

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 plants¹ 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.

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 2009b 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; whereas 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.

¹ 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).

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, staging areas, 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. 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 to be Analyzed

The following invasive plant species-related issues were brought up by the public during public scoping (Tetra Tech 2009a), 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). 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-11 and A-12) 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 Nevada Noxious Weed Program is governed by Nevada Revised Statutes (NRS) Chapter 555 – Control of Insects, Pest, and Noxious Weeds (Title 49). The Program is administered by the Nevada Department of Agriculture Plant Industry Division State Quarantine Officer. The State Quarantine Officer has the authority to declare by regulation the noxious weeds of the state (NRS 555.130). There are 39 weed control districts in Nevada. A portion of Alternative 7I is located within the Elko County weed management area (no other Route Alternative would cross into Nevada). The Noxious Weed Program advises that the control of noxious weeds is the responsibility of every landowner or occupant. Should a landowner or occupant fail, neglect, or refuse to comply with the with Noxious Weed Program, NRS 555 gives the State Quarantine Officer and the County Board of Commissions the authority to issue citations or put a lien against a property to enforce the program.

The BLM and Forest Service use the Wyoming, Idaho, and Nevada 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; Wyoming Weed and Pest 2008a, 2008b; University of Montana–Missoula 2009; Belliston et al. 2009; NRCS 2009). 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 2009b 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. 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. 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 various 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 2008a). Idaho has designated 64 species as noxious, 44 of which are suspected to occur within the Analysis Area (ISDA 2008). The state of Nevada has designated 47 plant species as noxious, 36 of which are suspected to occur within the Analysis Area; however, only 15 are suspected to occur within the portion of the Analysis Area that crosses into Nevada (in Elko County along Alternative 7I; NDA 2009). In addition, Idaho and Nevada have further categorized various noxious weed type; these categories are defined below in more detail.

Idaho’s noxious weeds are divided into three categories: Statewide Early Detection and Rapid Response 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 1 Early Detection and Rapid Response, 20 Control, and 23 Containment species (Table D.8-1). These three categories are defined as:

- **Statewide Early Detection and Rapid Response Noxious Weed List:** If any of the weeds listed in the Early Detection and Rapid Response 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.

Nevada's noxious weeds are divided into three categories: Category A, Category B, and Category C (NDA 2009). Fifteen Nevada-designated species have the potential to occur within the portion of the Analysis Area located in Nevada, including 6 Category A, one Category B, and 8 Category C species (Table D.8-1). These three categories are defined as:

- **Category A:** Weeds not found or limited in distribution throughout the state; actively excluded from the state and actively eradicated wherever found; actively eradicated from nursery stock dealer premises; control required by the state.
- **Category B:** Weeds established in scattered populations in some counties of the state; actively excluded where possible, actively eradicated from nursery stock dealer premises; control required by the state in areas where populations are not well established or previously unknown to occur.
- **Category C:** Declared noxious weeds not native to the state that are widely spread, but pose a threat to the agricultural industry and to agricultural products with a focus on stopping invasion.

3.8.2 Direct and Indirect Effects

This section is organized to present the effects of construction and operation, 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.

There is a Design Variation involving the use of two single-circuit structures proposed by the Proponent for Segments 2, 3, and 4 (see Section 2.2 for details), which is analyzed below in Section 3.8.2.4 and a Structure Variation that is analyzed in Section 3.8.2.5. The Proponents have also proposed a Schedule Variation, analyzed in Section 3.8.2.6, in which one of the two single circuits to be constructed in Segments 2, 3, and 4 and a portion of Segment 1W would be built on an extended schedule with construction beginning approximately 2.5 years after completion of the initial construction.

Mitigation measures or EPMs are presented in detail within this section only if it is the first time they have been discussed in Chapter 3; all other measures are referenced or summarized. A comprehensive list of all Proponent-proposed EPMs and Agency-required mitigation measures can be found in Table 2.7-1 of Chapter 2.

Plan Amendments

Proposed amendments are summarized in Table 2.2-1 of Chapter 2 and detailed in Appendices F and G. 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 proposed Project would not be constructed or operated. No Project-related impacts would occur from invasive plant species. However, invasive plant species are likely to continue to be introduced and may continue to spread as a result of natural dispersal or from various land-disturbing activities, such as oil and gas development, wind farms, transportation, recreation, and agriculture. Increases in the numbers or extent of invasive plant species would be restricted by monitoring and control measures implemented by weed control boards, federal land management agencies, and private landowners. For some species and areas there may be a reduction in weeds compared to current conditions, but others may increase and could cause degradation of natural and agricultural systems.

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. 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 native 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 identified EPMs within their Framework Reclamation Plan for Construction Activities (Appendix C-2) 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 the onset of construction activities. Because various landowners and land management agencies have differing requirements regarding invasive species, whether an invasive plant species would be treated at a specific location and how it would be treated would depend on its status (e.g., is it a noxious weed or not), requests/requirements of the landowner or land management agency, the nature and extent of the infestation, and the surrounding conditions (e.g., predominance of invasive species near the Project). The following EPMs proposed by the Proponents would be followed during pre-construction treatments, as well as during construction activities, to limit the potential spread or introduction of invasive plant species:

- REC-1 Company personnel and their contractors will be trained on noxious and invasive weed identification to facilitate avoidance of infestations where possible or identification of new infestations.
- REC-2 Pre-construction weed treatment would be conducted prior to the start of ground disturbing activities and at the time most appropriate for the target species.
- REC-3 Pre-construction weed treatment would be limited to the areas that are expected to have surface disturbing activities. The final Reclamation Plan will include a schedule showing the phased in-service dates for different segments. Pre-construction weed treatment will be scheduled accordingly.
- REC-4 Pre-construction treatment may use mechanical control, hand spraying, grazing, or herbicides. The final Reclamation Plan will discuss those options, as applicable.
- REC-5 All herbicide applications would comply with label restrictions, federal, state and/or county regulation, 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 PEIS 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.

Revegetation of disturbed areas with native species is essential to limit the spread or establishment of invasive plant species. Therefore, disturbed areas would be revegetated with native plant species adapted to local site conditions to establish long-term, productive, self-maintaining plant communities that are compatible with existing land uses. 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 for Construction Activities in Appendix C-2 provides details of the proposed revegetation activities.

The Proponents' proposed EPMs should substantially reduce the potential for the introduction and spread of invasive plant species as a result of Project construction activities; however, the BLM and cooperating agencies have identified additional mitigation measures that would further reduce the effects related to the introduction and spread of invasive plant species on federally managed lands. These include VEG-7, VEG-8, VEG-9, and VEG-12 (which are described in Section 3.6 – Vegetation Communities, and include general control/preventative measures including requirements for establishing cleaning stations to remove weed propagules from construction equipment), as well as the following mitigation measures:

- WEED-1 The Proponents shall consult with each appropriate local land management agency (Forest Service and BLM) office or landowner to determine appropriate seed mix and commercial seed source for revegetation. The Reclamation, Revegetation, and Weed Management Plan must specify the approved seed mixes for each area (also see VEG-1).
- 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 Gravel and other materials used for road construction shall come from certified weed-free sources.
- WEED-6 Soil stockpiles in areas containing invasive plants shall be reseeded or revegetated as soon as feasible, or the soil replaced in or near the original excavation. If requested by the applicable land-management agency, soil stockpiles shall be covered with plastic during the time prior to reseeded or replacement; however, plastic coverings will not be used on lands where the managing agency or landowner have requested that these piles not be covered with plastic (e.g., the Forest Service).

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. 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 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 for Construction Activities (Appendix C-2), 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 mitigation measures WEED-4 and VEG-12). 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 also identified EPMs within their Revised Plan for Operations, Maintenance, and Emergency Response Activities (Appendix C-4) intended to limit the spread of invasive plant species during operation and maintenance. These measures include the following:

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

approved herbicide and/or plan is unacceptable, they shall notify the Proponents.

- OM-16 Before beginning an O&M project on federal or state land, the Proponents or their subcontractors will clean all equipment that will operate off-road or disturb the ground. Tracks, skid plates, and other parts that can trap soil and debris will be removed for cleaning when feasible, and the entire vehicle and equipment will be cleaned at an off-site location.
- OM-17 To help limit the spread and establishment of noxious weed species in disturbed areas, desired vegetation needs to be established promptly after disturbance. The Proponents will rehabilitate significantly disturbed areas as soon as possible after ground-disturbing activities and during the optimal period. Seed and mulch will be certified “noxious weed free” and seed mix will be agreed to in advance by the landowner or land managing agency.
- OM-22 Only herbicides approved by the land managing agency as safe to use in aquatic environments and reviewed by the Proponents for effectiveness will be used within 100 feet of sensitive aquatic resources.

Revegetating disturbed areas with “desired vegetation” promptly after the initial disturbance (as outlined in the Proponents’ EPM OM-17) 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 Revised Plan for Operations, Maintenance, and Emergency Response Activities. 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).

The measures proposed by the Proponents should substantially reduce the potential for the introduction and spread of invasive species as a result of Project operation and maintenance activities. However, the BLM and cooperating agencies have identified the following mitigation measure that would further reduce operations and maintenance impacts on federally managed lands:

- WEED-4 Annual post-construction monitoring and treatment of invasive plants shall continue for at least 3 years. If after 3 years post-construction conditions are not equivalent or better than pre-construction conditions, monitoring and treatment will continue until these conditions are met (also see VEG-12).
- WEED-5 During operations, access roads and maintenance areas shall be surveyed annually between May 1 and September 30 (or as determined by Agency staff) for the presence of new weed introductions and existing invasive plant species. Coordinate with Agency specialists to identify the most appropriate time for survey. A weed control program would be

implemented if new weeds were found, which would define how and when these invasive plants would be treated. Weeds shall be treated before their seed heads have become viable, or if heads will become viable, whole plant removal of all weeds shall occur before seed drop occurs.

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 provided by the Proponents to address decommissioning; however, the EPMs proposed by the Proponents for construction as well as the mitigation measures identified by the BLM and cooperating agencies would be applicable during decommissioning and should be effective at reducing the potential to spread or introduce invasive plant species.

3.8.2.3 Proposed Route and 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.

The Proponent-proposed EPMs and agency-identified mitigation measures, combined with reclamation of disturbed areas, are 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 Route² 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 operation 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 operation of

² 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.

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, undisturbed habitat types; 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 1E, 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 currently 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 1E

Segment 1E, as proposed, would link the Windstar and Aeolus Substations in south-central Wyoming with a 100.6-mile 230-kV single-circuit transmission line. Twenty acres of the expansion of Windstar and Aeolus Substations and 0.5 acre for one regeneration site are attributed to Segment 1E. Alternative 1E-A is a 16.1-mile alternative along the north end of Segment 1E, which was the Proponents' initial proposal before moving the Proposed Route at the suggestion of local landowners to avoid the more settled area around Glenrock. Alternative 1E-B is 21.4 miles longer than the Proposed Route but is being considered by the Proponents because it would avoid a Wyoming-designated sage-grouse core area to the east. The BLM has required the consideration of Alternative 1E-C, which parallels the Segment 1W 230-kV lines into the Aeolus Substation (see Appendix A, Figure A-2).

The Proposed Route in Segment 1E runs almost entirely through native vegetation (91 percent of the total length; Table D.6-1), which is composed primarily of sagebrush, dwarf shrub, and juniper. Construction of the Proposed Route in Segment 1E would result in about 1,292 acres of total ground disturbance, of which about 1,160 acres would be in previously undisturbed areas (Table D.6-2).

There are three portions of Segment 1E used to compare the various Route Alternatives to the Proposed Route, one for each of the three Route Alternatives along Segment 1E.

Alternative 1E-A would result in substantially less total ground disturbance (128 acres) than the comparison portion of the Proposed Route (215 acres) during construction. The amount of disturbance to previously undisturbed areas would also be less under Alternative 1E-A (44 acres) compared to the comparison portion of the Proposed Route (118 acres). Therefore, Alternative 1E-A would have less potential for the spread or introduction of invasive plant species than the comparison portion of the Proposed Route, because it would result in lower level of disturbance and would cross more previously disturbed vegetation types where invasive plant species have likely already been established.

Alternative 1E-B would result in substantially more total ground disturbance (777 acres) than the comparison portion of the Proposed Route (402 acres). Both routes would pass primarily through previously undisturbed area, although Alternative 1E-B would result in a greater amount of disturbance to previously undisturbed areas (711 acres) than the comparison portion of the Proposed Route (384 acres). The natural vegetation crossed by both routes consists primarily of sagebrush and dwarf shrub. Therefore, both routes have the potential for introducing invasive plant species to weed-free areas. However, given that Alternative 1E-B would result in a higher overall level of disturbance, it would have a greater potential for the spread or introduction of invasive plant species than the comparison portion of the Proposed Route.

Alternative 1E-C would result in substantially less total ground disturbance (336 acres) than the comparable portion of Proposed Route (1,011 acres). Alternative 1E-C would also result in less disturbance to previously undisturbed areas (317 acres) than the comparison portion of the Proposed Route (978 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 1E-C.

The Proposed Route along Segment 1E, as well as Alternative 1E-C, would cross the Medicine Bow-Routt NFs (see Section 3.17 – Land Use and Recreation). Construction of the Proposed Route on the Medicine Bow-Routt NFs would result in about 47 acres of total ground disturbance, of which all but less than 1 acre would occur in previously undisturbed areas. Construction of Alternative 1E-C on the Medicine Bow-Routt NFs would result in about 15 acres of total ground disturbance, with all of these impact occurring in previously undisturbed areas.

Segment 1W

Segment 1W is composed of two parts, Segment 1W(a) and 1W(c), both of which would consist of a new 230-kV line for part of their length and a reconstruction of an existing 230-kV line for the remaining part. Segment 1W(a) would be about 76.5 miles long, and would extend from the Windstar Substation to the Aeolus Substation. Segment 1W(c) would be about 70.6 miles long, and would extend from the Dave Johnston Power Plant to the Aeolus Substation. Alternative 1W-A is a 16.2-mile alternative located near the town of Glenrock, which was the Proponents' initial proposal before moving the Proposed Route at the suggestion of local landowners in order to avoid the more settled area around Glenrock. Twenty acres of the proposed expansion at the Windstar and Aeolus Substations are attributed to Segment 1W(a) and 3 acres of the expansion at the Heward Substation and 17 acres of the expansion at the Windstar and Aeolus Substations are attributed to Segment 1W(c). There are no Route Alternatives proposed south of that point (see Appendix A, Figure A-2).

Approximately 90 percent of Proposed Route along Segment 1W(a) and 83 percent along Segment 1W(c) crosses natural vegetation, consisting primarily of sagebrush (Table D.6-1). Construction of the Proposed Route for Segment 1W (1W[a] and 1W[c] combined) would result in about 1,554 acres of total ground disturbance during construction, of which 1,267 acres would be to previously undisturbed areas (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 would result in less total ground disturbance (140 acres) than the comparison portion of Proposed Route (212 acres) during construction. Alternative 1W-A would also result in fewer acres of disturbance to previously undisturbed areas (46 acres) than the comparison portion of the Proposed Route (154 acres). Therefore, Alternative 1W-A would have less potential for the spread or introduction of invasive plant species than the comparison portion of the Proposed Route.

The 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) Proposed Route on the Medicine Bow-Routt NFs would result in about 16 acres of total ground disturbance, with no impact occurring in previously undisturbed areas. Construction of the Segment 1W(c) Proposed Route on the Medicine Bow-Routt NFs would result in about 44 acres of total ground disturbance, with no impact occurring in previously undisturbed areas.

Segment 2

Segment 2, as proposed, would link the Aeolus and Creston Substations in southeast Wyoming with two 500-kV circuits on one structure. One circuit would be operated at 230 kV during the initial phase of the Project. Its total proposed length is 96.7 miles. Fifty-two acres of the expansion of the Aeolus Substation and the construction of the Creston Substation and 0.5 acre for one regeneration site are attributed to Segment 2. There are three Route Alternatives, two of which are near the community of Fort Fred Steele. Alternative 2A at 28.4 miles long is being considered by the BLM because it remains in the WWE corridor nearer the town and the state historic site, and Alternative 2B, at 6.2 miles, is closer to the community than the comparison portion of the Proposed Route and was the initially proposed route before the Proponents responded to local suggestions and relocated the Proposed Route farther to the south. Alternative 2C is a 24.4-mile alternative located north of Hanna, Wyoming. It is being evaluated at the recommendation of the Wyoming Governor's office to follow a utility corridor approved by that office for minimizing effects to sage-grouse (see Appendix A, Figure A-3).

Approximately 87 percent of the 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 Proposed Route along Segment 2 would result in about 1,550 acres of total disturbance, of which 1,355 acres would be to previously undisturbed areas (Table D.6-2).

There are three portions of Segment 2 used to compare the various Route Alternatives to the Proposed Route, one for each of the three Route Alternatives along Segment 2.

Alternative 2A would result in more total ground disturbance (450 acres) during construction than the comparison portion of the Proposed Route (398 acres). Alternative 2A would also result in more disturbance to previously undisturbed areas

(374 acres) than the comparison portion of the Proposed Route (329 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 Proposed Route.

Alternative 2B would result in less total ground disturbance (83 acres) than the comparison portion of the Proposed Route (104 acres). The amount of disturbance to previously undisturbed areas would also be less under Alternative 2B (75 acres) than the comparison portion of the Proposed Route (94 acres). Therefore, Alternative 2B would have less potential for the spread or introduction of invasive plant species than would the comparison portion of the Proposed Route.

Alternative 2C would result in less total ground disturbance (322 acres) than the comparison portion of the Proposed Route (369 acres). However, the amount of disturbance to previously undisturbed areas would be similar between the two routes (255 acres for Alternative 2C and 257 acres for the comparison portion of the Proposed Route). Therefore, the two routes would have similar potential for the spread or introduction of invasive plant species, with the Proposed Route having slightly more risk.

Segment 3

Segment 3, as proposed, would link the Creston and Anticline Substations in southeast Wyoming with two 500-kV circuits on one structure. One circuit would be operated at 230 kV during the initial phase of the Project. Its total proposed length between those two substations is 46.7 miles. Sixty-nine acres of the construction of the Anticline and Creston Substations are attributed to Segment 3. Segment 3 would also link the Anticline and Jim Bridger Substations with a 4.3-mile 230-kV line and a 5.5-mile 345-kV line and includes the 10-acre expansion of the Jim Bridger 345-kV Substation. There are no alternatives proposed along this segment (see Appendix A, Figure A-4).

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 863 acres of total ground disturbance, of which 734 acres would correspond to disturbance to previously undisturbed areas (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 proposed ROW.

Segment 4

Segment 4, as proposed, would link the Anticline Substation near the Jim Bridger Power Plant in southwestern Wyoming with the Populus Substation in Idaho with two 500-kV circuits on one structure. Its total proposed length is 203 miles. Eighty-nine acres of the construction of the Anticline Substation and the expansion of the Populus Substation and 1.5 acres for three regeneration sites are attributed to Segment 4. It has six Route Alternatives in the middle portion of its route but 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 Proposed Route is 90.2 miles long, and its Route Alternatives vary from 85 to 102 miles long. These alternatives were proposed by the Wyoming Governor's office (4A, paralleling the existing 345-kV lines throughout); by the BLM

Kemmerer FO (4B through 4E, including edits from various cooperating agencies), with the intent to avoid impacts to cultural resources to the extent practical; and by the Proponents (4F, attempting to avoid impacts to cultural resources while still remaining north of the existing lines) (see Appendix A, Figures A-5 and A-6).

Approximately 81 percent of the Proposed Route along Segment 4 crosses natural vegetation, consisting primarily of sagebrush (Table D.6-1). Construction of the Proposed Route along Segment 4 would result in about 3,521 acres of total ground disturbance, of which 2,992 acres would correspond to disturbance to previously undisturbed areas (Table D.6-2).

Segment 4 has six alternatives, all of which can be compared to the same portion of the Proposed Route. The greatest amount of total ground disturbance would occur under Alternatives 4D (1,511 acres), followed by Alternative 4E (1,500 acres), the comparison portion of the Proposed Route (1,499 acres), Alternative 4B (1,488 acres), Alternative 4C (1,481 acres), Alternative 4F (1,327 acres), and Alternative 4A (1,289 acres). Disturbance to previously undisturbed areas would be greatest under Alternative 4D (1,330 acres), followed by Alternative 4B (1,313 acres), Alternative 4E (1,291 acres), the comparison portion of the Proposed Route (1,281 acres), Alternative 4C (1,271 acres), Alternative 4F (1,225 acres), and Alternative 4A (1,169 acres). Therefore, Alternative 4A and Alternative 4F would have less potential for the spread or introduction of invasive plant species than the other alternatives as well as the comparison portion of the Proposed Route.

The Proposed Route along Segments 4 would cross the Caribou-Targhee NF (see Section 3.17 – Land Use and Recreation). Construction of the Segment 4 Proposed Route on the Caribou-Targhee NF would result in about 117 acres of total ground disturbance, of which 112 acres would correspond to disturbance to previously undisturbed areas.

Segment 5

Segment 5, as proposed, would link the Populus and Borah Substations with a 54.6-mile single-circuit 500-kV line. Forty-four acres of the expansion of the Populus and Borah Substations are attributed to Segment 5. There are five Route Alternatives including two proposed by the BLM to avoid the Deep Creek Mountains (5A and 5B; 8 miles and 19 miles longer than the comparison portion of the Proposed Route), one preferred by Power County that crosses the Fort Hall Indian Reservation (5C; 6 miles shorter than the comparison portion of the Proposed Route), one originally proposed by the Proponents (5D; 2 miles shorter than the comparison portion of the Proposed Route but located within more agricultural lands), and one proposed by Power County as an alternative approach to the Borah Substation (5E) (see Appendix A, Figure A-7).

Approximately 67 percent of the Proposed Route along Segment 5 crosses natural vegetation, which primarily consists of sagebrush; however, approximately 21 percent of the Proposed Route along this segment crosses agriculture areas (Table D.6-1). Construction of the Proposed Route along Segment 5 would result in about 1,282 acres of total ground disturbance, of which 912 acres would correspond to disturbance to previously undisturbed areas (Table D.6-2).

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.

Alternative 5B would result in the greatest amount of total ground disturbance during construction (842 acres), followed by Alternative 5A (751 acres), and then the comparison portion of the Proposed Route (646 acres). However, all of three of these routes would impact comparable amounts of previously undisturbed areas. Due to the greater acreage of total area affected relative to the other segments, 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 (538 acres) than the comparison portion of the Proposed Route (823 acres), and also less disturbances to previously undisturbed areas (258 acres and 629 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 (455 acres) than the comparison portion of the Proposed Route (496 acres), and also less disturbance to previously undisturbed areas (233 acres and 309 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 would result in less total ground disturbance during construction compared to the comparable portion of the Proposed Route (104 acres and 141 acres, respectively), and would also result in less disturbance to previously undisturbed areas (37 acres and 58 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

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 one-quarter mile from each substation to allow for moving the entry point into the substation to the new 500-kV bay. Thirty-one acres of the expansion of the Borah and Midpoint Substations are attributed to Segment 6. Changes in the two substations would allow it to be operated at 500 kV (see Appendix A, Figure A-8).

Construction of Segment 6 would result in about 65 acres of disturbance within the immediate vicinity of the Borah and Midpoint Substations, of which 16 acres would correspond to disturbances to previously undisturbed areas (Table D.6-2). Given the existing development along this route, there are likely established invasive plant species in this area. Due to the likelihood of existing invasive plant species and the minor amount of ground disturbance, Segment 6 would have a low potential for the introduction and spread of invasive plant species.

Segment 7

Segment 7, as proposed, would link the Populus and Cedar Hill Substations with a 118.1-mile single-circuit 500-kV line. Forty-two acres of the expansion of the Populus and the construction of the Cedar Hill Substations and 1 acre for two regeneration sites are attributed to Segment 7. In addition to the Proposed Route, which is principally on private lands, Route Alternatives have been proposed by the BLM to avoid the Deep Creek Mountains (7A and 7B; which are 5 miles and 11 miles longer than the comparison portion of the Proposed Route), by local landowners (7C, 7D, 7E, 7F, and 7G, which all represent minor adjustments proposed to address local issues), by local landowners to avoid private agricultural lands (7I or the State Line Route, which is 55 miles longer than the Proposed Route and would require 0.5 acre for an additional regeneration site), and by the Proponents to avoid the State Line Route (7H, which is 10 miles longer than the Proposed Route). Alternative 7J, which is a variant of the State Line Route also proposed by local landowners, would not terminate at the Cedar Hill Substation. This alternative, referred to as the Rogerson Alternative, would require a different substation be constructed near a 345-kV existing transmission line (approximately 24 miles southwest of the Cedar Hill Substation; see Appendix A, Figure A-9). The tables and discussion in this document compare 7J (202 miles) with the corresponding portion of Segment 7/9 (118.1 miles of Segment 7 and 25.8 miles of Segment 9, for a total of 143.9 miles). All other Segment 7 alternatives are compared to Segment 7 of the Proposed Route (118.1 miles) only.

The Proposed Route for Segment 7 crosses mostly disturbed or developed cover types (60 percent of the total length), consisting primarily of agriculture 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 2,083 acres of total ground disturbance, of which 889 acres would correspond to disturbances to previously undisturbed areas (Table D.6-2).

There are eight portions of Segment 7 used to compare the various Route Alternatives to the Proposed Route: one for Alternatives 7A and 7B, one for Alternatives 7H and 7I, one for each of the remaining Route Alternatives.

Alternative 7B would result in more total ground disturbance during construction (828 acres) than Alternative 7A (778 acres) and the comparison portion of the Proposed Route (657 acres). However, Alternative 7A would result in a greater amount of disturbance to previously undisturbed areas (511 acres) compared to Alternative 7B (476 acres) and the comparison portion of the Proposed Route (405 acres). Therefore, due to the greater acreage of disturbance to previously undisturbed areas, Alternative 7A would have a greater potential for the spread or introduction of invasive plant species than Alternative 7B, followed by the comparison portion of the Proposed Route.

Alternative 7C would result in a similar amount of total ground disturbance as the comparison portion of the Proposed Route (289 acres and 288 acres, respectively). However, the comparison portion of the Proposed Route would result in a substantially greater amount of disturbance to previously undisturbed areas (68 acres) compared to Alternative 7C (7 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 would result in more total ground disturbance during construction (131 acres) than the comparison portion of the Proposed Route (118 acres). However, Alternative 7D and the comparison portion of the Proposed Route would result in similar disturbance to previously undisturbed areas (25 acres and 24 acres, respectively). Therefore, due to the greater overall acreage of disturbance, Alternative 7D would have a slightly greater potential for the spread or introduction of invasive plant species compared to the comparison portion of the Proposed Route

Alternatives 7E would result in more total ground disturbance during construction (95 acres) than the comparison portion of the Proposed Route (76 acres); as well as a slightly greater amount of disturbance to previously undisturbed areas (56 acres and 47 acres, respectively). Therefore, Alternative 7E would have a slightly greater potential for the spread or introduction of invasive plant species.

The comparison portion of the Proposed Route would result in a slightly greater amount of total ground disturbance during construction (261 acres) than would Alternative 7F (233 acres); as well as a slightly greater amount of disturbance to previously undisturbed areas (151 acres and 143 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 would result in a greater amount of total ground disturbance during construction (72 acres) than the comparison portion of the Proposed Route (48 acres), but would result in similar disturbances to previously undisturbed areas (15 acres and 22 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.

Both Alternatives 7H and 7I would replace the entire Proposed Route for Segment 7. Both alternatives would be longer than the Proposed Route and impact more lands (including substantially more disturbances to previously undisturbed areas). Alternative 7I would result in the greatest amount of total ground disturbance (3,218 acres), followed by Alternative 7H (2,551 acres) and the comparison portion of the Proposed Route (2,083 acres). Alternative 7I would also result in the greatest amount of disturbance to previously undisturbed areas (2,030 acres), followed by Alternative 7H (1,696 acres) and the comparison portion of the Proposed Route (889 acres). Therefore, Alternatives 7H and 7I would have a greater potential for the spread or introduction of invasive plant species than the comparison portion of the Proposed Route.

Alternative 7J would result in a more total ground disturbance than the comparison portion of the Proposed Route (3,606 acres and 2,510 acres, respectively). Furthermore, Alternative 7J would result in a greater amount of disturbance to previously undisturbed areas (2,021 acres) than the comparison portion of the Proposed Route (963 acres). Therefore, Alternative 7J would have a greater potential for the

spread or introduction of invasive plant species than the comparison portion of the Proposed Route. However, due to the routing of Alternative 7J in relation to the Proposed Routes of Segments 7 and 9, it cannot be directly compared with the Proposed Route of Segment 7, as can the other alternatives for this segment.

Alternatives 7H, 7I, and 7J would cross the Sawtooth NF (see Section 3.17 – Land Use and Recreation). Construction of Alternative 7H on the Sawtooth NF would result in about 338 acres of total ground disturbance, of which 160 acres would correspond to disturbances to previously undisturbed areas. Construction of Alternative 7I on the Sawtooth NF would result in about 625 acres of total ground disturbance, of which 441 acres would correspond to disturbances to previously undisturbed areas. Construction of Alternative 7J on the Sawtooth NF would result in about 383 acres of total ground disturbance, of which 119 acres would correspond to disturbances to previously undisturbed areas.

Segment 8

Segment 8, as proposed, would link the Midpoint and Hemingway Substations. This 131-mile single-circuit 500-kV transmission line would stay north of the Snake River until crossing through the SRBOP parallel to an existing 500-kV transmission line before ending at the Hemingway Substation. Thirteen acres of the expansion of the Midpoint Substation and 0.5 acre for a regeneration site are attributed to Segment 8. There are five Route Alternatives: 8A, which follows the WWE corridor but crosses the Snake River and I-84 twice (while the Proposed Route would stay north of this area); 8B and 8C, which represent the old routes originally proposed by the Proponents but that have now been changed to avoid the cities of Kuna and Mayfield, respectively; 8D, which represents a small revision involving a rebuild of the existing transmission line to move both away from the National Guard Maneuver Area; and 8E, which was proposed by the BLM in order to avoid crossing the Halverson Bar non-motorized portion of the Guffey Butte-Black Butte Archaeological District (see Appendix A, Figure A-10).

The Proposed Route for Segment 8 primarily crosses disturbed or agricultural lands (67 percent of the total length; Table D.6-1). Given that it parallels an existing ROW and crosses through disturbed or developed lands, there are likely established invasive plant species present. Construction of Proposed Route along Segment 8 would result in about 2,125 acres of total ground disturbance, of which 751 acres would correspond to disturbances to previously undisturbed areas (Table D.6-2).

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.

Alternative 8A would result in a slightly greater amount of total ground disturbance during construction (829 acres) than the comparison portion of the Proposed Route (815 acres), but would result in substantially less disturbance to previously undisturbed areas (86 acres and 335 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 would result in a greater amount of total ground disturbance during construction (779 acres) than the comparison portion of the Proposed Route (754 acres), but would result in less disturbance to previously undisturbed areas (134 acres and 162 acres, respectively). Therefore, both routes would result in similar potential for the spread or introduction of invasive plant species than the comparable portion of the Proposed Route (as the difference in acreage between total disturbances and disturbances to previously undisturbed areas are similar but opposite for each route), with the comparison portion of the Proposed Route having a slightly higher risk (due to the larger amount of disturbance to previously undisturbed areas).

Alternative 8C would result in a similar amount of total ground disturbance as the comparison portion of the Proposed Route (138 acres and 139 acres, respectively). However, Alternative 8C would result in a slightly greater amount of disturbance to previously undisturbed areas (34 acres) than the comparison portion of the Proposed Route (27 acres). Therefore, Alternative 8C would have a slightly greater potential for the spread or introduction of invasive plant species than the comparison portion of the Proposed Route.

Alternative 8D would result in a greater amount of total ground disturbance during construction (143 acres) than the comparison portion of the Proposed Route (123 acres). Neither Alternative 8D nor the comparison portion of the Proposed Route would result in 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, based on the total ground disturbance impacts.

Alternative 8E would result in a greater amount of total ground disturbance during construction (283 acres) than the comparison portion of the Proposed Route (98 acres). Furthermore, Alternative 8E would result in a greater amount of disturbance to previously undisturbed areas (42 acres) than the comparison portion of the Proposed Route (11 acres). 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, based on the total ground disturbance impacts.

Segment 9

Segment 9, as proposed, would link the Cedar Hill and Hemingway Substations with a 161.7 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 into the Hemingway Substation. Fifteen acres of the construction of the Cedar Hill Substation and 1 acre for two regeneration sites are attributed to Segment 9. There are eight Route Alternatives proposed, including 9A, which was the Proponents' Proposed Route until moving to avoid the Hollister area; 9B, which is being considered by the BLM because it follows the WWE corridor and parallels existing utility corridors; 9C, which was the Proponents' Proposed Route until moving to avoid the Castleford area; and 9D and 9E, proposed by the Owyhee County Taskforce, that cross more public lands north and south of the Proposed Route, respectively, than the Proposed Route. Most of

Alternative 9D would be within the SRBOP. Alternatives 9F, 9G, and 9H were proposed to avoid crossing the non-motorized area south of C.J. Strike Reservoir. Alternatives 9G and 9H provide an alternate route location south of Alternative 8E (see Appendix A, Figure A-11).

The Proposed Route for Segment 9 primarily crosses disturbed or agricultural lands (63 percent of the total length; Table D.6-1). Construction of the Proposed Route along Segment 9 would result in about 2,671 acres of total ground disturbance, of which 889 acres would correspond to disturbances to previously undisturbed areas.

There are four portions of Segment 9 used to compare the various Route Alternatives to the Proposed Route: one for Alternatives 9D, 9E, 9F, 9G, and 9H, and one for each of the remaining Route Alternatives.

Alternative 9A would result in a greater amount of total ground disturbance during construction (133 acres) than the comparison portion of the Proposed Route (117 acres). Alternative 9A would also result in a greater amount of disturbance to previously undisturbed areas (21 acres) than the comparison portion of the Proposed Route (15 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 a similar amount of total ground disturbance during construction as the comparison portion of the Proposed Route (816 acres and 825 acres, respectively), but would result in less disturbance to previously undisturbed areas than the comparison portion of the Proposed Route (127 acres and 196 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 a greater amount of total ground disturbance during construction than the comparison portion of the Proposed Route (279 acres and 239 acres, respectively), but would result in substantially less disturbance to previously undisturbed areas than the comparison portion of the Proposed Route (25 acres and 126 acres, respectively). Therefore, due to the fewer impacts to previously undisturbed areas, Alternative 9C would have less potential for the spread or introduction of invasive plant species than the comparison portion of the Proposed Route.

The comparison portion of the Proposed Route would result in more total ground disturbance during construction (955 acres) than Alternatives 9D (816 acres) and 9G (852 acres), but less disturbance than Alternatives 9E (1,004 acres), 9F (971 acres), and 9H (979 acres). The Proposed Route would result in more disturbance to previously undisturbed areas (501 acres) than Alternatives 9D (158 acres), 9F (236 acres), 9G (141 acres), and 9H (218 acres), but less than Alternative 9E (539 acres). Therefore, Alternative 9E would have the greatest potential for the spread or introduction of invasive plant species compared to the comparison portion of the Proposed Route.

Segment 10

Segment 10, as proposed, would link the Cedar Hill and Midpoint Substations with a 33.6-mile single-circuit 500-kV line, following a WWE corridor for most of its distance. Twenty-eight acres of the expansion of the Midpoint Substation and of the construction of the Cedar Hill Substation are attributed to Segment 10. There are no Route Alternatives proposed along this segment (see Appendix A, Figure A-12).

Construction of Segment 10 would result in about 549 acres of total ground disturbance, of which 24 acres would correspond to disturbances to previously undisturbed areas. Given the existing development along this route, there are likely invasive plant species currently present.

3.8.2.4 Design Variation

A Design Variation is being considered that would consist of constructing two single-circuit lines in Segments 2 through 4 instead of a single double-circuit line (which is the design assessed above). The disturbance footprint of the two single-circuit towers is greater than that of the double-circuit tower, in part because the requested ROW between Segments 2 and 4 would be wider, but also because helicopter-assisted construction could be implemented in these areas, which would require additional fly yards. The additional ROW space and the fly yards would cause additional temporary disturbance during construction. Across Segments 2, 3, and 4, the additional disturbance during construction of the single-circuit tower alternative ranges from 25 to 30 percent greater than comparable portions of the double-circuit tower disturbance under the proposed design. The two single circuits require more ground disturbance, but would be designed and constructed to the same standards as the Proposed Action. Table D.6-4 in Appendix D lists the acreage of disturbance that would occur under the Design Variation. The additional disturbance that would occur under the Design Variation would result in the increased potential for the spread or introduction of invasive plant species compared to the Proposed Action.

3.8.2.5 Structure Variation

The proposed guyed Structure Variation would add four guy wires about 140 feet long from a point about 100 feet up in each tower to four guy anchors spaced in a square around the tower (Appendix B, Figure B-6). This would not change the amount of disturbance during construction or operation appreciably. Therefore, there is no measurable difference in the potential for the spread or introduction of invasive plant species from the use of this Structure Variation when compared to the use of self-supporting lattice towers under the Proposed Action.

3.8.2.6 Schedule Variation

The Schedule Variation uses the two single-circuit Design Variation described above but extends construction over a longer time frame. Initially, only one of the eventual two single-circuit lines would be constructed with the second to be constructed at a later date. The Schedule Variation proposes that the first single-circuit transmission line in Segments 2, 3, and 4 would be built as soon as a ROW grant is issued, but that the second line would not begin construction until late 2018. This would mean nearly 2 years would pass

between the end of construction for the first line and beginning of construction for the second line. Any staging areas and fly yards that had been used for the first stage would have been revegetated after construction was complete and would have to be cleared again. As this variation would result in ground disturbances occurring twice in the same areas, the Schedule Variation would have essentially double the impacts on ground disturbance compared to the simultaneous construction or double-circuit alternative, even though the overall project footprint would not be any greater. Therefore, the potential for the spread or introduction of invasive plant species would be about twice under this variation compared to the simultaneous construction or double-circuit alternative.

3.8.3 Mitigation Measures

The Proponents have committed to EPMs that would be implemented Project-wide to limit the potential spread or introduction of invasive plant species, as outlined in this section and in Appendix C.

The following weed-related mitigation measures were identified by the Agencies and are required on federally managed lands. The Agencies recommend that the Proponents incorporate these measures into their EPMs and apply them Project-wide:

- WEED-1 The Proponents shall consult with each appropriate local land management agency (Forest Service and BLM) office or landowner to determine appropriate seed mix and commercial seed source for revegetation. The Reclamation, Revegetation, and Weed Management Plan must specify the approved seed mixes for each area (also see VEG-1).
- 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 Gravel and other materials used for road construction shall come from certified weed-free sources.
- WEED-4 Annual post-construction monitoring and treatment of invasive plants shall continue for at least 3 years. If after 3 years post-construction conditions are not equivalent or better than pre-construction conditions, monitoring and treatment will continue until these conditions are met (also see VEG-12).
- WEED-5 During operations, access roads and maintenance areas shall be surveyed annually between May 1 and September 30 (or as determined by Agency staff) for the presence of new weed introductions and existing invasive plant species. Coordinate with Agency specialists to identify the most appropriate time for survey. A weed control program would be implemented if new weeds were found, which would define how and when these invasive plants would be treated. Weeds shall be treated before their seed heads have become viable, or if heads will become viable, whole plant removal of all weeds shall occur before seed drop occurs.
- WEED-6 Soil stockpiles in areas containing invasive plants shall be reseeded or revegetated as soon as feasible, or the soil replaced in or near the original

excavation. If requested by the applicable land-management agency, soil stockpiles shall be covered with plastic during the time prior to reseeded or replacement; however, plastic coverings will not be used on lands where the managing agency or landowner have requested that these piles not be covered with plastic (e.g., the Forest Service).