

Report to the Washington Utilities and Transportation Commission

Electric Service Reliability - Major Event Report

Event Date: May 30 - June 2, 2020

Date Submitted: July 14, 2020

Primary Affected Locations: Statewide

Primary Cause: Spring Storm

Exclude from Reporting Status: Yes

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Report Approved by: Heide Caswell / Carrie Laird / Chad Ooten

Event Description and Restoration Summary

Event Outage Summary	
# Interruptions (sustained)	299
Total Customer Interrupted (sustained)	23,750
Total Customer Minutes Lost	17,395,242
State Event SAIDI	128 Minutes
CAIDI	732
Major Event Start	5/30/2020 12:00 a.m.
Major Event End	6/2/2020 10:16 p.m.

From May 30, 2020, to June 2, 2020, customers in Washington experienced numerous outages when a spring storm severely impacted reliability across Pacific Powers service territory. On the morning of May 30th the storm began developing along the southeast portion of state, with high winds and lightning causing outages in the Walla Walla service territory. Throughout the day the storm continued to develop and by the evening outages in the Sunnyside and Yakima service territories began to occur. Strong winds from the northeast grew, with recorded wind gust measurements as high as 49 MPH, as shown in Figures 1 and 2 below¹. In addition to the high winds around 4 p.m., heavy rain began to fall, dropping approximately 0.35 inches of water within two hours (figure 3). The rapid growth and development of the storm caused over 185 outages events in first 24 hours (May 30th) of the event, another 66 outages in the second day (May 31st), and 35 outages on the third day (June 1st). At 7:23 p.m. on May 30th the total customers without power peaked at 17,655.

¹ Remote Automatic Weather Station (RAWS). <https://raws.dri.edu/>

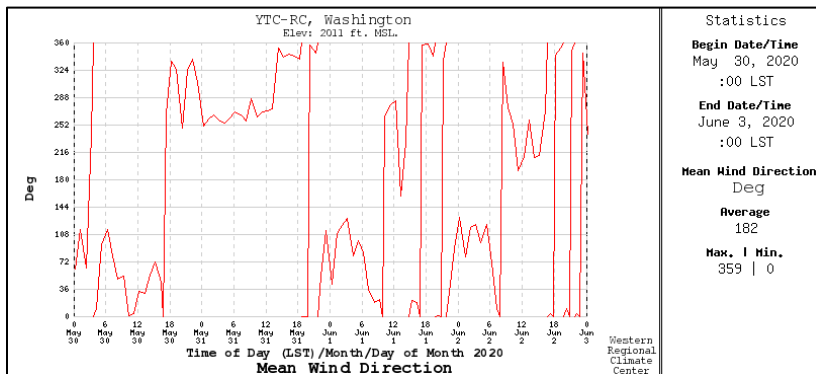


Figure 1. Yakima YTC-RC Washington mean wind direction during the major event.

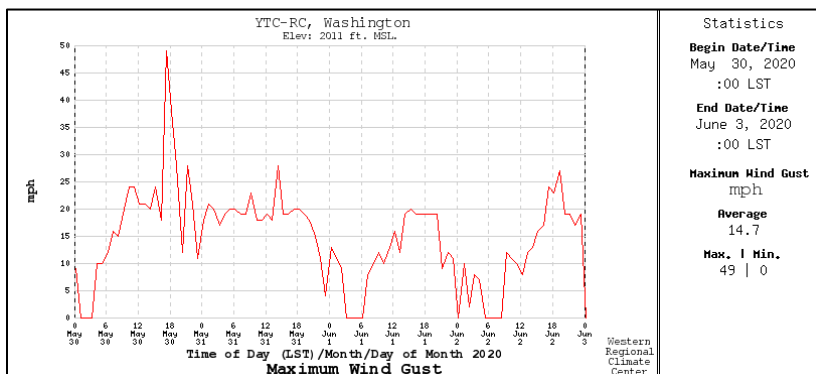


Figure 2. Yakima YTC-RC Washington maximum wind gust during the major event.

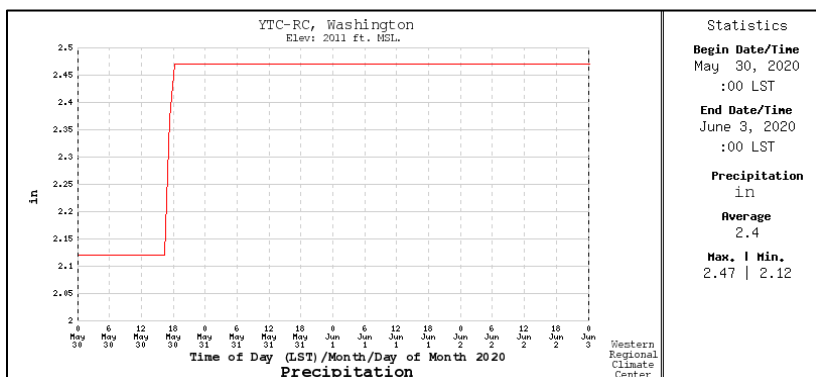


Figure 3. Yakima YTC-RC Washington precipitation during the major event.

The magnitude and severity of the storm during its initial onset coupled with the large number of outage events and affected customers, as described above, became a large task for crews in the region, which typically experience an average of only 2-3 outages a day. In addition the storm greatly affected the region as a whole causing a major event in Oregon, slowing the ability to bring in outside crews to assist in the restoration process. Internal crews from Walla Walla and Portland were brought in, along with several internal out of area single responders and 11 full contract crews were brought in. All crews in Yakima were used as responders for the duration of this event as well as many out of district two man crews, this allowed the local crews familiar with the area to feed the 13 crews repair work and keep in front of their need for next jobs.

Figure 4 below represents the percent of customer minutes lost and the number of customer interruptions by cause for the duration of the event. The most impactful outages were the result of wind and vegetation which account for 78% of the total customer minutes lost and 78% of all the customer interruptions. Pole fires also contributed to a significant amount of outages, while emergency damage repair outages resulted from steps required to safely make repairs to equipment initially damaged by effects of the storm. Repairs to equipment consisted of replacing broken poles, removing trees from lines, replacing transformers, responding to damaged service transformers and containment, clearing damaged trees and limbs that were not fully down but posed hazards, and reinstalling damaged conductor.

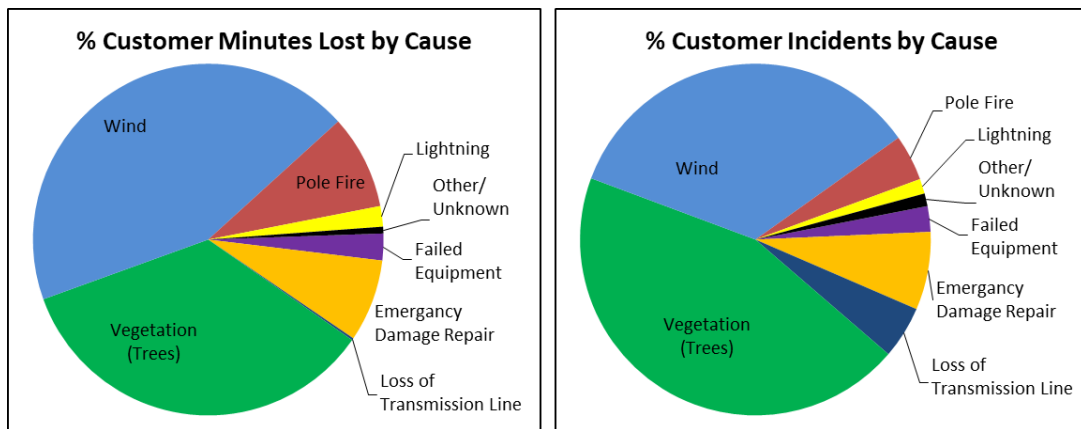


Figure 4. Percent of customer Minutes lost and % of customer incidents experienced by cause.

Approximately 23,750 customer interruptions were experienced, some of which were experienced by the same customers over the duration of the storm, see figures 5 and 6 below. The number of concurrent outages during the event peaked at 163 outages on the 30th at 10:54 p.m., with the number of open outages remaining above 100 for 46 hours. Sustained outage durations ranged from 7 minutes to 3 days 6 hours 14 minutes, with an average cumulative outage duration of 12 hours 2 minutes.

To date, there has been one company customer complaint and no commission customer complaints made regarding the major event.

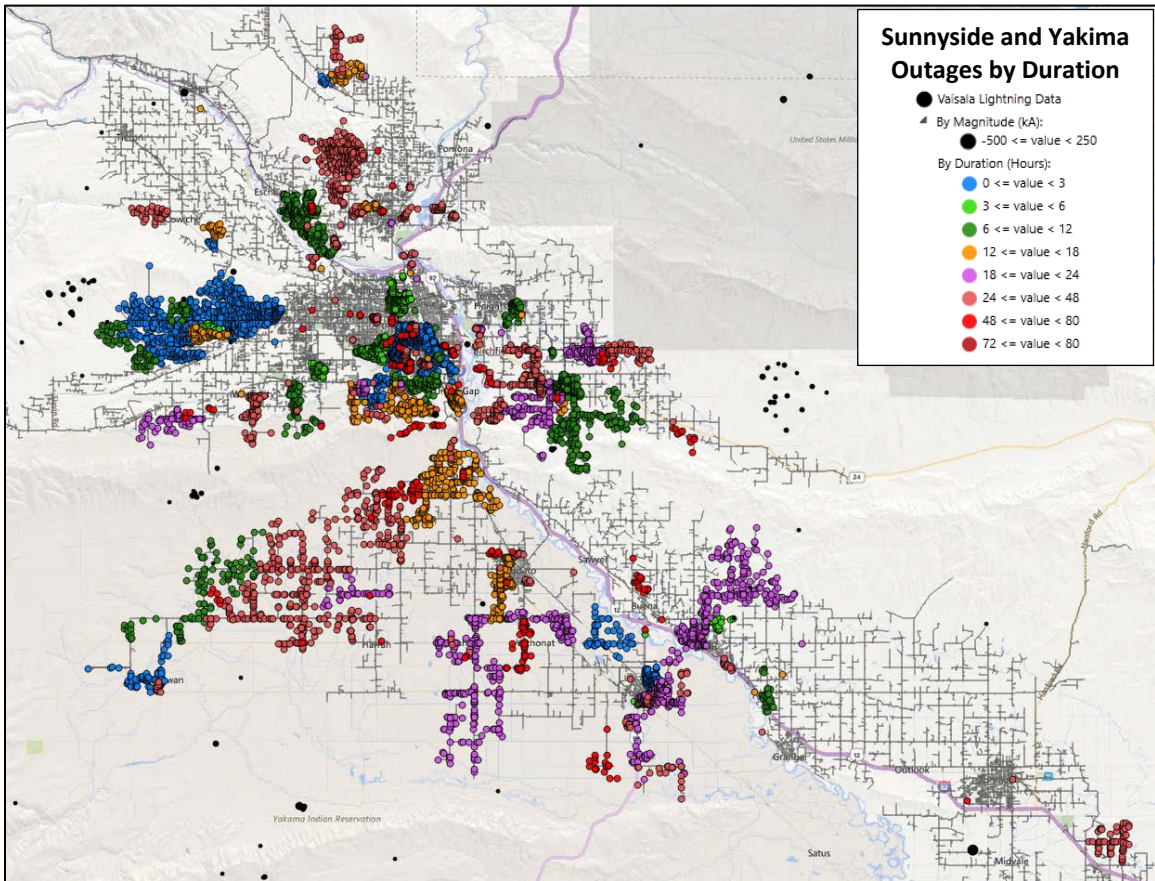


Figure 5. Sunnyside and Yakima, Outage Duration by hour and lightning strikes.

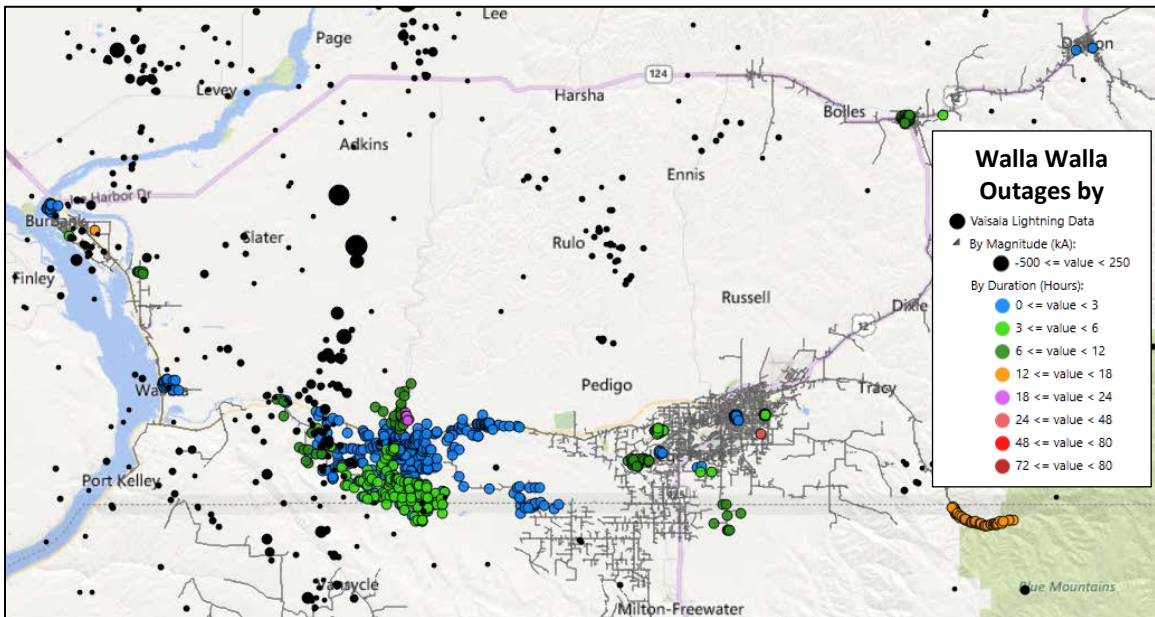


Figure 6. Walla Walla, Outage Duration by hour and lightning strikes.

Restoration Intervals

Total Customers Sustained	< 3 Hrs.	3 - 24 Hrs.	24-48 Hrs.	48-72 Hrs.	72-79 Hrs.
23,750	7,356	12,542	3,264	582	6

Restoration Resources

Personnel Resources	
Lineman	17
Support	8
Serviceman	7
Line Foreman	6
General Foreman	4
Substation Wireman	3
Relay Tech	3
Field Service Specialist	3
Lineman Representative	3
Meterman	2
Communications Tech	1
Line Patrolman	1
Contract crewman	62
Tree crewman	13
Flaggers	8
Total	141

Materials	
# Distribution Poles	24
# Transmission Poles	3
# Approx. conductor Line (feet)	22,708 ft.
# Transformers	27
# Crossarms	76
Insulators	381
Cutouts	132
Line fuses	121
Line splices	1,168
Guy Wire	6,518 ft.
Pole Top Extension	10

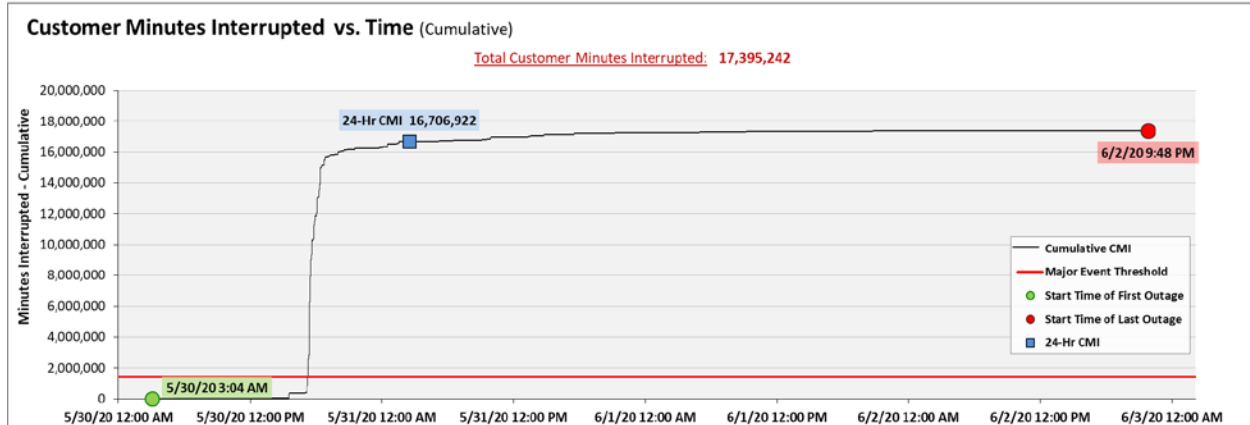
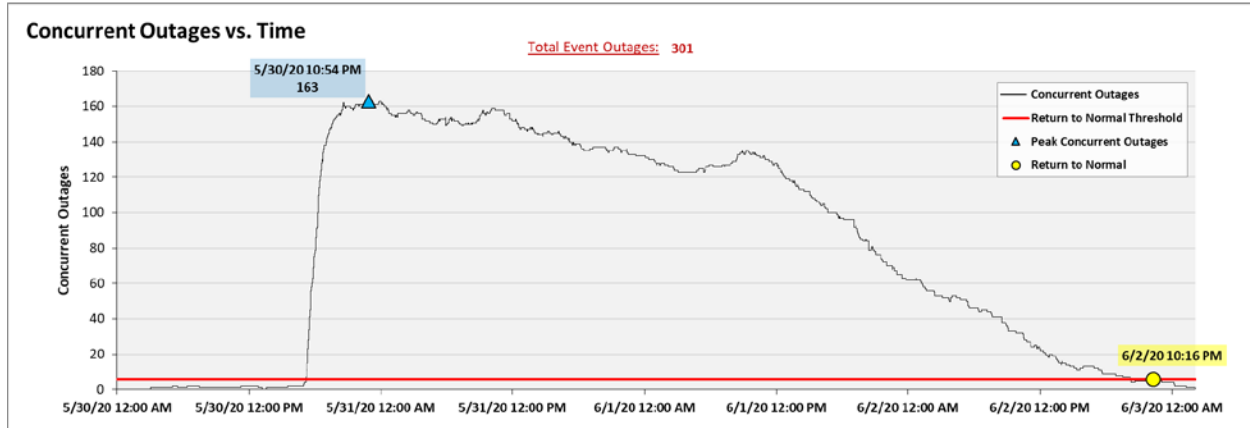
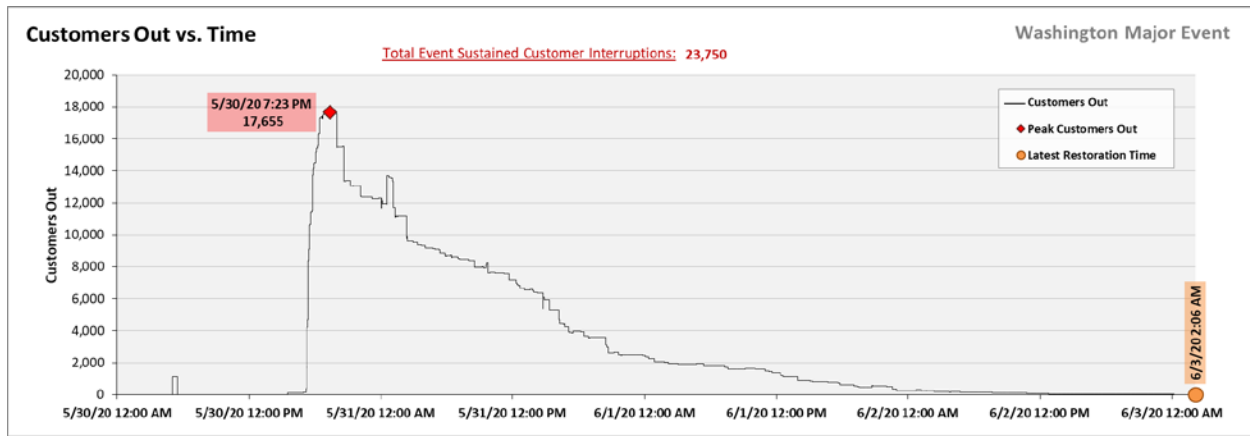
State Estimated Major Event Costs

Estimate \$	Labor	Contracts	Material	Overheads	Total
Capital	\$23,667	\$376,445	\$75,446	\$65,525	\$541,083
Expense	\$500,495	\$435,532	\$41,342	\$52,992	\$1,030,362
Total	\$524,162	\$811,977	\$116,788	\$118,518	\$1,571,445

Major Event Declaration

Pacific Power is requesting designation of this event and its consequences to be classified as a "Major Event" for exclusion from network performance reporting with the IEEE 1366-2003/2012. This major event exceeded the company's 2020 Washington threshold of 1,427,191 customer minutes lost (10.5 state SAIDI minutes) in a 24-hour period.

Event Detail



SAIDI, SAIFI, CAIDI by Reliability Reporting Region

Please see the attached system-generated reports.