Site Rehabilitation Plan

Boardman to Hemingway Transmission Line Project

Prepared by:

1221 West Idaho Street
Boise, Idaho 83702

Mark Stokes, Project Leader
(208) 388-2483
mstokes@idahopower.com

Zach Funkhouser, Permitting
(208) 388-5375
zfunkhouser@idahopower.com

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1.0 INTRODUCTION

Idaho Power Company (IPC) is proposing to construct and operate approximately 296.6 miles of new transmission line known as the Boardman to Hemingway Transmission Line Project (Project). The Project will include a 500-kilovolt (kV) single-circuit line, rebuilding of a portion of a 230-kV transmission line, rebuilding of a 138-kV transmission line, and a removal of a portion of an existing 69-kV transmission line between Boardman, Oregon, and the Hemingway Substation (located approximately 30 miles southwest of Boise, Idaho). The Project includes ground-disturbing activities associated with the construction of above-ground, single- and double-circuit transmission lines involving towers, access roads, multi-use areas, light-duty fly yards, pulling and tensioning sites as well as associated stations, communication stations, and electrical supply distribution lines.

The Project area, or Site Boundary, as defined in Oregon Administrative Rule (OAR) 345-001-0010(55) includes "the perimeter of the site of a proposed energy facility, its related or supporting facilities, all temporary laydown and staging areas, and all corridors and micrositing corridors proposed by the applicant." The Site Boundary for this Project includes the following facilities in Oregon:

- The Proposed Route, consisting of 270.8 miles of new 500-kV electric transmission line, removal of 12 miles of existing 69-kV transmission line, rebuilding of 0.9 mile of a 230-kV transmission line, and rebuilding of 1.1 miles of an existing 138-kV transmission line;
- Four alternatives that each could replace a portion of the Proposed Route, including the West of Bombing Range Road Alternative 1 (3.7 miles), West of Bombing Range Road Alternative 2 (3.7 miles), Morgan Lake Alternative (18.5 miles), and Double Mountain Alternative (7.4 miles);
- One proposed 20-acre station (Longhorn Station);
- Ten communication station sites of less than ¼ acre each and two alternative communication station sites;
- Permanent access roads for the Proposed Route, including 206.3 miles of new roads and 223.2 miles of existing roads requiring substantial modification, and for the Alternative Routes, including 30.2 miles of new roads and 22.7 miles of existing roads requiring substantial modification; and
- Thirty-one temporary multi-use areas and 299 pulling and tensioning sites of which four will have light-duty fly yards within the pulling and tensioning sites.

Construction of the Project will result in temporary impacts to waters of the state. This site rehabilitation plan presents goals and objectives, jurisdictional authority, implementation, and follow-through methods for restoring temporary wetland impacts. Temporary impacts to wetlands include construction activities that do not result in permanent removal or fill, such as construction of laydown areas, staging areas, or temporary contouring allowing for access of equipment.

1.1 Purpose

Rules regulating the rehabilitation of temporary wetland impacts are provided in OAR 141-085-0715: Mitigation for Temporary Impacts (ODSL 2011).

This OAR provides that a rehabilitation plan should be designed to:

- Re-establish the pre-existing contours of the site;

- Re-establish the pre-existing vegetation community; and
- Provide for rapid site stabilization to prevent erosion.

The Oregon Department of State Lands (ODSL) further provides rehabilitation guidelines for temporary impacts in *A Guide to the Removal-Fill Permit Process* (ODSL 2016). The rehabilitation plan should include a grading plan and list of seeds and plants to be utilized, as applicable. A monitoring plan (including monitoring method, criteria and duration) must also be included to confirm successful re-establishment of the wetland and vegetation. Temporary impacts that are rectified within 24 months from the date the impacts generally occurred do not require compensatory mitigation; however, site rehabilitation and monitoring is required (ODSL 2011b).

1.2 Goals and Objectives

The primary goal of the Plan is to assist IPC and its contractors in restoring wetland habitat affected by temporary impacts within 24 months of disturbance. This goal is established pursuant to the definitions of OAR 141-085-0510, which states:

- “Temporary Impacts” are adverse impacts to waters of this state that are rectified within 24-months from the date the impact occurred; and
- "Wetland Restoration" means to re-establish a former wetland.

The Plan provides measures that will be implemented prior to and during construction with the objective of minimizing wetland habitat impacts. It also provides details and measures that will be implemented following construction with the objectives of reestablishing, maintaining and monitoring wetlands temporarily impacted by construction.

2.0 REHABILITATION PLAN

IPC will begin rehabilitation of disturbed sites as soon as practicable after construction is completed. The Plan is applicable to all temporary wetland impacts along the transmission ROW, laydown areas, staging areas, temporary construction areas, and access roads in Oregon. Measures to be implemented to ensure successful rehabilitation include topsoil and subsoil segregation and stockpiling during construction, cleanup, appropriate surface recontouring, soil erosion control, seedbed preparation, application of ecologically site-specific seed mixes, planting, weed abatement, and monitoring.

2.1 Site Preparation

As part of the reclamation process, IPC will prepare the seedbed to facilitate the restoration of vegetation to pre-construction conditions. Construction activities within sites identified as temporary impacts shall not exceed two construction seasons, and rehabilitation of temporary impacts will be completed within 24 months of the initiation of impacts.

Initial construction activities include marking wetland boundaries clearly with high visible flagging and signs, installing temporary sediment controls, segregating and stockpiling topsoil, and grading for safe construction passage. Dense stands of noxious and invasive weeds will be treated with approved herbicides prior to vegetation clearing.

Prior to construction, topsoil will be stockpiled and separated from subsoil. IPC will minimize the length of time that topsoil is stockpiled. Surface soil thickness will vary throughout the construction area, depending on soil type; however, the top 1 foot of wetland topsoil shall be

preserved to the greatest extent feasible. Surface topsoil containing the seed reservoir and existing vegetation will be scraped and stored. The topsoil/vegetation mixture will not be mixed with underlying subsoil horizons. Oregon-certified weed-free erosion control blankets and/or certified weed-free straw bales will be used to contain and limit erosion at the stockpiles as needed. Surface soil and sub-surface soils will be replaced in the proper order during cleanup and final grading operations.

2.2 Site Restoration

Restoration will include cleanup, soil decompaction, topsoil replacement, surface grading/contouring, installation of soil erosion and sediment control measures, and seedbed preparation. Compacted soils would typically be associated with the access roads and along the transmission ROW, staging areas, laydown areas, temporary construction areas, and access roads. Subsoil decompaction will occur prior to surface soil replacement as necessary to reduce soil bulk density. Identified locations will be decompacted to a minimum depth of 6–12 inches.

The stockpiled topsoil/vegetation mixture will be re-spread after re-contouring is completed. In wetlands, the segregated top 1 foot of topsoil will be restored to its original location. The topsoil/vegetation mixture will provide seeds, vegetative propagules, and soil microbiota to facilitate vegetation establishment in temporary construction areas.

The transmission ROW, staging areas, laydown areas and other temporary construction areas, will be graded and contoured to blend within the surrounding landscape. Temporary roads used for pulling and tensioning of conductors and other construction activities and structure construction pads will be revegetated but not re-contoured unless they were subject to temporary fill or removal. Topsoil will be blended across the construction corridor, creating a roughened surface to capture precipitation, decrease erosion, and provide micro-habitats for plant establishment. Contouring will emphasize restoration of existing drainage and landform patterns, to the greatest extent practicable.

Seedbed preparation will consist of grading/contouring, decompacting soils, and restoring surface soil as described above. Specific wetland Best Management Practices (BMPs) referenced in this plan will be employed in wetland areas to avoid rutting and damage from equipment. The seedbed will be firm but not compacted.

Soil erosion and sediment control will occur through establishing desirable wetland vegetation and adjacent upland/riparian vegetation using measures such as mulch, erosion and control blankets. The Project will establish a desirable wetland plant cover as quickly as possible to minimize soil erosion and control sedimentation. Mulch, certified weed-free erosion control blankets and sediment logs, and certified weed-free straw bales, and/or water bars may also be used as appropriate.

In general, the following construction BMPs for erosion and sediment control shall be followed:

- Exposed soils shall be stabilized during and after construction in order to prevent erosion and sedimentation.
- Filter bags, sediment fences, sediment traps or catch basins, leave strips or berms, or other measures shall be used to prevent movement of soil into waterways and wetlands.
- Compost berms, impervious materials or other equally effective methods, shall be used to protect stockpiled soil during rain events or when the stockpile site is not moved or reshaped for more than 48 hours.

- Where vegetation is used for erosion control on slopes steeper than 2:1, a tackified seed mulch shall be used so the seed does not wash away before germination and rooting.
- Dredged or other excavated material shall be placed on upland areas having stable slopes and shall be prevented from eroding back into waterways and wetlands.
- Erosion control measures shall be inspected and maintained as necessary to ensure their continued effectiveness until soils become stabilized.
- All erosion control structures shall be removed when the project is complete and soils are stabilized and vegetated.

A specific list of the type and timing for each BMP is described in the Erosion and Sediment Control Plan included as an attachment to Exhibit I.

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.

2.3 Seed Planting Methods

Each site scheduled for rehabilitation will be evaluated to determine the most cost-effective means of establishing a suitable suite of plants as rapidly as possible. This evaluation will include a determination of how the site needs to be prepared to receive seeds and live plants, as well as what species to plant on the site. Planting will be done at the appropriate time of year to facilitate seed germination, based on weather conditions and the time of year when construction-related ground disturbance occurs. Choice of planting methods will be based on site-specific factors such as slope, erosion potential and the size of the site in need of revegetation. Disturbed ground may require chemical or mechanical weed control before weeds have a chance to go to seed.

Drill and broadcasting seeding techniques will be used. Seeding will be done after ground-disturbing activities are complete and at the appropriate time of year (preferably in the fall or, if fall is not an option, the spring). If there is a lag time between the end of ground-disturbing activities and seeding, BMPs from the SWPPP will be implemented. Drill seeding will be the primary method for seeding. Drill seeding uses specialized equipment such as a rangeland seeder. The advantages of drill seeding are efficiency at placing seed at the proper soil depth and economy of bulk seed. Its disadvantages are terrain limitations such as slopes greater than 15 percent and rocky soils. Slopes that cannot be drill seeded will be broadcast seeded. Broadcast seeding distributes the seed on top of the soil surface using a hand-held spreader, all-terrain vehicle–mounted cyclone-type seed spreader, or seed blower. Broadcast seed is not as efficient as drill seeding because in this method seeds are not buried in the soil, and it requires approximately twice the bulk seed. Area where broadcast seeding is used will be hand-raked, or a harrow will be used to cover the seed.

Hydro-seeding and hydro-mulching will not be used in wetland areas or near water bodies. Should the water levels in the restoration areas rise above the hydro-seeded/mulched area prior to seed germination and establishment, the mulch, binder, and seed will float and wash away.

2.4 Seed and Plant Mixes by Ecoregion

The following sections provide information about each ecoregion crossed by the Project, and provide suggested species for use in planting mixes for each one. Each ecoregion has different

climate and soil characteristics, requiring seed mixes and plants that will thrive under the site conditions. Species lists for planting presented here are not intended to be either exhaustive or limiting. They represent only a small fraction of species that may be suitable for use in the ecoregions and on a site by site basis.

The Project, from Boardman to Hemingway, crosses four Level III ecoregions, which can be further divided into ten Level IV ecoregions (Thorson *et al.* 2003). Table 1 describes these ecoregions.

Table 1. Precipitation and Land Cover and Land Use for Study Area by Ecoregion

Ecoregion III	Ecoregion IV	Precipitation-Mean Annual (inches)	Land Cover and Land Use
Columbia Plateau	10e, Pleistocene Lake Basins	7 to 10	Mostly cropland; some grassland. Non-irrigated winter wheat is grown using the crop– fallow rotation method. Irrigated land grows winter wheat, alfalfa, and barley.
Columbia Plateau	10c, Umatilla Plateau	9 to 15	Mostly cropland; some grassland. Non-irrigated winter wheat is grown using the crop– fallow rotation method. Irrigated land grows winter wheat, alfalfa, and barley.
Columbia Plateau	10n, Umatilla Dissected Uplands	15 to 25	Mostly grass-covered rangeland and wildlife habitat; on higher elevation, north-facing slopes: forest.
Blue Mountains	11c, Maritime-Influenced Zone	20 to 40 97 to 116	Forested. Logging, grazing, wildlife habitat, and recreation.
Blue Mountains	11l, Mesic Forest Zone	30-60. Mostly snow. Snow persists late into spring.	Forested. Logging, woodland livestock grazing, wildlife habitat, and recreation.
Blue Mountains	11k, Blue Mountain Basins	Wallowa and Grande Ronde valleys: 13-25. Baker Valley: 10-16.	Irrigated pastureland, cropland, recreation, and commercial, residential, and rural residential development. Principal crops: alfalfa, peas, winter wheat, and grass seed. Most wetlands on floodplains have been drained for agriculture.
Blue Mountains	11i, Continental Zone Foothills	9 to 18	Shrub- and grass-covered. Livestock grazing and wildlife habitat.
Snake River Plain	12j, Unwooded Alkaline Foothills	9 to 12	Shrub- and grass-covered rangeland and wildlife habitat; some irrigated hayland and pastureland near rivers.
Snake River Plain	12a, Treasure Valley	8 to 11	Irrigated cropland, pastureland, shrubland, grassland, and residential and commercial development. Primary crops: wheat, sugar beets, potatoes, onions, and alfalfa.

Ecoregion III	Ecoregion IV	Precipitation-Mean Annual (inches)	Land Cover and Land Use
Northern Basin and Range	80f, Owyhee Uplands and Canyons	8 to 14	Mostly brush- and grass-covered rangeland and wildlife habitat; some hay and small grain farming. Cheatgrass has replaced depleted bunchgrasses in overgrazed areas.

Adapted from Thorson et al. 2003.

Note: For the purpose of this table, which is to summarize climatic and vegetation information on a broad scale, study area can be considered synonymous with site boundary.

In Morrow County, nearly 80 percent of the study area is contained in ecoregion 10e, the Pleistocene Lake Basins of the Columbia Plateau. While roughly 20 percent of the eastern portion of the project is contained in ecoregion 10c, Umatilla Plateau.

In Umatilla County, the majority (approximately 60 percent) of the study area is contained in 10c, Umatilla Plateau of the Columbia Plateau, while 15 percent is in 10n, Umatilla Dissected Uplands of the Columbia Plateau, 15 percent is in 11c, Maritime-Influenced Zone of the Blue Mountains and less than 10 percent is in 11l, Mesic Forest Zone of the Blue Mountains.

In Union County, the study area is located entirely in the Level III Blue Mountains Ecoregion. The majority (approximately 49 percent) of the study area is contained in 11c, Maritime-Influenced Zone, 20 percent is in 11l, Mesic Forest Zone, 18 percent is in 11i, Continental Zone Foothills, and 13 percent is in 11k, Blue Mountain Basins.

In Baker County, the study area is located within the Level III Blue Mountains Ecoregion and the Level III Snake River Plain Ecoregion. The majority (approximately 93%) of the study area is contained in 11i, Continental Zone Foothills, and 3 percent is in 11k, Blue Mountain Basins of the Blue Mountains Ecoregions, while 4 percent in in 12j, Unwooded Alkaline Foothills of the Snake River Plain Ecoregion.

In Malheur County, the study area is located within the Level III Blue Mountains Ecoregion, Level III Snake River Plain Ecoregion, and the Level III Northern Basin and Range Ecoregion. Approximately 25 percent of the study area is contained in 11i, Continental Zone Foothills of the Blue Mountains Ecoregions, while 10 percent is in the 12a Treasure Valley and 35 percent is in 12j, Unwooded Alkaline Foothills of the Snake River Plain Ecoregion. The remaining 30 percent of the study area in Malheur County is located within 80f, Owyhee Uplands and Canyons of the Northern Basin and Range Ecoregion.

Table 2 shows the native shrubs and herbs that were documented during the 2012 wetland delineations by county that may be used for site revegetation. The choice of seed mixtures will be dependent on the existing vegetation types, the availability of commercial, weed-free live seed at the time of seeding, and landowner approval.

Table 2. Native Plants Documented During Delineations

Scientific Name	Common Name	Stratum	Wetland Indicator Status	County
Salix exigua	narrow-leaf willow	Shrub	OBL	Umatilla
Bidens cernua	nodding burr-marigold	Herb	FACW	Baker
Calamagrostis canadensis	bluejoint	Herb	FACW	Baker, Umatilla
Carex nebrascensis	Nebraska sedge	Herb	OBL	Union, Baker, Umatilla
Deschampsia cespitosa	tufted hairgrass	Herb	FACW	Baker
Distichlis spicata	coastal saltgrass	Herb	FACW	Malheur
Eleocharis palustris	common spike-rush	Herb	OBL	Union, Baker, Malheur, Umatilla
Hordeum brachyantherum	meadow barley	Herb	FACW	Malheur
Hordeum jubatum	fox-tail barley	Herb	FAC	Malheur
Juncus balticus	baltic rush	Herb	OBL	Union, Baker, Malheur
Juncus patens	spreading rush	Herb	FACW	Umatilla
Juncus torreyi	Torrey's rush	Herb	FACW	Baker, Malheur
Mimulus guttatus	seep monkey flower	Herb	OBL	Malheur
Ranunculus aquatilis	white water-crowfoot	Herb	OBL	Baker
Ranunculus sceleratus	cursed buttercup	Herb	OBL	Baker
Schoenoplectus acutus	hard-stem club-rush	Herb	OBL	Malheur
Schoenoplectus americanus	chair-maker's club-rush	Herb	OBL	Baker
Schoenoplectus maritimus	saltmarsh club-rush	Herb	OBL	Malheur
Schoenoplectus tabernaemontani	soft-stem club-rush	Herb	OBL	Morrow

2.5 Best Management Practices

Pertinent BMPs for wetland rehabilitation are included here for reference.

- Minimize the length of time that topsoil is segregated.
- Limit the operation of construction equipment within wetlands to that needed for clearing, facility installation, and restoration.
- Limit pulling of tree stumps and grading activities in wetlands to directly over the transmission line, except where necessary to ensure safety.

- Limit grading impacts in saturated or standing-water wetlands and/or in wetlands where rutting may occur by using low ground-weight construction equipment or by operating normal equipment on prefabricated timber or terra mats.
- Segregate the top 1 foot of topsoil from the area disturbed, except in areas where standing water is present or soils are saturated or frozen. Immediately after cleanup, restore the segregated topsoil to its original location.
- Prohibit storage of hazardous materials, chemicals, fuels, and lubricating oils within 100 feet of a wetland boundary unless infeasible.
- Prohibit the refueling of equipment within 100 feet of wetlands unless infeasible.
- Establish stable surface and drainage conditions and the use of erosion control devices to minimize soil erosion and sedimentation. Sediment barriers shall be installed prior to initial disturbance in wetlands and adjacent uplands to prevent sediment transport into the wetland.
- Re-establish terrain compatible with the surrounding landscape.
- Use native plant species for revegetation.

3.0 DRAFT MONITORING PLAN

The purpose of monitoring is to evaluate vegetative survival and establishment, soil moisture, sustaining hydrology, and occurrence of noxious weeds and to identify corrective measures that may be required to ensure successful restoration

3.1 Performance Standards for Rehabilitation

Goal 1: Restore wetland hydrology.

- **Objective 1:** Restore pre-construction soil contours.
- **Performance standard 1:** Restored soil contours match existing contours of undisturbed soil surface adjacent to the disturbance site.
- **Objective 2:** Restore pre-construction soil texture.
- **Performance standard 1:** Restored soil has drainage characteristics like undisturbed soil adjacent to the disturbance site; e.g., does not exhibit inappropriate ponding characteristic of compacted soil.

Goal 2: Establish wetland vegetation similar to the native plant component of the temporarily impacted wetlands.

- **Objective 1:** Achieve similar densities of native vegetation at the temporary impact site as were present pre-construction.
- **Performance standard 1:** Meet or exceed woody stem counts per acre as determined from pre-disturbance conditions.
- **Performance standard 2:** Three years post-construction, vegetation communities will have relative cover of tree, shrub and herbaceous species within ten percent of similar adjacent or nearby wetlands.

3.2 Monitoring Schedule and Methodology

IPC will monitor temporary impact sites for three years. In years 1, 2, and 3, vegetation will be monitored using guidance described in the ODSL's *Routine Monitoring Guidance for Vegetation*. Monitoring events will occur annually during the growing season.

3.3 Reporting and Documentation

IPC will provide a post-construction report demonstrating as-built conditions 90 days from Project completion. It will include representative photographs of completed restoration areas demonstrating pre-impact conditions have been reestablished, documentation of plant and seed materials received from the commercial sources, documentation of soil amendments used, and a summary of pertinent issues encountered during the implementation of the Plan.

For annual reporting, IPC will document the monitoring results in an annual report. Annual reports are described in Section 6.0, below.

4.0 MAINTENANCE PLAN

Maintenance of plantings and seeded areas during the establishment period (i.e., the 24 months following construction) is an essential component of the rehabilitation plan, especially for areas receiving less than 20 inches of average annual precipitation. The objectives of post-installation maintenance are to prevent soil erosion, ensure establishment of trees and shrubs, and remove non-native vegetation that could inhibit native herbaceous plant establishment.

After each monitoring visit, a qualified investigator will report to the Project proponent regarding the revegetation progress of each restored site. The investigator will make recommendations for reseeding or other remedial measures for sites that are not showing sufficient progress toward achieving revegetation success. Appropriate action to meet the objectives of this revegetation plan will be made.

5.0 CONTINGENCY PLAN

Where initial restoration and plant establishment efforts fail to meet plant establishment standards, reseeding, replanting, live cuttings, and/or transplanting may be required to ensure restoration success. Contingency measures that may be implemented include:

- Harvesting and transplanting herbaceous plugs, shrubs, and trees;
- Live cutting collection, storage, and planting; and
- Planting of commercially grown herbaceous plugs or potted shrubs and trees.

Given the 24-month timeframe associated with rehabilitation of temporary impacts, IPC will make a determination of the requirement for contingency measures at the end of the first growing season based on monitoring results.

6.0 REPORTING

IPC will document the monitoring results in an annual report. It is expected that a single annual report will be prepared for the entire Project length, and that this report will be submitted to each of the applicable federal or state agencies. The reports will provide a summary of Project reclamation activities and observations, progress towards or achievement of success, identify

any specific problem areas along the Project, and will include recommendations for additional corrective actions if necessary.

7.0 PLAN UPDATES

Once IPC has received a Site Certificate from the State of Oregon and necessary authorizations from the federal agencies, it will do final engineering on the final Project location. At this time, IPC will prepare a final Site Rehabilitation Plan for submittal to state and federal agencies. The final Site Rehabilitation Plan will be updated prior to the submittal of the JPA.

8.0 REFERENCES

ODSL (Oregon Department of State Lands). 2009. Routine Monitoring Guidance for Vegetation. Available at: http://www.oregon.gov/dsl/WW/Documents/dsl_routine_monitoring_guidance.pdf.

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Appendix T, Compensatory Wetland and Non-Wetland Mitigation Plan

A draft compensatory wetland and non-wetland mitigation plan is attached as a separate document.

The Stream Functional Assessment Methodology is attached to the draft Compensatory Wetland and Non-Wetland Mitigation Plan.