ENERGY FACILITY SITING COUNCIL

OF THE

STATE OF OREGON

Site Certificate for the Perennial Wind Chaser Station

ISSUE DATE

September 18, 2015

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PERENNIAL WIND CHASER STATION SITE CERTIFICATE

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Acronyms and Abbreviations

ASC	Application for Site Certificate
Council	Oregon Energy Facility Siting Council
Department	Oregon Department of Energy
DOGAMI	Oregon Department of Geology and Mineral Industries
DPO	Draft Proposed Order
ESCP	Erosion and Sediment Control Plan
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and Maintenance
OAR	Oregon Administrative Rule
ODFW	Oregon Department of Fish and Wildlife
ORS	Oregon Revised Statute
CTG	Combustion Turbine Generator
NRHP	National Register of Historic Places
WGS	Washington Ground Squirrels
MOU	Memorandum of Understanding

1.0 Introduction and Site Certification

This site certificate is a binding agreement between the State of Oregon (State), acting through the Energy Facility Siting Council (Council), and Perennial-WindChaser, LLC (certificate holder). As authorized under Oregon Revised Statue (ORS) Chapter 469, the Council issues this site certificate authorizing certificate holder to construct, operate and retire the Perennial Wind Chaser Station (facility) at the below described site in Umatilla County, Oregon, subject to the conditions set forth herein.

Both the State and certificate holder must abide by local ordinances, state law and the rules of the Council in effect on the date this site certificate is executed. However, upon a clear showing of a significant threat to public health, safety, or the environment that requires application of later-adopted laws or rules, the Council may require compliance with such later-adopted laws or rules (ORS 469.401(2)).

Subject to the conditions herein, this site certificate binds the State and all counties, cities and political subdivisions in Oregon as to the approval of the site and the construction, operation, and retirement of the facility as to matters that are addressed in and governed by this site certificate (ORS 469.401(3)). This site certificate does not address, and is not binding with respect to, matters that are not included in and governed by this site certificate, and such matters include, but are not limited to: employee health and safety; building code compliance; wage and hour or other labor regulations; local government fees and charges; other design or operational issues that do not relate to siting the facility (ORS 469.401(4)); and permits issued under statutes and rules for which the decision on compliance has been delegated by the federal government to a state agency other than the Council (ORS 469.503(3)).

Each affected state agency, county, city, and political subdivision in Oregon with authority to issue a permit, license, or other approval addressed in or governed by this site certificate, shall upon submission of the proper application and payment of the proper fees, but without hearings or other proceedings, issue such permit, license or other approval subject only to conditions set forth in this site certificate. In addition, each state agency or local government agency that issues a permit, license or other approval for this facility shall continue to exercise enforcement authority over such permit, license or other approval (ORS 469.401(3)). For those permits, licenses, or other approvals addressed in and governed by this site certificate, the certificate holder shall comply with applicable state and federal laws adopted in the future to the extent that such compliance is required under the respective state agency statutes and rules. (ORS 469.401(2)).

The certificate holder must construct, operate and retire the facility in accordance with all applicable rules as provided for in Oregon Administrative Rule (OAR) Chapter 345, Division 26. After issuance of this site certificate, the Council shall have continuing authority over the site and may inspect, or direct the Oregon Department of Energy (department) to inspect, or request another state agency or local government to inspect, the site at any time in order to ensure that the facility is being operated consistently with the terms and conditions of this site certificate ([ORS 469.430)].

The obligation of the certificate holder to report information to the department or the Council under the conditions listed in this site certificate is subject to the provisions of ORS 192.502 *et seq.* and ORS 469.560. To the extent permitted by law, the department and the Council will not publicly disclose information that may be exempt from public disclosure if the certificate holder has clearly labeled such

information and stated the basis for the exemption at the time of submitting the information to the department or the Council. If the Council or the department receives a request for the disclosure of the information, the Council or the department, as appropriate, will make a reasonable attempt to notify the certificate holder and will refer the matter to the Attorney General for a determination of whether the exemption is applicable, pursuant to ORS 192.450.

The Council recognizes that many specific tasks related to the design, construction, operation and retirement of the facility will be undertaken by the certificate holder's agents or contractors. Nevertheless, the certificate holder is responsible for ensuring compliance with all provisions of the site certificate.

The definitions in ORS 469.300 and OAR 345-001-0010 apply to the terms used in this site certificate, except where otherwise stated, or where the context clearly indicates otherwise. The findings of fact, reasoning, and conclusions of law underlying the terms and conditions of this site certificate are set forth in the Council's Final Order in the Matter of the Application for a Site Certificate (ASC) for the Perennial Wind Chaser Station (Final Order) issued on September 18, 2015, incorporated herein by this reference. In interpreting this site certificate, any ambiguity is to be clarified by reference to the following, in order of priority: (1) this Site Certificate, (2) the Final Order on the ASC and (3) the record of the proceedings that led to the Final Order on the ASC.

The duration of this site certificate shall be the life of the facility, subject to termination pursuant to OAR 345-027-0010 or the rules in effect on the date that termination is sought, or revocation under ORS 469.440 and OAR 345-029-0100 or the statutes and rules in effect on the date that revocation is ordered. The Council shall not change the conditions of this site certificate except as provided for in OAR Chapter 345, Division 27.

2.0 Facility Location

The Perennial Wind Chaser Station and related and supporting facilities are located in Umatilla County, Oregon. The site boundary, as defined in OAR 345-001-0010, encompasses 60 acres and includes the perimeter of the Station, its related and supporting facilities, rights of way of the lateral natural gas pipeline and transmission line, and all temporary staging areas. The energy facility site is located in the Northwest Quarter of Section 30, Township 4 North, Range 28 East, and Willamette Meridian. The energy facility is located approximately 5 miles southwest of Hermiston, Oregon, adjacent to the existing Hermiston Generating Plant. The facility's supporting transmission line and natural gas pipeline lateral are both located in Umatilla County, with the transmission line extending north to the facility's step-up substation that is located adjacent to Bonneville Power Administration's McNary Substation, and the natural gas pipeline lateral, extending south of the Station 4.63 miles.

3.0 Facility Description

3.1 Energy Facility

The energy facility is a natural gas-fueled simple-cycle power generating plant, producing up to 415 megawatts (MW) of electric power. The energy facility is a non-base load plant, limited to an average number of hours of operation per year of not more than 6,600 hours. The energy facility includes up to four generating units, each consisting of one GE LMS100 (or equivalent) combustion turbine, intercooler

heat exchanger, electrical generator, selective catalytic reduction unit, catalytic oxidation unit, and stack. Each generating unit is connected to a common cooling tower. The energy facility burns only natural gas, with the natural gas combusted in the combustion turbine generator, then expanded to drive the turbine generator, producing electric power. Each combustion turbine generator consists of a stationary combustion turbine-generator and associated auxiliary equipment and systems, which include: evaporative coolers, inlet air filters, nitrogen oxide control water injection system, gas turbine enclosure, gas turbine compartment ventilation system, fuel gas conditioning system, synthetic lubrication oil system, mineral lubrication oil system, automatic water wash system, fire detection and protection system, intercooler system, hydraulic starting system, and vibration monitoring system.

The energy facility is accessed from Westland Road via Interstate Highway 82 or 84. A paved loop road, approximately 24 feet wide, provides for normal truck and operator vehicle traffic and connects to Westland Road. The loop road is 3,000 feet in length.

The facility also includes the following related and supporting facilities. Exhibit B of the ASC includes additional information regarding facility components.

Natural-gas Pipeline Lateral

The energy facility receives natural gas from the natural gas pipeline lateral that extends south from the energy facility approximately 4.63 miles. The pipeline lateral is located within an established 50-foot natural gas right of way (ROW).

Transmission Line

Power generated at the energy facility is transmitted to the Bonneville Power Administration's McNary Substation, utilizing primarily preexisting transmission infrastructure that runs from Hermiston to McNary. A new 230-kV line replaces the 115-kV line on the preexisting infrastructure, plus an additional six poles connect the energy facility to the preexisting infrastructure. Four new poles run from the onsite switchyard in the southwest corner of the site to the northwestern corner of the site. From the northwest corner, the transmission line crosses Westland Road to a new pole on the western side. This fifth pole connects the energy facility to the preexisting infrastructure. The certificate holder may also replace the first connecting pole of the existing infrastructure, for a total of six new poles.

500-kV Step-up Substation

A 500-kV step-up substation steps up the voltage of the energy facility's 230-kV line to 500-kV in order to tie in to the open bay at the McNary Substation. The 500-kV transformer yard is open-air, of alternating current, and on a leveled and graveled area, approximately 3 acres in size and surrounded by a security fence. An underground line connects the 500-kV step-up substation to the McNary Substation tie-in location. The underground line is 477 feet in length and installed in a concrete-encased duct bank approximately 2 feet wide by 2 feet high, with approximately 3 feet of cover.

Zero Liquid Discharge System (Alternative Scenario)

Lamb Weston's Water Pollution Control Facilities Permit allows Lamb Weston's facility to manage and dispose of the Hermiston Generating Project's (HGP) waste water, among other wastewaters, by land application. It is the certificate holder's preference to send the energy facility's reclaimed water to HGP,

which would then be delivered to Lamb Weston. At the time of site certification, Lamb Weston was not able to consent to the certificate holder sending the energy facility's reclaimed water to HGP due to renewal of its permit. If Lamb Weston is not able to accept reclaimed water from the HGP that has come from the energy facility, the certificate holder will install a zero liquid discharge system (ZLD). If necessary, the ZLD system will consist of a clarifier, a high efficiency reverse osmosis system and a crystallizer. The system will be sized to accept an approximate 140 gallons per minute of blowdown from the cooling tower and miscellaneous plant wastewaters. A 200,000 gallon tank will be installed to handle potential fluctuations in the operation of the ZLD system. Effluent form the ZLD system would be returned to the cooling tower basin as makeup water, and the solids would be transported offsite for disposal in a landfill.

Utility Lines and Interconnecting Water Pipelines

Two telecommunication lines connect the energy facility telephone and data highway system into the City of Hermiston system. An interconnecting water pipeline connects the energy facility to the Port of Umatilla water system. The pipeline is located below grade with a trench under the railroad tracks and is approximately 208 feet. Additionally, as discussed above, should HGP, and in turn Lamb Weston, accept the certificate holder's reclaimed wastewater, an additional wastewater pipeline will connect the energy facility to the HGP for purposes of delivering the facility's reclaimed water to HGP.

Temporary Construction Areas

Additional areas, approximately 5.11 acres, are included for five construction offices, construction parking, construction laydown and the temporary storage of soil displaced during the construction process.

Buildings

A single pre-engineered building serves as a control room and administration building and also houses the water treatment equipment. Additionally, separate enclosures house the chemical feed equipment, electrical equipment, and alternative zero liquid discharge system, should this system be necessary.

4.0 Site Certificate Conditions

4.1 General Conditions: Design, Construction and Operations (GEN)

Condition Number	General Conditions
STANDARD: GENERAL STANDARD OF REVIEW (GS) (OAR 345-022-0000)	
GEN-GS-01	The certificate holder shall begin and complete construction of the facility by the dates specified in the site certificate. [Final Order Condition A.5; Mandatory Condition 345-027-0020(4)]

Condition Number	General Conditions
GEN-GS-02	The certificate holder shall begin construction of the facility within three years after the effective date of the site certificate. Under OAR 345-015-0085(9), the site certificate is effective upon execution by the Council chair and the applicant. [Final Order Condition A.1; Mandatory Condition 345-027-0020(4)]
GEN-GS-03	The certificate holder shall complete construction of the facility within six years after the effective date of the site certificate. [Final Order Condition A.2; Mandatory Condition 345-027-0020(4)]
GEN-GS-04	The certificate holder shall design, construct, operate, and retire the facility: (a) Substantially as described in the site certificate (b) In compliance with the requirements of ORS Chapter 469, applicable Council rules, and applicable state and local laws, rules and ordinances in effect at the time the site certificate is issued; and (c) In compliance with all applicable permit requirements of other state agencies [Final Order Condition A.4; Mandatory Condition 345-027-0020(3)]
GEN-GS-05	Before any transfer of ownership of the facility or ownership of the site certificate holder, the certificate holder shall inform the department of the proposed new owners. The requirements of OAR 345-027-0100 apply to any transfer of ownership that requires a transfer of the site certificate. [Final Order Condition A.9; Mandatory Condition 345-027-0020(15)]
GEN-GS-06	Any matter of non-compliance under the site certificate is the responsibility of the certificate holder. Any notice of violation issued under the site certificate shall be levied on the certificate holder. [Final Order Condition B.4]
GEN-GS-07	Except as necessary for the initial survey or as otherwise allowed for wind energy facilities, transmission lines or pipelines under this section, the certificate holder shall not begin construction, as defined in OAR 345-001-0010, or create a clearing on any part of the site until the certificate holder has construction rights on all parts of the site. For the purpose of this rule, "construction rights" means the legal right to engage in construction activities. For wind energy facilities, transmission lines or pipelines, if the certificate holder does not have construction rights on all parts of the site, the certificate holder may nevertheless begin construction, as defined in OAR 345-001-0010, or create a clearing on a part of the site if the certificate holder has construction rights on that part of the site and the certificate holder would construct and operate part of the facility on that part of the site even if a change in the planned route of a transmission line or pipeline occurs during the certificate holder's negotiations to acquire construction rights on another part of the site. [Final Order Condition A.6; Mandatory Condition 345-027-0020(5)]
GEN-GS-08	If the certificate holder becomes aware of a significant environmental change or impact attributable to the facility, the certificate holder shall, as soon as possible, submit a written report to the department describing the impact on the facility and any affected site certificate conditions. [Final Order Condition A.7; Mandatory Condition 345-027-0020(6)]

Condition Number	General Conditions
GEN-GS-09	(a)The certificate holder shall design, construct and operate the lateral natural gas pipeline in accordance with the requirements of the U.S. Department of Transportation as set forth in Title 49 Code of Federal Regulations, Part 192, in effect as of the date of this rule; and (b)The certificate holder shall develop and implement a program using the best available practicable technology to monitor the proposed lateral natural gas pipeline to ensure protection of public health and safety. [Final Order Condition A.11; Site Specific Condition 345-027-0023(3)]
STANDARD: ORGANIZATIONAL EXPERTISE (OE) (OAR 345-022-0010)	
GEN-OE-01	The certificate holder shall prevent the development of any conditions on the site that would preclude restoration of the site to a useful, non- hazardous condition to the extent that prevention of such site conditions is within the control of the certificate holder. [Final Order Condition B.5; Mandatory Condition 345-027-0020(7)]
GEN-OE-02	The certificate holder shall obtain all necessary federal, state and local permits or approvals required for construction, operation and retirement of the facility or ensure that its contractors obtain the necessary federal, state and local permits or approvals. [Final Order Condition B.6]
STANDARD: STRUCTURAL (SS) (OAR 345-022-0020)	
GEN-SS-01	The certificate holder shall design the facility to resist ground shaking from an event with a 2,475-year recurrence interval. All structures shall be designed in accordance with the Oregon Structural Special Code (2010) and the 2009 International Building Code. [Final Order Condition C.3]
GEN-SS-02	The certificate holder shall design, engineer and construct the facility to avoid dangers to human safety presented by seismic hazards affecting the site that are expected to result from all maximum probable seismic events. As used in this rule, "seismic hazard" includes ground shaking, landslide, liquefaction, lateral spreading, tsunami inundation, fault displacement and subsidence. [Final Order Condition C.5; Mandatory Condition 345-027-0020(12)]
GEN-SS-03	The certificate holder shall notify the department, the State Building Codes Division and the Department of Geology and Mineral Industries promptly if site investigations or trenching reveal that conditions in the foundation rocks differ significantly from those described in the application for a site certificate. After the department receives the notice, the Council may require the certificate holder to consult with the Department of Geology and Mineral Industries and the Building Codes Division and to propose mitigation actions. [Final Order Condition C.6; Mandatory Condition 345-027-0020(13)]
GEN-SS-04	The certificate holder shall notify the department, the State Building Codes Division and the Department of Geology and Mineral Industries promptly if shear zones, artesian aquifers, deformations or clastic dikes are found at or in the vicinity of the site.

Condition Number	General Conditions
	[Final Order Condition C.7; Mandatory Condition 345-027-0020(14)]
STANDARD: SOIL PROTECTION (SP) (OAR 345-022-0022)	
GEN-SP-01	To control the introduction and spread of noxious weeds, the certificate holder must implement the requirements of the approved Revegetation and Noxious Weed Control Plan during all phases of construction and operation of the facility. Amendments to the Revegetation and Noxious Weed Control Plan must be reviewed and approved by the Umatilla County Weed Control Board and submitted to the department no later than 30 days after approval. [Final Order Condition D.3]
GEN-SP-02	If herbicides are determined necessary, the certificate holder shall contract with a licensed contractor to prescribe and apply the proper treatments. Additionally, the certificate holder shall coordinate with each individual landowner prior to the application of specific herbicides. The certificate holder shall submit to the department evidence of consultation with the landowners prior to application of the herbicides and evidence of a contract with a licensed contractor. [Final Order Condition D.4]
GEN-SP-03	If a reportable release of hazardous material occurs during construction or operation of the facility, the certificate holder shall notify the department within 72 hours of the occurrence, clean up the release, and dispose of any contaminated soil or other materials according to applicable regulations. The certificate holder shall make spill control and containment kits readily available in areas containing fuel oil, lubricating oil, hydraulic oil, and chemicals, as well as chemical unloading areas. The spill kits shall be equipped with sorbent pads, diatomaceous earth, shovels and appropriate hand tools, curtain booms if working near open water, personal protection equipment, and temporary waste disposal containers. [Final Order Condition D.8]
STANDARD: LAND USE (LU) (OAR 345-022-0030)	
GEN-LU-01	The certificate holder shall design and construct all facility structures and buildings in compliance with the setback requirements of Umatilla County Development Ordinance Section 152.063(B), (C), (E) in effect as of April 03, 2014. [Final Order Condition E.2]
STANDARD: FISH AND WILDLIFE (FW) (OAR 345-022-0060)	
GEN-FW-01	The certificate holder shall design, construct, maintain and operate the reconductored transmission line following the current Avian Power Line Interaction Committee guidelines to minimize risk of avian mortality. [Final Order Condition H.6]
GEN-FW-02	The certificate holder shall restrict vehicular travel along the transmission line and pipeline to the right of way (ROW) and other established areas within the construction, access or maintenance easements. Additionally, the certificate holder shall impose speed limits during construction for access roads to reduce dust emissions, maintains safety and protect wildlife.

Condition Number	General Conditions
	[Final Order Condition H.7]
STANDARD: SCENIC RESOURCES (SR) (OAR 345-022-0080)	
GEN-SR-01	The certificate holder shall paint or otherwise finish the facility structures in neutral colors with a low reflectivity finish to provide visual integration with the surrounding landscape. [Final Order Condition J.1]
GEN-SR-02	For the new poles required for the transmission infrastructure, the certificate holder shall use poles similar in height and appearance to the existing poles within the transmission line right-of-way. [Final Order Condition J.3]
STANDARD: PUBLIC SERVICES (PS) (OAR 345-022-0110)	
GEN-PS-01	The site certificate holder shall fence the Station site and include a monitored gated entrance, security lighting and a closed circuit television camera shall be installed. [Final Order Condition M.6]
GEN-PS-02	Prior to beginning operation of the facility, the certificate holder shall provide a site plan to the Hermiston Fire & Emergency Services District. The certificate holder shall indicate the actual location of all facility structures on the site plan. During operation, the certificate holder shall ensure that appropriate fire protection agency personnel have an up-to- date list of the names and telephone numbers of facility personnel available to respond on a 24-hour basis in case of an emergency on the facility site. [Final Order Condition M.8]
STANDARD: SITING STANDARDS FOR TRANSMISSION LINES (TL) (OAR 345-024-0090)	
GEN-TL-01	(a) The certificate holder shall design, construct and operate the transmission line in accordance with the requirements of the National Electrical Safety Code (American National Standards Institute, Section C2, 1997 Edition); and (b) The certificate holder shall develop and implement a program that provides reasonable assurance that all fences, gates, cattle guards, trailers, or other objects or structures of a permanent nature that could become inadvertently charged with electricity are grounded or bonded throughout the life of the line. [Final Order Condition O.1; Site Specific Condition 345-027-0023(4)]
STANDARD: GROUNDWATER (GW) (OAR 345-022-0000)	
GEN-GW-01	During construction and operation of the facility, the certificate holder shall limit use of water obtained from the Port of Umatilla to no more than 2,000 gallons per minute and to amounts found to be within the scope of the water rights held by the Port. [Final Order Condition R.2]

4.2 Pre-construction Conditions (PRE)

Condition Number	Pre-construction Condition
STANDARD: ORGANIZATIONAL EXPERTISE (OE) (OAR 345-022-0010)	
PRE-OE-01	Before beginning construction, the certificate holder shall provide the department with the identity and qualifications of the design, engineering and construction contractor(s) for the facility. The certificate holder shall select contractors that have substantial experience in the design, engineering and construction of similar facilities. The certificate holder shall report to the department any change in contractors during the design and construction of the facility. [Final Order Condition B.1]
PRE-OE-02	The certificate holder must notify the department before conducting any work on the site that does not qualify as surveying, exploration, or other activities to define or characterize the site. The notice must include a description of the work and evidence that its value is less than $250,000 or evidence that the applicant has satisfied all conditions that are required prior to beginning construction. [Final Order Condition B.2]
PRE-OE-03	Before beginning construction, the certificate holder shall provide confirmation in writing to the department that the third parties have obtained all necessary permits or approvals and shall provide to the department proof of agreements between the certificate holder and the third parties regarding access to the resources or services secured by the permits or approvals. [Final Order Condition B.7]
STANDARD: STRUCTURAL STANDARD (SS) (OAR 345-022-0020)	
PRE-SS-01	Prior to beginning construction, the certificate holder shall complete additional geotechnical investigations, including field explorations and laboratory testing. The field explorations shall include additional borings for the final locations of the turbine/generators, access bridge, step-up substation, transmission towers and the buried transmission cable. Further, the site certificate holder shall perform a shear wave velocity measurement at the station and step-up substation sites. [Final Order Condition C.1]
PRE-SS-02	Prior to beginning construction, the certificate holder shall complete the following additional engineering evaluations: (a) Refining the seismic hazard evaluations and ground motion design parameters, including design response spectra; (b) Estimating soil bearing capacity and settlement for the transformer foundation, transmission tower foundation, and other geotechnical evaluations based upon the final design layout and design loads; (c) Developing geotechnical recommendations for trench excavation, shoring, and backfill of the buried transmission cable, as well as trenchless excavation techniques, if necessary to pass below existing railroad tracks; (d) Completing a final geotechnical design report.

Condition Number	Pre-construction Condition
	[Final Order Condition C.2]
PRE-SS-03	Prior to beginning construction, the certificate holder shall submit a written plan, subject to approval by the department, for implementing soil improvement techniques identified in the geotechnical evaluation. [Final Order Condition C.4]
STANDARD: SOIL PROTECTION (SP) (OAR 345-022-0022)	
PRE-SP-01	The certificate holder shall develop and implement a Hazardous Materials Management and Monitoring Plan (the Plan), which shall include and maintain a Materials Safety Data sheet for all hazardous chemicals stored onsite. The Plan shall contain best management practices and hazardous waste training for construction and operation personnel. The certificate holder shall submit a copy of this plan to the department for review and approval prior to the commencement of construction of the facility. [Final Order Condition D.6]
STANDARD: LAND USE (LU) (OAR 345-022-0030)	
PRE-LU-01	Prior to beginning construction, the certificate holder shall obtain all required land use approvals from Umatilla county as listed in the letter from the Umatilla County Board of Commissioners dated May 14, 2015, and shall submit all associated applications and pay all associated application fees. [Final Order Condition E.5]
STANDARD: RETIREMENT AND FINANCIAL ASSURANCE (RT) (OAR 345-022-0050)	
PRE-RT-01	Before beginning construction of the facility, the certificate holder shall submit to the State of Oregon, through the Council, a bond or letter of credit in a form and amount satisfactory to the Council to restore the site to a useful, non- hazardous condition. The certificate holder shall maintain a bond or letter of credit in effect at all times until the facility has been retired. The Council may specify different amounts for the bond or letter of credit during construction and during operation of the facility. [Final Order Condition G.3] [Mandatory Condition 345-027-0020(8)]
PRE-RT-02	Before beginning construction of the facility, the certificate holder shall submit to the State of Oregon, through the Council a bond or letter of credit naming the State of Oregon, acting by and through the Council, as beneficiary or payee. The initial bond or letter of credit amount for the facility is $4.560 million, without a zero liquid discharge system or $4.61 million with a zero liquid discharge system, depending upon the final design configuration, to be adjusted to the date of issuance, and adjusted on an annual basis thereafter, as described in sub-paragraph (b) of this condition: (a) The certificate holder may adjust the amount of the initial bond or letter of credit based on the final design configuration of the facility. Any revision to the restoration costs should be adjusted to the date of issuance as described in (b) and subject to review and approval by the department. (b) The certificate holder shall adjust the amount of the bond or letter of credit using the following calculation: i. Adjust the amount of the bond or letter of credit (expressed in second quarter 2013 dollars) to present value, using the U.S. Gross Domestic Product Implicit Price Deflator, Chain-Weight, as published in the Oregon Department of Administrative Services' "Oregon

Condition Number	Pre-construction Condition
	Economic and Revenue Forecast" or by any successor agency and using the second quarter 2013 index value and the quarterly index value for the date of issuance of the new bond or letter of credit. If at any time the index is no longer published, the Council shall select a comparable calculation to adjust second quarter 2013 dollars to present value. ii. Round the result total to the nearest $1,000 to determine the financial assurance amount. (a) The certificate holder shall use an issuer of the bond or letter of credit approved by the Council (b) The certificate holder shall use a form of bond or letter of credit approved by the Council. The certificate holder shall describe the status of the bond or letter of credit in the annual report submitted to the Council under OAR 345-026-0080. The bond or letter of credit shall not be subject to revocation or reduction before retirement of the facility site. [Final Order Condition G.4]
STANDARD: FISH AND WILDLIFE (FW) (OAR 345-022-0060)	
PRE-FW-01	Before beginning construction, the certificate holder shall provide the department and Oregon Department of Fish and Wildlife (ODFW) a detailed map of the facility site showing all project components, and a table showing the acres of temporary habitat impacted by habitat category and subtype, and the acres of permanent habitat impacted by habitat category and subtype. The maps of the facility site shall indicate the habitat categories of all areas that will be affected during construction. In classifying the affected habitat into habitat categories, the certificate holder shall consult with ODFW. The certificate holder shall not begin ground disturbance in an affected area until the habitat assessment has been approved by the department, in consultation with ODFW. The certificate holder shall not construct any facility components within areas of Category 1 habitat and shall avoid temporary disturbance of Category 1 habitat. [Final Order Condition H.1]
PRE-FW-02	Prior to commencement of construction, following completion of Condition PRE-FW-01 (Final Order Condition H.1), the certificate holder shall consult with the Oregon Department of Fish and Wildlife (ODFW) to determine the final acreage of habitat mitigation required. Mitigation shall be provided in accordance with the final acreage determinations provided in response to Condition PRE-FW-01 (Final Order Condition H.1) and consistent with a Habitat Mitigation Plan, if determined necessary, as approved by the department and ODFW (a) A final Habitat Mitigation Plan, if determined necessary, and ODFW's concurrence of that plan shall be submitted to the department no less than 30 days prior to the beginning of construction. (b) The final Habitat Mitigation Plan, if necessary, may be amended from time to time by agreement of the certificate holder and the Oregon Energy Facility Siting Council. Such amendments may be made without amendment of the site certificate. The Council authorizes the department to agree to amendments to this plan. The department shall notify the Council of the Final Habitat Mitigation Plan and all amendments to the plan. The Council retains the authority to approve, reject or modify any amendments of this plan agreed to by the department. [Final Order Condition H.2]

Condition Number	Pre-construction Condition
PRE-FW-03	Before beginning construction, the certificate holder shall prepare a final Project Restoration Monitoring Plan and Project Biological Monitoring Plan in consultation with the department and Oregon Department of Fish and Wildlife (ODFW). (a) The final plans and ODFW's concurrence must be submitted to the department no less than 30 days prior to the beginning of construction. The certificate holder shall implement the requirements of the approved plan during all phases of construction and operation of the facility, as applicable. (b) The plans may be amended from time to time by agreement of the certificate holder and the Oregon Energy Facility Siting Council. Such amendments may be made without amendment to the site certificate. The Council authorizes the department to agree to amendments of this plan; however, the Council retains the authority to approve, reject or modify any amendment of this plan agreed to by the department. [Final Order Condition H.4]
PRE-FW-04	Prior to commencing construction, all project personnel shall attend an environmental training session conducted by the certificate holder. The training shall include, but not be limited to, the following topics: identification of approved project boundaries and access roads; identification of sensitive wetland and waterbody resources; identification of special status-plant and wildlife species; techniques regarding avoidance and minimization measures the certificate holder will implement; the role of the onsite biologist; the notification process to be followed if new sensitive resources are identified. [Final Order Condition H.5]
PRE-FW-05	The certificate holder shall provide the department and the Oregon Department of Fish and Wildlife (ODFW) with a written summary of all results of biological preconstruction surveys, including nest surveys, within 10 days of survey completion. [Final Order Condition H.12]
PRE-FW-06	If construction is to occur during important times (breeding season for Ferrunginous Hawks and other raptors or migration for all native non-raptors), or at close distances to environmentally sensitive areas (nests of the above), prior to any construction activities, the certificate holder must consult with Oregon Department of Fish and Wildlife (ODFW) to determine appropriate measures to take and guidance on seasonal and/or spatial restrictions to avoid or minimize impact. [Final Order Condition H.11]
STANDARD: THREATENED AND ENDANGERED SPECIES (TE) (OAR 345-022-0070)	
PRE-TE-01	The certificate holder shall establish streamside management zones within 50 feet of both sides of intermittent and perennial streams and along margins of bodies of open water where removal of low-lying vegetation is minimized. [Final Order Condition I.1]
PRE-TE-02	Prior to beginning construction, the site certificate holder shall survey for northern sagebrush lizard in areas of sagebrush and other shrubby habitat to be impacted by ground disturbing activities. If northern sagebrush lizards are discovered, the site certificate holder shall contact and consult Oregon Department

Condition Number	Pre-construction Condition
	of Fish and Wildlife (ODFW) and the department to determine appropriate measures to avoid or minimize adverse effects, including spatial restrictions. Construction activities shall be restricted until consultation with ODFW has occurred. [Final Order Condition I.2]
PRE-TE-03	Prior to beginning construction, the site certificate holder shall examine any structures within the construction corridor for bat roosts. If any bat roosts are discovered, construction shall be restricted and the site certificate holder shall consult with Oregon Department of Fish and Wildlife and the department to determine appropriate measures to avoid and/or minimize adverse effects. [Final Order Condition I.3]
PRE-TE-04	Prior to beginning construction, the site certificate holder shall conduct pre-construction surveys for Washington Ground Squirrels (WGS) in any areas with suitable habitat, using a qualified professional biologist that has experience in detection of WGS. The certificate holder shall provide written reports of the surveys to the department and the Oregon Department of Fish and Wildlife (ODFW). If any project components that require ground disturbance are located within 1,000 feet of potential WGS habitat (excluding tilled agricultural land or developed areas as it is not suitable for WGS foraging or burrowing), the site certificate holder shall conduct transect surveys to determine if squirrels are present. If WGS are present within the 1,000 foot-buffer, the certificate holder shall identify the boundaries of the Category 1 WGS habitat in the report to the department and ODFW and construction shall be restricted until appropriate measures are determined, which shall include but not be limited to WGS habitat marking with high visibility flagging or makers. [Final Order Condition I.4]
PRE-TE-05	The site certificate holder shall conduct pre-construction surveys for Robinson's onion and Laurence's milkvetch prior to conducting any ground-disturbing activities in areas with suitable habitat. If any plants are discovered, the site certificate holder shall consult with the Oregon Department of Agriculture and the department for guidance on appropriate measures to avoid or minimize adverse effects. [Final Order Condition I.5]
STANDARD: HISTORIC, CULTURAL, AND ARCHAEOLOGICAL RESOURCES (HC) (OAR 345-022-0090)	
PRE-HC-01	Prior to construction, the certificate holder shall contact and coordinate with each owner/operator of the identified NRHP eligible historic period resources to obtain any necessary easements or approvals. The certificate holder shall ensure that a qualified archaeologist, as defined in OAR 736-051-0070, instructs construction personnel in the identification and avoidance of accidental damage to identified resources. Records of such training shall be maintained at the administration/control building and made available to authorized representatives of the department upon request. [Final Order Condition K.1]
PRE-HC-02	Before beginning construction, the certificate holder shall provide to the department a map showing the final design locations of all components of the facility, the areas that would be temporarily disturbed during construction and the areas that were surveyed in 2013.

Condition Number	Pre-construction Condition
	[Final Order Condition K.2]
PRE-HC-03	The certificate holder must employ qualified personnel to conduct field investigations of the section of the project's natural gas pipeline right of way not previously surveyed, prior to construction in that area. The certificate holder shall provide a written report of the field investigation to the department and Oregon State Historic Preservation Office (SHPO). If potentially significant historic, cultural or archaeological sites are found during the field investigations, the certificate holder must instruct all construction personnel to avoid the identified sites and must implement appropriate measures to protect the site, including the measures described in Condition CON-HC-01 (Final Order Condition K.3). [Final Order Condition K.4]
STANDARD: PUBLIC SERVICES (PS) (OAR 345-022-0110)	
PRE-PS-01	Before beginning construction of any new road approaches or utility crossings, the certificate holder shall obtain all required permits from Umatilla County. [Final Order Condition M.2]
PRE-PS-02	Prior to beginning construction, the certificate holder shall enter into a development agreement with Umatilla County to provide roadway and access improvements recommended by the Umatilla County Public Works Director in conjunction with construction and operation of the energy facility and to pay the certificate holder's proportionate share of Umatilla County's costs of implementing measures to address fogging and icing on County roads potentially impacted by the operation of the energy facility. [Final Order Condition M.4]
PRE-PS-03	Before beginning construction, the certificate holder shall submit Notice(s) of Proposed Construction or Alteration to the Federal Aviation Administration and the Oregon Department of Aviation. The certificate holder shall promptly notify the department of the responses from the FAA and the Oregon Department of Aviation. [Final Order Condition M.5]
PRE-PS-04	Prior to beginning construction, the certificate holder shall develop and implement a fire protection system, which shall include a fire water system, portable fire extinguishers, a smoke detection system and a carbon dioxide extinguishing system provided with the combustion turbine generators (CTG). [Final Order Condition M.7]
STANDARD: NOISE CONTROL REGULATION (NC) (OAR 345-035-0035)	
PRE-NC-01	Prior to beginning construction of the facility, the certificate holder shall re-run the noise model using the noise characteristics of the equipment that has been selected to ensure compliance with the noise regulations. [Final Order Condition P.1]
STANDARD: GROUNDWATER (GW) (OAR 345-022-0000)	

Condition Number	Pre-construction Condition
PRE-GW-01	The certificate holder shall enter into a contract with the owners of the Regional Water System to ensure completion of system improvements needed in order to provide water to the facility. [Final Order Condition R.1]
STANDARD: ENERGY FACILITIES THAT EMIT CARBON DIOXIDE (CD) (OAR 345-024-0500)	
PRE-CD-01	Before beginning construction, the certificate holder shall notify the department in writing of its final selection of an equipment vendor and shall submit a written design information report to the department sufficient to verify the facility's designed new and clean heat rate and its nominal electric generating capacity at average annual site conditions. The certificate holder shall include the proposed total number of hours of operation, subject to the limitation that the total annual average number of hours of operation per year is not more than 6,600 hours. At the time the certificate holder submits the information required by this condition, the certificate holder shall also specify its election of the method used to measure or calculate carbon dioxide emissions. The election shall apply for the initial reporting required pursuant to Condition OPR-CD-01 (Final Order Condition S.8) or Condition OPR-CD-02 (Final Order Condition S.9), as applicable, and to each reporting period required pursuant to Condition OPR-CD-03 (Final Order Condition S.10). [Final Order Condition S.1]
PRE-CD-02	For the purposes of this site certificate, "monetary path payment requirement" means the amount of offset funds determined pursuant to OAR 345-024-0590 and -600 and the amount of the selection and contracting funds that the certificate holder must disburse to the Climate Trust, as the qualified organization, pursuant to OAR 345-024-0710 and the site certificate. The certificate holder shall calculate the monetary path payment using an offset fund rate of $1.27 per ton of carbon dioxide in 2015 dollars as follows: (a) The certificate holder shall calculate the 2015 dollars using the index described in subsection (c) below. (b) The certificate holder shall increase the amount of the bond or letter of credit described in Condition PRE-CD-06 (Final Order Condition S.6) by the percentage increase in the index. The certificate holder shall index the funds from the date of the Council's approval of the site certificate to the date of disbursement of funds to The Climate Trust (c) The calculation of 2015 dollars shall be made using the same index described in Condition PRE-RT-02 (Final Order Condition G.4). The amount of the bond or letter of credit shall increase annually by the percentage increase in the Index and shall be pro-rated within the year to the date of disbursement to The Climate Trust from the date of Council approval of the site certificate. If at any time the Index is no longer published, the Council shall select a comparable calculation of 2015 dollars without an amendment of the site certificate. [Final Order Condition S.2]
PRE-CD-03	To calculate the initial monetary path payment requirement, the certificate holder shall use the contracted design parameters for capacities and heat rates submitted under Condition PRE-CD-01 (Final Order Condition S.1).

Condition Number	Pre-construction Condition
	[Final Order Condition S.3]
PRE-CD-04	The certificate holder shall submit all monetary path payment requirement calculations to the department for verification in a timely manner before submitting a bond or letter of credit for Council approval, before entering into a Memorandum of Understanding with The Climate Trust as required by Condition PRE-CD-05 (Final Order Condition S.5), and before making disbursement to The Climate Trust. The net carbon dioxide emissions rate of the facility shall not exceed 0.675 pounds of carbon dioxide per kilowatt-hour of net electric power output measured on a new and clean basis, as the department may modify such basis pursuant to Condition OPR-CD-01(c). (Final Order Condition S.8(c)). [Final Order Condition S.4]
PRE-CD-05	Before beginning construction of the facility, the certificate holder must enter into a Memorandum of Understanding (MOU) with The Climate Trust that establishes the disbursement mechanism to transfer selection and contracting funds and offset funds to The Climate Trust. (a) The MOU must be substantially in the form of Appendix E to the Final Order on the Application. At the request of the certificate holder, the Council may approve a different form of a bond or letter of credit and concurrent MOU without an amendment of the site certificate. (b) Either the certificate holder or The Climate Trust may submit to the Council for the Council's resolution any dispute between the certificate holder and The Climate Trust concerning the terms of the bond or letter of credit, the MOU or any other issues related to the monetary path payment requirement. The Council's decision shall be binding on all parties. [Final Order Condition S.5]
PRE-CD-06	Before beginning construction of the facility, the certificate holder shall submit to the Climate Trust a bond or letter of credit in the amount of the offset funds of the monetary path payment requirement as determined under Condition PRE-CD-02 (Final Order Condition S.2). (a) The certificate holder shall use a form of bond or letter of credit that is substantially in the form of Attachment B to the MOU described in Condition PRE-CD-05 (Final Order Condition S.5). At the request of the certificate holder, the Council may approve a different form of a bond or letter of credit without an amendment of the site certificate. (b) The certificate holder shall use an issuer of the bond or letter of credit approved by the Council (c)The certificate holder shall maintain the bond or letter of credit in effect until the certificate holder has disbursed the full amount of the offset funds to The Climate Trust. The certificate holder may reduce the amount of the bond or letter of credit commensurate with payments it makes to The Climate Trust. The bond or letter of credit must not be subject to revocation before disbursement of the full amount of the offset funds. [Final Order Condition S.6]
PRE-CD-07	The certificate holder shall disburse to The Climate Trust offset funds and selection and contracting funds when requested by The Climate Trust in accordance with Conditions OPR-CD-02 and OPR-CD-03 (Final Order Conditions S.9 and S.10) and the following requirements: (a) The certificate holder shall disburse selection and contracting funds to The Climate Trust before beginning construction and as appropriate when additional offset funds are required under Conditions OPR-CD-02 and OPR-CD-03 (Final Order Conditions S.9 and S.10)

Condition Number	Pre-construction Condition
	(b) Upon notice pursuant to subsection (c), The Climate Trust may request from the issuer of the bond or letter of credit the full amount of all offset funds available or it may request partial payment of offset funds at its sole discretion. Notwithstanding the specific amount of any contract to implement an offset project, The Climate Trust may request up to the full amount of offset funds the certificate holder is required to provide to meet the monetary path payment requirement. (c) The Climate Trust may request disbursement of offset funds pursuant to paragraph (b) by providing notice to the issuer of the bond or letter of credit that The Climate Trust has executed a bond or letter of intent to acquire an offset project. The certificate holder shall require that the issuer of the bond or letter of credit disburse offset funds to The Climate Trust within three business days of a request by The Climate Trust for the offset funds in accordance with the terms of the bond or letter of credit. [Final Order Condition S.7]

4.3 Construction Conditions (CON)

Condition Number	Construction Conditions
STANDARD: GENERAL STANDARD OF REVIEW (GS) (OAR 345-022-0000)	
CON-GS-01	Upon completion of construction, the certificate holder shall restore vegetation to the extent practicable and shall landscape all areas disturbed by construction in a manner compatible with the surroundings and proposed use. Upon completion of construction, the certificate holder shall remove all temporary structures not required for facility operation and dispose of all timber, brush, refuse and flammable or combustible material resulting from clearing of land and construction of the facility. [Final Order Condition A.8] [Mandatory Condition 345-027-0020(11)]
STANDARD: ORGANIZATIONAL EXPERTISE(OE) (OAR 345-022-0010)	
CON-OE-01	The certificate holder shall contractually require all construction contractors and subcontractors involved in the construction of the facility to comply with all applicable laws and regulations and with the terms and conditions of the site certificate. Such contractual provisions shall not relieve the certificate holder of responsibility under the site certificate. [Final Order Condition B.3]
STANDARD: SOIL PROTECTION (SP) (OAR 345-022-0022)	
CON-SP-01	The certificate holder shall conduct all construction work in compliance with an Erosion and Sediment Control Plan (ESCP) satisfactory to the Oregon Department of Environmental Quality and as required under the National Pollutant Discharge Elimination Systems (NPDES) #1200-C Construction Stormwater Discharge General Permit. The certificate holder shall include in the ESCP any measures necessary to meet local erosion and sediment control requirements or stormwater management requirements.

Condition Number	Construction Conditions
	[Final Order Condition D.1]
CON-SP-02	During construction, the certificate holder must implement best management practices to control dust generated by construction activities, such as applying water to roads and disturbed soil areas. [Final Order Condition D.2]
CON-SP-03	During construction, the certificate holder shall limit truck traffic to improved road surfaces. Within 60 days of completing construction, the applicant shall mitigate any areas of soil compaction by measures to include scarification and reseeding. [Final Order Condition D.5]
CON-SP-04	During construction of the facility, the certificate holder must complete the following monitoring to ensure that there are no significant potential adverse impacts to soils: (a) During construction, the certificate holder shall monitor disturbed area erosion and sediment control measures at the active construction areas on a weekly basis and every two weeks on inactive areas. Inspection of both active and inactive areas must occur at least daily during periods when 0.5 inches or more rain has fallen in a 24-hour period. (b) The certificate holder must remove trapped sediment when storage capacity has been reduced by 50 percent. Sediments shall be placed in an upland area certified by a qualified wetlands specialist. (c) If the erosion and sediment control measures are deemed ineffective, different strategies and/or measures shall be implemented, maintained and monitored after consultation with the department. (d) After completing construction in an area, the certificate holder must monitor the area until soils are stabilized and evaluate whether construction-related impacts to soils are being adequately addressed by the mitigation procedures described in the Erosion and Sediment Control Plan and the Revegetation and Noxious Weed Control Plan. As necessary, the certificate holder must implement follow-up restoration measures such as scarification and reseeding to address those remaining impacts. [Final Order Condition D.9]
CON-SP-05	Prior to operation, the certificate holder shall develop a Spill Prevention Control and Countermeasure Plan for implementation during the facility's operation. The certificate holder shall submit a copy of this plan to the department prior to commencement of operation of the Station. [Final Order Condition D.7]
STANDARD: LAND USE (LU) (OAR 345-022-0030)	
CON-LU-01	The certificate holder shall consult with the Oregon Department of Fish and Wildlife and the local Soil and Water Conservation District for any minor drainage improvements necessary to ensure effective drainage on surrounding agricultural lands. [Final Order Condition E.3]
STANDARD: FISH AND WILDLIFE HABITAT (FW) (OAR 345-022-0060)	

Condition Number	Construction Conditions
CON-FW-01	The certificate holder shall restore all areas temporarily impacted due to construction to pre-construction condition or better after construction has been completed. [Final Order Condition H.3]
CON-FW-02	During all years in which construction occurs, if construction related activities occur during the raptor breeding season (February 1 through August 31), the certificate holder must conduct pre-construction surveys within 0.5 miles of all proposed project features for Ferruginous Hawk nests, and within 0.25 miles for all other raptor species nests, including burrowing owl burrows. If active nests are located, the certificate holder shall notify the department and the Oregon Department of Fish and Wildlife (ODFW), and construction-related activities must be restricted within 0.5 miles of Ferruginous Hawk nests and 0.25 miles of all other raptor nests until the nests have failed or chicks have fledged. A biologist shall monitor the status of the active nests daily during nearby active construction and document potential adverse interactions with the project. [Final Order Condition H.8]
CON-FW-03	During all years in which construction occurs, if construction-related activities occur during the migratory bird breeding season (March 15 through April 15), pre-construction surveys must be conducted within 20 feet of all proposed project features for nests of all native, non-raptor species. Pre-construction nest surveys for non-raptors shall be valid for only two weeks. If active nests are located, the certificate holder must notify the department and consult with Oregon Department of Fish and Wildlife (ODFW) to determine appropriate avoidance and/or mitigation measures necessary. A biologist must monitor the status of active nests daily during nearby active construction and document potential adverse interactions with the project. [Final Order Condition H.9]
CON-FW-04	If a California myotis roost is observed during other biological surveys, the certificate holder must notify the department and consult with Oregon Department of Fish and Wildlife (ODFW) to determine any appropriate avoidance or mitigation measures necessary. [Final Order Condition H.10]
CON-FW-05	The certificate holder shall clearly demarcate boundaries of environmentally sensitive areas (nests referred to in Condition PRE-FW-06 (Final Order Condition H.11)) during construction to increase visibility to construction crews. [Final Order Condition H.13]
STANDARD: HISTORIC, CULTURAL, AND ARCHAEOLOGICAL RESOURCES (HC) (OAR 345-022-0090)	
CON-HC-01	The certificate holder shall cease all ground disturbing activities in the immediate area if any archaeological or cultural resources are found during construction of the facility. The certificate holder shall flag or mark the area and shall notify the department and the Oregon State Historic Preservation Office (SHPO) of the find. A qualified archaeologist shall evaluate the significance of the find. If SHPO determines that the resource is significant, the certificate holder shall make recommendations to the Council for mitigation, including avoidance, field documentation, and data recovery, in consultation with the department, SHPO, interested tribes and other impacted parties. The certificate holder shall not

Condition Number	Construction Conditions
	restart work in the affected area until the certificate holder has demonstrated to the Council that it has complied with the archaeological resource protection regulations. [Final Order Condition K.3]
STANDARD: PUBLIC SERVICES (PS) (OAR 345-022-0110)	
CON-PS-01	During construction of the facility, the certificate holder shall implement the following measures: (a) The certificate holder shall mount a right-turn prohibition sign with a supplemental "TRUCKS" rider plaque facing the westbound (driveway) approach; (b) The certificate holder shall mount a left-turn prohibition sign with a supplemental "TRUCKS" rider plaque facing the southbound (Westland Road) approach; (c) Prior to truck delivery of any oversize loads, a formal routing and delivery plan shall be developed by the certificate holder in conjunction with the department, in consultation with the Oregon Department of Transportation and Umatilla County; and (d) The certificate holder shall locate and maintain landscaping, and signing around aboveground utilities so that adequate sight distance is maintained. [Final Order Condition M.1]
CON-PS-02	Upon completion of construction, the certificate holder shall restore public roads to pre-construction conditions or better to the satisfaction of the Umatilla County Public Works Department. [Final Order Condition M.3]
STANDARD: WASTE MINIMIZATION (WM) (OAR 345-022-0120)	
CON-WM-01	The certificate holder shall implement a waste management plan during construction that includes but is not limited to the following measures: (a) Recycling steel, other metal scrap; and paper and cardboard waste; (b) Recycling wood waste to the maximum extent possible; (c) Collecting nonrecyclable waste for transport to a permitted solid waste disposal facility by a licensed waste hauler; and (d) Segregating all hazardous waste such as used oil, oily rags and oil-absorbent materials, mercury-containing lights and lead-acid and nickel-cadmium batteries for recycling or disposal by a licensed firm qualified in the proper recycling or disposal of hazardous waste. [Final Order Condition N.1]
CON-WM-02	The certificate holder shall provide portable toilets for on-site sewage handling during construction and shall ensure that they are pumped and cleaned regularly by a licensed contractor who is qualified to pump and clean portable toilet facilities. [Final Order Condition N.3]
STANDARD: NOISE CONTROL REGULATION (NC) (OAR 345-035-0035)	
CON-NC-01	To reduce construction noise impacts at nearby residences, the certificate holder shall: (a) Confine the noisiest operation of heavy construction equipment to the daylight hours to the extent practicable;

Condition Number	Construction Conditions
	(b) Require contractors to install and maintain exhaust mufflers on all combustion engine-powered equipment; and (c) Establish a complaint response system at the construction manager's office to address noise complaints. Records of noise complaints during construction must be made available to authorized representatives of the Department of Energy upon request. [Final Order Condition P.4]

4.4 Operational Conditions (OPR)

Condition Number	Operational Conditions
STANDARD: GENERAL STANDARD OF REVIEW (GS) (OAR 345-022-0000)	
OPR-GS-01	The certificate holder shall submit a legal description of the site to the Oregon Department of Energy within 90 days after beginning operation of the facility. The legal description required by this rule means a description of metes and bounds or a description of the site by reference to a map and geographic data that clearly and specifically identify the outer boundaries that contain all parts of the facility. [Final Order Condition A.3; Mandatory Condition 345-027-0020(2)]
OPR-GS-02	The certificate holder shall submit to the department copies of all incident reports involving the pipeline required under 49 CFR § 191.15. [Final Order Condition A.10; Site Specific Condition 345-027-0023(2)]
STANDARD: LAND USE (LU) (OAR 345-022-0030)	
OPR-LU-01	The certificate holder shall utilize fire retardant treated or non-combustible materials for all structures and fencing at the facility. In addition, the site shall be maintained clear of combustible materials within 20 feet of structures, except as necessary for Station operation. The certificate holder shall ensure that trees and other vegetation do not grow to become a fire hazard. [Final Order Condition E.1]
OPR-LU-02	To reduce the visual impacts of the facility, the certificate holder shall: (a) Not allow any advertising to be used on any part of the facility; (b) Use only those signs required for facility safety, required by law or otherwise required by this site certificate, except that the certificate holder may erect directional signage for deliveries and site circulation; (c) Design signs in accordance with Umatilla County design requirements for signs as described in UCDC Section 152.545; and (d) Maintain any signs allowed under this condition in good repair. [Final Order Condition E.4]

Condition Number	Operational Conditions
STANDARD: SCENIC RESOURCES (SR) (OAR 345-022-0080)	
OPR-SR-01	The certificate holder shall not use exterior nighttime lighting except: (1) The minimum exhaust stack lighting required or recommended by the Federal Aviation Administration; (2) Safety and security lighting at the Station and step-up substation, provided that such lighting is shielded or downward directed to reduce offsite glare; and (3) Minimum lighting necessary for repairs or emergencies. [Final Order Condition J.2]
STANDARD: WASTE MINIMIZATION (WM) (OAR 345-022-0120)	
OPR-WM-01	The site certificate holder shall implement a waste management plan during operation that includes but is not limited to the following measures: (a) Training employees to minimize and recycle solid waste; (b) Recycling paper products, metals, glass, and plastics; (c) Recycling used oil and hydraulic fluid; (d) Collecting nonrecyclable waste for transport to a permitted solid waste disposal facility by a licensed waste hauler; and (e) Segregating all hazardous waste such as used oil, oily rags and oil absorbent materials, mercury-containing lights and lead-acid and nickel-cadmium batteries for recycling or disposal by a licensed firm qualified in the proper recycling or disposal of hazardous waste. [Final Order Condition N.2]
OPR-WM-02	The certificate holder shall use hazardous materials in a manner that protects public health, safety and the environment and shall comply with all applicable local, state, and federal environmental laws and regulations. [Final Order Condition N.4]
OPR-WM-03	The certificate holder shall collect all hazardous solid waste, including oily waste, used filters, and oily rags or absorbents in sealable drums. The certificate holder shall collect used oils, solvents, and cleaning materials in tanks or barrels supplied by material vendors. [Final Order Condition N.5]
OPR-WM-04	The certificate holder shall store hazardous chemicals in aboveground containers or tanks located within secondary containment areas. Other chemicals and lubricants needed for facility maintenance and operation shall be stored in the facility buildings. [Final Order Condition N.6]
STANDARD: NOISE CONTROL REGULATION (NC) (OAR 345-035-0035)	
OPR-NC-01	Upon written notification from the department, the certificate holder shall monitor and record the actual statistical noise levels during operations to verify that the certificate holder is operating the facility in compliance with the noise control regulations. The monitoring plan must be reviewed and approved by

Condition Number	Operational Conditions
	the department prior to implementation. The cost of such monitoring, if required, will be borne by the certificate holder. [Final Order Condition P.2]
OPR-NC-02	During operation, the certificate holder shall maintain a complaint response system to address noise complaints. The certificate holder shall notify the department within 15 days of receiving a complaint about noise from the facility. The notification should include the date the complaint was received, the nature of the complaint, the complainant's contact information, the location of the affected property, and any actions taken, or planned to be taken, by the certificate holder to address the complaint. [Final Order Condition P.3]
STANDARD: ENERGY FACILITIES THAT EMIT CARBON DIOXIDE (CD) (OAR 345-024-0500)	
OPR-CD-01	Except as provided in Condition OPR-CD-01 (Final Order Condition S.9), within the first 12 months of commercial operation of the facility, the certificate holder shall conduct a 100-hour test (Year One Test). Tests performed for purposes of the certificate holder's commercial acceptance of the facility may suffice to satisfy this condition in lieu of testing after beginning commercial operation. (a) The certificate holder shall conduct the Year One Test to determine the actual heat rate (Year One Heat Rate) and the net electric power output (Year One Capacity) on a new and clean basis, without degradation, for each generating unit, with the results adjusted for the average annual site condition for temperature, barometric pressure, relative humidity, and operating hours per year. The certificate holder shall use a rate of 117 pounds of carbon dioxide per million Btu of natural gas fuel. (b) The certificate holder shall notify the department at least 60 days before conducting the tests required in subsection (a) unless the certificate holder and the department have mutually agreed that less notice will suffice. (c) Before conducting the tests required in subsection (a), the certificate holder shall, in a timely manner, provide to the department for its approval a copy of the protocol for conducting the tests. The department may approve modified parameters for testing on a new and clean basis pursuant to OAR 345-024-0590(1) without a site certificate amendment. The certificate holder shall not conduct the tests required in subsections (a) until the department has approved the testing protocols. (d) Within 60 days after completing the Year One Tests, the certificate holder shall provide to the Council reports of the results of the Year One Tests. [Final Order Condition S.8]
OPR-CD-02	If the certificate holder has elected to calculate excess carbon dioxide emissions based on direct measurements then the Year One Test described in Condition OPR-CD-01 (Final Order Condition S.8) is not required. (a) If the Year One Test is not performed, the certificate holder must report carbon dioxide emissions using actual measured emissions as reported to the Department of Environmental Quality or the U.S. Environmental Protection Agency for all subsequent five year periods over the life of the facility and may not change its election to report based on new and clean heat rate in any subsequent five year period. (b) If the Year One Test is not performed pursuant to Condition OPR-CD-01 (Final Order Condition S.8), then the certificate holder shall report the facility's net kWh generation and actual measured carbon dioxide emissions for the 12 month period following start of commercial operation. The

Condition Number	Operational Conditions
	certificate holder shall report the net kWh generation and actual carbon dioxide emissions for this period to the department within two months of the end of the first 12 month period. The certificate holder shall use the net kWh generation and measured carbon dioxide emissions to perform the calculations to determine if a supplemental monetary path payment is needed as set forth in Condition OPR-CD-03 (Final Order Condition S.10). The certificate holder shall submit these calculations to the department for verification. [Final Order Condition S.9]
OPR-CD-03	Based on the data from the Year One Tests described in Condition OPR-CD-01 (Final Order Condition S.8), or actual measured emissions described in Condition OPR-CD-02 (Final Order Condition S.9), the certificate holder shall calculate an adjusted monetary path payment. The certificate holder shall submit its calculations to the department for verification. If the adjusted amount exceeds the amount of the bond or letter of credit provided according to Condition PRE-CD-07 (Final Order Condition S.7) before beginning construction, the certificate holder shall fully disburse the excess amount directly to The Climate Trust within 30 days of the department's verification of the calculations. (a) The certificate holder shall include the appropriate calculations of the adjusted monetary path payment with its reports of the results of the Year One Tests required under Condition OPR-CD-01 (Final Order Condition S.8) or actual measured emissions required under Condition OPR-CD-02 (Final Order Condition S.9). (b) For calculating the adjusted monetary path payment, the certificate holder shall use an offset fund rate of $1.27 per ton of carbon dioxide (in 2015 dollars) and shall calculate contracting and selecting funds based on 10 percent of the first $500,000 in offset funds and 4.286 percent of any offset funds in excess of $500,000 (in 2015 dollars). (c) In no case shall the certificate holder diminish the value of the bond or letter of credit it provided before beginning construction or receive a refund from The Climate Trust based on the calculations made using the results of the Year One Test required under Condition OPR-CD-01 (Final Order Condition S.8) or actual measured emissions required under Condition OPR-CD-01 (Final Order Condition S.9). [Final Order Condition S.10]
OPR-CD-04	Every 5 years after commencing commercial operation of the facility (5-year reporting period), the certificate holder shall report to the Council the information required by either subsection (a) or (b), below. The certificate holder shall submit five-year reports to the Council within 30 days of the anniversary date of beginning commercial operation of the facility. (a) If the certificate holder has elected to calculate any excess emissions using annual average hours of operation and new and clean heat rates, the certificate holder shall report the annual average hours of operation of each generating unit within the facility during that five-year reporting period. The certificate holder shall use the Year One Capacity and Year One Heat Rate that it reports for the corresponding generating units pursuant to Condition OPR-CD-01 (Final Order Condition S.8) to calculate whether it owes supplemental monetary path payments. (b) If the certificate holder has elected to calculate any excess emissions using actual or measured carbon dioxide emissions reported to either the Oregon Department of Environmental Quality or the U.S. Environmental Protection Agency pursuant to a mandatory carbon dioxide reporting requirement, the certificate holder shall submit to the Council the carbon dioxide reporting data and

Condition Number	Operational Conditions
	net kWh generation for that five-year reporting period and shall use that data to determine whether it owes supplemental monetary path payments. (c) If the department determines that the facility exceeds the projected net total carbon dioxide emissions calculated pursuant to Condition PRE-CD-03 (Final Order Condition S.3) and either Condition OPR-CD-01 (Final Order Condition S.8) or Condition OPR-CD-02 (Final Order Condition S.9), prorated for five years, during any five-year reporting period, the certificate holder shall offset excess emissions for the specific reporting period according to subsection (c)(1) and shall offset the estimated future excess emissions according to subsection (c)(2). The certificate holder shall offset excess emissions using the monetary path described under Condition PRE-CD-02 (Final Order Condition S.2). The certificate holder shall disburse funds to The Climate Trust within 30 days after notification by the department of the amount that the certificate holder owes. (1) In determining the excess carbon dioxide emissions that the certificate holder must offset for a five-year period, the department shall apply OAR 345-024-0600(4)(a), unless the certificate holder has elected under OAR 345-024-0590(5) to utilize actual or measured carbon dioxide emissions as reported to either the Oregon Department of Environmental Quality or the U.S. Environmental Protection Agency pursuant to a mandatory carbon dioxide reporting requirement. The certificate holder shall pay for the excess emissions at $1.27 per ton of carbon dioxide emissions (in 2015 dollars). The department shall notify the certificate holder and The Climate Trust of the amount of the payment required, using the monetary path, to offset excess emissions. (2) The department shall calculate estimated future excess emissions and notify the certificate holder of the amount of payment required, using the monetary path, to offset them. To estimate excess emissions for the remaining period of the deemed 30- year life of the facility, the department shall use the parameters specified in OAR 345 024-0600(4)(b). The certificate holder shall pay for the estimated excess emissions at $1.27 per ton of carbon dioxide (in 2015 dollars). The department shall notify the certificate holder of the amount of payment required, using the monetary path, to offset future excess emissions. [Final Order Condition S.11]
OPR-CD-05	After the certificate holder has complied with the conditions relating to the carbon dioxide standard before beginning construction, incremental increases in capacity and heat rate that otherwise fall within the limits specified in OAR 345-027-0050(2) do not require an amendment of the site certificate if the certificate holder complies substantially with Conditions PRE-CD-01; PRE-CD-02; PRE-CD-03; PRE-CD-04; PRE-CD-05; PRE-CD-06; PRE-CD-07; OPR-CD-01; OPR-CD-02; OPR-CD-03; OPR-CD-04. (Final Order Conditions S.1 through S.11), except as modified below, and if: (a) The department or the Council determines, as described in OAR 345-027-0050(5), that the proposed change in the facility does not otherwise require an amendment; and (b) The certificate holder complies with the appropriate carbon dioxide emissions standard and monetary offset rate in effect at the time the department or the Council makes its determination under this condition. [Final Order Condition S.12]

4.5 Facility Retirement Conditions (RET)

Condition Number	Facility Retirement Conditions
STANDARD: RETIREMENT AND FINANCIAL ASSURANCE (RT) (OAR 345-022-0050)	
RET-RT-01	The certificate holder shall retire the facility if the certificate holder permanently ceases construction or operation of the facility. The certificate holder shall retire the facility according to a final retirement plan approved by the Council, as described in OAR 345-027-0110. The certificate holder shall pay the actual cost to restore the site to a useful, non-hazardous condition at the time of retirement, notwithstanding the Council's approval in the site certificate of an estimated amount required to restore the site. [Final Order Condition G.1; Mandatory Condition 345-027-0020(9)]
RET-RT-02	If the Council finds that the certificate holder has permanently ceased construction or operation of the facility without retiring the facility according to a final retirement plan approved by the Council, as described in OAR 345-027-0110, the Council shall notify the certificate holder and request that the certificate holder submit a proposed final retirement plan to the department within a reasonable time not to exceed 90 days. If the certificate holder does not submit a proposed final retirement plan by the specified date, the Council may direct the department to prepare a proposed final retirement plan for the Council's approval. Upon the Council's approval of the final retirement plan, the Council may draw on the bond or letter of credit described in OAR 345-027-0020(8), and Condition PRE-RT-02 (Final Order Condition G.4), to restore the site to a useful, non-hazardous condition according to the final retirement plan, in addition to any penalties the Council may impose under OAR Chapter 345, Division 29. If the amount of the bond or letter of credit is insufficient to pay the actual cost of retirement, the certificate holder shall pay any additional cost necessary to restore the site to a useful, non-hazardous condition. After completion of site restoration, the Council shall issue an order to terminate the site certificate if the Council finds that the facility has been retired according to the approved final retirement plan. [Final Order Condition G.2; Mandatory Condition 345-027-0020(16)]

5.0 Successors and Assigns

To transfer this site certificate or any portion thereof or to assign or dispose of it in any other manner, directly or indirectly, the certificate holder shall comply with OAR 345-027-0100.

6.0 Severability and Construction

If any provision of this agreement and certificate is declared by a court to be illegal or in conflict with any law, the validity of the remaining terms and conditions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the agreement and certificate did not contain the particular provision held to be invalid.

7.0 Execution

This site certificate may be executed in counterparts and will become effective upon signature by the Chair of the Energy Facility Siting Council and the authorized representative of the certificate holder.

IN WITNESS THEREOF, this site certificate has been executed by the State of Oregon, acting by and through the Energy Facility Siting Council, and by Perennial-WindChaser, LLC.

ENERGY FACILITY SITING COUNCIL

By: _____

Barry Beyeler, Chair

Oregon Energy Facility Siting Council

Date: SEPTEMBER 18, 2015

PERENNIAL-WINDCHASER, LLC

By: _____

Shigenobu Hamada, President

Perennial Power Holdings, Inc.

Date: September 23, 2015

Appendix 1
Perennial Wind Chaser Station

Perennial Wind Chaser Station

Revegetation and Noxious Weed Control Plan

October 2014

Prepared for:

Perennial-WindChaser LLC
300 Madison Avenue
New York, NY 10017

Prepared by:

Ecology and Environment, Inc.
333 SW Fifth Avenue, Suite 600
Portland, Oregon 97204

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1 INTRODUCTION

This Revegetation and Noxious Weed Control Plan outlines the goals, methods, and standards for soil restoration and revegetation of areas expected to be temporarily disturbed during the construction, operation, and maintenance of the Perennial Wind Chaser Station project (Project).[1] In addition, this plan describes noxious and invasive weed control measures that will be implemented in all areas of the Project during and after construction, including both temporary disturbance areas and permanent aboveground facilities. Perennial-WindChaser LLC (Perennial) is not required to revegetate areas with permanent Project facilities, such as the power generating facility (Station) site, step-up substation, or any other permanent aboveground Project components; however, noxious weed control and erosion control will be implemented in all areas of the Project including within the transmission pipeline and natural gas pipeline rights-of-way ([ROW] Project area). The purpose of these efforts is to restore the soil and vegetation in temporarily disturbed Project areas to pre-disturbance condition or better.

The goal of this plan is to provide the methods and standards to:

1. Avoid or minimize impacts on the native habitats and vegetation communities present in the Project area;
2. Avoid or minimize impacts on native soils through erosion and loss or degradation of topsoil;
3. Avoid or control the introduction or spread of noxious weeds in or immediately adjacent to the Project area (including along Project access roads);
4. Re-establish native plant communities in non-agricultural areas of the Project within five years of completion of the construction of the Project; and
5. Re-establish the conditions for pre-Project farming practices in agricultural areas of the Project within one year of completion of the construction of the Project.

This plan has been developed in consultation with the Oregon Department of Fish and Wildlife (ODFW) and the Umatilla County Weed Control Board. Additionally, this plan utilizes restoration and revegetation methods and standards developed by other energy projects in this region of Oregon that have been approved by the Oregon Energy Facility Siting Council (EFSC 2006, 2011). All seed mixes, planting methods, noxious weed control treatments, topsoil conservation methods, and erosion control measures will only be

1 This plan is incorporated by reference in the Project's site certificate application and is not intended to be a "stand-alone" document. This plan does not contain all mitigation measures required of Perennial.

implemented with the approval of the ODFW and the individual landowners. Perennial will implement and maintain sediment and erosion control measures during construction and after construction until the risk of erosion has been eliminated and areas of disturbance are successfully restored. This plan also provides a brief summary of post-construction monitoring procedures to evaluate the success of the measures described in this plan. For a complete discussion of Perennial's monitoring procedures, refer to the Project Restoration Monitoring Plan (Exhibit P, Appendix P-3).

The Project area is composed primarily of active agriculture cropland, disturbed or weedy agricultural areas, and limited areas of shrub-steppe rangelands of varying quality (>2 percent in the natural gas pipeline ROW). Direct and indirect impacts on vegetation and wildlife habitat at aboveground facilities will be permanent in nature and will result from the removal of vegetation and wildlife habitat through excavation and grading activities. Other than noxious weed control measures and erosion and sediment control measures, revegetation will not be conducted at these sites.

In general, the intensity of construction impacts on vegetation and habitat in temporary disturbance areas will be low and will often be limited to the flattening of vegetation by rubber-tired vehicles. In some instances, the intensity of impacts in temporary disturbance areas will be higher and will require the removal of topsoil and vegetation through grading, excavation, or drilling activities. Perennial will implement revegetation measures in all temporary construction disturbance areas where soil is disturbed. Such soil disturbance sites will require active measures to restore vegetation cover in a timely manner, control erosion, and prevent the establishment and spread of noxious weeds. Construction crews will segregate topsoil from subsoil for pipeline trenching in agricultural areas and replace this topsoil during the restoration phase of the Project.

Perennial will implement a number of best management practices designed to control sediment and minimize erosion, particularly in the vicinity of Project drainages and waterbodies. These erosion and sediment control practices will be maintained for the duration of the construction restoration phases of the Project, but may be maintained longer if a high risk of erosion still exists. Erosion and sediment control measures are described in the Erosion and Sediment Control Plan, located in Exhibit I, Appendix I-2.

2 SITE DESCRIPTION

The Station will be located on private land in Umatilla County, Oregon, approximately 4 miles southwest of the city of Hermiston, Oregon, near the intersection of Interstate Highways 82 and 84. In addition to the Station, the Project includes a 50-foot-wide natural gas pipeline ROW that will extend 4.63 miles south of the Station to the existing Gas Transmission Northwest pipeline and the construction of a new metering facility adjacent to the existing

metering facility. The natural gas pipeline ROW will be located almost entirely within the existing ROW of the lateral that services the Hermiston Generating Plant. In addition, the Project includes reconductoring an existing12-mile transmission line that will terminate at a new 3-acre step-up substation, as well installing an approximately 477-foot-long underground transmission cable into the existing Bonneville Power Administration McNary Substation. The transmission line reconductoring will not result in permanent ground disturbance.

Permanent ground disturbance will primarily occur at 1) the Station site, 2) the step-up substation, 3) the natural gas pipeline metering facility, and 4) the fenced riser area. Approximately 23.48 acres of category 5 and 6 habitat (developed areas and weedy grasslands at the Station site and the step-up substation) will be permanently removed as a result of the Project. These areas will not be revegetated after construction, although appropriate noxious weed control measures will be implemented in areas that have non-impervious surfaces.

Temporary ground disturbance will primarily occur at 1) the 50-foot-wide natural gas pipeline ROW, 2) the two new transmission line poles, 3) the underground electrical ROW connecting the step-up substation to the McNary Substation, and 4) the contractor's construction yard facilities adjacent to the Station. Approximately 2.03 acres of category 3 habitat (rabbitbrush-dominated shrub-steppe) and 34.64 acres of category 5 and 6 habitats (including weedy grassland, irrigated agriculture, and developed areas) will be temporarily disturbed. All temporarily disturbed Project areas will be seeded per ODFW requirements or returned back to agricultural use (at landowner request) after construction is complete.

Table 1 Permanent and Temporary Disturbances (in acres) to Each Habitat Type and Habitat Mitigation Category

Habitat Type	Mitigation Category	Disturbance Acres
Permanent Disturbances		
Weedy Grassland #1	5	0.00
Weedy Grassland #2	5	0.00
Weedy Grassland #3	6	0.00
Weedy Grassland #4	5	18.52
Weedy Grassland #5	5	0.51
Weedy Grassland #6	6	3.00
Agriculture	6	0.00
Shrub Steppe	3	0.00
Riparian	2	0.00
Open Water	6	0.29
Developed	6	1.16

Table 1 Permanent and Temporary Disturbances (in acres) to Each Habitat Type and Habitat Mitigation Category

Habitat Type	Mitigation Category	Disturbance Acres
Permanent Disturbances		
	Total	**23.48**
Temporary Disturbances		
Habitat Type	**Mitigation Category**	**Disturbance Acres**
Weedy Grassland #1	5	9.71
Weedy Grassland #2	5	0.59
Weedy Grassland #3	6	0.68
Weedy Grassland #4	5	10.10
Weedy Grassland #5	5	0.57
Weedy Grassland #6	6	0.71
Agriculture	6	6.77
Shrub Steppe	3	2.03
Riparian	2	0.00
Open Water	6	0.12
Developed	6	5.38
	Total	**36.67**

*Acreage is subject to change as Project plans continue to be refined.

3 SCHEDULE

In general, implementation of the measures described in this plan will begin at the start of construction activities, although it may be appropriate to implement some measures prior to the commencement of ground-disturbing activities. In particular, it may be advantageous to pre-treat selected noxious weed populations before construction activities start if treatment will prevent plants from going to seed. Erosion control and noxious weed control measures should be implemented and maintained throughout the construction phase of the Project. Restoration and revegetation of temporary disturbance areas should occur as soon as possible after construction has been completed in any given area of the Project. In instances where this is not possible due to construction requirements, temporary erosion control measures (e.g., temporary slope breakers, erosion control fabric, planting of winter wheat, etc.) should be implemented instead until final restoration efforts can be started. After construction of the Project, erosion control, noxious weed control, and replanting and seeding will continue for up to five years or until Perennial, the ODFW, and the Oregon Department of Energy (ODOE) have deemed restoration and revegetation to be successful. If the Project has not

achieved successful restoration and revegetation after five years, Perennial will consult the ODFW and ODOE regarding additional measures or an alternative course forward. Refer to the Project Restoration Monitoring Plan (Exhibit P, Appendix P-3) for more details on post-construction monitoring procedures and schedule.

4 RESTORATION AND REVEGETATION METHODS

Restoration and revegetation of temporarily disturbed Project areas will include: 1) erosion control and topsoil management, 2) noxious and invasive weed control, 3) seed mix selection and planting techniques, and 4) post-construction monitoring and contingency measures.

Monitoring of restoration efforts should be initiated during construction as work in individual areas of the Projects is completed, but most monitoring of revegetation will occur one to five years after construction has been completed.

Perennial anticipates following the restoration and re-seeding guidelines provided in this plan; however, the methods and timing could be altered at the request of landowners, the ODFW, and ODOE.

4.1 Erosion Control and Topsoil Management

Soil preservation and preparation techniques, including erosion control and topsoil management measures, shall be implemented immediately prior to, or at the start of, construction. Erosion and sediment control measures are provided in more detail in the Project's Erosion and Sediment Control Plan (Exhibit I, Appendix I-2), and will include measures similar to those described below.

The Project shall implement the following erosion control and topsoil management measures:

- Minimize construction impacts in the Project area by, where practical and safe, limiting grading and clearing to avoid impacts on native soils and vegetation;
- Use proper soil management techniques, including topsoil stripping, stockpiling, and reapplying to establish surface conditions that would enhance development of diverse, stable, and self-generating plant communities. Topsoil management will apply to the transmission pipeline ROW where excavation, grading, or other construction activities could result in mixing of soil layers;
- Establish stable surface and drainage conditions and use standard erosion control devices and techniques to minimize soil erosion and sedimentation, including the installation of silt fencing, straw bales, mulch, straw wattle, erosion control fabric, slope breakers, and trench breakers, as appropriate;

- Establish terrain compatible with the surrounding landscape (recontouring) that emphasizes restoration of existing drainage and landform patterns, to the extent practical; and
- Weed control methods, including treatment approach and use of specific herbicides, shall be finalized prior to construction in coordination with individual landowners, the ODFW, and Umatilla County.

4.2 Noxious and Invasive Weed Control

Noxious and invasive weed control should begin prior to ground disturbance through pre-treatment, if appropriate, and should continue through construction and during the operation and maintenance phases of the Project. Perennial shall implement measures to prevent or control introduction or spread of weed seeds and plant parts during construction or operations and maintenance phases of the Project. Efforts should focus on species that are designated as noxious weeds by the Oregon Department of Agriculture (ODA 2013) and by Umatilla County (Umatilla County Noxious Weed Control 2012). Table 2 shows the noxious and invasive weed species that were identified on the ROW during 2013 field surveys. In addition, Perennial shall attempt to prevent the introduction and spread of other invasive species not officially designated as noxious that could affect revegetation success, such as cheatgrass, Russian thistle, and tumble mustard.

The Project shall implement the following noxious and invasive weed control measures:

- Prevent introduction or spread of seeds and plant parts during construction or operations and maintenance from species that are designated as noxious weeds by the Oregon Department of Agriculture (ODA), and attempt to prevent the introduction and spread of other invasive species not officially designated as noxious, such as cheatgrass and Russian thistle;
- Include a discussion of the risks of noxious weeds and the Project control methods in the Project's environmental awareness training that Project personnel will undergo prior to entering the ROW;
- Qualified biological monitors or contract weed control personnel approved by the ODA, ODOE, and Umatilla County, as appropriate, shall conduct onsite biological monitoring in areas of noxious weed concern or presence before and after construction;
- Pre-treat all state-designated noxious weed populations identified in Project disturbance areas prior to construction, as practical;

- Wash all Project vehicles and equipment before they enter the Project Site for first time. Typically, this is done by constructing a contained wash structure at the contractor's construction yard and washing vehicles immediately upon arrival at the Project;
- Use regular site assessments and suitable herbicide application to keep off-ROW areas related to the Project, such as contractor construction yards, in weed free condition;
- Use certified weed-free straw bales and straw mulch for soil erosion and sedimentation control measures;
- Use certified weed-free seed during re-vegetation efforts obtained from a supplier approved by the State of Oregon; and
- Use manual, mechanical (mowing, clipping), or chemical (herbicides) techniques to control weed populations. Perennial may utilize any of these methods on a site-specific basis. If herbicide applications are used to treat weed populations, a licensed contractor should be used to prescribe specific treatments and to apply chemicals.

Table 2 Designated Noxious Weeds and Other Invasive Species Observed During 2013 Field Surveys

Latin Name	Common Name	ODA Classification[1]	Umatilla County Classification[2]	Number of Sites
State-designated noxious weeds				
Agropyronrepens	Quackgrass	None[3]	B	4
Centaureadiffusa	Diffuse knapweed	B	B[4]	6
Kochiascoparia	Kochia	B	B	3
Onopordumacanthium	Scotch thistle	B	B[4]	9
Secale cereal	Cereal rye	None	B	7
Tribulusterrestris	Puncturevine	B	B	1

Table 2 Designated Noxious Weeds and Other Invasive Species Observed During 2013 Field Surveys

Latin Name	Common Name	ODA Classification[1]	Umatilla County Classification[2]	Number of Sites
Invasive Species Not Designated as Noxious				
Bromustectorum	Cheatgrass	none	none	throughout
Salsola tragus	Russian thistle	none	none	throughout
Sisymbriumaltissimum	Tumble mustard	none	none	throughout

Source: ODA 2013, Umatilla County Noxious Weed Control 2012

Notes:

[1] ODA Class B definition: a weed of known economic importance which occurs in the state in small enough infestations to make eradication or containment possible; or is not known to occur, but its presence in neighboring states makes future occurrence in Oregon seem imminent. Limited to intensive control at the state, county or regional level as determined on a site specific, case-by-case basis. Where implementation of a fully integrated statewide management plan is not feasible, biological control (when available) shall be the primary control method.

[2] Umatilla County Class B definition: a weed of known economic importance which is regionally abundant, but which may have limited distribution in some countries. Where implementation of a fully integrated statewide management plan is feasible, biological control shall be the main control approach for species for which biological agents are available. Limited to intensive control at state or county level as determined on a case-by-case basis.

[3] This species was included on the ODA's 2010 designated noxious weed list.

[4] This species has been targeted by Umatilla County for additional enforcement throughout the county in dryland annual cropping areas, irrigated crops and pastures, and dryland/range/timber.

4.3 Re-seeding Methods

Areas of temporary disturbance will be restored to original grade and soil condition as soon as possible after the final construction ground disturbance and will generally be re-contoured and de-compacted, if necessary. These areas will then be evaluated to determine whether re-seeding or other revegetation techniques are required to return the area to preconstruction vegetation conditions. Re-seeding may not be necessary or appropriate in some areas, including places where vegetation has been flattened but not crushed and those where little or no vegetation was present prior to construction. If appropriate, re-seeding will be initiated immediately after construction in any completed part of the Project. Re-seeding activities may need to be delayed, depending on the season or on weather conditions, but should always occur as soon as appropriate after construction. Preliminary seed mixes are provided in Table 3; however, the final seed mixes used may change as a result of further consultations with the ODA and ODFW or at the request of individual landowners.

Agricultural Croplands

Perennial shall coordinate with landowners and, as necessary, restore croplands to original grade and contour and repair any agricultural drainage systems that are impacted by construction. Individual landowners will be consulted when determining the proper seed mix to be used during re-seeding activities on agricultural lands. The primary goal of cropland revegetation is to return croplands to a condition consistent with typical pre-construction conditions. If necessary, in coordination with the landowner, an appropriate cover crop will be planted to hold the site until the next crop planting rotation. Cultivated agricultural areas are successfully revegetated if the replanted areas achieve crop production comparable to adjacent non-disturbed cultivated areas. Perennial shall consult with the landowner to determine whether these areas have been successfully revegetated and shall report to the ODFW and ODOE on the success of revegetation in these areas as part of its annual Restoration Monitoring Report (see Restoration Monitoring Plan, Appendix P-3).

Disturbed Grasslands and Shrub-Steppe Rangeland

Weedy, disturbed grasslands constitute the primary non-agricultural vegetation type in the Project area (approximately 61 percent of temporary disturbance areas). Shrub-steppe rangeland constitutes a very small portion of the non-agricultural vegetation type in the Project area (less than 6 percent of temporary disturbance areas). Seed mixtures for disturbed grasslands and shrub-steppe rangeland (Table 3: Seed Mixes 2 and 3, respectively) have been developed consisting of native species and desirable non-native species known to provide erosion control and wildlife forage benefits in Eastern Oregon. The current seed mix recommendations provided in Table 3 may be altered prior to construction and revegetation efforts in consultation with landowners and the ODFW.

Perennial shall use the following guidelines during re-seeding efforts:

- Re-seed disturbed areas as soon as possible after final construction disturbance in each area.
- Re-seed construction soil disturbance areas to restore vegetation as soon as possible after construction in any part of the Project where construction has been completed.
- Re-seed temporary disturbance areas during the appropriate season and as weather conditions allow.
- Crews will attempt to conduct all re-seeding during the period from February through early April for construction disturbances that occurred during the winter and early spring. For areas where construction is completed outside of the winter or spring periods, re-seeding maybe delayed until the months of October or November (when dry season has passed). If final construction and soil restoration are not completed at a

time that allows immediate re-seeding during one of the two periods listed above (winter/spring or fall), the areas will be mulched or otherwise treated to minimize erosion until seeding can be conducted.

- Seeds will be applied using either manual or mechanical methods, depending on factors such as the size of the area to be re-seeded and risk for further disturbance due to the use of planting equipment (e.g., tractor or all-terrain vehicle).
- In addition, Perennial may employ either broadcasting or drilling techniques as appropriate and feasible. Broadcasting or seed drilling methods will be used according to which method is most appropriate for the disturbance area.
- Straw mulch may be applied as needed immediately after seeding.

Table 3 Seed Mix for Temporarily Disturbed Project Areas

Vegetation Type	Common Name	Scientific Name	PLS (pounds per acre[1],[2]	Description/ Purpose
Seed Mix 1: Agricultural (irrigated, dryland, and pastures)	Wheat or other crop seed, at the request of landowner.		At landowner request	(EC)
Seed Mix 2: Disturbed native grasslands	Secarbluebunch wheatgrass	*Pseudoregneriaspicata*	6	(N) (EC) (F)
	Sherman big bluegrass	*Poaampla*	1.5	(N) (F)
	Sandberg's bluegrass	*Poasecunda*	2.0	(N) (F)
	Small burnet	*Sanguisorba minor*	2.0	(I) (F)
	Great Basin wildrye *	*Elymuscinereus*	1.0	(N) (EC) (F)
	Needle and thread grass*	*Hesperostipacomata*	1.0	(N) (EC) (F)
	Western yarrow *	*Achilleamillefolium var. occidentalis*	1.0	(N) (F)
Seed Mix 3: Shrub-steppe	Secarbluebunch wheatgrass	*Pseudoregneriaspicata*	6	(N) (EC) (F)
	Sherman big bluegrass	*Poaampla*	1.5	(N) (F)
	Sandberg's bluegrass	*Poasecunda*	2.0	(N) (F)

Table 3 Seed Mix for Temporarily Disturbed Project Areas

Vegetation Type	Common Name	Scientific Name	PLS (pounds per acre[1],[2]	Description/ Purpose
	Ladak alfalfa	*Medicago sativa*	1.0	(I) (F)
	Small burnet	*Sanguisorba minor*	2.0	(I) (F)
	Great Basin wildrye *	*Elymuscinereus*	1.0	(N) (EC) (F)
	Needle and thread grass*	*Hesperostipacomata*	1.0	(N) (EC) (F)
	Western yarrow *	*Achilleamillefolium var. occidentalis*	1.0	(N) (F)
	Big sagebrush *	*Artemisia tridentata*	1.0	(N) (F)

Key:
(N) = Native, (I) = Introduced, (EC) = Erosion Control, (F) = Forage
* Optional species depending on site and availability
[1] PLS = pure live seed
[2] Final pounds/acre may change at the request of the landowners or the ODFW

5 MONITORING PROGRAM

The Restoration Monitoring Plan (Exhibit P, Appendix P-3) outlines the goals, methods, and criteria to be used by Perennial to evaluate and track the success of restoration efforts during and after construction of the Project. The discussion below provides a brief summary of the monitoring procedures provided in Appendix P-3; however, Appendix P-3 is the primary document for all monitoring procedures.

Perennial will conduct annual monitoring of restoration efforts in all Project areas. The purpose of monitoring is to evaluate the effectiveness of long-term soil stability, noxious weed control, and vegetation condition within areas disturbed during construction and to identify appropriate remedial actions that will help Perennial attain successful restoration of disturbed areas.

Perennial will provide biologists and/or inspectors qualified to conduct these evaluations. Restored cultivated lands will be monitored primarily by the landowner and/or farmer for production ability after Perennial has completed final construction restoration. Landowners may report any subsequent concerns to Perennial. In many cases, the restored croplands will be replanted during the next growing season. Perennial's monitoring teams will provide general descriptions of the conditions of cultivated agricultural areas during monitoring efforts; however, these will mainly be used to verify information provided by the landowner

and/or farmer. Therefore, most monitoring effort will occur at non-cultivated areas. However, Perennial's monitors will note substantial restoration issues observed on cultivated lands during the course of monitoring in other Project areas. Although monitoring of some restoration measures will be applicable to all project areas (e.g., erosion control and noxious weed control), monitoring of other measures will only apply to areas that are not developed or used for agricultural farming (e.g., topsoil segregation, re-seeding). Where possible, all annual monitoring efforts will be conducted in single site visits and by the same team.

Restoration monitoring will begin in the first growing season (fall or spring) following the completion of construction and initial restoration and continue annually for up to five years. When it is determined that an area of the Project has been successfully restored at any point during years 1 to 5, by satisfying all success criteria, Perennial will request concurrence from ODOE and ODFW. If ODOE and ODFW concur, Perennial will conclude that it has no further obligation to perform revegetation activities in that area of the Project. Where this is the case, the monitoring effort may require fewer than five years. If after five years of monitoring (and remedial actions) some sites have not attained restoration success, Perennial will coordinate with ODOE and ODFW regarding appropriate steps forward. At this point Perennial may suggest additional restoration techniques or strategies be implemented, or Perennial may request a waiver from further restoration obligations at these sites.

For a complete discussion of Perennial's monitoring procedures, refer to the Project Restoration Monitoring Plan (Appendix P-3).

6 AMENDMENT OF PLAN

This Revegetation Plan may be amended by agreement of Perennial and the ODOE. Amendments will be prepared in consultation with the ODFW and ODOE and may be made without altering the site certificate.

7 REFERENCES

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Appendix 2
Perennial Wind Chaser Station
Restoration Monitoring Plan

Perennial Wind Chaser Station

Restoration Monitoring Plan

October 2014

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1 INTRODUCTION

This Restoration Monitoring Plan outlines the goals, methods, and criteria to be used by Perennial-WindChaser LLC (Perennial) to evaluate and track the success of restoration efforts during and after construction of the Perennial Wind Chaser Station project (Project). These efforts include measures to help ensure proper topsoil management, soil stabilization, and erosion control; noxious weed control; and site revegetation. This plan focuses primarily on post-construction monitoring procedures; however, some measures implemented during earlier phases of construction, such as pre-treatment of noxious weeds and temporary erosion control techniques, may require monitoring during the construction phase.

The goals of the Project restoration measures and monitoring procedures are to:

1. Avoid or minimize impacts on native soils and habitats caused by erosion and loss or degradation of topsoil;
2. Avoid or control the introduction or spread of noxious weeds in or immediately adjacent to the Project area (including along Project access roads);
3. Re-establish native plant communities in non-cultivated temporary disturbance areas within five years of completion of the construction of the Project; and
4. Re-establish the conditions for pre-Project farming practices in cultivated agricultural areas of the Project within one year of completion of the construction of the Project;

This plan provides summaries only of the restoration measures that will be implemented during and after construction of the Project. These measures are discussed in more detail in the Project Erosion and Sediment Control Plan (Exhibit I, Appendix I-2) and in the Project Revegetation and Noxious Weed Control Plan (Exhibit P, Appendix P-2). Although these other plans also discuss monitoring procedures, this plan is the primary document for Project monitoring procedures. The monitoring procedures described in this plan supersede any monitoring procedures discussed in those plans.

The procedures described in this plan have been reviewed and approved by the Oregon Department of Energy (ODOE), the Oregon Department of Fish and Wildlife (ODFW), and the Umatilla County Weed Control Board. The procedures described in this plan utilize some of the restoration and revegetation methods and standards approved by ODOE for other energy projects in this region of Oregon (ODOE 2006, 2011).

2 SITE DESCRIPTION AND NATURE OF IMPACTS

The Project will be located on private lands in Umatilla County, Oregon. The project components relevant to this monitoring plan, including impacts types and acreages, are provided in Table 1 and described below.

Permanent ground disturbance related to construction will occur at 1) the Energy Facility Site (Station), 2) the step-up substation, and 3) and the riser structures at the Bonneville Power Administration's McNary Substation. At these sites, approximately 23.48 acres that consist of developed areas and weedy grasslands will be permanently altered. These areas will not be revegetated after construction, although appropriate soil stabilization, erosion control, and noxious weed control measures will be implemented in areas that have non-impervious surfaces.

Temporary ground disturbances related to construction will occur at all other Project sites, including 1) the natural gas pipeline right-of-way (ROW), 2) the construction laydown and parking area, 3) the underground electrical ROW connecting the step-up substation to the McNary Substation, 4) the contractor's construction yard facilities adjacent to the Station, and several other small project features. At these sites, an estimated 36.67 acres of land will be temporarily impacted as a result of the Project: approximately 22.5 acres composed of weedy grasslands; 12.2 acres of developed or agricultural lands; and 2 acres of shrub-steppe habitat.

Often, the intensity of construction impacts on vegetation and habitat in temporary disturbance areas will be low and will often be limited to the flattening of vegetation by rubber-tired vehicles. In some instances, the intensity of impacts in temporary disturbance areas will be higher and will require the removal of topsoil and vegetation through grading, excavation, or drilling activities.

Table 1 Project Disturbance Areas

Project Feature	Notes	Acres Impacted	
		Temporary	Permanent
Permanent disturbance areas			
Station site	Power station and switchyard	--	19.97
Step-up Substation	Step-up voltage to the BPA's McNary Substation	--	3.0
Risers structure	within McNary Substation/USACE lands	--	0.51
Temporary disturbance areas			
Construction Laydown and Parking (located outside of Energy Facility Site boundary)	During construction	5.11	--
Natural Gas Pipeline	4.63 miles long, 50-feet-wide ROW	28.06	--
Initial tie-in Transmission Poles (two new towers)	2 towers, 0.23 acres each	0.46	--
Underground 500-kV Transmission Cable	Step-up substation to risers	0.55	--
Underground Process Water Line	208 feet by 50 feet	0.24	--
Underground Reclaimed Water Line	538 feet by 50 feet	0.62	--

Table 1 Project Disturbance Areas

Project Feature	Notes	Acres Impacted	
		Temporary	Permanent
T-Line Tie-in to Substation	100 x 11 feet	0.03	--
Step-up Substation Road Upgrade	Gravel on existing access road (12 feet by 800 feet long)	0.22	--
Transmission Line Reconductoring[1]	12 stringing sites (50 feet by 100 feet)	1.38[1]	--
Subtotal		36.67	23.48
TOTAL		**60.15**	

Notes:

[1] Locations of up to 12 stringing sites (50 X 100 feet each) associated with the transmission line reconductoring have not been determined. No excavating, grading, or other soil disturbance will occur at these sites; potential disturbances will primarily result from vehicles driving on grass, shrubs, and other vegetation.

Key:

BPA Bonneville Power Administration
kV kilovolt
ROW right-of-way
USACE United States Army Corps of Engineers

3 SUMMARY OF RESTORATION MEASURES

Successful restoration of Project disturbance areas will be accomplished by implementing measures during construction that are designed to help ensure success in three main areas:

- Erosion control, topsoil management, and soil stabilization;
- Noxious weed control; and
- Revegetation.

Soil stabilization, erosion control, and noxious weed control measures will generally be implemented in all Project areas, including both temporary disturbance areas and permanent aboveground facilities. However, topsoil management and revegetation measures will generally only be implemented in temporary disturbance areas, including the pipeline ROW and contractor yards and parking areas. The Project is not required to restore vegetation or original soil conditions in areas with permanent aboveground Project facilities, such as the power generating facility (Station) site and the step-up substation. For cultivated agricultural lands, the Project will determine appropriate revegetation, soil stabilization, and topsoil restoration methods in coordination with the individual landowner and/or farmer.

The sections below summarize the restoration measures that will be implemented during construction of the Project that may be relevant to monitoring procedures. These measures are discussed in more detail in the Project Erosion and Sediment Control Plan, located in Exhibit I, Appendix I-2 and in the Project Revegetation and Noxious Weed Control Plan in Exhibit P,

Appendix P-2. The sections below are intended for use as a reference by field monitoring personnel after the measures have already been implemented.

3.1 Erosion Control, Topsoil Management, and Soil Stabilization Measures

The goal of these soil preservation measures is to avoid or minimize construction-related impacts on native soils and on the environment that may result from erosion or mixing of topsoil with subsoil layers. Perennial will implement erosion control, topsoil management, and soil stabilization measures according to the following general guidelines:

- Erosion control measures will be implemented immediately prior to ground disturbances in Project areas. These measures will be maintained for the duration of the construction and restoration phases, as necessary, and may be maintained into the operations and maintenance phase until the risk of erosion has been eliminated and areas of disturbance are successfully restored.
- Standard erosion control techniques will be used, including the use of silt fencing, straw bales, mulch, straw wattle, erosion control fabric, water bars, temporary and permanent slope breakers, trench breakers, and other techniques, as appropriate.
- At the discretion of Perennial's environmental inspectors and the pertinent landowners, some permanent erosion control measures may be appropriate (e.g., permanent slope breakers).
- Topsoil management techniques will be implemented at the start of ground-disturbing activities and maintained throughout construction, as needed.
- At a minimum, trench line and spoils side topsoil stripping and segregation will be performed in temporary disturbance areas, unless the pertinent landowner and/or farmer has requested otherwise.
- At the discretion of Perennial's environmental inspectors and the pertinent landowner and/or farmer, the contractor may conduct topsoil segregation in other Project areas where topsoil and subsoil might mix, such as the pipeline ROW during muddy conditions, or other areas where excavation or grading are needed.
- Soil stabilization measures will be implemented as soon as construction in any Project area is complete and, if needed, again during the final restoration and clean-up phase. These measures typically include restoring the site to original grade and contour and compacting soils as necessary.

3.2 Noxious and Invasive Weed Control Measures

Perennial will implement measures to prevent or control introduction or spread of designated noxious weed seeds and plant parts prior to and during construction and during the operations and maintenance phases of the Project. Noxious weed control efforts will focus on species that are designated as noxious weeds by the Oregon Department of Agriculture (ODA 2013) and by

Umatilla County (Umatilla County Noxious Weed Control 2012). The goal of noxious weed control is to prevent the introduction or spread of noxious weeds in or immediately adjacent to the Project area, but not to eradicate all noxious weed populations in Project areas.

Six designated noxious weed species were observed during field surveys in 2013: quackgrass (*Agropyron repens*), diffuse knapweed (*Centaurea diffusa*), kochia (*Kochia scoparia*), Scotch thistle (*Onopordum acanthium*), cereal rye (*Secale cereal*), and puncturevine (*Tribulus terrestris*). Locations of noxious weed observations are shown in Table 3 and Figures 1a to 1e. These species are all classified as category B by the State of Oregon and/or Umatilla County, indicating that limited to intensive control is required, as determined on a site-specific, case-by-case basis. In addition, surveyors observed three species of common invasive species that are not designated as noxious: including cheatgrass (*Bromus tectorum*), Russian thistle (*Salsola tragus*), and tumble mustard (*Sisymbrium altissimum*). Perennial is not required to treat or control these additional species.

Perennial will implement noxious weed control measures according to the following general guidelines:

- Qualified biologists will conduct onsite noxious weed surveys and monitoring.
- Noxious weed control may utilize manual (hand pulling), mechanical (mowing, clipping), or chemical (herbicides) treatment techniques to control weed populations.
- Perennial may utilize any of these methods on a site-specific basis but shall obtain approval from the ODFW and individual landowners prior to using specific herbicides.
- Only a state-licensed weed control contractor will apply herbicide treatments.
- Assess Project sites regularly during construction and treat weed populations as needed.
- Use certified weed-free straw bales and straw mulch for soil erosion and sedimentation control measures, and revegetation efforts.
- Finalize weed control methods, including treatment approach and use of specific herbicides, prior to construction in coordination with individual landowners, the ODFW, and Umatilla County.

3.3 Revegetation Measures

Perennial will re-seed all temporary disturbance areas where soil and vegetation have been disturbed, unless the individual landowners have requested otherwise. Re-seeding may not be necessary or appropriate in some areas, including sites where vegetation has been flattened but not crushed and areas where little or no vegetation was present prior to construction. In all cases, Perennial will seek approval from the pertinent land owner and/or farmer before re-seeding.

Agricultural Croplands

Perennial will coordinate with landowners and/or farmers and, as necessary, restore croplands to original grade and contour and repair any agricultural drainage systems that are impacted by construction. Individual landowners and/or tenant farmers will be consulted when determining the proper seed mix (usually a single type of crop seed, such as winter wheat) to be used during re-seeding activities on agricultural lands. The goal of cropland revegetation is to return croplands to a condition and production ability consistent with typical pre-construction condition. Restoration on cultivated lands, including potential re-seeding, will be conducted as soon as possible after construction has been completed.

Disturbed Grasslands and Shrub-Steppe Rangeland

During the clean-up phase of the Project, all non-cultivated temporary disturbance areas will be restored to original grade and soil condition as soon as possible after the final construction activities. For the Project, this includes areas with six different types of weedy grasslands, and one shrub-steppe area dominated by sagebrush and weedy grasses. These areas will then be evaluated to determine whether re-seeding is required to return them to pre-construction vegetation conditions. If re-seeding is necessary, this will generally be initiated immediately after construction is completed in any part of the Project site. In some cases, final re-seeding may need to be delayed, depending on the season or on weather conditions, but it should always occur as soon as appropriate after construction. Temporary seeding may be appropriate in some cases if a long delay is expected between the end of construction at a site and final restoration.

The goal of grassland and shrub-steppe rangeland restoration and re-seeding is to return these areas to a vegetative cover and species assemblage that are consistent with (not identical to) typical pre-construction conditions, or better. Individual landowners will be contacted for approval before applying seed mixes to these areas. Restoration of non-cultivated areas will utilize seed mixes that incorporate both native and desirable non-native seed species. Preliminary seed mixes have been determined and are provided in Table 4; the final seed mixes used may change as a result of further consultations with the ODA and ODFW or at the request of individual landowners.

Perennial will implement revegetation measures according to the following general guidelines:

- Re-seed areas as soon as possible after final construction disturbance in each area.
- Re-seed during the appropriate season (usually winter/spring or fall) and as weather conditions allow.
- If final construction is not completed at a time that allows immediate re-seeding, the areas will be mulched or otherwise treated to minimize erosion until seeding can occur.
- All seed mixes, planting methods, noxious weed control treatments, topsoil conservation methods, and erosion control measures will only be implemented with the approval of the ODFW and the individual landowners and/or farmers.

4 MONITORING PROCEDURES

Perennial will conduct annual monitoring of restoration efforts in all Project areas. Perennial will provide biologists and/or inspectors qualified to conduct these evaluations. Restored cultivated lands will be monitored primarily by the landowner and/or farmer for production ability after Perennial has completed final construction restoration. Landowners may report any subsequent concerns to Perennial. In many cases, the restored croplands will be replanted during the next growing season. Perennial's monitoring teams will provide general descriptions of the conditions of cultivated agricultural areas during monitoring efforts; however, these will mainly be used to verify information provided by the landowner and/or farmer. Therefore, the sections below primarily address monitoring at non-cultivated areas. However, Perennial's monitors will note substantial restoration issues observed on cultivated lands during the course of monitoring in other Project areas. Although monitoring of some measures will be applicable to all project areas (e.g., erosion control and noxious weed control), monitoring of other measures will only apply to areas that are not developed or used for agricultural farming (e.g., topsoil segregation, re-seeding). Where possible, all annual monitoring efforts will be conducted in single site visits and by the same team.

The purpose of monitoring is to evaluate the effectiveness of long-term soil stability, noxious weed control, and vegetation condition within areas disturbed during construction and to identify appropriate remedial actions that will help Perennial attain successful restoration of disturbed areas.

4.1 Erosion Control, Topsoil Management, and Soil Stabilization Monitoring Procedures

Perennial will provide construction inspectors and/or environmental inspectors during all phases of construction to oversee and inspect the implementation and maintenance of erosion control, topsoil segregation, and soil stabilization measures. During the operations and maintenance phase of the Project, Perennial's biologists and/or inspectors will conduct annual monitoring to evaluate the success of these measures.

Monitoring for these soil preservation measures will be conducted in all Project areas, but will focus on:

- Areas particularly susceptible to erosion, such as those near Project drainages and waterbodies (see Table 2) and areas with slopes;
- Areas where topsoil segregation was conducted;
- The pipeline trench line (e.g., for subsidence); and
- Areas where temporary or permanent erosion control devices (techniques) are in place.

Table 2 Project Waterbodies

Project ID	Type	Name	Location (milepost)
SS-001-003	Canal/ditch	Westland A Canal	0.00
SS-001-002	Canal/ditch	Westland A Canal	1.29
SS-001-001	Canal/ditch	High Line Canal	2.03

Monitoring crews will describe the effectiveness of the measures and differentiate between normal levels of wear-and-tear (e.g., due to weather conditions) and implementation failures. Monitors should recommend remedial actions for Perennial to take when needed, such as maintaining or repairing previously implemented measures or implementing new measure, if appropriate. All reports and recommendations for maintenance or remedial action should be supported by detailed notes and photographic documentation, and be recorded using a global positioning system (GPS).

4.2 Noxious and Invasive Weed Control Monitoring Procedures

Prior to construction, Perennial's biologists will conduct surveys for designated noxious weeds. Perennial will provide construction inspectors and/or environmental inspectors during all phases of construction to oversee and inspect the implementation of noxious weed control measures and monitor weed populations as necessary. During the operations and maintenance phase of the Project, Perennial's biologists will conduct annual noxious weed monitoring.

Monitoring of noxious weed measures will be conducted in all areas disturbed by the Project, including both temporary and permanent disturbance areas, but will focus on:

- Areas where noxious weeds were identified during pre-construction surveys;
- Any sites used as noxious weed cleaning stations during construction; and
- High traffic areas, including areas used for parking and access during construction, the operations building site, ROW access points, and drive lanes during operations and maintenance.

Monitoring crews will describe the effectiveness of noxious weed control measures across the Project area and recommend remedial actions for Perennial to conduct as necessary. Crews will inspect noxious weed sites documented during pre-construction surveys to determine if they have reestablished and, if so, if they have spread. Locations of noxious weed observations are shown in Table 3 and Figure 1a through 1e.

All recommendations for remedial actions should be supported by detailed notes and photo-documentation and be recorded using GPS. The Project Biological Resources Survey Report (Exhibit P, Appendix P-1) provides more detail on the noxious weeds observed during surveys, including species, percent cover, and extent of population. The same types of data will be collected during monitoring efforts.

4.3 Revegetation Monitoring Procedures

Perennial will provide qualified biologists to conduct annual monitoring of re-seeded areas. Biologists will select representative sites in Project revegetation areas for analysis and compare the results to the vegetation in nearby areas not disturbed by construction. Analysis at each site will be conducted at a vegetation monitoring plot within the Project boundary and a reference site outside of the Project boundary. Perennial does not have access to lands beyond its 50-foot-wide permanent ROW easement or other Project boundaries; therefore, it is not possible to conduct detailed surveys of reference plots in areas outside of the Project boundary. Instead, biologists will visually assess vegetation conditions at the reference sites in adjacent areas without leaving the Project boundary. In addition to providing detailed documentation of revegetation efforts at the vegetation monitoring plot and reference sites, the investigators will provide an overview summary of revegetation efforts across all temporary disturbance areas. This latter effort will not require sampling and will instead be based on visual inspection of the ROW conditions.

The purpose of revegetation monitoring is to help Perennial ensure that vegetative cover and species assemblage in temporary disturbance areas is restored to levels that are of similar quality or better than the conditions at reference sites. Because most of the temporary disturbance areas were already heavily disturbed and supported a large proportion of non-native plants prior to construction, achieving purely native plant assemblages is not the goal of this effort. Rather, the goal will be to achieve an acceptable level of ground cover of all plants, as well as an acceptable assemblage of desirable plant species (such as those included in the seed mix). Restoration success criteria are further described in Section 4.4.

Revegetation Monitoring Plots

Vegetation monitoring plots will each be 10 feet in diameter and be located at representative areas in some of the larger temporary disturbance areas. Plots should be visited during the growing season. The types of data recorded for vegetation monitoring plots and reference sites will be identical and will include GPS documentation, photographic documentation, and analysis for vegetative cover and species composition. The same revegetation monitoring plots and reference sites will be analyzed from year to year, unless this is not appropriate due to fire damage, disturbance by the landowner, or other occurrence.

Locations of vegetation monitoring plots and nearby reference sites will be as follows:

- At least two plots (and reference sites) per mile will be established in the pipeline ROW (10 plots total);
- Two plots (and reference sites) will be established at the construction laydown and parking area;
- One plot (and reference site) will be established in the underground electrical ROW near the McNary Substation; and

- No plots will be placed in cultivated or developed lands, in Project permanent aboveground facilities, or it he remaining smaller temporary disturbance areas.

For the Project, temporary construction disturbance will occur in areas with the following habitat types: six different types of weedy grasslands and one shrub-steppe area dominated by sagebrush and weedy grasses. In addition, cultivated areas that were re-seeded will require at least a cursory inspection to verify information provided by the landowner and/or farmer. These areas are shown in Figures 2, 3a, and 3b and are discussed in more detail in the Project's 2013 Biological Survey Report (Exhibit P, Appendix P-1).

During revegetation monitoring, the investigator will collect the following information regarding conditions at the sites:

- Confirmation that all areas requiring revegetation have been seeded (part of the overview summary of restoration efforts for the entire ROW);
- Vegetation characteristics at revegetation monitoring plots and associated reference sites, including:
  - Plant species and percent cover of species (visual estimate)
  - Percentage of total vegetative cover (visual estimate)
  - Percentage of bare soil (visual estimate)
- Percent cover of native and introduced desirable plant species (included in seed mixes or by natural recruitment);
- Percent cover of noxious weed species (those listed as noxious under the ODA Noxious Weed Control Program, by Umatilla County, or other invasive species such as cheatgrass and Russian thistle), and density estimates by species if present;
- Presence of soil condition or erosion problems that are negatively influencing revegetation success and require remedial action; and
- For cultivated agricultural lands, the monitors will report crop presence or evidence of recent harvest.

4.4 Restoration Success Criteria

Erosion control, topsoil management, and soil stabilizing measures will be deemed successful if little to no loss of native soils is visible. If the levels of recent native soil loss appears to be similar that of nearby areas outside of the Project area, Perennial will consider this to be acceptable and meeting the criteria.

Noxious weed control measures will be deemed successful if the numbers, extents, and densities of noxious weed populations are similar to pre-construction conditions, and populations have not spread to areas outside of the Project boundary that were not previously infested.

Disturbed grasslands and shrub-steppe rangeland will be considered successfully restored if the habitat quality in these areas is similar to or better than that at the reference sites. Because most of these areas were already heavily disturbed and supported a large proportion of non-native plants (including high abundance of cheatgrass) prior to construction, it is not the goal of this effort to achieve the exact levels of ground cover and species assemblages that were present prior to disturbance. Rather, the goal will be to achieve habitat quality that is similar to, or better than, the habitat quality observed at the reference site.

Based on the revegetation criteria approved by ODOE and ODFW for recent energy projects in similar habitat (ODOE 2006, 2007), Perennial will use the following criteria to determine post-construction revegetation success:

- Perennial will aim for restored sites to be dominated by desirable species; and
- Perennial will aim to achieve at least a 30 percent total canopy cover for all species and a ground cover of at least 25 percent for desirable species, unless conditions at reference sites are lower than this. Vegetation percent cover goals may be adjusted to match the typical percent cover in surrounding undisturbed areas.

For the purposes of these revegetation efforts, "desirable species" indicates not only the native or beneficial non-native species included in the seed mix, but also those that may be recruited naturally. Reseeding or replanting efforts will occur, in consultation with the ODFW, in any area where monitoring identifies a restoration failure.

Actively cultivated agricultural croplands will be considered successfully restored if these areas achieve crop production comparable to adjacent agricultural areas that were not disturbed during construction. No annual plot surveys will be conducted on active agricultural croplands. Perennial shall coordinate with the landowners and/or farmers to determine when sites have been successfully restored.

4.5 Remedial Action and Maintenance

Following each of the annual monitoring surveys described above, Perennial will conduct remedial measures as needed to address remaining soil impacts and revegetation requirements not achieved through initial plantings.

Common remediation measures that monitoring crews may recommend include:

- Re-seed select areas where significant areas of bare soil remain after establishment of initial seeding;
- Control/treat noxious weed/invasive plant species by qualified personnel using appropriate methods for the target species (e.g., herbicides applied by licensed personnel);
- Repair temporary or permanent erosion control structures;

- Install additional temporary or permanent erosion control structures; and
- Decompact soils where problematic soil conditions are negatively influencing revegetation efforts.

If the monitors recommend remedial actions, these recommendations will be provided in the annual monitoring report submitted to Perennial. Perennial will make every attempt to implement the recommended remedial actions as soon as possible, considering the season, weather conditions, and other site-dependent constraints. In general, remedial actions should be conducted within 30 days of the problems being identified in the field, if appropriate. However, if actions are needed within a shorter time frame to prevent restoration failure, the monitoring crews will notify Perennial as soon as possible after documentation of problem area (via telephone or email). Perennial will document revegetation progress and remedial actions taken in its Restoration Monitoring Report to the ODFW and ODOE (see Section 5.4).

4.6 Monitoring Schedule

During the construction phase, monitoring of restoration efforts should be initiated immediately after measures are implemented, as appropriate. Typically, Perennial's environmental inspectors will inspect soils and noxious weed measures (e.g., erosion control and noxious weed treatments) on a daily basis in areas of active construction, or on a weekly basis in other Project areas. In addition, all erosion control techniques and devices will be inspected within 24 hours of any large rain event (0.5 inch or greater). Monitoring for revegetation success will not begin in earnest until the first growing season after the construction phase has been completed.

Post-construction restoration monitoring efforts will be conducted according to the following general guidelines:

- Monitoring for all restoration measures will be conducted concurrently, when possible, and will begin in the first growing season (fall or spring) following the completion of construction and initial restoration and continue annually for up to five years.
- When it is determined that an area of the Project has been successfully restored at any point during years 1 to 5, by satisfying all success criteria, Perennial will request concurrence from ODOE and ODFW. If ODOE and ODFW concur, Perennial will conclude that it has no further obligation to perform revegetation activities in that area of the Project. Where this is the case, the monitoring effort may require fewer than five years.
- If after five years of monitoring (and remedial actions) some sites have not attained restoration success, Perennial will coordinate with ODOE and ODFW regarding appropriate steps forward. At this point Perennial may suggest additional restoration

techniques or strategies, or Perennial may request a waiver from further restoration obligations at these sites.

4.7 Reporting

Perennial will provide an annual Restoration Monitoring Report to ODOE and ODFW following each monitoring effort. Each annual report will provide a summary of field data collected during field visits and include an assessment of whether restoration efforts are meeting the success criteria. This reports will provide assessments of restoration efforts at each representative monitoring site (i.e., the vegetation monitoring plots), as well as of restoration efforts for the Project as a whole. This will include a description of the restoration status of cultivated lands. The reports will document remedial actions (e.g., seeding, noxious weed control, and repair of erosion control structures) taken to date, additional remedial actions planned for any areas that are not trending towards success, and the anticipated dates of completion of each of these actions.

When Perennial deems an area of the Project successfully restored by satisfying all success criteria, this will be stated in the annual revegetation report. If ODOE and ODFW concur, Perennial will conclude that it has no further obligation to perform revegetation activities in that area of the Project. Therefore, the monitoring effort for some areas of the Project may require fewer than five years. If after five years of monitoring (and remedial actions) some sites have not attained restoration success, Perennial's year 5 annual report will discuss potential steps forward for these sites. Perennial may then seek guidance from ODOE and ODFW for additional restoration techniques or request a waiver from further restoration obligations at these sites. If additional restoration is required, Perennial will continue to provide annual monitoring reports to ODOE and ODFW until efforts are halted.

5 AMENDMENT OF PLAN

Perennial anticipates completing the restoration and re-seeding guidelines provided in this plan; however, the methods and timing could be altered at the request of landowners, the ODFW, and ODOE. This Restoration Monitoring Plan may be amended by agreement of Perennial and ODOE. Amendments will be prepared in consultation with ODOE and ODFW and may be made without altering the site certificate.

Table 3 Noxious Weeds Observed at the Station Site and in the 50-foot-wide Pipeline Right-of-Way

ID	Species	Location (milepost)	Cover	Diameter
NW-003-008	Diffuse knapweed	0.23	6–25%	300+ feet
NW-003-009	Diffuse knapweed	0.23	<1%	100 feet
NW-003-007	Scotch thistle	0.24	<1%	150 feet
NW-003-006	Scotch thistle	0.32	<1%	150 feet
NW-003-003	Diffuse knapweed	0.5	<1%	100 feet
NW-003-004	Scotch thistle	0.5	<1%	100 feet
NW-003-005	Kochia	0.5	26–50%	50 feet
NW-003-012	Puncturevine	0.5	1–5%	300+ feet
NW-001-013	Cereal rye	0.59	<1%	300+ feet
NW-001-012	Cereal rye	1.28	<1%	300+ feet
NW-003-001	Diffuse knapweed	1.29	<1%	10 feet
NW-003-002	Kochia	1.29	<1%	single plant
NW-001-010	Cereal rye	1.35	<1%	300+ feet
NW-001-011	Scotch thistle	1.35	<1%	single plant
NW-001-009	Cereal rye	1.55	1–5%	300+ feet
NW-001-007	Scotch thistle	2.06	<1%	50 feet
NW-001-008	Cereal rye	2.06	<1%	50 feet
NW-001-006	Cereal Rye	2.32	26–50%	300+ feet
NW-001-005	Quackgrass	2.51	<1%	100 feet
NW-001-004	Quackgrass	2.93	<1%	300+ feet
NW-001-003	Quackgrass	3.05	<1%	300+ feet
NW-001-002	Quackgrass	3.34	<1%	300+ feet
NW-001-001	Scotch thistle	4.68	<1%	300+ feet
NW-001-014	Scotch thistle	Facility Site	<1%	300+ feet
NW-001-015	Scotch thistle	Facility Site	<1%	150 feet
NW-001-016	Scotch thistle	Facility Site	<1%	150 feet
NW-001-017	Cereal rye	Facility Site	<1%	150 feet
NW-003-010	Kochia	Facility Site	<1%	10 feet
NW-003-011	Diffuse knapweed	Facility Site	6–25%	300+ feet
NW-003-014	Diffuse knapweed	Interconnect	1–5%	50 feet

*Noxious weed populations were recorded during field survey in 2013. Conditions at time of construction are expected to differ slightly.

Table 4 Seed Mixes for Temporarily Disturbed Project Areas

Vegetation Type	Common Name	Scientific Name	PLS (pounds per acre[1],[2]	Description/ Purpose
Seed Mix 1: Agricultural (irrigated, dryland, and pastures)	Wheat or other crop seed, at the request of landowner.		At landowner request	(EC)
Seed Mix 2: Disturbed native grasslands	Secarbluebunch wheatgrass	*Pseudoregneriaspicata*	6	(N) (EC) (F)
	Sherman big bluegrass	*Poaampla*	1.5	(N) (F)
	Sandberg's bluegrass	*Poasecunda*	2.0	(N) (F)
	Small burnet	*Sanguisorba minor*	2.0	(I) (F)
	Great Basin wildrye*	*Elymuscinereus*	1.0	(N) (EC) (F)
	Needle and thread grass*	*Hesperostipacomata*	1.0	(N) (EC) (F)
	Western yarrow*	*Achilleamillefolium var. occidentalis*	1.0	(N) (F)
Seed Mix 3: Shrub-steppe	Secarbluebunch wheatgrass	*Pseudoregneriaspicata*	6	(N) (EC) (F)
	Sherman big bluegrass	*Poaampla*	1.5	(N) (F)
	Sandberg's bluegrass	*Poasecunda*	2.0	(N) (F)
	Ladak alfalfa	*Medicago sativa*	1.0	(I) (F)
	Small burnet	*Sanguisorba minor*	2.0	(I) (F)
	Great Basin wildrye*	*Elymuscinereus*	1.0	(N) (EC) (F)
	Needle and thread grass*	*Hesperostipacomata*	1.0	(N) (EC) (F)
	Western yarrow*	*Achilleamillefolium var. occidentalis*	1.0	(N) (F)
	Big sagebrush*	*Artemisia tridentata*	1.0	(N) (F)

Key:

(N) = Native, (I) = Introduced, (EC) = Erosion Control, (F) = Forage

* Optional species depending on site and availability

[1] PLS = pure live seed

[2] Final pounds/acre may change at the request of the landowners or the ODFW

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Umatilla County Noxious Weed Control. 2012. Umatilla County 2011 Noxious Weed List. Pendleton, Oregon.

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Existing Transmission Line

Underground Transmission Line

Step-up Substation

*The approximate extent of each observed population and its associated GPS points is mapped within Project ROWs

Noxious Weeds*

- Cereal Rye
- Quackgrass
- Scotch Thistle
- Diffuse Knapweed
- Kochia
- Puncturevine

- Cereal Rye Extent
- Quackgrass Extent
- Scotch Thistle Extent
- Kochia
- Diffuse Knapweed
- Puncturevine

N

0 500 1,000

Feet

Source: ESRI 2010, E&E Field Data 2013

Figure 1a

Noxious Weeds Observed in the Proposed Facility Site, Step-up Substation, and 50-foot-wide ROW

Perennial Wind Chaser Station

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Existing Transmission Line
New Overhead Transmission Line
Natural Gas Pipeline
Natural Gas Pipeline 50-foot Buffer
Station

*The approximate extent of each observed population and its associated GPS points is mapped within Project ROWs

Source: ESRI 2010, E&E Field Data 2013

Noxious Weeds*
- Cereal Rye
- Quackgrass
- Scotch Thistle
- Diffuse Knapweed
- Kochia
- Puncturevine

- Cereal Rye Extent
- Quackgrass Extent
- Scotch Thistle Extent
- Kochia
- Diffuse Knapweed
- Puncturevine

N

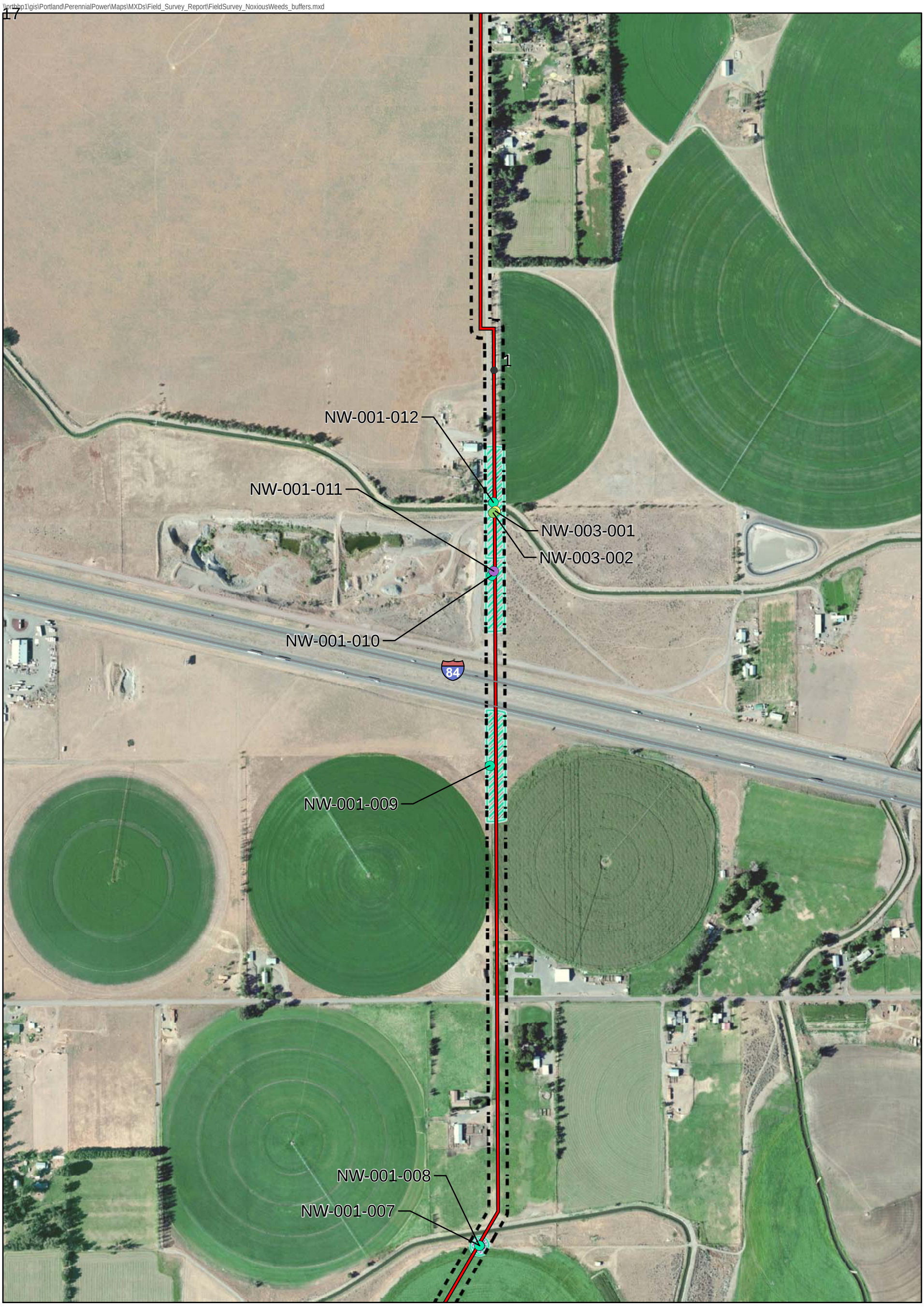
0 500 1,000
Feet

Figure 1b

Noxious Weeds Observed in the Proposed Facility Site and 50-foot-wide ROW

Perennial Wind Chaser Station

17



Natural Gas Pipeline

Natural Gas Pipeline 50-foot Buffer

Noxious Weeds*

- Cereal Rye
- Quackgrass
- Scotch Thistle
- Diffuse Knapweed
- Kochia
- Puncturevine

- Cereal Rye Extent
- Quackgrass Extent
- Scotch Thistle Extent
- Kochia
- Diffuse Knapweed
- Puncturevine

*The approximate extent of each observed population and its associated GPS points is mapped within Project ROWs

Source: ESRI 2010, E&E Field Data 2013

N

0 500 1,000

Feet

Figure 1c

Noxious Weeds Observed in the Proposed Facility Site and 50-foot-wide ROW

Perennial Wind Chaser Station

Natural Gas Pipeline

Natural Gas Pipeline 50-foot Buffer

Noxious Weeds*
- Cereal Rye
- Quackgrass
- Scotch Thistle
- Diffuse Knapweed
- Kochia
- Puncturevine

- Cereal Rye Extent
- Quackgrass Extent
- Scotch Thistle Extent
- Kochia
- Diffuse Knapweed
- Puncturevine

*The approximate extent of each observed population and its associated GPS points is mapped within Project ROWs

Source: ESRI 2010, E&E Field Data 2013

N

0 500 1,000

Feet

Figure 1d

Noxious Weeds Observed in the Proposed Facility Site and 50-foot-wide ROW

Perennial Wind Chaser Station

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Natural Gas Pipeline

Natural Gas Pipeline 50-foot Buffer

Noxious Weeds*

- Cereal Rye
- Quackgrass
- Scotch Thistle
- Diffuse Knapweed
- Kochia
- Puncturevine

- Cereal Rye Extent
- Quackgrass Extent
- Scotch Thistle Extent
- Kochia
- Diffuse Knapweed
- Puncturevine

*The approximate extent of each observed population and its associated GPS points is mapped within Project ROWs

Source: ESRI 2010, E&E Field Data 2013

N

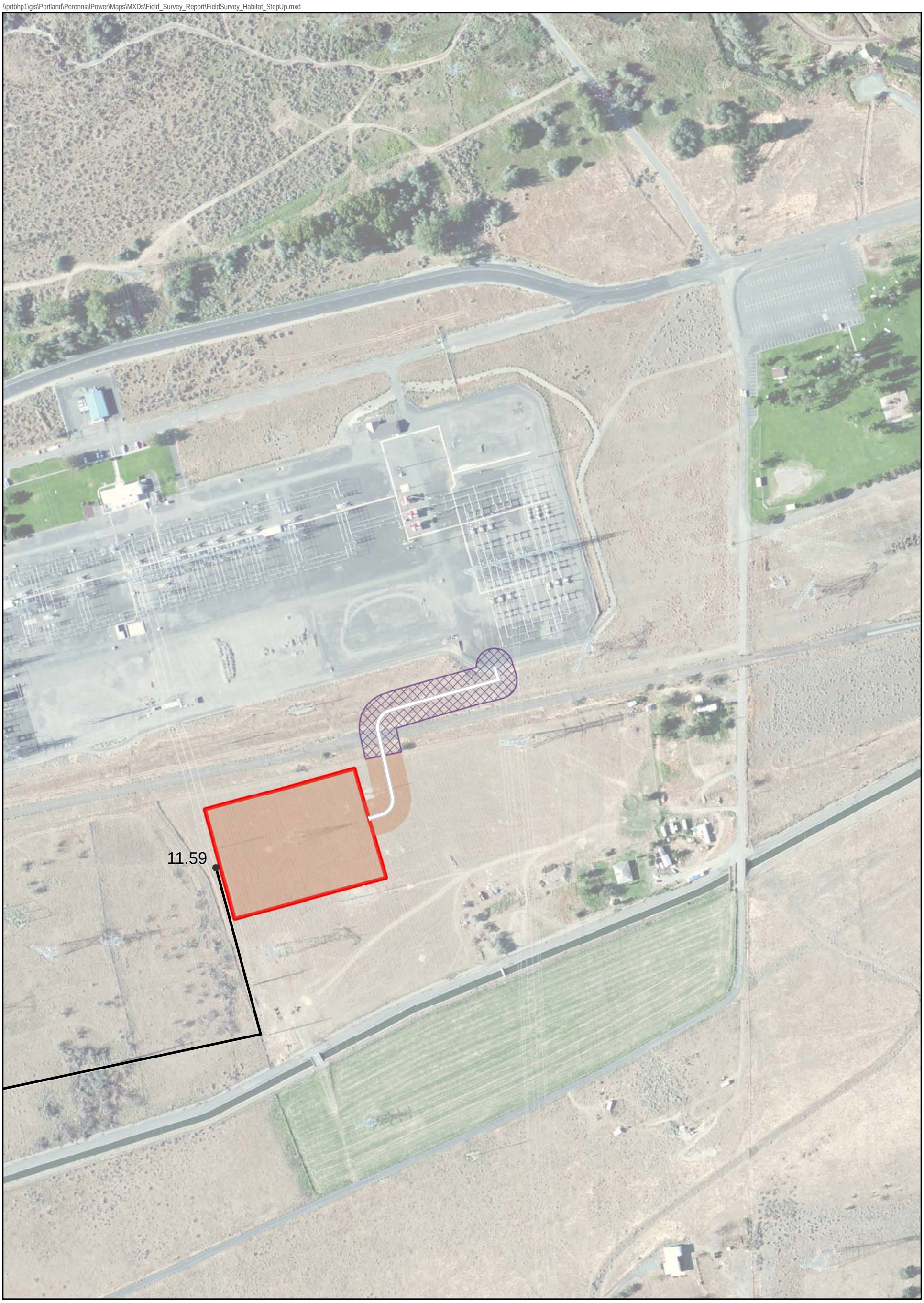
0 500 1,000

Feet

Figure 1e

Noxious Weeds Observed in the Proposed Facility Site and 50-foot-wide ROW

Perennial Wind Chaser Station



- Mileposts
- Existing Transmission Line
- Underground Transmission Line
- Step-up Substation

Field Data - Habitat
- Weedy Grassland #5
- Weedy Grassland #6

Source: ESRI 2010, E&E Field Data 2013

N

0 150 300
Feet

Figure 2

Field Mapped Habitats
of the Proposed Step-up
Substation and Its Associated
Underground Transmission Line

Perennial Wind Chaser Station

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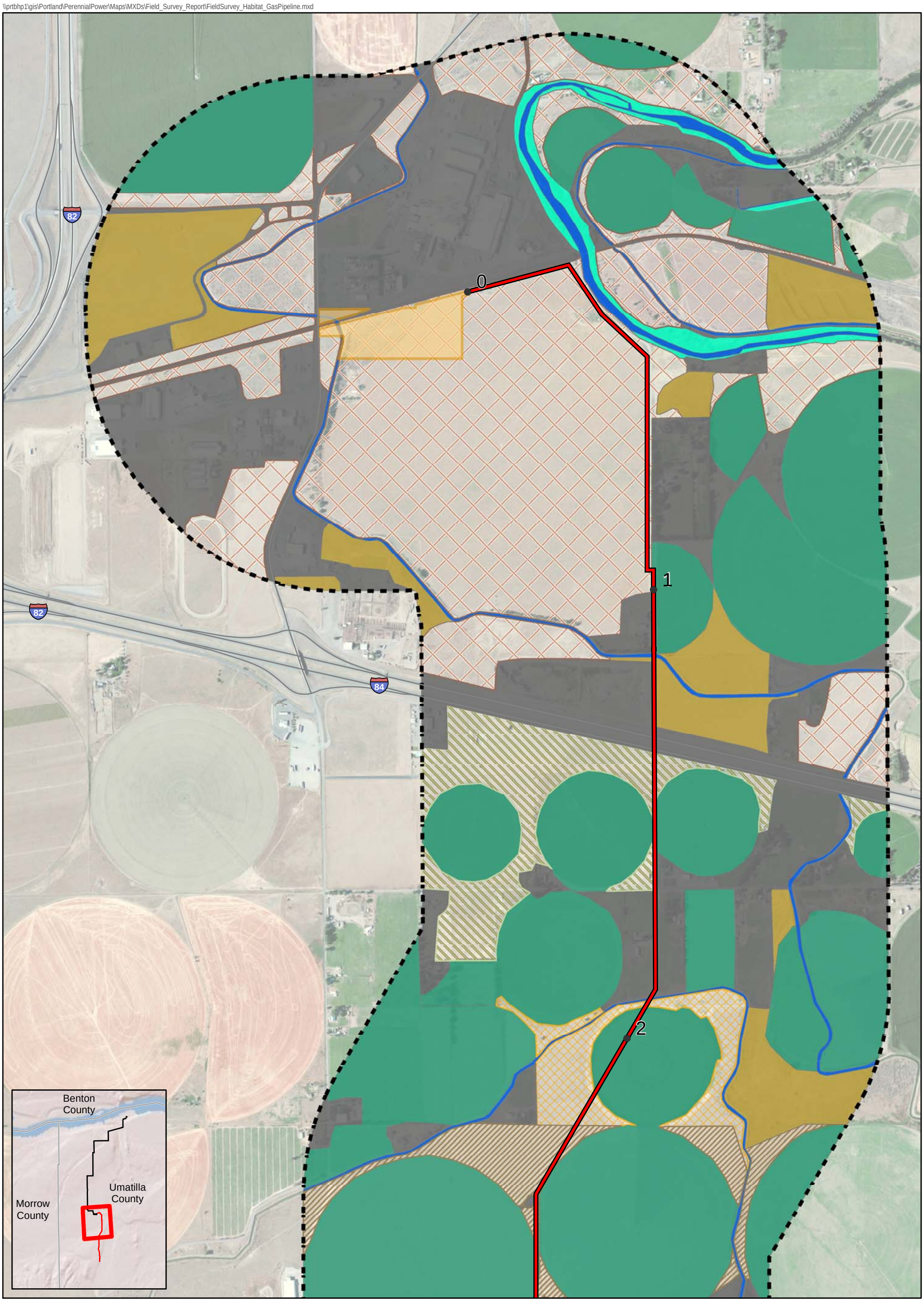


Mileposts
Natural Gas Pipeline
0.5-mile Buffer
Station

Field Data - Habitat
Agriculture
Developed
Open Water
Riparian
Shrub Steppe
Weedy Grassland #1
Weedy Grassland #2
Weedy Grassland #3
Weedy Grassland #4

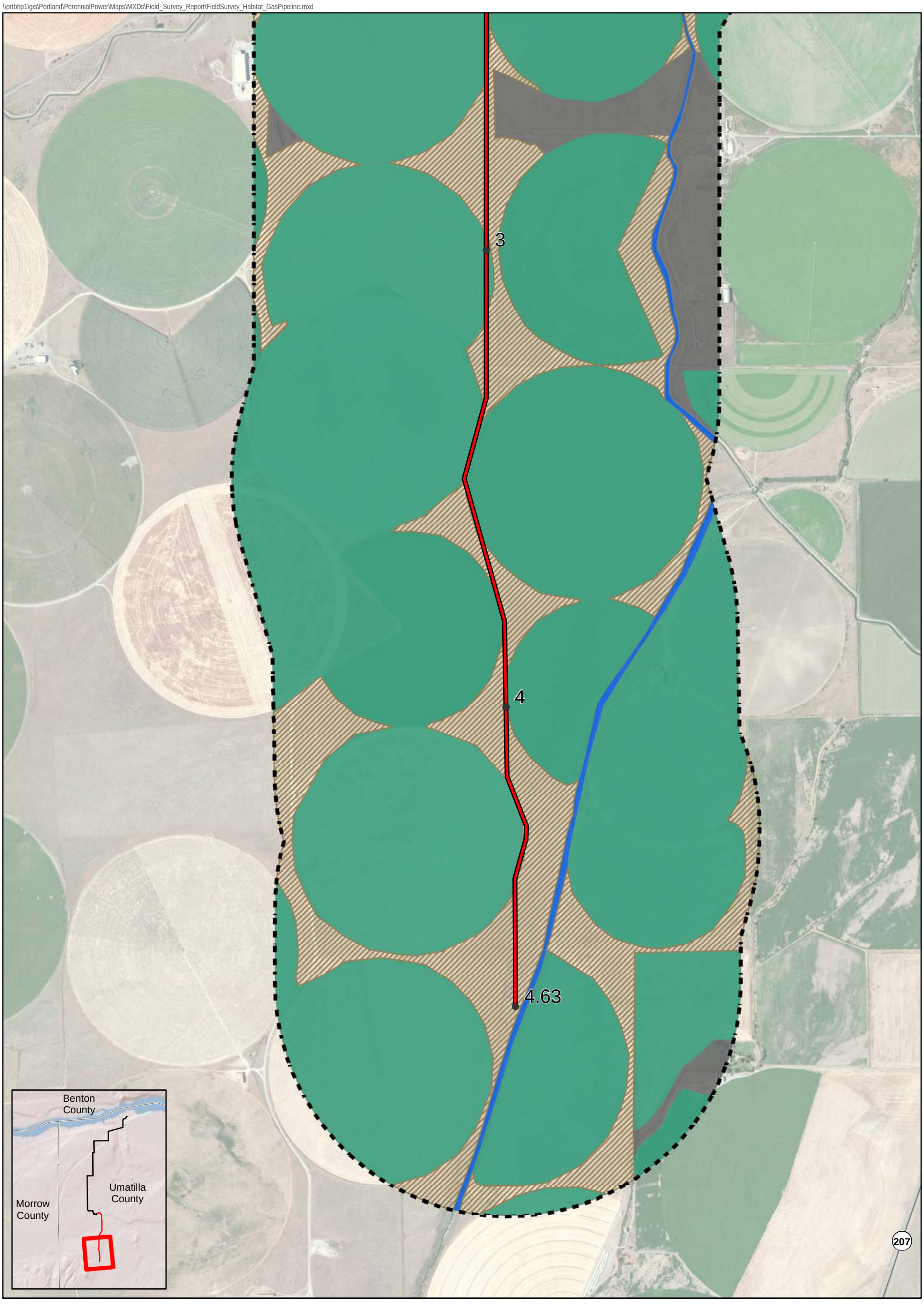
N
0 1,000 2,000
Feet

Source: ESRI 2010, E&E Field Data 2013

Figure 3a

Field Mapped Habitats within 0.5 Mile of the Proposed Facility Site and 50-foot-wide Pipeline ROW

Perennial Wind Chaser Station



- Mileposts
- Natural Gas Pipeline
- 0.5-mile Buffer
- Station

Field Data - Habitat

- Agriculture
- Developed
- Open Water
- Weedy Grassland #1

Source: ESRI 2010, E&E Field Data 2013

N

0 1,000 2,000

Feet

Figure 3b

Field Mapped Habitats within 0.5 Mile of the Proposed Facility Site and 50-foot-wide Pipeline ROW

Perennial Wind Chaser Station

Appendix 2
Perennial Wind Chaser Station
Biological Monitoring Plan

Perennial Wind Chaser Station

Biological Monitoring Plan

October 2014

Prepared for:

Perennial-WindChaser LLC
300 Madison Avenue
New York, NY 10017

Prepared by:

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1 INTRODUCTION

This Biological Monitoring Plan outlines the goals, methods, and criteria that Perennial WindChaser LLC will use to evaluate and track the success of mitigation measures designed to avoid or minimize impacts on plants and wildlife and their habitats resulting from the Perennial Wind Chaser Station project (Project). These include, but are not limited to, the following types of measures: environmental training; general habitat and wildlife impacts reduction practices; pre-construction surveys for sensitive wildlife; and seasonal and spatial disturbance buffers for active migratory bird nests or other known special-status species locations.

This plan addresses monitoring procedures to be conducted during the construction phase of the Project. Habitat restoration measures will be monitored by Perennial's post-construction monitoring crews, as described in the Project Restoration Monitoring Plan (Exhibit P, Appendix P3).

The goals of the biological mitigation measures and monitoring procedures are to:

1. Avoid or minimize impacts on habitat and native wildlife in general as a result of construction and operation of the Project; and
2. Avoid impacts on special-status plant and wildlife species that may result from construction and operation of the Project.

This plan summarizes the biological mitigation measures that will be implemented during and after construction of the Project. These measures are discussed in more detail in Exhibit P, Fish and Wildlife Habitat and Exhibit Q, Threatened and Endangered Species. The monitoring procedures described in this plan supersede any monitoring procedures discussed in these other documents. This plan has been reviewed and approved by the United States Fish and Wildlife Service (USFWS), the Oregon Department of Energy (ODOE), and the Oregon Department of Fish and Wildlife (ODFW).

2 SITE DESCRIPTION AND NATURE OF IMPACTS

The Project will be located on private lands in Umatilla County, Oregon. The Project's Energy Facility Site is located in an agricultural field that is surrounded on three sides by roads, railroads, industrial property (Hermiston Generating Plant and Lamb-Weston agricultural processing plant), light industrial property (FedEx package distribution facility), and a large cattle stock yard. A natural gas pipeline is to be constructed within an existing 50-foot right-of-way, also primarily on agricultural land, that extends south for 4.63 miles. An existing transmission line will be upgraded (reconductored) to accommodate the Project (requiring only two new poles at the north boundary of the Station), and a new step-up substation will be

constructed on agricultural land adjacent to the Bonneville Power Administration's existing McNary Substation.

The Project is expected to impact 60.15 acres total: 23.48 acres at permanent aboveground facilities and 36.67 acres at temporary impacts areas. These impacts include 2.03 acres of temporary disturbance in shrub-steppe habitat, 22.36 acres of temporary impacts on weedy grasslands, and 22.03 acres of permanent impacts on weeds grasslands.

In most cases, the intensity of construction impacts on vegetation and habitat in temporary disturbance areas will be low and will be limited to the flattening of vegetation by rubber-tired vehicles. In some instances, the intensity of impacts in temporary disturbance areas will be higher and will require the removal of topsoil and vegetation for grading, excavation, or drilling activities. Most of the shrub-steppe and grassland habitats present in the Project area were heavily disturbed prior to construction and supported a large proportion of non-native plants (including a high abundance of cheatgrass).

3 SUMMARY OF RESTORATION MEASURES

The following sections summarize the measures to be implemented during construction of the Project that may be relevant to monitoring procedures. These sections are intended for use as a reference by field monitoring personnel.

3.1 General Fish and Wildlife Habitat Measures

The goal of the general fish and wildlife habitat measures is to avoid or minimize impacts on plants and wildlife and their habitats.

The following measures will be implemented by Perennial to avoid and/or minimize impacts on fish, wildlife, and their habitats:

- All Project personnel will attend an environmental training session prior to entering the Project right-of-way. The training will cover topics related to the Project's environmental compliance, including, but not limited to, approved Project boundaries and access roads; sensitive wetland and waterbody resources; special-status plant and wildlife species; basic avoidance and minimization measures that Perennial will implement for the Project; the role of onsite biologist or monitors; the notification process to be followed if workers identify new sensitive resources; the major environmental laws and regulations that apply to the Project; and the penalty for not complying with laws or regulations.
- The Project will be designed, constructed, maintained, and operated following current Avian Power Line Interaction Committee guidelines to minimize risk of avian mortality.

- Any herbicides used during construction and operations and maintenance will be applied according to label instructions and any federal, state, and local regulations.
- Perennial will restrict vehicular travel to the right-of-way and other established areas within the construction, access, or maintenance easement(s).
- Roads not otherwise needed for maintenance and operations will be restored to pre-construction conditions, to the extent practicable.
- Every construction crew will carry appropriate emergency spill response equipment. If a spill occurs, the crew will temporarily halt work to contain and clean up the material and eliminate the source of the spill before resuming work.
- Perennial will restrict the refueling and maintenance of vehicles and the storage of fuels and hazardous chemicals within at least 100 feet of wetlands, surface waterbodies, and groundwater wells, or as otherwise required by federal, state, or local regulations.
- Perennial will conduct construction and scheduled maintenance activities during daylight hours, to the extent practicable.
- Perennial will impose speed limits during construction for access roads to reduce dust emissions, maintain safety, and protect wildlife.
- Perennial will restore all temporary construction-related areas to pre-construction conditions or better after work has been completed.
- Perennial will minimize compaction of soils and rutting through appropriate use of construction equipment (e.g., low ground-pressure equipment and temporary equipment mats).
- Perennial will minimize the amount of time that any excavations remain open.
- Perennial will identify, control, and minimize the spread of non-native invasive species and noxious weeds, to the extent practicable.
- Perennial will clearly demarcate boundaries of environmentally sensitive areas during construction to increase visibility to construction crews.
- Nesting raptors: If construction-related activities occur during the raptor breeding season (February 1 through August 31), pre-construction surveys will be conducted within 0.5 miles of all proposed Project features for ferruginous hawk (*Buteo regalis*) nests, and within 0.25 miles for all other raptor species nests, including burrowing owl (*Athene cunicularia*) burrows. If active nests are located, construction-related activities would be restricted within 0.5 miles of ferruginous hawk nests and 0.25 miles of all other raptor nests until the nests have failed or chicks have fledged. A biologist will monitor the status of the active nests daily during nearby active construction and document potential adverse interactions with the Project. Spatial restrictions around active raptor nests may be reduced through consultation with ODFW and the USFWS when considering factors

such as the visibility of the Project from the nest, topography, existing human disturbances, and the presence of nest monitors.

- Nesting migratory bird species (non-raptor): If construction-related activities occur during the migratory bird breeding season (March 15 through August 15) for Lewis's woodpecker (*Melanerpes lewis*), willow flycatcher (*Empidonax traillii adastus*), yellow-breasted chat (*Icteria virens*), tricolored blackbird (*Agelaius tricolor*), and other bird species, pre-construction surveys will be conducted within 20 feet of all proposed Project features for nests of all native, non-raptor species. Given the diversity of species potentially occurring in the vicinity of the Project, their varying nest initiation dates, and the possibility of multiple clutches by some species, pre-construction nest surveys for non-raptors will be valid for two weeks. If active nests are located, the Project will consult ODFW and USFWS to determine appropriate measures to take, which may include limiting construction-related activities within 20 feet of the nests until the nests have failed or chicks have fledged, and/or continuing proposed activities with the presence of a biological monitor. A biologist will monitor the status of active nests daily during nearby active construction and document potential adverse interactions with the Project.
- If the roost of a California myotis (*Myotis californicus*), an Oregon sensitive species, is observed incidentally during other biological surveys of the right-of-way, Perennial will consult ODFW to determine what, if any, appropriate measures to take. Potential measures include implementing a spatial disturbance buffer and/or continuing proposed activities with the presence of a biological monitor.
- If construction occurs during important time periods (e.g., breeding, migration, etc.) or at close distances to environmentally sensitive areas, Perennial will consult with the USFWS, ODFW, and Oregon Department of Agriculture (ODA) for guidance on seasonal and/or spatial restrictions designed to avoid and/or minimize adverse effects.
- Perennial will establish streamside management zones within 50 feet of both sides of intermittent and perennial streams and along margins of bodies of open water where removal of low-lying vegetation is minimized.
- Perennial will selectively apply herbicides, if used, within streamside management zones.

3.2 Threatened and Endangered Species Measures

The following measures will be implemented by Perennial to avoid and/or minimize impacts on federal and state threatened and endangered species:

- Fish: To avoid or minimize impacts on steelhead (Middle Columbia River, [*Onchorhynchus mykiss*]), bull trout (*Salvelinus confluentus*), margined sculpin (*Cottus marginatus*), Pacific lamprey (*Lampetra tridentata*), and other fish species, Perennial will establish streamside management zones within 50 feet of both sides of intermittent and

perennial streams where removal of low-lying vegetation is minimized. The pipeline right-of-way crosses three irrigation canals, but no streams or rivers; however, it does come close to the Umatilla River.

- Northern sagebrush lizard (*Sceloporus graciosus graciosus*): Perennial will survey for northern sagebrush lizard in areas of sagebrush and other shrubby habitat that will be impacted by ground disturbance. If northern sagebrush lizards are discovered, Perennial will consult with the USFWS, ODFW, and ODA for guidance on seasonal and/or spatial restrictions designed to avoid or minimize adverse effects.
- Bats: For small-footed myotis (*Myotis ciliolabrum*), long-eared myotis (*Myotis evotis*), long-legged myotis (*Myotis volans*), Yuma myotis (*Myotis yumanensis*), and pallid bat (*Antrozous pallidus*), Perennial will examine any structures (cliffs, caves, mines, fissures, under boulders, buildings, under bridges, and trees) within the construction corridor that could potentially be roost sites. If any bat roosts are discovered, Perennial will consult with the USFWS, ODFW, and ODA for guidance on seasonal and/or spatial restrictions designed to avoid or minimize adverse effects.
- Washington ground squirrel (*Urocitellus washingtoni*): Pre-construction surveys will be conducted prior to any ground disturbance in areas with suitable habitat. If any Project components that require ground disturbance are located within 1,000 feet of potential Washington ground squirrel habitat (excluding tilled agricultural lands or developed areas), Perennial's biologists will conduct transect surveys to determine if squirrels are present, as land access allows. These surveys will follow the protocols coordinated with the ODFW and detailed in the 2013 Biological Resources Survey Report (Exhibit P, Appendix P-1). If Washington ground squirrels are found within the 1,000-foot buffer, ODFW and USFWS will be consulted to determine the best mitigation measures to avoid or reduce adverse impacts. Potential measures include prohibiting or restricting construction-related activities within an appropriate buffer, or continuing proposed activities with the presence of a biological monitor.
- Robinson's onion (*Allium robinsonii*) and Laurence's milkvetch (*Astragalus collinus var. laurentii*): Pre-construction surveys will be conducted for Robinson's onion and Laurence's milkvetch prior to any ground disturbance in areas with suitable habitat. If any individuals of these plants are discovered, Perennial will consult with the USFWS, ODFW, and ODA for guidance on spatial restrictions designed to avoid or minimize adverse effects.

4 MONITORING PROCEDURES

Perennial will monitor the implementation and effectiveness of biological mitigation measures during construction. Potential impacts on biological resources as a result of constructing the Project are expected to be temporary and short term after implementation of the measures

summarized above and should dissipate soon after completion of construction as sites are restored and revegetated. Therefore, these measures will be monitored during the construction phase of the Project.

Perennial's onsite environmental inspectors will oversee the implementation of, and inspect, the general fish and wildlife mitigation measures listed above that do not involve plant or wildlife surveys or onsite construction monitoring. In general, impacts avoidance measures and techniques, such as erosion control measures, demarcation of sensitive areas, will be inspected on a daily basis in areas of active construction. In Project areas where construction is not actively occurring, these inspections will take place at least once per week.

Perennial will provide qualified biologists to conduct pre-construction surveys for special-status species in areas where suitable habitat is present. Threatened and endangered species that may require pre-construction surveys include Washington ground squirrel and Laurence's milkvetch. Pre-construction surveys will also include searches for nesting raptors and other migratory bird species. If active nests are observed, Perennial will coordinate with the USFWS and ODFW to determine what seasonal and spatial disturbance buffers are needed. If agency-required nest disturbance buffers intersect the Project area, biological monitors will monitor the nests until eggs have hatched and chicks have fledged and left the nest area. In some cases, the USFWS and ODFW may approve working within a typical disturbance buffer for an active nest, provided that a biological monitor remains onsite throughout construction in that area to monitor for altered behavior of the nesting bird. The environmental inspectors and biological monitors will coordinate on a daily basis, or as needed, to ensure compliance with all Project environmental conditions and regulatory requirements pertaining to sensitive plants and wildlife, and their habitats.

Post-construction studies by Perennial's restoration monitoring crews will assess the success of habitat restoration efforts. Therefore, this Biological Monitoring Plan does not address monitoring beyond the construction phase of the Project.

4.1 Remedial Action and Maintenance

Following the inspection or monitoring of biological measures, as described above, Perennial's environmental inspectors or biological monitors may suggest and implement corrective actions. Common corrective measures may include, but are not limited to, additional environmental training of Project personnel, adjustment of nest buffers at approval of agencies, further reduction of speed limits in specific Project areas, addition of biological monitors to specific crews or Project areas, and installation of additional signage.

If the monitors or environmental inspectors recommend remedial actions, these recommendations will be provided in the daily report to Perennial. Perennial will make every attempt to implement the recommended remedial actions as soon as possible, considering the

season, weather conditions, and other site-dependent constraints. In general, remedial actions for plant and wildlife impacts avoidance should be implemented within 24 hours, if not immediately by the inspector or monitor. Perennial will document the implementation and monitoring of biological measures.

4.2 Monitoring Schedule

Monitoring and inspection of biological mitigation measures will begin prior to construction when pre-construction surveys are conducted and will continue through completion of construction. In general, impacts avoidance measures and techniques, such as erosion control measures, demarcation of sensitive areas, will be inspected on a daily basis in areas of active construction. In Project areas where construction is not actively occurring, these inspections will occur at least once per week. When biological resources (e.g., active migratory bird nests) require onsite monitoring, this will typically occur on a daily basis, or as appropriate.

4.3 Reporting

Perennial will provide monthly status reports during construction to ODOE, USFWS, and ODFW that report any adverse interactions between Project construction and sensitive plants and wildlife. Within two months of completion of the construction phase of the Project, Perennial will submit a final Project report to ODOE, USFWS, and ODFW that summarizes all plant and wildlife impacts, habitat impacts, mitigation measures implemented, and the results of inspection and monitoring during construction, including any corrective actions that were implemented.

5 AMENDMENT OF PLAN

Perennial anticipates completing the procedures provided in this plan; however, the methods and timing could be altered at the request of USFW and ODFW. This Biological Monitoring Plan may be amended by agreement of Perennial and ODOE. Amendments will be prepared in consultation with USFWS and ODFW and may be made without altering the site certificate.