Charging Resiliency Hub Demonstration Grant Application

Overview

Portland General Electric (PGE) is exploring a first-of-its-kind Charging Resiliency Hub (CRH) demonstration, in association with one or more grant funding recipients, that integrates on-site solar photovoltaic (PV) power generation and a battery energy storage system (BESS) with public DC fast charging (DCFC) for passenger/light-duty electric vehicles (EVs). Key components must meet minimum requirements of at least 600 kW / 600 kWh for BESS and 50 kW DC for solar generation; detailed requirements information is found in subsequent sections.

Approved by the Oregon Public Utility Commission (OPUC) as part of the 2026–2028 Transportation Electrification Plan, this demonstration is designed to show "islanded" operating capability of DCFC during grid outages (including known Public Safety Power Shutoff (PSPS) events and unforeseen outages) and provide grid benefits through strategic operation of the PV/BESS microgrid. As no such resilient charging hubs currently exist in PGE's service area, this demonstration will produce novel learnings about technology viability, operational best practices, market interest, and scalability. Dedicated grant funding will support the construction and energization of at least one hub. PGE is seeking proposals from potential funding recipients.

The hub(s) will be strategically located to provide outage-resilient fast charging in or near underserved communities, along busy road corridors with significant vehicle traffic, and on or near critical regional routes to bolster electric mobility during a grid outage. The hub(s)s may also serve as Distributed Energy Resources (DERs) during normal operations, providing grid services such as peak shaving, load shifting, and demand response within PGE's Virtual Power Plant (VPP) framework.

The application framework below will be used to evaluate recipient capabilities, technical integration logic, and market interest to help PGE award funding to at least one grant recipient that meets the minimum requirements laid out in this document. The recipient(s) must be either a Charge Station Operator (CSO) as the sole entity, or a provider of DCFC/microgrid hardware that is partnered with a CSO. The ownership model of this demonstration shall involve the recipient owning and operating all assets at the hub, and either owning or leasing the property on which the hardware is installed. The funding awarded in this opportunity, not to exceed a total of approximately $2.25M across any and all grantees, is intended to incentivize resilient DCFC, PV and BESS procurement, installation, and control/operation. PGE intends to cover 80% of total site deployment cost (including additional DCFC ports, if proposed) up to the funding limit and may award funding to one or multiple recipients depending on proposals received. Funding will be issued in the form of a grant, as CRH sites will be owned/leased and operated by recipients. PGE does not intend to purchase or procure any hardware or software in this application, rather the funding is intended to enable the requirements of the demonstration listed below. Respondents should address how their proposals could be scaled down, if possible, in the event of funding limitations.

Demonstration Objectives Summary

The primary objective of the CRH demonstration is to provide reliable, outage-resilient fast charging in targeted corridors across PGE service territory by integrating DCFC with PV generation and battery energy storage. This initiative will support regional electric transportation needs during grid disruptions, including outages from PSPS and extreme weather events. Additionally, this demonstration provides the opportunity to evaluate key use cases for BESS/PV-supported DCFC, which may provide benefits to both CSOs as well as the electric grid.

Demonstration objectives:

1. **Enable and evaluate DCFC resiliency during outages** (planned and unplanned) for a minimum number of charger ports. Characterize the economic value of resiliency to recover otherwise lost charging revenue during an outage.
2. **Establish a viable DCFC station** that can demonstrate benefits to the grant recipient, end users, and the grid through deployment of PV/BESS assets.
3. **Characterize the value of the microgrid in providing grid services**, including potential for Virtual Power Plant (VPP) integration. Use cases could include reduced interconnection capacity request, peak load management, site energy arbitrage, fast frequency response, and demand response. Additional use cases may be evaluated in consultation with grant recipient(s).
4. **Measure technical performance and capability** of the site Energy Management System (EMS), charger uptime, and microgrid utilization during both grid-connected and islanded states.
5. **Quantify the total installed costs and ongoing O&M expenses**.
6. **Document learnings for site optimization and build a standardized framework for scalability** at other future sites across PGE territory.

Timeline

Release of this application is Wednesday, June 3rd, 2026, and responses are due no later than 5pm Pacific time on Friday, July 17th. PGE will then conduct an internal review process to score top proposals. Upon the close of the review, PGE may pursue a formal contract with one or more respondents. Prior to the close of the review, PGE may contact potential funding recipients with clarifying questions. Selected funding recipients will work in consultation with PGE to develop a formal test plan and detailed project timeline.

Questions may be submitted to PGE at ChargingHubDemo@pgn.com. There will be a virtual Q&A session on Monday, June 15th from 1-2PM Pacific time, where PGE will address frequent questions (provided the answers contain no non-public information) and solicit additional questions from participants. Grant recipients must send an e-mail to ChargingHubDemo@pgn.com and request an invitation to attend the virtual Q&A session.

Requirements

1. Recipient shall own and operate the infrastructure while PGE provides capital incentives.
2. Candidate site(s) must be located within the specific zones identified in Appendix A. These zones meet suitability criteria established in the 2026-2028 TE Plan for proximity to high-risk fire/PSPS zones, underserved communities, emergency transportation routes, charging deserts, and designated PGE Community Resource Centers. Further, the road corridors identified were selected based on high vehicle traffic counts according to ODOT traffic flow data. Note: While existing or pending DCFC sites may potentially receive funding, PGE anticipates that new site builds are most appropriate for this demonstration due to the likely cost and complexity of electrical design rework for existing sites to meet the requirements of the demonstration.
3. Recipients should be prepared to prove site control – having the exclusive legal right to develop, construct, operate, and maintain the proposed project on a specific plot of land – at contracting. Grantees will be required to operate site(s) for a minimum of five years.
4. Grant recipient must incorporate the PV and BESS system with fast charging infrastructure at proposed site(s), and complete construction and energization on a reasonable timeline. PGE expects and will work in good faith toward energization ~18 months from contracting. Note: PGE has performed initial diligence to confirm that the grid capacity in the candidate zones is sufficient for the scope of this demonstration and that capacity upgrades should not be required. However, further diligence will be needed to confirm viability of specific addresses.
5. Grant recipient must have relevant technical experience, ideally with integrating PV, Battery Energy Storage Systems, and DC Fast Charging (DCFC) including islanding functionality. Energy Management System (EMS) must coordinate on-site generation and storage during both normal and islanded operations.
6. Rate structure/tariff compliance: site shall be subject to PGE's required commitments as part of any applicable tariffs which may apply to this demonstration.
7. Implement software that can ration energy in discrete amounts to end users during outages. Fixed energy limits will be utilized to ensure the greatest number of vehicles can receive a sufficient charge during outages. The value of this energy limit is intended to be tested and potentially changed based on operational data.
8. Recipient shall accommodate PGE submeters for BESS, PV, and chargers. Physical security requirements for PGE assets located at a recipient facility (metering, access points, etc.) will be required. Scope and applicability will be coordinated between PGE and recipient.
9. Recipient shall agree to grid outage pricing protections. During 'island mode' operations, recipients are prohibited from implementing predatory pricing models that could be viewed as price gouging during an unplanned grid outage, PSPS event, or public emergency.
10. Technical Requirements for Resiliency
    a. DCFC – A minimum of four resilient NACS and/or CCS-standard charger ports offering 150+ kW per port while islanded. Uptime of 97% required. Site may have additional resilient or non-resilient charger ports. At least four outage-resilient ports must be capable of full DCFC power (minimum 600 kW concurrent) while islanded.

b. BESS – A minimum of 600 kW and 600 kWh. Battery provides an overnight resilience reserve of 300 kWh for unforeseen outages and an additional 300 kWh "flex reserve" that can be used for site energy arbitrage or other grid services during normal operation, or for additional reserve for PSPS events. In the event of a known upcoming PSPS outage, the flex reserve will be reserved to provide additional energy storage for the known outage. The BESS must power at least four resilient 150 kW ports during outages. The resilience reserve may be less than 300 kWh during daytime operations provided the recipient proves the viability of the PV array to charge the BESS and help sustain the charging load in the event of a daytime outage. BESS architecture can consist of one or multiple batteries provided that minimum requirements for power, energy and operational functionality are met. PGE may investigate the potential to deploy Dispatchable Standby Generation (DSG) at the site.

c. PV – A minimum of 50 kW of installed PV capacity (DC). AC grid-forming power conversion is permissible, as is direct DC distribution between PV and the BESS and/or DCFC. The intent of the PV system for this demonstration is not to provide excess generation to the grid, but rather to help balance site energy distribution and provide a generation source in the event of a daytime outage.

d. Site Energy Management System (EMS) – The hub will require sophisticated controls for site energy management and safe operation. The site EMS must provide the ability to adjust the amount of energy in the resiliency reserve based on learnings from operational and outage data and in consultation with PGE. The EMS shall enact the safe function of a predetermined set of site functions and modes, including:

   - Islanded operation: enabling variable energy dispensing limits (e.g. 35 kWh per vehicle); demonstrating maximum power delivery per port (150 kW each) with and without PV; demonstration of safe PV shutdown at high BESS State of Charge (SOC) without vehicle charging; enforcement of minimum BESS SOC and DCFC shutoff; demonstration of successful grid re-connection

   - Grid-tied operation: demonstration of grid services (depending on battery size and type of interconnection); demonstration of effective site operating strategy based on varying conditions such as time of day, electricity cost, and number of vehicles charging; demonstration of successful response to grid severance.

11. Optional: Provide resilient 120V power outlets.
12. Optional: Install one lockable 240V 50A outlet to allow emergency responders to use BESS.
13. Optional: Include provisions for safe integration of a backup generator to extend operational capability during prolonged outages or low battery conditions.
14. Optional: Provide sufficient site space (120' x 50') for a PGE-staged mobile community resource center (CRC) to leverage the site during a PSPS event or grid outage.

Application Prompts

Submit responses to the prompts below to ChargingHubDemo@pgn.com with "[Company Name] PGE CRH Application" in the subject line. Use the application outline provided below to guide response formatting.

- Responses may address an entire section in a single answer or provide responses to each question individually.
- Screenshots/appendices are allowed but not required.
- Responses may be DOCX or PDF file format. Filename should be "CompanyName-PGE-CRH-Application-Response-Date" .docx or .pdf.
- If relevant, please note in your response whether "*More details may be shared under NDA.*" PGE encourages respondents to share as much information as possible upfront to support timely review of the application prior to executing an NDA. If an NDA is required for PGE to review your proposal, please contact PGE via the e-mail address provided above to initiate the NDA intake process such that it can be completed in a timely manner.
- Yes/No responses to cybersecurity requirements/prompts in *Appendix B* are required.

1. **Overview and Background (Limit one page)**
    a. Provide a one-paragraph summary of your company and the market(s) you serve.
    b. List the primary contact details for the lead organization that is submitting the application, including legal business name and address, as well as first name, last name, title, telephone and e-mail address of the primary contact for the organization.
    c. Provide names and roles of any partner organizations or recipients that will be enlisted in implementing the project. Describe any partnerships with manufacturers, installers or experience building partnerships. Provide letters of support from any applicable partners.
2. **Site Selection and System Description (Limit two pages)**
    a. Indicate which of the three candidate zones you are proposing to build in. At least one specific address should be proposed. If multiple addresses are being considered, specify the addresses and what remaining diligence must be completed to down-select.
    b. Detail the number, type, and power of DCFC ports and chargers you are proposing to build (resilient and non-resilient), PV and BESS component sizing and configuration. In the event of funding limitations, describe the potential (if applicable) to scale down the project.
    c. Provide a system diagram that shows the overall design, power flow, communications, and controls between the PV, battery and fast charge hardware.
    d. What power distribution architecture would you use for site energy management to ensure that the PV array and battery would be operational when grid-connected and islanded? Will you implement a DC microgrid with a single switchgear for grid tie, or will BESS/PV/DCFC all have grid-forming inverters?
    e. Describe the software that manages the integration and control of the system, the islanding and reconnection functionality, and the ability to dispense software-limited amounts of energy in the event of an outage.
        i. Is your Energy Management System (EMS) hardware-agnostic or are you implementing an all-in-one ecosystem with hardware and software designed only to work together?

3. **Experience (One page)**
    a. If your company or partner has begun or completed similar installations, describe how past experience strengthens your proposal. Describe the use cases being explored in other installations. Describe the status of each demonstration. Could you apply proven technology integrations to this project?
4. **Capabilities and Safe Integration (Limit 3 pages)**
    a. Describe your plan to provide functionality for:
        i. **Resiliency & Outage Operations:** The ability to reliably provide power and charging during grid outages and PSPS events in "island mode." How long could the hub sustain critical loads under different outage scenarios? How many vehicles could the hub charge in an outage, assuming a fixed energy limit (use 35 kWh in an example)? Could the resilient charger functionality be swapped from one charger to another via simple software selections, for example to perform maintenance on chargers or to reallocate resilience capability when a charger is down? In other words, can you always maintain the minimum number of resilient ports regardless of O&M schedules or failures? Can you functionally demonstrate energy rationing (fixed kWh per session) when islanded? How would you communicate energy limits to users when islanded? Could first responders and emergency vehicles bypass/override an energy limit during an outage, and how?
        ii. **Technical Performance:** Describe the ability of the system to operate as designed under real-world conditions and the effectiveness of the energy management system to optimize charging, storage and PV use. Indicate how the battery system could be used to avoid peak demand during normal operation. Indicate the amount of battery capacity (beyond minimum requirements) that will be reserved for site-level optimization.
        iii. **Interconnection:** How would the sizing of your BESS and PV impact the connected load requirement from the grid?
        iv. **Safety & Risk:** Detail the adequacy of the fire and safety systems. Example items to address: How will you guard against battery thermal runaway? Will you monitor the battery pack with dedicated sensors? Will the battery system automatically handle any sensed thermal events? Can the battery system isolate and suppress ignition at the earliest stage? How would you handle pack-level fire suppression? Note the key industry standards that are met.
5. **Metering & Data Reporting (Limit 1 page)**
    a. Describe your capability and method for collecting the following data and insights:
        i. Charging Session Data: number of sessions; kW/kWh per session; charger utilization; uptime; interval data.
        ii. PV production (kW, kWh); power and energy delivered; grid/charger export.
        iii. BESS Usage (kW, kWh); BESS state of charge; BESS charge/discharge; grid import/export (if applicable); system uptime.
        iv. Number and duration of outages; time to island and reconnect; charging duration (minutes) and magnitude (kW) of charging loads supported per outage; energy (kWh) supplied during outages from BESS and/or PV; manual interventions.
        v. Maintenance events; site uptime and downtime; staff time required; training hours; recipient service requests.
        vi. Site user satisfaction; ease of use; perceived reliability.

vii. Grid load mitigated / cost saved from site energy management, including but not limited to peak demand shaving, TOU arbitrage/optimization, BESS DSG value provided during PGE-called events (if applicable); grid demand charge savings.

6. **Cybersecurity (Limit 2 pages)**
    a. Describe any data ownership and access requirements that may be necessary.
    b. Describe any technical support provided to PGE by all parties (hardware, software) during the demonstration.
    c. Filled-out (yes/no) Appendix B for minimum cybersecurity measures.
7. **Costs & Implementation (Limit 2 pages)**
    a. Hardware costs for DCFC hardware, PV and BESS.
    b. Installation costs for DCFC ports, PV, BESS and integration with DCFC.
    c. Any/all other costs such as engineering, permitting, or project management.
    d. Describe the installation timeline and process. What possible risks do you foresee with implementing the project and meeting the outlined timeline? How will you mitigate those risks?
    e. Optional: Will you use the BESS to reduce the grid service connection requirement? If so, describe how.
    f. Describe lease terms of the proposed site, if known.
8. **Optional Features and General Feedback (Limit 1 page)**
    a. Address any optional features in the proposed site that address any optional item(s) from the requirements section.
    b. Provide any additional comments, concerns, or feedback you'd like to provide PGE.
9. **Technical Information (No page limit)**
    a. Include spec sheets and technical info related to the hardware and software system(s).
    b. Specify compliance with all applicable certifications, standards, and safety best practices and protocols.
    c. Specify the DCFC connector standard(s) used: CCS and/or NACS

Appendix A: Required CRH Development Zones

To qualify for funding, sites must be deployed in one of the areas below. Geographical representations for each zone can be found in the following pages.

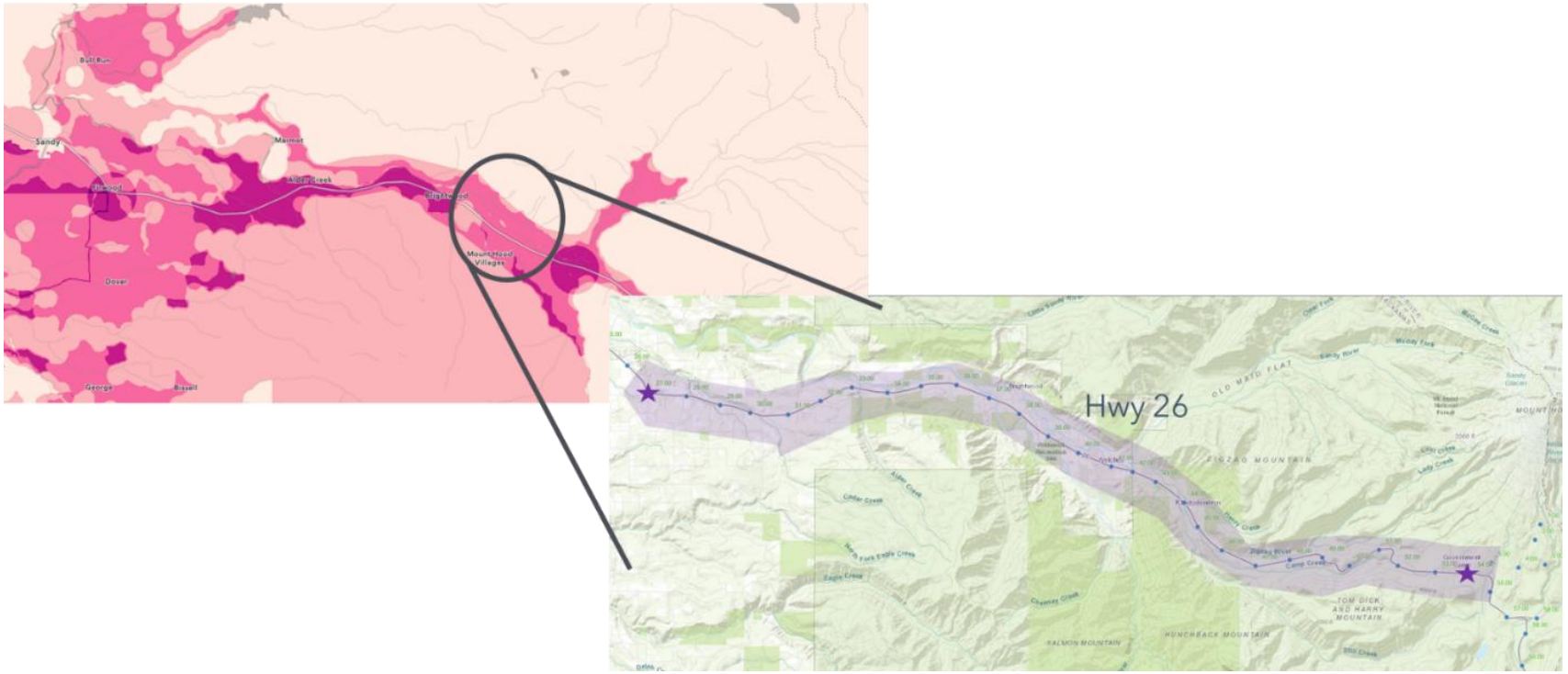
Detailed Area Descriptions

A. **Mt. Hood Corridor**: within one mile of Highway 26 (a.k.a. Mt. Hood Highway) between milepost 27 and milepost 54. Running through the communities of Brightwood, Welches, Rhododendron, and up to Government Camp, the corridor offers access to year-round recreation, dining, cabin rentals, and forest trailheads.

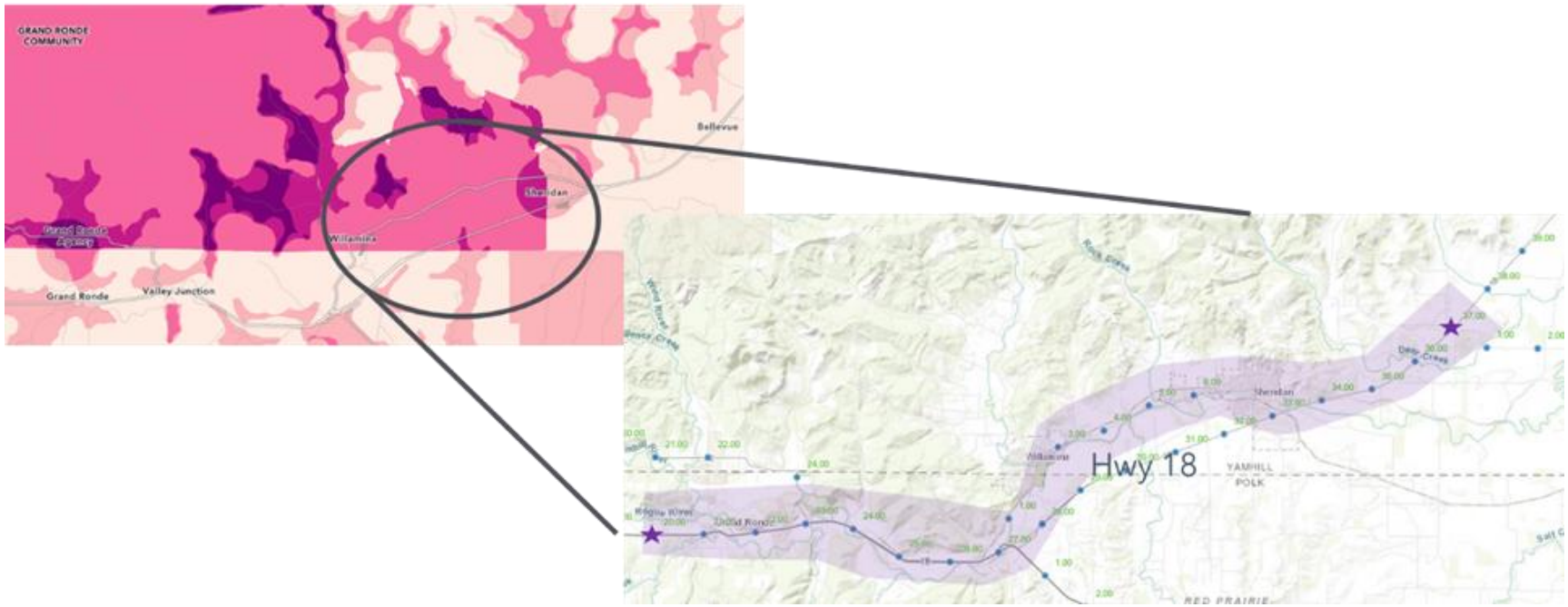
B. **Grand Ronde**: within one mile of Highway 18 and Highway 18 Business (a.k.a. Salmon River Highway) between milepost 37 and milepost 20. This stretch runs through Yamhill and Polk counties between the towns of Sheridan, Willamina and Grand Ronde area.

C. **NW Portland**: within one mile of Highway 30 (a.k.a. NW St. Helens Road) between milepost 7 and milepost 13. The northern terminus is at the intersection of NW Cornelius Pass Rd. This corridor transitions sharply from urban heavy industry to a scenic and heavily forested riverfront. It is characterized by industrial facilities, and local commercial businesses.

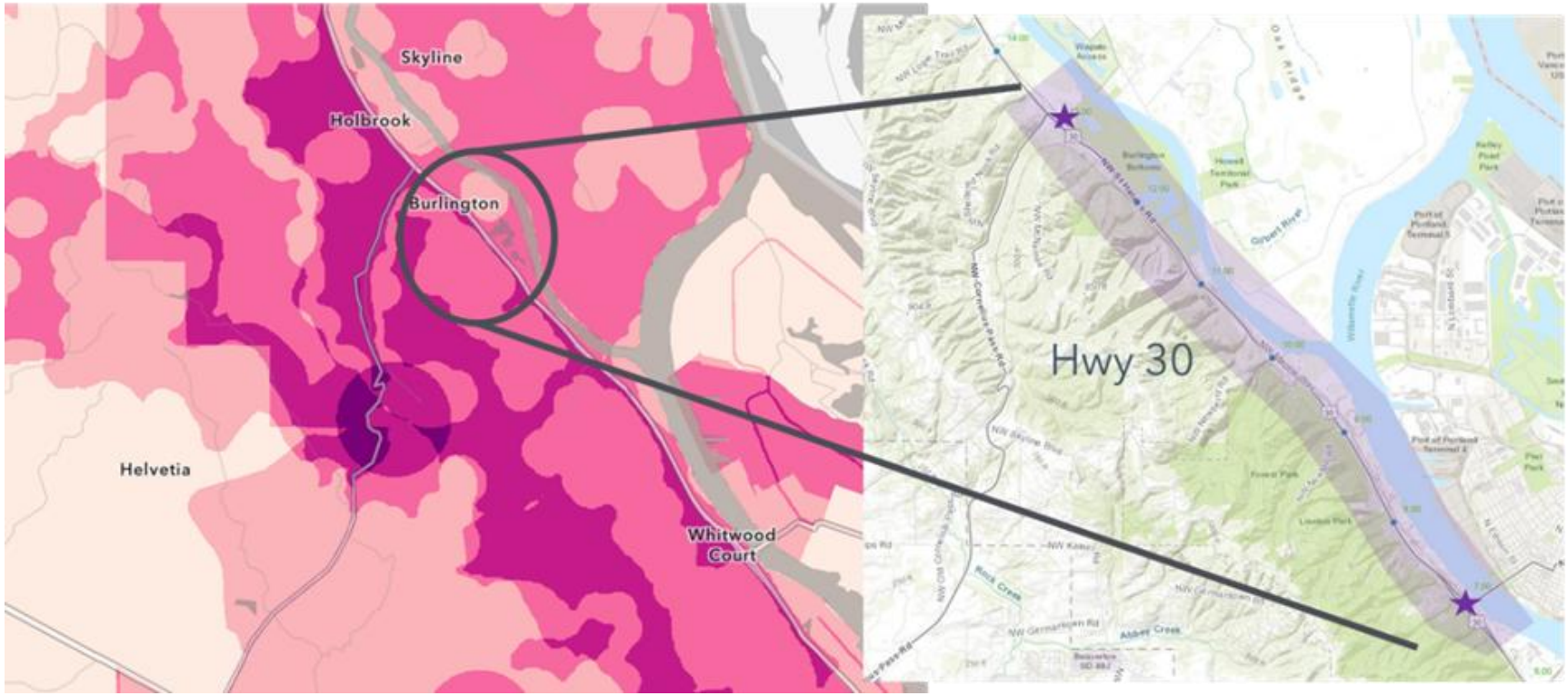
Target Zone A: Mt. Hood Corridor (Hwy 26)



Target Zone B: Grand Ronde (Hwy 18)



Target Zone C: NW Portland (Hwy 30)



Appendix B: Minimum Cybersecurity Requirements

Recipients partnering with PGE must pass minimum cybersecurity requirements. Answer the following yes/no minimum-security questions specifically in relation to potential data collected from the customer or PGE throughout the demonstration. **Responding to this section is required for this application.**

MINIMUM SECURITY REQUIREMENTS	YES	NO
Is sensitive data encrypted at rest?	☐	☐
Is sensitive data encrypted in transit (TLS 1.2+)?	☐	☐
Are unique user IDs assigned to each user?	☐	☐
Is MFA enforced for privileged access?	☐	☐
Are terminated users deprovisioned within 24 hours?	☐	☐
Do you conduct vulnerability scans at least quarterly?	☐	☐
Are critical vulnerabilities remediated within 30 days?	☐	☐
Are security logs retained for at least 90 days?	☐	☐
Do you maintain a documented Incident Response Plan?	☐	☐
Do you maintain cyber liability insurance?	☐	☐
Do you use subcontractors to deliver services?	☐	☐
Do you store or process customer sensitive data?	☐	☐
Do you maintain an up-to-date inventory of systems handling customer data?	☐	☐
Do you have a documented data classification policy?	☐	☐
Do you have IDS/IPS or SOC monitoring?	☐	☐
Is endpoint protection/EDR deployed on all corporate devices?	☐	☐
Are backups performed regularly and tested annually?	☐	☐
Are firewalls or equivalent controls implemented?	☐	☐
Do you follow a documented Secure SDLC?	☐	☐
Do you perform annual external penetration testing?	☐	☐
Do employees complete annual security awareness training?	☐	☐
Do you assess the security posture of your critical subcontractors?	☐	☐
Do you have SOC 2 Type II or ISO 27001 certification?	☐	☐