

Remington BESS, LLC

Alternatives Analysis

1. Introduction and Overview

Oregon state law and Marion County Code require that in order to site a “utility facility necessary for public service” on land zoned for exclusive farm use (“EFU”), an applicant must show reasonable non-EFU alternatives have been considered, and that one or more of six statutory factors nevertheless require the utility facility to be located in an EFU zone. ORS 215.275(1)-(2); MCC 17.136.040(I).

This Alternatives Analysis describes the key objectives, siting criteria, and alternatives that were considered for the proposed Remington Battery Energy Storage System project (“BESS Project”), identifies the siting criteria Remington applied, and discusses why alternatives were eliminated from further consideration due to siting constraints.

2. Project Overview

The BESS Project will consist of battery containers, transformers, inverters, transmission lines, and associated infrastructure that will deliver electricity to the PacifiCorp transmission system, interconnecting with the existing Parrish Gap Substation (which is the point of interconnection or “POI”). The BESS will have a total electrical output capacity of approximately 199 MW (AC). Power from the BESS Project will be collected at the collector substation on site, and energy will then be transmitted from the collector substation to the POI, and subsequently into an existing PacifiCorp-owned transmission line.

The BESS Project responds to PacifiCorp’s need for additional storage in order to provide reliable electric service in western Oregon. As detailed in PacifiCorp’s 2025 Integrated Resource Plan (“IRP”),¹ at least 380 megawatts of new 4-hour storage resources are needed in its Oregon service territory by 2029 in order to:

- Provide enhanced grid reliability, resiliency and stability;

¹ Available at <https://www.pacificorp.com/energy/integrated-resource-plan.html>, see Table P.3 in Volume II.

- Enable integration of renewable energy resources into the grid and avoid rolling blackouts or loss of power;
- Maximize the existing system’s capability and improve PacifiCorp’s ability to serve growing customer loads while reducing the risk of voltage collapse;
- Further the ability to provide peak shaving and load management;
- Support and defray infrastructure costs to transmission system;
- Provide backup electrical support to the grid that supports disaster recovery and critical infrastructure continuity services; and
- Assist Oregon in meeting its greenhouse gas emissions reduction goals of 80% by 2030, 90% by 2035, and 100% by 2040, as required by Oregon’s Clean Energy Bill (House Bill 2021), signed into law on July 19, 2021.

PacifiCorp’s 2025 Oregon Sibus Request for Proposals (RFP), which was approved by the Oregon Public Utilities Commission and is the means by which PacifiCorp will procure the resources described in the IRP, requires project completion and achievement of commercial operations by December 2029. The Remington BESS project has been designed to address PacifiCorp’s needs and will do so by providing 199 megawatts of 4-hour duration storage and by coming online before December 2029.

3. Project Objectives

Battery storage enhances the performance of all types of power generation—including, but not limited to, fossil fuel, nuclear, and hydroelectric—by helping balance supply and demand and improving grid reliability. Battery energy storage systems are also a critical part of delivering energy generated by wind and solar projects to the grid when that energy is most needed. Due to fluctuations in the generation of energy from wind and solar depending on the weather, battery storage smooths delivery to the grid; absent battery storage, the grid may have an excess of energy during windy and sunny periods but have a deficit at night or during calm or cloudy periods.

In addition to the general objective of providing storage for electricity for grid balancing purposes, this project has specific project objectives necessary to provide battery storage services to the region. Those objectives are defined below:

Business Objectives:

- Respond to the eligibility and scoring criteria in PacifiCorp’s 2025 Oregon Sibus RFP² such that the project will be commercially viable with PacifiCorp as the oftaker;
- Connect to a PacifiCorp-owned substation in PacifiCorp’s Willamette Valley Service Area.³ Internal studies indicate both demand for battery energy storage and available transmission to

² Available at https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/suppliers/rfps/2025-or-sibus-rfp/2025_OR_Sibus_RFP_Main_Document.pdf.

³ Shown on map at https://www.oasis.oati.com/woa/docs/PPW/PPWdocs/PP_Service_Territory.pdf includes the highlighted area within Marion, Linn, Polk, Lincoln, and Benton counties. See also Map 7.

and from said storage in this PacifiCorp service area, and the purpose of this project is to respond to this geographically specific demand; and

- Build a storage capacity of at least 199 MW of BESS. The Interconnection Queue Position held by Remington BESS, LLC is for 199 MW, and interconnection studies performed to date are specific to this capacity. The size of this project allows for economies of scale in developing, constructing, and operating the BESS, resulting in an economically viable project.

Public Service Objectives:

- Provide enhanced grid reliability, resiliency, and stability;
- Enable integration of renewable energy resources into the grid and avoid rolling blackouts or loss of power;
- Maximize the existing system’s capability and improve PacifiCorp’s ability to serve growing customer loads while reducing the risk of voltage collapse;
- Further the ability to provide peak shaving and load management;
- Support and defray infrastructure costs to transmission system;
- Provide backup electrical support to the grid that supports disaster recovery and critical infrastructure continuity services; and
- Assist Oregon in meeting its greenhouse gas emissions reduction goals of 80% by 2030, 90% by 2035, and 100% by 2040, as required by Oregon’s Clean Energy Bill (House Bill 2021), signed into law on July 19, 2021.

4. Remington Siting Criteria

In order to accomplish the project objectives, Remington BESS, LLC identified specific minimum siting criteria. These siting criteria were used to determine potential sites that satisfied the technical and feasibility needs of the BESS Project. The BESS Project requires:

1. Location: Within PacifiCorp’s Willamette Valley Service Area, per the project objectives.
2. Proximity to Point of Interconnection (“POI,” i.e., a utility-owned substation): Within 1 mile of a PacifiCorp-owned substation. This is a generally accepted screening criterion for BESS for several reasons, including but not limited to the need for utility crossing agreements, franchise and encroachment agreements in public roads, easement agreements across non-Project lands, engineering complexity, procurement lead times for utility poles, and power loss in transmission lines (note that for BESS, power must travel both in and out of the facility via the project transmission line). Each of these increase with increasing distance from the POI.
3. Substation voltage class and transfer capacity: 115kV or higher substation with “available transfer capacity,” meaning the specific substation can accept the BESS Project’s power within the proposed timeframe (in this case, by the end of 2029). An available transfer capacity (“ATC”) analysis is determined by performing in-depth study of the transmission system to

determine whether injected power at the substation would cause any overload or reliability concerns on the transmission system. The ATC study is performed using study cases developed by the host utility, in this case PacifiCorp. Based on the results from the preliminary available transfer capacity analysis, an interconnection request is filed with the host utility. The host utility studies the addition of the project and ultimately determines the impact on the transmission system.

4. Land availability: A minimum of 15 contiguous acres of available land in order to site at least 199 MW of storage capacity (1 acre per 20 MW), plus 2 acres for a project substation and 3 acres to account for access roads, zoning-related setback requirements, environmental buffers, and the ability to increase project capacity by up to 40 additional megawatts. Setting aside land for future expansion is an industry-standard practice where feasible due to the favorable economies of scale for increasing capacity at existing sites compared to new sites. "Available" land is defined as land that could feasibly be leased or purchased for use as a BESS facility. Available land does not strictly need to be unoccupied; however, a parcel would not be considered available if it is already developed with uses that cannot reasonably be moved, removed, or repurposed, or if a landowner is unwilling to lease or sell the property. As an example, a BESS could not be reasonably sited by purchasing and removing numerous homes from a residential neighborhood or by demolishing an existing commercial or industrial facility that is not already at or near end-of-life.
5. Feasible network upgrades: Network upgrades are the developer-funded, utility-constructed upgrades to PacifiCorp's facilities that would be necessary to allow the project to connect to the grid. These can consist of new breakers at the point of interconnection (PacifiCorp substation), new or extended transmission lines to create the grid capacity to charge and/or discharge storage resources, and other necessary equipment upgrades. Each project that enters the PacifiCorp interconnection queue and goes through a System Impact Study is assigned network upgrades based on the utility's assessment of what is needed to accommodate the project. The feasibility of network upgrades can be measured in time and cost.
 - o Timing: PacifiCorp (and any other affected utility systems) requires enough time to design, permit, procure equipment for, and install the necessary network upgrades. Procurement (i.e., purchasing and receiving equipment) can be one of the longest-lead time portions of this process due to the high demand for and limited production capacity of breakers, transformers, poles, and other equipment that often must be ordered several years in advance of delivery. The PacifiCorp 2025 OR Situs RFP includes a criterion of having a guaranteed commercial operation date (COD) on or before December 31, 2029. Therefore, the chosen Point of Interconnection must not require network upgrades that cannot be completed by mid-2029.
 - o Cost: Interconnection at the chosen PacifiCorp substation does not result in Network Upgrade costs that would render the project financially infeasible. For the purposes of this analysis, RWE considered Network Upgrade costs above \$20 million to be prohibitive for purposes of the fiscal feasibility of an individual BESS facility.
6. Lack of slopes: slopes less than 15%. For slopes greater than this, the construction cost and ground disturbance to level land (cut and fill) to accommodate BESS foundations becomes

substantial. This can result in loss of topsoil, substantially longer site preparation time, and increased noise, dust, and risk of erosion.

7. Lack of wetlands or other water features: No major wetlands, water features, or environmentally critical areas that would impede development.
8. Zoning: land use zoning allows for permitting of utility facilities.
9. Access: sufficient site access is available, meaning that construction equipment and BESS modules, utility poles, and other equipment can be delivered to the site without creating the need for substantial new road-building.
10. Avoids interference with existing utility easements. Electrical substations are connected by high-voltage transmission lines that carry electricity over long distances. The required ground clearance for these lines, and the typically exclusive nature of the easements across private and public lands that they occupy, means that a BESS cannot be sited within a transmission line easement (e.g., beneath the lines themselves). Additionally, where existing underground utilities (e.g., water, sewer, gas pipeline, buried electrical) are located, the BESS facility must avoid these easements as well, for both legal and safety reasons. A potential site that is crossed by an existing utility easement may not have sufficient space for a BESS facility after designing around these encumbrances.

5. Alternatives Analyzed

Based on the projects objectives and siting criteria, Remington BESS evaluated potential sites for the development of the BESS Project. Several alternative sites were considered for the BESS Project which address the development of a similar project elsewhere in Oregon. These alternatives are infeasible for the following reasons:

5a. No Project Alternative

The No Project Alternative would mean that the Project would not be constructed. By not construction new storage capacity, this alternative would:

- Reduce grid reliability, resiliency, and stability as the energy mix on the grid becomes more intermittent (e.g., as more solar and wind energy sources are added to the electricity supply).⁴ This may result in rolling blackouts or loss of power;
- Reduce integration of renewable energy resources into the grid, in opposition to the requirements of Oregon’s Clean Energy Bill;
- Reduce the existing system’s capability and reduce PacifiCorp’s ability to serve growing customer loads while increasing the risk of voltage collapse;
- Reduce PacifiCorp’s ability to provide peak shaving and load management; and

⁴ A substantial addition of intermittent supplies to Oregon’s electricity mix before December 31, 2027 is anticipated and facilitated by Governor Kotek’s Executive Order 2025-25, available at <https://www.oregon.gov/gov/eo/eo-25-25.pdf>.

- Not address the need for backup electrical support to the grid that supports disaster recovery and critical infrastructure continuity services.

5b. Other Project Location Alternatives

The potential for relocating the BESS Project to another site in the area was considered but deemed infeasible.

To identify potential BESS Project locations, Remington BESS, LLC first identified eligible PacifiCorp-owned substations within the utility's Willamette Valley Service Area. Remington focused on this service area primarily due to: 1) information about demand, grid balancing, and anticipated transmission upgrades provided by the utility in its IRPs (2025 and previous years' IRPs); and 2) the proprietary available transfer capacity (ATC) analysis performed by Remington BESS, LLC's parent company, which indicated capacity may be available at the target POI. The ATC analysis aggregates data from a variety of sources regarding substation capacity, ownership, prior studies, and other relevant data that helps RWE collect and analyze data about substations, ultimately providing information about the likelihood of available transfer capacity at any given substation.

PacifiCorp's transmission system in the Willamette Valley is non-contiguous with its system in Washington and Central Oregon, connected only by transmission lines owned by other utilities. To store energy located within the Willamette Valley service area, the BESS Project would need to be located within the same area. Locating storage outside of the area would trigger "wheeling" charges (charges for transferring, or "wheeling," electricity through lines owned by other utilities, such as Portland General Electric or Bonneville Power Administration), as well as increase the transmission line loss, which is the loss of electricity from the system as it is carried over long distances.

Potentially eligible substations in this Willamette Valley Service Area included those of 115kV voltage class or higher and with available transfer capacity. Using queries of numerous databases, review of transmission studies available from PacifiCorp, and other desktop and field research, Remington BESS, LLC initially identified 30 PacifiCorp-owned substations 115kV or higher within the study area. The ATC analysis then narrowed this list of eligible substations to 6 that may have available transfer capacity.

It is important to note that the ATC analysis, which analyzes available information on the generation and output at each substation, can only indicate a likelihood of available transfer capacity, but is not proof that such capacity exists. Only the utility (here, PacifiCorp) can confirm this and notify the interconnection customer (here, Remington) whether major network upgrades must be constructed to accommodate a project. This is done through a series of technical studies performed by PacifiCorp *only* for projects that have entered its interconnection queue after applying for a queue position, demonstrating a minimum of project readiness criteria have been met, and paying the study costs. This study process can take several years before a project has enough information about its interconnection requirements to enter into an agreement with PacifiCorp to actually perform the necessary upgrades and ultimately construct and bring the project online. However, by reviewing the study results of other projects in the queue, it is possible to make educated decisions about which substations are the most viable candidates for a project POI.

Using the list of 6 substations developed based on the ATC analysis, Remington then used GIS mapping to apply filters and narrow eligible Project sites based on the site criteria explained above, for example, land with appropriate zoning within 1 mile of the eligible substations. See Maps 1-6. With the site

criteria and project objectives applied, only the Remington site is feasible. The sections that follow provide detail regarding that analysis by substation.

Table 1: Substation Summary (See Map 1 for substation locations)

Substation Name	Voltage Class	County	Map #
Parrish Gap	230 kV	Marion	2
Jefferson	115 kV	Marion	3
Diamond Hill	230 kV	Linn	4
Fry	230 kV	Linn	5
Calapooya	230 kV	Linn	6
Brownsville	115 kV	Linn	6

Parrish Gap Substation (Marion County)

No non-EFU lands meet the Siting Criteria.

As illustrated on Map 2, only one parcel zoned Rural - Acreage Residential (2-4 acres) (R-AR) within 1 mile of the Parrish Gap Substation meets the minimum site size requirement of 15 acres; however, the topography of the area showed slopes greater than 15% within all of the parcels on the west side of Parrish Gap Road SE as well as on the south side of Pearson Road NE. No other non-EFU parcels (or potential assemblage of parcels) are within 1 mile of the Parrish Gap substation and meet the size or slope criteria necessary for the BESS project.

Jefferson Substation (Marion County)

Remington identified several non-EFU parcels within 1 mile of Jefferson Substation; however, as illustrated on Map 3, no non-EFU lands meet the Siting Criteria. For example:

- Future Urban Development/Lower density residential, Commercial/Mixed-Use/Medium-density residential, Rural - Acreage Residential (2-4 acres), and Industrial – Light: All but one of the parcels with these zones are below the minimum site size requirement and already developed with homes, schools, and/or businesses. One 20-acre parcel is located near the Jefferson Substation, but is bisected by Morgan Creek and its associated riverine and freshwater forested/shrub wetlands, all of which are visible in desktop review of the site. The necessary setbacks from these jurisdictional features would remove enough of the parcel from the buildable area that there would be insufficient space to build a BESS of the required 199 MW capacity here. None of the parcels with this zoning are eligible based on size criteria or absence of waters and wetlands, and none could be included in an adequately-sized parcel assemblage that would not require inclusion of adjacent EFU-zoned parcels.
- Public & Semi-public uses: The parcels with this zoning are owned by the City of Jefferson and include a cemetery and the city’s new (2022) water treatment plant. These do not meet the availability criterion.

- Rural Industrial: The only parcel with this zoning is less than 2 acres, and it is fully developed and surrounded by small, developed residential parcels. This parcel does not meet the size or availability criteria.

Diamond Hill Substation (Linn County)

As illustrated on Map 4, there is no non-EFU zoning within 1 mile of the Diamond Hill Substation. The nearest non-EFU parcels would require a transmission line 2 miles in length to reach the substation, and would require a crossing of I-5, which in this location is a span of about 300 feet. This length of transmission line, considered with the need for a 300-foot bore beneath an interstate highway, would make the project financially infeasible (i.e., not commercially competitive). Therefore, this is not a reasonable alternative to the proposed location, and no non-EFU parcels in the vicinity of the Diamond Hill Substation meet the siting criteria.

Fry Substation (Linn County)

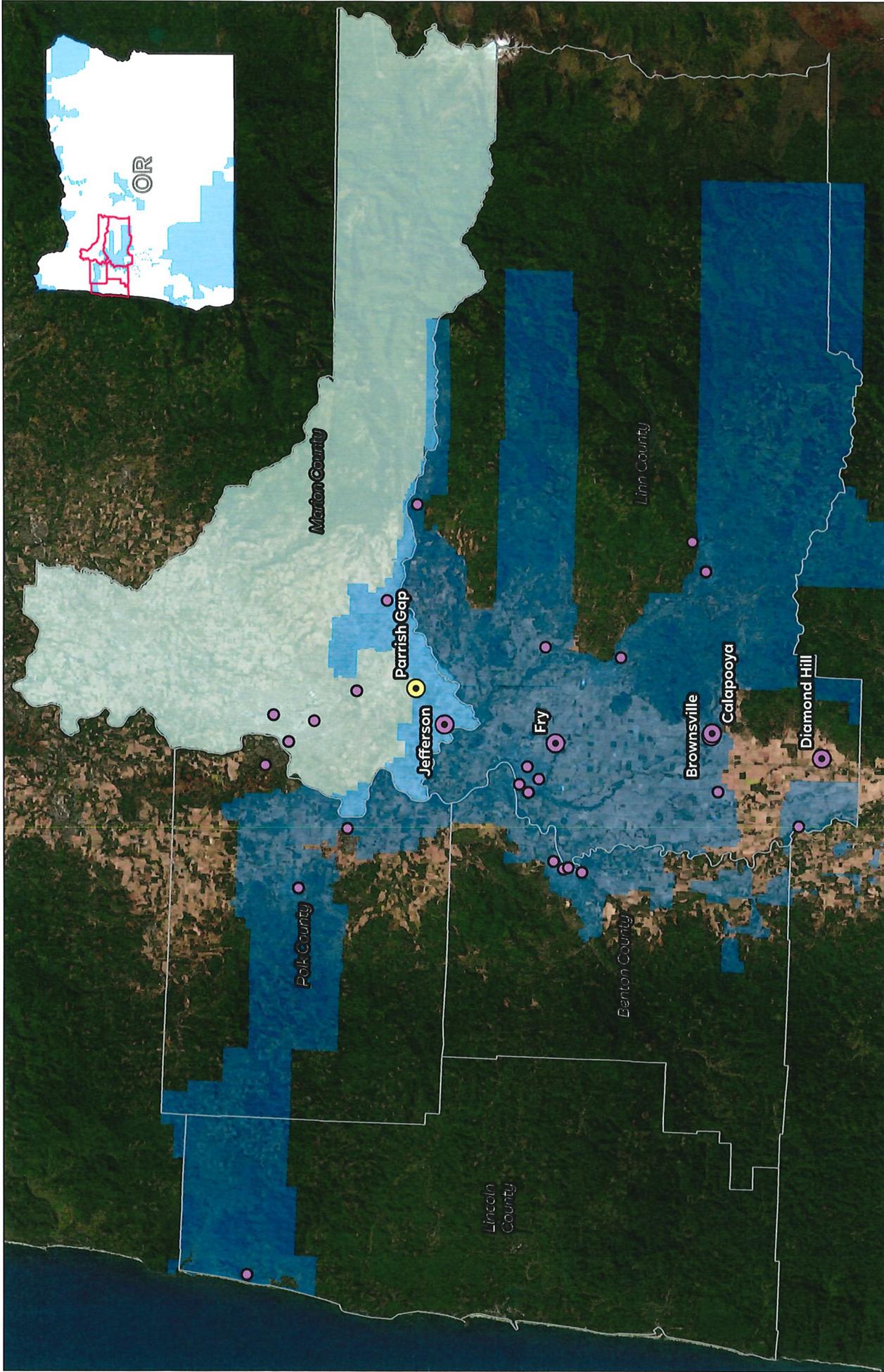
As illustrated on Map 5, there is no non-EFU zoning within 1 mile of the Fry Substation. The nearest non-EFU parcels are not available, being occupied with existing uses such as a foundry and several densely developed residential neighborhoods. No non-EFU parcels in the vicinity of the Fry Substation meet the siting criteria.

Calapooya Substation and Brownsville Substation (Linn County)

These substations are considered together because, as illustrated on Map 6, they are located only 1,000 feet from one another. The majority of the land within 1 mile of these substations is zoned EFU. There are some Light Industrial and Rural Industrial zoned parcels within 1 mile of these substations, but these parcels are already developed with businesses and homes.

6. Conclusion

As demonstrated above, Remington assessed potential alternative sites but based on the project and siting criteria no other sites are feasible and the BESS Project must be sited at the Parrish Gap substation on EFU land.



October 24, 2025
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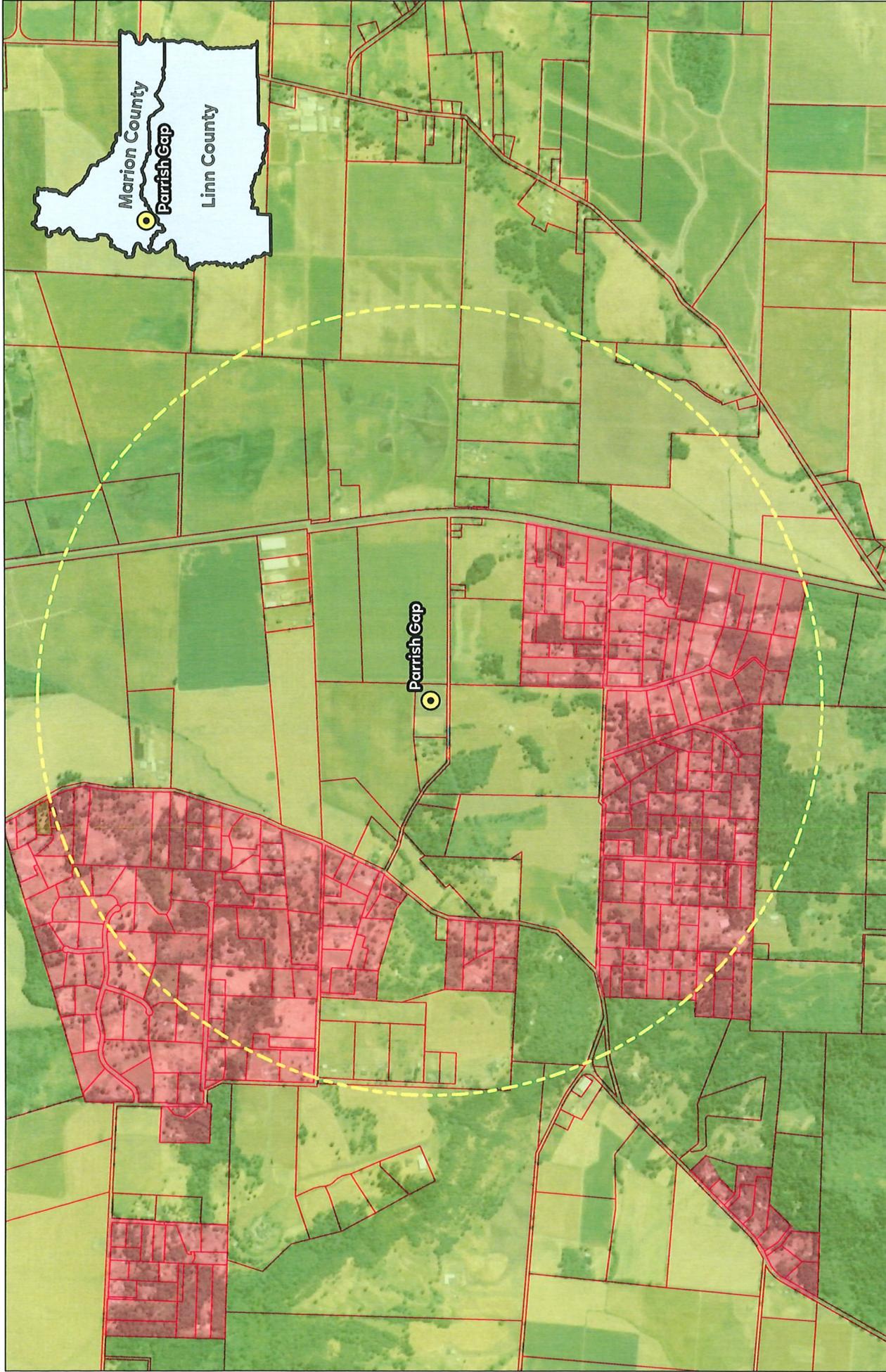


Remington BESS
 Map 1:
 115+ kV PAC Substations
 Western Oregon

- Proposed Project Substation
- Alternative Substations
- Other Evaluated Substations
- PacifiCorps Willamette Valley Service Area
- County Line



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 Final locations to be verified on-site by RWE personnel. The recipient
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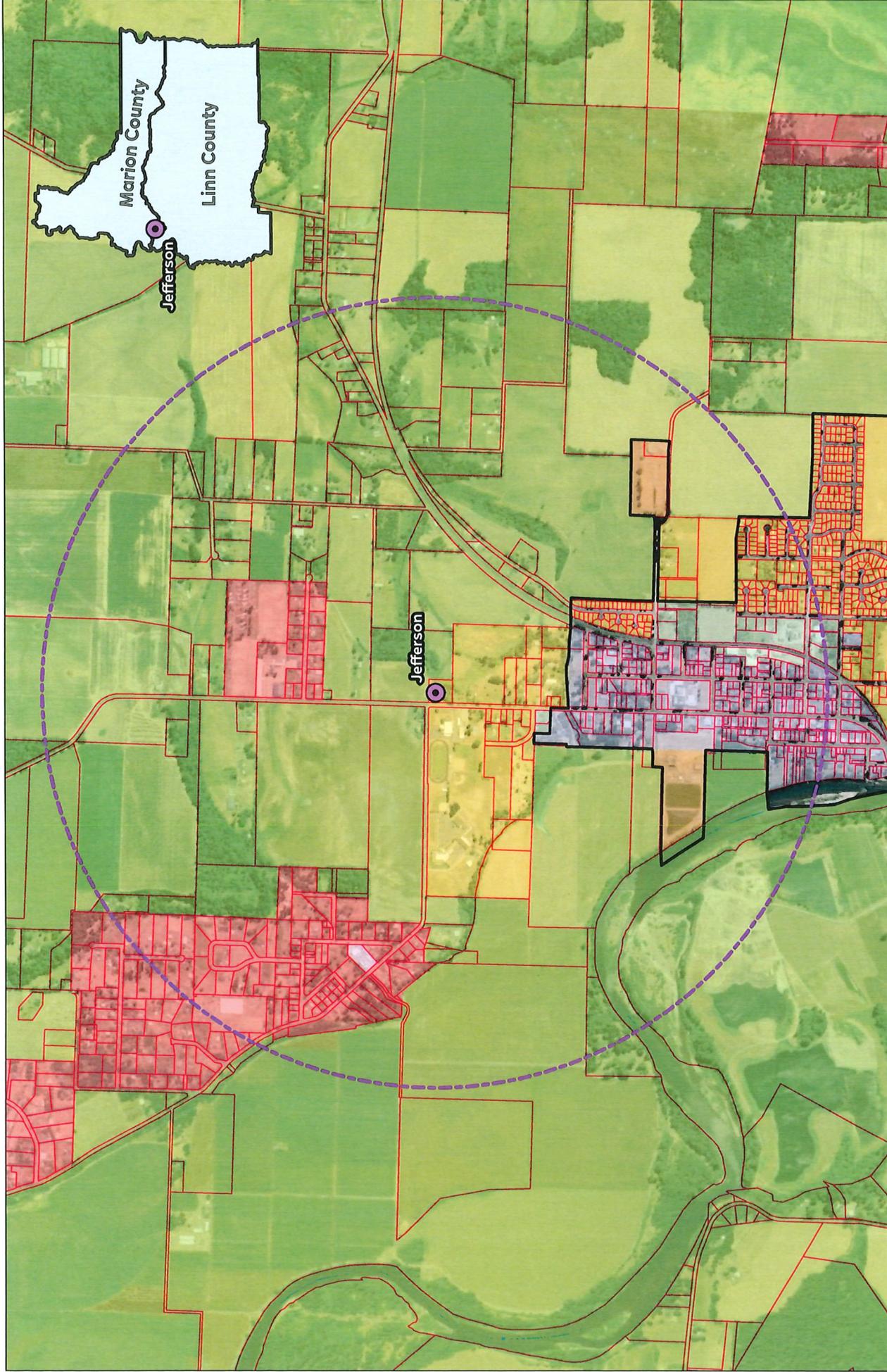
October 17, 2025
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Remington BESS Zoning Maps
 Map 2:
 Parrish Gap Substation - 230 kV
 Marion County, OR

-  1 mi Substation Buffer
-  Parcel Boundaries
-  Proposed Project Substation
-  Public & Semi-public Uses
-  Exclusive Farm Use 80
-  Rural Residential (2-4 acres)



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Remington BESS Zoning Maps
 Map 3:
 Jefferson Substation - 115 kV
 Marion County, OR

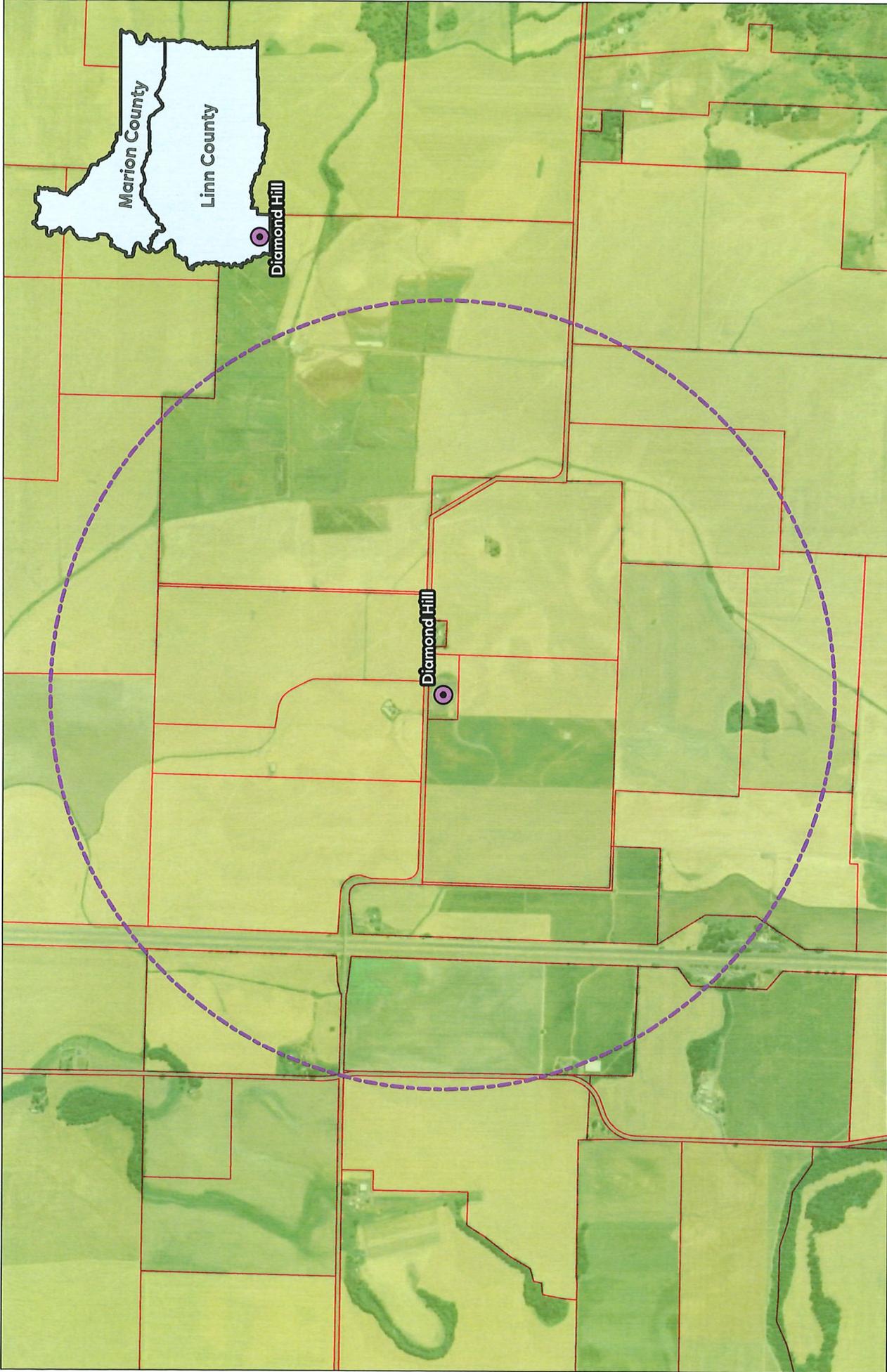
RWE

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- 1. m Substation Buffer
- Parcel Boundaries
- Commercial - General
- Exclusive Farm Use 80
- Future Urban Development
- High-density Res.
- Industrial - Light
- Medium Low-density Res.
- Medium-density Res.
- Mixed Farm-Forest 80
- Mixed-Use Corn. & Res. Med-High
- Public & Semi-public Uses
- Rural Industrial
- Rural Residential (2-4 acres)
- Municipal Boundary

0 2,500 Feet



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Remington BESS Zoning Maps

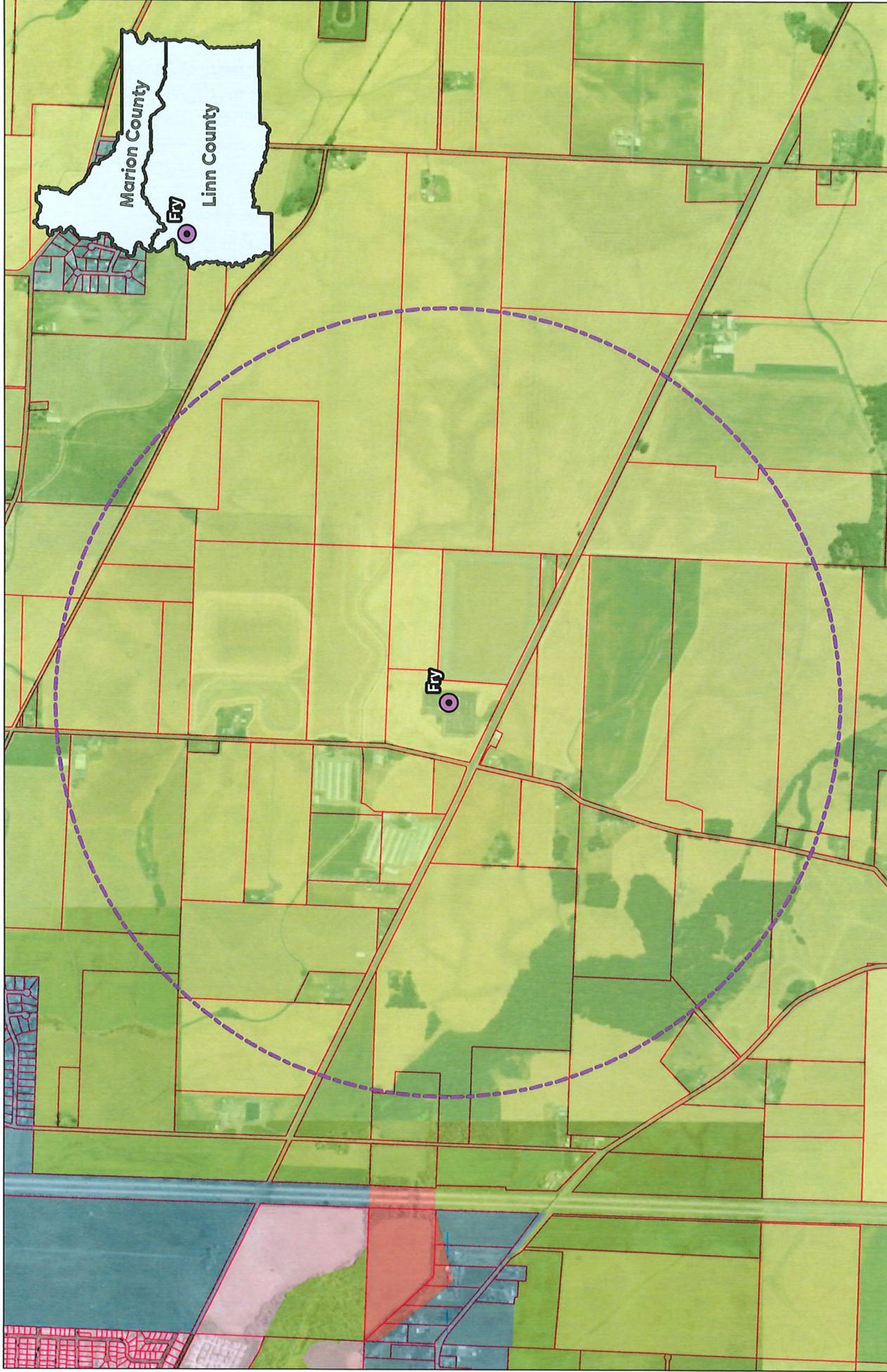
Map 4:
 Diamond Hill Substation - 230 kV

Linn County, OR

- Parcel Boundaries
- 1 mi Substation Buffer
- Exclusive Farm Use 80



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Remington BESS Zoning Maps

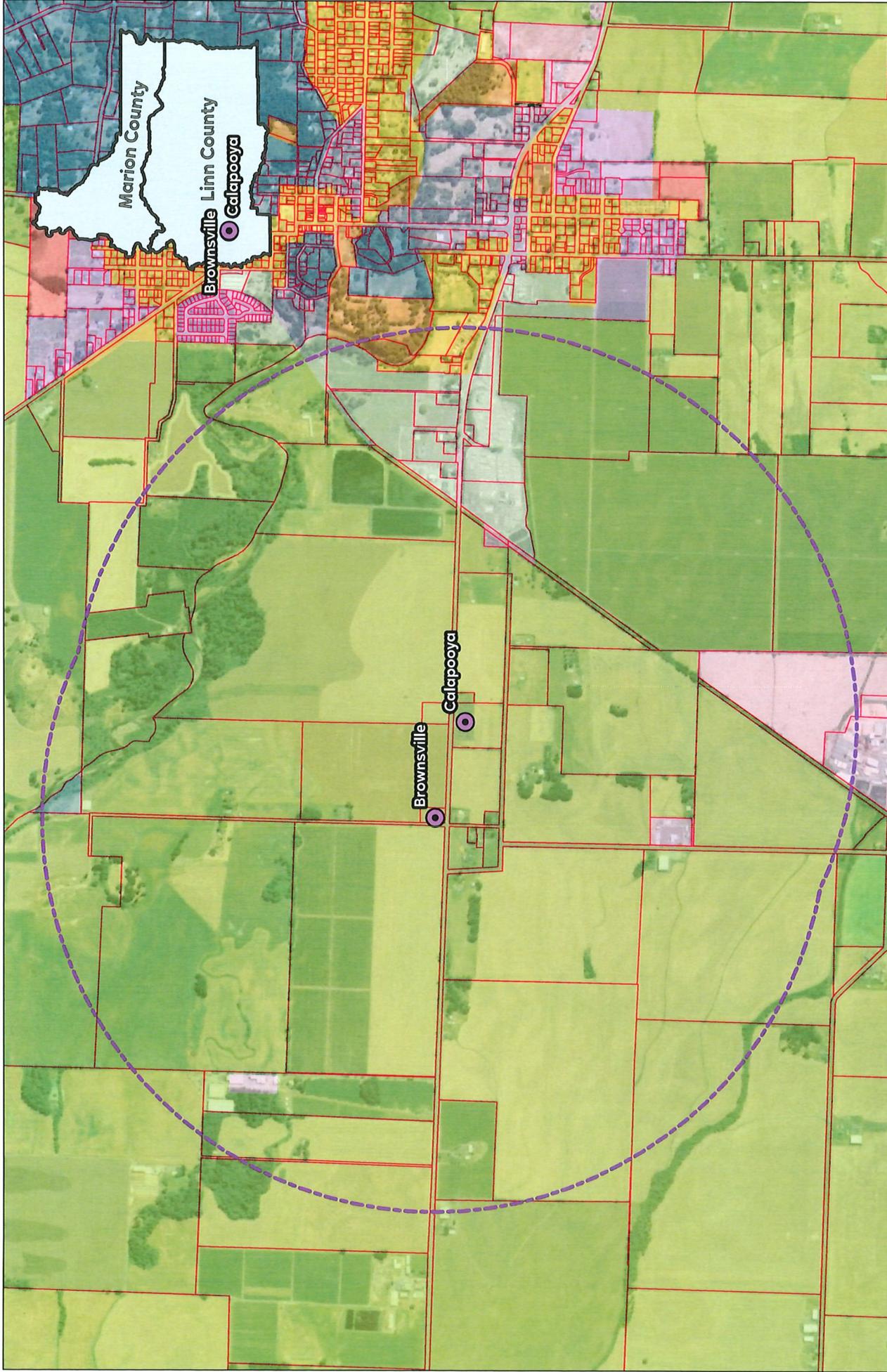
Map 5:
 Fry Substation - 230 kV

Linn County, OR

- Parcel Boundaries
- Exclusive Farm Use 20+
- Exclusive Farm Use 80
- Middle Housing
- Other
- Parks & Open Space
- Rural Residential 1 acre
- Rural Residential 5 acres
- 1 mi Substation Buffer



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Remington BESS Zoning Maps
 Map 6: Brownsville Substation - 115 kV
 Calapooya Substation - 230 kV
 Linn County, OR

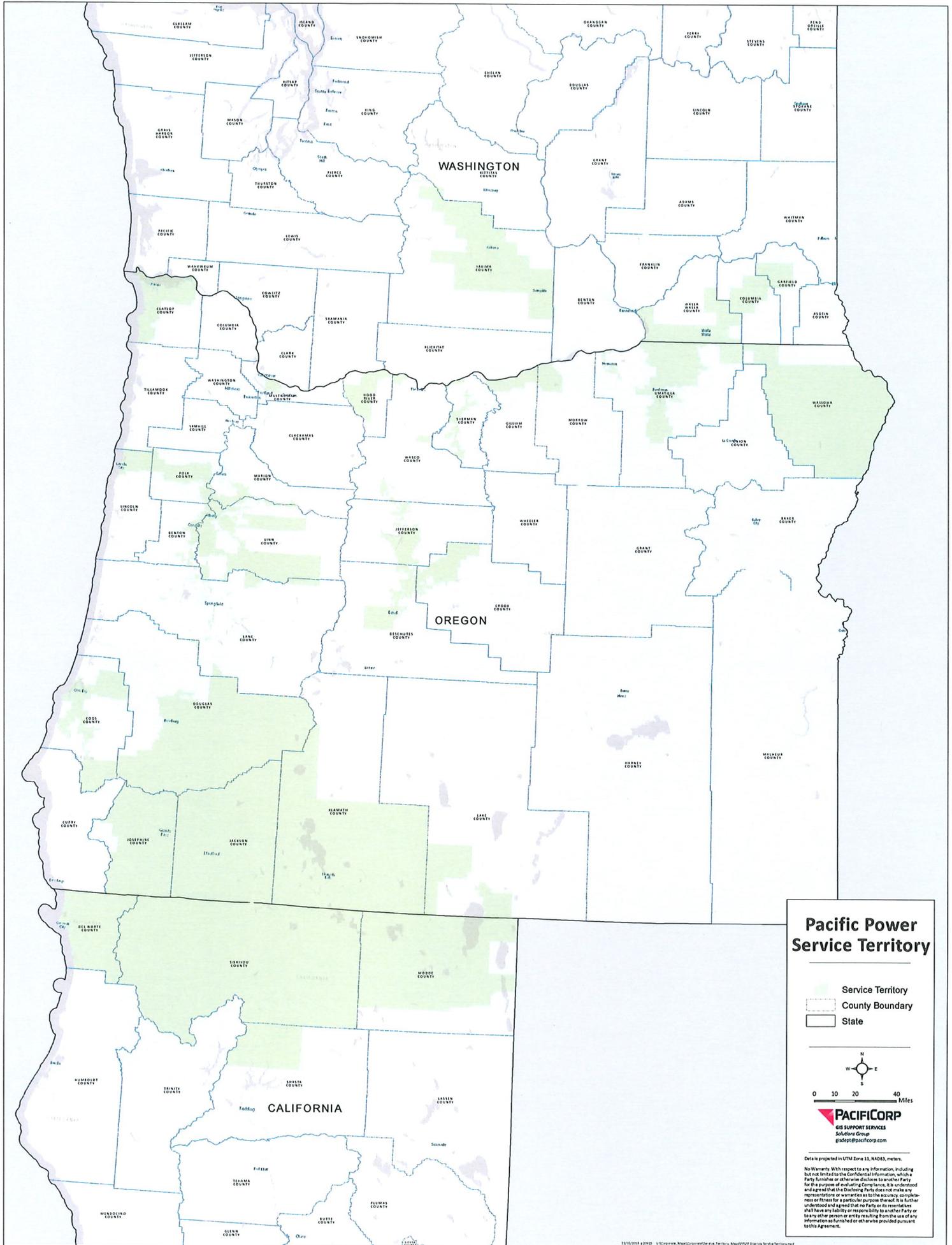
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RWE

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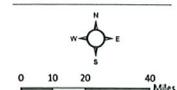
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Parcel Boundaries	Industrial - Light	Mineral and Aggregate	Rural Industrial
Commercial - Central	Low-density Res.	Mixed Farm-Forest 80	Rural Residential (2-4 acres)
Commercial - General	Medium Low-density Res.	Other	Rural Residential 5 acres
Exclusive Farm Use 80	Medium-density Res.	Public & Semi-Public Uses	



Pacific Power Service Territory

- Service Territory
- County Boundary
- State



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Data is projected in UTM Zone 11, NAD83, meters.
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