited to, this plan for greater sage-grouse).

Attachment H, Facility Maintenance, describes the standard maintenance practices to be used to maintain the transmission line and associated facilities during operation. EPMs will be incorporated in a Facility Maintenance Plan for these practices.

2.4 Temporal and Spatial Restrictions

Temporal and spatial restrictions (summarized in Appendix A) vary between RMPs and states and can include conflicting requirements within the same RMP. Therefore, the Companies have committed to the following restrictions for the construction of this project:

- All greater sage-grouse leks determined to be within 1 mile of the centerline of the Project would be surveyed using protocols, which have been approved by federal and state agencies, during the breeding season immediately prior to construction to determine whether the lek is active. The Proponents will provide survey results to the appropriate land management agency.
- There would be no construction activities through Idaho's key and restoration greater sage-grouse habitats and Wyoming's core habitats within 1 mile of active leks from March 1 to May 15 between 6 p.m. and 9 a.m. Off-limit areas would be marked so that workers in the area are aware of these sensitive areas.
- If no lek activity has been observed by April 25, construction activities may proceed.
- Surface disturbance would be prohibited year-round within 0.25 mile of previously documented leks.
- Notification would also be placed in areas frequented by on-site personnel (such as break rooms) to advertise the importance of complying with these restrictions.
- Temporal and spatial restrictions do not apply when lek or nesting and brood rearing habitat is separated from Project activities by other forms of human disturbance (e.g., agriculture, highways) or by line of sight barriers.

Adherence to these restrictions in conjunction with implementation of the EPMs and proposed mitigation is expected to protect greater sage-grouse and their habitat while still allowing for timely and fiscally responsible construction of the Project.

Except in times of emergency, operation and maintenance activities will be scheduled to avoid working within 0.65 mile of active leks during the spring mating season, defined to be between

March 1 and May 15 in Wyoming and March 15 to May 15 in Idaho, between the hours of 6 PM and 9 AM.

3.0. Mitigation

In developing this proposal to mitigate for possible impacts to greater sage-grouse and their habitat associated with the Gateway West project, the Companies considered the avoidance and minimization measures that were incorporated into the routing and siting process; conformance with state-wide conservation plan management measures; hypothesized impacts from transmission lines; and results of Idaho Power's spatial analysis. Additionally, environmental protection measures identified in the August 2008 POD and this plan were considered.

The Companies are proposing an in-lieu fee payment for direct permanent impacts within mapped habitat. The Companies are not proposing any payment for temporary impacts within mapped habitat because temporary impacts will be restored. To acknowledge that current information does not clearly indicate the nature and extent of indirect impacts, the Companies have also proposed an in-lieu fee payment based on line miles within and adjacent (within one km) to mapped habitat. Mitigation funds will be paid to the Office of Species Conservation (OSC) in Idaho for impacts that occur in Idaho and to the Wyoming Wildlife and Natural Resource Trust (WWNRT) for impacts that occur in Wyoming. The OSC (ID) and WWNRT (WY) will disperse funds to sage-grouse local working groups that cover areas impacted by the project. These entities have not yet been contacted and their participation will need to be secured.

Mitigation was divided into two main categories: right-of-way located within mapped greater sage-grouse habitat and ROW adjacent to greater sage-grouse habitat. Within habitat occurs when any portion of the ROW is inside mapped greater sage-grouse habitat. Adjacent to habitat is defined as the ROW is outside of mapped habitat by a distance of 1 km or less. Within each of these categories, mitigation was further differentiated if the proposed corridor was located adjacent to an existing corridor (e.g., transmission line; major highway or road; railroad, gas pipeline); and if the impact was direct permanent or temporary and indirect.

Impacts will be quantified as follows:

ROW within greater sage-grouse habitat:	▪ Direct permanent impacts will be quantified by acres. ▪ Indirect impacts will be quantified by line miles.
ROW adjacent to greater sage-grouse habitat:	▪ No mitigation is proposed for direct permanent impacts. ▪ Indirect impacts will be quantified by line miles.

The Companies consider structure locations, regeneration stations, substations, and new service and access roads as direct permanent impacts. The Companies distinguish between service roads and access roads. The sole purpose of service roads is to provide maintenance crews access to the transmission lines. These roads would not exist if the transmission lines did not exist. In contrast, access roads serve a broader purpose, such as contributing to the federal, county, or state road systems, thus their existence is independent of the transmission line. Access roads

provide direct or indirect access to the transmission lines, but that access is not their primary purpose. Existing access roads are not included as an impact and no mitigation is proposed for these. Service and new access roads that will be closed to public use will be revegetated as a best management practice to control erosion and sedimentation. Crested wheatgrass (*Agropyron cristatum)* and forage kochia (*Kochia prostrata)* will be used for revegetation. Both of these plant species are fire resistant, will resist noxious weeds, and will also provide habitat for upland birds, small mammals, and reptiles.

The Companies define areas used for storage or fly yards and areas disturbed within the ROW between structures during construction as temporary impacts. Temporary impacts will be restored in-kind (e.g., grassland will be restored to grassland) and no additional mitigation is proposed. Mitigation is summarized in Table 5.

Wyoming's core breeding areas have been mapped at a large-scale and consequently, core areas include habitats that do not support sage-grouse (e.g., urban areas, roads, etc.) While this plan has quantified impacts within and adjacent to core breeding areas, it has not differentiated among habitat types within core breeding areas. Final impacts and mitigation will be based on greater sage-grouse habitat within core breeding areas and is likely to be less than described in this document. The vegetation and habitat maps that are being developed for this Project will be used to identify greater sage-grouse habitat in core breeding areas and that will be the basis for quantifying impacts. Impacts are also likely to change as the route centerline is defined within the 2-mile wide planning corridor.

Impacts will be quantified using as-builts that will be completed at the end of construction activities for each segment.

Potential temporary and permanent impacts are identified in Table 6 and the number of line miles adjacent (within 1 km) to greater sage-grouse habitat and an existing corridor are identified in Table 7.

Table 5. Mitigation for impacts to greater sage-grouse habitat[3] associated with the Project.

ROW[4]	**Other Corridor[5]**	**Mitigation**
ROW w/in mapped habitat	Corridor present	▪ Mitigate direct permanent impacts to sage-grouse habitat at 1:1 (acre) ▪ Mitigate indirect effects at 0.5:1 (line miles)
	Corridor absent	▪ Mitigate direct permanent impacts to sage-grouse habitat at 1:1 (acres) ▪ Mitigate indirect effects at 0.75:1 (line miles)
ROW adjacent to mapped habitat	Corridor present	▪ Mitigate indirect effects at 0.1:1 (line miles)
	Corridor absent	▪ Mitigate indirect effects at 0.3:1 (line miles)

[3] Habitat or mapped habitat refers to areas delineated in state-wide greater sage-grouse plans.
[4] Within habitat occurs when any portion of the ROW is inside mapped greater sage-grouse habitat. Adjacent to habitat is defined as the ROW is outside of mapped habitat by a distance of 1 km or less.
[5] Corridor refers to other linear features such as transmission line, highway or major road, railway, or gas line.

Table 6. Preliminary temporary and permanent impacts associated with the construction and operation of the Project.

Line Segment	Temporary Impact (acres)[6]	Permanent Impact (acres)[7]
Seg 01E	12.11	115.11
Seg 01W	52.49	0.00
Seg 01Wa	9.39	111.40
Seg 01Wb	43.84	144.29
Seg 01Wc	14.76	83.62
Seg 02 (1 DC)[8]	261.47	583.06
Seg 02 (2 SC)	298.15	644.92
Seg 03	0	0
Seg 04 (1DC)	291.31	578.61
Seg 04 (2 SC)	346.88	641.65
Seg 05	0	0
Seg 06	0	0
Seg 07	204.53	319.86
Seg 08	211.27	358.79
Seg 09	119.83	174.04
Seg 10	91.16	115.72
Total Lines (1 DC)	**1312.14**	**2584.49**
Total Lines (2 SC)	**1404.40**	**2709.40**
Substations		
Aeolus	0	101.94
Cedar Hill	0	19.62
Midpoint	0	7.25
Total Substation		**128.82**

[6] Temporary impacts include pulling and tensioning sites, fly yards, and staging areas.
[7] Permanent impacts include structure pads, existing roads that need improvement, new roads, and substations.
[8] Rocky Mountain Power is evaluating the following two options for construction in segments 2-4: one double circuit (1 DC) line or 2 single circuit (2 SC) lines. Only one of the options will be built.

Table 7. Summary of line miles adjacent to greater sage-grouse habitat and miles adjacent to an existing corridor.

Line Segment	Total Segment Length (miles) Adjacent to Mapped Habitat	Total Shared Corridor Length (miles) Adjacent to Mapped Habitat	Total Segment Length (miles) Adjacent to Mapped Habitat Outside a Corridor
Seg 01E	2.160	0.413	0.407
Seg 01Wa	5.318	4.381	0.936
Seg 01Wb	4.351	2.796	1.555
Seg 01Wc	4.800	3.864	0.936
Seg 02	3.131	1.807	1.324
Seg 03	2.293	0.77	1.523
Seg 04	13.140	2.739	10.401
Seg 07	16.759	0.775	13.702
Seg 08	28.252	2.511	25.741
Seg 09	17.557	2.316	15.241
Seg 10	13.298	1.717	11.581
Total	107.436	24.089	83.347

Table 8 summarizes the mitigation requirements based on the ratios proposed in Table 5, and the preliminary impacts identified in Tables 4, 6, and 7. Actual impacts and mitigation requirements will be calculated as previously described.

Table 8. Proposed mitigation ratios and estimated impacts.

ROW	Mitigation	
Within habitat	Restore temporary impacts:	1 Double Circuit option: 1,312 acres
		2 Single Circuit option: 1,404 acres
	Direct permanent impacts at 1:1	1 Double Circuit option: 2,584 acres
		2 Single Circuit option: 2,709 acres
		Substations: 129 acres
	Indirect impacts adjacent to a corridor at 0.5:1	Adjacent to a transmission line corridor: 157 miles
	Indirect impacts greater than 1km from a corridor at 0.75:1	Outside a transmission line corridor: 25 miles
		Outside any corridor: 56 miles
Adjacent to habitat	Indirect impacts adjacent to a corridor at 0.1:1	Adjacent to a corridor: 24 miles
	Indirect impacts greater than 1 km from a corridor at 0.3:1	Outside a corridor: 83 miles

Dollar amounts are based on published[9] values and the Companies previous experience with other revegetation projects. Because of the wide range of activities that can be conducted (e.g.,

[9] Average and a range of costs for a variety of activities are provided in Public Review Draft Recommendations for Development of Oil and gas resources within Crucial and Important Wildlife Habitats. Version 2.0. revised December 9, 2008. Wyoming Game and Fish Department. http://www.pinedaleonline.com/news/2008/12/OGWildlifeRecommendations.pdf. Accessed January 15, 2009.

seeding, prescribed burning, fencing, guzzlers, etc.) to mitigate for impacts to greater sage-grouse and the wide variety of site conditions, cost estimates vary greatly. Costs in this proposal are based on average costs and the assumption that most mitigation activities would involve revegetation.

In-lieu fee payments will be calculated using the following formulas:

Direct permanent impacts:
Mitigation funding = ($2,000/acre) (mitigation ratio) (acres of direct impact)

Indirect effects:
Mitigation funding = ($20,000/line mile) (mitigation ratio) (line miles)

In-lieu fee payments will be paid over a ten-year period and will initially be estimated based on the proposed project. Ten percent of the cost will be paid each year and will be adjusted after as-builts are finalized.

4.0 References

HawkWatch International, Inc. 2008. Effectiveness of Raptor Perch Deterrents on an Electrical Transmission Line in Southwestern Wyoming. Salt Lake City UT. 24 p.

Idaho Power Company and Rocky Mountain Power. August 2008. Plan of Development. Gateway West Transmission Line Project.

Idaho Sage-grouse Advisory Committee. 2006. Conservation Plan for the Greater Sage-grouse in Idaho.

Lamers, W. M., and M. W. Collopy. 2007. Effectiveness of avian predator perch deterrents on electric transmission lines. Journal of Wildlife Management 71:2752-2758.

Southwest Wyoming Sage-grouse Conservation Assessment and Plan. July 2007.

Wyoming Greater Sage-grouse Conservation Plan. June 2003.

Appendix A. Greater Sage-grouse Temporal and Spatial Restrictions by Bureau of Land Management Field Office

Casper, Wyoming Field Office

Within Bates Hole/Fish Creek/Willow Creek:

- Occupied sage-grouse leks will have a ¾-mile CSU buffer to protect breeding habitats. Human activity will be avoided between 8 p.m. and 8 a.m. from March 1 to May 15 (TLS) within this buffer.
- Occupied sage-grouse leks will have a 4-mile buffer. Within this buffer, surface development or wildlife-disturbing activities will be restricted March 15 through July 15 (TLS). Also, within this 4-mile buffer (CSU), surface disturbing activities will avoid sagebrush stands of greater than 10 percent canopy cover. Within this 4-mile buffer, mitigate for power poles and other high profile structures that may provide raptor perches. Avoid placement of these structures if possible, or install devices to preclude raptor perching on the structures.
- As sage-grouse winter habitats are designated, a TLS will restrict activities from November 15 to March 14. Within the designated winter habitats, CSU for surface disturbing activities in sagebrush stands of greater than 20 percent canopy cover.
- The areas will have priority for vegetative treatments to improve sage-grouse habitats and for vegetation monitoring to ensure residual herbaceous vegetation is maintained for nesting cover on public lands.

Outside of Bates Hole/Fish Creek/Willow Creek:

- Avoid surface disturbance or occupancy within ¼ mile of the perimeter of occupied sage-grouse leks. Avoid human activity between 8 p.m. and 8 a.m. from March 1 to May 15 (TLS) within ¼ mile of the perimeter of occupied sage-grouse leks.
- Avoid surface-disturbing and disruptive activities in suitable sage-grouse nesting and early brood-rearing habitats within 2 miles of an occupied lek, or in identified sage-grouse nesting and early brood-rearing habitats outside the
- 2-mile buffer from March 15 to July 15 (TLS).
- Avoid surface-disturbing and disruptive activities in sage-grouse winter habitats from November 15 to March 14 (TLS).

Rawlins, Wyoming Field Office

- Prohibit surface disturbance or occupancy year round within ¼ mile of occupied leks, breeding, or nesting habitat.
- Disruptive activities prohibited March 1 to May 20, 6 pm to 9 am within ¼ mile of occupied leks, breeding, or nesting habitat.
- Avoid surface disturbing activities Mar 1 – July 15 within 2 miles of identified nesting/early brood rearing habitat.
- No surface disturbing or disruptive activities in winter concentration areas Nov 15 - March 14.
- Construction activities within 500 feet of open water and/or 100 feet of intermittent or ephemeral channels in potential or known habitat for T&E and Special Status Species will be avoided.

- High-profile structures (e.g., power lines and towers) would be authorized on a case by case basis from ¼ mile to 1 mile of an occupied lek.
- Requesting installation of antiperching devices - TBD.

Rock Springs, Wyoming Field Office

- Seasonal restrictions within ¼ mile radius of leks from March 1 to May 15.
- Seasonal restrictions within 2 mile radius of lek in nesting areas from March 15 to July 15.
- Prefer that entire line be outside of 2-mile buffer, but outside of ¼ mile from perimeter is acceptable.
- Requesting installation of antiperching devices - TBD.

Kemmerer, Wyoming Field Office

- Avoid surface disturbance or occupancy within ¼ mile of occupied leks.
- Avoid human activity from 8 pm and 8 am from March 1 to May 15 within ¼ mile of perimeter of occupied leks.
- Avoid surface disturbing and disruptive activity in suitable nesting and early brood-rearing habitats within 2 miles of occupied leks.
- Avoid surface disturbing and disruptive activity in identified nesting and early brood-rearing habitats outside the 2 mile buffer from March 15 to July 15.
- Avoid surface disturbance and disrupting activities in occupied winter habitats from Nov 15 to March 14.

Four Rivers (Cascade), Idaho Field Office

- RMP: No surface occupancy in winter range from December 1 to February 15.
- RMP: No surface occupancy in breeding grounds from February 15 to June 30.
- RMP: No surface occupancy within 2 miles of a lek from April 15 to June 30.
- Guidance for protection is addressed in the MOA in the 1997 Idaho Sage Grouse Management Plan, as follows:
    - Avoid disturbance within 0.6 miles of occupied leks from 6 PM to 9 AM from March 15 to May 1 in lower elevations and from March 25 to May 15 in higher elevations.
    - Use of guy-wires should be avoided.
    - The placement of perch deterrents should be considered on a site specific basis.
    - New structures should be sited at least 2 miles from occupied leks or other important seasonal habitats.

Four Rivers (Kuna), Idaho Field Office

- MFP: Refer to “Guidelines for Habitat Protection in Sage Grouse Range” as published by the Western States Sage Grouse Committee, June 1974.

Owyhee, Idaho Field Office

- Guidance for protection is addressed in the MOA in the 1997 Idaho Sage Grouse Management Plan, as follows:
- Avoid disturbance within 0.6 miles of occupied leks from 6 PM to 9 AM from March 15 to May 1 in lower elevations and from March 25 to May 15 in higher elevations.
- Use of guy-wires should be avoided.
- The placement of perch deterrents should be considered on a site specific basis.
- New structures should be sited at least 2 miles from occupied leks or other important seasonal habitats.

Bruneau, Idaho Field Office

- MFP: Restrict from March to May any intensive disturbance activities within 2 miles of sage grouse strutting grounds, and avoid the establishment of major roads within ½ mile.
- MFP: Restrict vehicular traffic to existing roads from November 1 to February 28 in sage grouse wintering habitats.
- Guidance for protection is addressed in the MOA in the 1997 Idaho Sage Grouse Management Plan, as follows:
- Avoid disturbance within 0.6 miles of occupied leks from 6 PM to 9 AM from March 15 to May 1 in lower elevations and from March 25 to May 15 in higher elevations.
- Use of guy-wires should be avoided.
- The placement of perch deterrents should be considered on a site specific basis.
- New structures should be sited at least 2 miles from occupied leks or other important seasonal habitats.

Appendix C-6
Draft Framework for Compensatory Mitigation for and Monitoring of Unavoidable Impacts to Waters of the U.S.

(submitted to BLM by Idaho Power and Rocky Mountain Power April 26, 2011)

IDAHO POWER®
An IDACORP Company

April 26, 2011

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Cheyenne, WY 82003-1828

Mr. Thomas B. Johnson, P.E.
U.S. Army Corps of Engineers
Wyoming Regulatory Office
2232 Dell Range Boulevard, Suite 210
Cheyenne, Wyoming 82009

Subject: Gateway West Waters of the U.S. Framework

Dear Mr. George and Mr. Johnson:

Idaho Power Company and Rocky Mountain Power (Companies) are pleased to submit the attached document as a supplement to the Companies' application and *Plan of Development* for the Gateway West Transmission Project (Project). The *Framework for Compensatory Mitigation for and Monitoring of Unavoidable Impacts to Waters of the U.S.* (Framework) establishes a proposed concept and process to be undertaken for the mitigation and compensation of impacts to waters of the U.S. due to the construction and operation of the Gateway West Transmission Line Project (Project). The Framework is intended to ensure the following:

- The Companies develop an approach that satisfies the mitigation requirements of the United States Army Corps of Engineers.
- No net loss of function or area of waters of the U.S. resulting from construction and long-term operation and maintenance (O&M) of the Project.
- The Companies are able to access the transmission line and ancillary facilities and implement the necessary O&M activities in a timely, cost effective and safe manner.
- The Companies comply with the North American Electric Reliability Corporation (NERC) and Western Electric Coordinating Council (WECC) reliability and service requirements.

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The Framework, together with the other proposed environmental protection measures, other plans, and project avoidance, minimization, and mitigation measures, comprises the Companies' commitment to wetland mitigation.

If you have any questions on the Framework, please feel free to contact me.

Respectfully,

Stacey Baczkowski

Stacey Baczkowski
Environmental Affairs

cc: Pam Anderson; Rocky Mountain Power
Todd Adams; Idaho Power
Walt Vering, Tetra Tech

Enc

DRAFT

FRAMEWORK FOR COMPENSATORY MITIGATION FOR AND MONITORING OF UNAVOIDABLE IMPACTS TO WATERS OF THE U.S.

Gateway West Transmission Line

Prepared for:

US Army Corps of Engineers

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And

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May 2011

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ACRONYMS AND ABBREVIATIONS

BLM	Bureau of Land Management
BMP	Best Management Practice
CGP	Construction General Plan
Companies	Idaho Power and Rocky Mountain Power
CWA	Clean Water Act
DEIS	Draft Environmental Impact Statement
EPM	Environmental Protection Measure
EPC	Engineering, Procurement and Construction
GIS	Geographic Information Systems
HUC	Hydrologic Unit Code
IDEQ	Idaho Department of Environmental Quality
IDWR	Idaho Department of Water Resources
ILF	In-Lieu Fee Program
IRT	Interagency Review Team
IM	Instructional Memorandum
kV	Kilovolt
MW	Megawatt
NDEP	Nevada Department of Environmental Protection
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Corporation
NPDES	National Pollutant Discharge Elimination System
NTP	Notice To Proceed
O&M	Operations and Maintenance
POD	Plan of Development
Project	Gateway West Project
RMP	Rocky Mountain Power
ROD	Record of Decision
ROW	Right-of-Way
SPCC	Spill Prevention, Control, and Countermeasures Plan
SWPPP	Storm Water Pollution Prevention Plan
TMDL	Total Maximum Daily Load
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USFS	U.S. Forest Service
USGS	U.S. Geologic Survey
WDEQ	Wyoming Department of Environmental Quality
WECC	Western Energy Coordinating Council
WWEC	West-Wide Energy Corridor

1.0 INTRODUCTION

This *Framework for Compensatory Mitigation for and Monitoring of Unavoidable Impacts to Waters of the U.S.* (Framework) establishes a proposed concept and process to be undertaken for the mitigation and compensation of impacts to waters of the U.S. due to the construction and operation of the Gateway West Transmission Line Project (Project).

This document describes the proposed Framework for mitigating impacts to waters of the U.S. that would result from the proposed Project and is intended to present an approach that would satisfy the mitigation requirements of the United States Army Corps of Engineers (USACE)[1]. The overall objective of the Framework is to ensure that there would be no net loss of function or area of waters of the U.S. resulting from construction and long-term operation and maintenance (O&M) of the Project. The Project's currently estimated permanent impacts to wetlands and riparian areas are approximately 27.4 acres for the Proposed Route. Temporary impacts to wetlands and riparian areas are currently estimated at 83.6 acres for the Proposed Route. Other alternative routes, suggested by agencies, local groups, and cooperating agencies, have different and sometimes larger impacts to wetlands and riparian areas. Impact estimates are based on indicative (desktop) design and would decrease as site-specific design engineering is completed.

Other federal (e.g., Bureau of Land Management [BLM]) or state (e.g., Idaho Department of Water Resources [IDWR], Department of Environmental Quality [IDEQ]) agencies may also require additional mitigation for impacts to aquatic resources beyond those required for the Clean Water Act (CWA) Section 404 permit from the USACE. As those requirements are specified, they would be incorporated into this Framework. This Framework builds on the *Aquatic Permitting Program* (Idaho Power Company and Rocky Mountain Power, 2010, incorporated by reference) that proposes a phased approach to aquatic permitting that is appropriate for a multi-state, 1,000 plus mile long transmission line.

This Framework represents the commitment on the part of Idaho Power Company and Rocky Mountain Power (RMP) (the Companies) to work with the USACE and other agencies to develop a wetland mitigation program, and provides the structure for reaching agreement on the program. This Framework, together with the other proposed environmental protection measures, other plans, and project avoidance, minimization, and mitigation measures, comprises the Companies' commitment to wetland mitigation.

1.1 Project Description, Purpose, and Need

The Companies are proposing to construct, operate, and maintain approximately 1,148 miles of new 230 kilovolt (kV) and 500kV electric transmission system consisting of 11 segments between the planned Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation near Melba, Idaho (Figures 1 and 2). The Project would relieve existing congestion, capacity, and reliability constraints and would allow for the delivery of up to 3,000 megawatts (MW) of additional energy to service areas principally in Utah and Idaho, but also the larger service areas of the Companies. The first segment of the Project has a required in-service date

[1] 40 CFR 230; Compensatory Mitigation for Losses of Aquatic Resources; Final Rule; April 10, 2008 Federal Register

of 2014; each segment has its own construction schedule that starts upon completion of the BLM-lead National Environmental Policy Act (NEPA) process and issuance of all necessary permits and authorizations. In addition to the transmission line and structures, the Project includes the following associated facilities:

- Permanent access and service roads to each structure, substation, and regeneration site;
- Laydown yards, staging areas, and other temporary construction ground disturbances;
- Construction of new substations;
- Expansion of existing substations, including those under construction for other projects;
- Communication systems with optical fiber regeneration stations (regen sites); and
- Substation distribution supply lines.

A more detailed description of the Project is provided in the Plan of Development (POD) (Idaho Power Company and Rocky Mountain Power, 2008) and subsequent revisions (incorporated herein by reference). The POD provides more detailed information on the purpose and need; proposed route; project-related facilities; details associated with construction, operation, and maintenance of the project; and applicant-proposed environmental protection measures (EPMs). The POD and other project-related documents can be accessed at: http://www.wy.blm.gov/nepa/cfodocs/gateway_west/documents.php. Table 1 provides a brief summary of the segments and the number of proposed alternatives that are being evaluated in the Environmental Impact Statement.

Table 1. Segment Summary

Segment #	Proposed Length	Originating Substation	Terminating Substation	Number of Alternatives
1E	100.5	Windstar	Aeolus	3
1W(a)	76.5	Windstar	Aeolus	1
1W(b)	70.6	Windstar	Aeolus	0
2	96.7	Aeolus	Creston	3
3	56.5	Creston	Anticline	0
4	203	Anticline	Populus	6
5	54.6	Populus	Borah	5
7	117.9	Populus	Cedar Hill	10
8	131	Midpoint	Hemingway	4
9	161.7	Cedar Hill	Hemingway	5
10	33.6	Cedar Hill	Midpoint	0

Figure 1. Wyoming Overview Map

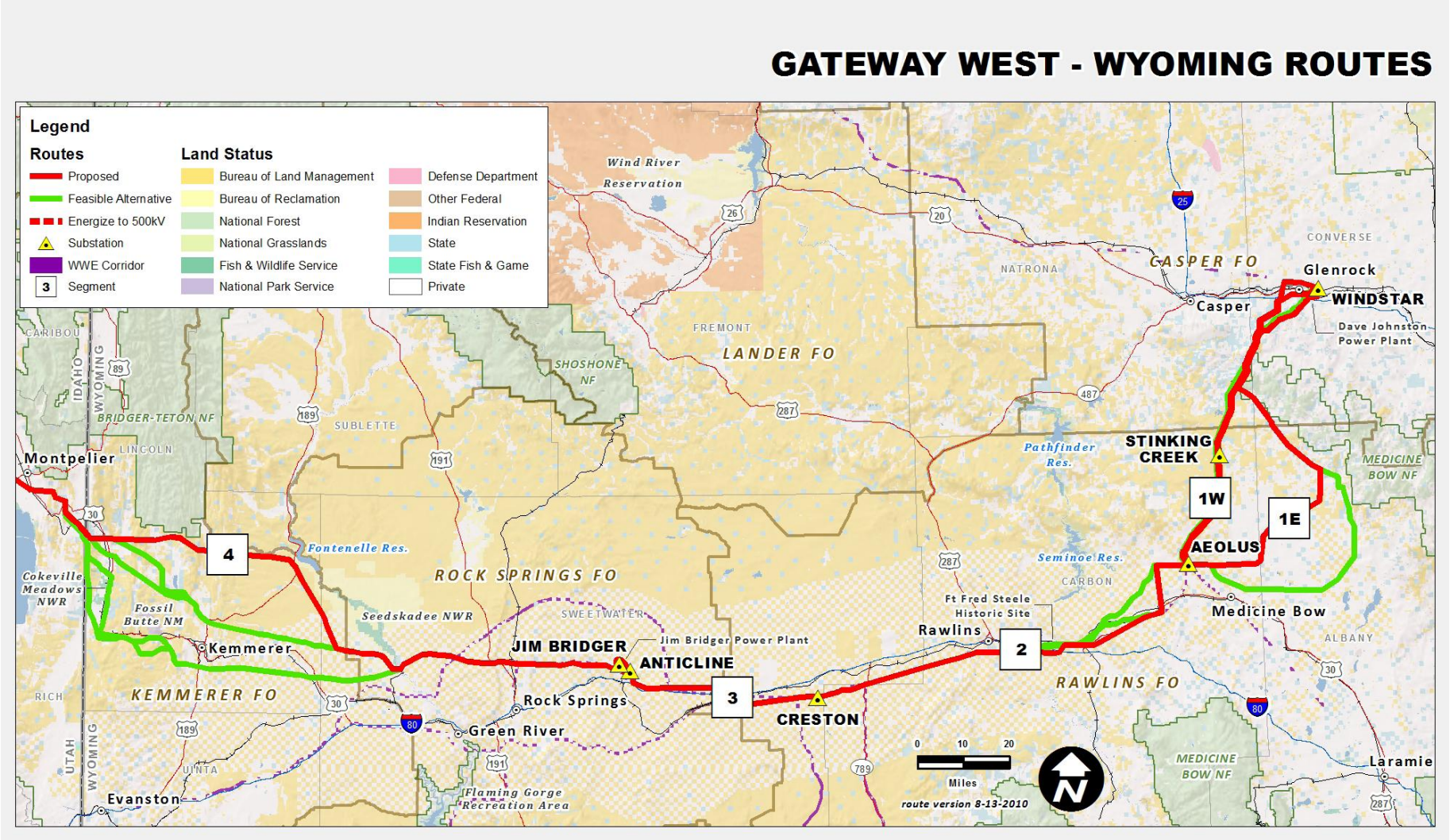
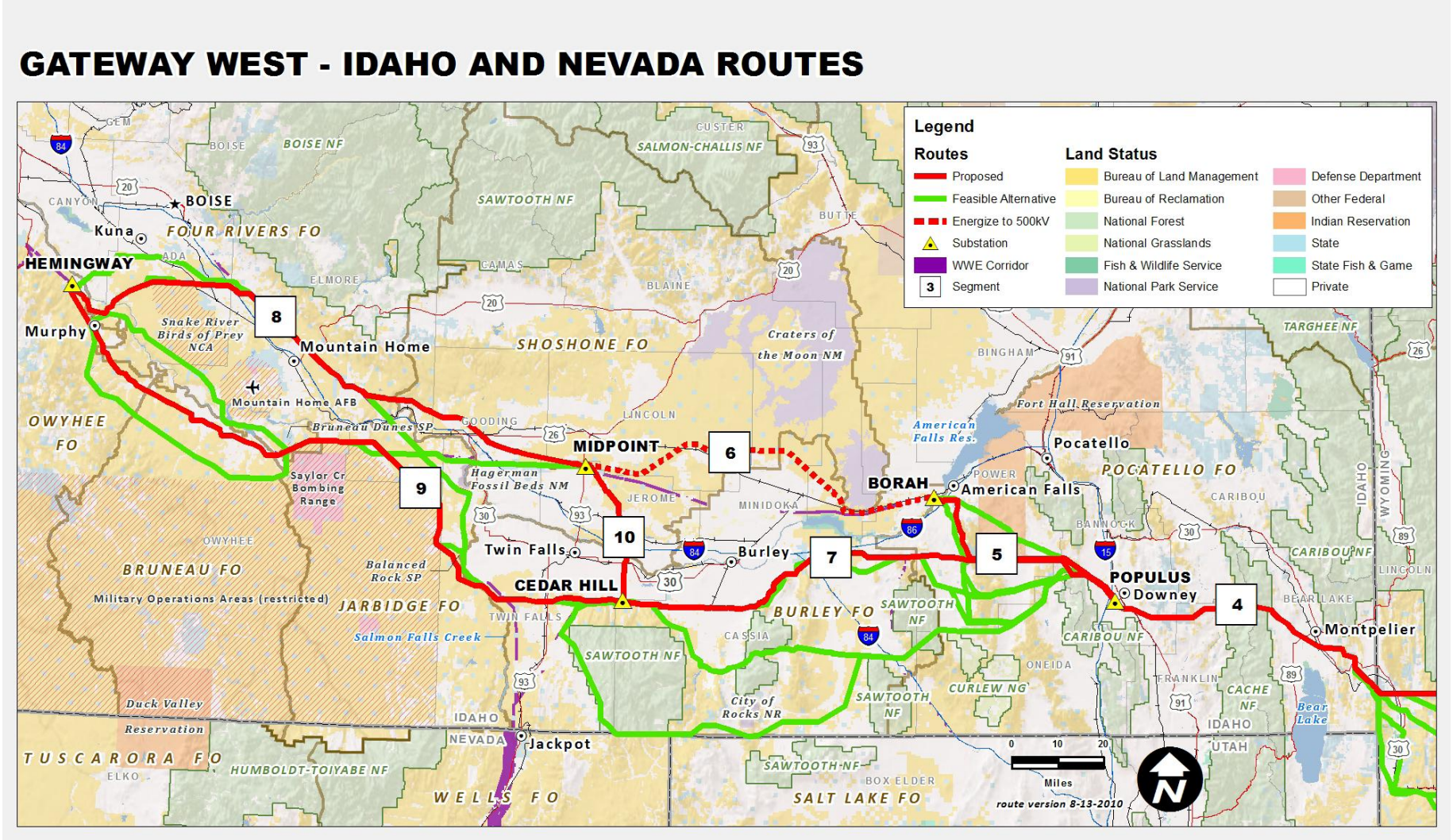


Figure 2. Idaho Overview Map



1.2 Framework Updates

This Framework is a living document and will be updated to include the following when available and appropriate:

- Recommendations from the USACE, BLM, and state agencies on compensatory mitigation for impacts to waters of the U.S.;
- Other federal and state agency requirements when specified;
- Revised impact calculations based on avoidance and minimization measures, including changes in road or route alignment;
- Incorporate the preferred alternative for federal lands when identified by the BLM and USFS; and
- Details on the Companies proposed mitigation for unavoidable impacts to waters of the U.S.

2.0 AQUATIC RESOURCE REGULATIONS

Construction, operation, and maintenance of the Project includes ground disturbing activities that could impact aquatic resources. The following regulations and associated permits and authorizations would be required for the Project.

The CWA (33 USC Section 1251 et seq., formerly the Federal Water Pollution Control Act of 1972), was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water. The CWA also requires the USACE to administer permits for dredge or fill in waters of the U.S.. Specific sections of the CWA that apply to the Project are described below, followed by a brief description of other aquatic resource permits required for the Project.

2.1 CWA - Section 303(d) List of Impaired Waters

Section 303(d) of the CWA establishes requirements for states and tribes to identify and prioritize water bodies that do not meet water quality standards through current technology-based regulations and controls. A water quality standard defines the designated beneficial uses of a water segment and the water quality criteria necessary to support those uses. Currently, both IDEQ and Wyoming Department of Environmental Quality (WDEQ) are required to conduct a comprehensive analysis of their respective state's water bodies every two years to determine if they meet water quality standards and develop a list of impaired or threatened waters that require Total Maximum Daily Load (TMDLs). The Project would need to implement measures to avoid and / or reduce the potential that it would contribute to the listing of a water body as impaired or be inconsistent with an adopted TMDL.

2.2 CWA - Section 130.7 Total Maximum Daily Load

Section 130.7 of the CWA requires states to establish TMDL programs, which are approved by the USEPA for streams and lakes that do not meet adopted water quality standards. A TMDL includes a quantitative assessment of water quality problems, contributing sources, and load reductions or control actions needed to restore and protect water bodies. A TMDL budget takes

into account loads from point, nonpoint, and natural background sources. National Pollutant Discharge Elimination System (NPDES) permits address point-source pollution to surface waters. Non-point source pollution is addressed by the application of Best Management Practices (BMPs), EPMs, and mitigation measures.

In compliance with the federal CWA, the IDEQ and the WDEQ have identified Section 303(d) water quality limited streams and lakes for development of TMDL criteria. TMDLs have been established for surface waters in Idaho. WDEQ has developed few TMDLS at this time as they are just beginning to implement the TMDL program; they are currently working on eight TMDLs. WDEQ projects that from the time of listing a waterbody as impaired, a TMDL for that waterbody would be developed within 1-5 years.

Stream segments within the Project Area that have been identified on 303(d) lists as impaired due to either sedimentation (sediment-impaired streams) or high temperatures (temperature-impaired streams), are listed in Appendix A for the Proposed Route.

2.3 CWA - Section 401 Water Quality Certification

Pursuant to section 401 of the federal CWA, any permit or license issued by a federal agency for an activity that may result in a discharge into waters of the U.S. requires certification from the state in which the discharge originates. This requirement allows each state to have input into federally approved projects that may affect its waters (rivers, streams, lakes, and wetlands) and to ensure the projects would comply with state water quality standards and any other water quality requirements of state law. State certification ensures that the project would not adversely impact impaired waters (waters that do not meet water quality standards) and that the project complies with applicable water quality improvement plans (TMDLs). The States must grant, deny, or waive section 401 certification for a project before a federal permit or license can be issued.

2.4 CWA - Section 402 NPDES Permits

The NPDES program requires facilities discharging from a point source into waters of the U.S. to obtain discharge permits. A point source is a conveyance such as a pipe, storm drain or other point. USEPA is responsible for permitting and enforcing all NPDES permits in Idaho. NPDES permits are administered by the WDEQ in Wyoming. Most storm water discharges are considered point sources and require coverage by a NPDES permit. The Project will need to obtain coverage under existing construction storm water programs in Idaho and Wyoming.

The NPDES Stormwater Program requires operators of construction sites that disturb one acre or more to obtain authorization to discharge stormwater under an NPDES construction stormwater permit. In Idaho and Wyoming, the EPA and WDEQ, respectively, have issued Construction General Permits (CGP). In order to be covered under the CGP, a site-specific Storm Water Pollution Prevention Plan (SWPPP) must be developed. The operator files a Notice of Intent which indicates the operator would comply with the CGP. The site operator must document the erosion, sediment, and pollution controls that would be used during construction and operation, inspect the controls periodically, and maintain the controls throughout the life of the project. If a TMDL has been established for the water body where a project would discharge, and the TMDL indicates that it applies to construction or stormwater discharges, then the SWPPP must be consistent with the requirements of that TMDL.

If hazardous materials, including fuels and lubricants, are used or stored in quantities exceeding certain quantities, a Spill Prevention, Control and Countermeasure (SPCC) Plan is required. Section 311(j)(1)(c) of the CWA contains the regulations preventing discharge of oil to surface water. The SWPPP also contains measures regarding the handling and storage of such materials.

2.5 CWA - Section 404 Waters of the U.S. Permits

Section 404 of the CWA authorizes the USACE to regulate the discharge of dredged or fill material to the waters of the United States. Discharges are authorized through issuance of nationwide permits or individual permits for specific activities.

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 § 328.4); and under Title 40 CFR § 230.3 (s)(1). Waters of the United States are defined as:

> *"All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide, all interstate waters including interstate wetlands, all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which would affect interstate or foreign commerce, including such waters which are or could be used by interstate or foreign travelers for recreational or other purposes, or from which fish or shellfish are or could be taken and sold in interstate or foreign commerce, or which are used or could be used for industrial purposes by industries in interstate commerce; all impoundment of waters otherwise defined as waters of the United States interstate commerce, tributaries of waters identified in paragraphs 1-4 of this section, the territorial seas; and wetlands adjacent to waters."*

Many wetlands are protected under the CWA as waters of the U.S. and special aquatic sites. Wetlands are defined by the USACE based on the presence of wetland vegetation, wetland hydrology, and hydric soils. In addition, Executive Order 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 and individual permits for larger and more complex impacts.

Nationwide permits. A nationwide permit is a general permit that authorizes a category of activities throughout the nation by streamlining the approval process for certain types of activities that have minimal impacts to aquatic resources. These permits are valid only if the conditions applicable to the permit are met. If the conditions cannot be met, a regional or individual permit would be required. Section 404 Nationwide Permit 12 (December 2007 version) covers construction, maintenance, and repair of utility lines in all waters of the U.S. provided that there is no change in pre-construction contours. This nationwide permit also covers related facilities including substations, structure foundations, and roads; provided that

these activities do not result in the loss of greater than 0.5 acre of waters of the U.S. Nationwide Permit 12 also authorizes temporary structures, fill, and work necessary to conduct utility line activities as long as (1) appropriate measures are taken to maintain normal downstream flows and minimize flooding, (2) structures and fill consist of materials that would not be eroded by high flows, and (3) structures and fill are removed in their entirety and the affected areas are returned to pre-construction elevations and re-vegetated as appropriate upon project completion. Impact limitations for Nationwide Permit 12 cover all disturbances at a single crossing of a wetland or stream, or multiple crossings of the same wetland or stream.

Any permanent impacts over 0.1 acre to waters of the U.S. require full mitigation, regardless of permit type. Permanent loss of more than 0.5 acres of a water of the U.S. requires an individual (General) permit rather than coverage under a Nationwide Permit.

Nationwide Permits contain general conditions that address potential impacts to the environment that could result from dredge or fill of waters of the U.S., such as adverse affects to soils, migration and spawning habitats, endangered species, or historic properties. Supplemental documentation may be required as part of a pre-construction notification package (e.g. plant and wildlife survey reports, cultural resource survey reports) to support compliance with the general conditions of the Nationwide Permit. Compliance with the National Historic Preservation Act and the Endangered Species Act is being addressed in the Environmental Impact Statement currently being prepared for this Project.

Individual Permits. Individual Permits are issued following a full public notice interest review of an individual application for a Department of Army permit. A public notice is distributed to all known interested persons. After evaluating all comments and information received, a final decision on the application is made. The final decision is made on a case-by-case evaluation and is generally based on the outcome of the public notice process and a determination of project benefits versus detriments (losses).

2.6 RIVERS & HARBORS ACT OF 1899, Sections 9 and 10

Section 9 of the Rivers and Harbors Appropriation Act of 1899 (33 U.S.C. 403; Chapter 425, March 3, 1899; 30 Stat. 1151) (Act) prohibits the construction of any bridge, dam, dike or causeway over or in navigable waterways of the U.S. without Congressional approval. Administration of section 9 has been delegated to the Coast Guard. Structures authorized by State legislatures may be built if the affected navigable waters are totally within one State, provided that the plan is approved by the Chief of Engineers and the Secretary of Army (33 U.S.C. 401).

Under section 10 of the Act, the building of any wharfs, piers, jetties, and other structures is prohibited without Congressional approval, and excavation or fill within navigable waters requires the approval of the Chief of Engineers. Authority of the USACE to issue permits for the discharge of refuse matter into or affecting navigable waters under section 13 of the 1899 Act (33 U.S.C. 407; 30 Stat. 1152) was modified by title IV of P.L. 92-500, October 18, 1972, the Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. 1341-1345; 86 Stat. 877), as amended, which established the National Pollutant Discharge Elimination System Permits.

The Fish and Wildlife Coordination Act (16 U.S.C. 661-667e; 48 Stat. 401), as amended, provides authority for the U.S. Fish and Wildlife Service (USFWS) to review and comment on the effects on fish and wildlife of activities proposed to be undertaken or permitted by the USACE. USFWS concerns include contaminated sediments associated with dredge or fill projects in navigable waters.

2.7 Other Permits and Programs

Executive Order 11988 requires federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. In accomplishing this objective, "each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by flood plains in carrying out its responsibilities."

3.0 AVOIDANCE AND ENVIRONMENTAL PROTECTION MEASURES

To the greatest extent possible, the Project has been sited and designed to avoid and minimize, impacts to waters of the U.S., as well as other resources, including historic properties listed on the National Historic Register and species listed under the Endangered Species Act. This section describes the siting process for the Project, the environmental protection measures that would be implemented by the Companies, and the road standards used by the Companies to minimize impacts where waterbodies must be crossed.

3.1 Siting

The identification of an initial proposed route for the Project was constrained by the purpose and need for the project, which includes interconnecting 11 substations between Glenrock, Wyoming and the Hemingway Substation located southwest of Boise, Idaho. While some segments have one or more alternatives, each segment must begin and end at a particular substation to meet the segment's and Project's purpose and need. The route between substations was identified with the intent of avoiding as many environmental constraints as possible. Constraints were defined as resources or conditions that potentially limit transmission line routing because they are sensitive to facility construction or operation. Opportunities were defined as resources or conditions that can accommodate facility construction or operation because of their characteristics. Constraints taken into consideration during initial siting and routing included upland and wetland constraints, such as known locations of wetlands and water crossings, known concentration or nesting areas for sensitive wildlife species, known populations of rare plants, cultural resources, aesthetic resources, and recreational areas. Opportunities taken into consideration during initial siting and routing included existing transmission line and other utility rights-of-way; transportation corridors, and designated utility corridors.

This approach was implemented by completing the following tasks in coordination with the BLM and the United States Forest Service (USFS):

- Definition of the Project study area, based on the location of each substation;
- Definition of routing opportunities and constraints;

- Collection and mapping of existing information in the Project study area for each category of routing opportunity and constraint;
- Identification and evaluation of alternative substation sites, where applicable (several substations are already in place and/or are planned as part of other projects);
- Identification of initial alternate transmission line corridors for each segment and sub-segment;
- Collection of routing constraint and opportunity information and focused field reconnaissance in key selected areas;
- Completion of initial agency consultation and consultation with other stakeholders (e.g., private land owners, counties) to identify potential issues and concerns regarding transmission line routing and other Project activities;
- Coordination with agencies and groups in the development and refinement of alternative corridors in each segment;
- Support for the BLM's evaluation and comparison of alternative corridors in each segment; and
- Identification of the Companies Proposed Route.

Two general approaches were used to identify and evaluate routes and select the proposed route for each segment.

1. In proposed and established utility corridors such as the Section 368 Energy Act West-Wide Energy Corridors (WWEC, BLM et al. 2008), or BLM and USFS designated utility corridors, and/or where existing transmission lines exist, analyses were completed to characterize the resources present in the areas crossed by the corridors, and to determine if use of such corridors would result in significant environmental effects. A combination of constraint mapping, stakeholder input, and field reconnaissance was used to confirm the use of existing or planned corridors. In several cases, alternative routes were proposed because of environmental constraints within or immediately adjacent to existing or planned corridors such as greater sage-grouse leks, raptor nests, oil and gas wells, etc.

2. Where no existing or planned corridors existed, a "greenfield" siting approach was followed. In those cases, a Linear Routing Tool[2] was used to identify initial corridors for further evaluation (Idaho Power and Rocky Mountain Power, 2009). Refinements of corridors identified by the LRT were made after reviewing aerial photography and topographic maps, known constraints and opportunities, input received from stakeholders, and field reconnaissance results.

The Companies conducted extensive routing and siting and proposed a route that best avoided most constraints while meeting the Companies' purpose and need for that segment. Agencies

[2] The Geographic Information System (GIS) — based LRT determines the least-cost path between two points by first assigning, and then combining environmental acceptability values to GIS data layers within a project area.

and other groups identified concerns with the route proposed by the Companies and proposed partial or complete alternatives for that segment to the BLM. The BLM considered those alternatives and included them in the DEIS where the BLM determined that they met the BLM's purpose and need. The Companies worked closely with advocates of the alternative routes and conducted siting activities within the generally proposed alternative corridor to avoid known resource impacts where feasible, using the same tools and techniques used to determine the Proposed Route.

3.2 Environmental Protection Measures and Plans

The Companies must produce a series of plans that include site-specific EPMs and submit them to the BLM, USFS, and other appropriate agencies with regulatory authority for review and approval before receiving a Notice to Proceed (NTP) to begin construction. These plans have been presented in detailed outline form to the BLM for inclusion as part of the overall project description in the DEIS, and would be finalized when a final route is permitted and the final design is completed. In most instances these plans would either directly or indirectly provide protection to wetlands. Plans that are currently proposed and that can affect waters of the U.S. include the following:

- **Reclamation, Revegetation, and Noxious and Invasive Weed Control**. The focus of this plan is to describe the measures that would be implemented to restore temporarily impacted areas. The plan would meet the reclamation requirements specified in BLM Instructional Memorandum (IM) No. WY-2009-022 and guidance contained in Chapter 2840 of the Forest Service Manual as applicable. The plan would also incorporate by reference the SWPPP that would be developed to comply with CWA requirements and that would include measures to address erosion and sedimentation runoff that could result from ground disturbing activities.
- **Plant and Wildlife Conservation.** This plan presents avoidance and minimization measures to reduce impacts to special-status plant and wildlife species from construction activities. This plan summarizes the avoidance and minimization measures conducted during siting and routing of the Project components and outlines specific conservation measures to be implemented in the event that state or Federally listed species, BLM sensitive species, or Forest Service special-status species or their habitats are identified within or adjacent to the Project Right of Way (ROW).
- **Plan for Operations, Maintenance, and Emergency Response Activities**. This plan is intended to ensure 1) O&M activities comply with applicable state and federal laws and policies; 2) Consistency across and within federal jurisdictions; 3) The Companies are able to access the transmission line and ancillary facilities and implement the necessary O&M activities in a timely, cost effective and safe manner; 4) Impacts to the environment are avoided where practicable or are minimized; and 5) The Companies comply with the North American Electric Reliability Corporation (NERC) and Western Electric Coordinating Council (WECC) reliability and service requirements.
- **Stormwater Pollution Prevention**. SWPPPs would be prepared in accordance with Idaho and Wyoming requirements. The SWPPP would provide detailed descriptions of potential pollutants and best management practices (including installation, maintenance, and removal standards) for construction activities and long-term stabilization of disturbed areas. The SWPPP would also include elements of the SPCC discussed below.

- **Spill Prevention, Containment, and Countermeasures.** This plan would outline spill prevention practices and requirements for refueling and equipment operation near waterbodies, procedures for emergency response and incident reporting, and training requirements. The plan would also include site-specific implementation of cleanup procedures in the event of soil contamination from spills or leaks of fuels, lubricants, coolants, or solvents. SPCC plans would be prepared for construction activities and for substation operation where applicable.

3.3 Road and Waterbody Crossing Standards

The Companies plan to use existing roads and waterbody (e.g., channel, river, streambed) crossings where practicable and feasible. The Companies conducted siting and design engineering to avoid new crossings of perennial streams, rivers, or artificial water conveyances such as canals as possible. New roads have been planned to cross waterbodies only where avoidance is infeasible and largely where waterbodies are ephemeral or intermittent.

New road construction, which includes widening existing roads where necessary, would occur between existing roads to the ROW and each individual facility, including all transmission structures within the ROW. Repair or maintenance of existing roads was not included in impact calculations if the original road prism is not proposed to be enlarged. Examples of road crossing and culvert standards are found in Appendix B. The specific loads and the stream conditions would dictate the type of stream crossing.

The following waterbody crossings would be used where avoidance is not possible:

Type 1—Drive through: Crossing of a channel with only minimal vegetation removal and no cut or fill. This is typical for much of the low-precipitation sagebrush country with rolling topography and dry washes or ephemeral draws that rarely carry surface water.

Type 2—Ford: Crossing of a channel that includes grading and stabilization. Stream banks and approaches would be graded to allow vehicle passage and stabilized with rock or other erosion control devices. As necessary and where approved by the land-management agency or landowner, the stream bed would be reinforced with coarse rock material to support vehicle loads, prevent erosion, and minimize sedimentation into the waterway. The rock would be installed in the stream bed such that it would not raise the level of the streambed, thus allowing continued movement of water, fish, and debris. A ford crossing would result in an average disturbance profile of 25 feet width (along the waterbody) and 50 feet length (along the roadway) for 1,000 square feet or 0.02 acre at each crossing. Ford performance and condition would be monitored for the life of the road and maintained or repaired as necessary to protect water quality.

Type 3— Culvert: Crossing of a channel that include installation of a culvert and a stable road surface established over the culvert for vehicle passage. Culverts would be designed and installed under the guidance of a qualified engineer who, in collaboration with a hydrologist and aquatic biologist if required by the land management agency, would recommend placement locations; culvert gradient, height, and sizing; and proper construction methods. Culvert design would consider bedload, debris size, and volume. The average disturbance footprint for culvert installation is estimated to be 50 feet wide (along the waterbody) and 150 feet long (along the road) for 7,500 square feet or 0.17 acre at each crossing.

The Companies have a standard set of BMPs in their road and construction manuals (examples in Appendix B) and would use additional BMPs where required by land-managing agencies during construction. The use of equipment in streams would be minimized where feasible. All culverts would be designed and installed to meet the land-managing agency standards and culvert slope would not exceed stream gradient. Typically, culverts would be partially buried in the streambed to maintain streambed material in the culvert. Adjacent sediment control structures such as check dams, rock armoring, or riprap may be necessary to prevent erosion or sedimentation. Culverts would be inspected and maintained on a regular basis for the life of the Project (estimated at 50 years) for proper operation and to protect water quality.

For waterbodies that are primarily dry, the crossing options include Type 1 through 3, and require agency consultation for crossings on Federal lands. For 303(d) listed streams with sediment as the primary contaminant of concern, additional erosion and sediment control devices (e.g., turbidity curtains) would be used if flow is present during installation of in-stream structures and other BMPs are not effective.

4.0 PRELIMINARY ESTIMATION OF IMPACTS TO WATERS OF THE U.S.

Preliminary impacts were identified through detailed remote sensing and image interpretation with ground-truthing. More detailed mapping, field verifications, and jurisdictional determinations would be conducted on selected segments once engineering design is further developed and refined.

4.1 Methods

Waters of the U.S. were identified through multi-spectral imagery, National Wetland Inventory datasets, existing GIS hydric soil layers, and field verification. Details of this survey are presented in the *Revised Habitat Baseline Technical Report* (Tetra Tech 2010). Survey data were used to produced a baseline map of current vegetation that is consistent across ownership, can be used to route the project outside of sensitive resources to the extent practical, and provides the basis for impact assessment in the DEIS.

The results of the remote sensing effort were validated using data obtained during systematic field sampling. Before mapping commenced, biologists field-sampled vegetation communities on accessible public lands. Field plot data were not made available to the crews that conducted field mapping or remote sensing interpretation; they were used as an independent way to check the accuracy of the field and remote sensing efforts The same biologists that collected field data also participated in the mapping and quality control effort; therefore, they were familiar with the vegetation communities within the Project area.

To determine the acreage of impacts that could potentially occur to waters of the U.S., the Project's construction and operational footprints were overlain onto the wet areas that were mapped through remote sensing. Areas where the Project's construction or operational footprints were co-located with mapped waters of the U.S. were considered to be a direct impact and the acreage of impact was calculated using GIS.

4.1.1 Indicative vs. Design Engineering

Initial estimates of construction and operational footprints were determined through indicative engineering design. Indicative engineering used an initial project route and road layout that was developed based on aerial images, topographic maps, and road and environmental constraint data. As a result, they likely overestimate the impacts that would actually occur from Project construction and operation. Moreover, the majority of roads and structure locations would be adjusted following field review and an iterative process that assess potential siting constraints and opportunities. For example, Project components would be sited outside of wetlands during the final siting process whenever possible as a standard engineering practice. In addition, the impacts resulting from tower pads were estimated by applying a standard width buffer to each indicative tower location for a construction work area. During engineering design, structure locations would be refined to further avoid and minimize impacts to waters of the U.S. where feasible.

In areas where the BLM has not included an alternative to the Companies' proposed route in the DEIS, the Companies are in the process of developing an engineering design that integrates field work and avoids waters of the U.S. where feasible. To date, a final engineering design centerline has been developed for Segments 2 and 3 in Wyoming. Because the level of detail in the engineering design is greater than indicative design, impacts to waters of the U.S. are less than originally estimated. Engineering design would be developed for the remaining segments in phases and is dependent on the certainty of agency approval and the amount of access granted by private property owners for engineering field verification. Engineering design for Segments 1-4 is anticipated to be completed before the Record of Decision (ROD) is published, while detailed engineering for Segments 5-10 would occur after the ROD is published.

4.2 Impacts to Water of the U.S.

The Project comprises critical infrastructure for the Companies and the western U.S. electrical grid. Limiting the potential for, and duration of, unplanned outages, and planning for the use of live line maintenance techniques to minimize the requirement for any outages, is an important part of the design, construction, and O&M requirements for the Project. Because of the need to operate this line almost continuously and to avoid unplanned outages, permanent access to the line and structures is a critical component of the project. The Companies would use permanent fill to construct above-grade service roads in waters of the U.S. This would provide the most flexibility for construction and O&M activities and expedited access for emergency restoration throughout the year. Service and access roads account for the majority of unavoidable impacts to waters of the U.S. for this Project. Required vegetation management for the safe O&M of the line also contributes to wetland impacts.

Where avoidance through engineering design was not possible, impacts are being minimized where feasible through relocation or redesign of project features. For example, impacts have been minimized by reducing desired vegetation management areas and road width to the minimum needed for safe operation and compliance with regulatory requirements. Permanent and temporary direct and indirect impacts to waters of the U.S. that would result from construction and O&M activities are similar in nature but tend to vary in extent. Removal of vegetation and the introduction of fill material to waters of the U.S. could directly alter their ability to serve as wildlife habitat; their ability to trap sediment and nutrients; and their ability to moderate flood flow or facilitate surface water flow. This could also result in indirect impacts

such as increased water and soil temperatures and/or alteration of species composition (which can also change the function) within these areas. Any blasting that may occur within or adjacent to a waters of the U.S. could fracture the bedrock and alter the hydrology of a perched water table and potentially lead to drier conditions that impair revegetation efforts. Withdrawal of water for use during construction may temporarily impact waters of the U.S. by reducing the water input that they would normally receive.

Service road maintenance and vegetation management could result in minor 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 runoff measures such as water bars, culverts, sediment basins, or perimeter control would be installed as required to minimize erosion.

Although some Project-related disturbances to vegetation would be temporary and associated with construction activities, long-term impacts would occur in forested wetlands because of ongoing vegetation management and the time it takes for revegetation efforts to mature. 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. The Companies would not actively restore forested wetlands because of the potential for trees to interfere with the transmission line. 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 wetland type.

4.3 Alternative Road Designs in Waters of the U.S. Considered but not Proposed

The Companies have considered the following service road alternatives within waters of the U.S., but do not propose to utilize these alternatives because they do not provide safe, timely year around access to each structure site:

- At-grade roads: At-grade roads constructed with geotextiles and road materials which 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 infeasible.
- Construction timing: Construction within waters of the U.S. could be timed during dry or frozen conditions along with the use of low ground pressure tires or specialized tracked vehicles. This approach does not allow sufficient flexibility for emergency restoration and O&M as the depth of water and/or soil conditions would not allow access to the structures during certain times of the year.
- Matting materials: Mats could be temporarily installed to allow access for heavy vehicles and equipment. The mats typically come in the form of heavy timbers bolted together and spread the concentrated axle loads from equipment over a much larger surface area thereby reducing the bearing pressure on fragile soils. The effectiveness of mats decreases as standing water increases. Matting has a limited service life before replacement is required and must be stored for maintenance and emergency restoration

activities. While matting is sometimes used during construction, the Companies do not consider it a suitable alternative for emergency restoration or for periodic O&M activities.

- Ice roads: Ice roads can be constructed if suitable winter conditions are present, although there is a relatively small window of time during the year where cold enough weather is present on the line routes. Ice roads obviously would not allow the flexibility required for O&M in other seasons besides winter.
- Helicopter construction: This is commonly used in waters of the U.S.; however, the weight of the double-circuit 500kV towers preclude the use of helicopter erection. The lighter single-circuit 500kV towers would be designed such that they can be erected by helicopter if needed. The use of ground based vehicles would still be required for O&M activities (e.g., replace hardware; string and tension conductor) and would not eliminate the need for a service road to each structure. It is also unlikely that all construction activities could be conducted without the use of ground-based vehicles (e.g., transporting crews and equipment to the work site).

5.0 MITIGATION FRAMEWORK

The USACE recognizes three mechanisms for providing compensatory mitigation for unavoidable permanent impacts to waters of the U.S. Temporarily impacted areas would be restored to predisturbance conditions and are not included in the Framework. Listed in order from 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 (ILF) programs involve off-site compensation activities that are conducted by a mitigation bank 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 (USACE 2008a). 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., offsite compensatory mitigation).

Project impacts would be largely confined to the requested ROW for the transmission line and roads, occur in multiple locations, and would generally be less than 0.5 acre at each site. The Companies would evaluate if on-site or off-site mitigation is appropriate and would consider surrounding land uses, the nature and extent of the impact, and agency requirements when determining mitigation sites.

5.1 Mitigation Banks

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 (Johnson 2010; Joyner 2010). In addition, it is unlikely any approved mitigation banks would be operational within service areas appropriate for this Project on a schedule that would allow for timely Project permitting. The Companies' are not considering creating a mitigation bank as part of this Project. Therefore, mitigation banks are not considered a feasible option.

5.2 In-lieu Fee Program

The Companies are proposing to mitigate unavoidable impacts to waters of the U.S. through the use of ILF. Second in preference for meeting compensatory mitigation requirements, ILF

programs have been developed in some parts of the U.S., but few are present in the project area. There are two existing ILF programs in Idaho (Appendix C). The Companies are also considering a combination of ILF and permittee-responsible mitigation including preservation, restoration, and/or enhancement of existing wetlands and/or creation of new wetlands. As wetland impacts are further refined and conversations with the USACE continue, the Companies would determine which mitigation option(s) would be implemented. Suitable sponsors for an ILF program include national non-governmental organizations such as The Nature Conservancy, Ducks Unlimited, Trout Unlimited, or the Rocky Mountain Elk Foundation, state organizations such as the Wyoming Wildlife Federation, or local land trusts.

The ILF framework and resulting mitigation would provide mitigation at a larger scale, with a greater likelihood of long-term success, and an opportunity to provide increased functions over smaller, isolated on-site mitigation. The proposed ILF mitigation provides a more robust approach to ensure long-term success of mitigation goals, i.e., full replacement of lost wetland functions and values.

5.2.1 ILF Mitigation Parameters

Whether the Companies are able to use existing ILF programs or they must develop one or more in partnership with an organization capable of managing it, the following information would be provided for each separate ILF sponsor:

- A description of the sponsor's experience and qualifications with respect to providing compensatory mitigation;
- Potential site locations, baseline conditions at the sites, and general plans that indicate what kind of wetland compensation can be provided (*e.g.*, wetland type, restoration or other activity, proposed time line, *etc.*);
- Geographic service area;
- Accounting procedures;
- Methods for determining fees and credits including the allocation of advance credits;
- A schedule for conducting the activities that would provide compensatory mitigation or a requirement that projects would be started within a specified time after impacts occur;
- Performance standards for determining ecological success of mitigation sites;
- Reporting protocols and monitoring plans;
- Financial, technical and legal provisions for remedial actions and responsibilities (*e.g.*, contingency fund);
- Financial, technical and legal provisions for long-term management and maintenance (*e.g.*, trust);
- Provision that clearly states that the legal responsibility for ensuring mitigation terms are fully satisfied rests with the organization accepting the fee; and
- Review by the Interagency Review Team (IRT) as established by the district engineer in accordance with 40 CFR part 230, and public review and comment.

Appendix D contains proposed language for an ILF instrument.

5.3 Permittee Responsible Mitigation

The Companies may use permittee responsible mitigation by itself or in combination with an ILF program. While the USACE guidance (FR Vol. 65, No. 216; Nov 7, 2000) states a preference for on-site and in-kind mitigation, the Companies would propose mitigation that would likely

result in off-site mitigation that includes in-kind and out-of-kind activities either near the impact site or in the same watershed/HUC unit. The Companies are not likely to propose on-site mitigation because of the need to access structures and associated facilities over the life of the project. The comprehensive mitigation plan that would be developed for permittee responsible mitigation would include the following:

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.

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.

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 instruments, as well as site ownership.

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.

Mitigation Ratios—This section would describe the number of acres of mitigation wetlands to be preserved/created/enhanced based on determined mitigation ratios and total impact acres of the Project.

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; and
- A description of the length of the monitoring period and responsible party (minimum of 5 years and until success criteria or ecological performance standards are met).

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.

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.

5.3.1 Compensatory Mitigation Sub-plans

The following sub-plans would also be included as part of the Comprehensive Mitigation Plan:

1. **Work Plan—**This plan would describe the following:
    - Geographic boundaries of the mitigation area(s) (including watershed size);
    - 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 including plan-form geometry, channel form, and design discharge;
    - Soil management measures; and
    - Erosion control measures.
2. **Maintenance Plan—**This plan would include a description and schedule for the maintenance requirements to support 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 would 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.

5.4 Location of Required Mitigation and Known Mitigation Opportunities

Previous discussion with the USACE have indicated that offsite compensatory mitigation, if employed, must be located in the watershed in which the disturbance has taken place and that the watersheds must be 6th order Hydrologic Unit Code (HUC) or smaller. Figure 3 identifies the 6th order HUC boundaries crossed by the project. Table 2 lists the potential impacts from operation and maintenance in wetland and riparian areas by 6th order HUC.

Table 2. Acres of Wetland and Riparian Impacts by 6th Order HUC across the Project

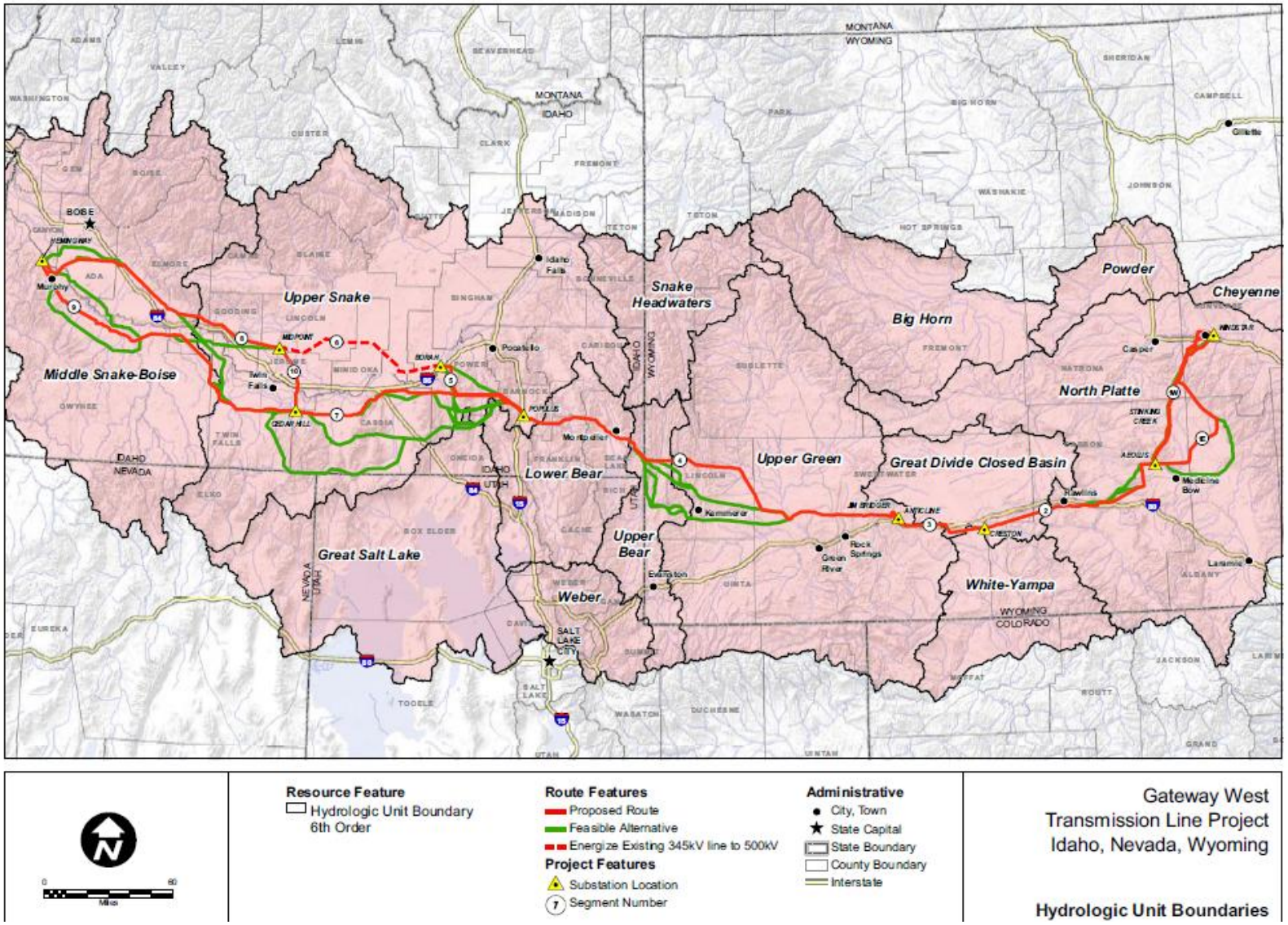
6th Order HUC Name	6th Order HUC Number	Acres of Wetland Impacts	Acres of Riparian Impacts	Total
North Platte	101800	2.66	6.02	8.68
Upper Green	140401	1.20	2.51	3.71
Great Divide Closed Basin	140402	0.30	0.76	1.06
White-Yampa	140500	0.00	0.00	0.00
Upper Bear	160101	1.95	0.08	2.03
Lower Bear	160102	6.12	2.44	8.56
Upper Snake	170402	0.93	1.03	1.96
Middle Snake-Boise	170501	0.47	0.93	1.40
Totals		13.6	13.8	27.4

Note: Acreages within the table are inclusive of unvegetated waters that are associated with wetland or riparian areas. Unvegetated waters such as intermittent drainages are not included in this table.

In the event ILF options do not meet the needs of the Companies, are not available when the Companies require them, or cannot be developed within these watersheds, the Companies would be responsible for the mitigation as described in Section 5.3. To identify land suitable for mitigation, priority would be given to sites exhibiting the following:

- Stable, predictable water table;
- Beneficial habitat features, such as, “in-kind” community design and connectivity to other protected or important habitats;
- Proximity to other wetlands;
- Existing functional features (e.g. flood detention);
- Imminent risk for destruction or degradation from development;
- Sufficient land area to provide ecologically meaningful upland buffer;
- Previously degraded wetlands; and

Figure 3. 6th Order HUCs across the Project



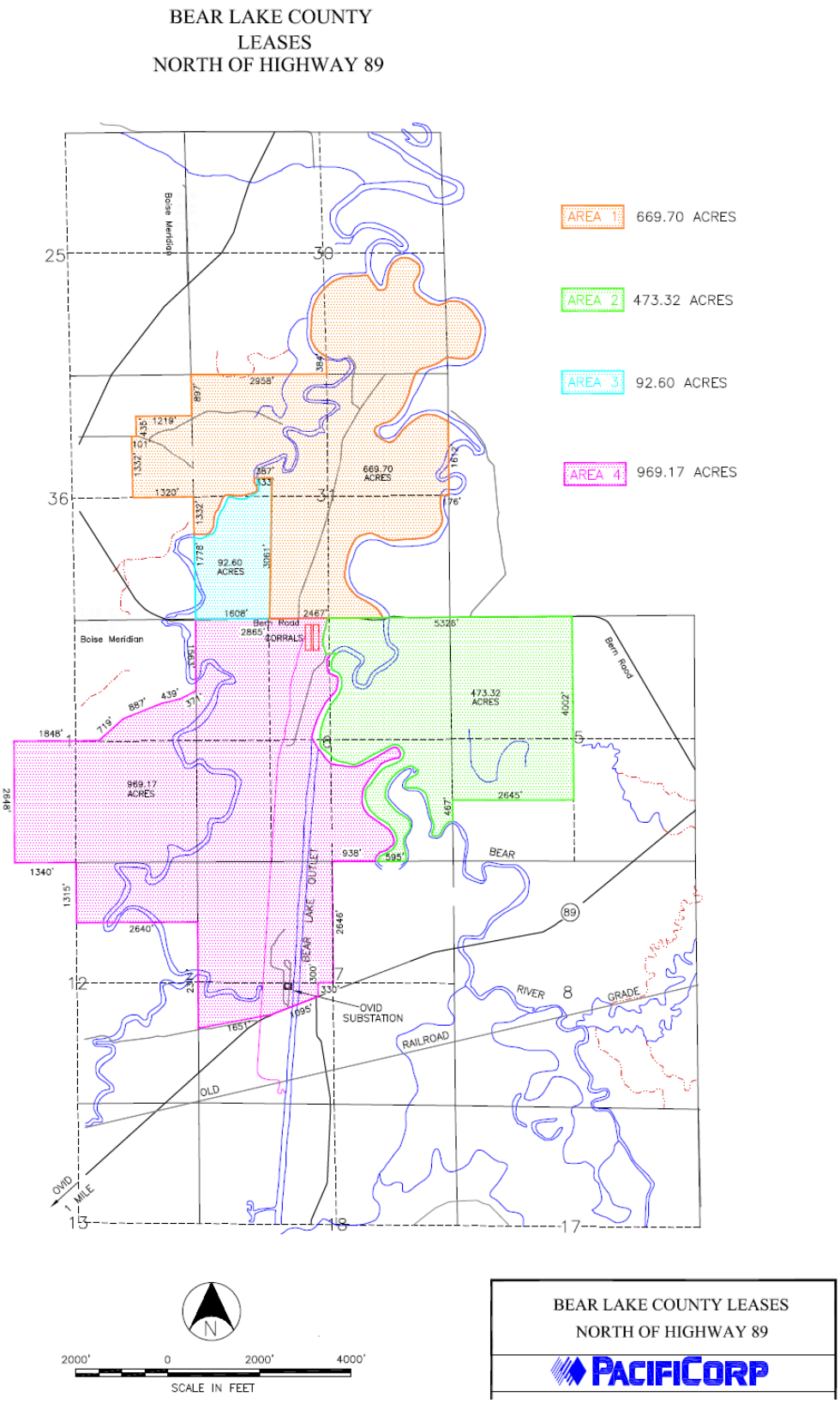
Priorities for preservation or protection of existing wetlands are as follows:

- contiguous with existing preserved or important habitat areas;
- adjacent to areas with low potential for development;
- probability for sustained ecological biodiversity value for foreseeable future (low probability for future development);
- connects two or more preserved or important habitat areas; and
- contains important wetlands—significant in maintaining water quality, stream flow and aquatic habitat in a contiguous or downstream watercourse, contains habitat, or has the potential for creation of habitat, for sensitive wildlife.

5.4.1 *Known Mitigation Opportunity*

In the upper and lower Bear 6th code HUC, Rocky Mountain Power (RMP) owns several large tracts of land within the floodplain of the Bear River (Figure 4). RMP has indicated that if the need exists, a portion of their lands could be used for mitigation. A preliminary field visit in August 2010, with the USACE, identified a location where mitigation could occur. If the Companies determine this is a viable mitigation opportunity, a comprehensive mitigation plan as outlined in Section 5.3 would be prepared. To date no other mitigation sites within the 6th order HUCs crossed by the project have been identified.

Figure 4. Bear Lake County Leases



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APPENDIX A
WATERBODIES LISTED AS IMPAIRED ALONG THE PROPOSED ROUTE

Waterbodies Listed as Impaired along the Proposed Route

Waterbody Name	Segment	Mile-post	303d_List	TMDL List (Cat4a)	TMDL Citation*
Bear River - Idaho/Wyoming border to railroad bridge (T14N, R45E, Sec. 21)	Segment 4	139.9	Sediment		ID16010102BR001_05
Sheep Creek - source to mouth	Segment 4	144.0	Sediment		ID16010102BR008_02
Sheep Creek - source to mouth	Segment 4	144.9	Sediment		ID16010102BR008_02
Bear River -railroad bridge (T14N, R45E, Sec. 21) to Alexander Reservoir	Segment 4	148.2	Sediment		ID16010201BR002_02
Bear River -railroad bridge (T14N, R45E, Sec. 21) to Alexander Reservoir	Segment 4	148.7	Sediment		ID16010201BR002_02
Bear River -railroad bridge (T14N, R45E, Sec. 21) to Alexander Reservoir	Segment 4	149.1	Sediment		ID16010201BR002_02
Bear River -railroad bridge (T14N, R45E, Sec. 21) to Alexander Reservoir	Segment 4	149.8	Sediment		ID16010201BR002_02
Bear River -railroad bridge (T14N, R45E, Sec. 21) to Alexander Reservoir	Segment 4	152.9	Sediment		ID16010201BR002_02
Swan Lake Creek Complex	Segment 4	192.9	Sediment		ID16010202BR018_02b
Marsh Creek - source to mouth	Segment 4	195.7	Temperature	Sediment	ID17040208SK006_03a
Marsh Creek - source to mouth	Segment 4	200.0	Temperature	Sediment	ID17040208SK006_03
Marsh Creek - source to mouth	Segment 4	201.2	Temperature	Sediment	ID17040208SK006_03
Marsh Creek - source to mouth	Segment 5	5.2	Temperature	Sediment	ID17040208SK006_04a
Hawkins Creek - Hawkins Reservoir Dam to mouth	Segment 5	6.5		Sediment	ID17040208SK011_02
Hawkins Creek - Hawkins Reservoir Dam to mouth	Segment 5	7.6		Sediment	ID17040208SK011_02
Hawkins Creek - Hawkins Reservoir Dam to mouth	Segment 5	8.5		Sediment	ID17040208SK011_03
Hawkins Creek - source to Hawkins Reservoir	Segment 5	12.7		Sediment	ID17040208SK013_02
Hawkins Creek - source to Hawkins Reservoir	Segment 5	13.6		Sediment	ID17040208SK013_02a
Hawkins Creek - source to Hawkins Reservoir	Segment 5	14.9		Sediment	ID17040208SK013_02
Bannock Creek - source to American Falls Reservoir	Segment 5	23.1	Sediment		ID17040206SK002_02
Bannock Creek - source to American Falls Reservoir	Segment 5	23.4	Sediment		ID17040206SK002_03
Bannock Creek - source to American Falls Reservoir	Segment 5	25.8	Sediment		ID17040206SK002_02
Bannock Creek - source to American Falls Reservoir	Segment 5	26.7	Sediment		ID17040206SK002_02
West Fork Bannock Creek - source to mouth	Segment 5	27.8	Sediment		ID17040206SK008_02
West Fork Bannock Creek - source to mouth	Segment 5	29.5	Sediment		ID17040206SK008_02
West Fork Bannock Creek - source to mouth	Segment 5	29.6	Sediment		ID17040206SK008_02
West Fork Bannock Creek - source to mouth	Segment 5	30.7	Sediment		ID17040206SK008_02
East Fork Rock Creek - source to mouth	Segment 5	33.2		Sediment	ID17040209SK010_02

Waterbody Name	Segment	Mile-post	303d_List	TMDL List (Cat4a)	TMDL Citation*
East Fork Rock Creek - source to mouth	Segment 5	35.2		Sediment	ID17040209SK010_03
East Fork Rock Creek - source to mouth	Segment 5	36.0		Sediment	ID17040209SK010_02
East Fork Rock Creek - source to mouth	Segment 5	36.8		Sediment	ID17040209SK010_02
East Fork Rock Creek - source to mouth	Segment 5	37.4		Sediment	ID17040209SK010_02
Marsh Creek - source to mouth	Segment 7	4.8	Temperature	Sediment	ID17040208SK006_04a
Hawkins Creek - Hawkins Reservoir Dam to mouth	Segment 7	6.4		Sediment	ID17040208SK011_02
Hawkins Creek - Hawkins Reservoir Dam to mouth	Segment 7	7.4		Sediment	ID17040208SK011_02
Hawkins Creek - Hawkins Reservoir Dam to mouth	Segment 7	10.5		Sediment	ID17040208SK011_02
Hawkins Creek - Hawkins Reservoir Dam to mouth	Segment 7	11.2		Sediment	ID17040208SK011_02
Hawkins Creek - source to Hawkins Reservoir	Segment 7	13.2		Sediment	ID17040208SK013_02
Hawkins Creek - source to Hawkins Reservoir	Segment 7	13.5		Sediment	ID17040208SK013_02
Hawkins Creek - source to Hawkins Reservoir	Segment 7	13.9		Sediment	ID17040208SK013_02b
Hawkins Creek - source to Hawkins Reservoir	Segment 7	16.8		Sediment	ID17040208SK013_02b
Hawkins Creek - source to Hawkins Reservoir	Segment 7	17.4		Sediment	ID17040208SK013_02b
Bannock Creek - source to American Falls Reservoir	Segment 7	21.2	Sediment		ID17040206SK002_02
Bannock Creek - source to American Falls Reservoir	Segment 7	22.3	Sediment		ID17040206SK002_02
Bannock Creek - source to American Falls Reservoir	Segment 7	23.1	Sediment		ID17040206SK002_02
Bannock Creek - source to American Falls Reservoir	Segment 7	23.5	Sediment		ID17040206SK002_03
Bannock Creek - source to American Falls Reservoir	Segment 7	23.6	Sediment		ID17040206SK002_02
Bannock Creek - source to American Falls Reservoir	Segment 7	26.4	Sediment		ID17040206SK002_02
Bannock Creek - source to American Falls Reservoir	Segment 7	27.6	Sediment		ID17040206SK002_02
West Fork Bannock Creek - source to mouth	Segment 7	30.6	Sediment		ID17040206SK008_02
East Fork Rock Creek - source to mouth	Segment 7	33.5		Sediment	ID17040209SK010_02
East Fork Rock Creek - source to mouth	Segment 7	35.4		Sediment	ID17040209SK010_02
East Fork Rock Creek - source to mouth	Segment 7	35.7		Sediment	ID17040209SK010_02
East Fork Rock Creek - source to mouth	Segment 7	37.4		Sediment	ID17040209SK010_02
South Fork Rock Creek - source to mouth	Segment 7	40.8		Sediment	ID17040209SK009_04
Raft River - Heglar Canyon Creek to mouth	Segment 7	59.4		Sediment	ID17040210SK001_05
Unclassified Waters in CU 17040212	Segment 7	110.3		Sediment	ID17040212SK000_02

Waterbody Name	Segment	Mile-post	303d_List	TMDL List (Cat4a)	TMDL Citation*
Unclassified Waters in CU 17040212	Segment 7	111.0		Sediment	ID17040212SK000_02
Unclassified Waters in CU 17040212	Segment 7	111.3		Sediment	ID17040212SK000_02
Dry Creek - source to mouth	Segment 7	114.2	Temperature	Sediment	ID17040212SK022_03
Malad River - confluence of Black Canyon Creek and Big Wood River to mouth	Segment 8	19.2		Sediment	ID17040219SK001_06
Malad River - confluence of Black Canyon Creek and Big Wood River to mouth	Segment 8	19.4		Sediment	ID17040219SK001_06
Unclassified Waters in CU 17040212	Segment 8	29.6		Sediment	ID17040212SK000_02
Clover Creek - Pioneer Reservoir Dam to mouth	Segment 8	39.0	Temperature	Sediment	ID17040212SK034_04
Little Canyon Creek - source to mouth	Segment 8	47.7		Sediment	ID17050101SW012_03a
Little Canyon Creek - source to mouth	Segment 8	48.2		Sediment	ID17050101SW012_02
Cold Springs Creek - source to mouth	Segment 8	52.9		Sediment	ID17050101SW014_03
Indian Creek - source to Sugar Ave.(T03N, R02W, Sec. 15)	Segment 8	90.1	Sediment		ID17050114SW003_02
Indian Creek - source to Sugar Ave.(T03N, R02W, Sec. 15)	Segment 8	91.2	Sediment		ID17050114SW003_02
Indian Creek - source to Sugar Ave.(T03N, R02W, Sec. 15)	Segment 8	92.0	Sediment		ID17050114SW003_02
Indian Creek - source to Sugar Ave.(T03N, R02W, Sec. 15)	Segment 8	92.8	Sediment		ID17050114SW003_02
Indian Creek - source to Sugar Ave.(T03N, R02W, Sec. 15)	Segment 8	93.5	Sediment/ Temperature		ID17050114SW003_03
Indian Creek - source to Sugar Ave.(T03N, R02W, Sec. 15)	Segment 8	93.8	Sediment		ID17050114SW003_02
Indian Creek - source to Sugar Ave.(T03N, R02W, Sec. 15)	Segment 8	95.0	Sediment		ID17050114SW003_02
Indian Creek - source to Sugar Ave.(T03N, R02W, Sec. 15)	Segment 8	95.4	Sediment		ID17050114SW003_02
Indian Creek - source to Sugar Ave.(T03N, R02W, Sec. 15)	Segment 8	98.8	Sediment		ID17050114SW003_02
Indian Creek - source to Sugar Ave.(T03N, R02W, Sec. 15)	Segment 8	99.6	Sediment		ID17050114SW003_02
Indian Creek - source to Sugar Ave.(T03N, R02W, Sec. 15)	Segment 8	100.9	Sediment		ID17050114SW003_02
Indian Creek - source to Sugar Ave.(T03N, R02W, Sec. 15)	Segment 8	101.0	Sediment		ID17050114SW003_02
Indian Creek - source to Sugar Ave.(T03N, R02W, Sec. 15)	Segment 8	101.1	Sediment		ID17050114SW003_02
Indian Creek - source to Sugar Ave.(T03N, R02W, Sec. 15)	Segment 8	101.7	Sediment		ID17050114SW003_02
Indian Creek - source to Sugar Ave.(T03N, R02W, Sec. 15)	Segment 8	102.9	Sediment/ Temperature		ID17050114SW003_03
Indian Creek - source to Sugar Ave.(T03N, R02W, Sec. 15)	Segment 8	103.4	Sediment		ID17050114SW003_02
Indian Creek - source to Sugar Ave.(T03N, R02W, Sec. 15)	Segment 8	104.5	Sediment		ID17050114SW003_02

Waterbody Name	Segment	Mile-post	303d_List	TMDL List (Cat4a)	TMDL Citation*
Indian Creek - source to Sugar Ave.(T03N, R02W, Sec. 15)	Segment 8	105.6	Sediment		ID17050114SW003_02
Indian Creek - source to Sugar Ave.(T03N, R02W, Sec. 15)	Segment 8	106.3	Sediment		ID17050114SW003_02
Indian Creek - source to Sugar Ave.(T03N, R02W, Sec. 15)	Segment 8	107.1	Sediment		ID17050114SW003_02
Snake River - C.J. Strike Dam to river mile 425 (T02N, R04W, Sec. 02)	Segment 8	118.0	Temperature		ID17050103SW006_07b
Rock Creek - Fifth Fork Rock Creek to river mile 25 (T11S, R18E, Sec. 36)	Segment 9	2.3		Sediment	ID17040212SK016_04
McMullen Creek - source to mouth	Segment 9	3.8	Temperature	Sediment	ID17040212SK015_02
McMullen Creek - source to mouth	Segment 9	4.3	Temperature	Sediment	ID17040212SK015_02
McMullen Creek - source to mouth	Segment 9	5.5	Temperature	Sediment	ID17040212SK015_02
McMullen Creek - source to mouth	Segment 9	6.0	Temperature	Sediment	ID17040212SK015_02
McMullen Creek - source to mouth	Segment 9	6.1	Temperature	Sediment	ID17040212SK015_03
Cottonwood Creek - source to mouth	Segment 9	8.9		Sediment	ID17040212SK014_04
Cottonwood Creek - source to mouth	Segment 9	9.0		Sediment	ID17040212SK014_04
Salmon Falls Creek - Salmon Falls Creek Dam to Devil Creek	Segment 9	32.5		Temperature	ID17040213SK003_06
Devil Creek - source to mouth	Segment 9	37.2		Temperature	ID17040213SK002_04
Deadman Creek - source to mouth	Segment 9	48.5	Sediment		ID17050101SW008_02
Deadman Creek - source to mouth	Segment 9	49.0	Sediment		ID17050101SW008_02
Deadman Creek - source to mouth	Segment 9	49.5	Sediment		ID17050101SW008_02
Deadman Creek - source to mouth	Segment 9	51.4	Sediment		ID17050101SW008_03
Deadman Creek - source to mouth	Segment 9	51.7	Sediment		ID17050101SW008_02
Deadman Creek - source to mouth	Segment 9	53.1	Sediment		ID17050101SW008_02
Deadman Creek - source to mouth	Segment 9	61.3	Sediment		ID17050101SW008_02
Deadman Creek - source to mouth	Segment 9	62.6	Sediment		ID17050101SW008_02
Deadman Creek - source to mouth	Segment 9	72.2	Sediment		ID17050101SW008_02
Deadman Creek - source to mouth	Segment 9	76.5	Sediment		ID17050101SW008_03
Sailor Creek - source to mouth	Segment 9	82.1	Sediment		ID17050101SW006_04
Sailor Creek - source to mouth	Segment 9	82.7	Sediment		ID17050101SW006_02
Browns Creek - source to mouth	Segment 9	87.6	Sediment		ID17050101SW003_04
Sugar Valley Creek - source to mouth	Segment 9	104.5		Sediment	ID17050102SW008_04
Jacks Creek - confluence of Little and Big Jacks Creeks to C.J. Strike Reservoir	Segment 9	104.8	Temperature	Sediment	ID17050102SW002_05

Waterbody Name	Segment	Mile-post	303d_List	TMDL List (Cat4a)	TMDL Citation*
Birch Creek - source to mouth	Segment 9	126.8	Sediment		ID17050103SW021_03
Castle Creek - source to mouth	Segment 9	131.6		Sediment/ Temperature	ID17050103SW014_04
Sinker Creek - source to mouth	Segment 9	143.8		Sediment/ Temperature	ID17050103SW012_04
Snake River - Milner Dam to Twin Falls	Segment 10	23.5	Temperature	Sediment	ID17040212SK020_07
Unclassified Waters in CU 17040212	Segment 10	26.9		Sediment	ID17040212SK000_02
Unclassified Waters in CU 17040212	Segment 10	27.0		Sediment	ID17040212SK000_02
Unclassified Waters in CU 17040212	Segment 10	27.5		Sediment	ID17040212SK000_02
Unclassified Waters in CU 17040212	Segment 10	28.0		Sediment	ID17040212SK000_02
Unclassified Waters in CU 17040212	Segment 10	28.3		Sediment	ID17040212SK000_02
Unclassified Waters in CU 17040212	Segment 10	29.0		Sediment	ID17040212SK000_02
Unclassified Waters in CU 17040212	Segment 10	29.6		Sediment	ID17040212SK000_02

*From Idaho Department of Environmental Quality Working Principles and Policies for the 2008 Integrated (303[d]/305[b]) Report

Category 1 waters are attaining water quality standards and no uses are threatened.
Category 2 waters are attaining some designated uses, and no uses are threatened, but there is insufficient (or no) data and information available to determine if the remaining uses are attained or threatened.
Category 3 waters have insufficient data (or no data) and information to enable determining if designated uses are being attained.
Category 4 waters do not support (or threaten) a standard for one or more designated uses, but they do not require the development of a Total Maximum Daily Load (TMDL). There are three subcategories under Category 4:

- *Category 4a* waters have had a TMDL completed and approved by EPA.
- *Category 4b* waters have had pollution control requirements placed on them other than a TMDL—and these waters are reasonably expected to attain the water quality standard in the near future.
- *Category 4c* waters are those waters for which nonsupport of the water quality standard is not caused by a pollutant.

Category 5 waters do not meet (or threaten) applicable water quality standards for one or more designated uses by one or more pollutants. Category 5 water bodies make up the 303(d) list of impaired waters.

NOTE: No impaired waterbodies occur within the project in Wyoming.

APPENDIX B
ROAD AND CULVERT CROSSING EXAMPLES

Roads—Construction

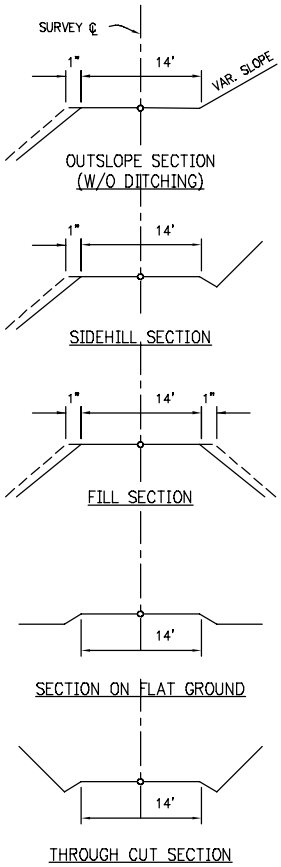
A. Scope

This standard provides information about constructing transmission line access. All road construction/improvements, fords, structure/equipment landings, and lay-down yards shall be held to a minimum. On level terrain, road construction may only require back-dragging a blade to remove brush to facilitate construction. In undulating or mountainous terrain the following standards shall apply.

B. Index

The index below provides a quick reference to detailed figures contained in this standard for road construction with varying slopes and conditions.

Referenced Road Cross Section	ACCESS ROAD SECTION
Figure 2	OUTSLOPE SECTION (W/O DITCHING)
Figure 3 Figure 4 Figure 5	SIDEHILL SECTION
Figure 2	FILL SECTION
Figure 2	SECTION ON FLAT GROUND
Figure 2	THROUGH CUT SECTION



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C. Planning

Before construction can take place. the road system must be planned and located properly. Poor planning or road location is associated with the following most common causes of road failure (Furniss et al. 1991):

- Improper placement and construction of road fills.
- Insufficient culvert sizes.
- Very steep road grades.
- Improper placement or sidecast of excess materials.
- Removal of slope support by undercutting.
- Altering drainage by interception and concentration of surface and subsurface flows.

A plan showing existing and new road locations shall be developed and shall be shown on the company's access road charts, plan maps, and transportation plan map. Road locations shall be marked on the ground by survey stakes and blue-and-white, striped flagging. GPS coordinates shall be obtained to define the road center–line. These coordinates shall be used to create the transportation plan map. Road information shall also be placed on transmission line plan maps.

In the event of conflict between the drawings and the staked locations, the latter shall take precedence and transportation plan maps and the transmission line plan maps shall be revised accordingly. Any culverts and gates listed in access road charts are required. Fords, drainage improvements, rip-rap fills and crushed rock requirements listed in the access road charts are anticipated; however, requirements will be determined based on actual site conditions encountered. If changes are made in the field, the maps shall be revised to show these changes.

Because roads are long-term features, their location must be carefully chosen to provide safe access, avoid long-term maintenance problems, reduce potential for degrading water quality, and minimize costs over the short and long term. For more information see the references in Section H.

D. Road Construction

Roads shall be constructed in a manner that will support equipment for construction of the transmission line and to provide access roads for line inspection and maintenance equipment after the line has been constructed.

All construction access roads on federally managed public lands are subject to approval prior to construction. Other federal, state, and local landowners may require approvals before road construction commences on their property. Where side slopes exceed 60 percent, a full bench cut will be reburied. No side-casting of material will be allowed in these areas; end-haul of material will be required to a designated location approved by the federal agency or other property owner. Close coordination with the federal agency will be required.

The detail drawings provided in this standard for completing cuts and fills, providing drainage, and installing culverts are furnished as guidelines for the road construction. Actual road construction cut slopes, fill slopes, drainage requirements, rip-rap, and

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crushed rock needs will be determined during construction based on site conditions. Cut and fill quantities shall balance when possible, reducing the material removed or brought in for road completion.

During road construction, consideration shall be given to restoration required after construction completion, including re-vegetation, rock cover, and other drainage and erosion control factors. Clearing and grading shall be minimized to reduce the restoration requirements for disturbed areas. The visual impact of roads on the surrounding areas shall be considered at all times during construction.

Crushed rock shall be sound, hard, durable, angular, or sub-angular rock, suitable for road base courses. Crushed rock shall be well graded 2″ to 1/4″ size (3″ to minus-size skip-graded is a minimum acceptable substitute).

Rip Rap shall be sound, hard, durable, rock ranging in size from 2″ to 8″ as specified on drawings and as required by conditions.

Any improvements made, including spur roads, fords, bridges, equipment landings and lay-down areas, shall be held to a minimum. Following completion of the work, the removal of these improvements shall be at the discretion of company or its representative.

Roads shall be sufficiently wide, but not less than 14′ in width. The construction shall provide bench cuts, grading, filling, compaction, and ditches necessary to accommodate heavy construction equipment and other heavily loaded vehicles. Roads shall be installed in accordance with the figures in this standard.

All roads shall be constructed with a smooth, uniform surface and shall be outsloped where practical to provide drainage and minimum erosion. Avoid outsloped roads where they will direct runoff onto erodible fill, embankments, or where they would cause off-camber curves. Where outsloping is not practical, sufficient water dips, water bars, or ditching, shall be installed as shown in the Section E of this standard. See standards TA 503, *Roads—Water Bars and Water Dips* and TA 504, *Roads—Culvert Installation* for further detail on proper drainage.

Outsloping a road means building the road surface so that it is tilted outward 2-3 percent so water can run off the road surface (see Figure 1). Outsloping works well under the right conditions. The following conditions are favorable for use of outsloped roads with no ditch:

- Short back slopes.
- Terrain slope less than 20 percent.
- Road grades steeper than 3 percent.
- Seasonal road use.
- Light traffic.
- Fast re-vegetation of cut and fill slopes.

Outslopes become a problem if roads are not maintained when ruts begin to form. The ruts will then act as channels.

The following conditions are unfavorable for outsloping:

- Long back slopes.

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- Terrain steeper than 20 percent.
- Steep, continuous road grade.
- Where ruts occur and allow water to concentrate and run along the road.
- Where winter hauling is required.

To minimize rutting and erosion of the right-of-way, road construction shall be completed during predominantly dry conditions. Fills, which will essentially consist of native soils, shall not be made when the moisture content of the soils will not permit adequate compaction.

As a minimum level of compaction, common fill shall be placed in 12″-thick, loose lifts and each lift compacted by walking or tracking in with a heavy dozer or rubber-tired (pneumatic) equipment. Each lift shall be compacted by at least four passes with the equipment.

In areas of dense vegetation, the surface organic material shall be stripped from the ground within the roadway and cut and fill areas. Stripping to a maximum depth of 6″ will be adequate unless otherwise directed by the company or its representative. Stripped and disturbed areas shall be compacted as specified above or as shown in the drawings or access road charts.

Personnel constructing the access road system shall be aware of the definition of a wetland such that potential wetlands may be identified before work is begun. In some cases where wetlands have been identified, road construction personnel shall comply with requirements as directed by the company or its representative.

Ditches, installed culverts, and/or installed surface drains to drain wet areas resulting from springs, seeps, or poor surface drainage may be required to construct the road. Drainage ditches shall be shallow, not to exceed 18″ in depth. The ditch bottom shall have a width of approximately 1′ and side slopes shall not exceed 1.5 to 1 (see Figure 5).

All earthwork and grading, cut and fill slopes, and other disturbed areas shall be re-vegetated with seed. Unless otherwise specified, the seed mix shall consist of 45 percent rye grass, 45 percent orchard or fescue grass, and 10 percent clover. The seed shall be applied at a minimum of 60 pounds per acre. At locations where the ground slope is greater than 10 percent, the seeds shall be covered with straw- or wood-fiber mulch applied at a rate of one ton of mulch per acre. The seed shall be spread in early fall when weather permits.

All phases of operation, including the construction of truck and tractor roads, shall be conducted to minimize as much as practical the damage to the soil and to prevent gullies and creation of other conditions conducive to soil erosion. Repair of all erosion damage shall be accomplished as soon as it occurs to prevent further loss of material into existing drainages. Cut slopes shall be stabilized. Care shall be taken to avoid creation of wet land conditions.

Crew movement on the right-of-way, including access routes, shall be limited so as to minimize damage to land or property. Crews shall endeavor to avoid marring the lands. Ruts and scars shall be obliterated, damage to ditches, terraces, roads and other features of the land shall be corrected, and the disturbed land beyond the access roads and structure landings shall be restored, as nearly as practical, to its original condition before final acceptance of the work.

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Erosion control measures shall be installed to minimize the transport of eroded sediments to streams and other waterways. Erosion control measures may include, but are not necessarily limited to, straw bales and silt fences.

E. Road Cross Sections

This section provides road cross sections, including required dimensions, cleared right-of-way width, and other information. See general road construction notes in Section G and references in Section H.

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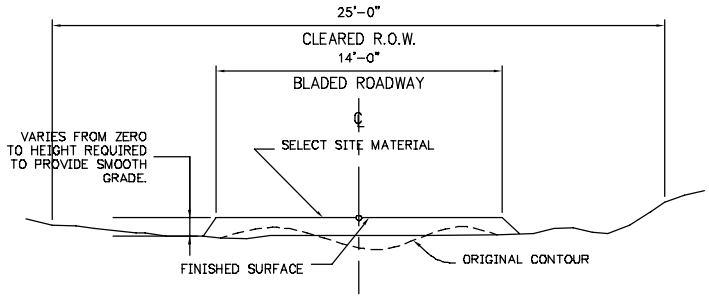
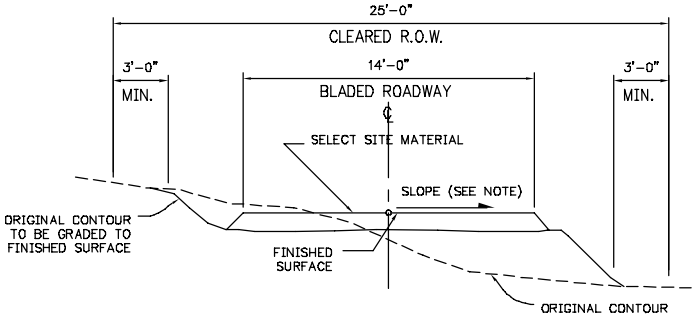
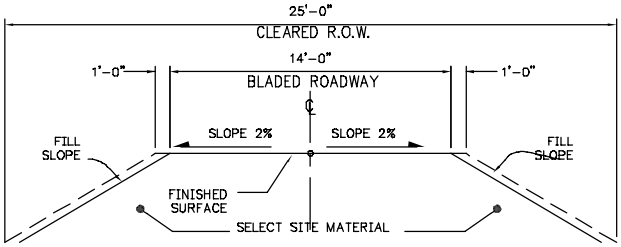


TYPICAL SECTION ON FLAT GROUND

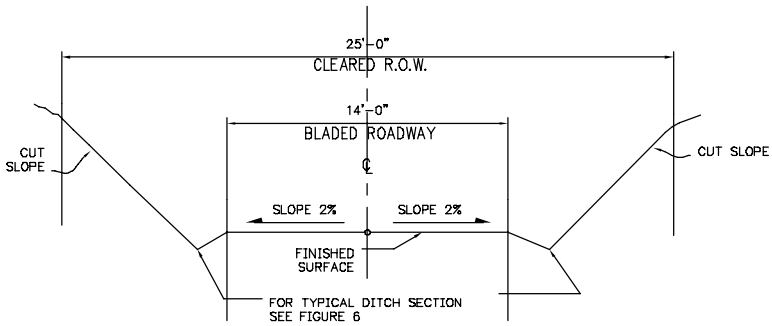


NOTE:
PROVIDE "OUTSLOPED" ROAD CROSS-SECTION, BY GRADING ROADS TO SLOPE IN THE SAME DIRECTION AS THE SURROUNDING TOPOGRAPHY. SO THAT THE UPHILL EDGE OF THE ROAD IS HIGHER THAN THE DOWNHILL EDGE. BESIDES ALLOWING RUNOFF TO EXIT THE ROADWAY IN AS SHORT A DISTANCE AS POSSIBLE. THIS ELIMINATES THE NEED FOR ROADSIDE DITCHES. PROVIDE A MINIMUM 2% OUTSLOPE ON ROADS WITH GRADES AS STEEP AS 15% ON STEEPER ROADS. PROVIDE 4% OUTSLOPE. AVOID OUTSLOPED ROADS WHERE THEY WOULD DIRECT RUNOFF ONTO ERODIBLE FILL, EMBANKMENTS OR WHERE THEY WOULD CAUSE OFF-CAMBER CURVES.

TYPICAL "OUTSLOPE" SECTION



TYPICAL FILL SECTION



TYPICAL THROUGH CUT SECTION

Figure 1—Typical Road Sections for Different Terrains

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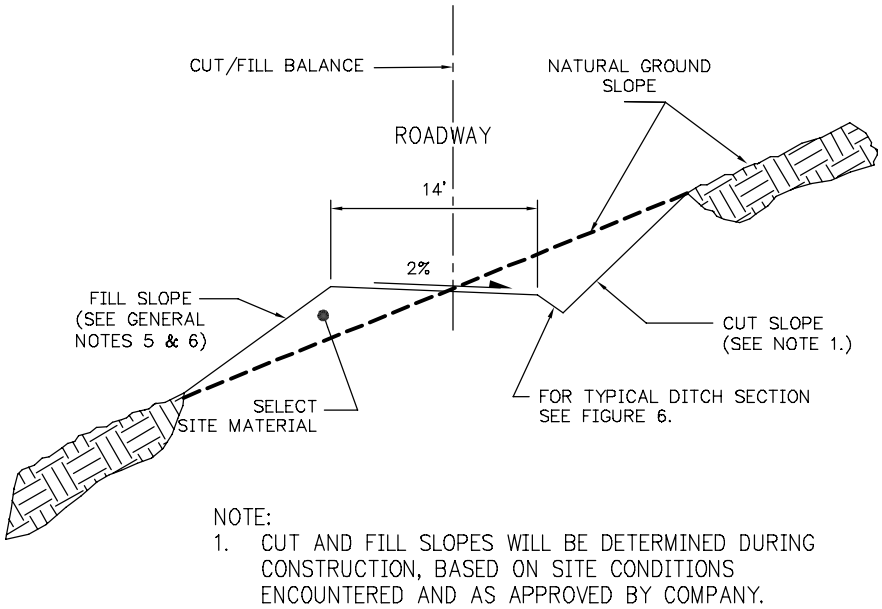

Figure 2—Typical Cut and Fill Insloped Road Section for Natural Side Slopes Less Than 30 Percent (15□)

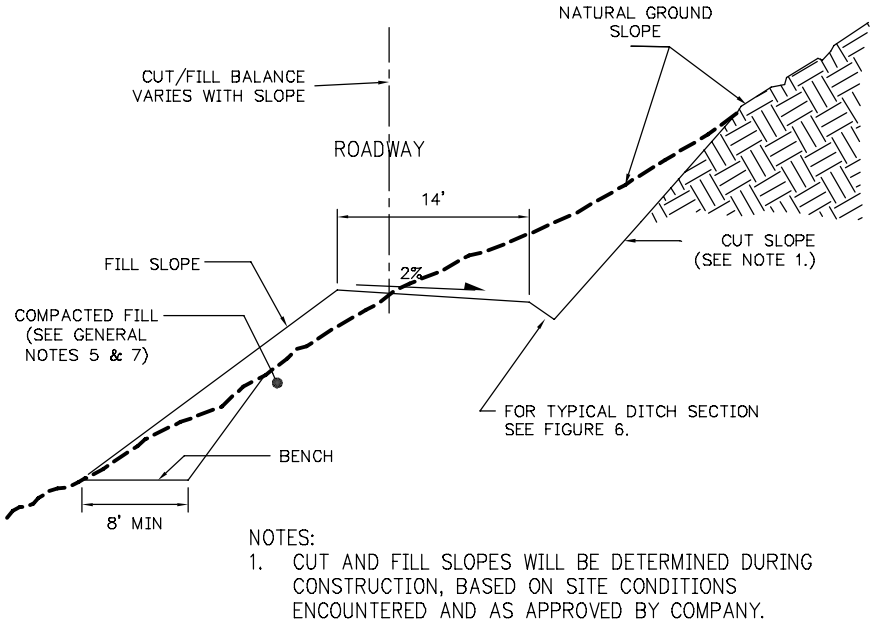

Figure 3—Typical Cut and Fill Insloped Road Section for Natural Side Slopes Greater Than 30 Percent (15□) and Less Than 60 Percent (30□).

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Engineer (C. Wright): CLW
Standards Manager (G. Lyons): GS

Roads—Construction

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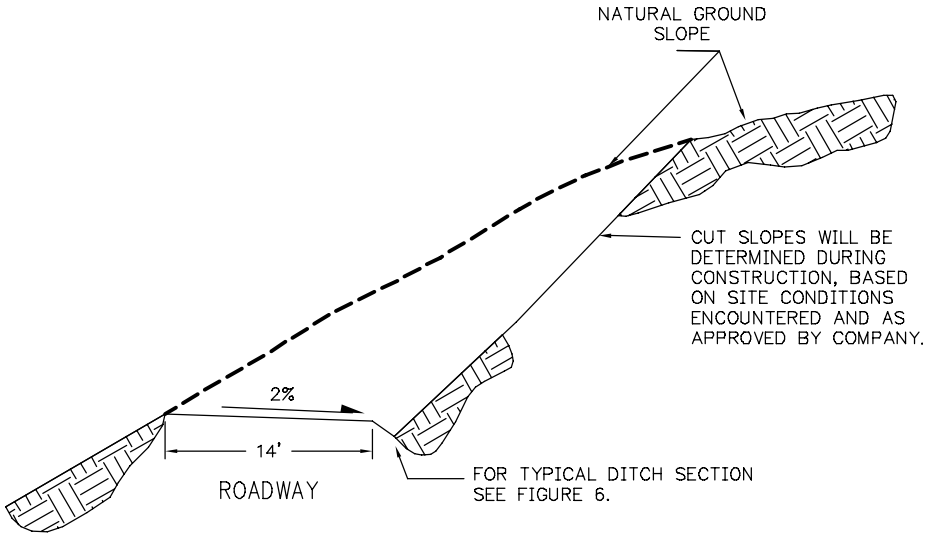

Figure 4—Typical Cut and Fill Section
for Natural Side Slopes Greater than 60 Percent (30□).

F. Typical Ditch Section

Typical ditch construction is depicted in Figure 6. Many of the road cross sections shown above use this ditch construction.

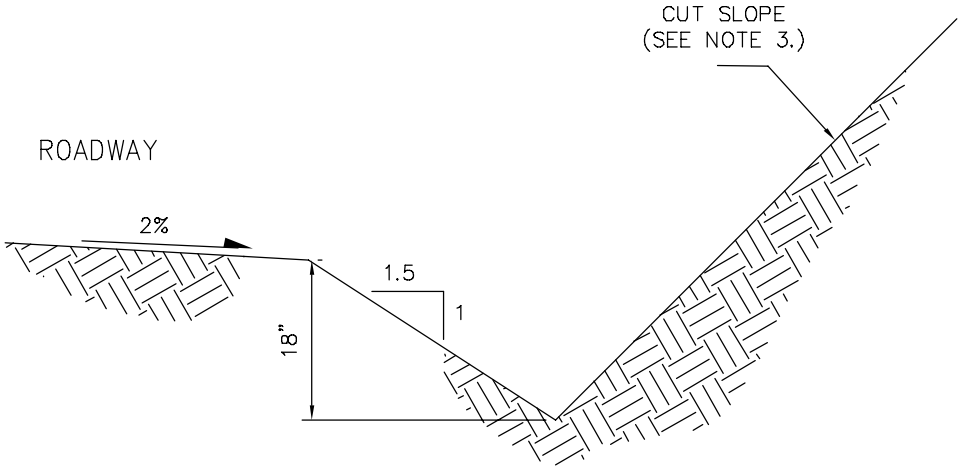

Figure 5—Ditch Section

Notes:

1. Slope the ditch so that it will drain; ditch shall have a minimum slope of 1 percent and not to exceed 3 percent.
2. Remove all soil, rock, and other material loosened by grading from ditch.
3. Cut slopes will be determined during construction based on site conditions and as approved by the company representative.

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G. General Road Construction Notes

1. Roads shall follow natural contours as much as practical.
2. Maximum grade for roads shall be 10 percent. Grades up to 20 percent will be allowed for a distance of 1000 feet where unavoidable and approved by the company.
3. Radius of curves shall be 200 feet, with a minimum of 80 feet when approved by company. When curves are less than 200 feet, roadbed shall be widened as shown in Table 1.
4. Cut and fill slopes will be determined during construction based on site conditions encountered and as approved by the company.
5. Unless specified otherwise by the company, fill material shall consist of site material excavated from RG-1 cuts. Fill material shall have a maximum particle size of 12″.
6. Fills placed on side slopes of 30 percent or less shall be placed in nominal 9″ lifts and compacted by walking in with at least four passes of earthwork equipment.
7. Fills placed on side slopes greater than 30 percent shall be placed in nominal 12″-thick lifts and compacted to at least 90 percent of the maximum dry density as determined by the ASTM D 696 method of compaction.
8. Allow 1′ additional road width on fill slopes for sloughing. When fills are over 6′ high at shoulder, allow 2′ additional road width.
9. Road construction across wetland areas may require placement of fragmented 6″ minus rock. Rock shall be placed in 8″-thick lifts and compacted by a heavy dozer or vibratory roller until well keyed. RB-(1) rock will be provided and installed by the contractor. Proper construction shall be use in wetlands so conditions as shown in Figure 7 do not develop.
10. Geotextile fabric material shall consist of MIRAF1212 OHP or equivalent, as approved by the company.

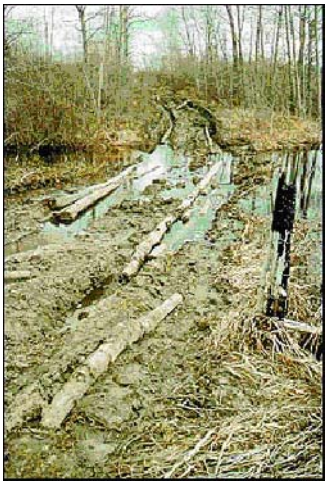

Figure 6—Poor Road Construction in Wetland Area

Table 1—Road Width for Different Road Curves

Curve Radius (feet)	Roadbed Width (feet)
200 or >	14
150 to 200	16
100 to 150	18
80 to 100	20

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H. References

1. *Handbook for Forest and Ranch Roads*, William E. Weaver, PHD. and Danny K. Hagans, 1994.

2 *A Landowner's Guide to Building Forest Access Roads,* United States Department of Agriculture, Forest Service, Northeastern Area State and Private Forestry, July 1998.

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Roads—Water Bars and Water Dips

A. Scope

This standard describes drainage methods, including water bars, water dips, ditches, and outsloping, which can be used where intermittent or permanent streams cross roadways. Depending on the method used, drainage structures should be installed during or after basic road construction. For information on ditches and culverts see TA 504, *Roads—Culvert Installation*.

B. Water Bars and Dips

Water bars are narrow structures which can be constructed at various depths depending on the need. Deep bars are generally used on roads closed to vehicle traffic. Figure 1 shows a typical shallow water bar constructed across a road.

Figure 1—Water Bar

Water bars can be constructed with hand tools, but bulldozers are most commonly used. It is best to start at the end of the road and work outward so the bars are not damaged with frequent crossing by heavy machinery.

Water bars should be installed at an approximate 30° angle downslope. Figure 2 shows dimensions for construction of water bars and water dips with and without drainage ditches to be used on access and right-of-way roads. The outflow end of the water bar should prevent water from accumulating and should not flow directly into a stream. This will allow sediment to settle out of the water, preventing erosion. As a supplement to water bars on closed roads, logging slash can be lopped and scattered, grass can be planted, or both. Table 1 shows recommended spacing between water bars for various road grades.

Table 1—Distance Needed Between Water Bars

Road grade (percent)	Distance (feet)
2	250
5	135
10	80
15	60
20	45
25	40
30	35

Source: Kochenderfer 1970, p. 28

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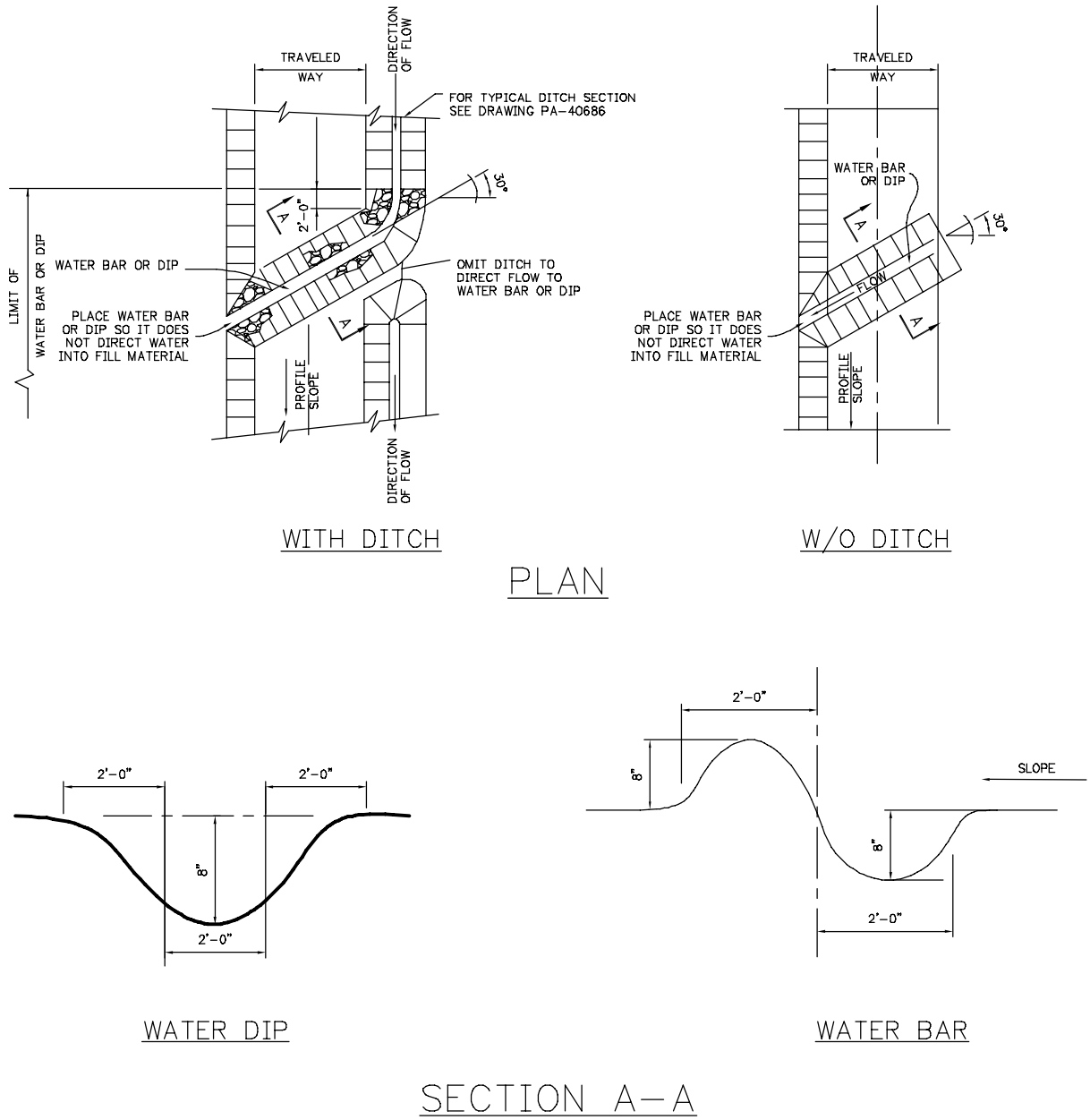

Figure 2—Water Bar and Dip Construction Plan and Profile

C. Broad-Based Drainage Dips

Broad-based drainage dips are easily maintained and do not increase wear on vehicles or reduce hauling speed when properly installed. Because of construction characteristics, these dips should not be used on roads graded in excess of 10 percent. (See Figure 3.)

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Table 2—Minimum Distance Needed Between Water Bars

Road grade (percent)	Distance (feet)
2 – 4	300 – 200
5 – 7	180 – 160
8 – 10	150 – 140

Source: Kochenderfer 1970, p. 19, 25

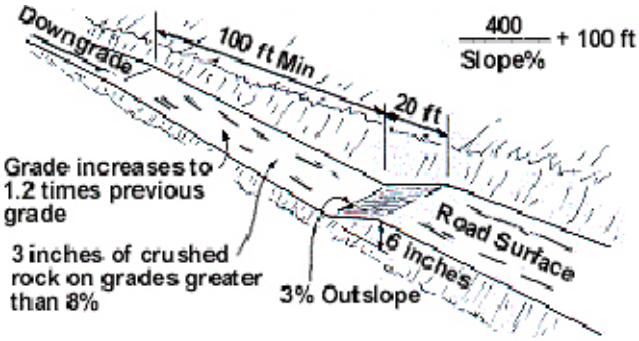

Figure 3—Typical Spacing Between Drainage Dips

As with a water bar, care should be taken to ensure adequate drainage at the outflow of a dip. Water dips should never be designed to discharge directly into a stream. The discharge area should be protected with stone, grass, sod, heavy litter cover, brush, logs, or other natural material which will reduce the velocity of the water. Natural litter may be adequate in many cases if the terrain is not too steep.

Table 2 presents the spacing of broad-based dips as computed with the formula shown in the figure.

Close attention should be paid to construction of broad-based dips, as they are often made too small. Figure 3 shows minimum dimensions. Dips should be armored with crushed rock or gravel. Figure 4 shows a practical example of how a broad-based drainage dip can be used.

Figure 4—Drainage Dip

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Roads—Culvert Installation

A. Scope

This standard provides information about the construction of surface drainage and the installation of culverts. It is impossible to over-emphasize the importance of drainage in maintaining stable roads and protecting water quality. Roads should be designed and constructed to cause minimal disruption of natural drainage patterns. Provisions for two components of road drainage should be included in every road project: 1) road-surface drainage (including drainage which *originates* from the cutbank, road surface, and fill-slope), and 2) hill-slope drainage (including drainage from large springs, gullies, and streams which *cross* the road alignment).

B. Determining Culvert Diameter

Use pipe no smaller than 24″ in diameter. A drainage table provides help in determining the proper size culvert (see Table 1 and Table 2). The following example illustrates how to choose pipe size (Table 1) using the drainage table (Table 2). To use this method, you will need information on slope, soils, and cover.

Example: The area to be drained is 70 acres on steep slopes with heavy soils and moderate cover. In Table 2 under C opposite 70, find area required: 10.3 square feet. Under the area table for round pipe (Table 1), the pipe size should fall between 42″ and 48″. Use 42″ pipe with an area of 9.6 square feet. If a wood or other type of box culvert is planned, one 3′ by 3.5′ pipe would furnish the required area.

Table 1—Size of Round Pipe Needed for Area of Waterway

Area (square feet)	Pipe diameter (inches)
1.25	24
1.80	24
3.10	24
4.90	30
7.10	36
9.60	42
12.60	48
15.90	54
19.60	60
23.80	66
28.30	72
33.20	78
38.50	84
44.20	90

Source: Figure 45, Haussman and Pruett 1978, p. 36

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Table 2—Drainage Table Based on Talbot's Formula for Rainfall
1-1/4″ per Hour

Acres	Impervious 100% runoff †C=1.00	Steep slopes Heavy soils Moderate cover C=0.80	C=0.70	Moderate slopes Heavy to light soils Dense cover C=0.60	C=0.50	Gentle slopes Agricultural soil & cover C=0.40	C=0.30	Flatland Previous soils C=0.20
	Area required for waterway Square Feet							
2	0.5	0.4	0.4	0.3				
4	0.9	0.7	0.6	0.5				
6	1.2	1.0	0.8	0.7	0.6	0.5		
8	1.5	1.2	1.0	0.9	0.7	0.6		
10	1.7	1.4	1.2	1.0	0.9	0.7	0.3	
20	2.9	2.3	2.0	1.8	1.5	1.2	0.5	
30	4.0	3.2	2.7	2.4	2.0	1.6	0.5	0.3
40	4.9	3.9	3.4	3.0	2.5	2.0	0.9	0.4
50	5.8	4.7	4.0	3.5	2.9	2.3	1.2	0.6
60	6.7	5.4	4.6	4.0	3.4	2.7	1.5	0.8
70	7.5	6.0	5.2	4.5	3.8	3.0	1.8	1.0
80	8.3	6.7	5.8	5.0	4.2	3.3	2.0	1.2
90	9.1	7.3	6.3	5.5	4.6	3.6	2.3	1.4
100	9.9	7.9	6.8	5.9	4.9	3.9	2.5	1.5
150	13.5	10.6	9.3	8.0	6.7	5.4	2.7	1.7
200	16.6	13.4	11.5	10.0	8.4	6.7	2.9	1.8
250	19.8	15.8	13.6	11.9	9.9	7.9	4.0	2.0
300	22.9	18.1	15.5	13.6	13.5	9.0	5.0	2.7
350	25.5	20.3	17.5	15.3	12.7	10.1	5.9	3.3
400	28.0	22.5	19.5	17.0	14.0	11.1	6.8	4.0
450	30.9	24.9	21.0	18.5	15.3	12.1	7.5	5.1
500	33.4	26.4	23.0	20.0	16.6	13.3	8.4	5.6
600	38.5	30.8	26.3	23.0	19.0	15.2	9.0	6.2
700	43.0	34.2	29.8	26.0	21.5	17.0	9.9	6.6
800	48.0	38.1	32.9	28.5	23.8	19.0	11.4	7.7
900	52.0	41.5	35.9	31.1	26.0	20.8	12.9	8.6
1000	56.5	45.0	38.9	34.0	28.3	22.5	14.3	9.5

* See Table 1 for size of pipe needed.

† C is the constant factor based on a combination of how much water the soil can hold, slope, and cover. C = .70 is adequate for most conditions prevailing in the Northeast. C = 1.00 represents complete runoff of precipitation (e.g., rock surfaces).

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Table 3 provides a simplified method for determining culvert size. To use this table, determine the size of the drainage area (in acres) above the stream crossing as well as the expected life of the culvert. A private consultant may provide assistance determining the size of a culvert. Make sure they do not size the culverts for a 50- or 100-year storm, unless that is what is required. For low-traffic or temporary roads, a flood frequency of 20 years can be used.

Table 3—Culvert Sizes by Drainage Area

	Recurrence interval (years)		
	10	20	50
Area (acres)	**Culvert diameter (inches)**		
10	24	24	18
20	24	24	20
30	24	24	24
40	24	24	26
50	24	24	28
60	24	24	28
70	24	26	30
80	24	26	30
90	24	28	32
100	26	28	34
125	28	30	36
150	28	32	38
175	30	34	40
200	32	36	42

Source: Table 3, Helvey and Kochenderfer 1988, p. 125

C. Determining Culvert Lengths

The following simplified procedure can be used to determine culvert lengths needed for new stream crossings or ditch-relief drains. Refer to Figure 1 for specific locations and distances described in the step-by-step procedure. A complete example follows these instructions.

1. Estimate the depth of the fill (F) at the running surface on the inside of the road above the culvert inlet (point “a”).
2. Additional width (C) due to fill is then estimated as 1.5 times the fill depth (F) (that is, all fill slopes are assumed to be 1.5:1 in steepness).
3. Add half the road width (1/2 W) and the fill width (C). Measure this distance horizontally upstream from the center line of the road, and place stake at location A. The horizontal

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distance must be converted to slope distance before you can tape it off on the ground. Use Table 4 to convert horizontal distance to slope distance (on-the-ground distance).

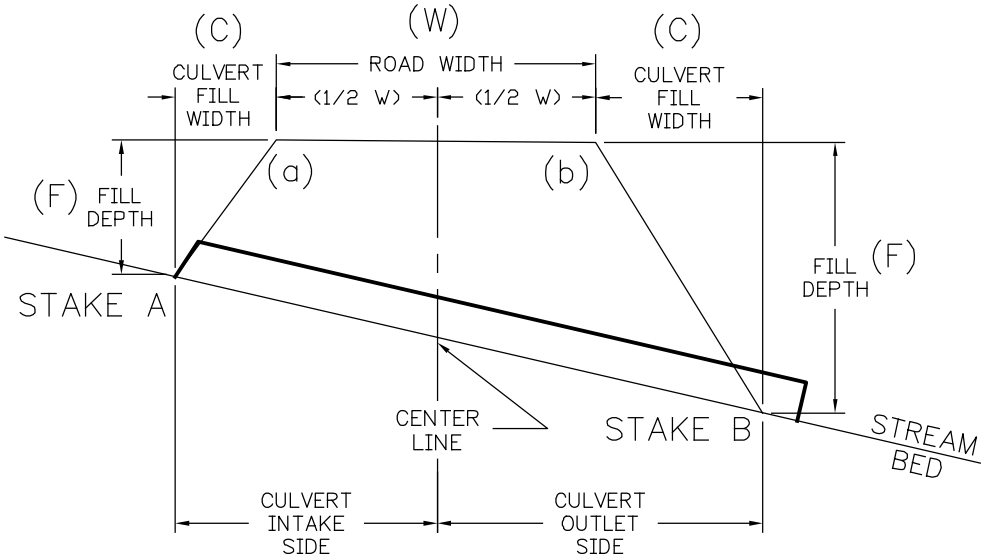

Figure 1—Culvert Length

4. Repeat steps 1 through 3 for the culvert outlet side of the crossing and place stake at location B.
5. Measure the slope length between stakes A and B. This measurement, plus two to four extra feet, is the length of culvert needed for the installation. The extra several feet are added to extend the inlet and outlet beyond the edge of the fill.

   Forty-four feet horizontal distance equals 52.4 feet slope distance on a 65 percent slope.

   horizontal distance × correction factor = slope distance

   (44ft) × (1.19) = 52.4′

   Example: What culvert length is needed for a 14′ wide road crossing a stream with a 55 percent gradient? The estimated inside fill-depth, above the culvert inlet, will be 6′ and the fill-depth above the outlet will be 13′.

   Step 1: Estimated depth of fill (F) at culvert inlet = 6′

   Step 2: (C) = 1.5 × 6′ = 9′

   Step 3: 14′ wide road (W), so 1/2 × 14′ = 7′

   Stake A (the location of the culvert inlet) should be placed on the ground a distance of (9′ + 7′) = 16 horizontal feet up the stream channel from the flagged centerline of the road. According to the correction table, 16 feet horizontally on a 55 percent slope is 18.2′ slope distance (16′ × 1.14 = 18.2′).

   Place the inlet stake (A) 18.2′ up the channel from the centerline of the road.

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Step 4: Estimated depth of fill (F) at culvert outlet =13′

Step 5: (C) = 1.5 ×13′ = 20′

Step 6: 14′ wide road (W), so 1/2 × 14 = 7′

Stake B (the location of the culvert outlet) should be placed on the ground a distance of (13′ + 20′) = 33 horizontal feet down the stream channel from the flagged centerline of the road. According to the correction table, 33 feet horizontally on a 55 percent slope is 37.6′ slope distance (33′ × 1.14 = 37.6′0.

Place the outlet stake (B) 37.6 ′down the channel from the centerline of the road.

Step 7: Length of culvert needed = 18.2′ + 37.6′ = 55.8′ or about 56′.

Approximately 2′–4′ should be added to this length to make sure the culvert inlet and outlet extend sufficiently beyond the base of the fill.

Final culvert length to be ordered and delivered to the site = 56 ′+ 4 ′= 60 ′.

Table 4—Slope Correction Factors to (C) on Vertical-Horizontal Distance to Slope Distance

Hill slope or stream channel gradient (%)	Correction factor (multiplier)	Hill slope or stream channel gradient (%)	Correction factor (multiplier)
10	1.00[1]	45	1.10
15	1.01	50	1.12
20	1.02	55	1.14
25	1.03	60	1.17
30	1.04	65	1.19
35	1.06	70	1.22
40	1.08	75	1.25

[1] For a slope of 10 percent or less, no correction factor is needed.

D. Culvert Installation for Ditch Relief

Insloped roads should be constructed: 1) where road-surface drainage discharged over the fillslope would cause unacceptable erosion or discharge directly into stream channels, 2) where fillslopes are unstable, or 3) where outsloping would create unsafe conditions for use. It is generally preferable to outslope road surfaces in order to disperse road-surface runoff before it has a chance to concentrate.

Insloped roads should be built with an inside drainage ditch to collect and remove road surface runoff (TA 501, *Roads—Construction*). Roads steeper than about 8 percent may be too steep for an inside ditch because of the potential for gullying in the ditch. Inside ditches should also be drained at intervals sufficient to prevent ditch erosion or

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outlet gullying, and at locations where water and sediment can be filtered before entering a watercourse. Filtering can be accomplished with thick vegetation, gentle slopes, settling basins, or filter windrows of woody debris and mulches secured to the slope.

As with outsloped roads, steep insloped road surfaces may be difficult to drain. Rolling dips (for permanent, surfaced roads and seasonal roads) or waterbars (for seasonal or temporary, unsurfaced roads) should be constructed at intervals sufficient to disperse road surface runoff from steep road segments. See TA 503, *Roads—Water Bars and Water Dips* for more information.

Ditches and culverts need occasional maintenance to maintain proper flow. Annual and storm-period inspection can prevent small problems from growing into large failures. When ditches become blocked by cutbank slumps, they need to be cleaned and the spoil deposited in a stable location. However, excessive maintenance (i.e., grading) can cause continuing and persistent erosion, sediment transport, and sediment pollution to local streams. It may also remove rock surfacing.

Ditch relief culverts should be designed and installed along the road at intervals close enough to prevent erosion of the ditch and at the culvert outfall, and at locations where collected water and sediment is not discharged directly into watercourses (Table 5).

Table 5—Maximum Suggested Spacing for Ditch Relief Culverts (ft)

Road grade	**Soil Credibility**				
(%)	**Very High**	**High**	**Moderate**	**Slight**	**Very Low**
2	600–800				
4	530	600–800			
6	355	585	600–800		
8	265	425	525	600–800	
10	160	340	420	555	
12	180	285	350	460	600–800
14	155	245	300	365	560
16	135	215	270	345	490
18	118	190	240	310	435

On new roads, ditch flow should be directed into a culvert and discharged into buffer areas and filter strips before it reaches a watercourse crossing. Ditches should neither be discharged directly into the inlet of a watercourse crossing culvert, nor should ditch relief culverts discharge into a watercourse without first directing flow through an adequate filter strip. In addition to installing ditch relief culverts on either approach to watercourse crossings, it is advisable to consider installing ditch drains before curves, above and below through-cut road sections, and before and after steep sections of the road.

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If a ditch is capable of transporting and delivering sediment to a Class I or Class II watercourse during a flood event, it can be said to function the same as a Class III watercourse. It has a bed and a bank, and it can transport sediment. Ditches which drain directly into watercourse-crossing culverts should be treated and protected from disturbance and erosion, just as is a Class III watercourse. Ditch relief culverts should be installed across ditched roads before water course crossings so that water and sediment can be filtered before reaching the stream.

Ditch relief culverts do not need to be large, since they carry flow only from the cutbank, springs, and a limited length of road surface. In areas of high erosion and/or storm runoff, nominal ditch relief culvert sizes should be 18″, but ditch relief culverts should never be less than 15″ diameter. Smaller culverts are too easily blocked (Figure 2). Generally, culverts should have a grade at least 2 percent greater than the ditch which feeds it to prevent sediment buildup and blockage. Where possible, ditch relief culverts should be installed at the gradient of the original ground slope, so it will emerge on the ground surface beyond the base of the fill. If this is not possible, the fill below the culvert outlet should be armored with rock or the culvert fitted with an anchored downspout to carry erosive flow past the base of the fill. Culverts should never be “shot-gunned” out of the fill, thereby creating highly erosive road drainage waterfalls (Figure 3).

Figure 2—Undersized Culvert

Figure 3—Culvert Not Installed at the Existing Stream Gradient

A 10 percent grade to the culvert will usually be self-cleaning. The culvert should be placed at a 30° angle to the ditch to improve inlet efficiency and prevent plugging and erosion at the inlet. The pipe should be covered by a minimum of 18″ of compacted soil, or to a depth of 1.5 times the culvert diameter, whichever is greater. Finally, inlet protection such as rock armoring or drop structures can be used to help minimize erosion, slow flow velocity, and settle sediment before it is discharged through the pipe.

E. Culvert Installation for Stream Crossings

The importance of proper planning for stream crossings cannot be overstated. If stream crossings are not planned and located before road construction begins, serious problems may arise, including unintended damage to natural resources. Requirements for stream crossings vary from state to state. Often, a permit is required; check with the water division of the local natural resources agency.

Culverts can be considered dams that are designed to fail. The risk of culvert failure is substantial for most crossings, so *how* they fail is critical. In the upper sketch in

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Figure 4, the crossing has failed and the road grade has diverted the stream down the road, resulting in severe erosion and downstream sedimentation. Such damage to aquatic habitats can persist for many years. Stream diversions are easy to prevent, as illustrated by the lower sketch, in which the road grade was such that a failed crossing caused only some loss of road fill.

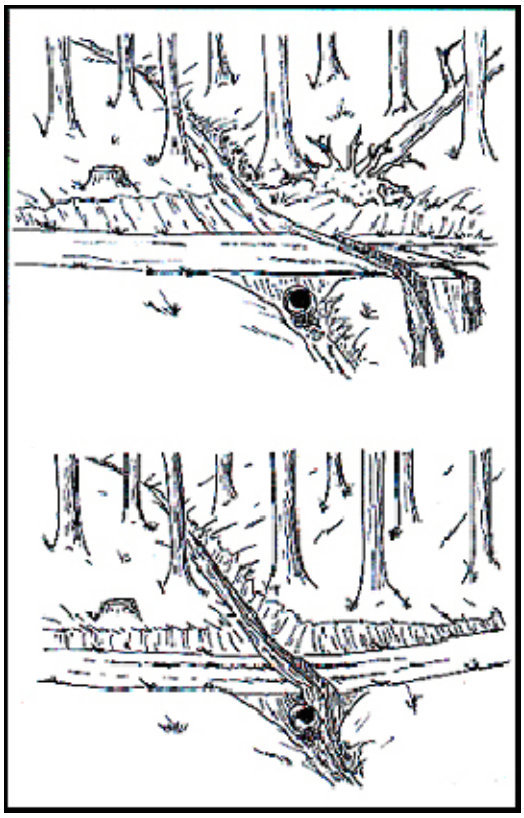

Figure 4—Stream Crossing Failures

Culverts should be installed as road work progresses. The culvert and its related drainage features should be installed via the following steps:

1. Place debris and slash to be used as a filter system, if needed.
2. Construct sediment ponds, if needed.
3. Complete downstream work first, such as energy dissipating devices and large rock riprap.
4. Route stream around work area until pipe is installed.
5. Construct pipe inlet structure.
6. Install culvert pipe.

A culvert inlet should be placed on the same level as the stream bottom. Where the culvert inlet has to be lower than the drainage gradient, a drop box can be constructed. The box provides a place for sediment to settle before water enters the culvert. Drop boxes require frequent maintenance.

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Install culvert pipes as near as possible to the gradient of the natural channel and so there is no change in the stream bottom elevation (Figure 5). Culverts should not cause damming or pooling. Seat the culvert on firm ground and compact the earth at least halfway up the side of the pipe to prevent water from leaking. Pipe culverts must be adequately covered with fill; the rule is a minimum of 30″ or 1.5 times the culvert diameter, whichever is greater.

Figure 5—Culvert Installed at Channel Gradient

If adequate cover cannot be achieved, an arch pipe or two small culverts should be installed. The cover must also be compacted to prevent settling in the road. Debris-laden material should not be used to cover pipe culverts.

The following are additional guidelines for installing culverts in streams:

- Limit construction activity in the water to periods of low or normal flow.
- Minimize use of equipment in streams.
- Use soil stabilization practices on exposed soil at stream crossings. Seed/mulch and install temporary sediment control structures, such as silt fences made of straw bales or geotextiles, immediately after road construction. Maintain these practices until the soil is permanently stabilized.
- Use materials that are clean, non-toxic, and which do not erode.

To prevent erosion and under-cutting of the inlet end of the culvert, provide a headwall. Sandbags containing some cement mixed with the sand, durable logs, concrete, or hand-placed riprap are suitable.

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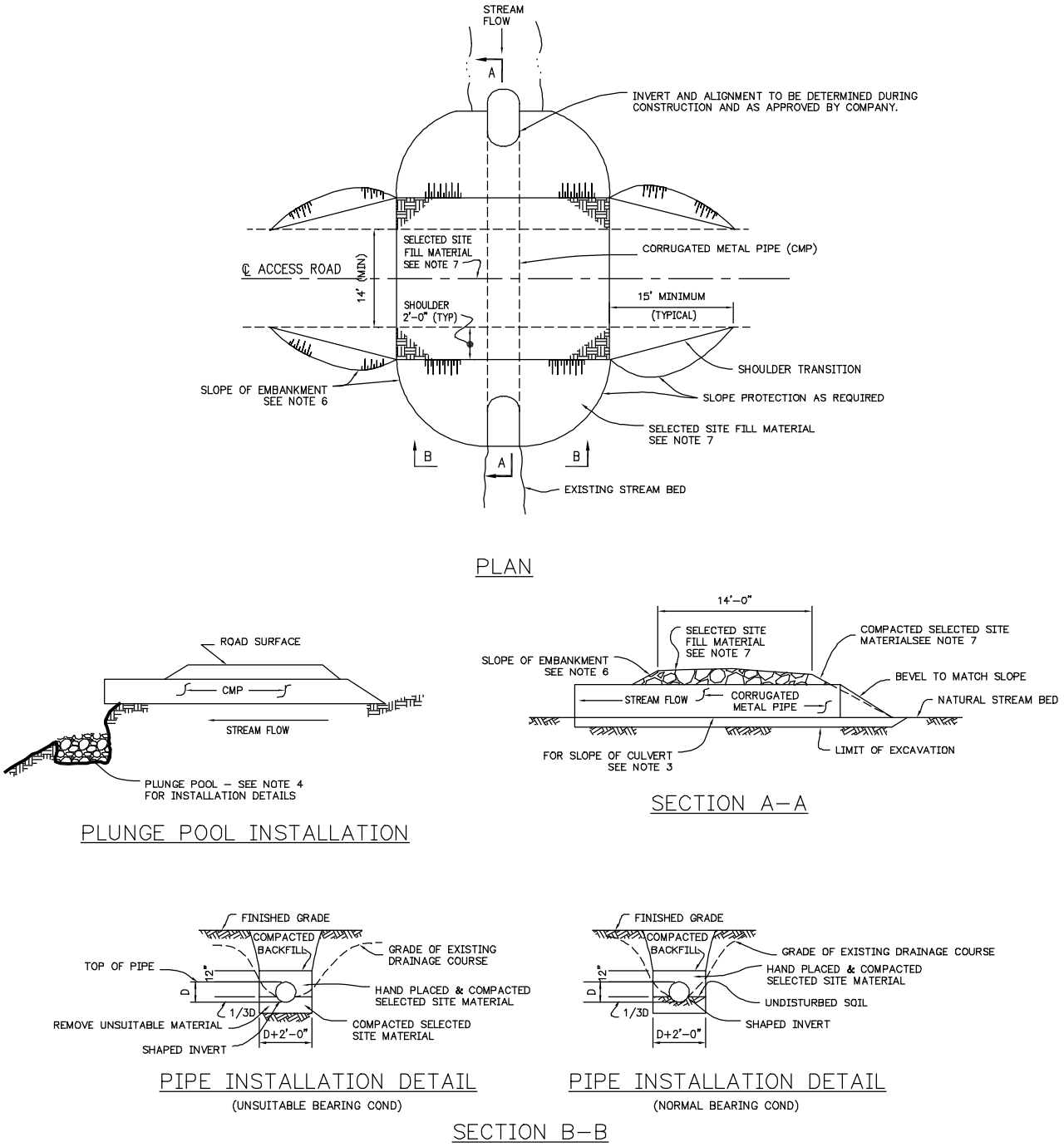

Figure 6—Stream Crossing Culverts

Installation Notes for Figure 6:

1. Culverts for existing drainage shall be aligned with the drainage.

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2. Culverts for roadway and ditch drainage shall be oriented at an angle of 30° to 45° to the roadway. See TA 503, *Roads—Water Bars and Water Dips*, for installation instructions.
3. Culverts shall be sloped a minimum of 1 percent or at least 1 percent steeper than the existing drainage.
4. When the culvert outlet is above grade, a plunge pool shall be constructed with length and width equal to two pipe diameters and a depth of one pipe diameter. Line plunge pool with geotextile fabric filled with 2″ to 8″ rock.
5. Culvert clogging debris located within 50′ of a culvert inlet shall be removed.
6. Cut and fill slopes will be determined during construction based on site conditions and as approved by the company.
7. See TA 501, *Roads—Construction*, for general road construction information.
8. Cover over culverts shall be 18″ or 1.5 times the culvert diameter, whichever is greater. To minimize damage from culvert failure, height of fill over culverts shall be as close to minimum as practical.
9. Outlets on culverts with pipe slopes greater than 3 percent shall be protected with a 30′ × 10′ strip of geotextile fabric fastened to culvert as a bib. Fabric shall be weighted down with 6″to 8″ rock to slow runoff.
10. Bottom of culvert shall be cushioned with fine-grain site material when installed over large rocks.

F. Fords

A ford is an alternative way to cross a water course where the streambed has a firm rock or coarse gravel bottom; the approaches are low and stable enough to support traffic; the stream is small to medium-sized, with water depth less than three feet and stream flows not exceeding 6 fps; and vehicle traffic is light. Dry fords can often be installed and used with minimal impact to the channel system.

The following standards apply when constructing a ford:

1. Install wing ditches, water-bars, dips, and level spreaders before the crossing. These structures should disperse runoff into an established and stable stream buffer.
2. If corduroy, coarse gravel, or gabion is used to create a driving surface, it should be installed flush with the streambed to minimize erosion and to allow fish passage.
3. Crossings should be at right angles to the stream.
4. Stabilize the approaches by using non-erodible material. The material should extend at least 50 feet on both sides of the crossing.
5. Requirements for stream crossings vary from state to state. Often a permit is required; check with the water division of the local natural resources agency.
6. Fords shall be designed for a low-maintenance long-term life. Rock size and grading, depth of rock, fabric underlayment, etc. and approaches shall be designed for the equipment expected to use the road.

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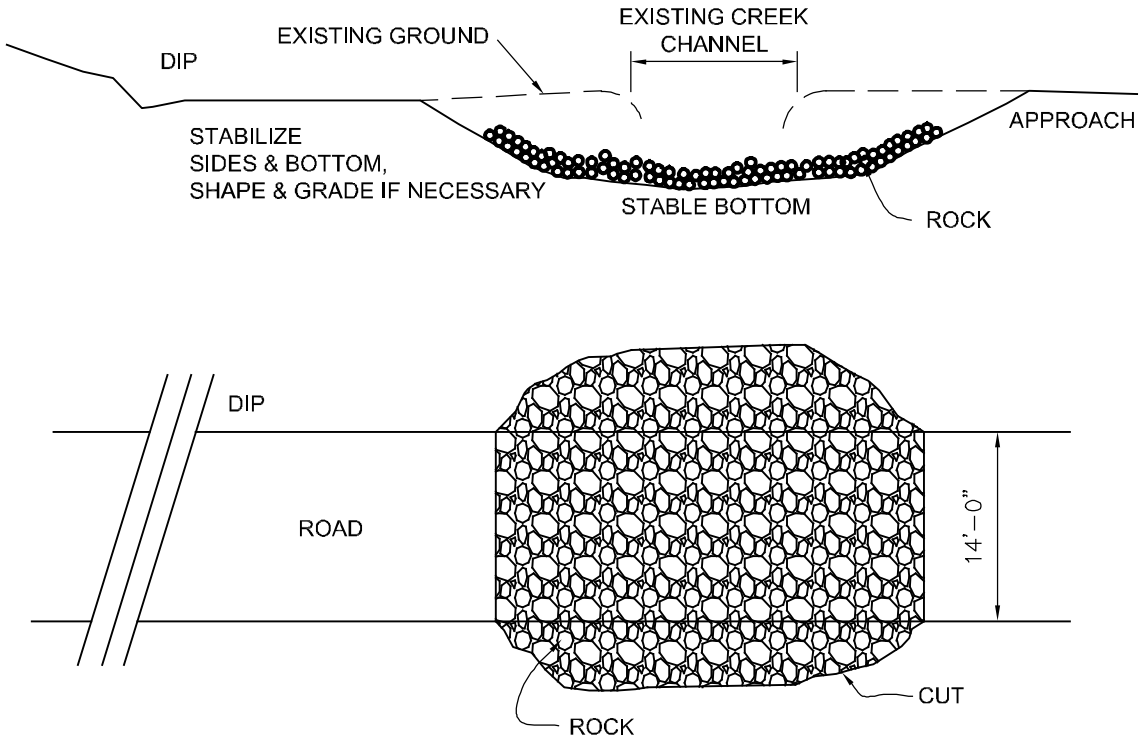

Figure 7 – Ford Stream Crossing

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APPENDIX C
CURRENT IN-LIEU FEE OPPORTUNITIES

The following two ILF programs were identified in Idaho:

Ducks Unlimited Program

State	ID
Corps District	Walla Walla
Program Type	Corps
Sponsor	Ducks Unlimited
Sponsor Requirements	Ducks Unlimited
Administrator	U.S. Army Corps of Engineers, Walla Walla District
Completed Projects	1
Pending Projects	0
Total Acres of Permitted Losses	1
Total Acres Replaced	100
Total Feet of Permitted Losses	0
Delineated Service Areas	No
Description of Service Area	The Corps tries to keep the restoration as local as possible. The projects have occurred in the same drainage basin as the impacts.
Contact Information	Mike Doherty
Contact Address	U.S. Army Corps of Engineers Walla Walla District 201 North 3rd Avenue Walla Walla, WA 99362-1876
Replacement Ratio Determination	Replacement ratios were not used. The Corps offered a project that it wanted done to the applicant and the applicant had a choice of whether to accept the project.
Fee Amount Calculated	For the Burlington Northern project, $265,000 was charged, based on the amount of money needed to complete the restoration project.
Success Criteria	The success criteria include vegetation planning, earthworks to ensure everything is at the right elevation, and required plantings. Monitoring for survival is required.
Protection Mechanisms	Project completed in federal wildlife refuge
Entity Holding Funds	Ducks Unlimited
Funds To Date	$265,000.00
Date of Information	8/30/2001

The Nature Conservancy In-Lieu-Fee Program

State	ID
Corps District	Walla Walla
Program Type	Corps
Sponsor	The Nature Conservancy
Sponsor Requirements	The Nature Conservancy
Administrator	U.S. Army Corps of Engineers, Walla Walla District
Completed Projects	1
Pending Projects	0
Total Acres of Permitted Losses	4
Total Acres Replaced	100.8
Total Feet Replaced	560
Delineated Service Areas	No
Description of Service Area	They try to keep the restoration as local as possible. The projects have occurred in the same drainage basin as the impacts.
Contact Information	Mike Doherty
Contact Address	USACE, Walla Walla District 201 North 3rd Avenue Walla Walla, WA 99362-1876
Replacement Ratio Determination	Replacement ratios were not used. The Corps offered a project that it wanted done to the applicant and the applicant had a choice of whether to accept the project.
Success Criteria	The success criteria include vegetation planning, earthworks to ensure everything is at the right elevation, and required plantings. Monitoring for survival is required.
Protection Mechanisms	conservation easement
Entity Holding Funds	Bonner Boundary Board
Funds To Date	$140,000.00
Date of Information	8/30/2001

No ILF programs were identified for Wyoming; however, the following mitigation bank was identified:

Wyoming Statewide Wetland Mitigation Bank

State	WY
Agreement Status	Approved-active
Year Bank was Established	1995
Authorizing Legislation	Wyoming Statutes 35-11-308 through 35-11-311 provide the legislative authority to establish the Wyoming Wetland Bank. Specifically, 35-11-311 requires the development of this document. Wyoming Wetlands Act (passed in 1991). The Act was further amended and refined in the 1994 legislative session. See instrument for more information. Agreement Type: combination public/private
Total Number of Sites Approved	Don't operate with sites
Total Acres Approved	600
Geographic Service Area	Use of banked credits is confined to the Wyoming river basin in which the impacts will occur. In order to equalize the size differentials of the basins, the largest basins have been divided and the smaller ones consolidated. Banked wetland credits can only be withdrawn for use as mitigation within the following areas: South Platte & Lower North Platte; Upper North Platte & Great Divide; Cheyenne, Belle Fourche & Little Missouri; Powder & Tongue; Big Horn; Wind; Green & Little Snake; Bear & Snake; Yellowstone & Madison
Agreement Sponsor	Wyoming Department of Environmental Quality
Contact Information	Bill Dirienzo
Contact Address	122 West 25th Street Herschler Building 4-W Cheyenne, WY 82002
Credit Definition	Other
Specify if Other	Calculated after construction - enhancement credits and creation/restoration credits - all credits are expressed in acre-units
Site Selection Criteria	Any person wishing to deposit wetlands in the State Bank must notify the department before beginning the creation, restoration or enhancement project. An on-site pre-construction evaluation will be made by the department or their designated representative. Along with a request for deposit, the applicant must provide proof of legal water rights.

State	WY
Sponsor Activities	The State of Wyoming, through the Department of Environmental Quality will maintain all bank records and produce periodic reports concerning wetland gains and losses and credit and debit transactions for each account.
Debiting Activities	The options made possible by the wetland bank are available to both public and private entities. Any individual landowner, organization or public agency can earn credits for wetland creation, restoration or enhancement. Once the credits are recorded in the bank, they can be withdrawn by the owner or transferred to another party to meet mitigation requirements. Maintenance Requirements: Any improvements, enhancements or newly created wetlands are not required to be maintained under these guidelines unless the credit is withdrawn for mitigation purposes.
Monitoring Requirements	The department will maintain records, in perpetuity, of all Wetland Bank accounts and credit transactions. These records will be public information and will be made available to any interested person upon request.

APPENDIX D
PROPOSED IN-LIEU FEE MITIGATION INSTRUMENT

PROPOSED IN-LIEU FEE MITIGATION INSTRUMENT

The Companies would prepare a prospectus for the proposed ILF program that would include the following:

1. Objectives.
2. How the ILF would be established and operated.
3. Proposed service area(s).
4. Need and technical feasibility.
5. Ownership arrangements and long-term management strategy.
6. Sponsor qualifications.
7. Compensation planning framework.
8. Description of program account.

The prospectus would be provided to the USACE and the USACE is responsible for public notice and coordination with the IRT. If the USACE determines that the proposed ILF program has the potential to provide compensatory mitigation, the Companies would prepare a Draft Instrument. The Draft Instrument would include the following elements:

1. Service area.
2. Accounting procedures.
3. Provision stating legal responsibility to provide compensatory mitigation.
4. Default and closure provisions.
5. Reporting protocols.
6. Compensation planning framework.
    a. Geographic service area(s)
    b. Description of threats
    c. Analysis of historic resource loss
    d. Analysis of current resource conditions
    e. Goals and objectives
    f. Prioritization strategy
    g. Preservation justification
    h. Description of stakeholder involvement
    i. Long-term protection and management strategies
    j. Strategy for periodic evaluation and reporting
7. Advance credits.
8. Method for determining project specific credits and fees & draft fee schedule
9. In-lieu fee program account.
10. Transfer of long-term management responsibilities.
11. Financial arrangements for long-term management.
12. Other information deemed necessary by the USACE district engineer.

The Draft Instrument is not a ILF mitigation plan. The Companies would also develop an ILF mitigation plan, concurrent with, and dependent upon, the ILF Instrument. The ILF mitigation plan would include:

1. Objectives.
2. Site selection (further described in §332.3(d)).
3. Site protection instrument (further described in §332.7(a)).
4. Baseline information.
5. Determination of credits (further described in §332.3(f)).
6. Mitigation work plan.
7. Maintenance plan.
8. Performance standards (further described in §332.5).
9. Monitoring requirements (further described in §332.6).
10. Long-term management plan (further described in §§332.7 and 332.8(u)).
11. Adaptive management plan (further described in §332.7(c)).
12. Financial assurances (further described in §332.3(n)).

The ILF mitigation plan is not discussed further in this Appendix.

Proposed Draft ILF Instrument

1.0 Service Area

The geographic service area[3] for the (Gateway West ILF Program) is defined as (*specify the geographic unit*). Idaho Power Company (IPC) and Rocky Mountain Power (RMP) (the Companies) would provide compensatory mitigation for permitted impacts within the same geographic service area in which the impacts occurs unless the district engineer, in consultation with the IRT, has agreed to an exemption. [*Insert maps of project area, impacts, service area*.] This service area was selected because the Companies, in consultation with the district engineer, has concluded that the scale is appropriate to ensure that the projects selected would be able to effectively compensate for adverse environmental impacts across the entire service area. The Companies would not accept participation from other permittees; this ILF Program has been developed for the sole use of the Companies to mitigate for unavoidable impacts to waters of the U.S. resulting from the construction, operation, and maintenance of the Gateway West 500 Kilovolt Transmission Line Project. Individual mitigation projects would be proposed for specific service areas in project-specific mitigation plans.

2.0 Accounting Procedures

The Companies shall establish and maintain a system for tracking the production of credits, credit transactions, and financial transactions between the Companies and ILF sponsor. Credit production, credit transactions, and financial transactions must be tracked on a programmatic

[3] Service area is defined as: "the watershed, ecoregion, physiographic province and/or other geographic area within which the…in-lieu fee program is authorized to provide compensatory mitigation required by DA permits.

basis (i.e., the number of available credits for the entire program by service area) and separately for each individual project.

3.0 Provisions Stating Legal Responsibility to Provide Compensatory Mitigation

(*Program Sponsor*) assumes all legal responsibility for satisfying the mitigation requirements of the Corps/state permit for which fees have been accepted (i.e., the implementation, performance, and long-term management of the compensatory mitigation project(s) approved under this agreement and subsequent mitigation plans). The transfer of liability is established by: 1) the approval of this in-lieu fee instrument; 2) receipt by the district engineer of a credit sale form/letter/certificate that is signed by the (*Program Sponsor*) and the Companies and dated (see Section (X, "Reporting protocols"); and 3) the transfer of fees from the Companies to (*Program Sponsor*).

4.0 Default and Closure Provisions

If the Corps determines that (*Program Sponsor*) has failed to provide the required compensatory mitigation in a timely manner (i.e., (*Program Sponsor*) has failed to meet performance based milestones set forth in the project-specific mitigation plan, meet ecological performance standards, submit monitoring reports in a timely manner, establish and maintain an annual ledger report and individual ledgers for each project in accordance with the provisions in Section (X, "Accounting Procedures"), submit an annual financial assurances and long-term management funding report, report approved credit transactions, complete land acquisition and initial physical and biological improvements by the third full growing season after the first advance credit in that service area is secured by a permittee, and/or otherwise comply with the terms of the instrument), the district engineer must take appropriate action to achieve compliance with the terms of the instrument and all approved mitigation plans. Such actions may include suspending credit sales, decreasing available credits, requiring adaptive management measures, utilizing financial assurances or contingency funds, terminating the agreement, using the financial assurances or contingency funds to provide alternative compensation, directing the use of in-lieu fee program account funds to provide alternative mitigation (e.g., securing credits from another third party mitigation provider), or referring the non-compliance with the terms of the instrument to the Department of Justice.

Any delay or failure of (*Program Sponsor*) to comply with the terms of this agreement shall not constitute a default if and to the extent that such delay or failure is primarily caused by any force majeure or other conditions beyond (*Program Sponsor*)'s reasonable control and significantly adversely affects its ability to perform its obligations hereunder, such as flood, drought, lightning, earthquake, fire, landslide, condemnation or other taking by any governmental body. (*Program Sponsor*) shall give written notice to the district engineer and IRT if the performance of any of its in-lieu fee projects is affected by any such event as soon as is reasonably practicable.

Either party to this agreement may terminate the agreement within 60 days of written notification to the other party. In the event that the Gateway West ILF Program operated by (*Program Sponsor*) is terminated, (*Program Sponsor*) is responsible for fulfilling any remaining project obligations including the successful completion of ongoing mitigation projects, relevant

maintenance, monitoring, reporting, and long-term management requirements. (*Program Sponsor*) shall remain responsible for fulfilling these obligations until such time as the long-term financing obligations have been met and the long-term ownership of all mitigation lands has been transferred to the party responsible for ownership and all long-term management of the project(s).

Funds remaining in the Gateway West ILF Program accounts after these obligations are satisfied must continue to be used for the restoration, establishment, enhancement, and/or preservation of aquatic resources. The Corps shall direct Gateway West ILF Program to use these funds to secure credits from another source of third-party mitigation, such as another in-lieu fee program, mitigation bank, or another entity such as a governmental or non-profit natural resource management entity willing to undertake the compensation activities. The funds should be used, to the maximum extent practicable, to provide compensation for the amount and type of aquatic resource for which the fees were collected. The Corps itself cannot accept directly, retain, or draw upon those funds in the event of a default.

5.0 Reporting Protocols

The Companies must report to the district engineer and the IRT the following information:

1. Monitoring reports, on a schedule and for a period as defined by project specific mitigation plan(s).
2. Credit transaction notifications.
3. An annual program report summarizing activity from the program account (financial and credit accounting) as detailed below.
4. An annual financial assurances and long-term management funding report as detailed below.

<u>Monitoring reports</u>

Monitoring is required of all compensatory mitigation projects to determine if the project is meeting its performance standards and if additional measures are necessary to ensure that the compensatory mitigation project is accomplishing its objectives. If (*Program Sponsor*) fails to submit reports within 90 days of the deadlines outlined in the mitigation plan(s), the Corps may take appropriate compliance action (see Section (X, “Default and closure”)). Project-specific mitigation plans would detail the parameters to be monitored, the length of the monitoring period, the dates that the reports must be submitted (e.g., first of each month), the party responsible for conducting the monitoring, the frequency for submitting monitoring reports to the district engineer, and the party responsible for submitting those monitoring reports to the district engineer and the IRT. The level of detail and substance of the reports must be commensurate with the scale and scope of the compensatory mitigation project. The Corps is required to provide monitoring reports to interested federal, tribal, state, and local resource agencies, and the public, upon request.

<u>Credit transaction notification</u>

Section (X, “Provisions stating legal liability”) establishes the terms by which the legal responsibility for compensation requirements is transferred from the Companies to (*Program*

Sponsor). These terms require (*Program Sponsor*) to submit a credit sale form/letter/certificate to the Corps. The document must be signed by the (Program Sponsor) and the permittee and dated. The credit transaction form/letter/certificate must include the permit number(s) for which (*Program Sponsor*) is accepting fees, the number of credits being purchased, and resource type(s) (e.g., Cowardin class) of credits being purchased. (Program Sponsor) must submit the signed and dated credit transaction form/letter/certificate within 10 days of receiving the fees from the permittee. A copy of each credit transaction form/letter/certificate would be retained in both the Corps' and (*Program Sponsor's*) administrative and accounting records for the Gateway West ILF Program.

Annual program report

(*Program Sponsor*) must submit an annual report (annual ledger report) to the district engineer and the IRT. The report must be made available to the public upon request. The annual program report must be submitted no later than the last day of March, or the following business day if that date falls on a federal/state holiday or weekend. The annual report must include the following information:

Program account (financial) reporting:

- All income received and interest earned by the program account for the program and by service area.
- A list of all permits for which in-lieu fee program funds were accepted by service area, including (1) Corps permit number (and/or the state permit number); (2) service area in which the authorized impacts are located; (3) amount of authorized impacts; (4) amount of required compensatory mitigation; (5) amount paid to the in-lieu fee program; and (6) date the funds were received from the permittee.
- A description of in-lieu fee program expenditures/disbursements from the account (i.e., the costs of land acquisition, planning, construction, monitoring, maintenance, contingencies, adaptive management, and administration) for the program and by service area.

Ledger (credit) reporting:

- The balance of advance credits and released credits at the end of the report period for the program and by service area.
- The permitted impacts for each resource type.
- All additions and subtractions of credits.
- Other changes in credit availability (e.g., additional credits released, credit sales suspended).

Financial assurances and long-term management funding report

(Program Sponsor) must submit an annual report on financial assurances and long-term management to the district engineer and the IRT. (Program Sponsor) is required to give the Corps at least (XX days; to be determined by the sponsor in consultation with the Corps and IRT) advance notice if required financial assurances would be terminated or revoked. In addition, the financial assurance instrument must be written in such a way that it is the obligation of the bonding company or financial institution to provide the Corps notice. Inclusion of a summary of any changes to the financial assurances in the reporting year does not alter

this separate obligation. The financial assurances and long-term management funding report must include:

- Beginning and ending balances of the individual project accounts providing funds for financial assurance and long-term management.
- Deposits into and any withdrawals from the individual project accounts providing funds for financial assurance and long-term management.
- Information on the amount of required financial assurances and the status of those assurances, including their potential expiration for each individual project.

6.0 Compensation Planning Framework

The compensation planning framework must include the following ten elements:

1. The geographic service area(s), including a watershed based rational for the delineation of each service area.
2. A description of the threats to aquatic resources in the service area(s), including how the in-lieu fee program would help offset impacts resulting from those threats.
3. An analysis of historic aquatic resource loss in the service area(s).
4. An analysis of current aquatic resource conditions in the service area(s), supported by field documentation.
5. A statement of aquatic resource goals and objectives for each service area, including a description of the general amounts, types and locations of aquatic resources the program would seek to provide.
6. A prioritization strategy for selecting and implementing compensatory mitigation activities
7. An explanation of how any preservation objectives identified above satisfy the criteria for use of preservation.
8. A description of any public and private stakeholder involvement in plan development and implementation, including coordination with federal, state, tribal and local aquatic resource management and regulatory authorities.
9. A description of the long term protection and management strategies for activities conducted by the in-lieu fee program sponsor.
10. A strategy for periodic evaluation and reporting on the progress of the program in achieving the goals and objectives above, including a process for revising the planning framework as necessary.

7.0 Advance Credits

Upon approval of this instrument for Gateway West ILF Program, (*Program Sponsor*) is permitted to sell advance credits in the amount indicated in the chart below. The number of advance credits available for sale varies by service area, as indicated. The number of advance credits available for sale is specified by service area, as indicated in (*the chart*). As the milestones in the schedule are reached (i.e., restoration, creation, enhancement and/or preservation is implemented), advance credits convert to released credits. At a minimum, credits would not be released until (*Program Sponsor*) has obtained IRT approval of the mitigation plan for the site, has achieved the applicable milestones in the credit release schedule, and the credit releases have been approved by the district engineer.

Once (*Program Sponsor*) has sold all of its advance credits, no more advance credits may be sold until an equivalent number of credits has been released in accordance with the approved credit release schedule outlined in a project-specific mitigation plan. Once all advance credits are fulfilled, an equivalent number of advance credits may be made available for sale, at the discretion of the district engineer and IRT. (*Program Sponsor*) shall complete land acquisition and initial physical and biological improvements by the third full growing season after the sale of advance credits. If (*Program Sponsor*) fails to meet these deadlines, the district engineer must either make a determination that more time is needed to plan and implement an in-lieu fee project or, if doing so would not be in the public interest, direct (*Program Sponsor*) to disburse funds from the Gateway West ILF Program account to provide alternative compensatory mitigation to fulfill those compensation obligations.

8.0 Method for Determining Project-Specific Credits and Fees and Draft Fee Schedule

The draft fee schedule section should simply include a chart or list of the fees charged by the program per unit of credit and for each wetland type provided and in each service area in which the program operates. Fees for Gateway West ILF Program shall be determined based on an analysis of the expected costs associated with the restoration, establishment, enhancement, and/or preservation of aquatic resources in [*the state/region/watershed*]. The program costs included in this analysis are those related to land acquisition, project planning and design, construction, plant materials, labor, legal fees, monitoring, remediation or adaptive management activities, program administration, contingency costs appropriate to the stage of project planning, including uncertainties in construction and real estate expenses, the resources necessary for the long-term management and protection of the in-lieu fee project, and financial assurances (including contingency costs) that are expected to be necessary to ensure successful completion of in-lieu fee projects. These fees shall be reviewed annually and updated as appropriate. Credits generated by Gateway West ILF Program shall be based on [*an appropriate assessment*
method or other suitable metric] approved by the Corps. The standard mitigation ratios for wetlands are currently (*insert chart*). The standard mitigation ratios for streams are currently (*insert chart*).

9.0 In-Lieu Fee Program Account

<u>Financial accounting</u>

Reporting requirements for financial reporting are at Section (X, “Reporting Protocol.”) The Gateway West ILF Program account would track funds accepted from permittees separately from those accepted from other entities and for other purposes (i.e., fees arising out of an enforcement action, such as supplemental environmental projects). The account would be held at a financial institution that is a member of the Federal Deposit Insurance Corporation. Any and all interest accruing from the account would be used to provide compensatory mitigation for impacts to aquatic resources. The program account would be established after this instrument is approved and before any fees are accepted. If the Corps determines that the (Program Sponsor) is failing to provide compensatory mitigation by the third full growing season after the first advance credit is secured, the agency may direct the funds to alternative compensatory mitigation projects. Additional information on failure to fulfill the terms of the instrument is

discussed in Section (X, “Default & Closure”). The Corps has the authority to audit the program account records at any time. Funds paid into the Gateway West ILF Program account may only be used for the direct replacement and management of aquatic resources. This means the selection, design, acquisition (i.e., appraisals, surveys, title insurance, etc.), implementation, and management of in-lieu fee compensatory mitigation projects. This may include fees associated with securing a permit for conducting mitigation activities, activities related to the restoration, enhancement, creation, and/ or preservation of aquatic resources, maintenance and monitoring of mitigation sites, and the purchase of credits from mitigation banks. Use of fees is explicitly prohibited for activities such as upland preservation (other than buffers), research, education and outreach, or implementation of best management practices for wetlands unless these are directly associated with the success of the mitigation and have been identified in the mitigation plan. Up to (__%) of the fees paid into Gateway West ILF Program may be used for administrative costs. Such costs include bank charges associated with the establishment and operation of the program, staff time for carrying out program responsibilities, expenses for day to day management of the program, such as bookkeeping, mailing expenses, printing, office supplies, computer hardware or software, training, travel, and hiring private contractors or consultants.

<u>Credit accounting</u>

(*Program Sponsor*) shall establish and maintain an annual report ledger that tracks the production of released credits for Gateway West ILF Program and for each individual in-lieu fee project. Reporting requirements for the annual report ledger are at Section (X). On the income side, (*Program Sponsor*) shall track the fees and all other income received, the source of the income (i.e., permitted impact, penalty fee, etc.), and any interest earned by the program account. The ledgers shall also include a list of all the permits for which in-lieu fee program funds were accepted, including the appropriate permit number (Corps or state permit), the service area in which the specific authorized impacts are located, the amount (acreage or linear feet) of authorized impacts, the aquatic resource type impacted by Cowardin class, the amount of compensatory mitigation required, the amount paid to the in-lieu fee program for each of the authorized impacts, and the date the funds were received from the permittee. (*Program Sponsor*) shall establish and maintain a report ledger for Gateway West ILF Program that would track all program disbursements/expenditures and the nature of the disbursement (i.e., costs of land acquisition, planning, construction, monitoring, maintenance, contingencies, adaptive management, and administration). (*Program Sponsor*) may also track funds obligated or committed, but not yet disbursed. The ledger shall also include, for each project, the permit numbers for which the project is being used to offset compensatory mitigation requirements, the service area in which the project is located, the amount of compensation being provided by method (i.e., restoration, establishment, enhancement, or preservation), the aquatic resource type(s) represented (e.g., Cowardin class), the amount of compensatory mitigation being provided (acres and/or linear feet), and the number of credits certified by the IRT. The annual report ledger shall also include a balance of advance credits and released credits at the end of the report period for each service area.

10.0 Transfer of Long-Term Management Responsibilities

After securing approval from the district engineer, (*Program Sponsor*) shall transfer long-term management responsibilities to [*name a specific land stewardship entity or "a land stewardship entity, such as a public agency, non-governmental organization, or private land manager*"]. Transfer of long term stewardship responsibilities may occur before or after performance standards have been achieved. Once long term management has been transferred to land stewardship entity, said party is thereby responsible for meeting any and all long-term management responsibilities outlined in the project-specific mitigation plan. Until such time as long-term management responsibilities are transferred to another party, (*Program Sponsor*) would be considered responsible for long-term management of the mitigation project.

11.0 Financial Arrangements for Long-Term Management

If (*Program Sponsor*) chooses to transfer the responsibilities for long-term management to a long-term steward, (*Program Sponsor*) must seek Corps' approval. The Corps must be given the option of being a signatory to any contract or other arrangement assigning the rights and delegating the responsibilities to the steward. If long-term stewardship responsibilities are transferred to (*land stewardship entity*), (*Program Sponsor*) shall also transfer the long-term management funds/account for otherwise arrange for disbursements from such funds/account to the (*land stewardship entity*).

12.0 Signatures

_____ _____

Program sponsor Date

_____ _____

District Engineer Date

_____ _____

IRT members choosing to participate Date