



e-FILING REPORT COVER SHEET

COMPANY NAME: PacifiCorp d/b/a Pacific Power

DOES REPORT CONTAIN CONFIDENTIAL INFORMATION? No Yes If yes, submit a redacted public version (or a cover letter) by email. Submit the confidential information as directed in OAR 860-001-0070 or the terms of an applicable protective order.

Select report type: RE (Electric) RG (Gas) RW (Water) RT (Telecommunications)
 RO (Other, for example, industry safety information)

Did you previously file a similar report? No Yes, report docket number: RE 107

Report is required by: OAR 860-023-0161

Statute

Order

Note: A one-time submission required by an order is a compliance filing and not a report (file compliance in the applicable docket)

Other

(For example, federal regulations, or requested by Staff)

Is this report associated with a specific docket/case? No Yes, docket number: RE 107

List Key Words for this report. We use these to improve search results.

Major Event Report

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Send confidential information, voluminous reports, or energy utility Results of Operations Reports to PUC Filing Center, PO Box 1088, Salem, OR 97308-1088 or by delivery service to 201 High Street SE Suite 100, Salem, OR 97301.



825 NE Multnomah, Suite 2000
Portland, Oregon 97232

April 2, 2021

VIA ELECTRONIC FILING

Public Utility Commission of Oregon
Attn: Filing Center
201 High Street SE, Suite 100
Salem, OR 97301-3398

RE: RE 107—PacifiCorp Major Event Report

In compliance with OAR 860-023-0161, PacifiCorp d/b/a Pacific Power submits the enclosed report describing a major event that occurred February 11-20, 2021, in the company's Oregon service territory.

PacifiCorp requests to exclude the outage information for this event from both its network performance reporting and customer guarantee failure payments.

If you require further information regarding this report, please contact Heide Caswell, Director, Asset Performance and Wildfire Mitigation, at (503) 813-6216.

Sincerely,

Etta Locky
Vice President, Regulation, Customer and Community Solutions

Enclosure

cc: Lori Koho/Administrator, Safety, Reliability, and Security Division

Report to the Oregon Public Utility Commission
Electric Service Reliability - Major Event Report

Event Date: February 11-20, 2021

Date Submitted: April 2, 2021

Primary Affected Locations: Oregon

Primary Cause: Winter storm

Exclude from Reporting Status: Yes

Report Prepared by: April Brewer, Carrie Laird, Zach Barnes,
Steve Vanderburg

Report Approved by: Heide Caswell

Event Customer Impact and Outage Summary

Event Outage Summary	
# Interruptions (sustained)	1,221
Total Customer Interrupted (sustained)	142,206
Total Customer Minutes Lost	164,847,386
State Event SAIDI	264.4 Minutes
CAIDI	1,159
Major Event Start	2/11/21 2:00 PM
Major Event End	2/20/21 9:23 PM

On the afternoon of Thursday, February 11, 2021, the company activated its Emergency Operations Command Center (EOCC) due to a series of forecasted storms, which were set to begin that evening and continue throughout the weekend. Just a few hours after the activation of the EOCC, wind and tree related outages began occurring in the Portland region. By early morning on February 12, 2021, Lincoln City, Dallas, and Stayton also started seeing an uptick in outages as a result of the storm event.

During the first 48 hours of the major event, 539 outage events occurred, affecting service to over 82,000 customers. This first wave of the winter storm heavily impacted service reliability in the Willamette Valley reporting region, including service areas in Albany, Dallas, and Stayton, in addition to the northern coastal region of Clatsop/Astoria. These events were the result of downed vegetation, ice, snow, and other emergency damage repairs due to extreme weather impacts. At 5:09 a.m. on February 13, 2021, the number customers without power peaked at 47,123 customers; by the end of the day on February 13 the number of customers without power was reduced to just under 21,000. Restorations continued throughout the day; however, by the evening, outages began to rise again as a heavy accumulation of ice began impacting services.

Figure 1 below highlights the impacts to customers in the Willamette Valley region showing customers interrupted by total outage durations over the course of the entire major event. Figure 2 highlights the same details as Figure 1, for the Clatsop/Astoria operating area.

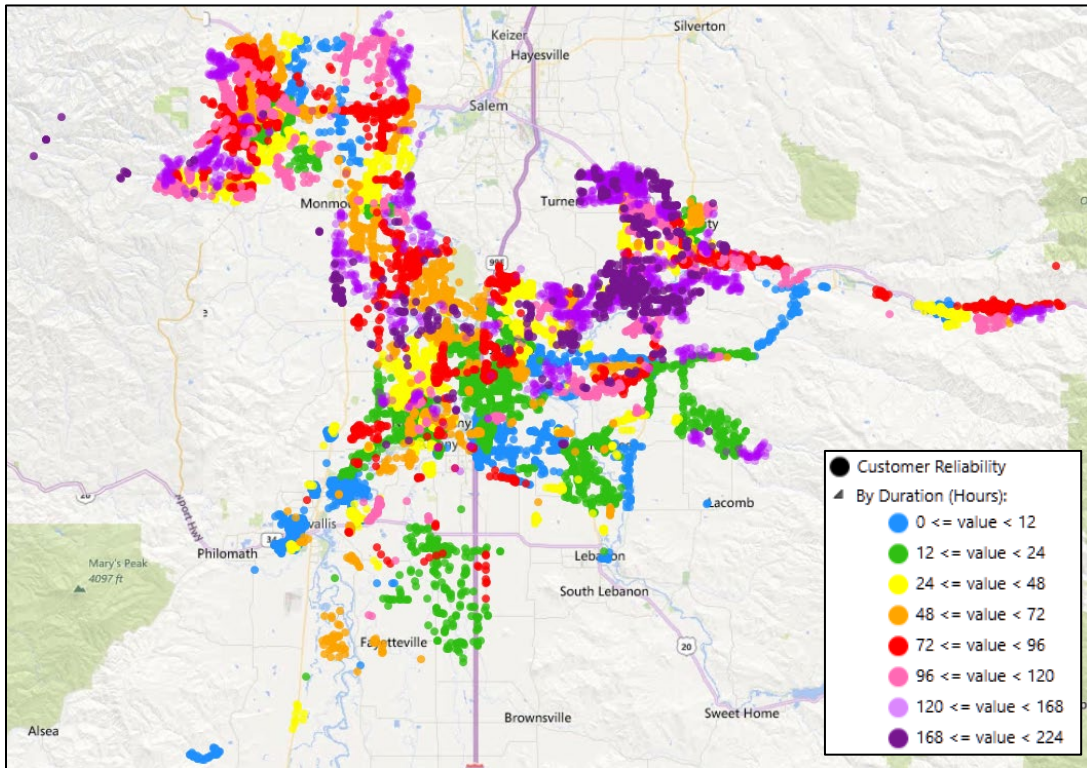


Figure 1: Willamette Valley Region major event outages by duration.

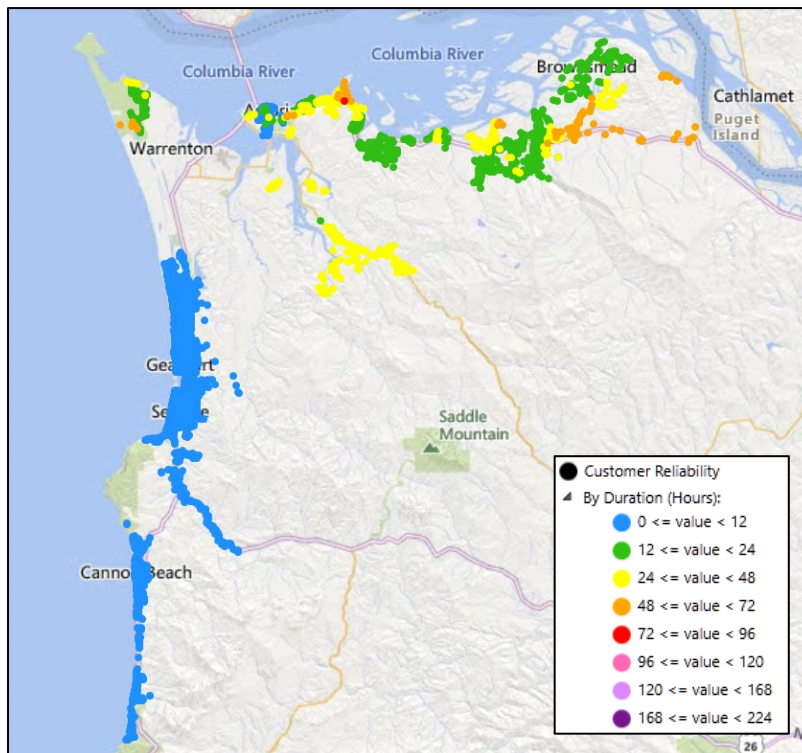


Figure 2: Clatsop (Astoria) operating area major event outages by duration.

The next wave of storms resulted in new customer interruptions, and at 4:55 a.m. on February 15, 2021, the number of customers without power peaked at 43,037 customers out. This second event greatly affected services in Portland, where ice accumulation on equipment and trees became too heavy, causing downed line and trees in numerous areas. Due to the multiple locations and portions of downed lines throughout many circuits, restoration activities were slowed as circuits needed to be fully patrolled prior to re-energizing.

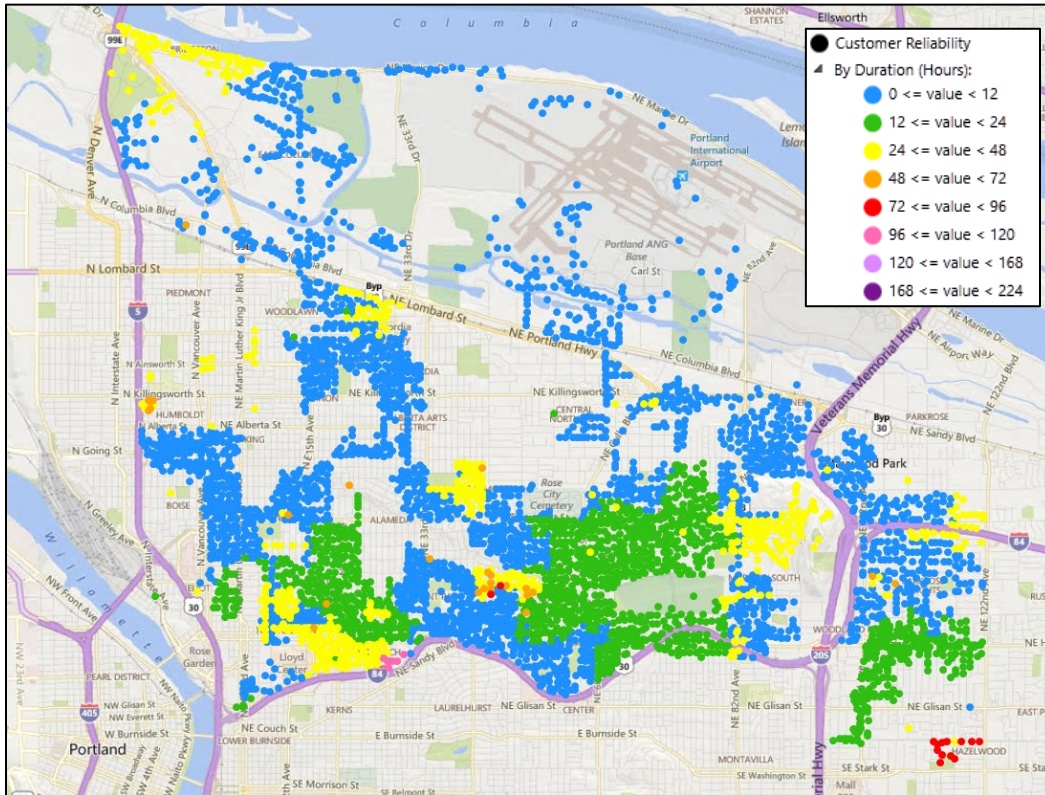


Figure 3: Portland major event outages by duration.

Overall, 1,221 outages were experienced, affecting over 100,000 customers. During the event, approximately 62,000 customers experienced one interruption, while 25,000 experienced two interruptions, and 9,300 experienced three interruptions, and 3,500 customers experienced four or more interruptions. These outages ranged in duration from five minutes to over nine days. Figure 4 below outlines the percent of customer minutes interrupted and customer outages experienced by operating areas.

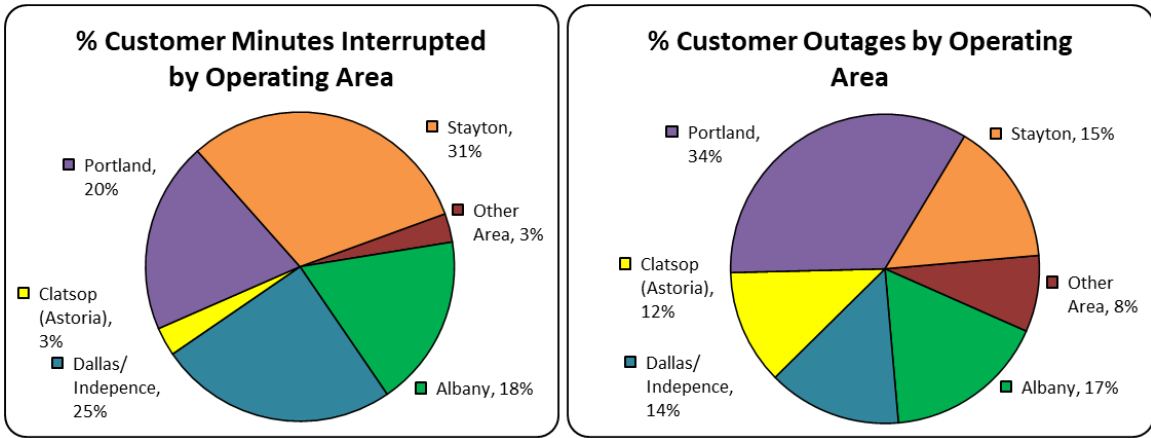


Figure 4: % of customer minutes interrupted, and customer outages experienced by operating areas.

The operating area impacts varied substantially as measured by restoration duration, i.e. CAIDI. In Stayton, CAIDI was substantially longer than, for example, the Portland operating area. Generally, this speaks to the fact that damage experienced during the event varied commensurate to that metric. These variations are noticeable when looking at the maps shown in figures 1-3, which outline the difference in outage durations those in Portland experienced versus those in the Willamette Valley region. Detailed information regarding the event response and restoration challenges faced in these regions is discussed in the Event Response and Recovery section below.

Figure 5 outlines the percent of customer minutes interrupted and customer outages experienced by outage cause. For the most part the percent of customer minutes interrupted verse the percent of customer outages align closely to each other; however, loss of supply events which often may only result in an outage for a short period of time can have a significant impact on the volume of customers affected, as shown below. Information about the weather over the course of the event is detailed in Weather Magnitude and Impacts section of this report.

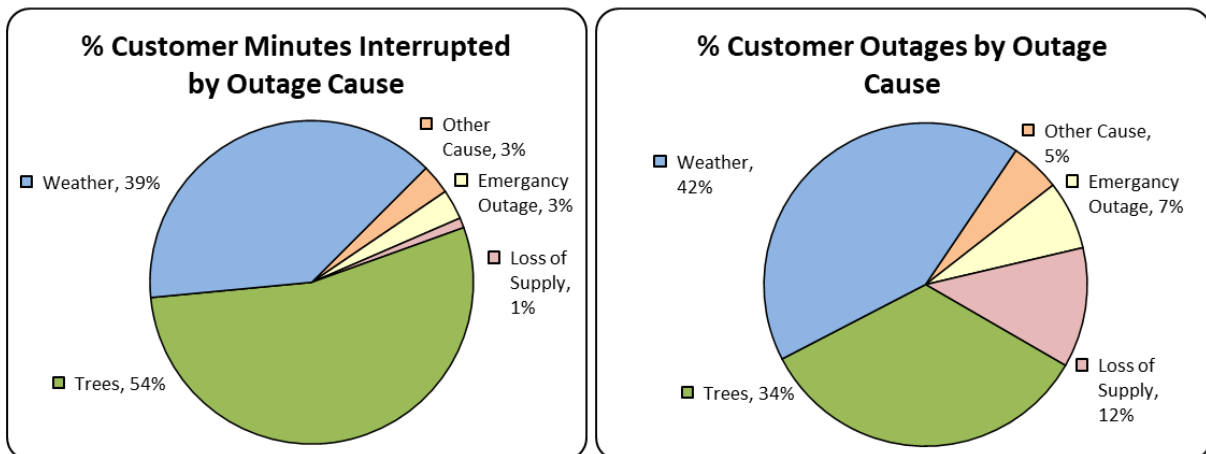


Figure 5: percent of customer minutes interrupted, and customer outages experienced by outage cause.

The following table shows the amount of total customer outages experienced (separated as individual outage events), and the restoration duration intervals.

Restoration Intervals											
Total Customers Sustained	< 3 Hrs.	3 - 24 Hrs.	1-2 Days	2-3 Days	3-4 Days	4-5 Days	5-6 Days	6-7 Days	7-8 Days	8-9 Days	9-10 Days
142,206	49,014	63,386	14,862	4,980	2,953	3,435	1,521	1,408	484	157	6

Weather Magnitude and Impacts

A prolonged, unusually widespread, and severe ice storm impacted portions of the Willamette Valley, Portland Metro, and interior northern coastal regions beginning February 11, 2021, and ending February 15, 2021. Widespread ice accumulations greater than one inch caused extensive damage to trees and power lines in these areas, with the greatest accumulations in our Stayton, Albany, Dallas and Portland Metro service areas. See Figure 6. While freezing rain events occur every two to five years within the Willamette Valley and Portland metro, ice storms of this magnitude and extent are exceedingly rare, likely only occurring once every 25 to 40 years.

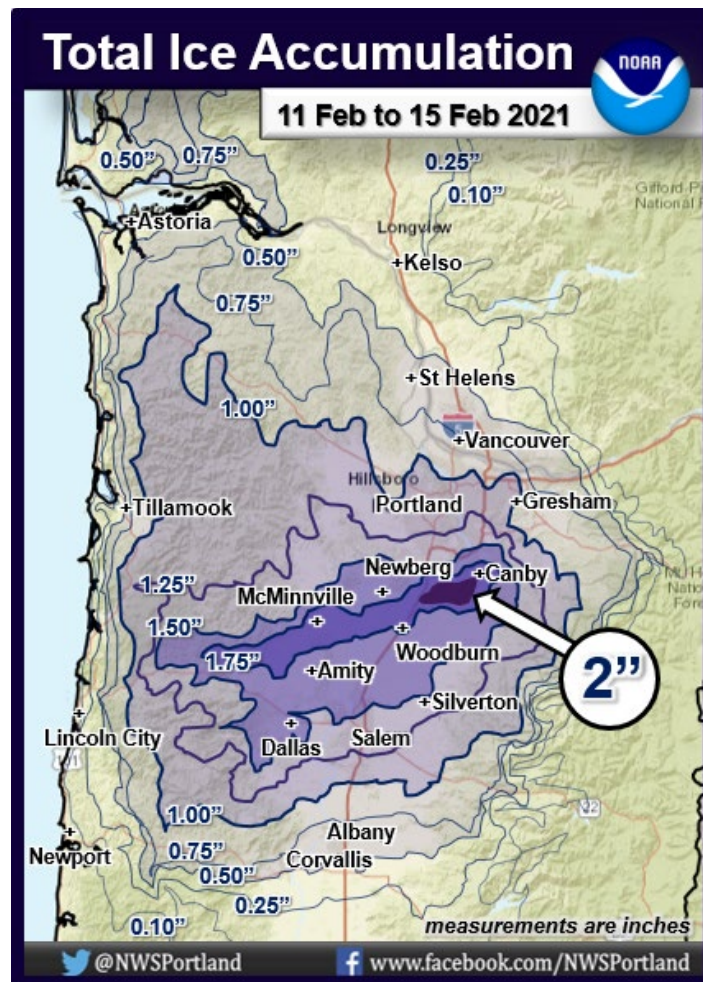


Figure 6: Storm total ice accumulation courtesy of the National Weather Service Portland, OR.

Event Response and Recovery

At 2:00 p.m. on February 11, 2021, the Pacific Power Emergency Operations Center was activated, due to a pending widespread winter storm. Operations personnel were mobilized from across the three Pacific Power states, both internal and contract crews. Outage related impacts due to snow, winds, and ice were anticipated in the Central and Northern Oregon Coast, the Willamette Valley, the Portland Metropolitan area, and the Columbia River Gorge. Due to the widespread nature of the event, and the timing, establishing crew resources early was critical. The ice accumulations and prolonged freezing temperature made assessment and restoration difficult. Ice related loading caused limb and tree damage, often damaging areas that had been previously restored. As the storm progressed, many crews were forced to wait until daylight before damage assessments could be made. The storm damage was widespread but the communities with the most noticeable damage were Stayton, Aumsville, Dallas, Independence, and Albany. The second round of weather on February 15, 2021, created a new series of outages hitting the Portland service territory. Coordination between the Oregon Department of Transportation and local public works agencies was crucial to respond to road conditions, allow intra and interstate travel for our crews, and ensure debris was cleared from roadways to allow for safe travel for restoration activities. Due to the extent of damage, mutual aid resources and line crews from Pacific Power's other state service territories and sister companies (NV Energy and MidAmerican Energy Company) assisted in the restoration efforts. Mutual aid was also provided by Tillamook People's Utility District crews. In excess of 400 personnel worked on restoration for this event across the Willamette Valley, Lincoln City, Astoria and Portland.

Throughout the event Emergency Operations Center teams established daily outbound calls to update customers, established a customer-facing website to customize geographic restoration timelines, and worked on community coordination of resources needed for the prolonged restoration efforts.

By the evening of February 19, 2021, all area assessments were completed and 98 percent of the customers affected were restored. As service was restored in the Willamette Valley, Pacific Power crews and contractors were redeployed to Portland General Electric to assist in their restoration efforts.

On the evening of February 20, 2021, the Pacific Power Emergency Operations Center was deactivated and the small subset of customers in the Willamette Valley remaining out were restored by the following afternoon.

During the event there were four commission complaints and five commission inquiries associated with the major event.



Figure 7: Storm photos and the effects on system facilities.

Restoration Resources, Cost, and Damaged Equipment ¹

Restoration work during the event was challenging due to the volume of outages and icy conditions. Restoration efforts were slowed down due to ice accumulation and having to patrol circuits prior to re-energizing. Over 723 Pacific Power personnel worked to clear downed trees and lines and make repairs following the winter storm.

Pacific Power personnel working on restoration included linemen, tree trimmers, support staff, and contractors. Over 223 poles, 406 crossarms, 18,311 line splices, 176 transformers, 5,037 insulators, and over 209,611 conductor feet were needed to restore power.

Personnel Resources			
Internal local crewmembers	126	Foreman	10
Internal borrowed crewmembers (RMP)	23	Meterman	11
Estimator	24	Transformer Repairman	3
Substation crewmembers	18	Mechanic	13
Warehouseman	30	Flaggers	42
Support staff	27	External Contract Crewman	272
Hydro	1	Tree Crewman	200
TOTAL			723

Materials			
# Poles (D)	188	Cutouts	628
# Poles (T)	26	Line fuses	2,054
# Poles (D/T)	9	Line splices	18,311
Approx. Conductor Line (feet)	209,611	Guy wire	12,979
# Transformers	176	Arrester	68
# Crossarms	406	Capacitor Bank	1
Insulators	5,037	Helicopters	1

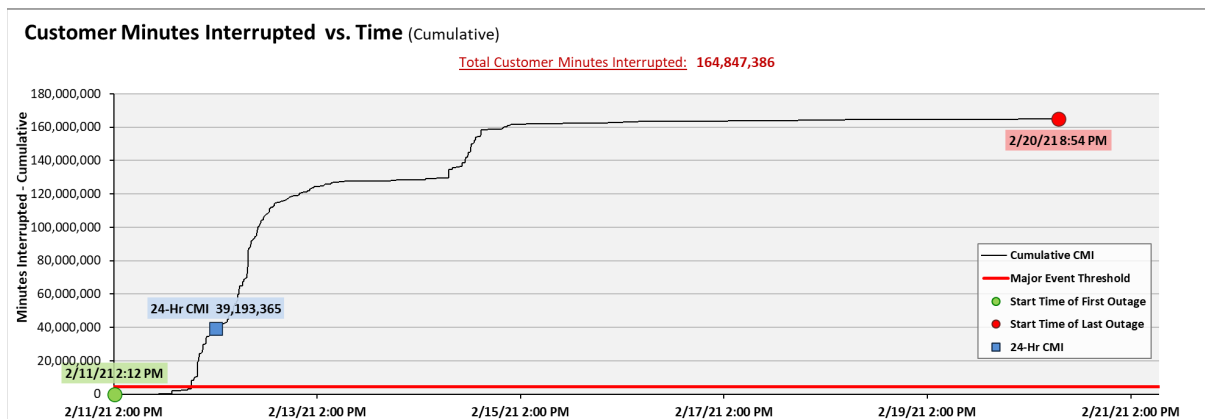
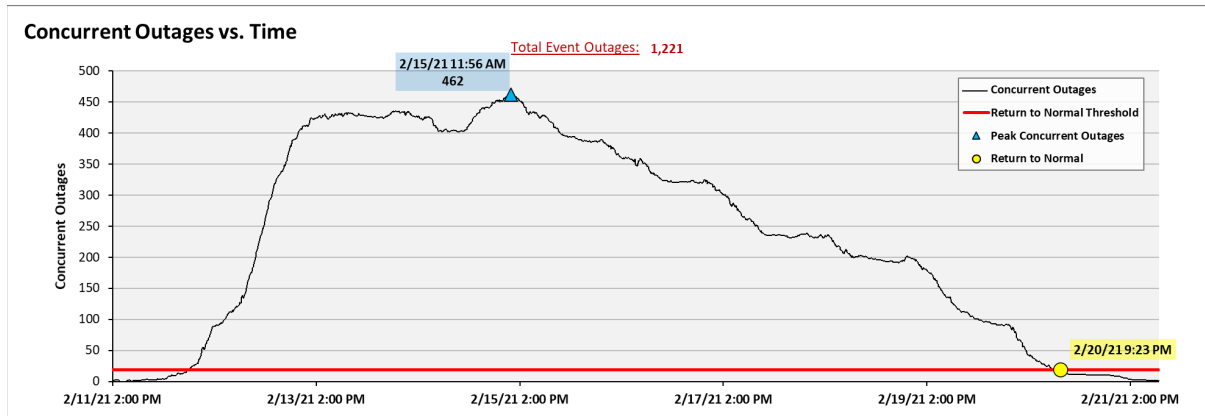
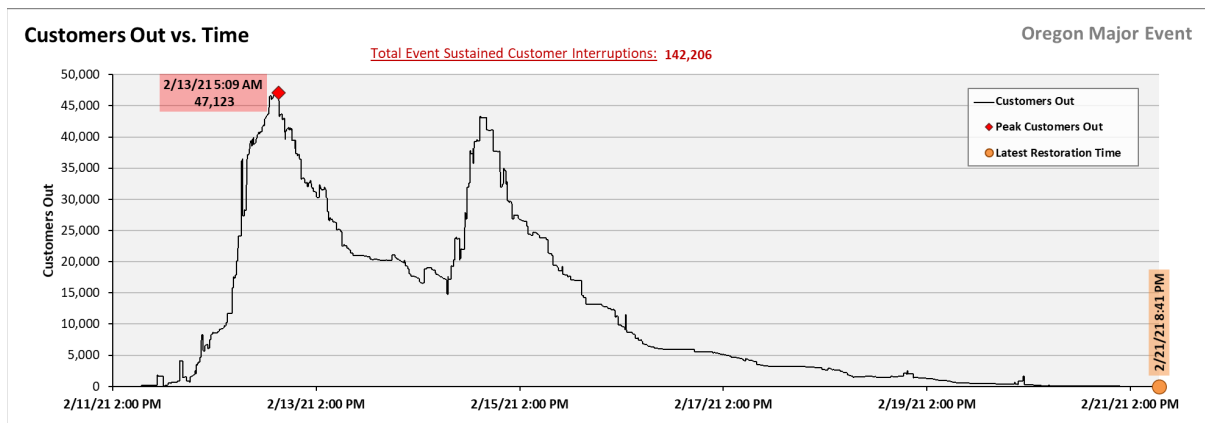
Cost					
Estimate \$	Labor	Contract Resources	Materials	Overheads	Total
Capital	\$1,002,006	\$4,705,654	\$597,841	\$618,094	\$6,923,594
Expense	\$3,451,534	\$4,815,354	\$215,057	\$151,395	\$8,633,340
Total	\$4,453,540	\$9,521,008	\$812,898	\$769,489	\$15,556,935

¹ Data provided represents specific system records for personnel, resources, and costs; and is specific to the event, inclusive of state delineation. However, additional resources whose participation did not get individually captured in transaction recording systems were utilized during the event; thus the data presented here effectively understates the resources, including cost, involved in restoring the system to normal.

Major Event Declaration

PacifiCorp designates these events, and the consequences thereof, a major event in accordance with OAR 860-023-0161. This is a major event because it exceeded the design or operating limits of the system, and the Major Event Threshold for Oregon as calculated annually by the company according to IEEE 1366-2003 methodology² (commonly referred to as the 2.5 beta method). The company's 2021 Oregon reliability threshold is 4,375,975 customer minutes lost (7.02 Oregon SAIDI minutes) in a 24-hour period.

Event Details



² The event resulted in a SAIDI equivalent to 4.9 beta, which designates the event as catastrophic, since it exceeded 4.15 beta, which was found in prior IEEE task force work to be the appropriate threshold for catastrophic designation.

SAIDI, SAIFI, CAIDI by Reliability Reporting Region
Please see the attached system-generated reports.

PacifiCorp Major Event Report
Customer Analysis

	Oregon	Customer Analysis 2/11/21 through 2/20/21					Customers Restored by Intervals								Major Event Only - metric by operating area customer counts		
		Sustained Customers Off	% Sustained Customers Off	CML	Number of Sustained Interruptions	Customer Count	< 5 min	5 min - 3 hrs	3 hrs - 24 hrs	24 hrs - 48 hrs	48 hrs - 72 hrs	72 hrs - 96 hrs	96 + hrs	% Sustained Customers Restored in 3 Hours PS4	SAIDI	SAIFI	CAIDI
PC	PACIFICORP	142,206	7%	164,847,386	1,219	2,019,764	23,327	49,014	63,386	14,862	4,980	2,953	7,011	34%	81.62	0.070	1,159
PP	Pacific Power	142,206	18%	164,847,386	1,219	807,241	23,327	49,014	63,386	14,862	4,980	2,953	7,011	34%	204.21	0.176	1,159
OR	Oregon	142,206	23%	164,847,386	1,219	623,412	23,327	49,014	63,386	14,862	4,980	2,953	7,011	34%	264.43	0.228	1,159
OR	ALBANY	23,746	72%	29,529,382	230	32,925	2,530	7,845	10,288	2,486	1,527	762	838	33%	896.87	0.721	1,244
OR	BEND/REDMOND	859	1%	205,679	8	69,733	1	2	857	-	-	-	-	0%	2.95	0.012	239
OR	CLATSOP (ASTORIA)	16,632	66%	5,297,262	83	25,251	199	12,069	3,574	914	75	-	-	73%	209.78	0.659	318
OR	COOS BAY/COQUILLE	927	4%	179,510	13	26,382	2,098	393	534	-	-	-	-	42%	6.80	0.035	194
OR	CORVALLIS	4,739	16%	2,183,697	54	30,457	-	2,531	1,737	325	135	11	-	53%	71.70	0.156	461
OR	COTTAGE GROVE/J.CITY	55	0%	50,672	4	11,390	-	22	12	21	-	-	-	40%	4.45	0.005	921
OR	DALLAS/INDEPENDENCE	20,156	127%	40,443,323	195	15,858	7	3,290	8,436	3,405	1,702	1,366	1,957	16%	2,550	1.271	2,007
OR	ENTERPRISE	18	0%	2,969	1	5,531	-	18	-	-	-	-	-	100%	0.54	0.003	165
OR	GRANTS PASS	97	0%	20,218	17	52,543	-	38	59	-	-	-	-	39%	0.38	0.002	208
OR	HERMISTON	2	0%	673	1	4,906	-	-	2	-	-	-	-	0%	0.14	0.000	337
OR	HOOD RIVER	64	33%	18,653	4	9,595	-	21	43	-	-	-	-	33%	1.94	0.007	291
OR	KLAMATH FALLS	1,637	4%	308,703	11	38,015	-	900	737	-	-	-	-	55%	8.12	0.043	189
OR	LEBANON	1,526	7%	1,802,144	36	21,085	-	132	1,302	55	20	15	2	9%	85.47	0.072	1,181
OR	LINCOLN CITY	820	7%	590,872	29	12,080	-	285	380	151	4	-	-	35%	48.91	0.068	721
OR	MADRAS	160	1%	26,066	7	17,692	-	144	16	-	-	-	-	90%	1.47	0.009	163
OR	MEDFORD	622	1%	124,318	14	89,893	-	411	211	-	-	-	-	66%	1.38	0.007	200
OR	PENDLETON	5	0%	458	4	13,036	-	5	-	-	-	-	-	100%	0.04	0.000	92
OR	PORTLAND	47,684	56%	33,141,643	187	85,630	17,747	12,166	30,185	5,291	34	-	8	26%	387.03	0.557	695
OR	ROSEBURG/MYRTLECREEK	730	2%	68,143	16	42,940	745	723	7	-	-	-	-	99%	1.59	0.017	93
OR	STAYTON	21,725	158%	50,852,964	304	13,707	-	8,017	5,006	2,214	1,483	799	4,206	37%	3,710.0	1.585	2,341
OR	WALLA WALLA	2	0%	38	1	2,320	-	2	-	-	-	-	-	100%	0.02	0.001	19

*Only current event specific metric impact shown. Does not include values from other events which may have occurred in other regions during the same time period.

PacifiCorp Major Event Report
Customer Analysis

Date*	Customer Interrupted by Date 2/11/21 through 2/20/21					Customers Restored by Intervals								Major Event Only - metric by state customer counts		
	Sustained Customers Off	% Sustained Customers Off	CML	Number of Sustained Interruptions	Average Customer Count	< 5 min	5 min - 3 hrs	3 hrs - 24 hrs	24 hrs - 48 hrs	48 hrs - 72 hrs	72 hrs - 96 hrs	96 + hrs	% Sustained Customers Restored in 3 Hours PS4	SAIDI	SAIFI	CAIDI
2/11/21	183	0%	41,119	7	623,412	-	15	168	-	-	-	-	8%	0.07	0.000	225
2/12/21	64,185	10%	98,685,303	274	623,412	2,711	22,956	24,160	6,571	2,999	1,855	5,644	36%	158.30	0.103	1,538
2/13/21	19,709	3%	29,042,284	297	623,412	18	7,318	5,742	2,730	1,684	934	1,301	37%	46.59	0.032	1,474
2/14/21	14,582	2%	8,665,489	93	623,412	4	5,491	7,917	1,066	16	52	40	38%	13.90	0.023	594
2/15/21	34,331	6%	25,911,152	174	623,412	17,210	5,906	24,015	4,266	50	75	19	17%	41.56	0.055	755
2/16/21	3,693	1%	1,148,348	97	623,412	1,286	3,179	243	67	174	23	7	86%	1.84	0.006	311
2/17/21	1,103	0%	529,067	80	623,412	-	756	255	28	50	14	-	69%	0.85	0.002	480
2/18/21	985	0%	495,212	87	623,412	-	353	505	120	7	-	-	36%	0.79	0.002	503
2/19/21	1,560	0%	231,105	61	623,412	2,098	1,202	344	14	-	-	-	77%	0.37	0.003	148
2/20/21	1,875	0%	98,308	49	623,412	-	1,838	37	-	-	-	-	98%	0.16	0.003	52

Data as of
3/22/21

PacifiCorp Major Event Report

SSC by State Analysis

	Oregon	Event 02/11/21 through 02/20/21						Month 02/01/21 through 02/28/21						YTD FY2022 01/01/21 through 02/28/21					
		Major Events Included			Major Event Excluded			Major Events Included			Major Events Excluded*			Major Events Included			Major Events Excluded*		
	PacifiCorp Major Events Report SSC by State	SAIDI	SAIFI	CAIDI	SAIDI	SAIFI	CAIDI	SAIDI	SAIFI	CAIDI	SAIDI	SAIFI	CAIDI	SAIDI	SAIFI	CAIDI	SAIDI	SAIFI	CAIDI
PC	PacifiCorp	83.92	0.091	919	2.14	0.020	105	90.47	0.151	601	6.93	0.068	102	109.33	0.313	349	14.02	0.127	111
Comp	Power Company	205.69	0.186	1,105	1.07	0.009	118	213.94	0.253	847	7.62	0.064	119	250.23	0.568	440	14.47	0.119	121
ST	State	264.82	0.232	1,139	0.40	0.004	92	272.06	0.293	929	6.88	0.063	110	313.13	0.641	488	13.59	0.119	114
OR	ALBANY	47.37	0.038	1,244	-	-	-	47.53	0.039	1,217	0.16	0.001	172	49.77	0.059	849	0.18	0.001	171
OR	BEND/REDMOND	0.33	0.001	239	-	-	-	0.45	0.002	216	0.12	0.001	169	0.96	0.004	223	0.18	0.001	160
OR	CLATSOP (ASTORIA)	8.50	0.027	318	0.001	0.000	174	8.92	0.030	300	0.42	0.003	141	11.06	0.039	286	0.97	0.008	124
OR	COOS BAY/COQUILLE	0.29	0.001	194	0.00	0.000	181	0.40	0.004	93	0.12	0.003	40	5.22	0.023	229	0.41	0.004	97
OR	CORVALLIS	3.50	0.008	461	-	-	-	4.51	0.028	162	1.01	0.020	50	6.49	0.041	159	1.48	0.023	64
OR	COTTAGE GROVE/J.CITY	0.08	0.000	921	-	-	-	0.08	0.000	846	0.00	0.000	255	0.10	0.000	491	0.02	0.000	159
OR	DALLAS/INDEPENDENCE	64.87	0.032	2,006	0.00	0.000	55	65.03	0.033	1,946	0.16	0.001	146	65.73	0.038	1,725	0.24	0.002	159
OR	ENTERPRISE	0.00	0.000	165	-	-	-	0.01	0.000	138	0.00	0.000	115	0.04	0.000	240	0.01	0.000	147
OR	GRANTS PASS	0.04	0.000	199	0.00	0.000	139	0.74	0.007	105	0.71	0.007	103	10.13	0.187	54	1.04	0.012	90
OR	HERMISTON	0.00	0.000	337	-	-	-	0.02	0.000	307	0.01	0.000	324	0.17	0.006	28	0.12	0.006	21
OR	HOOD RIVER	1.94	0.007	291	-	-	-	10.79	0.065	167	8.84	0.058	152	10.84	0.065	166	8.90	0.058	153
OR	KLAMATH FALLS	0.50	0.003	189	-	-	-	0.78	0.004	183	0.29	0.002	174	2.73	0.011	242	2.23	0.009	259
OR	LEBANON	2.94	0.003	986	0.05	0.001	89	3.11	0.004	848	0.22	0.001	182	7.31	0.019	382	0.48	0.004	135
OR	LINCOLN CITY	0.95	0.001	721	-	-	-	1.61	0.005	303	0.66	0.004	166	2.40	0.013	192	1.03	0.010	104
OR	MADRAS	0.04	0.000	163	-	-	-	0.44	0.003	155	0.39	0.003	154	0.65	0.012	56	0.61	0.011	54
OR	MEDFORD	0.20	0.001	199	0.001	0.000	108	0.52	0.005	106	0.32	0.004	81	1.76	0.013	133	1.13	0.009	132
OR	PENDLETON	0.00	0.000	92	-	-	-	0.79	0.002	335	0.03	0.000	309	1.28	0.006	222	0.27	0.002	139
OR	PORTLAND	53.50	0.080	667	0.34	0.004	90	55.07	0.088	628	1.91	0.011	171	61.33	0.121	507	2.25	0.013	175
OR	ROSEBURG/MYRTLECREEK	0.12	0.001	97	0.007	0.000	227	0.18	0.002	104	0.07	0.001	126	0.69	0.006	123	0.52	0.004	125
OR	STAYTON	81.57	0.035	2,341	-	-	-	81.70	0.036	2,291	0.13	0.001	160	85.05	0.043	1,973	0.28	0.001	224
OR	WALLA WALLA	0.00	0.000	19	-	-	-	0.00	0.000	52	0.00	0.000	117	0.05	0.000	232	0.00	0.000	102

*may include other regional major event exclusions during the same period. Operating areas are calculated by the state frozen customer count metrics.

Data as/of
3/22/21