Schumann Wind, LLC

Land Use Decision for the

Schumann Wind Project

Associated Transmission Line

Umatilla County

Aug 16, 2017

Overview

Schumann Wind LLC (Schumann or the Project) is a wind generation project north of Athena applying for a permit to construct a 34.5kV overhead and underground transmission line which will connect Schumann to the existing Chopin Wind Project underground transmission line. The power would then be conveyed to the existing Chopin Wind Project substation, located just south of the point of interconnection (POI) with the utility (PacifiCorp) at the Weston Substation, north of the City of Weston. A Small Generation and Interconnection Agreement (SGIA) with a total output capacity of 18 MW has been executed by the Chopin Wind Project (10 MW), in which Schumann is identified as "Phase two", and will fulfill the remaining 8 MWs of capacity in the agreement.

The Project transmission line is expected to be approximately 2.3 miles in length and will be primarily underground. Those segments of the transmission line that run through arable land will be located underground in an effort to eliminate any disturbance to agricultural operations. The transmission line will cross Pine Creek and the associated canyon by way of overhead structures which will have the benefit of minimizing grading activities and disturbance to Pine Creek and its riparian zone as well as achieving the crossing with the least amount of disturbance to previously undisturbed ground.

Cultural and Environmental Considerations

The Project has contracted with the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) to perform an archeological survey of areas of potential disturbance during construction of the Project. The survey results do not indicate any archaeological sites were discovered, thus no current setbacks are planned for. An archeological monitor will be present during initial ground disturbance periods of construction to inspect disturbed soil and identify any inadvertent archeological discoveries. The CTUIR has also developed an Inadvertent Discovery Plan to provide a protocol for an inadvertent discovery of human remains and/or archaeological resources onsite as well as a Traditional Use Study. The Archeological Survey report is provided as Attachment K, the Inadvertent Discovery Plan as Attachment L, and Traditional Use Study as attachment M of the CUP application. Additionally, the archaeological study findings have been shared with the State Historical Preservation Office (SHPO) for their review and they have confirmed the results and provided comment in Attachment N of the CUP application.

WEST, Inc has completed a baseline Wildlife and Vegetation survey for the Project area. This survey has identified any areas that contain sensitive species of plants and animals that may require special consideration or avoidance. The results of this survey have informed the final design layout of the Project and ensured that sensitive habitat and vegetation are protected.

In addition to the Baseline Wildlife and Vegetation survey, WEST has prepared an Avian Impact Monitoring Plan for the Project. The development of this plan comes after years of experience of performing operations monitoring in the area as well as collaboration with National and State Department of Fish and Wildlife professionals, including detailed discussions regarding the nearby Chopin Project. In addition to avoidance and minimization measures that may be required, and the implementation of the Avian Impact Monitoring Plan, the Project has committed to the implementation of the Avian Power Line Interaction Committee (APLIC) guidelines to minimize potential interactions

with birds and overhead power lines from both a collision and electrocution risk perspective (*Avian Power Line Interaction Committee (APLIC). 2006. Suggested practices for avian protection on power lines: the state of the art in 2006. Edison Electric Institute, APLIC, and the California Energy Commission. Washington D.C. and Sacramento, CA. Avian Power Line Interaction Committee (APLIC). 2012. Reducing avian collisions with power lines: the state of the art in 2012. Edison Electric Institute and APLIC. Washington, D.C.).* See Attachment J of the CUP.

As part of ongoing development, Schumann will consult with stakeholders, including the Walla Walla Watershed Council, Oregon Department of Fish and Wildlife and other area groups and agencies. Additionally, Schumann will work with the Walla Walla Watershed Council and the Oregon Department of Agriculture to address concerns they have regarding impacts to water quality in Pine Creek. Any and all necessary Federal, State, local and crossing permits will be obtained prior to construction.

Setbacks

Umatilla County Development Code describes setback requirements specific to wind project transmission lines. The Project transmission route has been planned and will be designed to comply with these setback requirements.

> **HHH(6)(a)(5)** From tower and project components, including transmission lines, underground conduits and access roads, to known archeological, historical or cultural sites shall be on a case by case basis, and for any known archeological, historical or cultural site of the Confederated Tribes of the Umatilla Indian Reservations the setback shall be no less than 164 feet (50 meters).

Schumann contracted with the CTUIR to perform archaeological and cultural surveys of the Project area. Surveys have been completed. The Archeological Study can be found as Attachment K, the Inadvertent Discovery Plan can be found as Attachment L, the Traditional Use Study can be found as Attachment M, and a letter from the State Historical Preservation Office can be found as Attachment N of the CUP application. The results of these surveys have informed the final design of the transmission line, ensuring that no archeological, historical, or cultural sites be disturbed. To that end, Schumann will comply with the recommended setbacks in the event that important sites are discovered.

> **HHH(6)(a)(6)** New electrical transmission lines associated with the wind project shall not be constructed closer than 500 feet to an existing residence without prior written approval of the homeowner, said written approval to be recorded with county deed records. Exceptions to the 500 feet setback include transmission lines placed in a public right of way.

The nearest residence to the proposed Project transmission line is approximately 5,000 feet away. No new transmission facilities will be located within 500 feet of an existing residence.

> **HHH(11)(a)Walla Walla Watershed.** Lands located within the Walla Walla Sub-basin east of Highway 11 shall be subject to additional standards…
>
> There shall be no construction of project components, including wind turbines, transmission lines and access roads on soils identified as highly erodible. The highly erodible soils are those soils identified by the Oregon Department of Agriculture as highly erodible.

Schumann Wind LLC will not require any new construction within the Walla Walla Sub-basin east of Highway 11. Some minor monitoring/communications equipment will be added inside the Chopin Substation control house, which is within the described area, but this will not require new groundbreaking or other construction work.

Typical Transmission Line Features

The Project transmission line will be constructed with both above ground and below ground portions. Of the estimated total 2.3 miles of transmission route, approximately .75 miles will be overhead and the remaining 1.55 miles will be underground.

Buried Cable

In an effort to minimize disturbance to agricultural operations on site, portions of the transmission route that run through cultivated fields will be underground. These underground portions will be buried to a minimum depth of 3 feet in order to ensure that traditional farming practices can go on unabated. Prior to trenching or excavating of the trench, topsoil will be stockpiled to one side while trenched or excavated material will be kept separate to ensure large rocks are not intermingled with topsoil. While the final design of the underground transmission line has not been finalized, a typical design can be seen below in Figure 1.

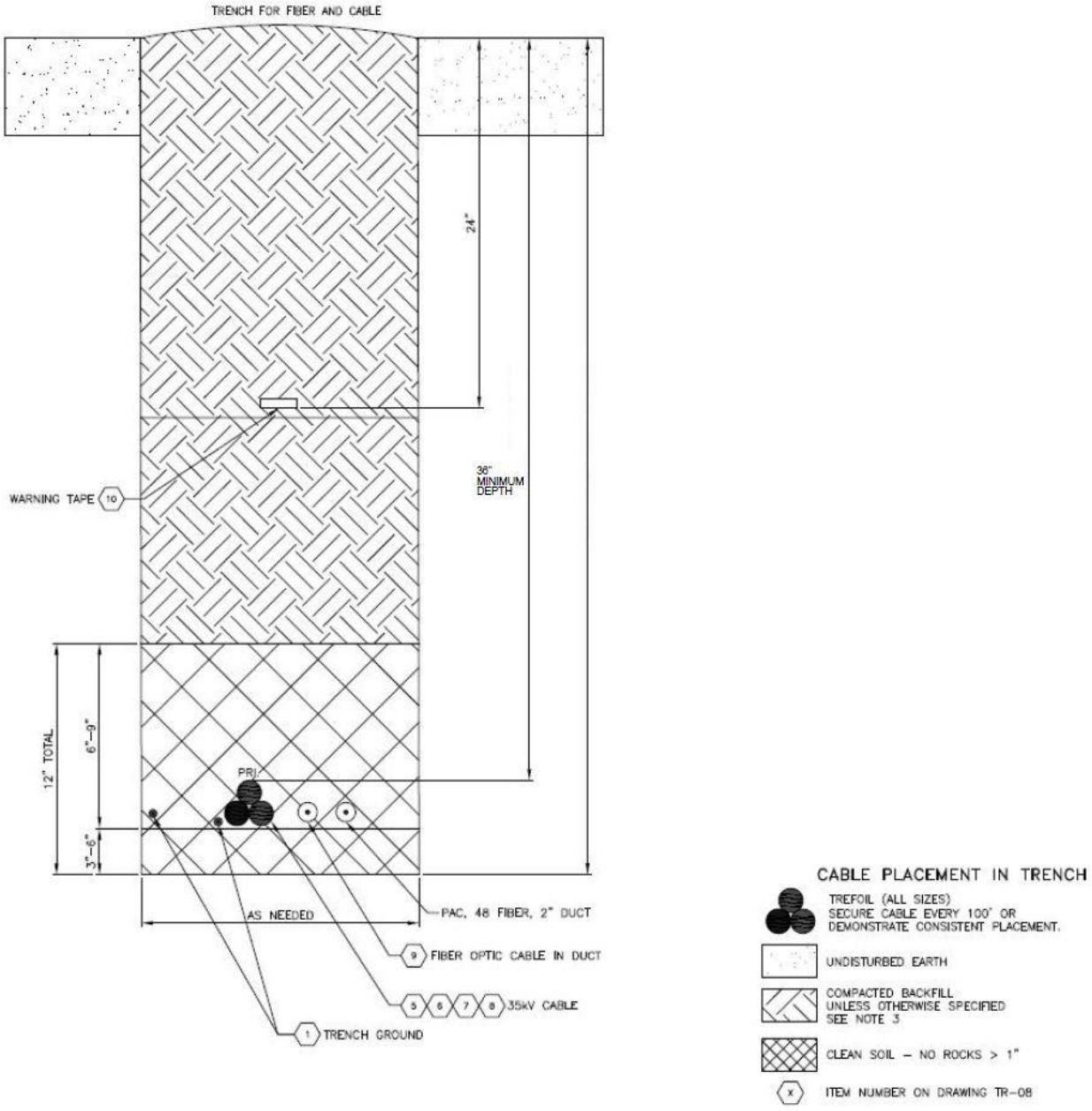


Figure 1. Typical Buried Transmission Design

Overhead Cable

Outside of cultivated fields, the transmission line will be carried overhead. The route crosses Pine Creek, which is at the bottom of a fairly steep canyon. In order to cross this portion of land, long spans are planned which require a minimum amount of pole structures. This plan will have the benefit of

incurring a minimal amount of disturbance to the land while still crossing difficult terrain. Preliminary engineering studies have identified likely pole locations and pole designs. While final design of the pole route and technology is pending results from engineering, biological, and archeological studies, final designs will meet or exceed the latest APLIC standards and recommendations so as to eliminate or minimize negative impacts to area avian species.

Typical overhead structures that are currently being considered include H-frame style wooden poles and steel mono-pole designs. The short ¾ mile portion of overhead may also use a combination of these technologies, depending on feasibility of construction and based on recommendations by wildlife professionals. Common designs for these two structure types can be examined below in Figure 2.

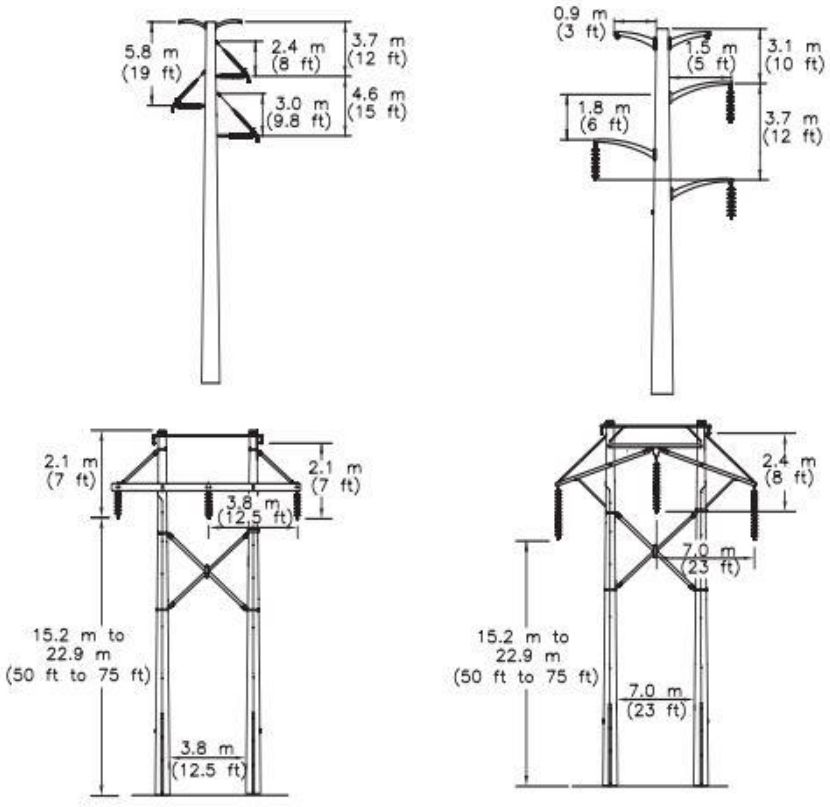


Figure 2. Typical Transmission Structures

Point of Connection

The power generated from the Schumann Wind Project will be delivered to the PacifiCorp grid at the Weston Substation, on the outskirts of Weston, OR. Schumann will utilize the existing underground Chopin Wind Project transmission line for the vast majority of this power delivery. To that end, the

Project will connect to the Chopin Wind transmission line at a point within the Chopin Wind Project boundary. In addition to the joint use of one transmission line, Schumann will fulfill the remaining 8 MW of capacity on the SGIA.

Schumann will construct a small switching and metering yard adjacent to the Chopin transmission line just south of the Chopin wind turbines. This will allow PacifiCorp to differentiate between the power generated by the two projects and provide isolation switches and other necessary equipment. A preliminary connection/switching yard layout can be examined in Attachment A.

Operations and Maintenance of the Transmission Line Facility

The transmission line will be managed by the BayWa r.e. Wind, LLC (BayWa) Asset Management and Operations team based in San Diego in close coordination with local service providers who will be selected based upon specific criteria, such as the ability to respond to certain issues in less than 4 hours. BayWa manages more than 17 miles of wind asset transmission lines in the United States, including the approximately 5 mile Chopin Wind Project underground transmission line here in Umatilla County, which would be utilized for the Schumann Wind Project. A future Shared Facilities Agreement will specify the project facilities that will be shared between Chopin and Schumann and the ongoing responsibilities of the entities.

The contact information for any issues related to the transmission line will be provided along with (if different) the contact for the completed Project once this has been finalized and before commercial operation of the facility.

152.617(II)(7)

ORS 469.300 defines an Associated Transmission Line as "new transmission lines constructed to connect an energy facility to the first point of junction of such transmission line or lines with either a power distribution system or an interconnected primary transmission system or both or to the Northwest Power Grid. As such, Schumann Wind LLC finds that the Project transmission line meets the definition as an Associated Transmission Line and thus must provide evidence that it satisfies the requirements of 152.617(II)(7)(B). Further review indicates that the Project must meet the requirements of paragraph (2) below, since it cannot meet the requirements of paragraph (1).

152.617 (II)(7) Utility facilities necessary for public service; criteria; rules; mitigating impact of facility.

(B) An associated transmission line is necessary for public service and shall be approved by the governing body of a county or its designee if an applicant for approval under ORS 215.283(1)(c) demonstrates to the governing body of the county or its designee that the associated transmission line

meets either the requirements of paragraph (1) of this subsection or the requirements of paragraph (2) of this subsection.

(1) An applicant demonstrates that the entire route of the associated transmission line meets at least one of the following requirements:

(a) The associated transmission line is not located on high-value farmland, as defined in ORS 195.300, or on arable land;

(b) The associated transmission line is co-located with an existing transmission line;

(c) The associated transmission line parallels an existing transmission line corridor with the minimum separation necessary for safety; or

(d) The associated transmission line is located within an existing right of way for a linear facility, such as a transmission line, road or railroad that is located above the surface of the ground.

(2) After an evaluation of reasonable alternatives, an applicant demonstrates that the entire route of the associated transmission line meets, subject to paragraphs (3) and (4) of this subsection, two or more of the following criteria:

(a) Technical and engineering feasibility;

(b) The associated transmission line is locationally-dependent because the associated transmission line must cross high-value farmland, as defined in ORS 195.300, or arable land to achieve a reasonably direct route or to meet unique geographical needs that cannot be satisfied on other lands;

(c) Lack of an available existing right of way for a linear facility, such as a transmission line, road or railroad, that is located above the surface of the ground;

(d) Public health and safety; or

(e) Other requirements of state or federal agencies.

2(b) The energy generation facility that the subject transmission line (TL) services will be located on and completely surround by arable land. The connection point (terminus) of the transmission line is located on and also completely surrounded by arable land, see Map 1 below. While an alternative route has been investigated that would utilize existing rights of way (ROW), Schumann has determined that this would neither provide a reasonably direct route nor lessen agricultural impacts. In fact, the only alternative route that utilizes existing ROWs would significantly increase the amount of disturbance to agricultural lands when compared to the proposed route, as described in further detail in response (c) below.

Once the cable has crossed Pine Creek by way of overhead structures located outside of arable land, the cable will move to underground routing for the remainder of length. This will necessarily require a short (approximately 160') run through arable land until it reaches the existing Chopin Wind Farm access road. From there, it would continue within or on the shoulder of the road bed until it reaches the POI on private land, approximately ½ mile north of the westernmost point of Staggs Rd (Co Rd 674).

(c) While there is a significant length of proposed TL route that would be placed within available existing linear facility footprints (not legal right of ways), there are short portions that do not have those options. The only possible way to utilize existing right of ways (ROWs) would be by locating the TL within public road ROW. This alternative has been explored in Map 2, below. A review of this route has led to the following facts and conclusions.

The most direct route that locates the TL entirely within an existing ROW would cause significantly more disturbance to agricultural operations than the proposed route. Of the more than 9 mile length that this alternative route would require, all but approximately 700' (~1%) along the road edge is used for farming. These landowners are not a part of the Project and would be unnecessarily impacted by the construction of the line. Additionally, this alternative route would pass in front of 7 rural residences and require a new segment of overhead TL in front of 1 residence, in order to cross Pine Creek on Johnson Road (Co Rd 678).

Compared to approximately 9 miles of agricultural and residential temporary impacts, the proposed route only temporarily impacts approximately .25 miles of arable land; all of which are located on participating Project landowner's land. The proposed route utilizes existing transmission infrastructure which eliminates the need for an additional ~6-9 miles of TL construction. The results of this analysis prove that there is no reasonable alternative to the proposed route and that the proposed route provides the least impactful way to accomplish the transmission of electricity from generation facility to the POI.

In addition to the above reasons for locating the TL as proposed, Schumann has determined that a project of this size cannot support the cost of construction of the alternative 9 mile transmission line. The approximate 2.3 mile TL, as proposed, represents a cost effective means of conveying the power to the grid that is commensurate to the size of the generation facility while minimizing the disturbance to area agriculture and traffic.

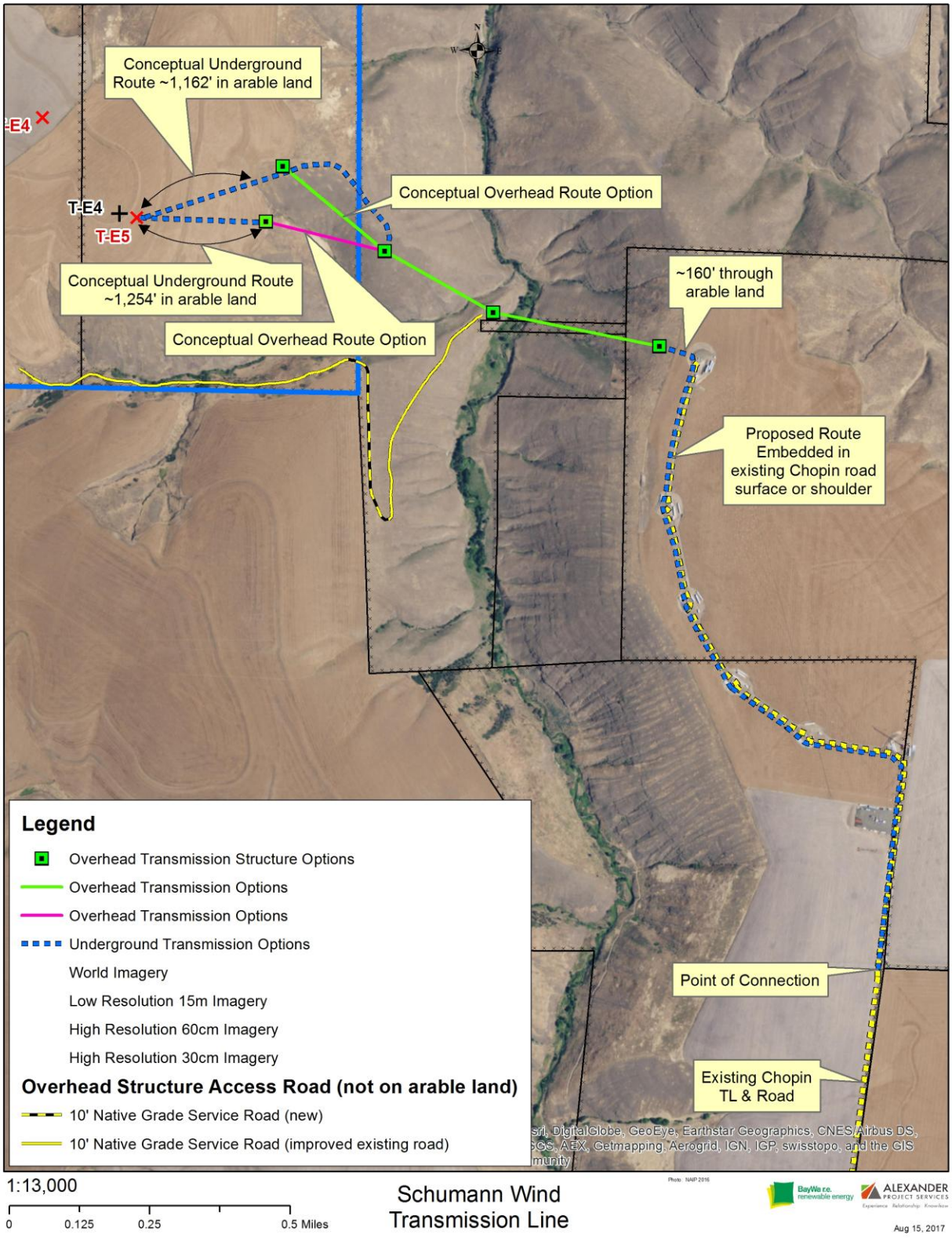
(3) As pertains to paragraph (2), the applicant shall present findings to the governing body of the county or its designee on how the applicant will mitigate and minimize the impacts, if any, of the associated transmission line on surrounding lands devoted to farm use in order to prevent a significant change in accepted farm practices or a significant increase in the cost of farm practices on the surrounding farmland.

While approximately .25 miles of the TL and the proposed metering yard are are necessarily located on arable land, Schumann has planned the route to minimize locations on arable land by utilizing underground construction at all such segments. All underground routing through cultivated fields will be buried to a depth of 3 feet or greater, which will affect no change to traditional farming practices for the life of the Project.

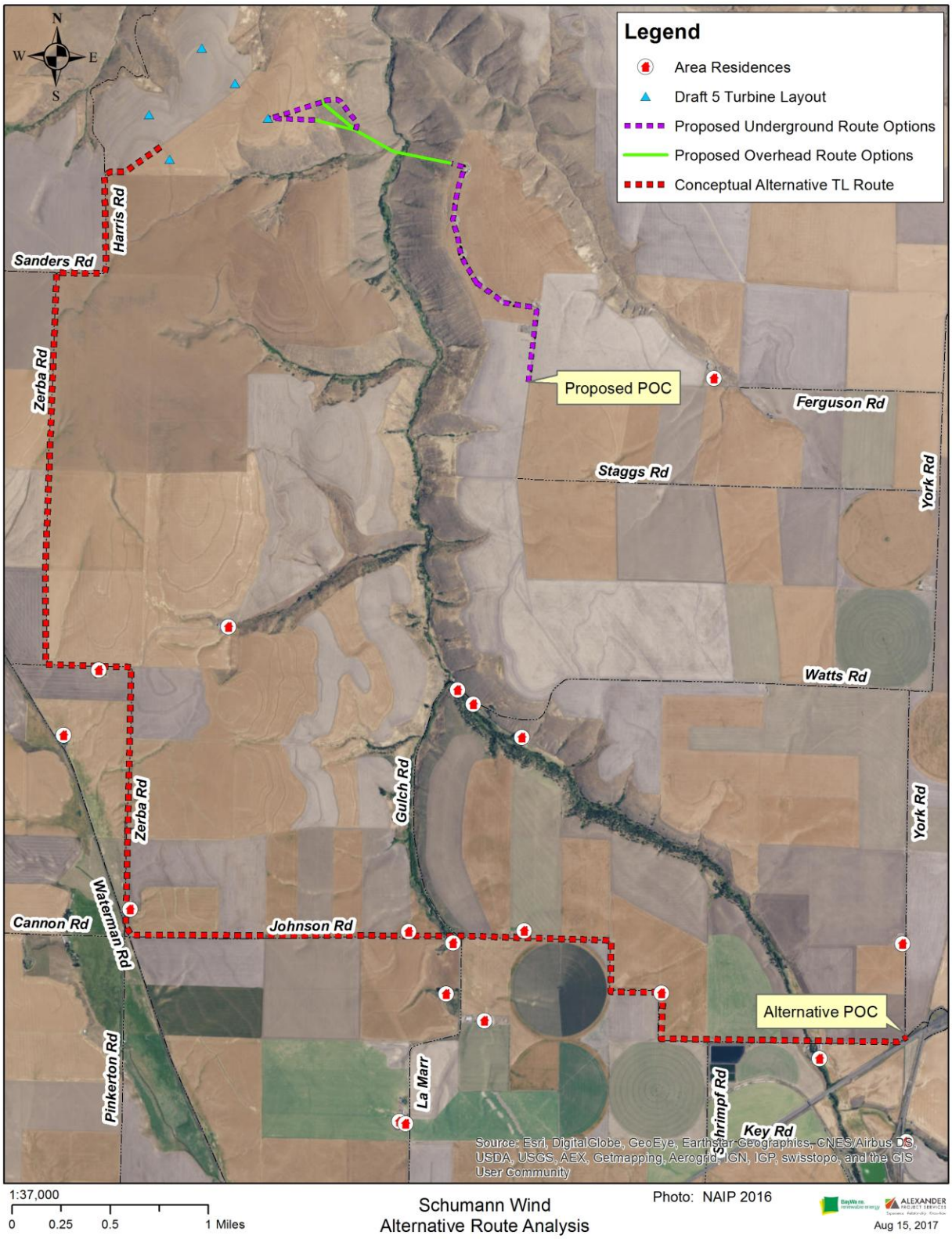
The beginning point of the TL at the associated generation facility (west side of Pine Creek) is expected to be at a turbine which is closest to the field edge. From this beginning point, the TL will continue to be buried on the most direct route practical through arable lands to the first overhead transmission structure, which will be located on non-arable land. The route will continue over non-arable land, crossing Pine Creek and its associated canyon, via overhead structures. Once the cable has reached an elevation and slope conducive to trenching, the route will continue underground for a short segment to the existing footprint of the Chopin Wind Farm. From there, it will continue within or next to the footprint of the Chopin project along the Chopin project road until it meets the identified interconnection point of the existing Chopin underground transmission line. At that point, a small metering yard (see Figure 3) will be used to facilitate the connection with the Chopin line and measure the amount of electricity that is added to the Chopin line.

The nearest Project above ground transmission segment to a surrounding landowner who farms the land is approximately a quarter mile. This distance between underground transmission features and surrounding landowners is even further at approximately 1/3 of a mile. As such, there will be no impacts to surrounding landowners from the Project TL, as proposed.

(4) The governing body of a county or its designee may consider costs associated with any of the factors listed in paragraph (B) of this subsection, but consideration of cost may not be the only consideration in determining whether the associated transmission line is necessary for public service.



Map 1. Transmission Line Facilities



Map 2. Alternative Route Analysis