

### 3.8 INVASIVE PLANT SPECIES

Two terms will be used throughout this section: “invasive plant species” and “noxious weeds.”

Invasive plant species consist of non-native plants<sup>1</sup> that have been spread beyond their natural range of dispersal by human activities. Invasive plants are typically adaptable, aggressive, and have a high reproductive capacity. Their introduction causes or is likely to cause economic or environmental harm, or harm to human health (National Invasive Species Information Center 2008). Invasive plants are of concern because they can spread to new areas rapidly, threaten the genetic integrity of native flora through hybridization, typically flourish in disturbed areas resulting in the exclusion of native vegetation, and can change the structure and function of ecosystems through alterations of geochemical and geophysical processes.

“Noxious weed” is a legal term for any invasive plant species that has been officially designated by a federal, state, or local agency as injurious to public health, agriculture, recreation, wildlife, or property (Sheley and Petroff 1999). Noxious weeds are a concern for federal, state, and county governments because of their potential to degrade wildlife habitat, reduce plant diversity, adversely affect agricultural production, and impact management of both natural and agricultural systems.

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

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

---

<sup>1</sup> Not all non-native plant species are considered invasive plants, or are detrimental to economic or environmental conditions (e.g., some non-native horticultural landscaping species have low dispersal rates or are unable to survive outside of maintained landscaped areas).

- **Segment 7:** The BLM's Preferred Route is the Proposed Route incorporating Alternatives 7B, 7C, 7D, and 7G (Figure A-9). The Proposed Route in the East Hills and Alternative 7G will be micro-sited to avoid sage-grouse PPH. Power and Cassia Counties' preferred route is Alternative 7K (Figure A-9).
- **Segment 8:** The BLM's Preferred Route is the Proposed Route incorporating Alternative 8B (Figure A-10). This is also IDANG's preferred route.
- **Segment 9:** The BLM's Preferred Route is the Proposed Route incorporating Alternative 9E, which was revised to avoid PPH and the community of Murphy (Figure A-11). Owyhee County's preferred route is Alternative 9D (Figure A-11).
- **Segment 10:** The BLM's Preferred Route is the Proposed Route (Figure A-12).

### 3.8.1 Affected Environment

This section discusses the existing environmental conditions, in relation to invasive plant species, that could be impacted by the Project. It starts by defining the Analysis Area. It then identifies the issues that have driven the analysis and characterizes the existing conditions within the Analysis Area.

#### 3.8.1.1 Analysis Area

The Project would cross a wide variety of habitat types, including expanses of semi-arid shrublands and grasslands, irrigated agricultural lands (principally in the Snake River Plains), forested mountains, shrub and woodland covered hills, and riparian woodlands and wetlands. Previously disturbed habitats are present to some extent along all segments of the Proposed Route (see Table 3.6-1), with approximately one-third having either been modified by human activities or containing invasive plant species to an extent that they were mapped as either disturbed vegetation or agriculture during the project-specific remote sensing effort (see Section 3.6 – Vegetation Communities, or Tetra Tech 2010a for more details regarding this mapping effort). Areas described as disturbed vegetation (or previously disturbed areas) within this EIS likely already contain populations of invasive species, which could potentially serve as source populations for the spread of these species to new areas. Areas described as undisturbed vegetation (or previously undisturbed areas) are more likely to contain weed-free areas, and are subsequently at a greater risk of ecological effects associated with invasive species introduction and/or spread.

The Analysis Area includes the extent of all counties crossed by the Project. This area encompasses the disturbance footprint of the Project (i.e., the ROW of the Proposed Route and Route Alternatives, and the access roads, multipurpose yards, and other work spaces) as well as areas outside the Project footprint where invasive plant species could be introduced as a result of construction and operation. Counties provide an appropriate scale of analysis because detailed information on site-specific invasive plant species occurrences within the Analysis Area is not currently available; however, information on invasive plant species and noxious weed occurrences is available at the county level (based on County weed lists). Additionally, the existing regulatory framework pertaining to invasive plant species and noxious weeds directs agencies to manage these species on a county by county basis within designated weed

management areas, weed control districts, or similar jurisdictions (see Section 3.8.1.3 – Regulatory Framework).

### **3.8.1.2 Issues Related to Invasive Plant Species**

The following invasive plant species-related issues were brought up by the public during public scoping (Tetra Tech 2009) and comments on the Draft EIS, were raised by federal and state agencies during scoping and agency discussions, or are issues that must be considered as stipulated in law or regulation:

- Whether noxious weeds would be introduced or spread into the ROW and adjacent areas,
- How the presence of the Project would impact efforts to control existing noxious weeds, and
- Whether a noxious weed prevention and abatement plan would be developed in conjunction with the appropriate agencies.

### **3.8.1.3 Regulatory Framework**

#### **Federal**

Federal EO 13112 – Invasive Species requires each federal agency to prevent the introduction of invasive species, to provide for their control, and not to authorize, fund, or carry out actions that are likely to cause or promote the introduction or spread of invasive species. The Federal Noxious Weed Act of 1974, as amended in 1990 (7 U.S.C. § 2814), requires federal land management agencies to develop a management program for control of plants that are classified under federal or state law as undesirable, noxious, or harmful, and to cooperate with state governments in control of undesirable plants on federal lands. The Carson-Foley Act of 1968 (P.L. 90-583, 43 U.S.C. § 1241) as well as the individual BLM FO Land Use Plans and Forest Service National Forest Plans also provide direction for management of invasive plant species and noxious weeds on federal lands.

The BLM and Forest Service have developed land management plans for the various FOs and NFs under each of their jurisdictions that detail land management goals and objectives, specify permissible and prohibited activities by geographic designation, and provide BMPs and stipulations required for activities in that NF or BLM FO's jurisdiction.

In 2009 the Department of the Interior amended the BLM's Land Use Plan in 11 contiguous western states to designate energy transport corridors (WWE corridors), consistent with the requirements of Section 368 of the Energy Policy Act of 2005 (Forest Service 2009a). The Forest Service also issued a ROD in 2009 for energy corridors on NFS land. This decision also adopted a series of IOPs, which include requirements that must be met (such as NEPA and interagency consultation requirements, as well as specific requirements related to invasive plant species) in order to approve ROW grants within the designated corridors. These IOPs are mandatory, as appropriate, for projects proposed within the Section 368 corridors. Portions of the Gateway West transmission line are proposed within the WWE corridor and therefore must comply with these IOPs. All IOPs and the Project's compliance to these measures are provided in Appendix H.

## **State**

In Wyoming, noxious weeds are managed under the Wyoming Weed and Pest Control Act of 1973. The act provides for weed and pest districts associated with each county, covering all lands within a county including federal lands. Wyoming has 23 weed and pest districts; the Proposed Route and Route Alternatives are located in the following six districts: Albany, Carbon, Converse, Lincoln, Natrona, and Sweetwater. Noxious weeds and pests are designated at the state level, but each weed district can declare additional species applicable only within the district. The district board has the right to conduct investigations on lands when it has probable cause to believe that noxious weeds or pest infestations exist that are liable to spread to adjacent areas and could contribute to the injury or detriment of others. If the suspected area is deemed to be infested, the board then issues a resolution to the landowner containing specific remedial action for the control of the noxious weed or pest. The board may then put a lien on the property of any landowner who fails or refuses to perform these requirements.

The Idaho Noxious Weed Law (Title 22, Chapter 24, Idaho Code) is the basis for management and control of noxious weeds by the State of Idaho. The Idaho State Department of Agriculture (ISDA) is responsible for administering the State Noxious Weed Law. Noxious Weeds Rules (Idaho Administrative Procedures Act [IDAPA] 02 Title 06 Chapter 22) designate weeds as noxious statewide. Each county has a weed control superintendent. In addition, there are 30 cooperative weed management areas in Idaho, which are formed cooperatively by landowners and land managers. The Proposed Route and Route Alternatives are located within nine cooperative weed management areas and include Highlands, Utah and Idaho, Power, Raft River, Goose Creek, Minidoka, Northside Tri-County, Shoshone Basin, and Southfork Boise. Segments 8 and 9 (see Appendix A, Figures A-10 and A-11) in Owyhee, Canyon, and Ada Counties are not located within a cooperative weed management areas; however, these counties do have county weed programs. Under the Idaho Noxious Weed Law, Idaho landowners are responsible for the control of noxious weeds on their land. Landowners who fail to comply with the Idaho Noxious Weeds Law may be subject to fines and imprisonment.

The BLM and Forest Service use the Wyoming and Idaho state noxious weed lists to guide weed management on federal lands. The BLM also manages county declared species on federal lands in Wyoming.

### **3.8.1.4 Methods**

Information regarding the identity and location of invasive plant species and noxious weeds within the Analysis Area was obtained from conversations with federal, state, and county agency personnel, as well as from county weed lists and existing distribution databases (ISDA 2008; University of Montana–Missoula 2009; Belliston et al. 2009; NRCS 2009; Wyoming Weed and Pest Council 2012a, 2012b). These lists provide information on the probable conditions within the Analysis Area; however, they should be considered preliminary at this time. Prior to construction, the extent and composition of invasive plant species in relation to the Project will be determined and verified via pre-construction surveys (discussed in more detail in Section 3.8.2.2). The results of

these surveys, in conjunction with the lists discussed above, will serve as a basis for directing Project-specific weed control efforts

The primary source of information used during the assessment of existing vegetation was a detailed remote sensing–based vegetation mapping study conducted specifically for this Project. The goal of the mapping effort was to identify existing vegetation types using a combination of GIS-assisted segmentation, aerial imagery interpretation, and limited ground surveys. This effort identified 77 different vegetation alliances within the Analysis Area, 9 of which were classified as “disturbed,” and included agricultural areas as well as various disturbed grassland and sagebrush types (see Section 3.6 – Vegetation Communities, or Tetra Tech [2010a] for more details regarding this mapping effort).

The disturbance acreages presented in Section 3.8.2 were determined by overlaying the Project footprint onto the GIS layer of vegetation types developed during the remote sensing effort (see Chapter 2 for a detailed discussion of how the Project footprint was determined for the transmission line and ancillary facilities). It was assumed that although all soil and vegetation disturbances could result in the spread or establishment of invasive plant species, the greatest ecological impact would likely occur within previously undisturbed areas because it is likely that these areas currently contain few if any invasive plant species, and their introduction would have adverse impacts to these previously undisturbed areas compared to baseline conditions. To identify the amount of disturbance that would occur within previously undisturbed areas, the acreages of impact to areas classified as “undisturbed” during the remote sensing effort were summed by segment.

#### **3.8.1.5 Existing Conditions**

Moving from east to west through the Analysis Area, the extent of natural vegetation crossed by each transmission line segment decreases. The term “natural vegetation” in this context refers to vegetation communities that have not been disturbed and/or that are not dominated by non-native species. Segments in the eastern portion of the Analysis Area (Segments 1 through 4) cross the most (by percentage) natural vegetation (Table D.6-1 in Appendix D), followed by Segment 5, Segments 6 through 9, and Segment 10. Therefore, it is likely that the abundance of invasive plant infestations is higher along the western portion of the Analysis Area compared to the eastern portion.

Table D.8-1 in Appendix D lists, by segment and Route Alternative, the invasive plant species and noxious weeds that are known or expected to occur within the Analysis Area, based on various federal, state, and county weed lists. Note that Table D.8-1 contains only those species known or expected to occur within the Analysis Area and is dominated by noxious weeds due to the increased effort by agencies to track these species. However, it is possible that additional invasive species, not listed in Table D.8-1, could occur within the Analysis Area. These species would also need to be considered if encountered during Project construction and operation, because the introduction or spread of any invasive species, including those not listed in Table D.8-1, must be minimized to comply with federal, state, and county requirements. The extent and composition of invasive plant species in relation to the Project would be determined

during pre-construction surveys (discussed in more detail in Section 3.8.2.2); the goal of Table D.8-1 is to show a list of the invasive species that are expected occur along the line, based on available information at this time.

As shown in Table D.8-1, noxious weed designations are inconsistent between the two states crossed by the Project. This is because some species may be considered problematic in some locations but not in others, or they are too widespread or abundant to be economically controlled. Wyoming has designated 25 species as noxious, all of which could occur within the Analysis Area (Wyoming Weed and Pest Council 2012a, 2012b). There are 64 species designated as noxious in Idaho, 44 of which are suspected to occur within the Analysis Area (ISDA 2008). In addition, Idaho has further categorized various noxious weed types; these categories are defined below in more detail.

Idaho's noxious weeds are divided into three categories: Statewide Early Detection and Rapid Response (EDRR) Noxious Weed List, Statewide Control Noxious Weed List, and Statewide Containment Noxious Weed List (ISDA 2008). Forty-four Idaho-designated species are suspected to occur within the Analysis Area, including one EDRR, 20 Control, and 23 Containment species (Table D.8-1). These three categories are defined as:

- **Statewide EDRR Noxious Weed List:** If any of the weeds listed in the EDRR list are found to occur in Idaho, they shall be reported to the ISDA within 10 days following positive identification by the University of Idaho or other qualified authority as approved by the ISDA Director. These weeds shall be eradicated during the same growing season as identified.
- **Statewide Control Noxious Weed List:** Weeds listed in the control list are known to exist in varying populations throughout the state. The concentration of these weeds is at a level where control and/or eradication may be possible. A written plan for weeds on the Statewide Control Noxious Weed List shall be developed by the control authority that specifies active control methods to reduce known population in no more than 5 years. The plan shall be available to the ISDA upon request.
- **Statewide Containment Noxious Weed List:** Weeds listed in the Containment Noxious Weeds List are known to exist in various populations throughout the state. Weed control efforts may be directed at reducing or eliminating new or expanding weed populations, while known and established weed populations, as determined by the weed control authority, may be managed by any approved weed control methodology, as determined by the weed control authority.

### **3.8.2 Direct and Indirect Effects**

This section is organized to present the effects of construction and operations, followed by decommissioning activities on the spread and/or introduction of invasive plant species. The various Route Alternatives are analyzed in detail within Section 3.8.2.3.

Table 2.7-1 in Chapter 2 contains a list of the EPMS that have been developed as part of this Project to offset or reduce potential impacts related to non-native plant species,

as well as a description of where these various measures would apply (e.g., on private, state, or federally managed lands). These measures also contain commitments by the Proponents to follow all existing federal Best Management Practices and restrictions that are applicable to the BLM FOs and National Forests crossed by the Project (i.e., EPMs G-1, G-2, and G-4), and the utilization of third-party environmental monitors who would ensure the Project complies with all environmental restrictions and requirements during construction (i.e., EPM G-3). Note that EPMs are presented in detail within Section 3.8 only if it is the first time they have been discussed in Chapter 3; all other measures are referenced or summarized.

The measures listed in Table 2.7-1 were developed cooperatively between the Project's Proponents and the Agencies in order to protect sensitive resources. Some of the EPMs listed in Table 2.7-1 could be required by the Agencies on all landownerships (i.e., federal, state, and private lands) due to the broad authority found under certain regulations (e.g., protection of federally listed wildlife species would be required on all lands, regardless of landownership, due to the USFWS's authority granted by the ESA). With the exception of these circumstances however, the BLM does not have the authority to require EPMs on private and state lands. Therefore, the Proponents have agreed to a broad-based conservation plan, under which they have volunteered to apply some of the federally required measures (i.e., those that are only required on federally managed lands) to certain private and state lands as well. The Proponents have agreed to this broad-based conservation plan in order to protect sensitive resources over a broader area and because Project-wide measures are easier to administer and explain to construction personnel. Due to the checkerboard landownership pattern in Wyoming, the Proponents have committed (within their POD [Appendix B of this Final EIS]) to apply the EPMs in Table 2.7-1 to all portions of the Project located in Wyoming (including private and state lands) as well as all lands in Idaho along Segments 6, 8, and 9, except for the following circumstances: 1) federal measures not required on private/state lands would not be applied at proposed substation and regeneration sites located on private lands; 2) federal measures that are only applicable to a specific BLM FO would not be applied on private lands; 3) federal measures that are only applicable to NFS lands will not be applied on private lands; and 4) federal measures not required on private/state lands that conflict with requests from private property owners would not be applied on the applicable private land. As the checkerboard landownership pattern is not as extensive in Idaho, and the landownership along Segments 4 (in Idaho), 5, 7, and 10 are predominantly private landownerships, the Proponents would only apply the federally required measures on federally-managed lands along these segments in Idaho, but not on the state and private lands.

### **Plan Amendments**

Proposed amendments to BLM RMPs and MFPs are summarized in Table 2.2-1 of Chapter 2, while BLM plan amendments associated with other routes are summarized in Table 2.2-2. BLM plan amendments are discussed in detail in Appendices F-1 and G-1. Proposed amendments to Forest Plans are summarized in Table 2.2-3 of Chapter 2 and discussed in detail in Appendices F-2 and G-2. Amendments are needed to permit the Project to cross various areas of BLM-managed and NFS lands. Effects described for areas requiring an amendment in order for the Project to be built would

only occur if the amendment were approved. Amendments that alter land management designations could change future use of these areas. No amendments specific to invasive plant species are proposed for the Project and no impacts to invasive plant species resulting from approving the amendments beyond the impacts of the Project are anticipated.

### **3.8.2.1 No Action Alternative**

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

### **3.8.2.2 Effects Common to All Action Alternatives**

#### **Construction**

The establishment of invasive plant species can affect the quality of habitat through competition with, and eventual replacement of, desirable native species. Replacement of native species can have various environmental effects including changes in fire regime (increasing the frequency and severity of fires), changes in the nutrient regime of soils, and increased soil erosion. For example, cheatgrass (*Bromus tectorum*) can proliferate rapidly in disturbed arid and semi-arid sagebrush grasslands, and can increase the rate and severity of fires, thereby creating a cycle of disturbance that ultimately increases the rate of cheatgrass establishment and spread. Invasive plant species can negatively impact vegetation community structure by creating, changing the density of, or eliminating vegetation layers or canopy cover. In agricultural and grazing lands, invasive plant species have the potential to reduce the quality, quantity, and value of forage or crops, and can increase land management procedures and costs. In addition, riparian and irrigated areas can provide favorable growing conditions for invasive plant species that require regular moisture, and the hydrological movement in these areas can spread these species to downslope or downriver areas.

Vegetation removal and soil disturbance during construction could create optimal conditions for the establishment of invasive plant species. These species typically produce an abundance of seed, thrive in disturbed areas, and have few natural competitors; therefore, once established they spread quickly and can overtake desirable plant communities. Vehicles and construction equipment traveling from areas that contain invasive species into "weed-free areas" could disperse invasive plant seeds and propagates, resulting in their establishment in previously undisturbed areas that may not

have contained invasive species, as well as increasing the distribution or abundance of existing populations in previously disturbed areas. Furthermore, disturbed areas may be seeded by airborne seeds originating from plants within adjacent areas; therefore, direct contact between infected areas and construction equipment is not required for invasive plant species to spread to new areas. In addition, the transportation of materials into areas disturbed by construction (e.g., borrow materials, mulch, gravel, as well as seed mixtures and/or saplings used during revegetation efforts) may contribute to the spread of invasive plant species. If measures are not taken to prevent and control newly established infestations resulting from construction, then invasive plant species can persist in disturbed and reclaimed areas, and those that are present in the construction area may spread into adjacent areas. However, measures would be implemented to reduce the potential for introduction or spread of invasive plant species; these measures are discussed below.

The Proponents have prepared a Framework Reclamation Plan (see Appendix B) and identified EPMs (see Table 2.7-1) to reduce the potential spread or establishment of invasive plant species. The final Reclamation Plan will be developed once the final location of all Project facilities is identified and will be submitted to the BLM and cooperating agencies for approval. The items outlined in the preliminary plan include pre-construction surveys, pre-construction weed treatments, the weed prevention and control methods to be used during construction, and post-construction control and monitoring.

To effectively implement measures for limiting the spread or introduction of invasive plant species, the location and extent of existing invasive plant infestations would need to be known. Therefore, pre-construction surveys for invasive plants would be conducted within all areas that would be disturbed by construction. These surveys would have multiple goals, including documenting the presence of plant species and evaluating 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, overgrazed, previously disturbed, recently burned, etc.), and the presence and extent of invasive plant species. These vegetation surveys would be conducted during the appropriate growing season prior to construction, and would provide baseline data to plan for weed control efforts as well as provide additional information to guide short- and long-term reclamation efforts. The locations of all invasive plant species (including any that are not identified in Table D.8-1 of Appendix D) would be documented with a hand-held GPS instrument; these data would be used to develop a pre-construction weed map. The pre-construction weed map would be used to define the infected area(s) prior to construction, and would be compared to post-construction conditions to document any weeds the Proponents are responsible for introducing and/or spreading.

Existing invasive plant species 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 following EPMs would be followed during pre-construction treatments, as well as during construction activities, to

limit the potential spread or introduction of invasive plant species. Note that REC-1 through REC-7 would be implemented during both pre-construction and construction activities, while REC-8 through REC-15 would be implemented during construction activities. These measures would be implemented Project-wide, regardless of land-ownership (see Table 2.7-1 in Chapter 2).

- REC-1 Proponent 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, the Proponents' specifications 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](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.
- 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.

The following EPMs (in addition to VEG-4, VEG-5, and VEG-8, which are described in Section 3.6 – Vegetation Communities) would be required on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2):

- WEED-1 The Proponents shall consult with each appropriate local land management agency (Forest Service and BLM) office to determine appropriate seed mix and commercial seed source for revegetation. The Reclamation, Revegetation, and Weed Management Plan shall specify the approved seed mixes for federal lands. Disturbed soil will not be allowed to support the

growth of noxious weeds or invasive weedy species. Prevention of noxious weeds will apply to all phases of the Project.

WEED-2 Weed control and prevention measures shall adhere to all agency standards and guidelines. These measures shall be developed in consultation with local, state, and federal weed agencies; all implemented measures would follow the principle of integrated weed management.

WEED-3 Soil stockpiles in areas containing noxious weeds and invasive plant species shall be kept separate from soil removed from areas that are free of noxious weed and invasive plant species, and the soil will be replaced in or near the original excavation. If requested by the applicable land-management agency, soil stockpiles shall be covered with plastic if the soil stockpile will be in place for two weeks or more and is not being actively used. On lands managed by the Forest Service or per private landowner request, stockpiles will not be covered with plastic.

The revegetation of disturbed areas is essential to limit the spread or establishment of invasive plant species. Therefore, disturbed areas would be revegetated with species adapted to local site conditions to establish long-term, productive, self-maintaining plant communities that are compatible with existing land uses. The Proponents have stated however, that native seed mixes would be used when applicable, but that they intend to use non-native species mixes as appropriate (e.g., when reseeding is conducted as a stabilization measure or to keep out invasive species such as cheatgrass or to meet specific landowner requests). However, the Proponents would be required to use native seed mixes on lands where the landowners and land-management agencies require that only native seed mixes be used (e.g., on federally managed lands). The agencies have also identified EPM WEED-4, which would be required on all federal lands, to further protect federally managed lands from invasive plant species:

WEED-4 Gravel and other materials used for road construction on federally managed lands shall come from certified weed-free sources.

The final Reclamation Plan would include success criteria for determining whether revegetation efforts have been successful and what remediation requirements would be implemented if the success criteria are not met. The Framework Reclamation Plan in Appendix B provides details of the proposed revegetation activities.

### **Operations**

Impacts resulting from operations and maintenance activities would be similar to those discussed for construction; however, there would be less ground disturbance and fewer vehicles traveling along the ROW during operations. Therefore, there would be less potential for adverse effects associated with the introduction and spread of invasive plant species. Activities during operations would include routine ground patrols, routine maintenance of facilities and roads, emergency response, routine cyclical vegetation height management every 3 to 10 years (e.g., removal of trees that would interfere with height restrictions, hazard trees, and low-growing shrub vegetation encroaching on access roads), and invasive plant control. As was discussed for construction-related impacts, any vehicles and equipment passing through weed-infested areas could

potentially serve as a source of invasive plant species propagation/spread. Additionally, the vegetation removal conducted during operations (i.e., ROW maintenance; see Section 3.6 – Vegetation Communities) may encourage weed seed germination and provide opportunities for weed spread. However, measures would be implemented to limit the spread and establishment of invasive plant species during the Project's operations (discussed in more detail within the following paragraphs).

As outlined in the Proponents' Framework Reclamation Plan (see Appendix B), post-construction weed control efforts would be conducted to limit the spread and establishment of invasive plant species, followed by annual monitoring to ensure that these efforts are successful. Based on this Plan, annual post-construction weed control spraying would most likely occur during the months of May to June; however, the potential for fall treatments does exist, depending on the weed species present. All spraying of herbicides would be conducted in compliance with agency requirements (see REC-5 and WEED-2). Following annual spraying, monitoring surveys would be conducted to determine the locations and abundance of invasive plant species in the Project vicinity. The Proponents have proposed to conduct annual post-construction monitoring for a 3-year period following the conclusion of ground-disturbing activities (however, see VEG-8, which would be required on federally managed lands). These monitoring surveys are expected to occur in the fall (August–September) and would be conducted following the same methods as the pre-construction survey. Annual herbicide spraying would be planned and coordinated with the applicable agencies (based on the results of the prior years' survey data) to ensure spraying is conducted only where necessary, in areas approved for herbicide use, at the proper growing period, during favorable environmental conditions, and using only the appropriate chemicals to control targeted species. All chemicals would be approved by the affected land management agency. It is anticipated that most spraying would be conducted using ATV-mounted spray equipment, supported by one or more four-wheel-drive pickups equipped with water tanks. The final Reclamation Plan would provide site-specific information on invasive plant species, relative abundance, and the range of treatment methods that would be used.

The Proponents have identified EPMs, which would be implemented Project-wide (see Table 2.7-1), that are intended to limit the spread of invasive plant species during operations and maintenance. These measures include the following:

- OM-13 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.
- OM-14 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-15 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.
- OM-20 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.

Revegetating disturbed areas with “desired vegetation” promptly after the initial disturbance (as outlined in the EPM OM-15) is an essential component needed to limit the spread and establishment of invasive plant species; however, “significantly disturbed areas” are not explicitly defined within the Framework Operations, Maintenance, and Emergency Response Plan (see Appendix B). The Proponents would need to clearly define this term, in order to ensure that they (the Proponents or construction contractor) would adhere to the commitment to revegetate all disturbed areas that are not permanently occupied by Project facilities. In addition, measures would be needed to stabilize any areas that cannot be revegetated within a reasonable time after initial disturbance (potentially due to unforeseen environmental conditions).

### **Decommissioning**

Impacts from decommissioning would be similar to those for construction. Removal of structures and vehicle travel along the ROW could result in the spread or introduction of invasive plant species. No EPMS are specifically provided to address decommissioning; however, the EPMS proposed for construction would be applicable during decommissioning, and should be effective at reducing the potential to spread or introduce invasive plant species.

### **3.8.2.3 Comparison of Alternatives by Segment**

Invasive plant species generally increase in abundance and distribution with increased ground disturbance, removal of vegetation canopy, and opportunities for transport into new areas. All of the alternatives would increase these conditions and would likely have direct and indirect effects on invasive plant species abundances and distributions. The extent of effect would depend on the level of disturbance, the current distribution of invasive species, and the vectors that are available for distribution. The discussion below focuses on the first two factors, as it is assumed that the vectors available for distribution, such as vehicle traffic, equipment activity, or wind dispersal, would be comparable for all segments and alternatives.

Implementation of the EPMS, in combination with the reclamation of disturbed areas, is likely to be effective at reducing the risk of introduction and spread of invasive plant

species. However, as Route Alternatives differ from the comparison portion of the Proposed Route<sup>2</sup> or other alternatives in the amount of ground disturbance that would likely occur during construction, some Route Alternatives could be more susceptible to infestations than others. In addition, some Route Alternatives involve greater disturbance within previously disturbed or altered vegetation types, where invasive species are likely already present. These include agriculture areas, disturbed/developed areas, and disturbed sagebrush and grassland areas identified during the remote sensing effort (these areas are referred to below as “previously disturbed areas”; undisturbed areas will be referred to as “previously undisturbed areas”). Although continued disturbances in previously disturbed areas could alter the distribution of existing infestations as well as create opportunities for new infestations, it is assumed that areas characterized by a higher level of cultivation and development would likely have fewer native species and “weed-free areas” than previously undisturbed areas. Therefore, construction and operations in previously disturbed areas would likely result in fewer effects on the spread or establishment of invasive species than in previously undisturbed areas. Construction and operations of the Project in previously undisturbed areas could result in new infestations within areas that previously contained few if any infestations, which would reduce the quality of native vegetation and would likely have a greater ecological effect than impacts to previously disturbed areas.

A general comparison of the alternatives is provided below, based on the total acres of ground disturbance during construction as well as the acreage of disturbance that would occur to previously undisturbed areas (i.e., disturbance to “natural vegetation”; see Table D.6-2). These two factors provide an estimate of the potential for invasive plant species spread and establishment. The Proposed Routes for Segments 1W, 2, 4, 5, 7, 8, and 9 have Route Alternatives that are evaluated in this EIS, while the Proposed Routes in Segments 3, 6, and 10 do not have Route Alternatives. The invasive plant species known or suspected to occur within each segment are shown in Table D.8-1 of Appendix D.

**Segment 1W**

The preferred routes in Segment 1W are as follows:

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

Segment 1W is composed of Segments 1W(a) and 1W(c), both of which consist of single-circuit 230-kV transmission lines. Generally, Segment 1W(a) would be a new 73.8-mile-long transmission line, and 1W(c) would involve reconstruction of a 73.6-mile-long portion of the existing Dave Johnston – Rock Springs 230-kV transmission line. However, in the area approximately 5 miles to the north and to the south of Ice Cave Mountain, the lines shift east to avoid the ice cave. In this area, 1W(a) would be the reconstruction of the existing line and 1W(c) would be the new line. Segment 1W(a)

<sup>2</sup> The “comparison portion of the Proposed Route” refers to the portion of the Proposed Route that starts and ends at the same nodes as a Route Alternative.

has one alternative, Alternative 1W(a)-B, which is located north and west of the town of Glenrock and was the Proponents' initial proposal. However, the Proposed Route was revised following the Draft EIS public comment period in order to avoid the more populated area around Glenrock. Figure A-2 in Appendix A shows the location of the Segment 1W routes.

Approximately 80 percent of Preferred/Proposed Route along Segment 1W(a) and 83 percent along Segment 1W(c) would cross natural vegetation, consisting primarily of sagebrush (Table D.6-1). Construction of the Preferred/Proposed Route for Segment 1W (1W[a] and 1W[c] combined) would result in about 1,833 acres of total ground disturbance during construction, of which 1,371 acres would be to previously undisturbed areas (i.e., natural vegetation; Table D.6-2). However, because this portion of the route parallels an existing transmission line, it is likely that there are established invasive plant populations in this area.

Alternative 1W(a)-B would result in more total ground disturbance (273 acres) than the comparison portion of Preferred/Proposed Route (151 acres) during construction. Alternative 1W(a)-B would also result in more acres of disturbance to previously undisturbed areas (203 acres) than the comparison portion of the Preferred/Proposed Route (50 acres). Therefore, Alternative 1W(a)-B would have a greater potential for the spread or introduction of invasive plant species than the comparison portion of the Preferred/Proposed Route.

***Medicine Bow-Routt National Forests Crossed by Segment 1W***

The Preferred/Proposed Route for Segments 1W(a) and 1W(c) would cross the Medicine Bow-Routt NFs (see Section 3.17 – Land Use and Recreation). Construction of the Segment 1W(a) and 1W(c) Preferred/Proposed Routes on the Medicine Bow-Routt NFs would result in about 64 acres of ground disturbance. As described above, the Proponents would be required to adhere to all Forest Service requirements regarding weeds and invasive plant species on the National Forests.

**Segment 2**

The preferred route in Segment 2 is as follows:

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

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

Approximately 91 percent of the Preferred/Proposed Route along Segment 2 crosses natural vegetation, consisting primarily of sagebrush, greasewood, and dwarf shrub (Table D.6-1). However, over half the segment would be within an existing utility corridor, where existing populations of invasive plant species are likely present. Construction of the Preferred/Proposed Route along Segment 2 would result in about 1,785 acres of total disturbance, of which 1,507 acres would be to previously undisturbed areas (i.e., natural vegetation; Table D.6-2).

There are two portions of Segment 2 used to compare the various Route Alternatives to the Preferred/Proposed Route, one for each of the two Route Alternatives along Segment 2. These alternatives and the comparison portion of the Preferred/Proposed Route are discussed in the following paragraphs.

Alternative 2A would result in more total ground disturbance (359 acres) during construction than the comparison portion of the Preferred/Proposed Route (309 acres). Alternative 2A would also result in more disturbances to previously undisturbed areas (304 acres) than the comparison portion of the Preferred/Proposed Route (264 acres). Therefore, Alternative 2A would have a greater potential for the spread or introduction of invasive plant species than would the comparison portion of the Preferred/Proposed Route.

Alternative 2B would result in less total ground disturbance (212 acres) than the comparison portion of the Preferred/Proposed Route (238 acres). The amount of disturbance to previously undisturbed areas would also be less under Alternative 2B (198 acres) than the comparison portion of the Preferred/Proposed Route (220 acres). Therefore, Alternative 2B would have less potential for the spread or introduction of invasive plant species than would the comparison portion of the Preferred/Proposed Route.

**Segment 3**

The preferred route in Segment 3 is as follows:

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

A single-circuit 500-kV line would link the former location of the Creston Substation, approximately 2.1 miles south of Wamsutter, Wyoming, to the proposed Anticline Substation near the existing Jim Bridger Power Plant. Segment 3 would be approximately 45.9 miles long. This segment also includes a 5.1-mile segment of 345-kV line to connect to the existing Jim Bridger Power Plant Substation (Segment 3A). There are no alternatives proposed along Segment 3. Figure A-4 in Appendix A shows the location of the Segment 3 routes.

Segment 3 crosses natural vegetation for approximately 88 percent of its length, consisting primarily of sagebrush, greasewood, and dwarf shrub (Table D.6-1). Construction of Segment 3 would result in about 893 acres of total ground disturbance, of which 779 acres would correspond to disturbance to previously undisturbed areas (i.e., natural vegetation; Table D.6-2). Segment 3 follows existing utility corridors and

the I-80 corridor. Therefore, there are likely established invasive plant species along the Preferred/Proposed ROW.

**Segment 4**

The preferred routes in Segment 4 are as follows:

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

Segment 4 would link the proposed Anticline Substation and the existing Populus Substation near Downey, Idaho, with a single-circuit 500-kV line. Its proposed length is approximately 197.6 miles. The Segment 4 BLM-Preferred/Proposed Route was revised to follow Alternative 4A, as analyzed in the Draft EIS, based on public comments. This segment generally follows an existing transmission line corridor. Segment 4 has five Route Alternatives in the middle portion of its route; however, the first 52 miles to the east and the last 61 miles to the west (in Idaho) do not have any route alternatives. The middle section of the Preferred/Proposed Route, for which alternatives are presented, is approximately 85.2 miles long, and its alternatives vary from approximately 87.5 to 102.2 miles long. Alternatives 4B through 4E were proposed by the BLM Kemmerer FO (with input from various cooperating agencies), with the intent to avoid impacts to cultural resources to the extent practical. Alternative 4F was proposed by the Proponents to avoid impacts to cultural resources while still remaining north of the existing Bridger Lines. Alternative 4G was proposed by the Forest Service in order to avoid unstable soils identified along the Proposed Route during the 2012 soil assessment (it is located within Sections 1 and 2, Township 12 South, Range 41 East). Figures A-5 and A-6 in Appendix A show the location of the Segment 4 routes in Wyoming and Idaho, respectively.

Approximately 87 percent of the BLM-Preferred/Proposed Route along Segment 4 crosses natural vegetation, consisting primarily of sagebrush (Table D.6-1). Construction of the BLM-Preferred/Proposed Route along Segment 4 would result in about 4,247 acres of total ground disturbance, of which 3,552 acres would correspond to disturbance to previously undisturbed areas (i.e., natural vegetation; Table D.6-2).

Segment 4 has five alternatives, all of which can be compared to the same portion of the BLM-Preferred/Proposed Route. The greatest amount of total ground disturbance would occur under Alternatives 4D (2,115 acres), followed by Alternative 4B (2,086 acres), Alternative 4E (2,085 acres), Alternative 4C (2,075 acres), and Alternative 4F (1,785 acres). This order holds true when comparing the alternatives against the amount of disturbance to previously undisturbed areas (i.e., with Alternative 4D having the greatest impact and Alternative 4F having the least). All of the alternatives would result in a greater amount of impact than the comparison portion of the Preferred/Proposed Route. Therefore, the alternatives would have a greater potential for the spread or introduction of invasive plant species than would the comparison portion of the Preferred/Proposed Route.

### ***Caribou-Targhee National Forest Crossed by Segment 4***

There are two routes considered across the Caribou-Targhee NF (i.e., the Proposed Route as well as Alternative 4G). The Forest Service soils assessment, which was completed in 2012, identified steep slopes and potentially unstable soils along a portion of the Proposed Route that crosses the Caribou-Targhee NF (i.e., in Sections 1 and 2, Township 12 South, Range 41 East). The Forest Service therefore identified an alternative route that avoids these areas (referred to as Alternative 4G). Alternative 4G is 2.6 miles long compared to 2.3 miles for the comparison portion of the Proposed Route, and moves a proposed fly yard to a new location outside of the ROW (see Figure 2.4-3 in Chapter 2). The Forest Service's Preferred Route for the portion of Segment 4 within the Caribou Targhee NF is the Proposed Route with the inclusion of Alternative 4G. The Forest Service's Preferred Route for the ROW on the Caribou NF would be 9.4 miles long and impact a total of 356 acres of land (28 acres more than the comparison portion of the Proposed Route). This increase in the acreage of disturbance associated with the Forest Service Preferred Route is mostly related to increases in the amount of disturbance to mixed forests and juniper woodlands. As the Forest Service Preferred Route (which includes Alternative 4G) would impact slightly more vegetation than the Proposed Route, it would have a slight increase in the risk of spread or introduction of invasive plant species compared to the Proposed Route. Table 3.6-9 in Section 3.6 – Vegetation Communities lists the acres of impact (by Project component) that would occur along the portion of the Proposed Route that would be located on the Caribou-Targhee NF, Alternative 4G, as well as the portion of the Proposed Route that would be comparable to Alternative 4G.

As described above, the Proponents would be required to adhere to all Forest Service requirements regarding weeds and invasive plant species on the National Forests.

### **Segment 5**

The preferred routes in Segment 5 are as follows:

<b>Preferred Route</b>	<b>Agency</b>
Proposed Route incorporating Alternatives 5B and 5E <sup>1/</sup> (Figure A-7)	BLM
Proposed Route incorporating Alternatives 5C and 5E (Figure A-7)	Power County

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

Segment 5 would link the Populus and Borah Substations with a single-circuit 500-kV line that would be approximately 55.7 miles long. There are five Route Alternatives to portions of the Proposed Route in Segment 5. Alternatives 5A and 5B were proposed by the BLM to avoid crossing the Deep Creek Mountains. Alternative 5C, which crosses the Fort Hall Indian Reservation, was proposed as the preferred route by Power County; however, the Fort Hall Business Council has voted not to permit the Project across the Reservation. Alternative 5D was originally the Proponents' Proposed Route.

Alternative 5E was proposed by Power County as an alternative approach to the Borah Substation. The BLM has identified a Preferred Route that includes portions of the Proposed Route with Alternatives 5B and 5E (with the assumption that reliability issues associated with 5E can be resolved). The Segment 5 Preferred Route is 73.3 miles long, compared to 55.7 miles for the Proposed Route. Figure A-7 in Appendix A shows the location of the Segment 5 routes.

Approximately 68 percent of the Proposed Route along Segment 5 crosses natural vegetation, which primarily consists of sagebrush; however, a large portion of the route also crosses agricultural lands (about 20 percent; Table D.6-1). Construction of the Proposed Route along Segment 5 would result in about 1,461 acres of total ground disturbance, of which 1,054 acres would correspond to disturbance to previously undisturbed areas (i.e., natural vegetation; Table D.6-2). The Preferred Route would impact more total area (about 1,794 acres) as well as natural vegetation (about 1,081 acres) compared to the Proposed Route.

There are four portions of Segment 5 used for comparison to the Route Alternatives: one for Alternatives 5A and 5B, and one for each of the remaining Route Alternatives. These alternatives and the comparison portion of the Proposed Route are discussed in the following paragraphs.

Alternative 5B (which is part of the Preferred Route) would result in the greatest amount of total ground disturbance during construction (946 acres), followed by Alternative 5A (786 acres), and then the comparison portion of the Proposed Route (601 acres). This order holds true when comparing the alternatives against the amount of disturbance to previously undisturbed areas (i.e., with Alternative 5B having the greatest impact and the comparison portion of the Proposed Route having the least). Due to the greater acreage of vegetation impacts, Alternative 5B would have the greatest potential for the spread or introduction of invasive plant species compared to the other three routes considered in this area.

Alternative 5C would result in less ground disturbance during construction (604 acres) than the comparison portion of the Proposed Route (949 acres), and also less disturbances to previously undisturbed areas (274 acres and 741 acres, respectively). Therefore, Alternative 5C would have less potential for the spread or introduction of invasive plant species than the comparison portion of the Proposed Route.

Alternative 5D would result in less ground disturbance during construction (491 acres) than the comparison portion of the Proposed Route (565 acres), and also less disturbance to previously undisturbed areas (234 acres and 348 acres, respectively). Therefore, Alternative 5D would have less potential for the spread or introduction of invasive plant species than the comparison portion of the Proposed Route.

Alternative 5E (which is part of the Preferred Route) would result in less total ground disturbance during construction than the comparison portion of the Proposed Route (165 acres and 177 acres, respectively), and would also result in less disturbance to previously undisturbed areas (45 acres and 64 acres, respectively). Therefore, Alternative 5E would have less potential for the spread or introduction of invasive plant species than the comparison portion of the Proposed Route.

## **Segment 6**

The BLM's Preferred Route in Segment 6 is as follows:

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

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

Construction of Segment 6 would result in about 65 acres of disturbance within the immediate vicinity of the Borah and Midpoint Substations, of which 17 acres would correspond to disturbances to previously undisturbed areas (i.e., natural vegetation; Table D.6-2). Given the existing development along this route, there are likely established invasive plant species in this area. Due to the minor amount of ground disturbance in this area, Segment 6 would have a low potential for the introduction and spread of invasive plant species.

## **Segment 7**

The preferred routes in Segment 7 are as follows:

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

Segment 7 would link the Populus Substation and the proposed Cedar Hill Substation with a single-circuit 500-kV line that would be approximately 118.2 miles long. Several alternatives to the Proposed Route are being considered. Route Alternatives 7A and 7B have been proposed by the BLM to avoid crossing the Deep Creek Mountains. Alternatives 7C, 7D, 7E, 7F, and 7G were proposed by local landowners to avoid private agricultural lands. Alternative 7K (also called the Goose Creek Alternative) was identified during the public comment period as a shorter alternative to the Proposed Route than either 7I or 7J (refer to Chapter 2 of the Draft EIS for a description of these routes). The alignment for Alternative 7K was developed in cooperation with Cassia County. Alternatives 7H, 7I, and 7J, which were analyzed in the Draft EIS, are no longer under consideration. The BLM has identified a Preferred Route that includes portions of the Proposed Route with Alternatives 7B, 7C, 7D, and 7G. The Segment 7 Preferred Route is 130.2 miles long, compared to 118.2 miles for the Proposed Route. Figure A-9 in Appendix A shows the location of the Segment 7 routes.

The Proposed Route for Segment 7 crosses mostly disturbed or developed cover types (about 57 percent of the total length), consisting primarily of agricultural and disturbed sagebrush and grassland areas (Table D.6-1). Therefore, it is likely that invasive plant

species are present along this route. Construction of the Proposed Route along Segment 7 would result in about 2,526 acres of total ground disturbance, of which 1,341 acres would correspond to disturbances to previously undisturbed areas (i.e., natural vegetation; Table D.6-2). The Preferred Route would impact more total area (about 2,748 acres) but less natural vegetation (about 1,077 acres) than the Proposed Route.

There are seven portions of Segment 7 used to compare the various Route Alternatives to the Proposed Route: one for Alternatives 7A and 7B, and one for each of the remaining Route Alternatives. These alternatives and the comparison portion of the Proposed Route are discussed in the following paragraphs.

Alternative 7B (which is part of the Preferred Route) would result in more total ground disturbance during construction (999 acres) than Alternative 7A (924 acres) and the comparison portion of the Proposed Route (810 acres). However, Alternative 7A would result in a greater amount of disturbance to previously undisturbed areas (625 acres) compared to Alternative 7B (579 acres) and the comparison portion of the Proposed Route (590 acres). Therefore, due to the greater acreage of disturbance to previously undisturbed areas, Alternative 7A would have a greater potential for the introduction of invasive plant species than Alternative 7B, followed by the comparison portion of the Proposed Route (due to impacts to relatively undisturbed areas), while Alternative 7B would have a greater potential for the spread of existing invasive plant population, followed by Alternative 7A and the comparison portion of the Proposed Route (due to impacts in areas that likely already contain invasive plants).

Alternative 7C (which is part of the Preferred Route) would result in slightly less total ground disturbance during construction than the comparison portion of the Proposed Route (362 acres and 372 acres, respectively). Alternative 7C would result in substantially less disturbance to previously undisturbed areas (11 acres) than the comparison portion of the Proposed Route (83 acres). Therefore, the comparison portion of the Proposed Route would have a greater potential for the spread or introduction of invasive plant species than Alternative 7C.

Alternative 7D (which is part of the Preferred Route) would result in more total ground disturbance during construction (158 acres) than the comparison portion of the Proposed Route (138 acres). However, Alternative 7D and the comparison portion of the Proposed Route would result in similar disturbance to previously undisturbed areas (33 acres and 31 acres, respectively). Therefore, due to the greater overall acreage of disturbance, Alternative 7D would have a greater potential for the spread or introduction of invasive plant species compared to the comparison portion of the Proposed Route.

Alternative 7E would result in more total ground disturbance during construction (113 acres) than the comparison portion of the Proposed Route (82 acres), as well as a greater amount of disturbance to previously undisturbed areas (67 acres and 51 acres, respectively). Therefore, Alternative 7E would have a greater potential for the spread or introduction of invasive plant species.

Alternative 7F would result in less total ground disturbance during construction than the comparison portion of the Proposed Route (275 acres and 283 acres, respectively), as well as less disturbance to previously undisturbed areas (165 acres and 168 acres,

respectively). Therefore, the comparison portion of the Proposed Route would have a slightly greater potential for the spread or introduction of invasive plant species than Alternative 7F.

Alternative 7G (which is part of the Preferred Route) would result in a greater amount of total ground disturbance during construction (87 acres) than the comparison portion of the Proposed Route (64 acres), but would result in similar disturbances to previously undisturbed areas (21 acres and 26 acres, respectively). Because it results in greater overall disturbances but similar disturbances to previously undisturbed areas, Alternative 7G would have a slightly greater potential for the spread or introduction of invasive plant species than the comparable portion of the Proposed Route.

Alternative 7K would result in a greater amount of total ground disturbance during construction than the comparison portion of the Proposed Route (3,461 acres and 2,523 acres, respectively). Alternative 7K would also result in more disturbance to previously undisturbed areas (2,208 acres) than the comparison portion of the Proposed Route (1,162 acres). Therefore, Alternative 7K would have a greater potential for the spread or introduction of invasive plant species than the comparison portion of the Proposed Route, or any of the other alternatives.

***Sawtooth National Forest Crossed by Segment 7***

Alternative 7K would cross the Sawtooth NF (see Section 3.17 – Land Use and Recreation). Construction of Alternative 7K on the Sawtooth NF would result in about 398 acres of total ground disturbance (Table D.6-5). As described above, the Proponents would be required to adhere to all Forest Service requirements regarding weeds and invasive plant species on the National Forests.

**Segment 8**

The preferred routes in Segment 8 are as follows:

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

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

Segment 8 Preferred Route is 132.0 miles long, compared to 131.5 miles for the Proposed Route. Figure A-10 in Appendix A shows the location of the Segment 8 routes.

The Proposed Route for Segment 8 primarily crosses disturbed or agricultural lands (67 percent of the total length; Table D.6-1). Furthermore, given that it parallels an existing ROW and crosses through disturbed or developed lands, there are likely established invasive plant species present in this area. Construction of Proposed Route along Segment 8 would result in about 2,518 acres of total ground disturbance, of which 871 acres would correspond to disturbances to previously undisturbed areas (i.e., natural vegetation; Table D.6-2). The Preferred Route would impact more total area (about 2,535 acres) but less natural vegetation (about 836 acres) than the Proposed Route.

There are five portions of Segment 8 used to compare the various Route Alternatives to the Proposed Route, one for each of the five Route Alternatives considered. These alternatives and the comparison portion of the Proposed Route are discussed in the following paragraphs.

Alternative 8A would result in a slightly greater amount of total ground disturbance during construction (983 acres) than the comparison portion of the Proposed Route (963 acres), but would result in substantially less disturbance to previously undisturbed areas (83 acres and 395 acres, respectively). Because it results in substantially less disturbance to previously undisturbed areas, Alternative 8A would have less potential for the spread or introduction of invasive plant species than the comparable portion of the Proposed Route.

Alternative 8B (which is part of the BLM's Preferred Route) would result in a slightly greater amount of total ground disturbance during construction (916 acres) than the comparison portion of the Proposed Route (899 acres), but would result in less disturbance to previously undisturbed areas (160 acres and 195 acres, respectively). Therefore, Alternative 8B would have a slightly higher potential for the introduction of invasive plant species than the comparison portion of the Proposed Route (due to more impacts to relatively undisturbed areas); while the Proposed Route would have a higher potential for the spread of existing invasive plant population (due to more impacts in areas that likely already contain invasive plants).

Alternative 8C would result in a slightly less total ground disturbance during construction (140 acres) than the comparison portion of the Proposed Route (163 acres), but would result in more disturbance to previously undisturbed areas (40 acres and 30 acres, respectively). Therefore, Alternative 8C would have a slightly lower potential for the introduction of invasive plant species than the comparable portion of the Proposed Route (due to less impacts to relatively undisturbed areas), while the Proposed Route would have a lower potential for the spread of existing invasive plant population (due to less impacts in areas that likely already contain invasive plants).

Alternative 8D would result in a greater amount of total ground disturbance during construction (174 acres) than the comparison portion of the Proposed Route (147 acres). However, Alternative 8D and the comparison portion of the Proposed Route

would result in less than 0.1 acre of disturbance to previously undisturbed areas. Therefore, Alternative 8D would have a greater potential for the spread or introduction of invasive plant species than the comparison portion of the Proposed Route.

Alternative 8E would result in a greater amount of total ground disturbance during construction (334 acres) than the comparison portion of the Proposed Route (124 acres). Furthermore, Alternative 8E would result in a greater amount of disturbance to previously undisturbed areas (50 acres) than the comparison portion of the Proposed Route (14 acres). Therefore, Alternative 8E would have a greater potential for the spread or introduction of invasive plant species than the comparison portion of the Proposed Route, based on the total ground disturbance impacts.

**Segment 9**

The preferred routes in Segment 9 are as follows:

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

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

The Proposed Route for Segment 9 primarily crosses disturbed or agricultural lands (62 percent of the total length). Construction of the Proposed Route along Segment 9 would result in about 3,294 acres of total ground disturbance, of which 1,085 acres would correspond to disturbances to previously undisturbed areas (i.e., natural vegetation; Table D.6-2). The Preferred Route would impact more total area (about 3,352 acres) as well as more natural vegetation (about 1,139 acres) than the Proposed Route.

There are five portions of Segment 9 used to compare the various Route Alternatives to the Proposed Route: one for Alternatives 9D, 9F, 9G, and 9H, and one for each of the remaining Route Alternatives. These alternatives and the comparison portion of the Proposed Route are discussed in the following paragraphs.

Alternative 9A would result in a greater amount of total ground disturbance during construction (162 acres) than the comparison portion of the Proposed Route (147 acres). Alternative 9A would also result in a greater amount of disturbance to previously undisturbed areas (25 acres) than the comparison portion of the Proposed Route (17 acres). Therefore, Alternative 9A would have a greater potential for the spread or introduction of invasive plant species compared to the comparison portion of the Proposed Route.

Alternative 9B would result in less total ground disturbance during construction (965 acres) than the comparison portion of the Proposed Route (1,037 acres), as well as less disturbance to previously undisturbed areas than the comparison portion of the Proposed Route (148 acres and 249 acres, respectively). Therefore, Alternative 9B would have less potential for the spread or introduction of invasive plant species than the comparison portion of the Proposed Route.

Alternative 9C would result in slightly more total ground disturbance during construction than the comparison portion of the Proposed Route (320 acres and 305 acres, respectively), but would result in substantially less disturbance to previously undisturbed areas than the comparison portion of the Proposed Route (18 acres and 159 acres, respectively). Therefore, due to the substantially fewer impacts to previously undisturbed areas and the similar amount of total disturbance (i.e., about 15 acres more), Alternative 9C would have less potential for the spread or introduction of invasive plant species than the comparison portion of the Proposed Route.

Alternative 9E (revised; part of the Preferred Route) would result in more total ground disturbance during construction (1,290 acres) than the comparison portion of the Proposed Route (1,232 acres), as well as more disturbance to previously undisturbed areas than the comparison portion of the Proposed Route (722 acres and 688 acres, respectively). Therefore, Alternative 9E (revised) would have a greater potential for the spread or introduction of invasive plant species than the comparison portion of the Proposed Route.

Alternative 9F would result in more total ground disturbance during construction (1,165 acres) than Alternative 9H (1,163 acres), the comparison portion of the Proposed Route (1,145 acres), Alternative 9G (1,059 acres), and Alternative 9D (1,048 acres). However, this exact relationship does not hold true when comparing impacts to previously undisturbed areas. The comparison portion of the Proposed Route would result in the greatest impact to previously undisturbed areas (602 acres), followed by 9F (281), 9H (259 acres), 9D (190 acres), and then 9G (169 acres). As a result, Alternative 9F and the comparison portion of the Proposed Route would result in the greatest potential for the spread or introduction of invasive plant species in this area, with Alternatives 9D and 9G having the least potential risk relative to the other alternatives in this area.

### **Segment 10**

The BLM's Preferred Route in Segment 10 is as follows:

<b>Preferred Route</b>	<b>Agency</b>
Proposed Route (Figure A-12)	BLM

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

Construction of Segment 10 would result in about 671 acres of total ground disturbance, of which 32 acres would correspond to disturbances to previously undisturbed areas (i.e., natural vegetation; Table D.6-2). Given the existing development along this route, invasive plant species likely are currently present in this area.