



Portland General Electric
121 SW Salmon Street • Portland, OR 97204
portlandgeneral.com

April 7, 2025

Oregon Public Utility Commission
Attn: Filing Center
201 High Street, S.E.
Salem, OR 97308-1088

Re: RE 112 Major Event Exclusion
Period: February 24, 2025

Portland General Electric (PGE) hereby submits this report in compliance with OAR 860-023-0161 which requires the electric company to file a report with the Commission within 30 business days after the conclusion of an event. This report provides a summary of the major event that occurred on February 24, 2025.

For questions regarding this filing, please contact Mary Widman at mary.widman@pgn.com. Please direct all formal correspondence and requests to the following email address pge.opuc.filings@pgn.com.

Sincerely,

A handwritten signature in cursive script that reads "Benjamin H Hillam".

Benjamin Hillam
Manager, Asset Management Analytics

Enclosures

Major Event Day Report

Event Date(s)	February 24, 2025
Primary Cause	Wind and Rain
Reliability Reporting Area	PGE Service Territory
Operating Area(s) Impacted	Eastern, Southern, Western
Reporting Area SAIDI	33.3¹
Reporting Area CAIDI	383

Major Event Exclusion Report

This report is developed by PGE to convey the causes and impacts of customer outages for a major event when the Customer Average Interruption Duration Index (CAIDI) for the reliability reporting area exceeds five hours. The report provides context to the exclusion of certain reliability metrics related to the Major Event Days identified during this event. PGE subscribes to the 2.5 Beta Methodology outlined in the Institute of Electrical and Electronics Engineers (IEEE) 1366 Standard to determine T_{MED} for each year. A "Major Event Day" is a day in which the daily System Average Interruption Duration Index (SAIDI) exceeds T_{MED} for the current year. The report is filed with the Oregon Public Utility Commission (OPUC) as required by Oregon Administrative Rule (OAR) 860-023-0161 and is required to include:

- A description of the major event, the interruption causes, and factors that impacted restoration of service;
- The reliability reporting area and geographic area impacted;
- The total number of customers affected and the number of customers without service at periodic intervals; and
- The calculated SAIDI, System Average Interruption Frequency Index (SAIFI) and CAIDI impacts (i.e., "Event SAIDI, SAIFI, and CAIDI") associated with the Major Event to customers on a reliability reporting area and a system-wide basis.

¹ T_{MED} for 2025 is 8.32 minutes.
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Definitions and Acronyms

CAIDI - Customer Average Interruption Duration Index; the average duration a customer experienced per sustained interruption (greater than 5 minutes).

Customer - A metered electrical service point for which an active bill account is established at a specific location.

IEEE - Institute of Electrical and Electronics Engineers; a technical professional organization dedicated to advancing technology for the benefit of humanity.

MED - Major Event Day; a day in which the daily System Average Interruption Duration Index (SAIDI) exceeds a Major Event Day threshold value.

OAR - Oregon Administrative Rule; created by state agencies and some boards and commissions to implement and interpret statutory authority.

Operating Area - Geographic subdivision of PGE's service territory. PGE's customers and distribution infrastructure are split into three operating areas: 1) Eastern, 2) Western, and 3) Southern.

OPUC - Oregon Public Utility Commission; state agency responsible for rate regulation and enforcing electric safety standards.

Reliability Reporting Area - PGE's entire service territory, which encompasses the Eastern, Western, and Southern Operating Areas. Also, the area where PGE's annual T_{MED} threshold is calculated for performance.

SAIDI - System Average Interruption Duration Index; the average duration from all sustained interruptions a customer experienced per year (greater than 5 minutes).

SAIFI - System Average Interruption Frequency Index; the average frequency of sustained interruptions a customer experienced per year (greater than 5 minutes).

T_{MED} - A major event day threshold value.



Major Event Description

Event Primary Cause

On February 24, 2025, following several days of warm and wet conditions that brought soils saturation above the 90th percentile, a strong low-pressure system sweeping north off the coast of the Pacific Northwest brought two impactful wind events to the service territory. The first was a round of strong thunderstorms on the late afternoon of February 24, 2025, which produced copious amounts of small hail and strong outflow winds, with sustained speeds in the 15-25mph range, and gusts 45-60mph, with a maximum gust of 74mph. The second period of more widespread southerly winds occurred overnight and into the early morning of February 25, 2025. This was a result of the tightening pressure gradient as the low came onshore, with another period of 20-30mph sustained winds, and 35-50mph gusts, with a maximum of 64mph. There was 1-3 inches of rain that fell during this two-day event, which was on top of the 2-5 inches of rainfall during the preceding 3 days, when snow level had peaked near 8000ft. Soil saturation leaves trees susceptible to uprooting, especially when combined with high winds. Figures 1- 3 on the following pages capture the weather drivers for the storm.

The initial wind event in the late afternoon of February 24, 2025, was the primary driver of outages across PGE's service territory. Over 400 outages were reported within 5 hours between midafternoon on February 24, 2025, and the outage peak near 20:00. While many outages were restored throughout the night, complex vegetation outages were delayed until daylight and lasted throughout the day on February 25, 2025. The Major Event Day resulted in outages that affected 83,002 customers, with 68,964 customers out at the peak.



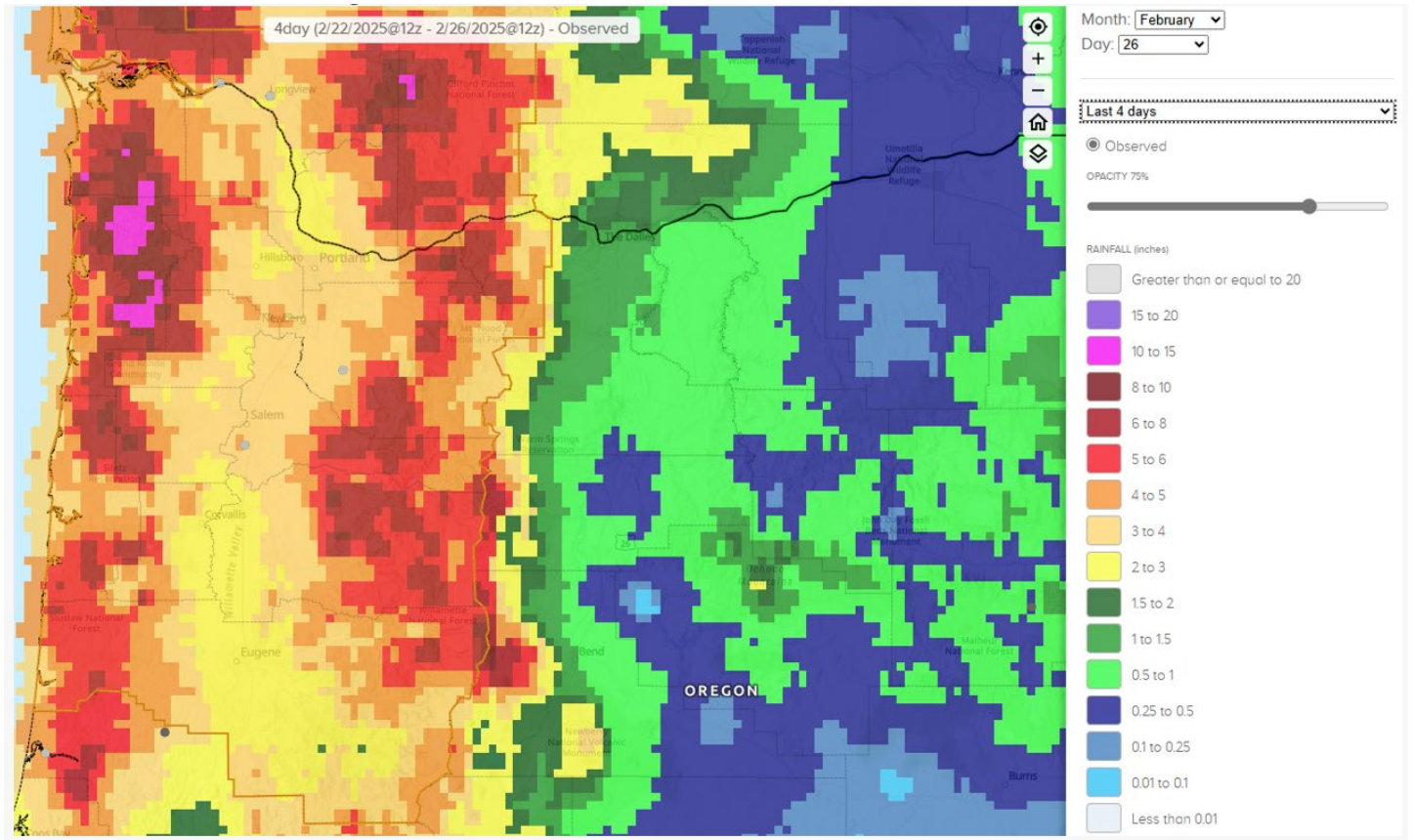


Figure 1: 4-day rainfall totals from February 22-25, 2025.



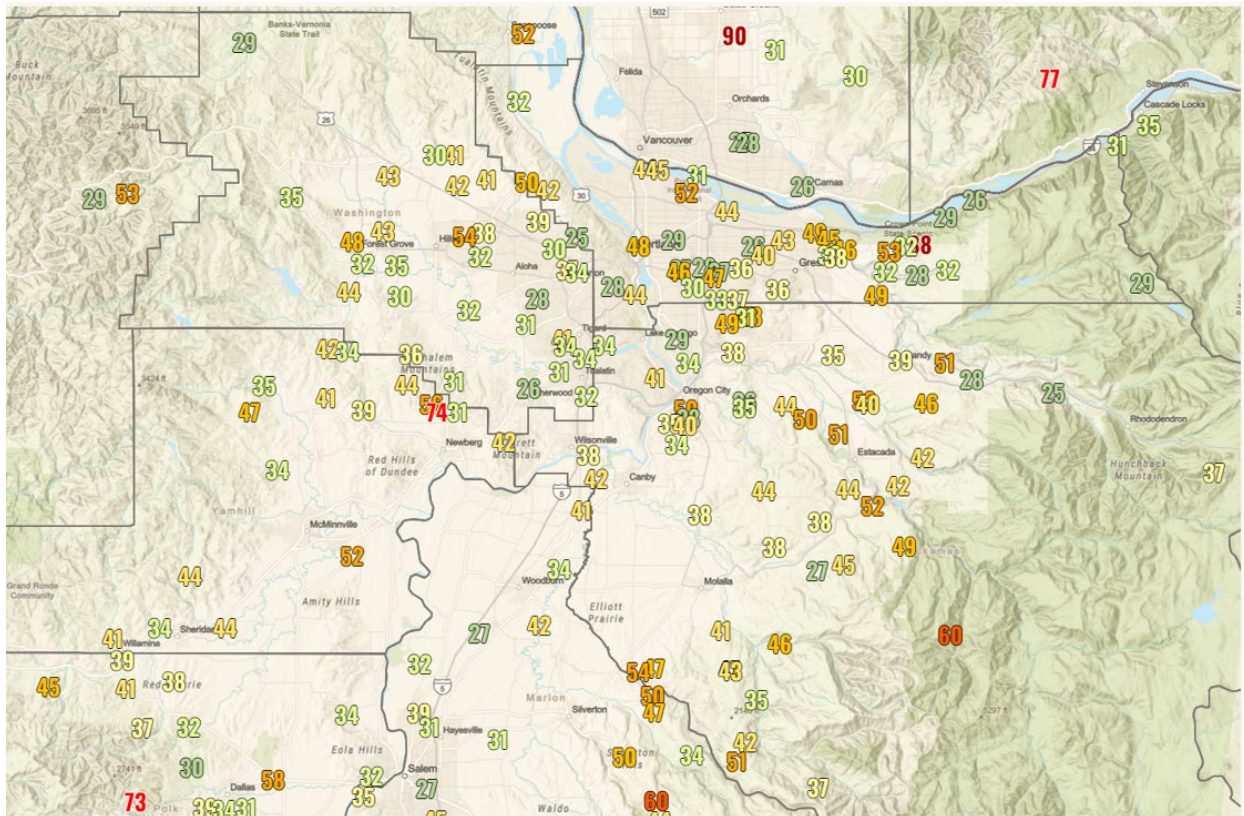


Figure 2: Max Wind Gusts occurring on February 24, 2025. Chart shows maximum wind gusts above 25mph throughout Portland General Electric's service territory.

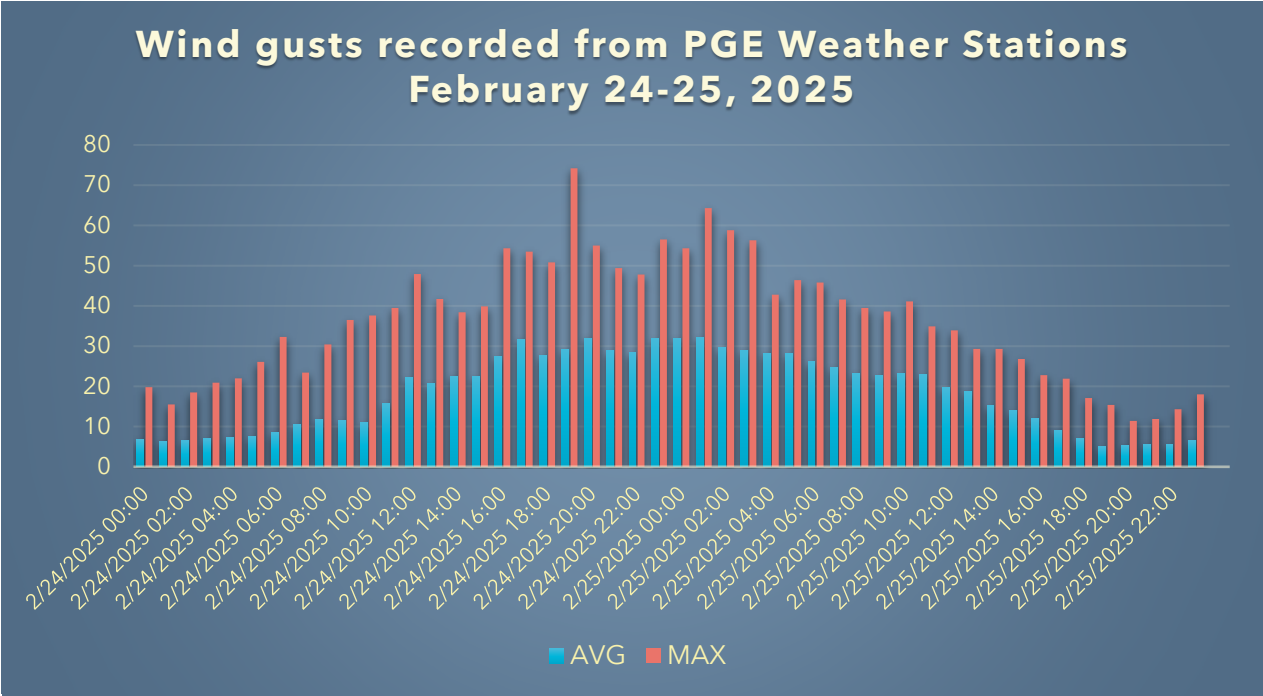


Figure 3: Average and Max Wind gusts recorded from PGE Weather Stations. Most outages occurred between 16:00 and 20:00, with recorded wind gusts between 50 and 70 mph.



Figure 4 shows the cumulative interruptions and cumulative customer minutes interrupted (CMI) from February 24, 2025 - February 26, 2025. The outage count spiked quickly on February 24, 2025 between 16:00 and 20:00, corresponding to high wind gusts across PGE's service territory.

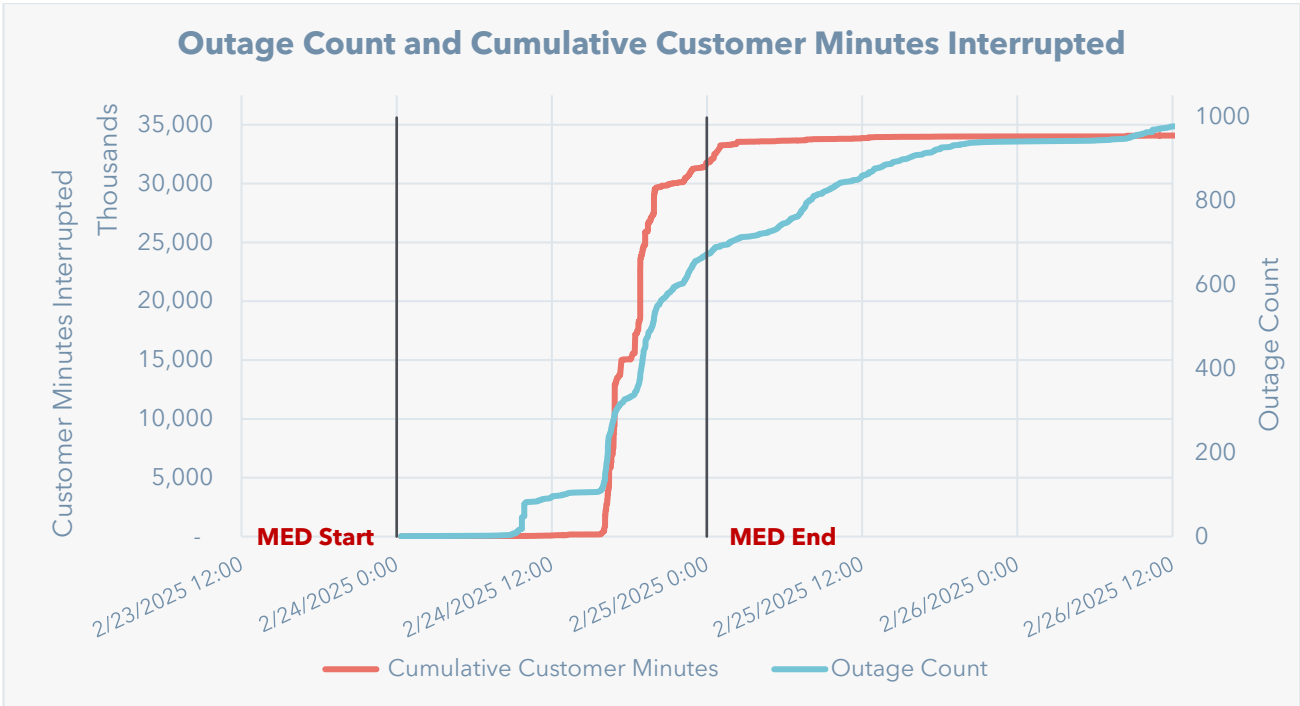


Figure 4: Timeline of total Outage Event Count and Cumulative Customer Minutes Interrupted



Interruption Causes

There was a total of 673 sustained interruptions during the MED. Table 1 below shows the interruption causes during the MED as characterized by the cause code categories defined by OAR 860-023-151 (2)(b). Combined, weather and vegetation contribution over 80% of all outages. A few significant Transmission outages contributed 18% of all Customer Minutes.

Table 1: Interruption Causes during February 24, 2025, MED

Interruption Causes February 24, 2025						
OAR Cause	Sustained Interruption Count	Percentage of Interruption Count	Total Interruption Duration	Customer Minutes Interrupted	Percentage of Customer Minutes	Customers Interrupted
A Loss of Supply - Transmission	9	1.3%	3,379	5,765,092	18.1%	18,263
B Loss of Supply - Substation	3	0.4%	221	407,616	1.3%	6,255
C Distribution - Equipment	10	1.5%	2,335	164,966	0.5%	450
D Distribution - Lightning	1	0.1%	1,082	41,128	0.1%	38
E Distribution - Planned	90	13.3%	19,561	46,777	0.1%	415
F Distribution - Public	12	1.8%	9,212	15,667	0.0%	19
G Distribution - Vegetation	33	4.9%	17,912	3,344,249	10.5%	12,034
H Distribution - Weather	506	75.2%	430,646	21,935,702	69.0%	45,327
I Distribution - Wildlife	0	0.0%	-	-	0.0%	-
J Distribution - Unknown	9	1.3%	8,418	74,482	0.2%	201
K Distribution - Other	0	0.0%	-	-	0.0%	-
Grand Total²	673	100.0%	492,767	31,795,679	100.0%	83,002

Factors that impacted restoration of service

All outages from the event were restored within 72 hours. The combination of days of rain leading to soil saturation and high winds increased the risk of vegetation outages, including falling limbs as well as uprooted trees. The high winds delayed some restoration as lifts are not able to operate at wind speeds above 30mph. Some outages that occurred after sun-down needed to wait until the morning

² Values in Grand Total column may not match due to rounding.

for visibility. Fallen trees and limbs caused by rain and wind cause extensive damage to equipment resulting in longer event restoration times to clear debris and then replace or rebuild the damaged equipment.

During the event, Wilsonville Substation was single sourced with the McLaughlin-Wilsonville 115kV line out for planned work. During the storm, a tree branch fell on the Sherwood-Wilsonville 115kV transmission line, causing Loss of Transmission to all remaining Wilsonville feeders. After the Transmission line was cleared, the closing motor needed to be manually charged prior to re-energizing the substation. An investigation into the Wilsonville Substation outages is occurring to determine correction action steps for improved restorations in the future.

Table 2: Outage Restoration Time

Outage Restoration Time	Number of Outages	Count of Customers Interrupted
<3 hrs	89	27,046
3-12 hrs	306	40,430
12-24 hrs	198	10,978
1-2 days	79	4,335
2-3 days	1	213
>3 days	0	0
Total	673	83,002

Impact to Operating Areas

Table 3 shows the impact to each of PGE’s Operating Areas. There was high wind and rain throughout all PGE’s Operating areas, and the interrupting events were roughly proportional to their population size.

Table 3: Number of Interruptions and Customer Minutes Interrupted by Operating Area

Operating Area	Customer Count	Sustained Interruption Count	Percentage of Interruption Count	Customer Minutes Interrupted	Percentage of Customer Minutes	Customers Interrupted
EASTERN	455,180	270	40.13%	12,608,697	39.66%	27,908
SOUTHERN	187,532	187	27.77%	5,679,387	17.86%	12,292
WESTERN	311,477	216	32.10%	13,507,594	42.48%	42,802
Reliability Reporting Area³	954,189	673	100.00%	31,795,679	100.00%	83,002

The graphics in Figure 5 and Figure 6 show a high-level overview of where customers were impacted and outage duration throughout PGE’s Reliability Reporting Area. Customer counts and outage duration are determined at the meter level. Customer counts and customer minutes interrupted are displayed by hexbins⁴ which represent an approximate 0.25 sq mile area.

³ Values in Total column may not match due to rounding.

⁴ Hexagonal shapes visualizing the distribution and density of data over a geographic area.

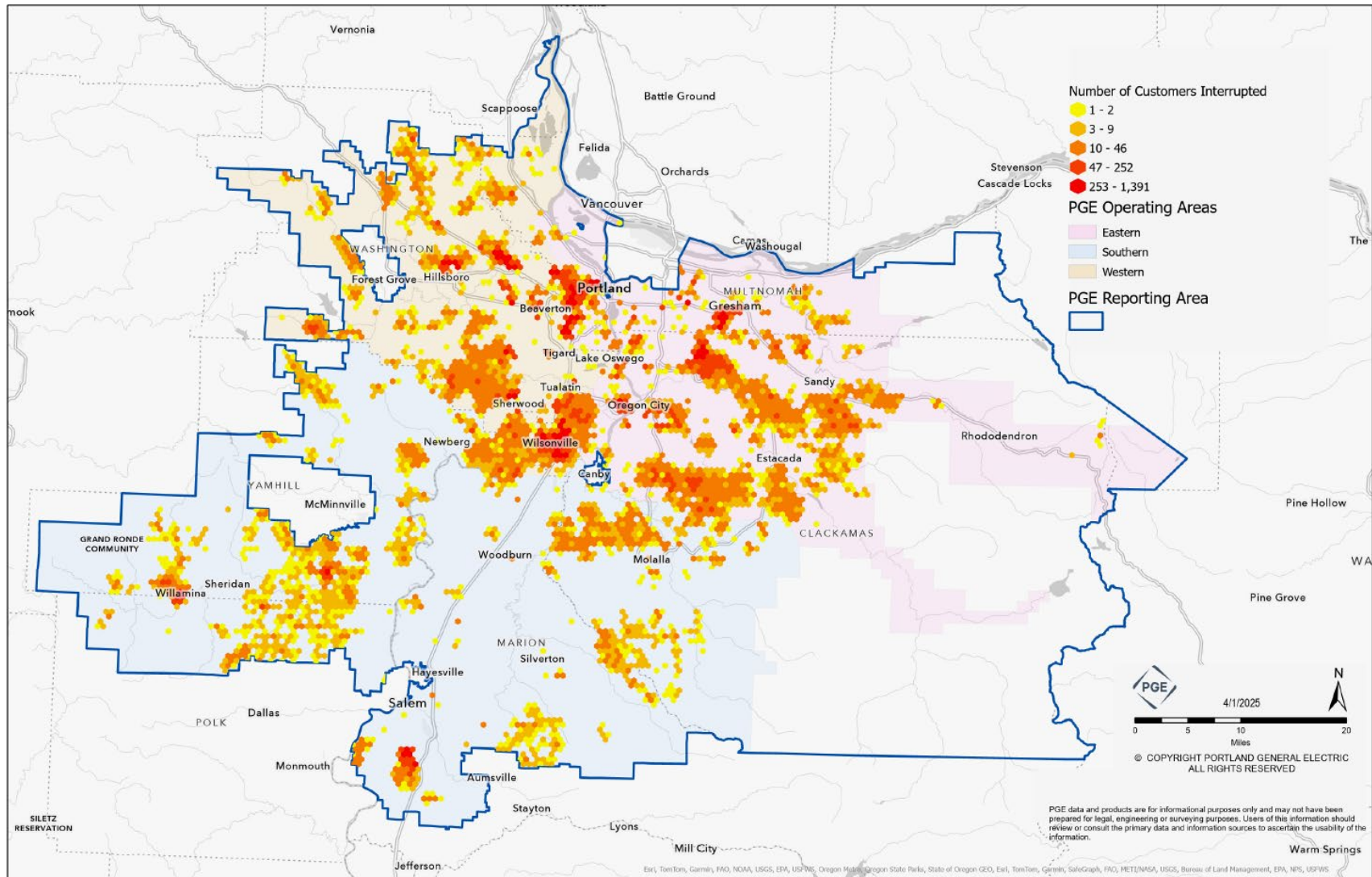


Figure 5: Number of Customers Affected across the Reliability Reporting Area.

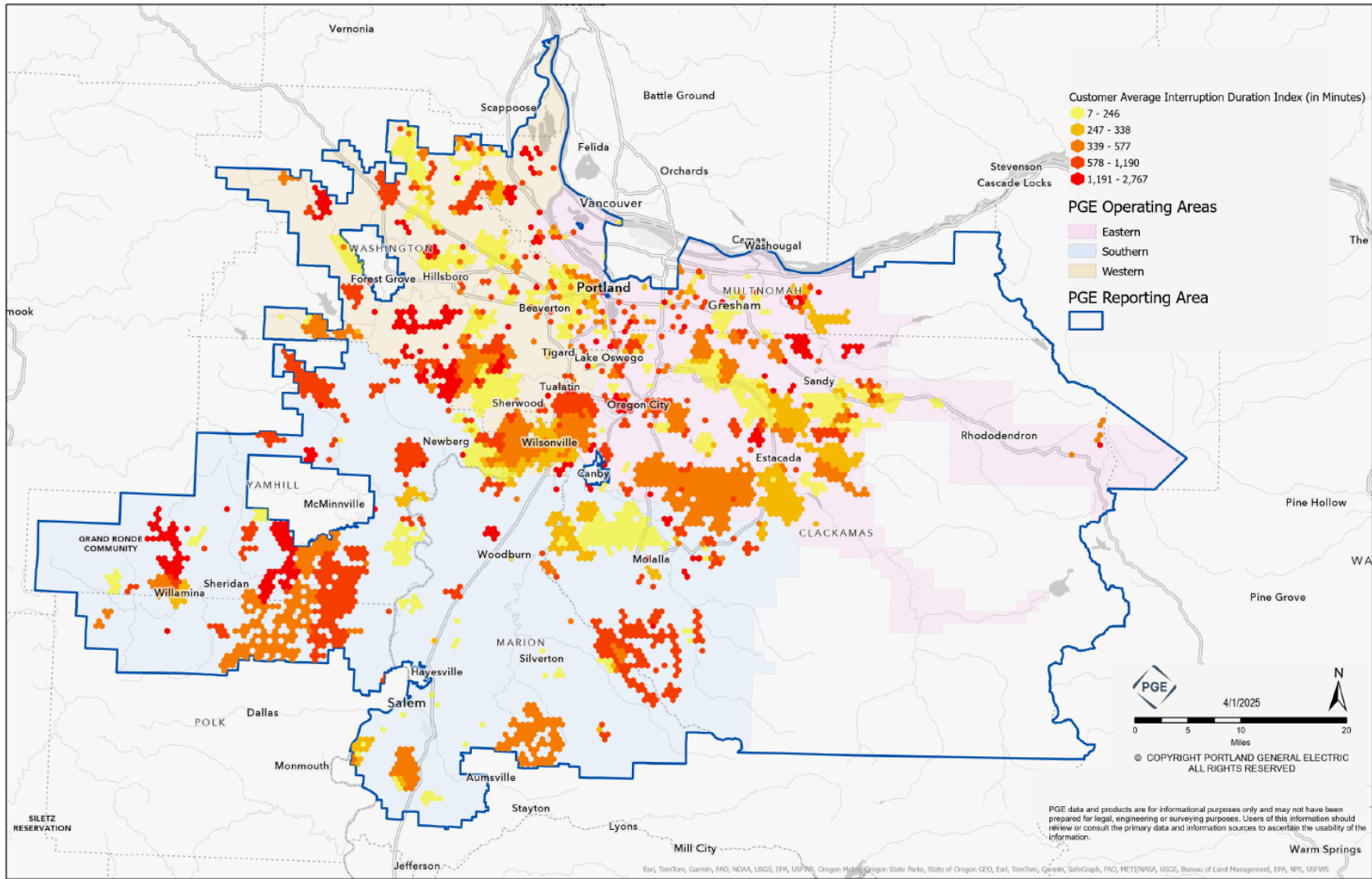


Figure 6: CAIDI across the Reliability Reporting Area⁵

⁵ Operating Area boundaries extend outside PGE service territory, as it includes areas with PGE Generation and Transmission.
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Total Customers Interrupted

During the MED, the peak customers out was 60,964 customers. The total number of customers affected during the MED was 83,002. Figure 7 displays the timeline of number of customers out throughout the MED and restoration. While restoration was taking place, the second early morning wind event on February 25, 2025, created additional outages. The customers that were impacted on February 25, 2025, are included in the graph below, but are not included in metrics for exclusion.

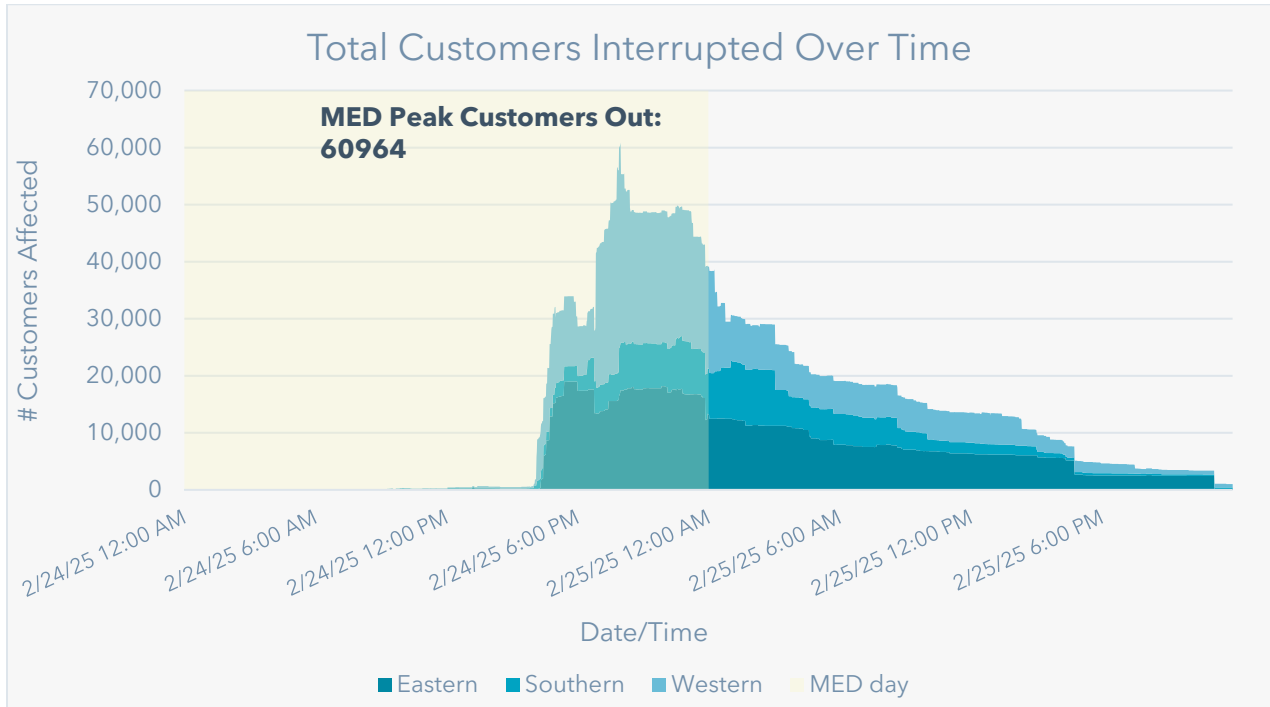


Figure 7: The storm event lasted 2 days, including storm restoration, but only February 24, 2025, exceeded the T_{med} .

System Reliability Indices

Table 4 shows the calculated impacts for PGE’s Reliability Reporting Area.

Table 4: February 24, 2025, Major Event Day System Metrics

	T_{MED}	SAIDI	SAIFI	CAIDI
PGE Reliability Reporting Area	8.32	33.3	0.0870	383

