WASHINGTON SERVICE QUALITY REVIEW

January 1 – December 31, 2021

Annual Report

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EXECUTIVE SUMMARY

During January 1 through December 31, 2021, Pacific Power delivered reliable service to its Washington customers. The level of performance met established baselines. Also, the Customer Guarantee program continued to deliver high quality results consistent with the prior year's performance. The Company has noted in the past that the service it delivers ranks high when compared across the industry.

The Company's service reliability can be impacted by uncontrollable interference events, such as car-hit-pole accidents, and by significant events that exceed the normal underlying level of interruptions but that do not reach the qualifying major event threshold for exclusion from the Company's underlying performance metrics. To provide a perspective on their impact during the reporting period, the significant events experienced during 2021 are listed in Section 3.2. Consideration of the root causes of these significant days is important when evaluating year-on-year performance. When the Company develops reliability improvement projects it evaluates these root causes and prepares plans that reflect the certainty of repetition of these events. The outcomes are reflective of the plans outlined in the Areas of Greatest Concern, shown in Section 3.6. And, while no substantial wildfire mitigation impacts occurred in 2021 within Washington, the company implemented protection coordination settings that more substantially affected distribution system performance through its "Elevated Fire Risk" (EFR) settings. Concurrently it developed a method to estimate the reliability impacts of device setting changes. EFR settings are generally applied when fire weather conditions such as high winds, low fuel moisture, high temperature, low relative humidity and volatile fuels might be expected. Operational responses are different also, which results in more sustained outage events and longer outage duration.

1 Service Standards Program Summary

Pacific Power has a number of Customer Service Standards and Service Quality Measures with performance reporting mechanisms currently in place. These standards and measures define Pacific Power's target performance (both personnel and network reliability performance) in delivering quality customer service. The Company developed these standards and measures using relevant industry standards for collecting and reporting performance data. In some cases, Pacific Power has expanded upon these standards. In other cases, largely where the industry has no established standards, Pacific Power has developed metrics, targets and reporting. While industry standards are not focused around threshold performance levels, the Company has developed targets or performance levels against which it evaluates its performance. These standards and measures can be used over time, both historically and prospectively, to measure the service quality delivered to our customers. In its entirety, these measures comply with WAC 480-100-393 and 398 requirements for routine reliability reporting.

In UE-042131, the Company applied for, and received approval, to extend the core program through March 31, 2008. During the MidAmerican acquisition of Pacific Power, in UE-051090, the program was extended again through 2011. While the term of this program has lapsed, the Company has continued to perform all programs as performed historically. No actions have been taken by the Company to recommend any suspension or changes to the program that was extended in UE-042131.

1.1 Pacific Power Customer Guarantees

Customer Guarantee 1: Restoring Supply After an Outage	The Company will restore supply after an outage within 24 hours of notification from the customer with certain exceptions as described in Rule 25.
Customer Guarantee 2: Appointments	The Company will keep mutually agreed upon appointments which will be scheduled within a two-hour time window.
Customer Guarantee 3: Switching on Power	The Company will switch on power within 24 hours of the customer or applicant's request, provided no construction is required, all government inspections are met and communicated to the Company and required payments are made. Disconnections for nonpayment, subterfuge or theft/diversion of service are excluded.
Customer Guarantee 4: Estimates For New Supply	The Company will provide an estimate for new supply to the applicant or customer within 15 working days after the initial meeting and all necessary information is provided to the Company.
Customer Guarantee 5: Respond To Billing Inquiries	The Company will respond to most billing inquiries at the time of the initial contact. For those that require further investigation, the Company will investigate and respond to the Customer within 10 working days.
Customer Guarantee 6: Resolving Meter Problems	The Company will investigate and respond to reported problems with a meter or conduct a meter test and report results to the customer within 10 working days.
Customer Guarantee 7: Notification of Planned Interruptions	The Company will provide the customer with at least two days' notice prior to turning off power for planned interruptions consistent will Rule 25 and relevant exemptions.

Note: See Rules for a complete description of terms and conditions for the Customer Guarantee Program.

1.2 Pacific Power Performance Standards[1]

Network Performance Standard 1: Improve System Average Interruption Duration Index (SAIDI)	The Company will maintain SAIDI commitment target.
Network Performance Standard 2: Improve System Average Interruption Frequency Index (SAIFI)	The Company will maintain SAIFI commitment target.
Network Performance Standard 3: Improve Under Performing Circuits	The Company will reduce by 20% the circuit performance indicator (CPI) for a maximum of five under-performing circuits on an annual basis within five years after selection.
Network Performance Standard 4: Supply Restoration	The Company will restore power outages due to loss of supply or damage to the distribution system within three hours to 80% of customers on average.
Customer Service Performance Standard 5: Telephone Service Level	The Company will answer 80% of telephone calls within 30 seconds. The Company will monitor customer satisfaction with the Company's Customer Service Associates and quality of response received by customers through the Company's eQuality monitoring system.
Customer Service Performance Standard 6: Commission Complaint Response/Resolution	The Company will: a) respond to at least 95% of non-disconnect Commission complaints within two working days per state administrative code[2]; b) respond to at least 95% of disconnect Commission complaints within four working hours; and c) resolve 95% of informal Commission complaints within 30 days.

Note: Performance Standards 1, 2 & 4 are for underlying performance days, excluding days classified as Major Events.

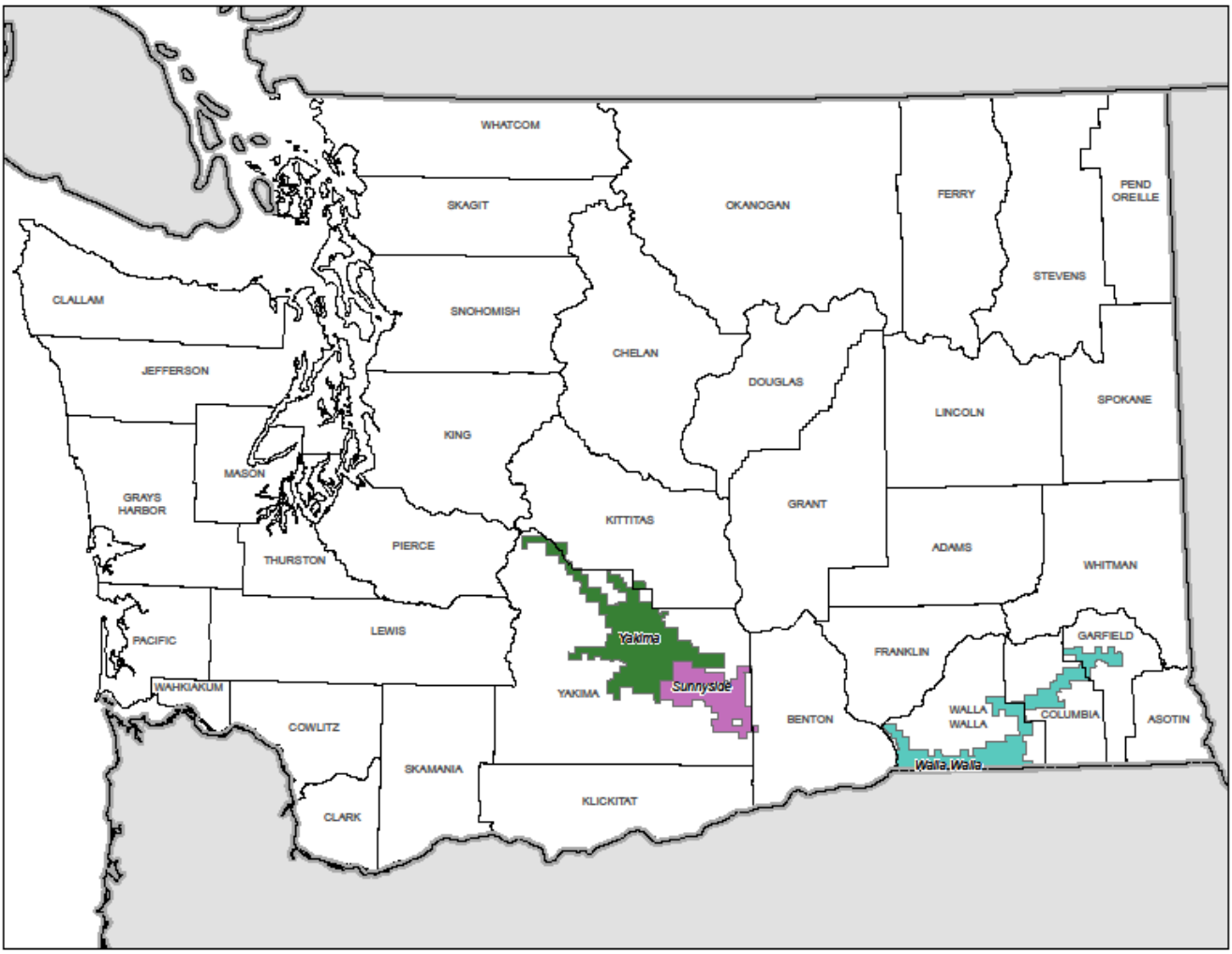
[1] The Company committed to Service Standards Programs that expired on 12/31/2011; during the program all elements committed to were delivered successfully. By terms of the commitment any changes to the program required the approval of the Commission. The Company has proposed no changes to the program, but continues at this time, to operate consistently with its historical program. State reliability reporting rules establish requirements that the Company interprets as generally encompassing the requirements of Network Performance Standards 1-3.

[2] Although the Performance Standard indicates that complaints will be responded to within 3 days, the Company acknowledges and adheres to the requirements set forth in 480-100-173(3)(a).

1.3 Service Territory

Service Territory Map

Contained below is a graphic of the Company's Washington service territory[3], colored by operating area.



[3] While Washington State doesn't recognize electric certificate areas, the graphic shows the regions in which PacifiCorp serves customers in the state.

2 CUSTOMER GUARANTEES SUMMARY

PACIFIC POWER A DIVISION OF PACIFICORP customer*guarantees* January to December 2021

Washington

	Description	2021 Events	2021 Failures	2021 % Success	2021 Paid	2020 Events	2020 Failures	2020 % Success	2020 Paid
CG1	Restoring Supply	83,563	0	100.00%	$0	107,419	0	100.00%	$0
CG2	Appointments	3,091	1	99.97%	$50	2,269	1	99.96%	$50
CG3	Switching on Power	657	0	100.00%	$0	1,059	0	100.00%	$0
CG4	Estimates	409	0	100.00%	$0	263	3	98.86%	$150
CG5	Respond to Billing Inquiries	298	2	99.33%	$100	353	0	100.00%	$0
CG6	Respond to Meter Problems	93	0	100.00%	$0	119	0	100.00%	$0
CG7	Notification of Planned Interruptions	14,992	3	99.98%	$150	8,768	3	99.97%	$150
		103,103	**6**	**99.99%**	**$300**	**120,250**	**7**	**99.99%**	**$350**

(Major Events are excluded from the Customer Guarantees program.)

Overall guarantee performance remains above 99%, demonstrating Pacific Power's continued commitment to customer satisfaction.

Customer Communications: The Customer Guarantee program was highlighted throughout the year in customer communications as follows:

- performance reports are included in June's billing statements
- the program is highlighted in Voices
- the program is highlighted in the Company's newsletter
- each new customer is mailed a welcome aboard pamphlet that features the program and how to file a claim
- Pacific Power's website features the program with information for our customers

3 RELIABILITY PERFORMANCE

During the reporting period, the Company's reliability compared favorably to its baseline performance level as established in 2003. This year's "Major Events Excluded As Reported" SAIDI performance of 106 minutes was much better than the approved SAIDI baseline of 150 minutes, while the year's "Major Events Excluded As Reported" SAIFI performance of 0.794 events was also much better than the approved SAIFI baseline of 0.975 events. Over the past decade the system has consistently performed well during underlying performance periods. Various reliability metrics are shown below providing a historical perspective, including an additional 5-year rolling average metric.

3.1 Multi-Year Historical Performance

	Major Events Included[1]		SAIDI Based Major Events Excluded 2.5 beta		SAIFI Based Major Events Excluded 10% Op Area[2]		SAIDI & SAIFI-Based Major Events Excluded As Reported *(2.5 beta effective 2005)*		Normalized Historic Performance[3]		5 Year Rolling Average Performance	
Year	**SAIDI**	**SAIFI**	**SAIDI**	**SAIFI**	**SAIDI**	**SAIFI**	**SAIDI**	**SAIFI**	**SAIDI**	**SAIFI**	**SAIDI**	**SAIFI**
2003	126	1.062	91	0.933	89	0.539	98	0.954	89	0.539	97	0.761
2004	172	1.024	87	0.712	119	0.726	123	0.851	87	0.712	93	0.736
2005	128	0.851	110	0.810	121	0.761	111	0.812	110	0.761	103	0.808
2006	242	1.259	120	0.980	187	0.891	122	0.985	120	0.891	112	0.879
2007	146	1.169	122	1.116	114	0.853	122	1.115	114	0.853	115	0.943
2008	329	1.756	127	1.323	124	0.881	131	1.331	124	0.881	122	1.019
2009	182	1.128	161	1.042	162	0.857	161	1.044	161	0.857	129	1.057
2010	107	0.862	107	0.862	97	0.601	103	0.688	97	0.601	128	1.033
2011	91	0.587	80	0.549	91	0.587	80	0.550	80	0.549	119	0.946
2012	158	0.986	100	0.664	100	0.664	100	0.664	100	0.664	115	0.855
2013	198	1.048	113	0.791	192	1.017	107	0.760	107	0.791	110	0.741
2014	146	0.862	122	0.793	146	0.862	122	0.793	122	0.793	102	0.691
2015	154	1.176	100	0.845	149	1.075	95	0.744	95	0.845	101	0.702
2016	116	1.204	52	1.073	110	0.916	85	0.643	52	0.916	102	0.721
2017	253	1.228	124	0.876	243	1.113	114	0.760	114	0.876	105	0.740
2018	176	1.129	112	0.998	170	0.841	106	0.710	106	0.841	104	0.730
2019	130	1.034	106	0.933	112	0.780	88	0.679	88	0.780	98	0.707
2020	286	1.240	113	0.942	279	1.092	106	0.794	106	0.942	100	0.717
2021	135	1.068	98	0.861	124	0.817	87	0.611	87	0.817	100	0.711

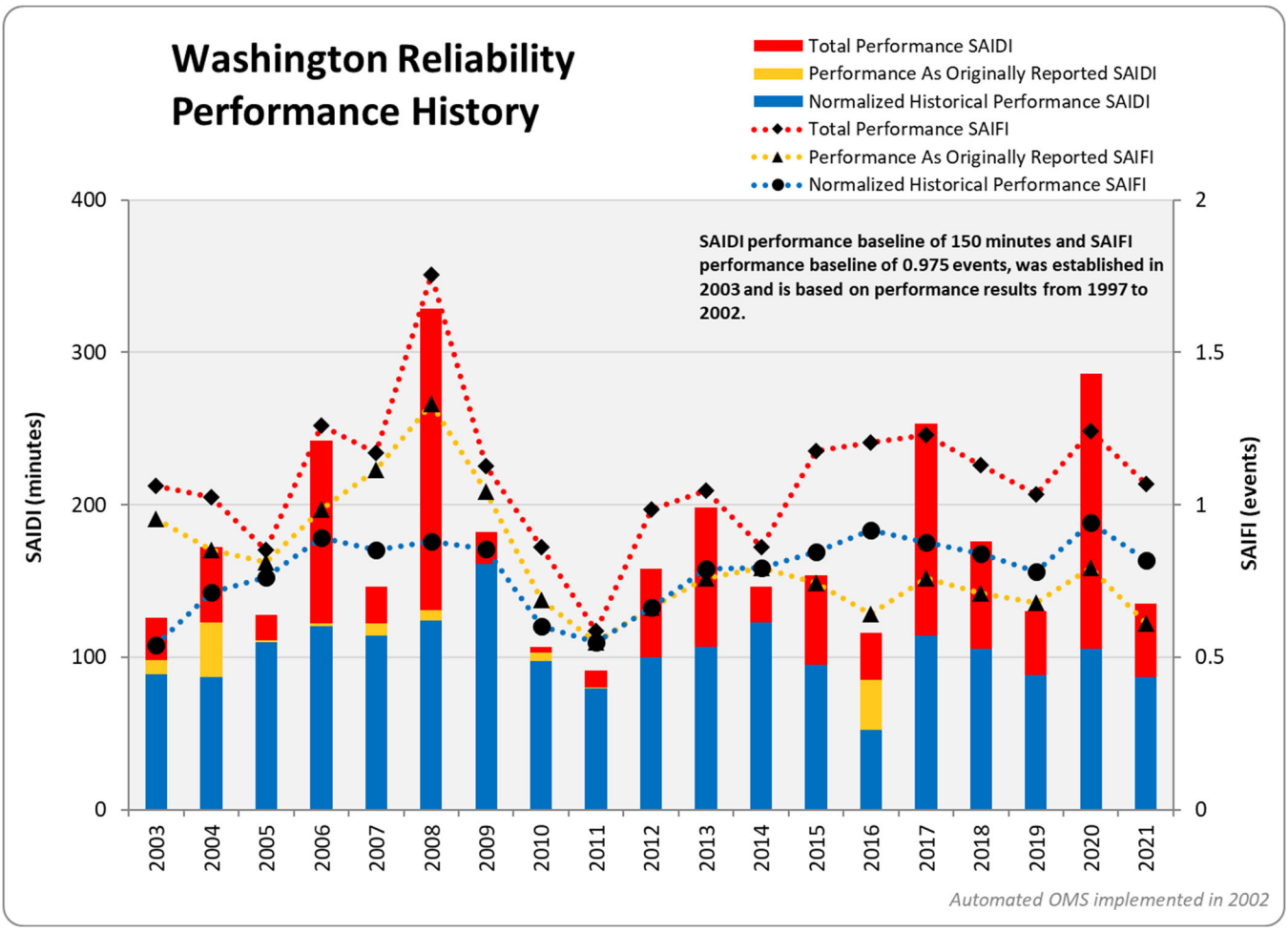
[1]Customer requested and pre-arranged outages are not reported in these metrics

[2]If a 10% op area major event also qualified as a 2 1/2 beta major event it was associated only with the 2 1/2 beta major event.

[3]Normalized performance is the result of applying both SAIDI and SAIFI-based major events to establish underlying performance

[4]Performance baselines were established in June 2003. See page 3 of Reporting Plan.

SAIDI performance baseline of 150 minutes and SAIFI performance baseline of 0.975 events.


Washington Reliability Performance History
Total Performance SAIDI
Performance As Originally Reported SAIDI
Normalized Historical Performance SAIDI
Total Performance SAIFI
Performance As Originally Reported SAIFI
Normalized Historical Performance SAIFI
SAIDI performance baseline of 150 minutes and SAIFI performance baseline of 0.975 events, was established in 2003 and is based on performance results from 1997 to 2002.
SAIDI (minutes)
SAIFI (events)
400
300
200
100
0
2
1.5
1
0.5
0
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
Automated OMS implemented in 2002

3.2 System Average Interruption Duration Index (SAIDI)

In 2021, the Company delivered reliability results much better than baseline for both outage duration (SAIDI) and outage frequency (SAIFI); the performance compared to baselines is identified in Section 3.1 above.

The Company's reporting plan recognizes two types of major events; the first, a SAIDI-based major event[4] is defined using statistical methods as outlined in IEEE 1366-2003/2012 while the second, a SAIFI-based major event is defined in the company's reporting plan. During the year, two SAIDI-based and four SAIFI-based[5] major events were recorded. The events designate 48.31 minutes to be separated from underlying reporting metrics. Copies of the Company's filed major events are included in the Appendix of this report.

2021 Major Events			
Date	**Cause**	**SAIDI**	**SAIFI**
May 9, 2021	Loss of supply	25.86	0.050
* June 19, 2021	Loss of Supply	3.03	0.047
* August 21, 2021	Loss of Transmission line	5.57	0.053
* October 13, 2021	Loss of Supply	1.53	0.076
November 14, 2021	Windstorm	11.52	0.157
* December 31, 2021	Loss of supply	0.80	0.074
	SAIDI Based Major Event Total	37.38	0.207
	*** SAIFI Based Major Event Total**	10.93	0.251
	TOTAL	48.31	0.458

During the period, there were eight significant event days[6] (daily underlying SAIDI of 2.1 minutes or more). These seven days account for 33.5 SAIDI minutes and 0.152 SAIFI events, representing 39% of the underlying SAIDI and 25% of the underlying SAIFI.

SIGNIFICANT EVENT DAYS					
DATE	**PRIMARY CAUSE**	**SAIDI**	**SAIFI**	**% Underlying SAIDI (87 min)**	**% Underlying SAIFI (0.61 events)**
January 13, 2021	Windstorm	4.7	0.032	5%	5%
February 6, 2021	Various wind and tree related outages	6.1	0.021	7%	3%
March 28, 2021	Windstorm	3.7	0.020	4%	3%
March 28, 2021	Windstorm	3.7	0.020	4%	3%
June 13, 2021	Pole Fire	2.7	0.011	3%	2%
June 15, 2021	Lightning	2.3	0.021	3%	3%
October 22, 2021	Pole fires	5.4	0.016	6%	3%
October 24, 2021	Tree and pole fires	5.0	0.011	6%	2%
	TOTAL	**33.5**	**0.152**	**39%**	**25%**

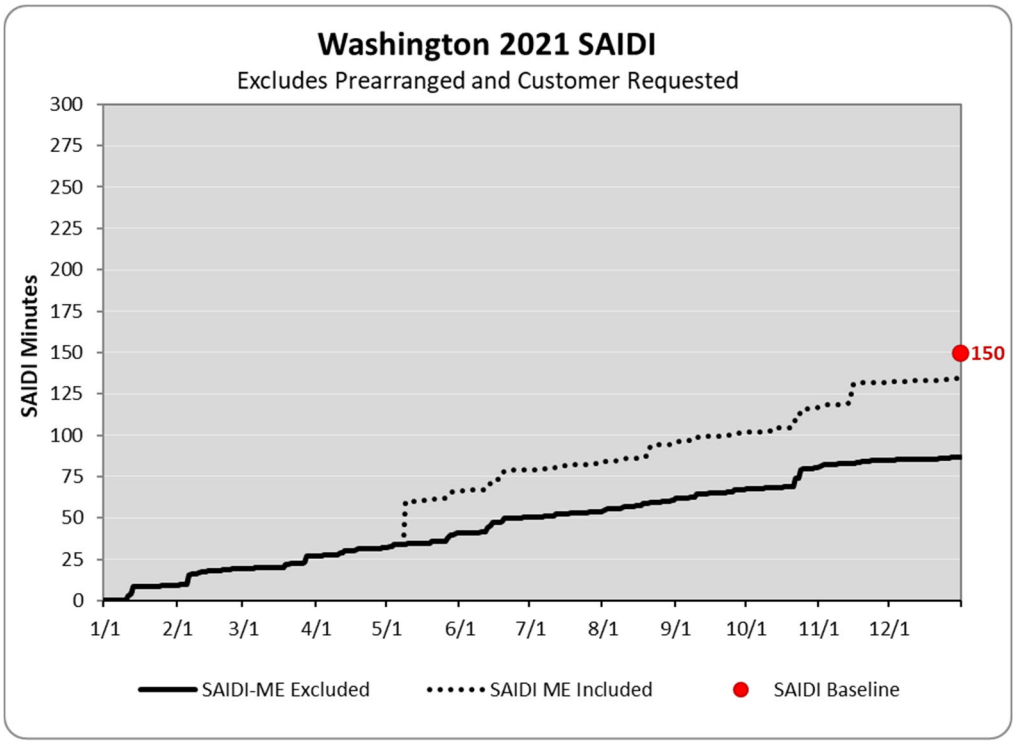
[4] During calendar 2021, the calculated threshold for a major event was 10.84 SAIDI Minutes; for 2022, it will be 10.81 SAIDI minutes.

[5] The SAIFI-based major event combines Sunnyside and Yakima operational areas since the two are operated as one response center. However, district level metrics segment these two operational areas to allow comparison against legacy reports.

[6] The Company established a variable of 1.75 times the standard deviation of its natural log SAIDI results to identify significant event days; generally, they are triggered by weather, however, may also be the result of significant transmission system events.

During 2021, outage duration, or SAIDI, was better than baseline.

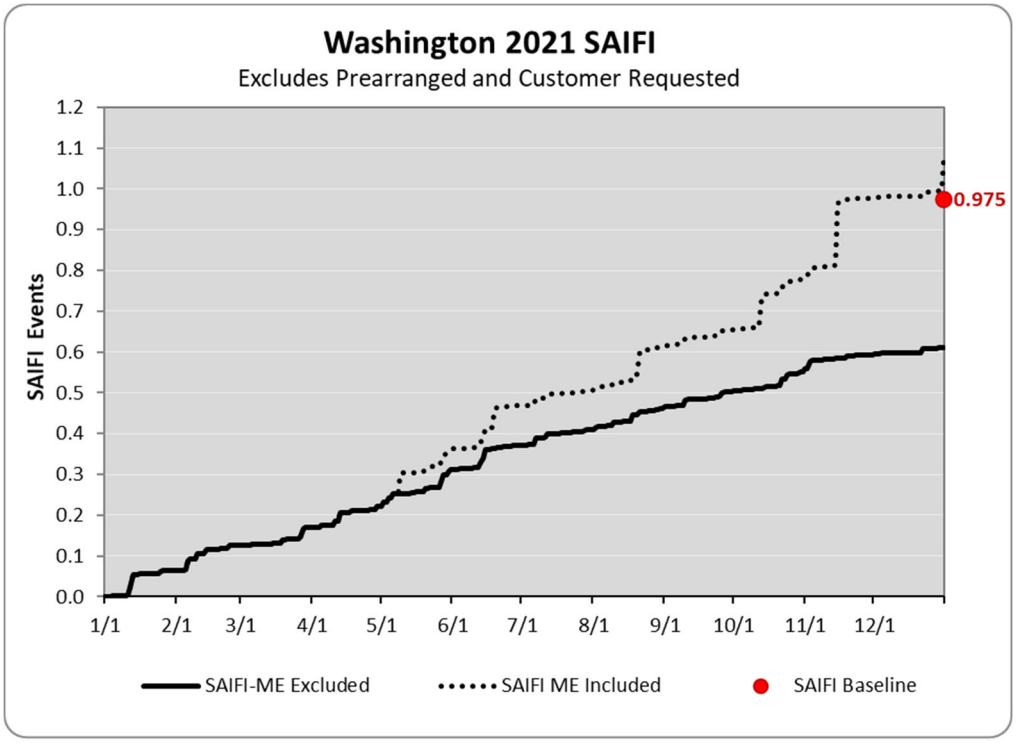
January 1 through December 31, 2021	
2021 SAIDI Internal Goal = 88	**SAIDI Actual**
Total Performance	135.1
SAIDI-based Major Events Excluded	37.4
SAIFI-based Major Events Excluded	10.9
Reported (Major Events Excluded)	**86.8**



3.3 System Average Interruption Frequency Index (SAIFI)

During 2021 outage frequency or SAIFI was better than baseline.

January 1 through December 31, 2021	
2021 SAIFI Internal Goal = 0.760	**SAIFI Actual**
Total Performance	1.068
SAIDI-based Major Events Excluded	0.207
SAIFI-based Major Events Excluded	0.251
Reported (Major Events Excluded)	**0.611**



3.4 Operating Area Metrics

Washington operating area performance metrics for the reporting period are listed in the table below.

January 1 – December 31, 2021	Sunnyside			Walla Walla[7]			Yakima		
	SAIDI	SAIFI	CAIDI	SAIDI	SAIFI	CAIDI	SAIDI	SAIFI	CAIDI
Including Major Events	220	1.669	132	116	1.138	102	113	0.833	136
Total SAIDI-based Major Events	142	0.273	519	6	0.038	155	17	0.244	68
Total SAIFI-based Major Events	29	1.079	27	25	0.239	104	-	-	-
Reported Major Events Excluded	49	0.317	153	85	0.861	99	96	0.590	163

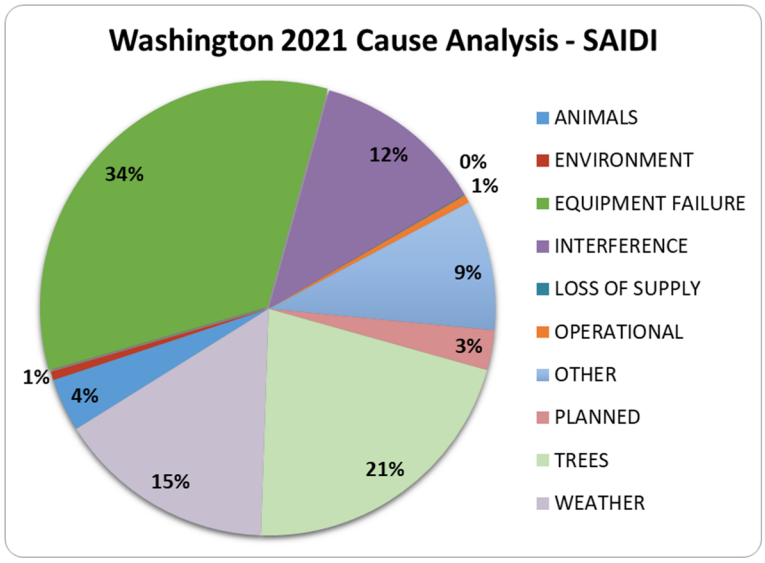
2021 Sunnyside Customer Count:	24,993
2021 Walla Walla Customer Count:	28,298
2021 Yakima Customer Count:	83,549
2021 Washington Customer Count:	136,841

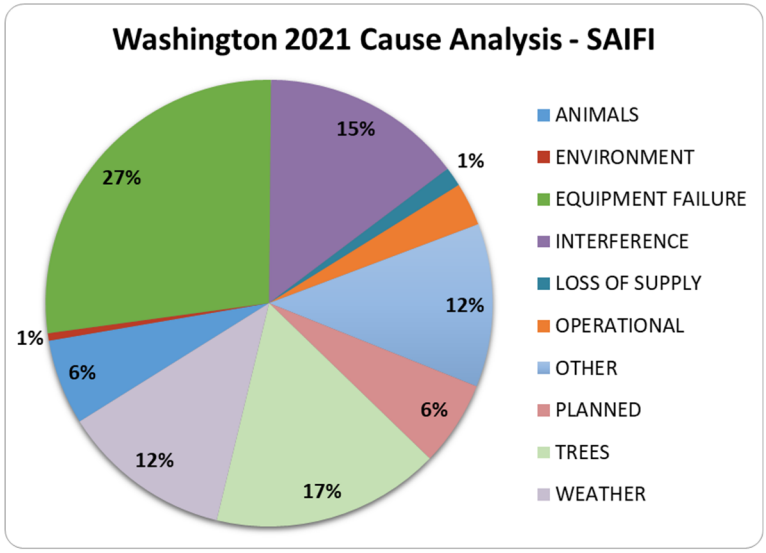
3.5 Cause Code Analysis

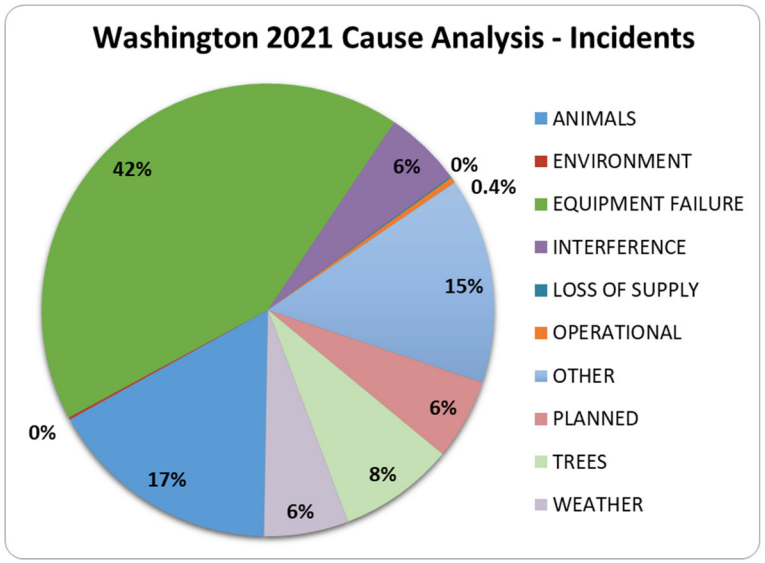
The table and charts below break out the number of outage incidents, customer minutes lost (CML), and sustained interruptions by cause code. CML is directly related to SAIDI (average outage duration); Sustained Interruptions is directly related to SAIFI (average outage frequency). Certain types of outages typically result in high duration, but are infrequent, such as Loss of Supply outages. Others tend to be more frequent but are generally shorter in duration. The pie charts depict the breakdown of performance results by percentage of each cause category. Following the pie charts, a cause category table lists the direct causes with definitions and examples. Thereafter is a historical view of cause codes, as they summarize to annual SAIDI and SAIFI performance.

[7] The district metrics for Walla Walla include a small amount of Oregon customers served from two circuits originating in Washington.

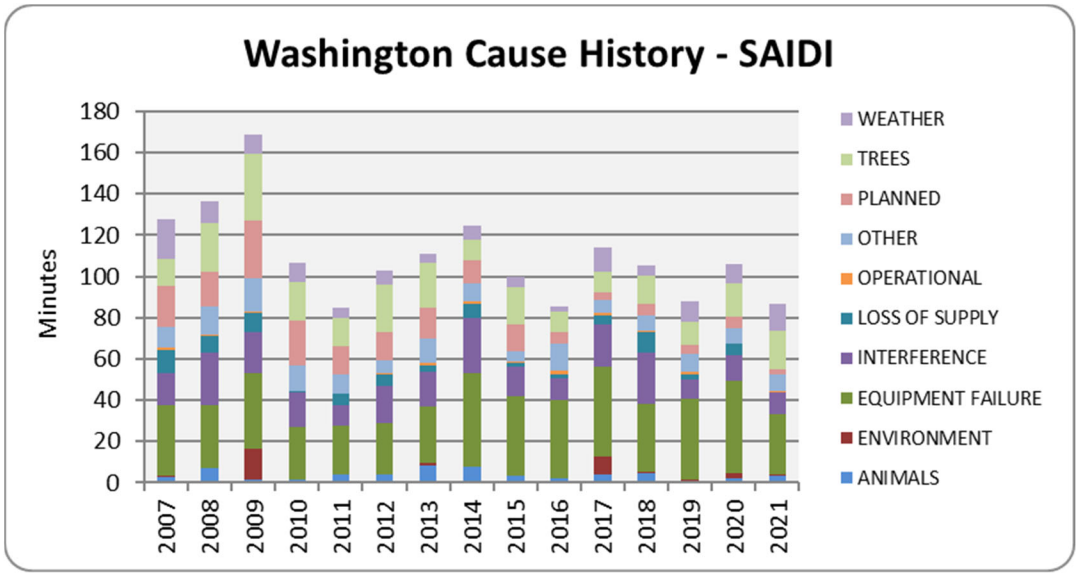
Washington Cause Analysis	Underlying 1/1/2021 - 12/31/2021				
Direct Cause	**Customer Minutes Lost for Incident**	**Customers in Incident Sustained**	**Sustained Incident Count**	**SAIDI**	**SAIFI**
ANIMALS	182,254	2,455	151	1.33	0.018
BIRD MORTALITY (NON-PROTECTED SPECIES)	193,520	1,320	141	1.41	0.010
BIRD MORTALITY (PROTECTED SPECIES) (BMTS)	63,554	1,290	3	0.46	0.009
BIRD NEST (BMTS)	787	8	6	0.01	0.000
BIRD SUSPECTED, NO MORTALITY	11,571	103	14	0.08	0.001
ANIMALS	**451,687**	**5,176**	**315**	**3.30**	**0.038**
FIRE/SMOKE (NOT DUE TO FAULTS)	72,712	452	3	0.53	0.003
ENVIRONMENT	**72,712**	**452**	**3**	**0.53**	**0.003**
B/O EQUIPMENT	681,279	6,022	322	4.98	0.044
DETERIORATION OR ROTTING	1,004,400	4,298	356	7.34	0.031
NEARBY FAULT	8,501	81	3	0.06	0.001
OVERLOAD	70,750	338	26	0.52	0.002
POLE FIRE	2,248,807	12,068	92	16.43	0.088
EQUIPMENT FAILURE	**4,013,737**	**22,807**	**799**	**29.33**	**0.167**
DIG-IN (NON-PACIFICORP PERSONNEL)	2,310	9	6	0.02	0.000
OTHER INTERFERING OBJECT	179,080	2,355	18	1.31	0.017
OTHER UTILITY/CONTRACTOR	69,251	236	14	0.51	0.002
VANDALISM OR THEFT	58,008	250	9	0.42	0.002
VEHICLE ACCIDENT	1,149,877	9,343	57	8.40	0.068
INTERFERENCE	**1,458,525**	**12,193**	**104**	**10.66**	**0.089**
LOSS OF TRANSMISSION LINE	7,891	1,172	2	0.06	0.009
LOSS OF SUPPLY	**7,891**	**1,172**	**2**	**0.06**	**0.009**
FAULTY INSTALL	240	2	2	0.00	0.000
INCORRECT RECORDS	360	2	2	0.00	0.000
INTERNAL CONTRACTOR	51	2	2	0.00	0.000
PACIFICORP EMPLOYEE - FIELD	67,285	2,605	2	0.49	0.019
OPERATIONAL	**67,936**	**2,611**	**8**	**0.50**	**0.019**
OTHER, KNOWN CAUSE	188,734	1,857	86	1.38	0.014
UNKNOWN	914,652	8,024	192	6.68	0.059
OTHER	**1,103,386**	**9,881**	**278**	**8.06**	**0.072**
CONSTRUCTION	12,796	86	12	0.09	0.001
CUSTOMER NOTICE GIVEN	2,534,404	14,992	740	18.52	0.110
CUSTOMER REQUESTED	71,942	175	3	0.53	0.001
EMERGENCY DAMAGE REPAIR	242,822	3,604	72	1.77	0.026
INTENTIONAL TO CLEAR TROUBLE	82,415	1,458	25	0.60	0.011
PLANNED NOTICE EXEMPT	12,549	99	4	0.09	0.001
PLANNED	**2,956,927**	**20,414**	**856**	**21.61**	**0.149**
TREE - NON-PREVENTABLE	1,758,421	11,606	130	12.85	0.085
TREE - TRIMMABLE	759,489	2,217	26	5.55	0.016
TREES	**2,517,910**	**13,823**	**156**	**18.40**	**0.101**
FREEZING FOG & FROST	11,318	61	1	0.08	0.000
LIGHTNING	137,410	1,946	8	1.00	0.014
SNOW, SLEET AND BLIZZARD	13,014	56	15	0.10	0.000
WIND	1,687,746	8,245	90	12.33	0.060
WEATHER	**1,849,488**	**10,308**	**114**	**13.52**	**0.075**
Washington Including Prearranged	**14,497,633**	**98,837**	**2,635**	**105.96**	**0.722**
Washington Prearranged	**2,618,895**	**15,266**	**747**	**19.14**	**0.112**
Washington Underlying Results	**11,881,306**	**83,571**	**1,888**	**86.83**	**0.611**

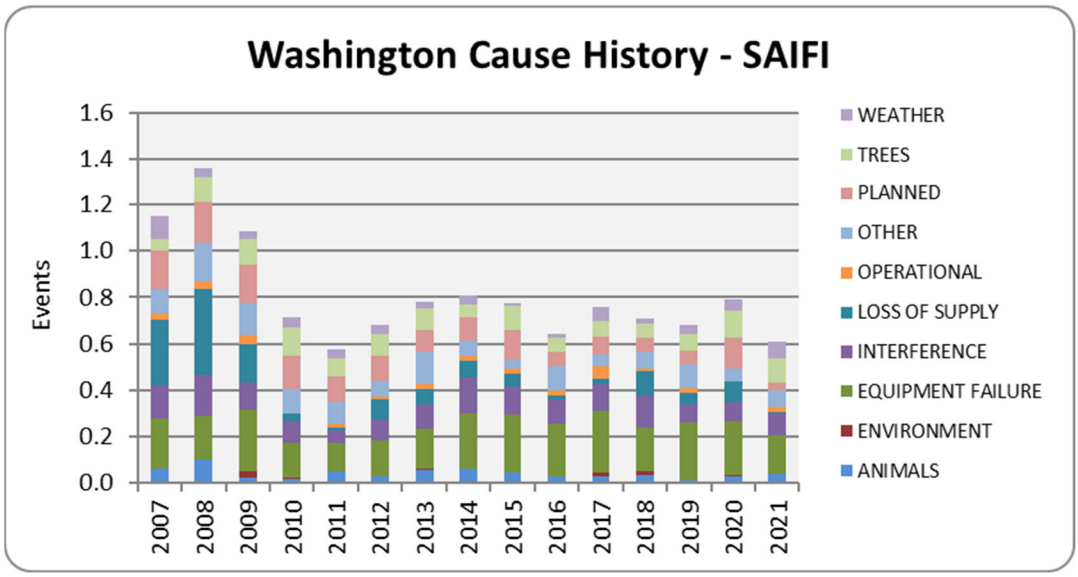

Washington 2021 Cause Analysis - SAIDI
34%
12%
0%
1%
9%
3%
1%
4%
15%
21%
ANIMALS
ENVIRONMENT
EQUIPMENT FAILURE
INTERFERENCE
LOSS OF SUPPLY
OPERATIONAL
OTHER
PLANNED
TREES
WEATHER


Washington 2021 Cause Analysis - SAIFI
15%
1%
27%
12%
1%
6%
6%
12%
17%
ANIMALS
ENVIRONMENT
EQUIPMENT FAILURE
INTERFERENCE
LOSS OF SUPPLY
OPERATIONAL
OTHER
PLANNED
TREES
WEATHER


Washington 2021 Cause Analysis - Incidents
42%
6%
0%
0.4%
15%
6%
0%
17%
6%
8%
ANIMALS
ENVIRONMENT
EQUIPMENT FAILURE
INTERFERENCE
LOSS OF SUPPLY
OPERATIONAL
OTHER
PLANNED
TREES
WEATHER

Direct Cause Category	Category Definition & Example/Direct Cause	
Animals	Any problem nest that requires removal, relocation, trimming, etc.; any birds, squirrels or other animals, whether or not remains found.	
	• Animal (Animals) • Bird Mortality (Non-protected species) • Bird Mortality (Protected species)(BMTS)	• Bird Nest • Bird or Nest • Bird Suspected, No Mortality
Environment	Contamination or Airborne Deposit (i.e. salt, trona ash, other chemical dust, sawdust, etc.); corrosive environment; flooding due to rivers, broken water main, etc.; fire/smoke related to forest, brush or building fires (not including fires due to faults or lightning).	
	• Condensation/Moisture • Contamination • Fire/Smoke (not due to faults) • Flooding	• Major Storm or Disaster • Nearby Fault • Pole Fire
Equipment Failure	Structural deterioration due to age (incl. pole rot); electrical load above limits; failure for no apparent reason; conditions resulting in a pole/cross arm fire due to reduced insulation qualities; equipment affected by fault on nearby equipment (e.g., broken conductor hits another line).	
	• B/O Equipment • Overload	• Deterioration or Rotting • Substation, Relays
Interference	Willful damage, interference or theft; such as gun shots, rock throwing, etc.; customer, contractor or other utility dig-in; contact by outside utility, contractor or other third-party individual; vehicle accident, including car, truck, tractor, aircraft, manned balloon; other interfering object such as straw, shoes, string, balloon.	
	• Dig-in (Non-PacifiCorp Personnel) • Other Interfering Object • Vandalism or Theft	• Other Utility/Contractor • Vehicle Accident
Loss of Supply	Failure of supply from Generator or Transmission system; failure of distribution substation equipment.	
	• Failure on other line or station • Loss of Feed from Supplier • Loss of Generator	• Loss of Substation • Loss of Transmission Line • System Protection
Operational	Accidental Contact by PacifiCorp or PacifiCorp's Contractors (including live-line work); switching error; testing or commissioning error; relay setting error, including wrong fuse size, equipment by-passed; incorrect circuit records or identification; faulty installation or construction; operational or safety restriction.	
	• Contact by PacifiCorp • Faulty Install • Improper Protective Coordination • Incorrect Records • Internal Contractor	• Internal Tree Contractor • Switching Error • Testing/Startup Error • Unsafe Situation
Other	Cause Unknown; use comments field if there are some possible reasons.	
	• Invalid Code • Other, Known Cause	• Unknown
Planned	Transmission requested, affects distribution sub and distribution circuits; Company outage taken to make repairs after storm damage, car hit pole, etc.; construction work, regardless if notice is given; rolling blackouts.	
	• Construction • Customer Notice Given • Energy Emergency Interruption • Intentional to Clear Trouble	• Emergency Damage Repair • Customer Requested • Planned Notice Exempt • Transmission Requested
Tree	Growing or falling trees	
	• Tree-Non-preventable • Tree-Trimmable	• Tree-Tree felled by Logger
Weather	Wind (excluding windborne material); snow, sleet or blizzard, ice, freezing fog, frost, lightning.	
	• Extreme Cold/Heat • Freezing Fog & Frost • Wind	• Lightning • Rain • Snow, Sleet, Ice and Blizzard


Washington Cause History - SAIDI
Minutes
180
160
140
120
100
80
60
40
20
0
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
WEATHER
TREES
PLANNED
OTHER
OPERATIONAL
LOSS OF SUPPLY
INTERFERENCE
EQUIPMENT FAILURE
ENVIRONMENT
ANIMALS


Washington Cause History - SAIFI
Events
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
WEATHER
TREES
PLANNED
OTHER
OPERATIONAL
LOSS OF SUPPLY
INTERFERENCE
EQUIPMENT FAILURE
ENVIRONMENT
ANIMALS

3.6 Areas of Greatest Concern

As in past reports, the Company has continued to focus on improved system hardening and protection. Through targeted reliability projects protective coordination has been improved by replacing hydraulic reclosers, installing new line reclosers, enhancing the existence of fuses that are able to reduce line and the amount of customers exposed to those fault events and replacing substation relays. This new equipment has allowed for smaller and more coordinated protective operations to clear fault events. Additionally, the Company has continued reliability-centered hardening activities on circuits whose equipment may be performing in a way indicating a lack of resilience to fault events. Using the Company's proprietary analytical tools, portions of circuits are identified that warrant additional hardening activity, often comprised of crossarm or cut-out replacement. Along with circuit hardening and protection efforts, the Company reviews to obtain better segmentation of circuits, as well as increasing feeder ties and replacing damaged cable. As the Company has reported in the past, it continues to look for strategies to improve its service delivery to its customers. In 2021 this included expansion of work done under its pole fire mitigation program in addition to energy equity data supporting selection of targeted reliability. The pole fire mitigation includes targeted inspection of specific assets with replacement or repair for families that have been more problematics. Energy equity data, including that associated with the state's Clean Energy Implementation Plan, were incorporated into selection of improvement projects.

The table below lists reliability projects identified and currently underway for Washington's Areas of Greatest Concern; these circuits will be subsequently reported as Program Year 2023 circuits in Section 3.7.

Substation	Circuit Name	Circuit	2022 Assessment	Baseline CPI99
TOPPENISH	FRALEY	5Y246	Identified as Highly Impacted Community (HIC) circuit, having recent decline in performance; work planned for 2023 and beyond.	33
TOPPENISH	JEFFERSON	5Y352	Identified as HIC circuit, having recent decline in performance; as part of 2022 Circuit Hardening adding fusing to unfused taps and general hardening of zone one.	97
DODD RD	WINDWARD	4W22	As part of the 2022 FIOLI adding fusing to unfused taps, installation of fuse savers, and relocation of a recloser.	79
HOPLAND	EAST VALLEY	5Y441	Identified as HIC circuit, having recent decline in performance; as part of the 2022 Circuit Hardening adding fusing to unfused taps, installation of fault indication devices, and shortening span lengths.	109
TIETON	NILE	4Y1	As part of Wildfire Mitigation, reconductoring a significant portion of the NW section of the circuit with covered conductor including planning of re-routing along state highway Right of Way (ROW).	385

3.7 Reduce CPI for Worst Performing Circuits by 20%

On a routine basis, the company reviews circuits for performance. One of the measures that it uses is called circuit performance indicator (CPI), which is a blended weighting of key reliability metrics covering a three-year time frame. The higher the number, the poorer the blended performance the circuit is delivering. As part of the company's Performance Standards Program, it annually selects a set of Worst Performing Circuits for target improvement. The improvements are to be completed within two years of selection. Within five years of selection, the average performance is to be improved by at least 20% (as measured by comparing current performance against baseline performance). Program years 1-15 have previously met improvement targets so are no longer shown in the performance update below.

WASHINGTON WORST PERFORMING CIRCUITS	BASELINE	Performance 12/31/2021
PROGRAM YEAR 2022		
Freeway 5Y56	22	31
Mall 5Y466	31	30
Sheller 5Y314	43	29
Touchet 5W124	73	51
Twelfth Ave. 5Y197	13	32
TARGET SCORE = 29	36	35
PROGRAM YEAR 2021		
Donald 5Y330	117	91
Nikola 5Y435	65	47
Pippin 5Y860	78	64
Stone Creek 5W19	63	39
Waneta 5Y316	67	56
TARGET SCORE = 63	78	59
PROGRAM YEAR 2020		
Bonneview 5Y302	44	19
Cannery 5W323	50	53
Gibson Rd 5Y601	126	18
Peach 5Y498	34	23
Satus 5Y205	80	113
GOAL MET! TARGET SCORE = 53	**69**	45
PROGRAM YEAR 2019		
GRANGER 5Y357	114	51
HAY 5Y131	191	88
MABTON EXPR 5Y174	113	22
WESLEY 5Y218	135	91
ZILLAH 5Y245	280	15
GOAL MET! TARGET SCORE = 133	**167**	54
PROGRAM YEAR 2018		
Dazet 5Y434	30	13
Green Park 5W116	53	69
Harrah 5Y202	113	81
Orion 5Y577	89	23
Reser Road 5W16	50	47
GOAL MET! TARGET SCORE = 57	**67**	47

WASHINGTON WORST PERFORMING CIRCUITS	BASELINE	Performance 12/31/2021
PROGRAM YEAR 2017		
GURLEY 5Y358 (circuit split into 5Y850 and 5Y854)	119	23, 37
BOYER 5W118	48	58
FERNDALE 5W106	88	55
NILE 4Y1	301	385
4TH St. 5Y468	91	25
GOAL MET! TARGET SCORE = 104	**129**	**97**
PROGRAM YEAR 2016		
DRAPER 5Y156	162	46
PINE STREET (BOWMAN) 5W150	26	50
RUSSEL CREEK 5W121	23	22
TAUMARSON FEEDER 5W50	29	23
VAN BELLE 5Y312	149	32
GOAL MET! TARGET SCORE = 62	**78**	**35**

3.8 Restore Service to 80% of Customers within 3 Hours

The Company targets restoring power to 80% of its customers within 3 hours.

WASHINGTON RESTORATIONS WITHIN 3 HOURS					
January – December 2021 = 83**%**					
January	February	March	April	May	June
79%	82%	57%	92%	92%	82%
July	August	September	October	November	December
80%	80%	92%	83%	87%	92%

3.9 Telephone Service and Response to Commission Complaints

COMMITMENT	GOAL	PERFORMANCE
PS5-Answer calls within 30 seconds	80%	82%
PS6a) Respond to commission complaints within 3 days[8]	95%	100%
PS6b) Respond to commission complaints regarding service disconnects within 4 hours	95%	100%
PS6c) Resolve commission complaints within 30 days	95%	100%

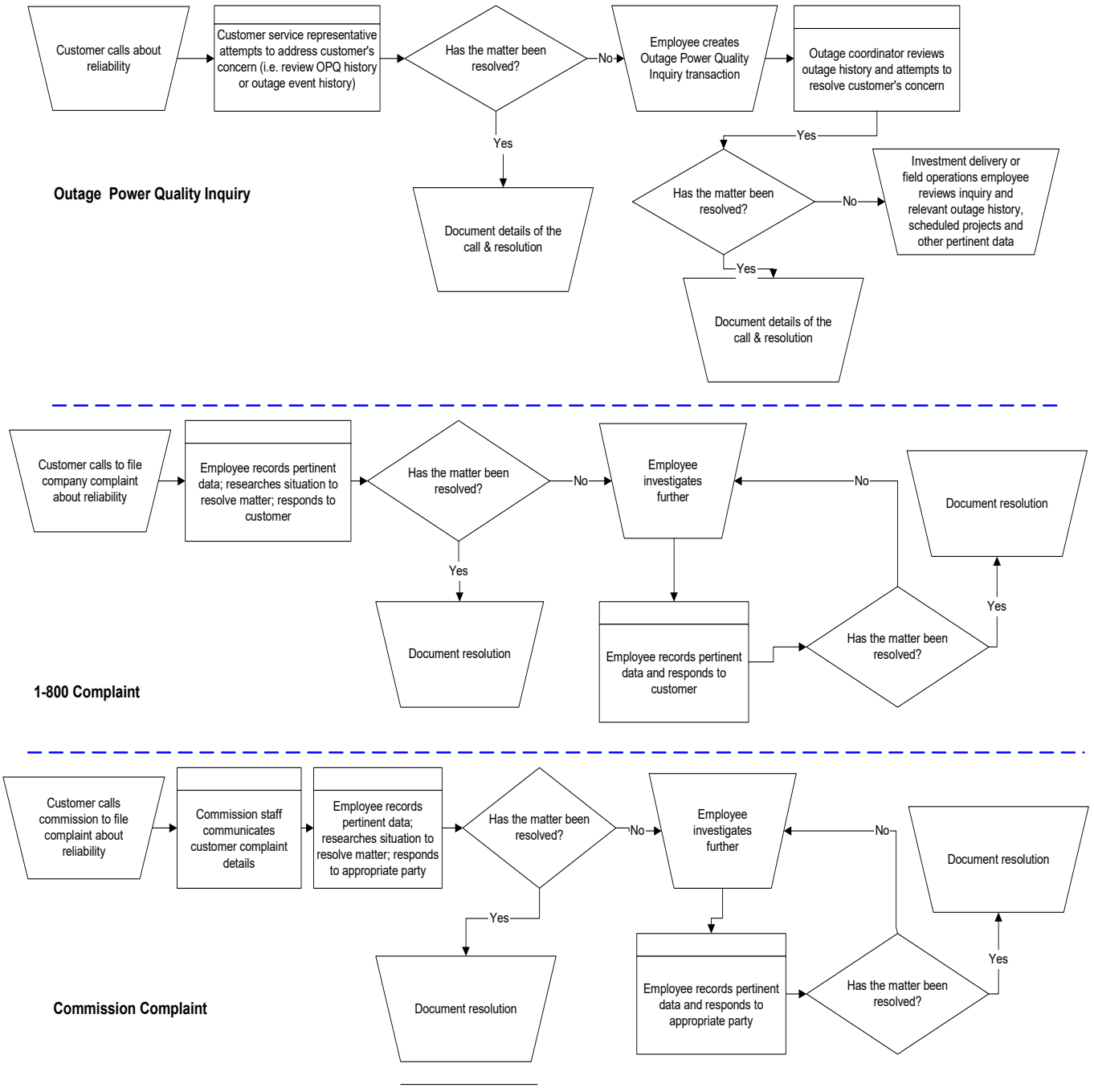
[8] Although the Performance Standard indicates that complaints will be responded to within 3 days, the Company acknowledges and adheres to the requirements set forth in WAC 480-100-173(3)(a).

4 CUSTOMER RELIABILITY COMMUNICATIONS

4.1 Reliability Complaint Process Overview

The Company's process for managing customers' concerns about reliability are to provide opportunities to hear customer concerns, respond to those concerns, and where necessary, provide customers an opportunity to elevate those concerns.

Customer Reliability Communications



4.2 Customer Complaint Tracking

Listed below are the various avenues available to a customer to resolve concerns about reliability performance.

- **Customer Reliability Inquiry**
  The company records customer inquiries about reliability as Outage Power Quality transactions in its customer service system, referred to as "OPQ" transactions.

- **Customer Complaint**
  If a customer's reliability concerns are not met through the process associated with the OPQ transaction, a customer can register a 1-800 complaint with the company which is addressed by the customer advocacy team. This is recorded in a complaint repository from which regular reports are prepared and circulated for resolution.

- **Commission Complaint**
  If a customer's reliability concerns are not met through the process associated with a 1-800 complaint, a customer can register a complaint with the Commission. This is recorded by the Commission staff and also by the company in a complaint repository. Regular reports are prepared and circulated for resolution of these items.

4.3 Customer Complaints Recorded During the Period

Listed below, by the recording source, are reliability-related customer complaints received during the reporting period. If the reliability concern is related to a major event such information is included in the summary.

- **1-800 (Internally Elevated) Complaints**
  There was one Informal Complaints received by the company in the reporting period.

Received	Complaint Type	Site Address	Site ID	Sub-Complaint type	Summary
10/20/2021	Reliability and Restoration	5501 W Arlington St, Yakima	46988965	Outage Information	The customer is concerned with outages in her area and wants the underground lines replaced.

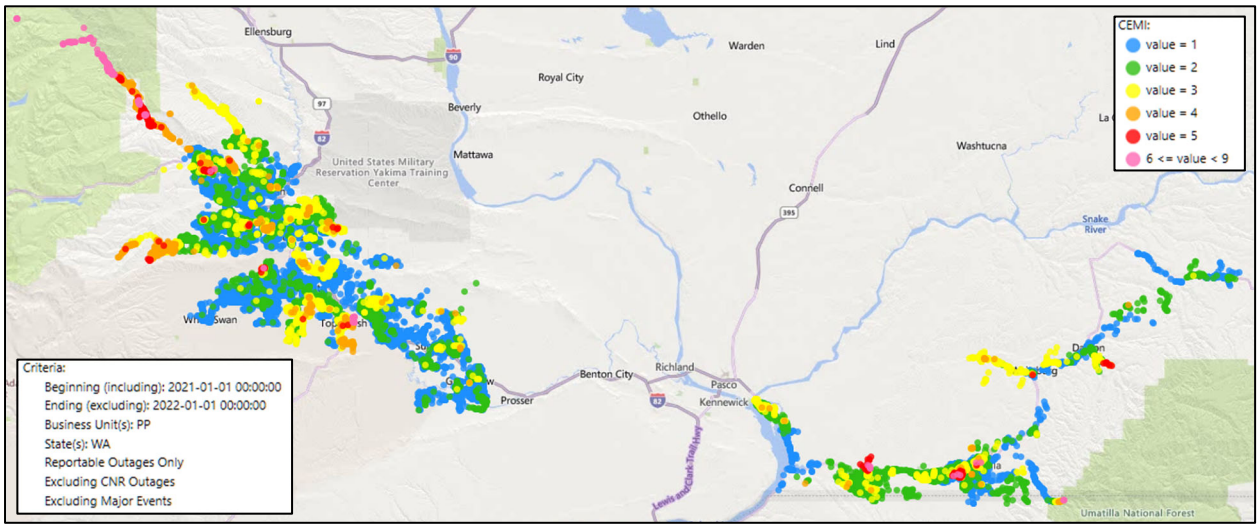
- **Commission Complaints**

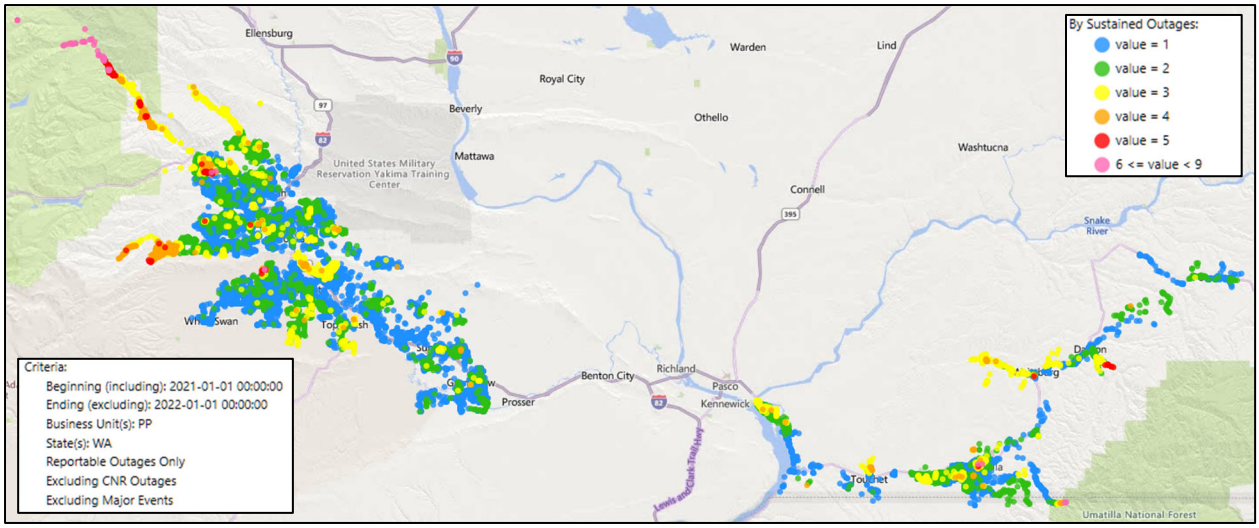
  There were no reliability or restoration Commission Complaints in 2021.

5 WASHINGTON RELIABILITY RESULTS DURING 2021

To geospatially display reliability results the Company has developed its GREATER tool which blends circuit topology with outage history and uses a variety of industry metrics (differentiated by color) to indicate areas where reliability analysis should be targeted. In the subsequent plots, two important reliability indicators are depicted. In each plot thumbnails are used to orient the graphic. First, plots with customers experiencing multiple interruptions (CEMI) are shown. This measure shows how many sustained and momentary outages a given service transformer has experienced. The greater the color intensity, with red as the most severe, the more interruptions the transformer has had. Note that this depiction exceeds the requirements of the reporting rule but is helpful to the Company in selecting areas of reliability concern. Second sustained interruptions are shown. This measure shows how many sustained outages a service transformer has experienced, which is aligned with the requirements of the reporting rules. Third, service transformer-level SAIDI is shown. While technically SAIDI is a "system-level" metric, the local application of this metric can be revealing in determining service transformers that have had long cumulative durations of outages during the period. As explained previously, the greater the color intensity, the longer the outage duration during the period. (Major events, customer requested and prearranged outages are excluded from underlying results.)

5.1 State Reliability

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value = 3
value = 4
value = 5
6 <= value < 9
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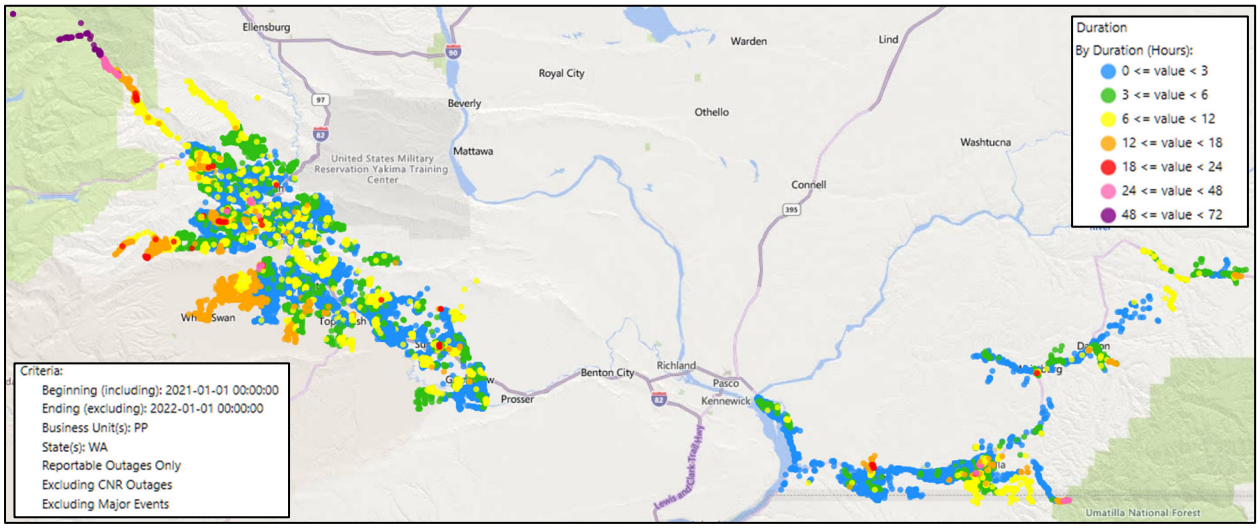
Ending (excluding): 2022-01-01 00:00:00
Business Unit(s): PP
State(s): WA
Reportable Outages Only
Excluding CNR Outages
Excluding Major Events
Ellensburg
Warden
Lind
Royal City
Beverly
Othello
Mattawa
Washtucna
United States Military Reservation Yakima Training Center
Connell
Snake River
Benton City
Richland
Pasco
Kennewick
Prosser
Umatilla National Forest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12 <= value < 18
18 <= value < 24
24 <= value < 48
48 <= value < 72
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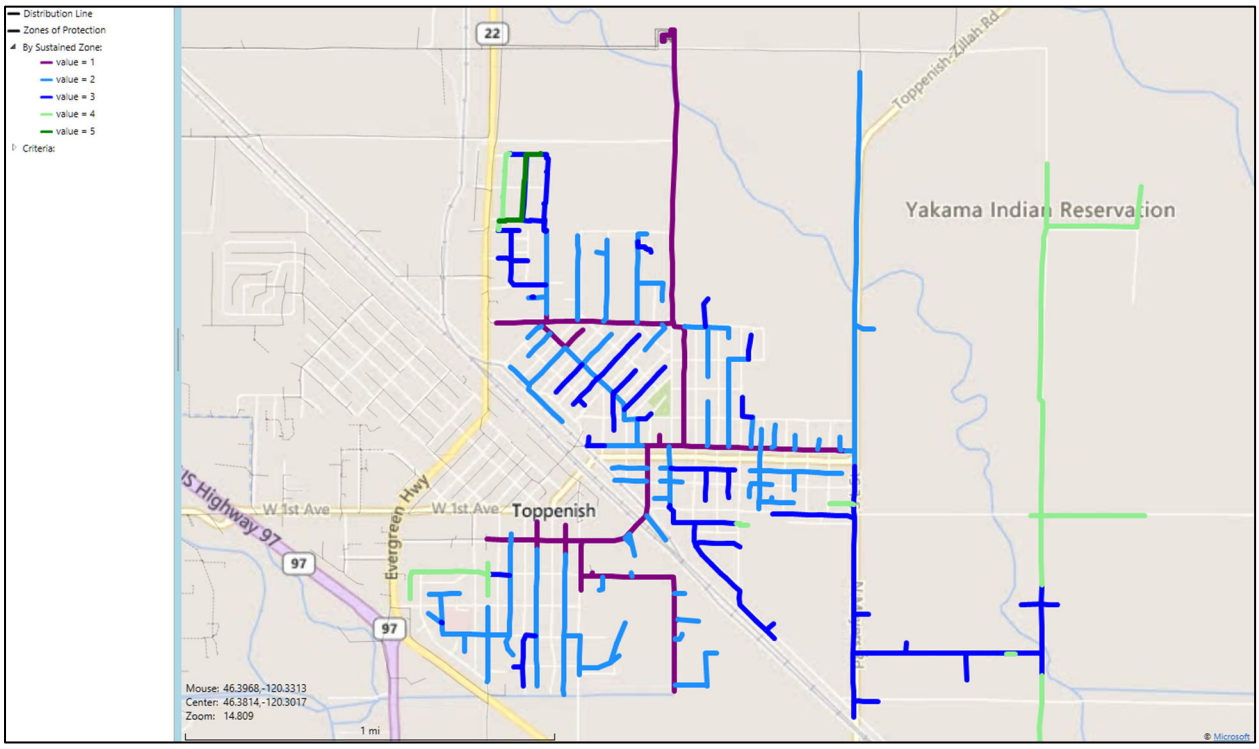
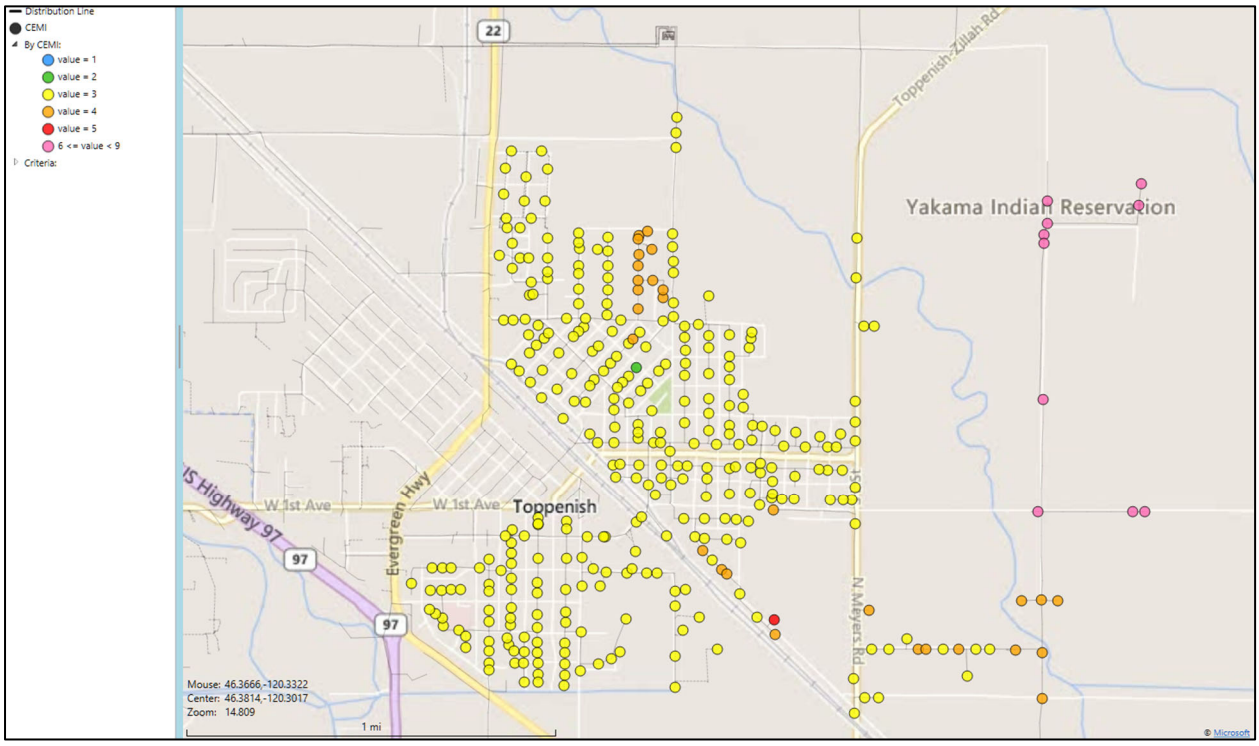
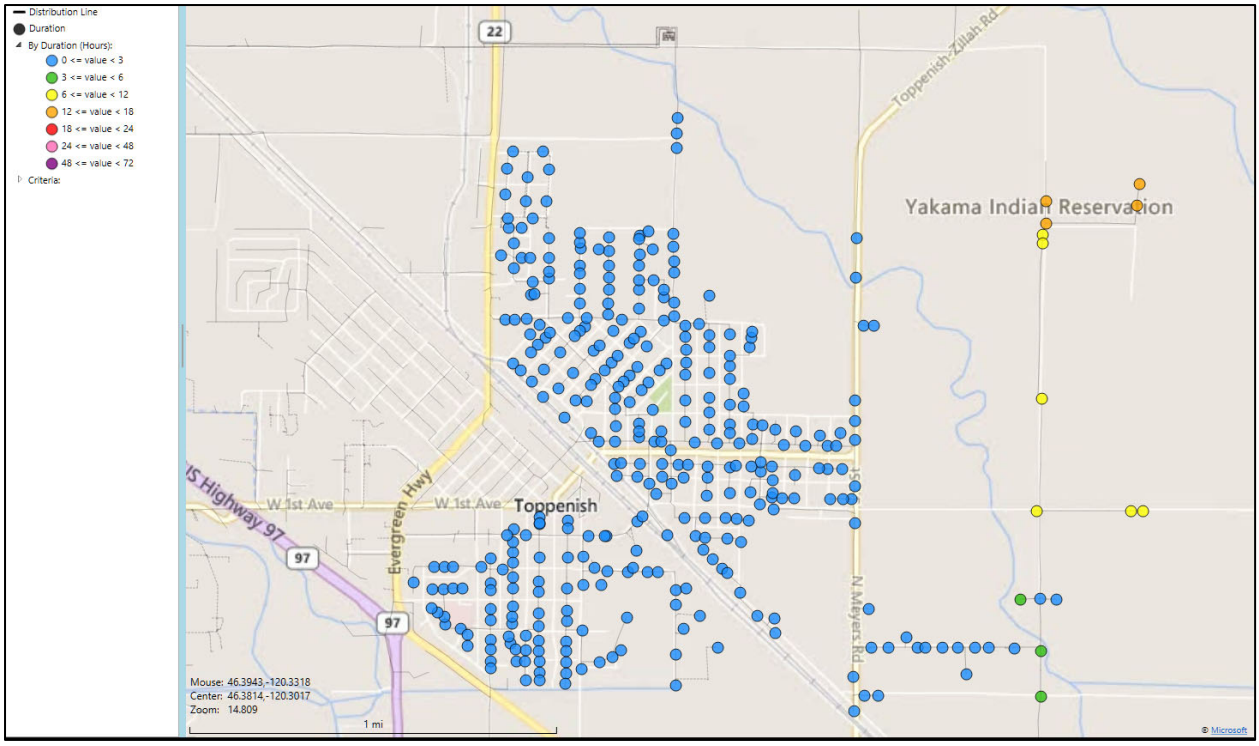
Ending (excluding): 2022-01-01 00:00:00
Business Unit(s): PP
State(s): WA
Reportable Outages Only
Excluding CNR Outages
Excluding Major Events
Ellensburg
Warden
Lind
Royal City
Beverly
Othello
Mattawa
Washtucna
United States Military Reservation Yakima Training Center
Connell
Benton City
Richland
Pasco
Kennewick
Prosser
Umatilla National Forest

5.2 5Y246: Fraley



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Duration
By Duration (Hours):
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6 <= value < 12
12 <= value < 18
18 <= value < 24
24 <= value < 48
48 <= value < 72
Criteria:
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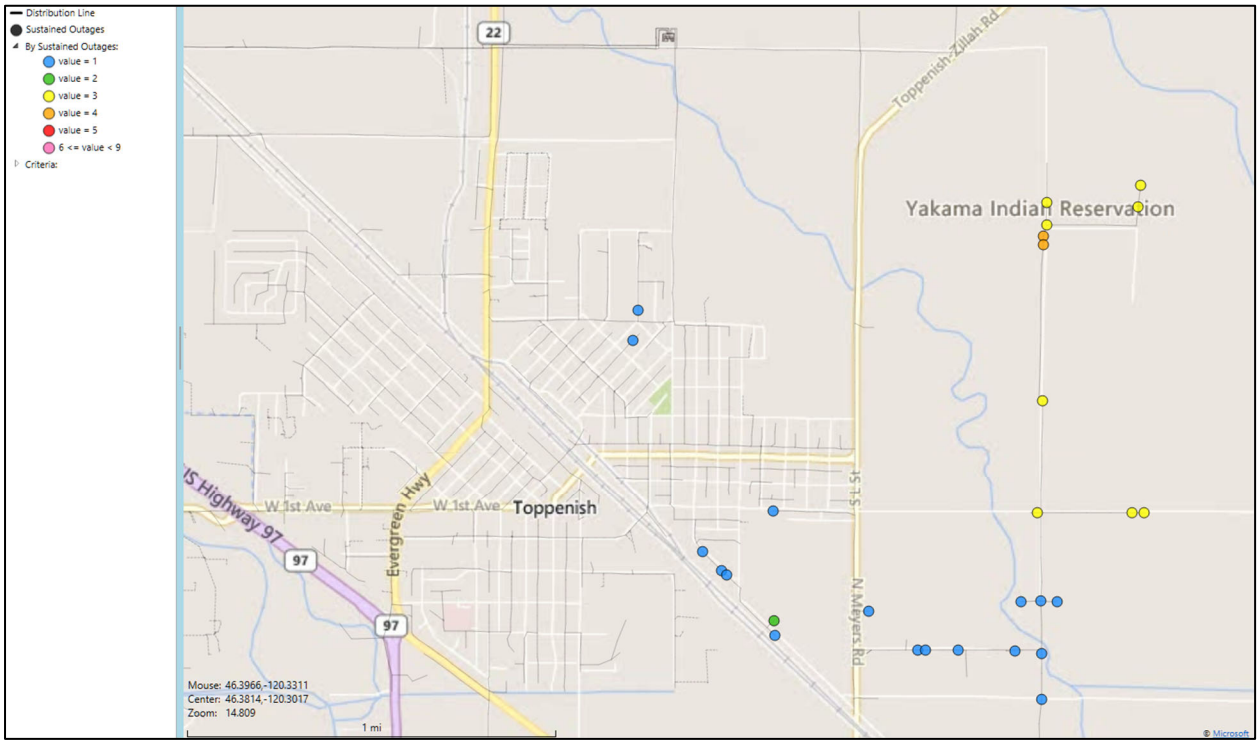
Toppenish-Zillah Rd
Yakama Indian Reservation
W 1st Ave
Toppenish
Evergreen Hwy
97
N Meyers Rd
Mouse: 46.3943,-120.3318
Center: 46.3814,-120.3017
Zoom: 14.809
1 mi
© Microsoft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value = 5
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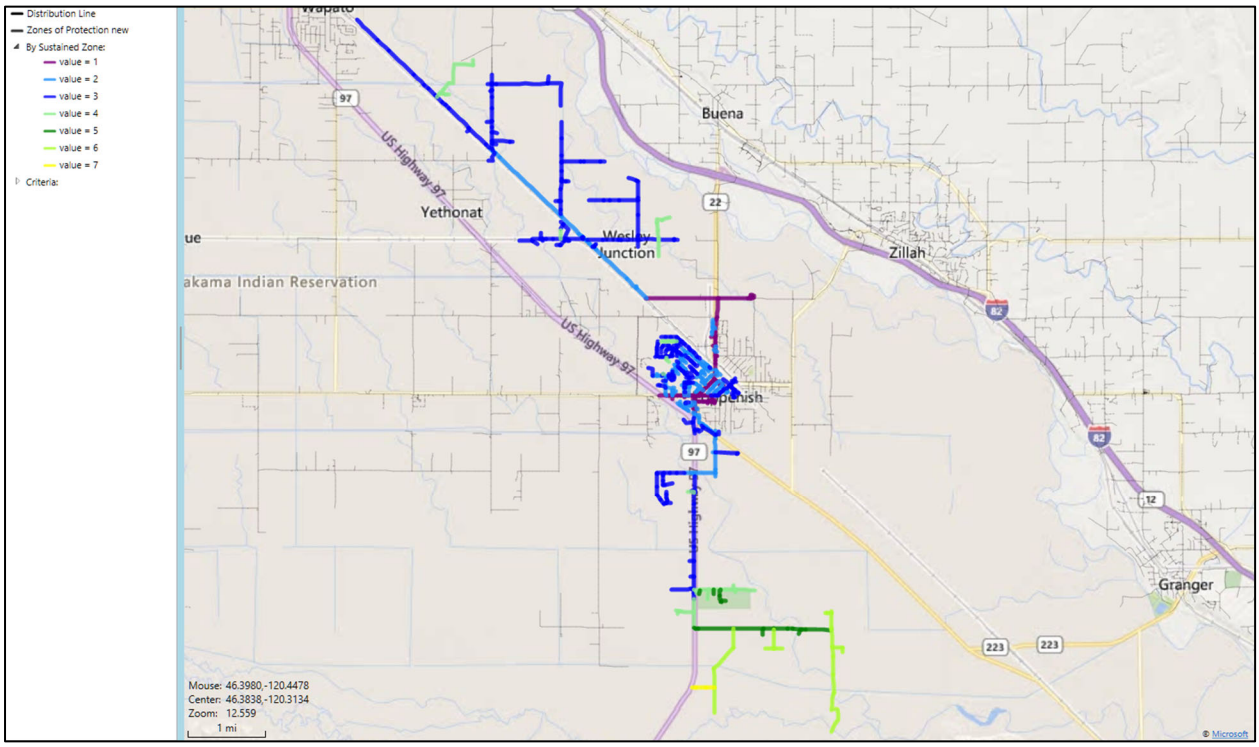
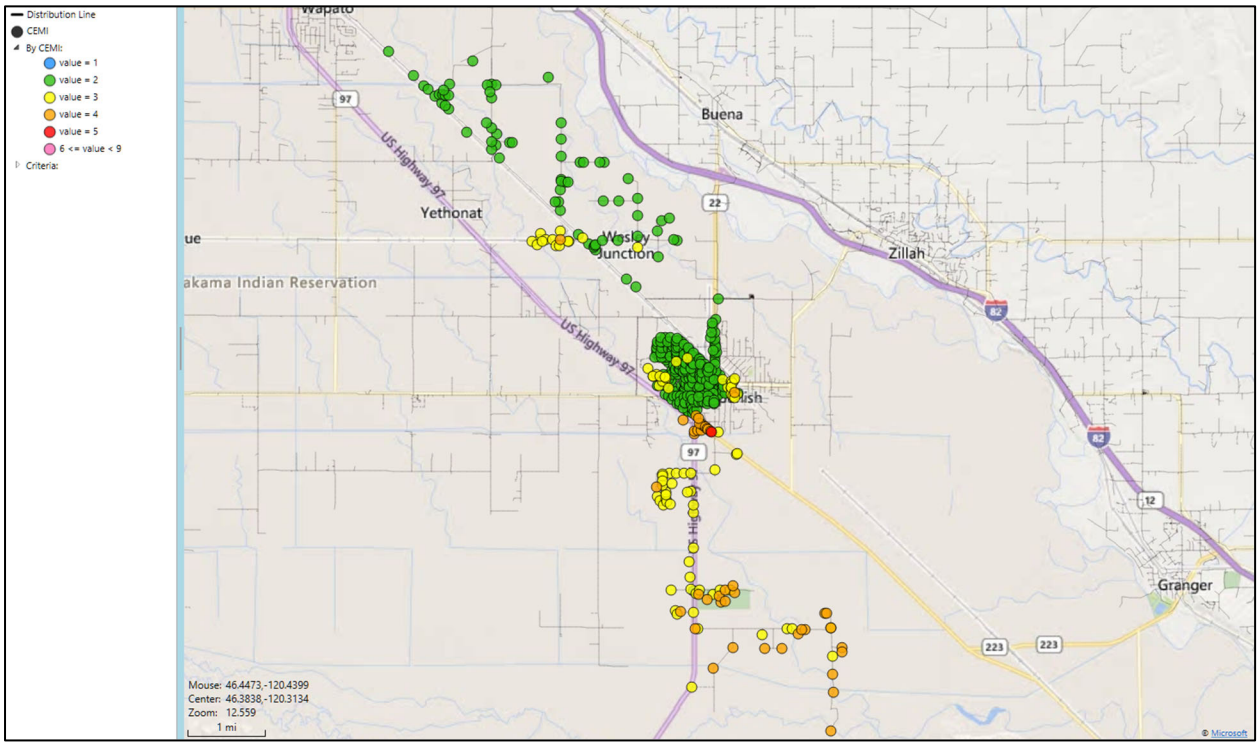
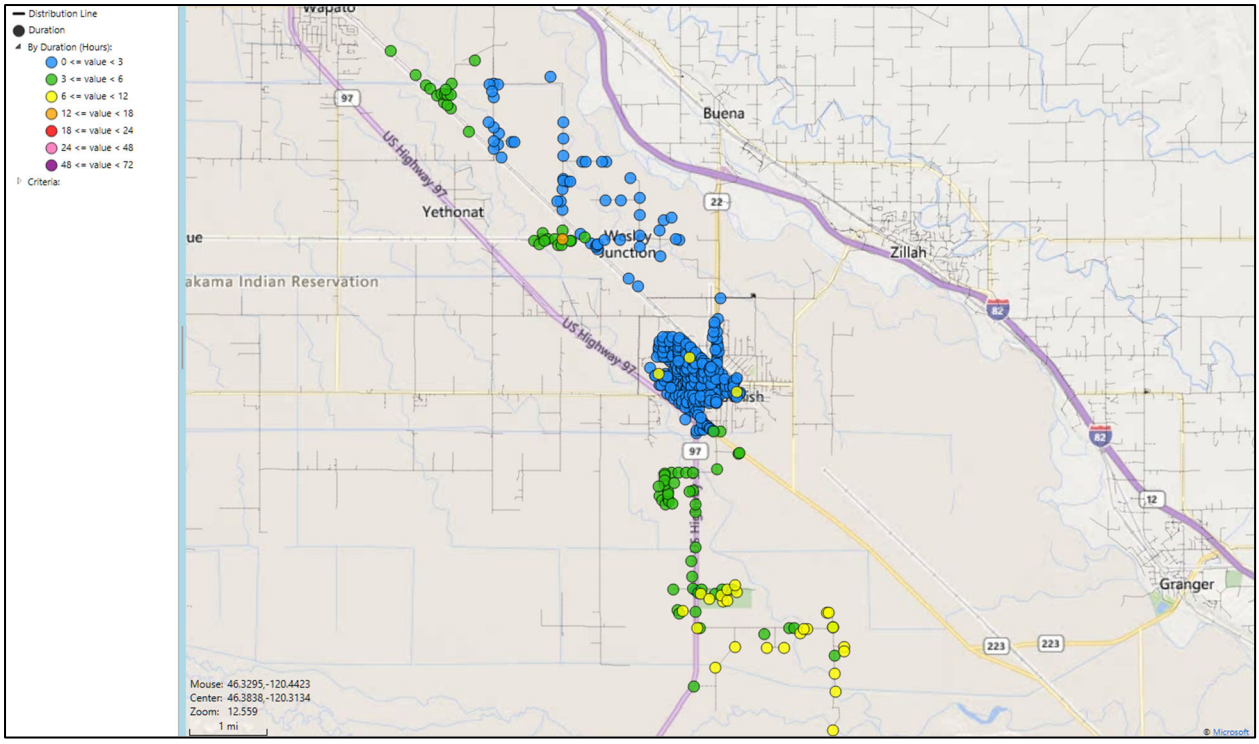
Toppenish-Zillah Rd
Yakama Indian Reservation
W 1st Ave
Toppenish
Evergreen Hwy
97
N Meyers Rd
Mouse: 46.3966,-120.3311
Center: 46.3814,-120.3017
Zoom: 14.809
1 mi
© Microsoft

5.3 5Y352: Jefferson



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By Duration (Hours):
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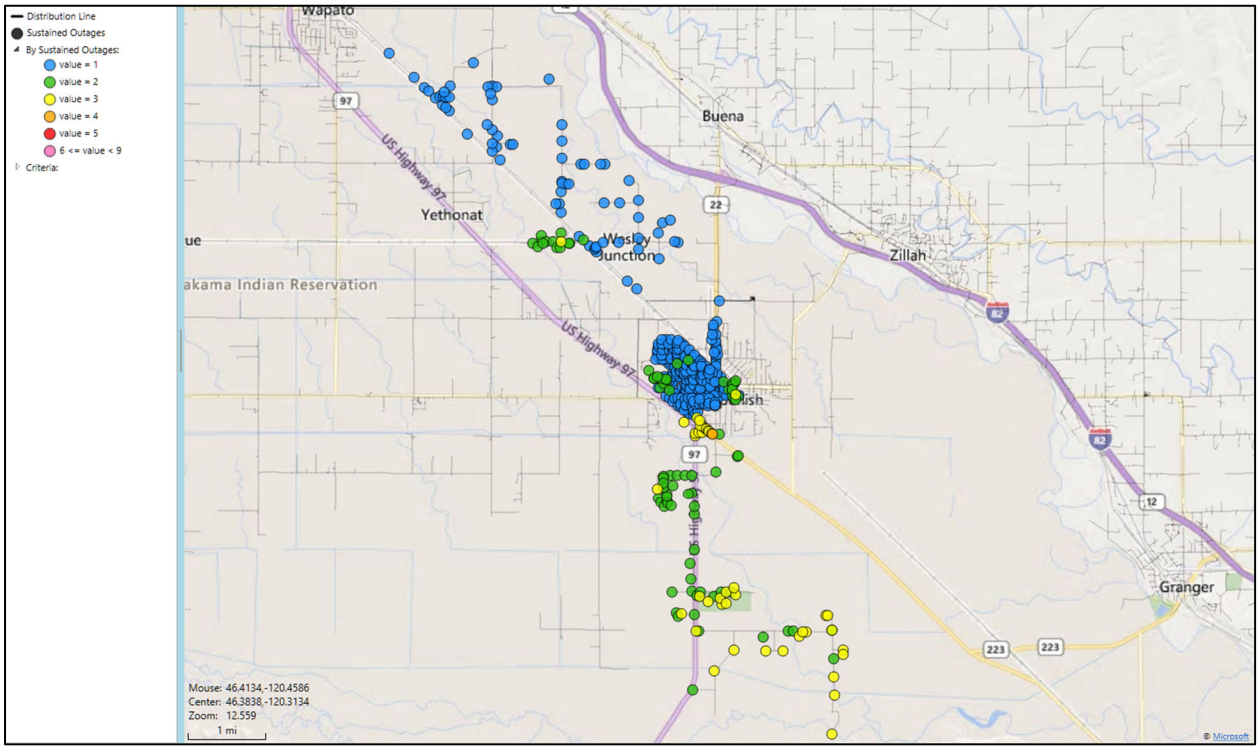
6 <= value < 12
12 <= value < 18
18 <= value < 24
24 <= value < 48
48 <= value < 72
Criteria:
Wapato
Buena
Yethonat
Wasley Junction
Zillah
akama Indian Reservation
US Highway 97
Granger
Mouse: 46.3295,-120.4423
Center: 46.3838,-120.3134
Zoom: 12.559
1 mi
© Microsoft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6 <= value < 9
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Buena
Yethonat
Wasley Junction
Zillah
akama Indian Reservation
US Highway 97
Granger
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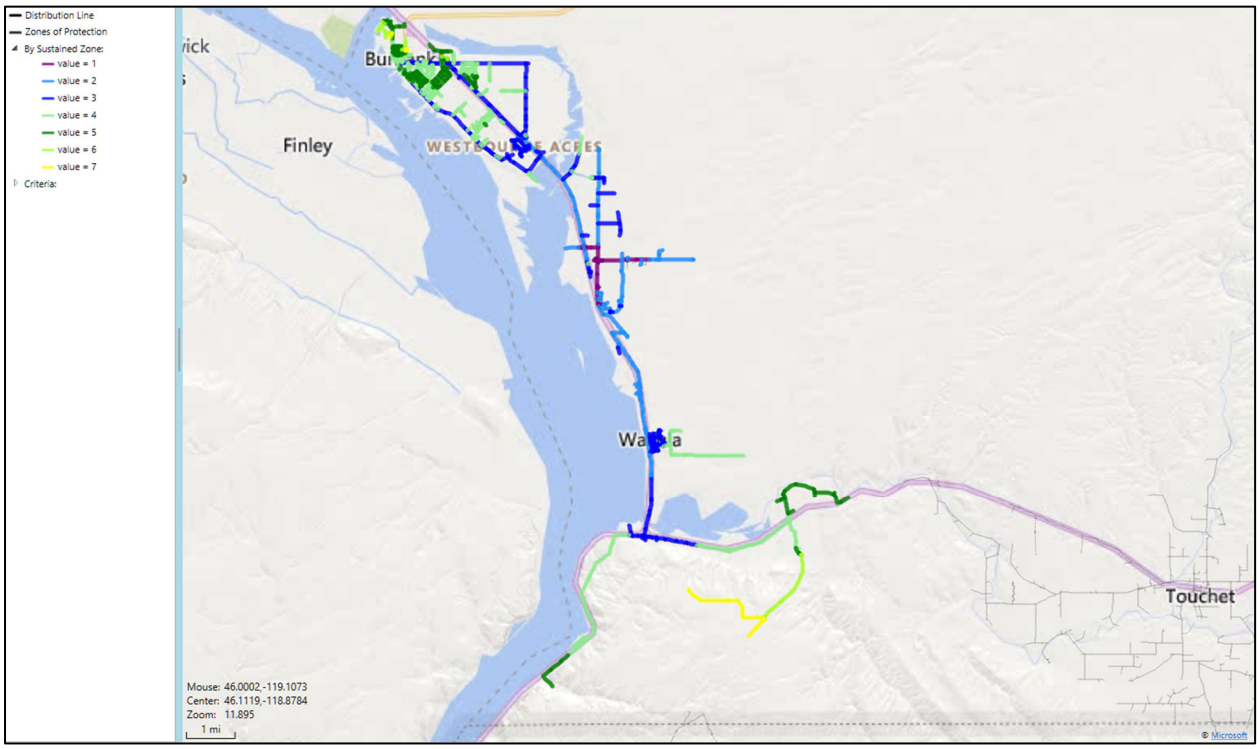
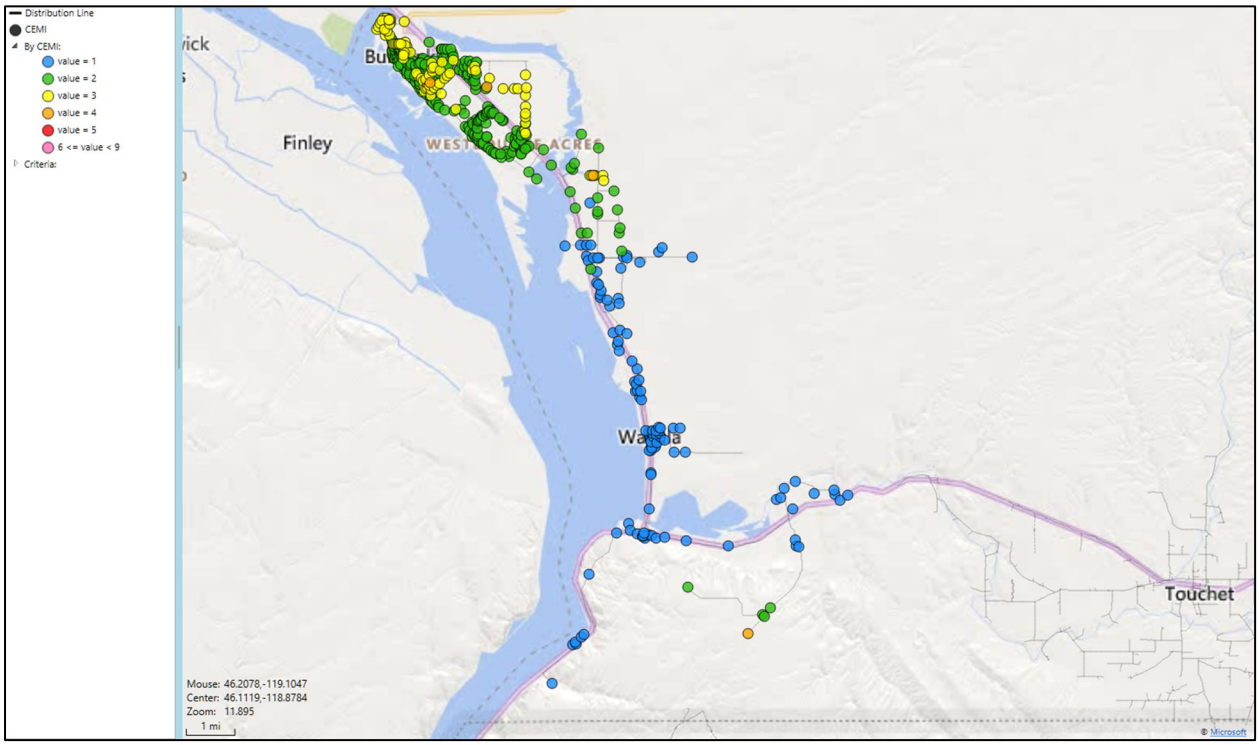
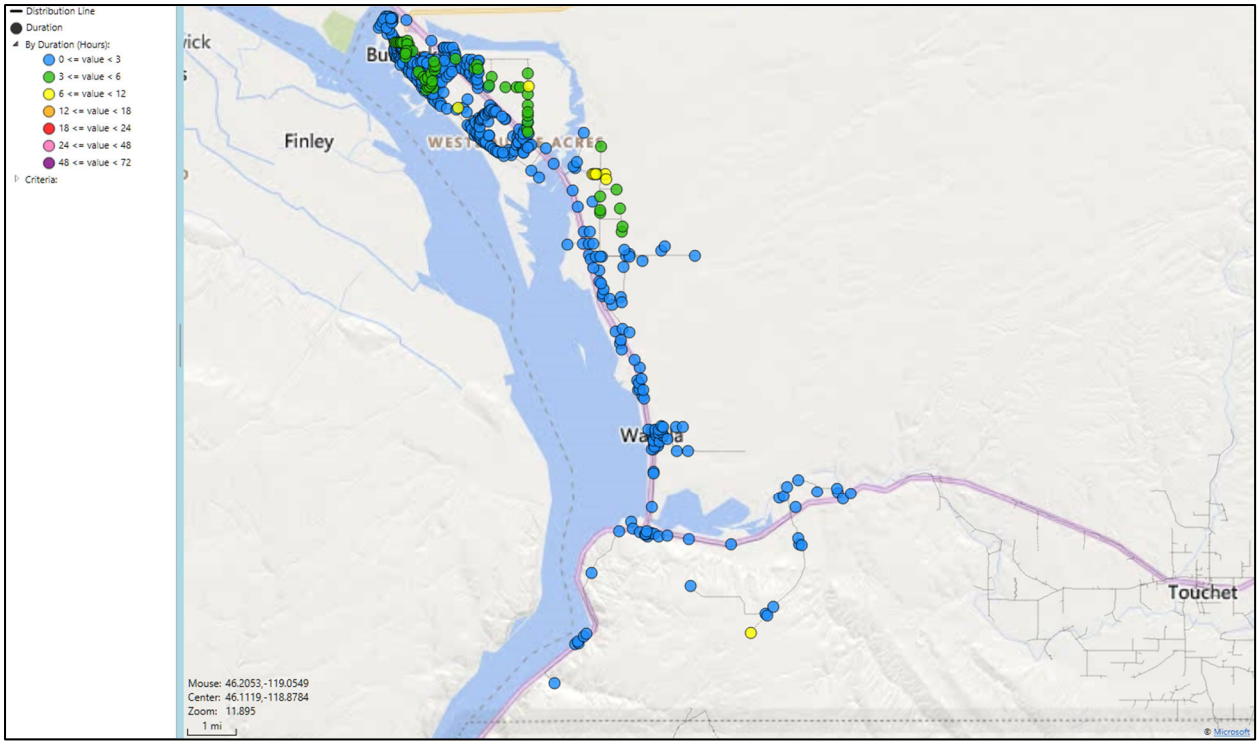
Center: 46.3838,-120.3134
Zoom: 12.559
1 mi
© Microsoft

5.4 4W22: Windward



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Touchet
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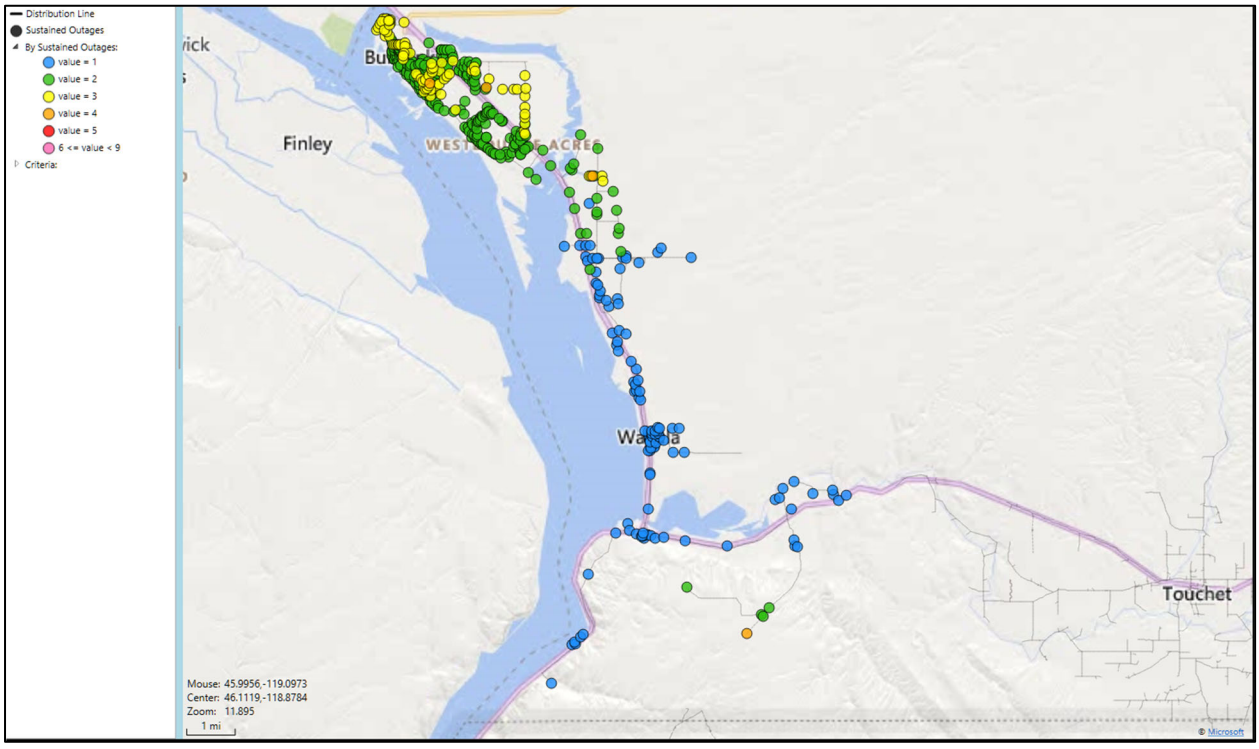
Zoom: 11.895
1 mi
© Microsoft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Touchet
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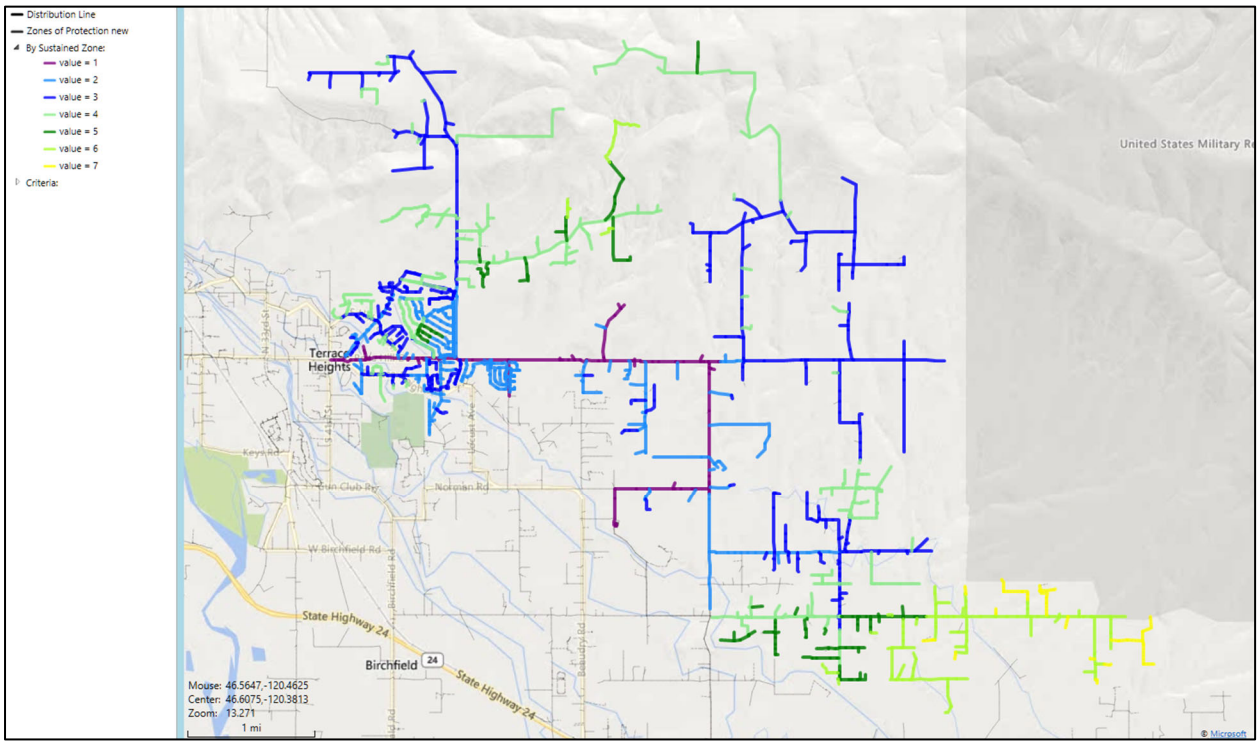
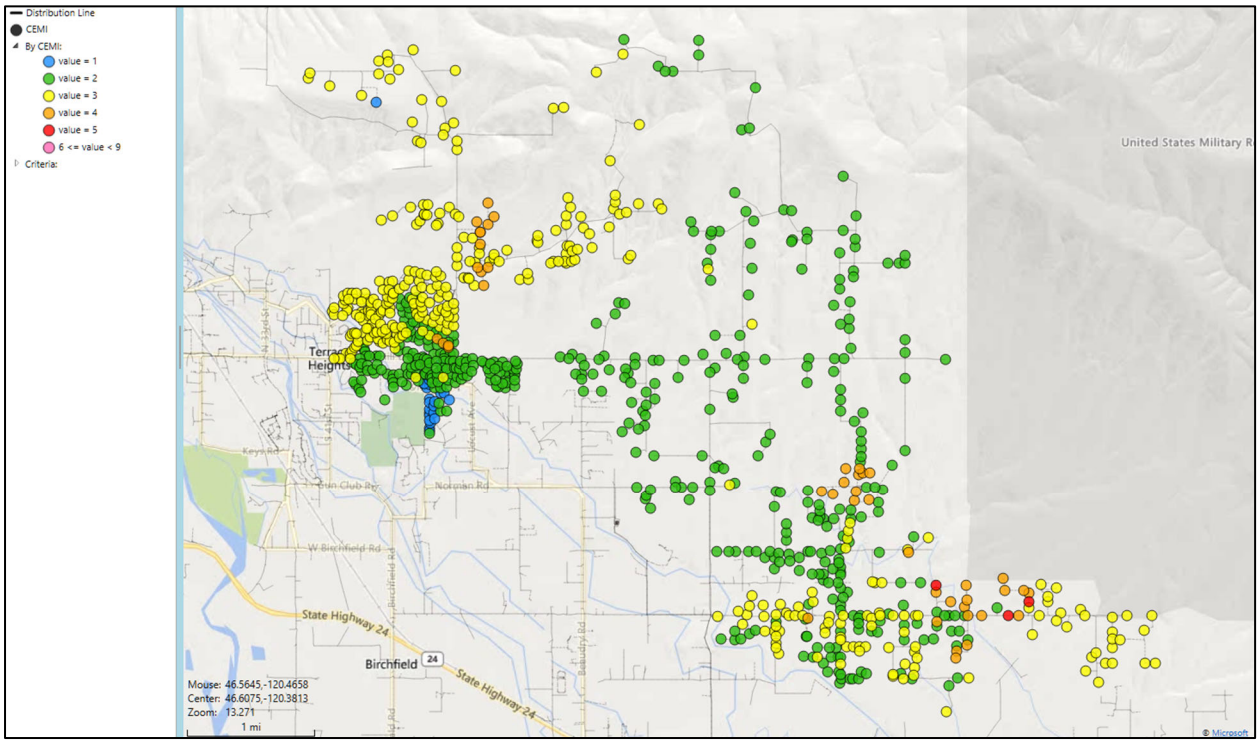
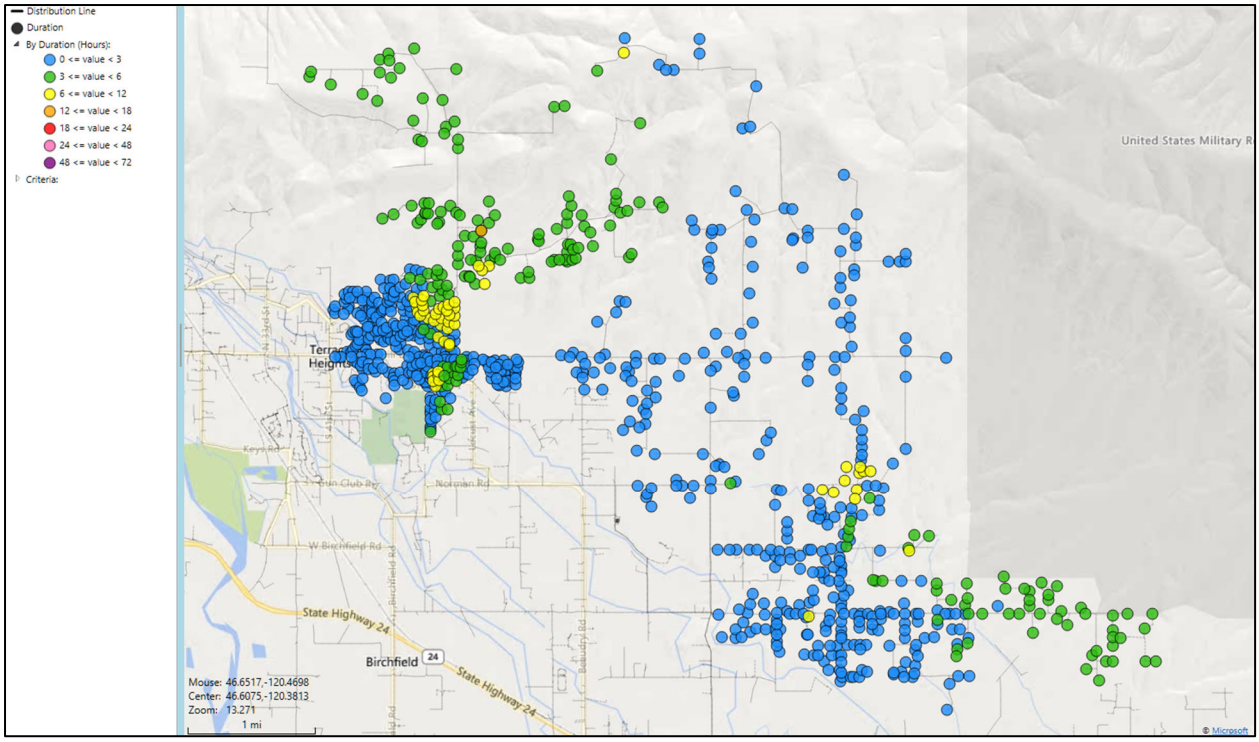
Center: 46.1119,-118.8784
Zoom: 11.895
1 mi
© Microsoft

5.5 5Y441: East Valley



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Duration
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6 <= value < 12
12 <= value < 18
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Criteria:
United States Military R
Terrace Heights
Keyes Rd
Sun Club Dr
Notrain Rd
W Birchfield Rd
State Highway 24
Birchfield
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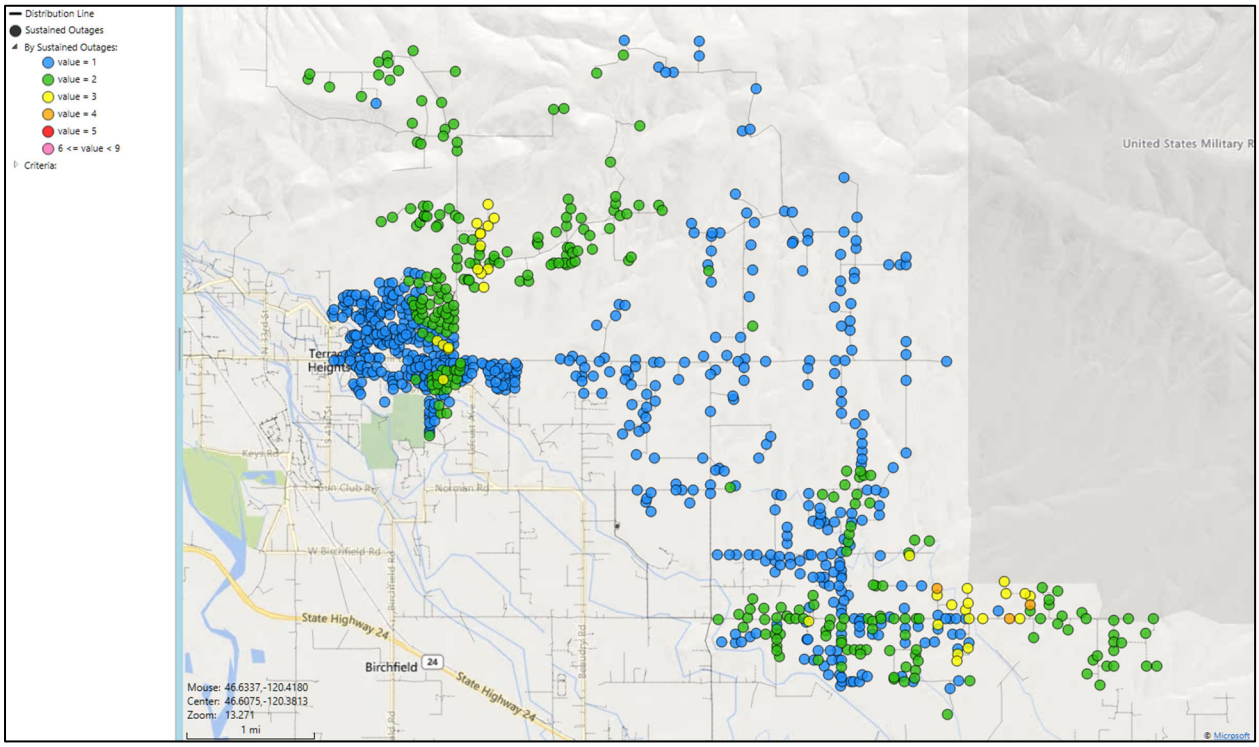
Center: 46.6075,-120.3813
Zoom: 13.271
1 mi
© Microsoft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Sustained Outages
By Sustained Outages:
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6 <= value < 9
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Terrace Heights
Keyes Rd
Sun Club Dr
Notrain Rd
W Birchfield Rd
State Highway 24
Birchfield
24
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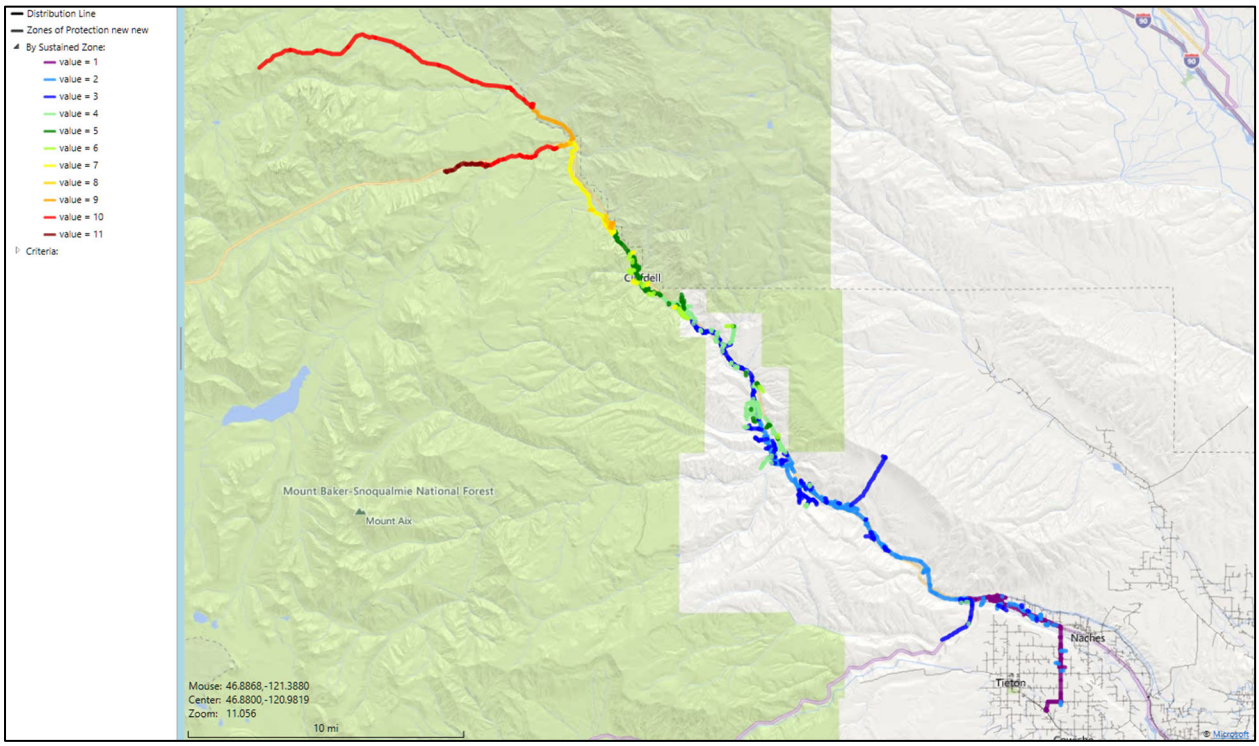
Center: 46.6075,-120.3813
Zoom: 13.271
1 mi
© Microsoft

5.6 4Y1: Nile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value = 8
value = 9
value = 10
value = 11
Criteria:
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Mount Aix
Naches
Tieton
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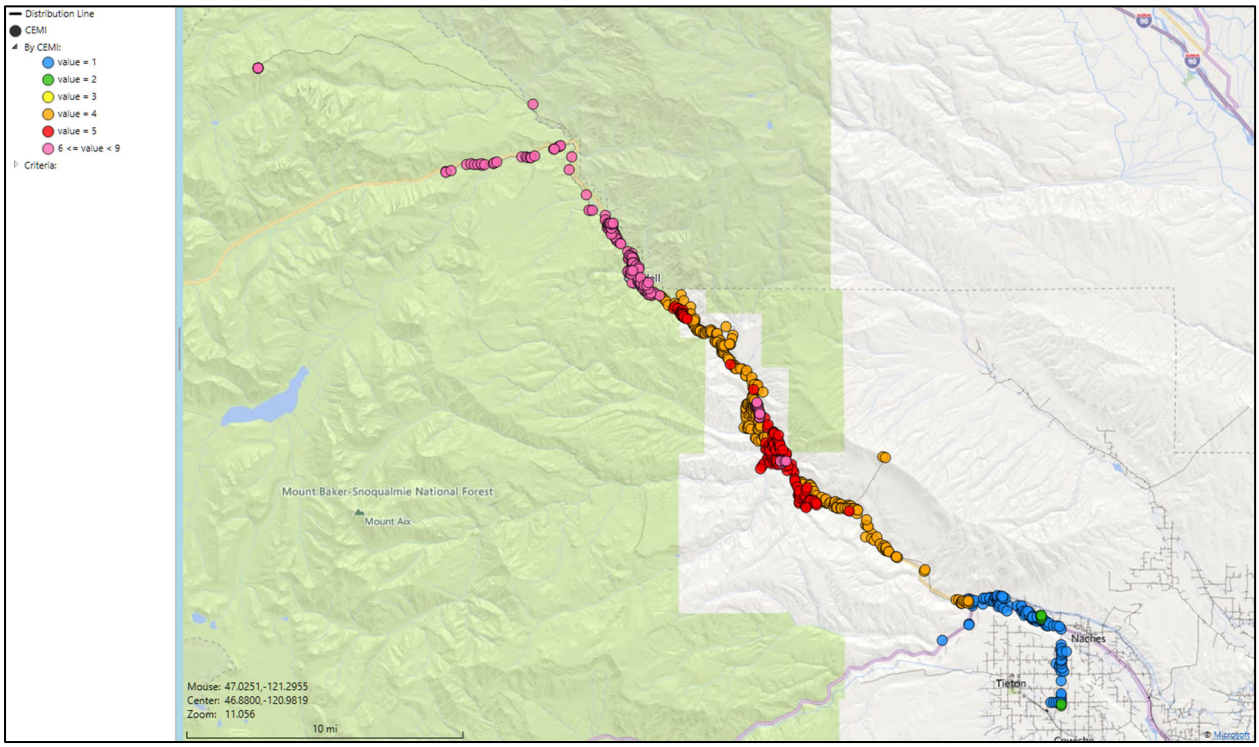
Distribution Line
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By CEMI:
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value = 3
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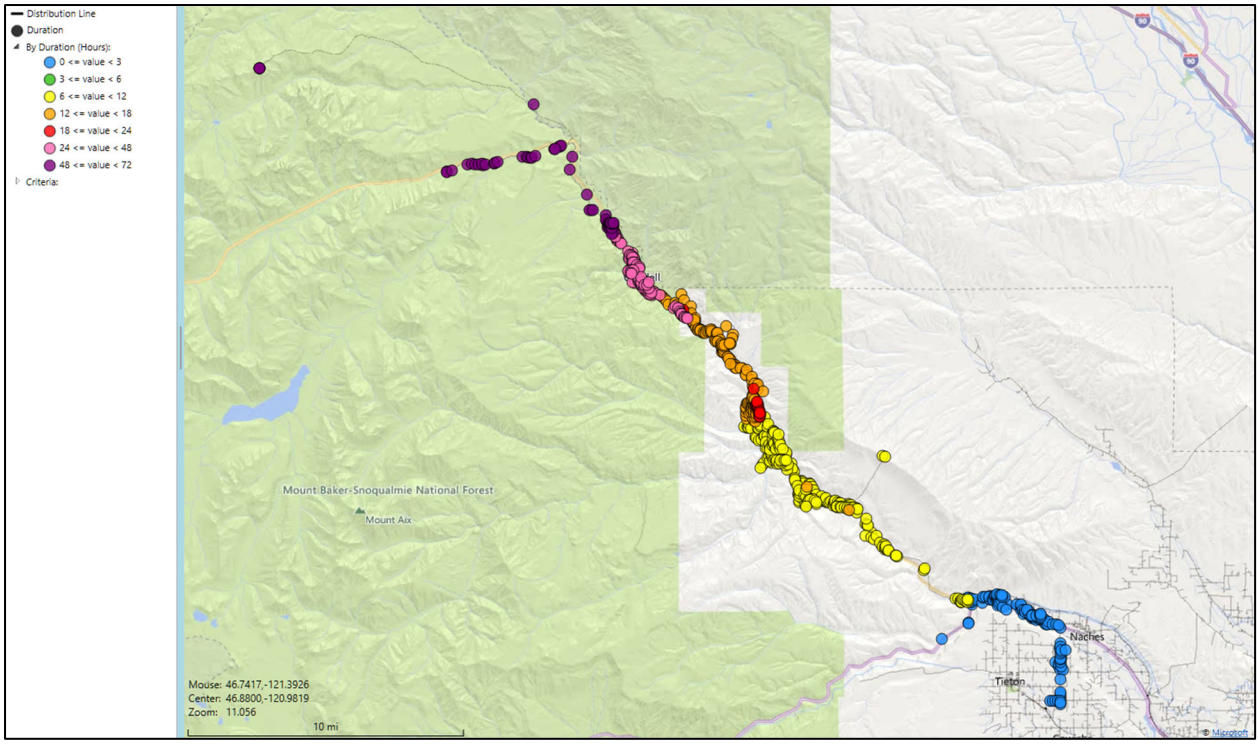
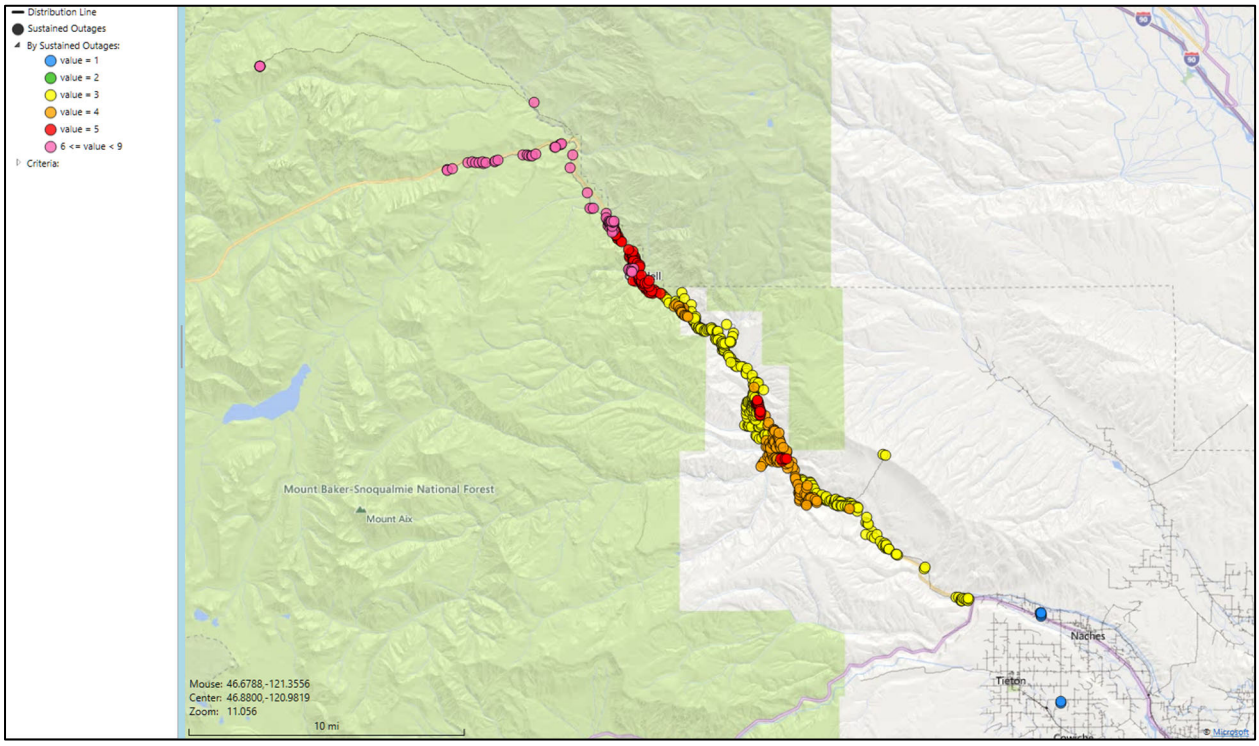
value = 5
6 <= value < 9
Criteria:
Mount Baker-Snoqualmie National Forest
Mount Aix
Naches
Tieton
Mouse: 47.0251,-121.2955
Center: 46.8800,-120.9819
Zoom: 11.056
10 mi


Distribution Line
Duration
By Duration (Hours):
0 <= value < 3
3 <= value < 6
6 <= value < 12
12 <= value < 18
18 <= value < 24
24 <= value < 48
48 <= value < 72
Criteria:
Mount Baker-Snoqualmie National Forest
Mount Aix
Naches
Tieton
Mouse: 46.7417,-121.3926
Center: 46.8800,-120.9819
Zoom: 11.056
10 mi


Distribution Line
Sustained Outages
By Sustained Outages:
value = 1
value = 2
value = 3
value = 4
value = 5
6 <= value < 9
Criteria:
Mount Baker-Snoqualmie National Forest
Mount Aix
Naches
Tieton
Mouse: 46.6788,-121.3556
Center: 46.8800,-120.9819
Zoom: 11.056
10 mi

APPENDIX A: Reliability Definitions

This section will define the various terms[9] used when referring to interruption types, performance metrics and the internal measures developed to meet performance plans. A map of Pacific Power's service territory is included.

Interruption Types

Sustained Outage
A sustained outage is defined as an outage of equal to or greater than 5 minutes in duration.

Momentary Outage
A momentary outage event is defined as an outage equal to or less than 5 minutes in duration, and comprises all operations of the device during the momentary duration; if a breaker goes to lockout (it is unable to clear the faulted condition after the equipment's prescribed number of operations) the momentary operations are part of the ensuing sustained interruption. This sequence of events typically occurs when the system is trying to re-establish energy flow after a faulted condition, and is associated with circuit breakers or other automatic reclosing devices. Pacific Power uses the locations where SCADA (Supervisory Control and Data Acquisition) exists and calculates consistent with IEEE 1366-2003/2012. Where no substation breaker SCADA exists fault counts at substation breakers are to be used.

Reliability Indices

SAIDI
SAIDI (system average interruption duration index) is an industry-defined term to define the average duration summed for all sustained outages a customer experiences in a given period. It is calculated by summing all customer minutes lost for sustained outages (those exceeding 5 minutes) and dividing by all customers served within the study area. When not explicitly stated otherwise, this value can be assumed to be for a one-year period.

Daily SAIDI
In order to evaluate trends during a year and to establish Major Event Thresholds, a daily SAIDI value is often used as a measure. This concept was introduced in IEEE Standard P1366-2003/2012. This is the day's total customer minutes out of service divided by the static customer count for the year. It is the total average outage duration customers experienced for that given day. When these daily values are accumulated through the year, it yields the year's SAIDI results.

SAIFI
SAIFI (system average interruption frequency index) is an industry-defined term that attempts to identify the frequency of all sustained outages that the average customer experiences during a given period. It is calculated by summing all customer interruptions for sustained outages (those exceeding 5 minutes in duration) and dividing by all customers served within the study area.

CAIDI
CAIDI (customer average interruption duration index) is an industry-defined term that is the result of dividing the duration of the average customer's sustained outages by the frequency of outages for that average customer. While the Company did not originally specify this metric under the umbrella of the

[9] IEEE1366-2003/2012 was first adopted by the IEEE Commissioners on December 23, 2003. The definitions and methodology detailed therein are now industry standards, which have since been affirmed in recent balloting activities.

Performance Standards Program within the context of the Service Standards Commitments, it has since been determined to be valuable for reporting purposes. It is derived by dividing SAIDI by SAIFI.

CEMI

CEMI is an acronym for Customers Experiencing Multiple (Sustained and Momentary) Interruptions. This index depicts repetition of outages across the period being reported and can be an indicator of recent portions of the system that have experienced reliability challenges. This metric is used to evaluate customer-specific reliability in Section 4 Customer Reliability Communications.

MAIFI

MAIFI (momentary average interruption frequency index) is an industry standard index that quantifies the frequency of all momentary interruptions that the average customer experiences during a given time-frame. It is calculated by counting all momentary interruptions which occur, as long as the interruption event did not result in a device experiencing a sustained interruption.

$MAIFI_E$

MAIFIE (momentary average interruption event frequency index) is an industry standard index that quantifies the frequency of all momentary interruption events that the average customer experiences during a given time-frame. It is calculated by counting all momentary interruptions which occur within a 5 minute time period, as long as the interruption event did not result in a device experiencing a sustained interruption.

CPI99

CPI99 is an acronym for Circuit Performance Indicator, which uses key reliability metrics of the circuit to identify underperforming circuits. It excludes Major Event and Loss of Supply or Transmission outages. The variables and equation for calculating CPI are:

CPI = Index * ((SAIDI * WF * NF) + (SAIFI * WF * NF) + (MAIFI * WF * NF) + (Lockouts * WF * NF))
Index: 10.645
SAIDI: Weighting Factor 0.30, Normalizing Factor 0.029
SAIFI: Weighting Factor 0.30, Normalizing Factor 2.439
MAIFI: Weighting Factor 0.20, Normalizing Factor 0.70
Lockouts: Weighting Factor 0.20, Normalizing Factor 2.00

Therefore, 10.645 * ((3-year SAIDI * 0.30 * 0.029) + (3-year SAIFI * 0.30 * 2.439) + (3-year MAIFI * 0.20 * 0.70) + (3-year breaker lockouts * 0.20 * 2.00)) = CPI Score

CPI05

CPI05 is an acronym for Circuit Performance Indicator, which uses key reliability metrics of the circuit to identify underperforming circuits. Unlike CPI99 it includes Major Event and Loss of Supply or Transmission outages. The calculation of CPI05 uses the same weighting and normalizing factors as CPI99.

Performance Types & Commitments

Pacific Power recognizes two categories of performance: underlying performance and major events. Major events represent the atypical, with extraordinary numbers and durations for outages beyond the usual. Ordinary outages are incorporated within underlying performance. These types of events are further defined below.

Major Events

Pursuant to WAC 480-100-393 Electric Reliability Annual Monitoring and Reporting Plan, modified February 2011, the company recognizes two types of major events in Washington:

- A SAIDI-based Major Event is defined as a 24-hour period where SAIDI exceeds a statistically derived threshold value, as detailed in IEEE Distribution Reliability Standard 1366-2003/2012.
- A SAIFI-Based Major Event is defined as an event in which more than 10% of an operating area's customers are simultaneously without service as a result of a sustained interruption.

Underlying Events

Within the industry, there has been a great need to develop methodologies to evaluate year-on-year performance. This has led to the development of methods for segregating outlier days. Those days which fall below the statistically derived threshold represent "underlying" performance and are valid (with some minor considerations for changes in reporting practices) for establishing and evaluating meaningful performance trends over time. If any changes have occurred in outage reporting processes, those impacts need to be considered when making comparisons. Underlying events include all sustained interruptions, whether of a controllable or non-controllable cause, exclusive of major events, prearranged (which can include short notice emergency prearranged outages), customer requested interruptions and forced outages mandated by public authority typically regarding safety in an emergency situation.

Performance Targets

The Company and Commission, in the MidAmerican transaction docket, UE05-01590, agreed to extend Service Standards through 12/31/2011. Within Washington, because performance delivered by the Company falls within industry second quartile performance levels, the Company committed that it would achieve performance by 12/31/2011 that maintains performance targets set in prior Merger Commitment Periods. Additionally, in WAC 480-100-393 the Company is required to set baseline metrics and when performance deviates from those baselines, explain the reasons for that deviation and any action plans which may result from that level of performance.

APPENDIX B: 2021 Major Event Filings

Report to the Washington Utilities and Transportation Commission

Electric Service Reliability - Major Event Report

Event Date:	May 9, 2021
Date Submitted:	June 18, 2021
Primary Affected Locations:	Statewide
Primary Cause:	Loss of Substation
Exclude from Reporting Status:	Yes
Report Prepared by:	April Brewer
Report Approved by:	Heide Caswell / Carrie Laird

Event Description and Restoration Summary

Event Outage Summary	
# Interruptions (sustained)	9
Total Customers Interrupted (sustained)	6,833
Total Customer Minutes Lost	3,538,061
State Event SAIDI	25.9 Minutes
CAIDI	518
Major Event Start	5/9/21 12:00 AM
Major Event End	5/10/21 12:00 AM

On the morning of May 9, 2021, a squirrel was able to bypass animal guarding at the Grandview substation making contact with the 12 kV switchgear, resulting in damage to electrical bus and glass insulators, shown in figure 1. The event operated station protective equipment, de-energizing the entire substation and the six distribution circuit feeds. The event affected service to a total 6,792 customers with outage durations ranging from 7 hours 6 minutes to 9 hours 44 minutes (figure 2).

During the restoration process crews worked to assess damaged equipment and obtain replacement materials required. Responders accessed replacement materials at the local operating base, an hour away, and during the interim, area engineers developed switching plans to shorten customer outage duration.

Throughout the event more than 10 field responders completed damage assessments, switching, and multiple repairs to the substation bus, insulators, and additional animal guarding to restore customers.

To date, there has been no commission or company complaints concerning this major event.

Figure 1: Photos of damaged equipment.

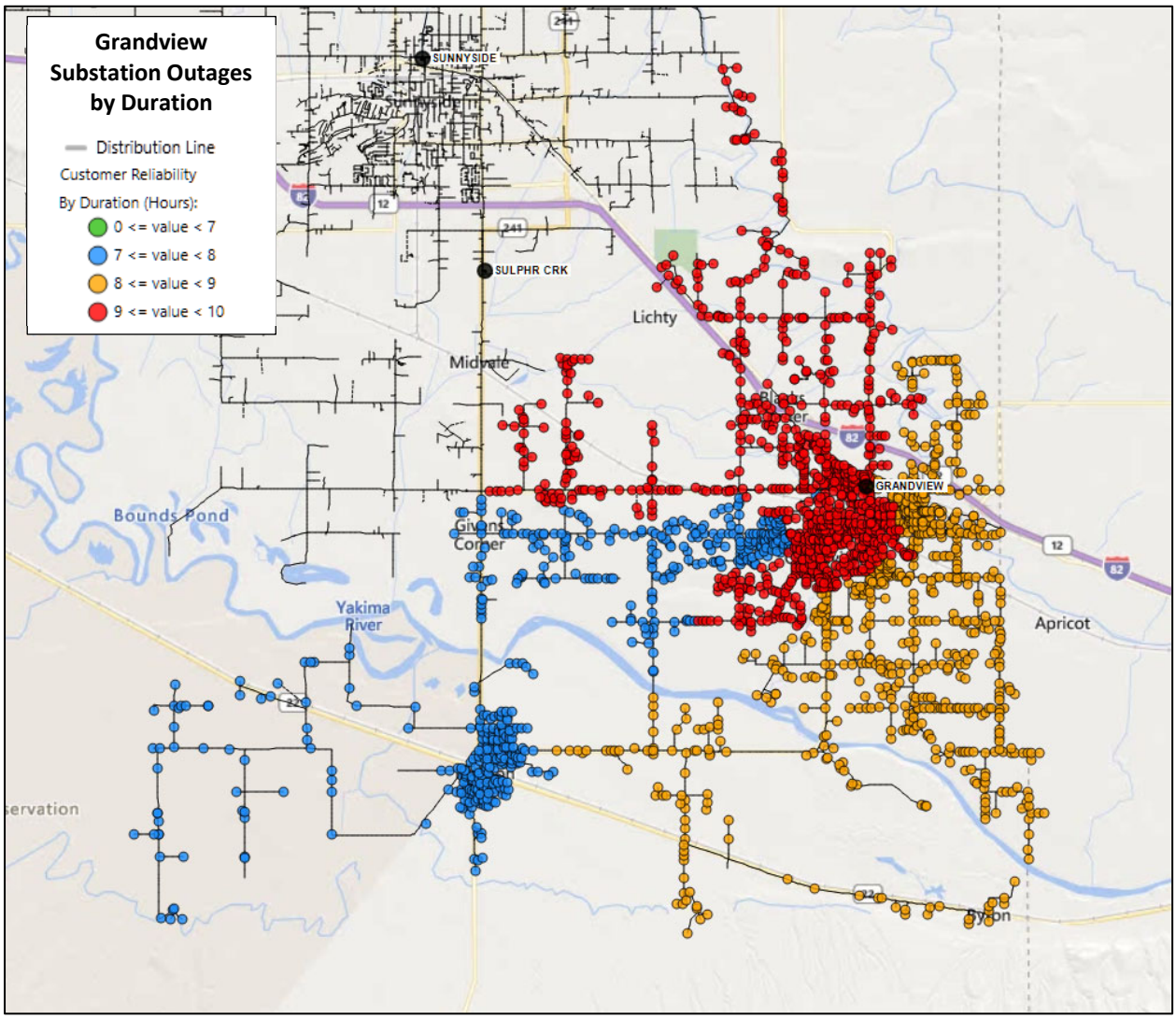


Figure 2. Grandview Substation Outages Duration by hour.

Restoration Intervals

Total Customers Sustained	< 3 Hrs.	3 - 24 Hrs.	24-48 Hrs.
6,833	36	6,797	0

Restoration Resources [10]

Personnel Resources	
Line Crewman	**1**
Substation crewmembers	**11**
Foreman	**2**
Total	**14**

Materials	
Animal Guard Shield	**12**
Insulators	**8**

State Estimated Major Event Costs

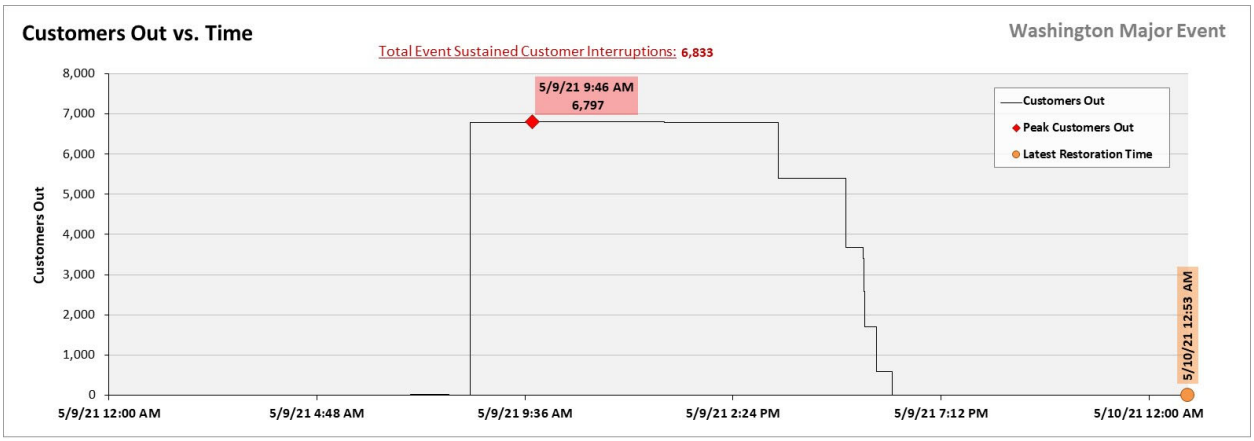
Estimate $	Labor	Material	Overhead/Other	Total
Capital	$15,847	$3,850	$2,922	**$22,619**
Expense	$0	$0	$0	**$0**
Total	**$15,847**	**$3,850**	**$2,922**	**$22,619**

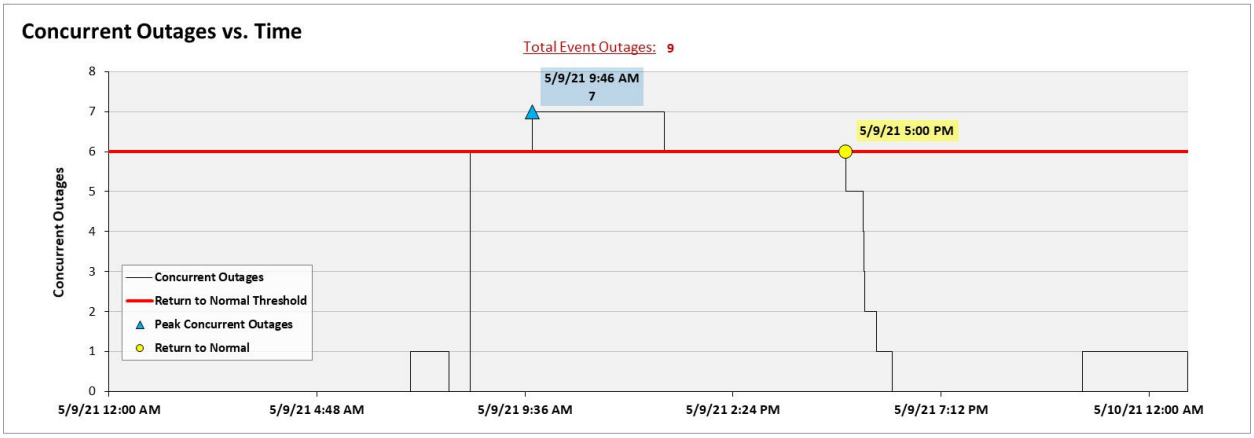
Major Event Declaration

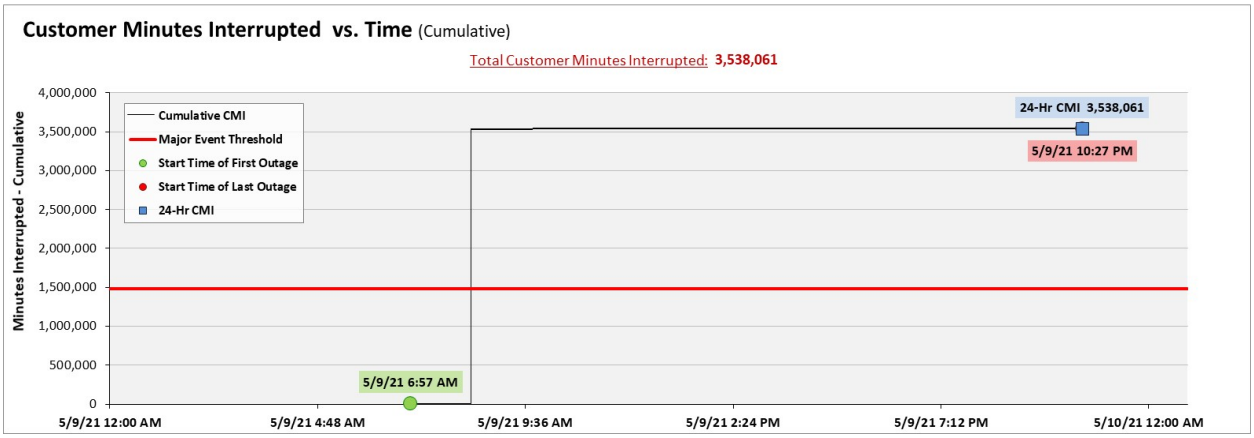
Pacific Power is requesting designation of this event and its consequences to be classified as a "Major Event" for exclusion from network performance reporting with the IEEE 1366-2003/2012. This major event exceeded the company's 2021 Washington threshold of 1,482,928 customer minutes lost (10.8 state SAIDI minutes) in a 24-hour period.

[10] Data provided represents specific system records for personnel, resources, and costs; and is specific to the event, not 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.

Event Detail







Report to the Washington Utilities and Transportation Commission

Electric Service Reliability - Major Event Report

Event Date:	June 19, 2021
Date Submitted:	August 3, 2021
Primary Affected Locations:	Sunnyside
Primary Cause:	Loss of Transmission Line
Exclude from Reporting Status:	Yes
Report Prepared by:	April Brewer
Report Approved by:	Heide Caswell / Carrie Laird

Event Description and Restoration Summary

Event Outage Summary	
# Interruptions (sustained)	8
Total Customers Interrupted (sustained)	6,463
Total Customer Minutes Lost	415,101
State Event SAIDI	3.03 Minutes
CAIDI	64
Major Event Start	6/19/21 12:00 AM
Major Event End	6/20/21 12:00 AM

On the afternoon of June 19, 2021, Sunnyside, Washington, experienced a SAIFI-based major event due to a fire that damaged a transmission line structure. The fire began when a farmer burning a debris pile stepped away from the burn, and upon returning found the nearby transmission structure was on fire. A patrolman was quickly dispatched to the substation where they were able to switch to an alternative feed, restoring customers and de-energizing the damaged equipment. The outage affected six feeders from the Grandview substation, serving 6,242 customers for a duration of one hour four minutes.

Permanent repairs to the damaged structure were made by a contractor and post construction the system feeds were returned to normal.

To date, there have been no commission or company complaints concerning this major event.

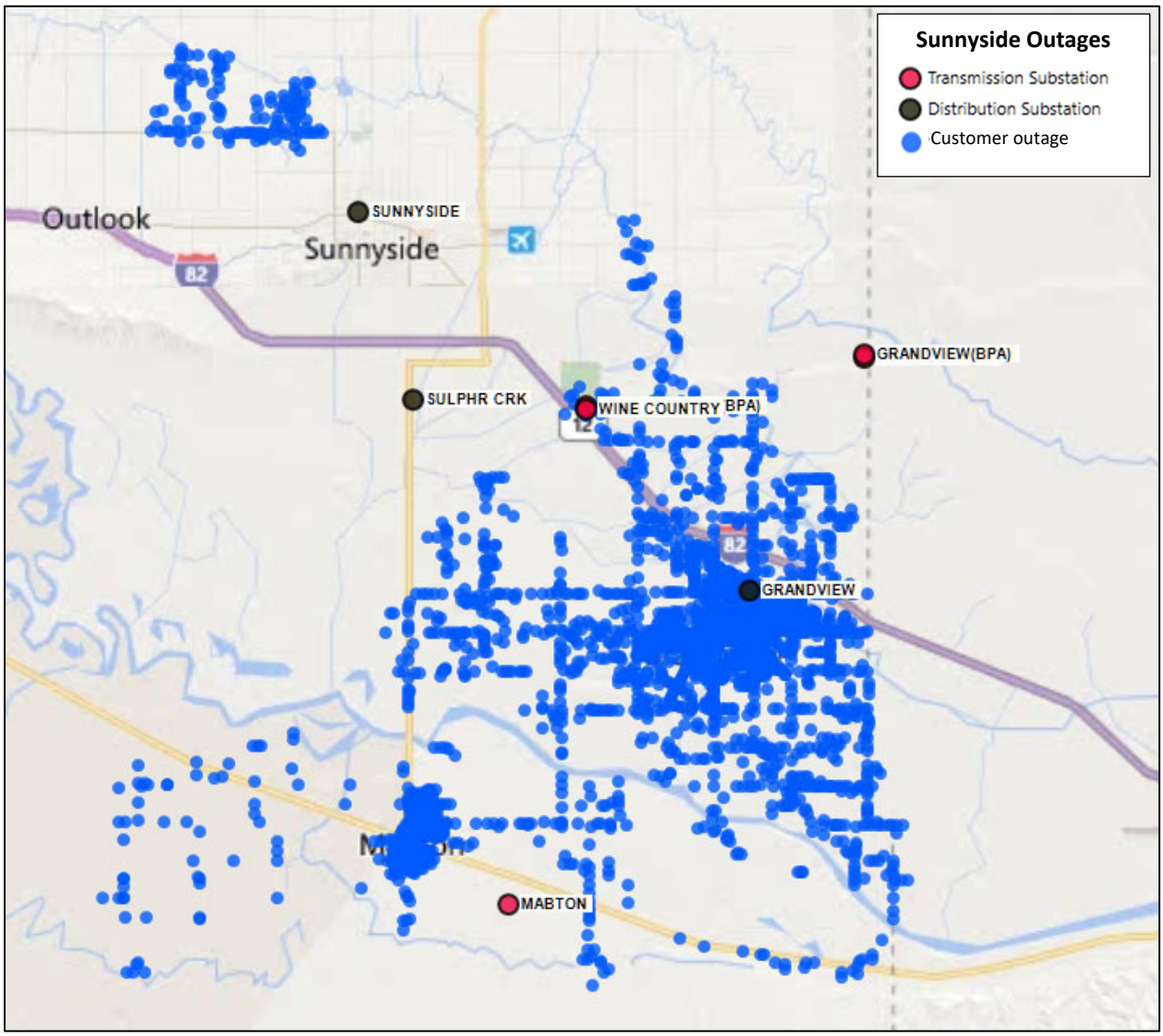


Figure 1. Sunnyside Major event outages.

Restoration Intervals

Total Customers Sustained	< 3 Hrs.	3 - 24 Hrs.	24-48 Hrs.
6,463	6,453	10	0

Restoration Resources [11]

Personnel Resources	
Internal Crewman	**6**
External Crewman	**5**
Substation crewmembers	**1**
Administrative	**1**
Total	**13**

Materials	
Poles	**2**
Insulators	**3**

State Estimated Major Event Costs

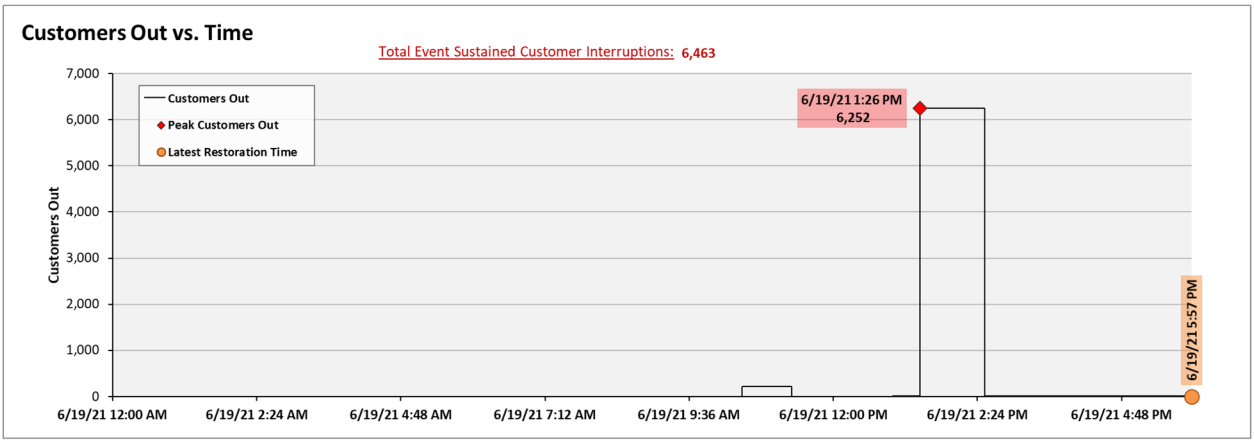
Estimate $	Labor	Contracts	Material	Overhead	Total
Capital	$12,908	$25,907	$7,593	$7,980	**$54,388**
Expense	$0	$0	$0	$0	**$0**
Total	**$12,908**	**$25,907**	**$7,593**	**$7,980**	**$54,388**

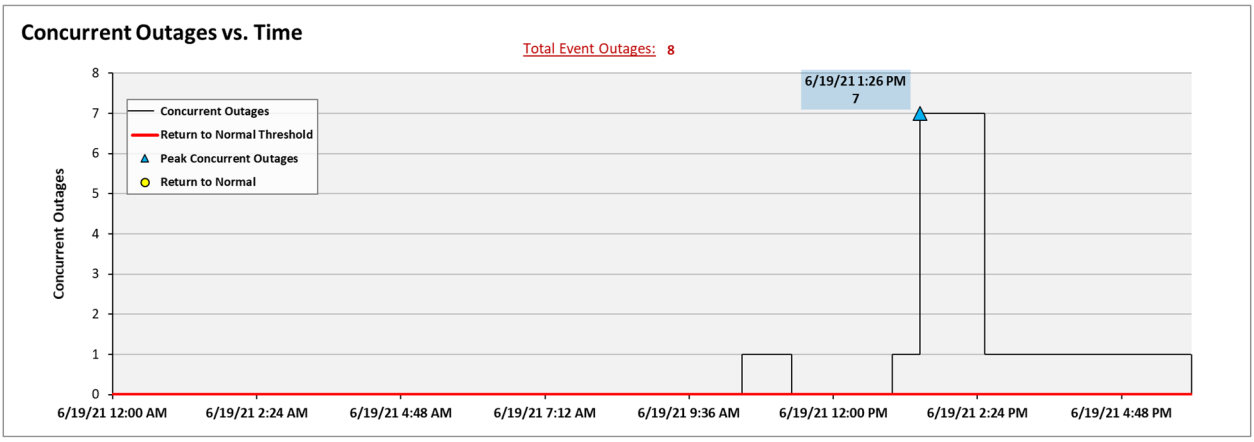
Major Event Declaration

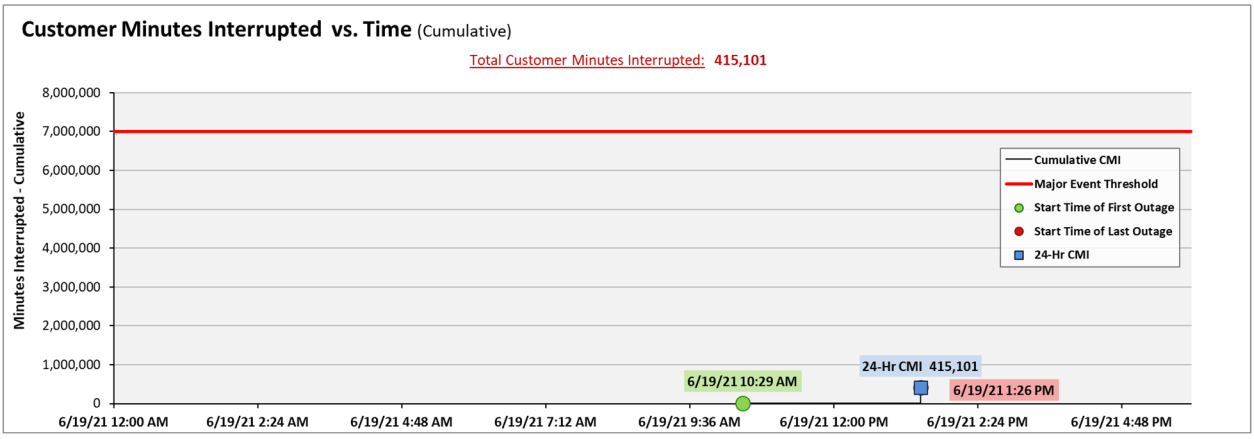
Pacific Power is requesting designation of this event and its consequences to be classified as a "Major Event" for exclusion from underlying network performance reporting. This major event exceeded the company's current Washington system average interruption frequency index-driven (SAIFI) threshold of 10% total operating area customers served sustained interruptions (6,252 customers were interrupted out of 24,993 Sunnyside operating area customers, or 25% of the operating area customers) simultaneously in a 24-hour period.

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

Event Detail







Report to the Washington Utilities and Transportation Commission

Electric Service Reliability - Major Event Report

Event Date:	August 21, 2021
Date Submitted:	November 2, 2021
Primary Affected Locations:	Walla Walla
Primary Cause:	Loss of Transmission Line
Exclude from Reporting Status:	Yes
Report Prepared by:	April Brewer
Report Approved by:	Heide Caswell / Carrie Laird

Event Description and Restoration Summary

Event Outage Summary	
# Interruptions (sustained)	5
Total Customers Interrupted (sustained)	7,314
Total Customer Minutes Lost	762,127
State Event SAIDI	5.57 Minutes
CAIDI	104
Major Event Start	8/21/21 12:00 AM
Major Event End	8/22/21 12:00 AM

On the morning of August 21, 2021, Walla Walla, Washington, experienced a SAIFI-based major event due to a loss of transmission feed and damaged side-stack distribution insulator mounted on a transmission structure. The event occurred during a lightning storm, which was suspected to be the cause of the transmission line outage, that damaged the equipment. At 6:55 a.m. 7,314 customers fed from five distribution circuits out of the Prospect Point Substation experienced an outage. Crews were quickly dispatched to patrol the transmission line and survey any damage to the substation. While patrolling the line crews found the damaged side-stack insulator. After determining the damage, substation crews restored power to four of the five affected distribution feeds, restoring power to 6,470 customers in one hour 24 minutes. Crew members began isolating the area of the damaged equipment and began restoring power to the remaining 844 customers while the repairs were completed. These customers were out for a duration ranging from four hours six minutes to six hours six minutes.

To date, there have been no commission or company complaints concerning this major event.

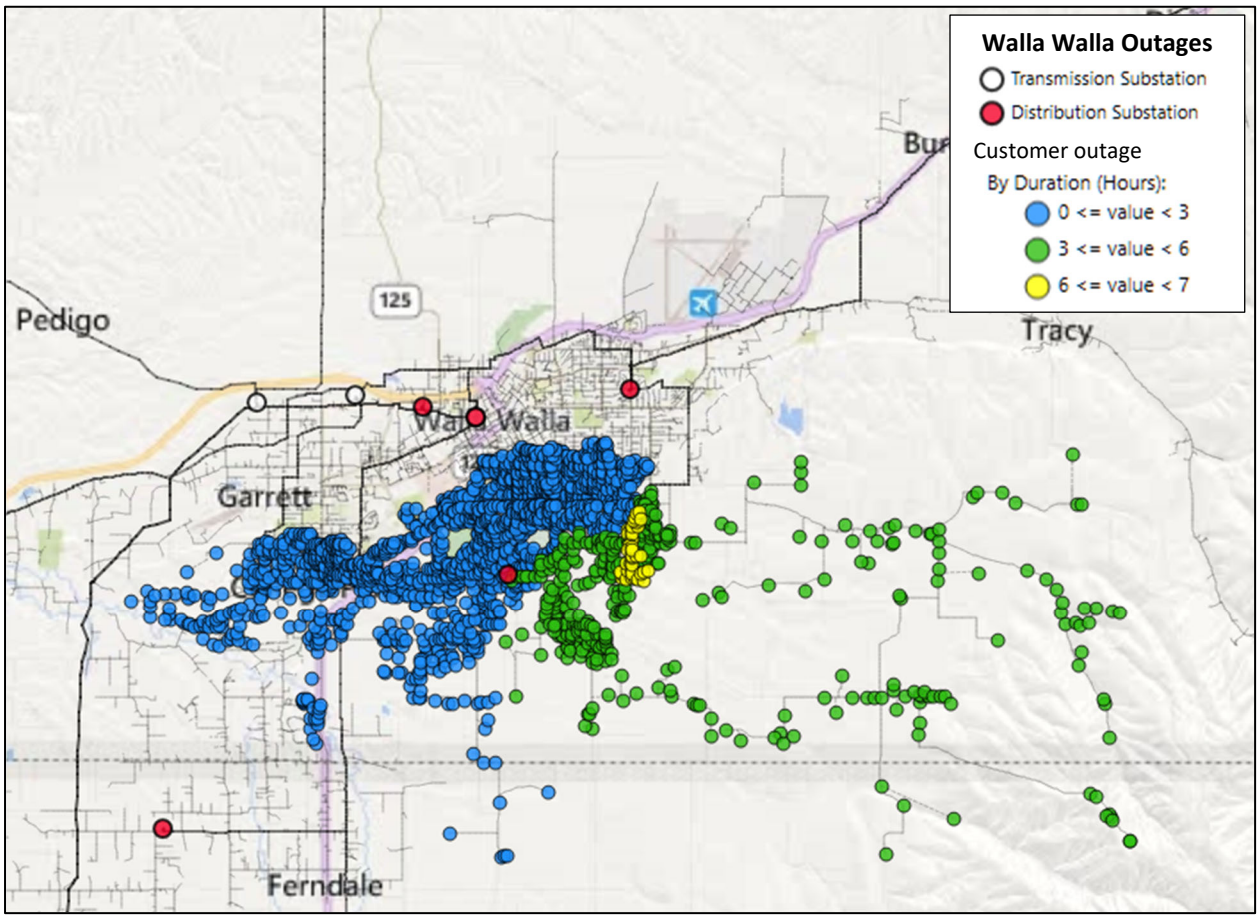


Figure 1. Walla Walla Major event outages.

Restoration Intervals

Total Customers Sustained	< 3 Hrs.	3 - 24 Hrs.	24-48 Hrs.
7,314	6,470	844	0

Restoration Resources [12]

Personnel Resources	
Linemen	**4**
Estimator	**1**
Substation crewmembers	**2**
Foreman	**1**
Total	**8**

Materials	
Insulator	**1**

State Estimated Major Event Costs

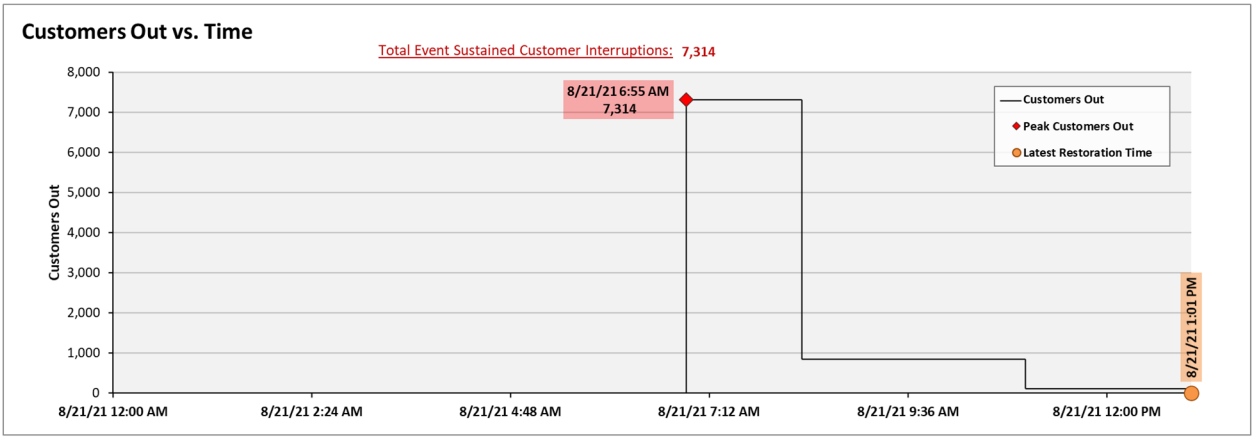
Estimate $	Labor	Contracts	Material	Overhead	Total
Capital	$4,143	$0	$289	$532	**$4,956**
Expense	$3,991	$0	$0	$30	**$0**
Total	**$8,134**	**$0**	**$289**	**$562**	**$4,956**

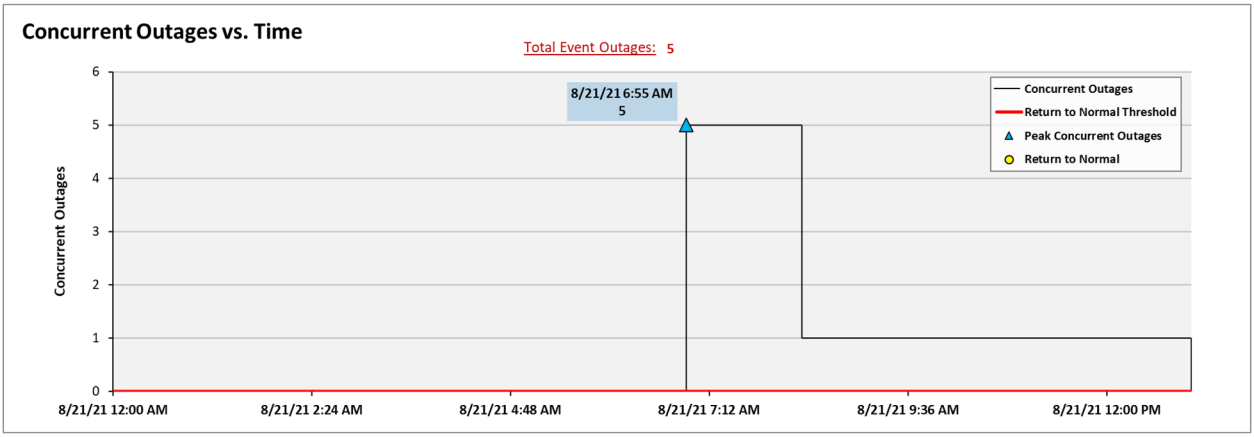
Major Event Declaration

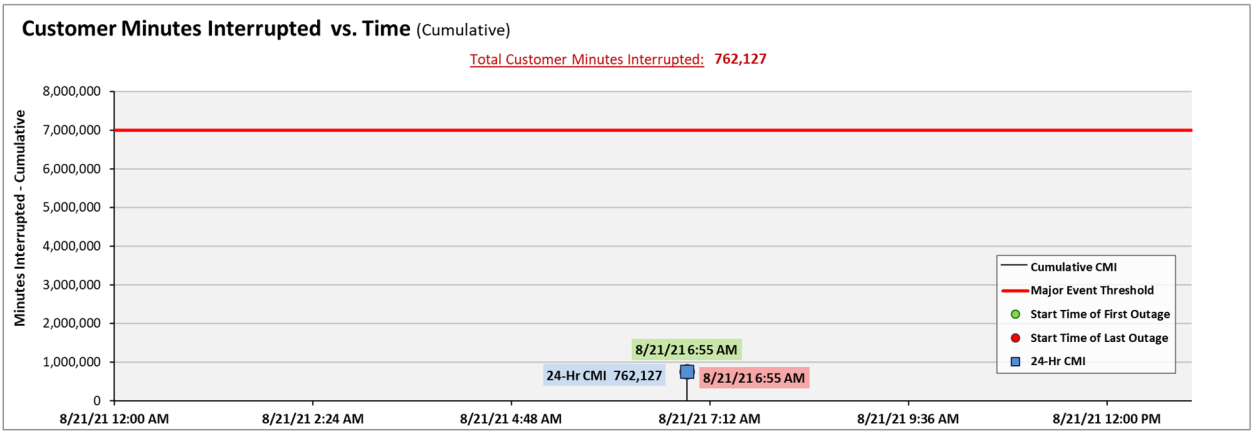
Pacific Power is requesting designation of this event and its consequences to be classified as a "Major Event" for exclusion from underlying network performance reporting. This major event exceeded the company's current Washington system average interruption frequency index-driven (SAIFI) threshold of 10% total operating area customers served sustained interruptions (7,314 customers were interrupted out of 28,298 Walla Walla operating area customers, or 26% of the operating area customers) simultaneously in a 24-hour period.

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

Event Detail







Report to the Washington Utilities and Transportation Commission

Electric Service Reliability - Major Event Report

Event Date:	October 13, 2021
Date Submitted:	December 7, 2021
Primary Affected Locations:	Sunnyside
Primary Cause:	Loss of Transmission Line
Exclude from Reporting Status:	Yes
Report Prepared by:	April Brewer
Report Approved by:	Heide Caswell / Carrie Laird

Event Description and Restoration Summary

Event Outage Summary	
# Interruptions (sustained)	11
Total Customers Interrupted (sustained)	10,426
Total Customer Minutes Lost	209,149
State Event SAIDI	1.53 Minutes
CAIDI	20
Major Event Start	10/13/21 12:00 AM
Major Event End	10/14/21 12:00 AM

At 2:55 p.m. on October 13, 2021, Sunnyside, Washington, experienced a SAIFI-based major event when Bonneville Power Administration (BPA) and Pacific Power (PP) were conducting trip testing. The BPA is currently undergoing construction activities to its transmission system in the area, which requires various relay testing throughout the process. At the time of the outage the North Bonneville(BPA) - Outlook(PP) - Midway(BPA) line was undergoing relay tests based on a BPA-developed test plan. The plan included BPA personnel isolating BPA relay #1 while Pacific Power personnel isolated the corresponding relay A. BPA relay #2 and Pacific Power relay B were kept in service to provide ongoing protection to the transmission line.

However, during the testing, BPA's relay #1 was not fully isolated and as a result the BPA tester also ended up sending signals to the in-service BPA relay #2, which in turn sent a signal to Pacific Power's in-service relay B. This tripped two circuit breakers in the Outlook substation, which resulted in a loss of supply to distribution feeds out of the Toppenish and Punkin Center Substations. The Toppenish Substation lost feed to six distribution circuits serving a total of 6,257 customers. The Punkin Center Substation lost feed to three distribution circuits, serving 4,069 customers. In total the event impacted 10,326 customers for 18 minutes. During the event the company took immediate actions to restore customers.

To date, there have been no commission or company complaints concerning this major event.

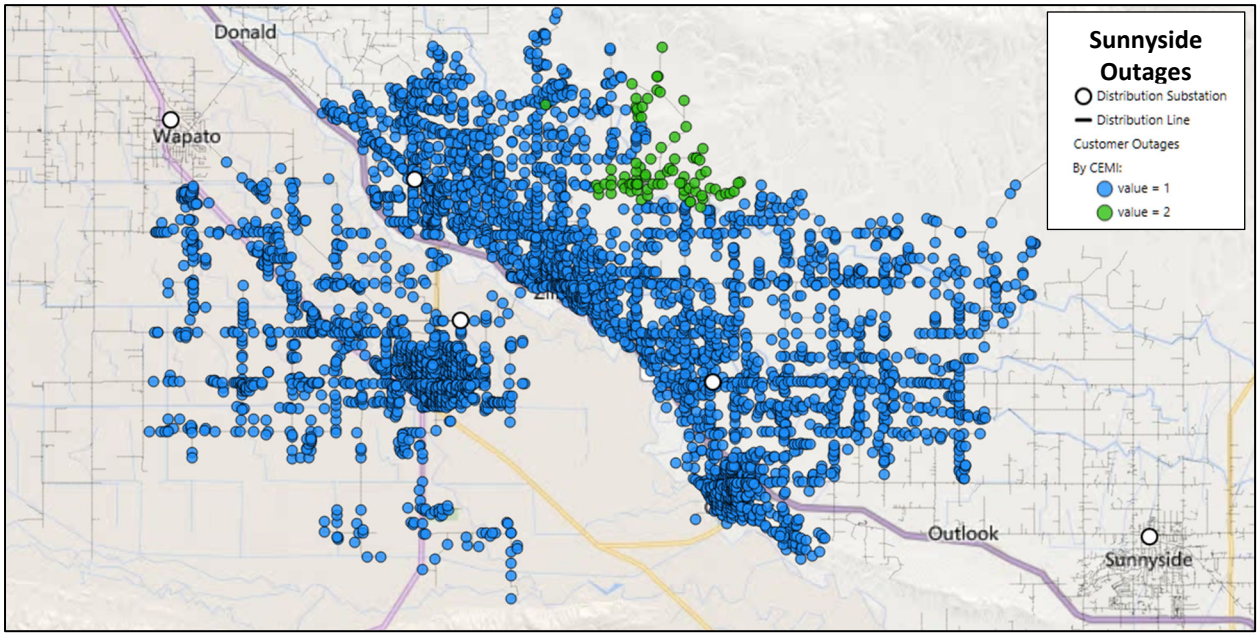


Figure 1. Sunnyside Major event outages.

Restoration Intervals

Total Customers Sustained	< 3 Hrs.	3 - 24 Hrs.	24-48 Hrs.
10,426	10,326	100	0

Restoration Resources [13]

Personnel Resources	
Substation crewmembers	**2**
Total	**2**

State Estimated Major Event Costs

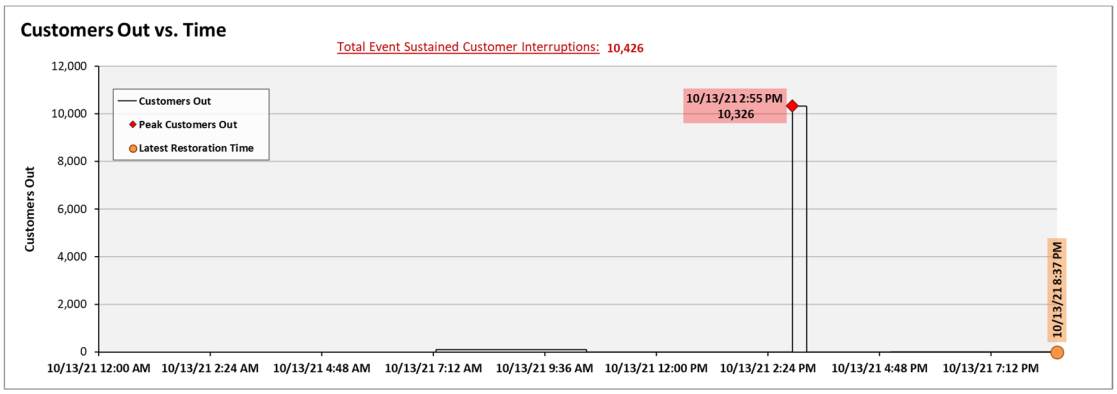
Estimate $	Labor	Contracts	Material	Total
Capital	$0	$0	$0	**$0**
Expense	$441	$0	$0	**$441**
Total	**$441**	**$0**	**$0**	**$441**

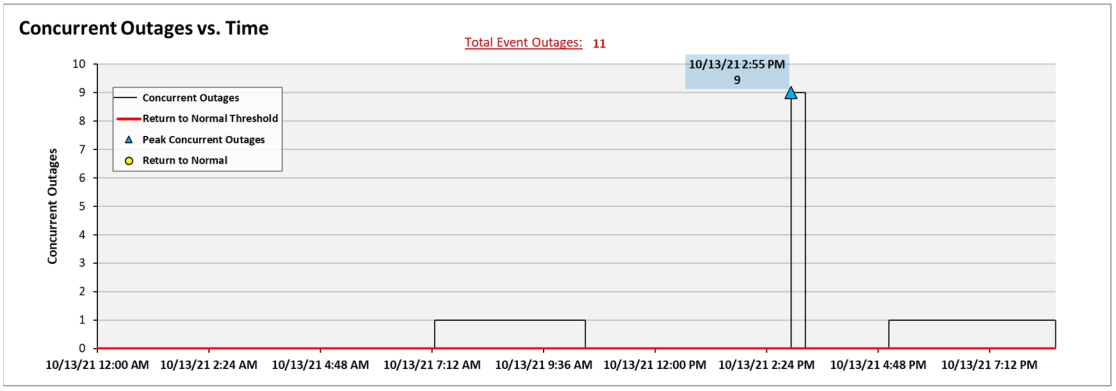
[13] Data provided represents specific system records for personnel, resources, and costs; and is specific to the event, not inclusive of state delineation. However additional resources whose participation did not get individually captured in transaction recording systems may have been utilized during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

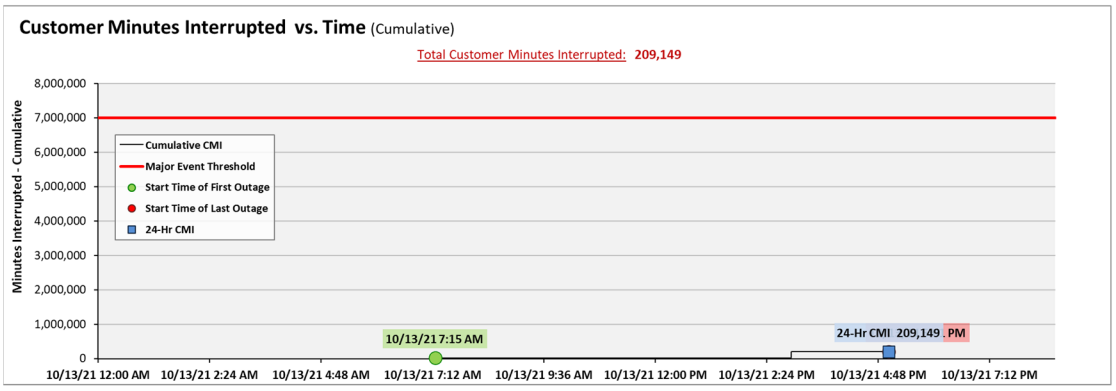
Major Event Declaration

Pacific Power is requesting designation of this event and its consequences to be classified as a "Major Event" for exclusion from underlying network performance reporting. This major event exceeded the company's current Washington system average interruption frequency index-driven (SAIFI) threshold of 10% total operating area customers served sustained interruptions (10,426 customers were interrupted out of 24,993 Sunnyside operating area customers, or 42% of the operating area customers) simultaneously in a 24-hour period.

Event Detail







Report to the Washington Utilities and Transportation Commission

Electric Service Reliability - Major Event Report

Event Date:	November 14-16, 2021
Date Submitted:	January 13, 2022
Primary Affected Locations:	Yakima
Primary Cause:	Weather
Exclude from Reporting Status:	Yes
Report Prepared By:	April Brewer
Report Approved By:	Heide Caswell / Carrie Laird

Event Description and Restoration Summary

Event Outage Summary	
# Interruptions (sustained)	82
Total Customers Interrupted (sustained)	21,500
Total Customer Minutes Lost	1,576,506
State Event SAIDI	11.52 Minutes
CAIDI	73
Major Event Start	11/14/21 8:35 PM
Major Event End	11/16/21 2:37 AM

From November 14–16, 2021, Washington experienced a major event as the result of several storm related outage events. Most significantly were outages which occurred as a result of a storm which passed through the Yakima service territory. Outages in the Yakima operating area which accounted for 88% of the customer minutes lost and 95% of all customer outages during the major event. The following information highlights the weather, outage, and restorations details during the major event.

On November 15, an atmospheric river brought strong and unusually widespread southwest to west winds to the Yakima area. Winds increased through the morning hours of November 15, peaked in the afternoon, then slowly decreased during the evening and overnight hours. Maximum wind gusts reached 64 miles per hour (mph) at the Vagabond Army Airfield, 59 mph at the Yakima Airport (McAllister Field), and 41 mph at the Sunnyside Airport weather stations. These maximum gust values exceed each station's 99th percentile values. Figures 1-3 show the details of winds speed and wind gusts for these three weather stations on November 15. As is typical, the strongest winds occurred on the east slopes of the Cascades where gusts up to 83 mph were measured (Sedge Ridge), as shown in Figure 4.

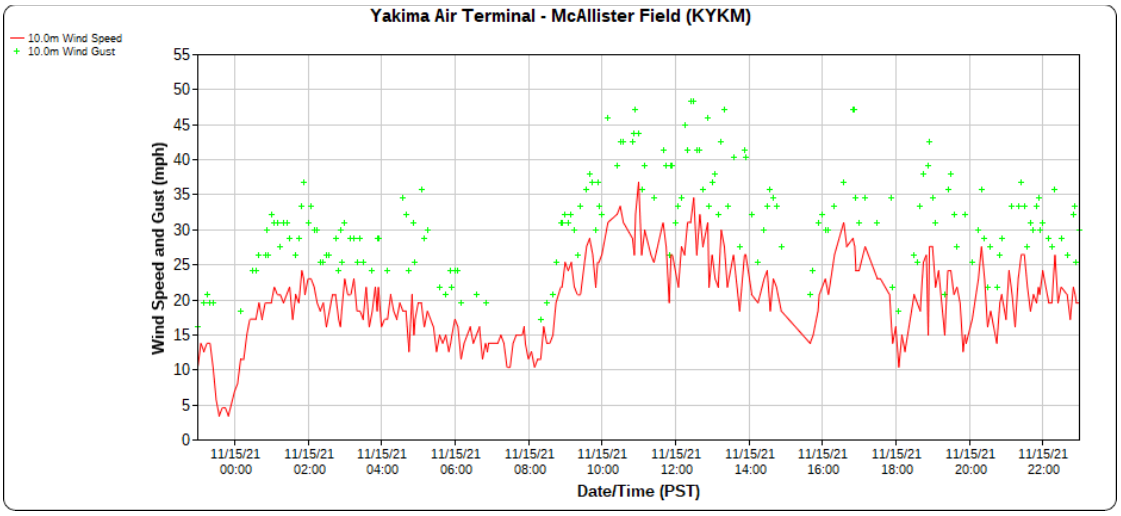


Figure 1. November 15 measured wind speed and gusts at Yakima Air Terminal weather station.

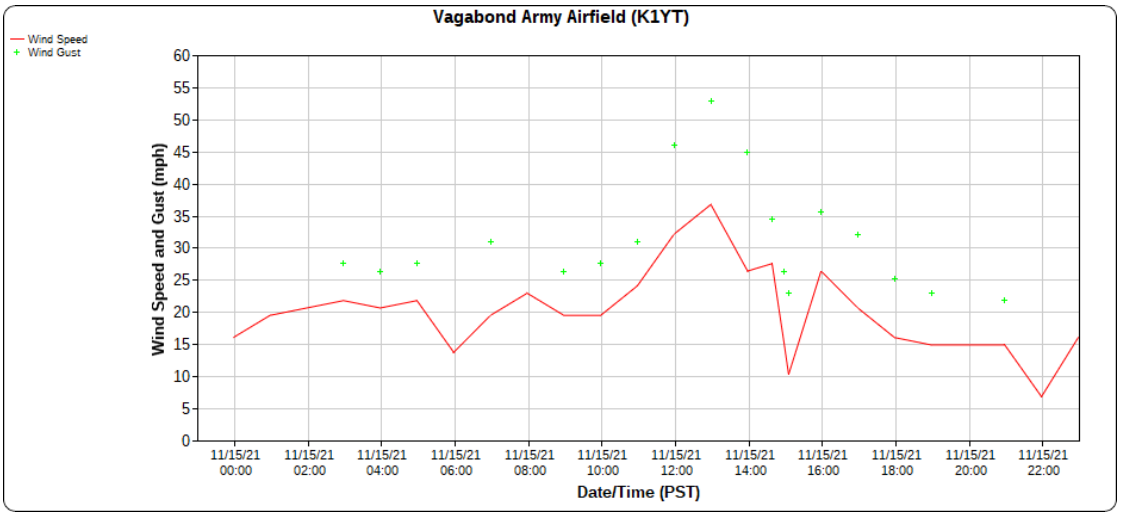


Figure 2. November 15 measured wind speed and gusts at Vagabond Army Airfield weather station.

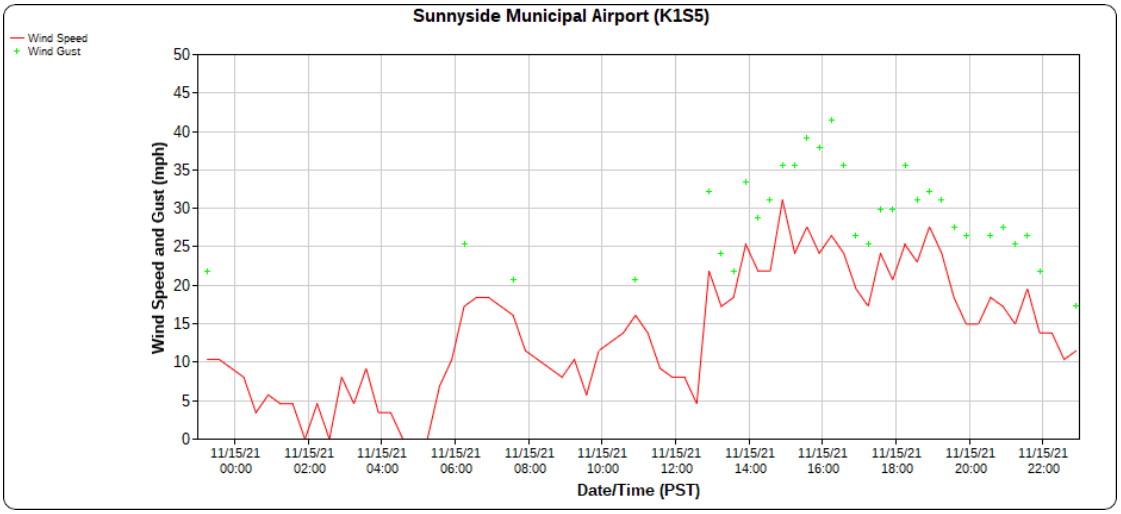


Figure 3. November 15 measured wind speed and gusts at Sunnyside Municipal Airport weather station.

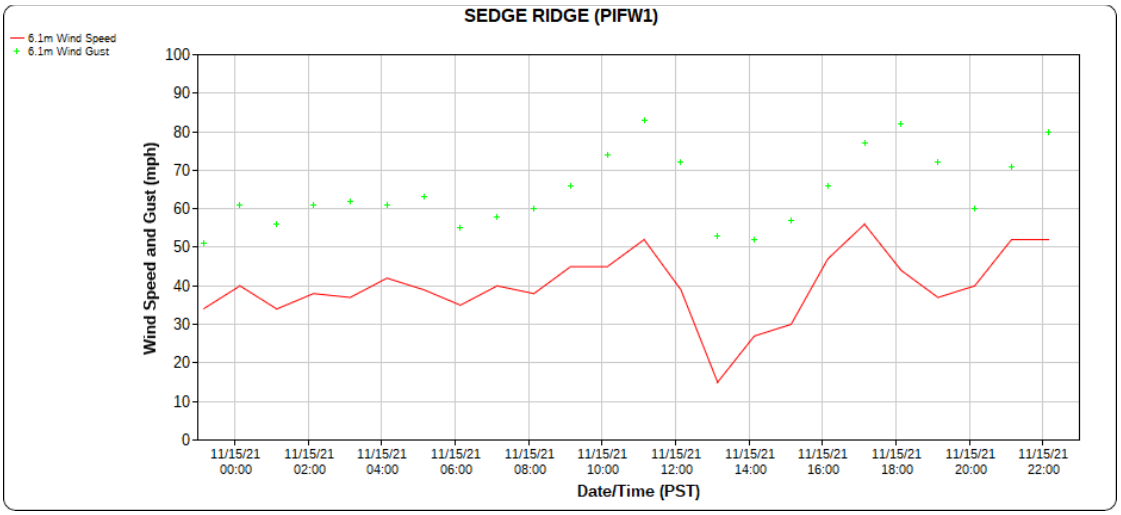


Figure 4. November 15 measured wind speed and gusts at Vagabond Army Airfield weather station.

Abnormally high winds began hitting the Yakima Valley around 8:00 a.m. on November 15. Although winds remained through most of the day, the strongest winds were on the leading edge of the storm and most of the outage damage occurred around noon, where within the span of one hour 33 outage events occurred in Yakima; including a loss of transmission line outage which affected four substations, feeding 14 circuits, serving approximately 15,600 customers. The customer outage durations for the loss of transmission line ranged from five minutes to 56 minutes. Within Pacific Powers Washington service areas, Yakima experienced 71 outage events on November 15, while Sunnyside experienced four events, and Walla Walla experienced 11 events.

Once the storm impacts were felt all available crews, both internal and contract crews were pulled off scheduled work to help restore service, including five local contract line crews working in the Yakima area, one contract line crew from the Tri-Cities, one contract line crew from Albany, Oregon, three contract tree crews, and three contract flagging crews. Internal resources were split into single responders, with the remaining being used as responders to field hazard and outage calls. Non-lineman resources from substation operations were used to field non-hazard calls and suspected non-outage calls to keep lineman resources focused on actual outage and hazard calls. Once a system outage assessment was completed internal resources were grouped back into crews, as needed, to address damages requiring larger crews.

During this time, downed trees, limbs on lines, and wire down were the main causes for the outages. Most of the distribution repairs involved removing trees and limbs from lines, putting conductors back up, patrolling lines, tightening sag, and re-energizing once it was verified no permanent fault existed. Many other outages had no cause found as the fault self-cleared and the line was able to be patrolled and re-energized after initial patrol. During the major event 25% of all customer minutes lost and 78% of all customers out were the result of the loss of transmission line event, while 63% of all customer minutes lost and 15% of all customer outages were due to wind and tree related causes. As evidenced by the large volume of

customers out in combination with the small accumulation of customer minutes lost, crews focused restoration activities on restoring outages which impacted larger numbers of customers, and then addressed the outages which occurred downstream of those larger events. Outage durations during the major event ranged from five minutes to 16 hours 20 minutes with an average restoration duration of one hour 13 minutes. Considering more the 21,500 customers experienced an outage during the period, crews were able to quickly focus on the large volume of single digit customer count outages requiring cleanup after the large bulk of customers had quickly been restored. The maps in figures 5 through 7 show the locations of customer outages and the association to wind gust locations, duration, and frequency of outages during the event period.

To date, there have been no company or commission customer complaints made regarding the major event.

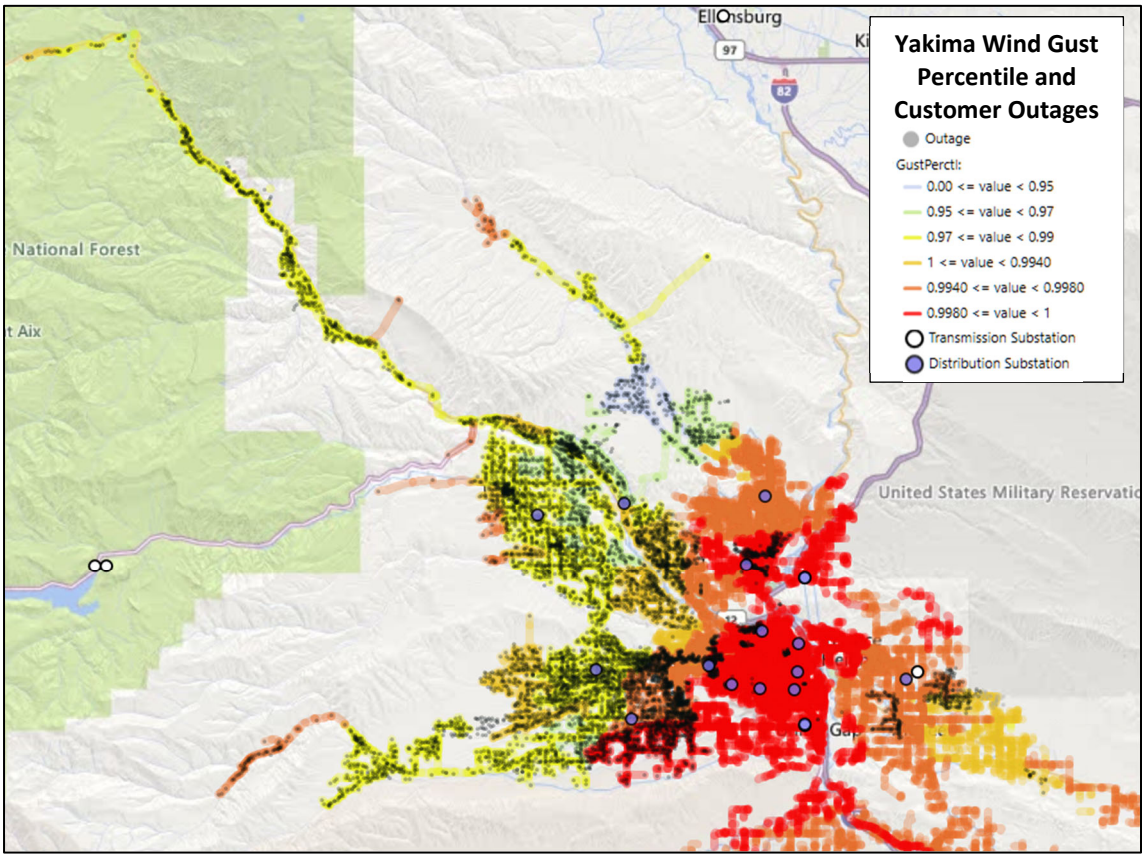


Figure 5. Yakima wind gust for November 15 mapped by circuit overlaid with event outages.

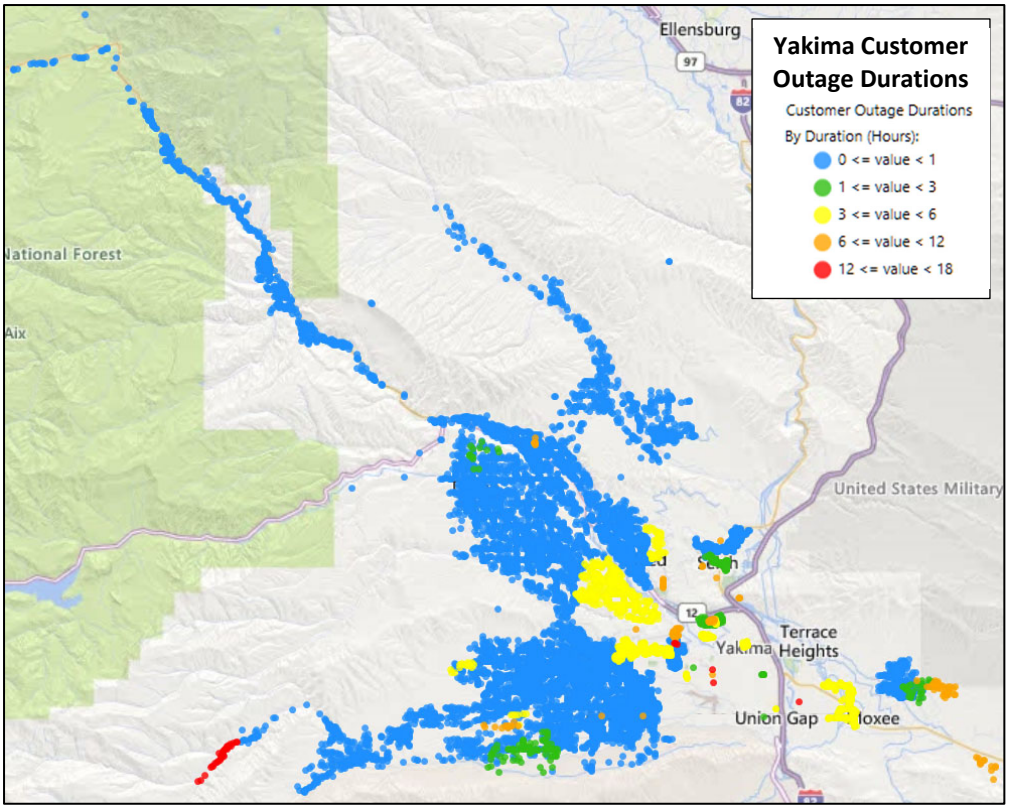


Figure 5. Yakima Customer outage durations during the Major Event.

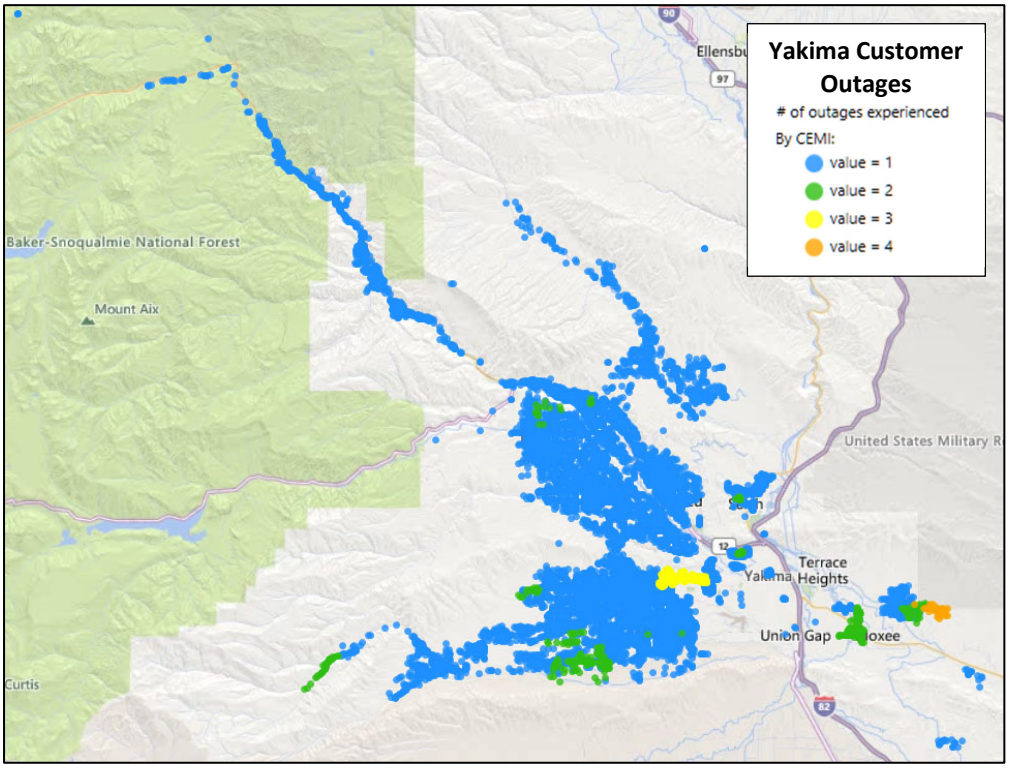


Figure 7. Yakima Customer outages during the Major Event.

Restoration Intervals

Total Customers Sustained	< 3 Hrs.	3 - 24 Hrs.	24 - 48 Hrs.
21,500	18,258	3,242	0

Restoration Resources [14]

Personnel Resources			
Collector	**2**	Field Manager	**3**
# Support staff	**1**	Foreman	**1**
Line crewman	**19**	Substation	**7**
Contract crewman	**21**	Warehouseman	**1**
		Total	**55**

Materials			
Poles (D)	**16**	Cutouts	**31**
# Approx. conductor Line (feet)	**1,130**	Regulator	**1**
Transformers	**4**	Line splices	**148**
Crossarms	**11**	Pole Reinforcer	**4**
Insulators	**32**	Wood Pole Protection Wrap	**25**

State Estimated Major Event Costs

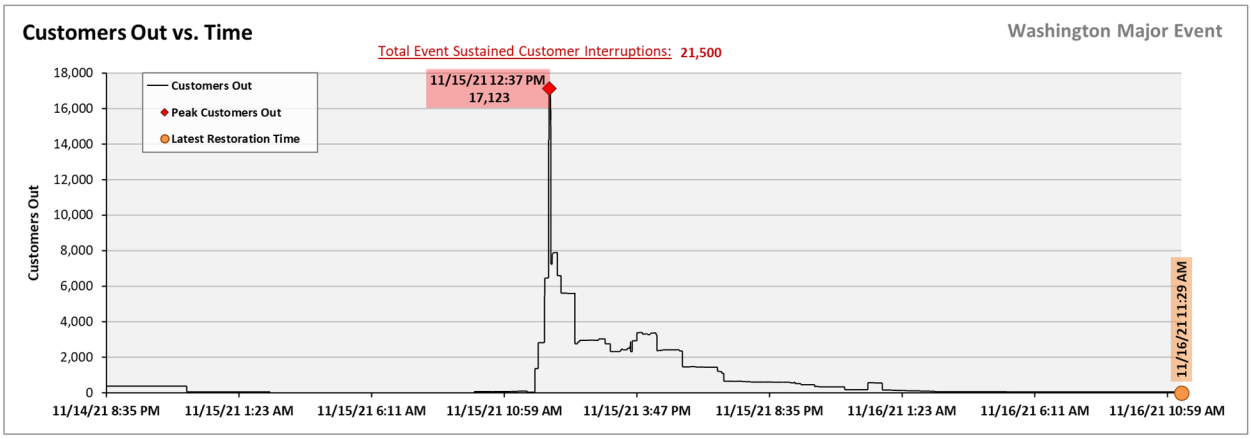
Estimate $	Labor	Contracts	Material	Overhead	Total
Capital	$8,038	$13,660	$32,963	$6,604	$61,264
Expense	$78,605	$86,494	$22,022	$7,572	$194,694
Total	**$86,643**	**$100,154**	**$54,985**	**$14,176**	**$255,957**

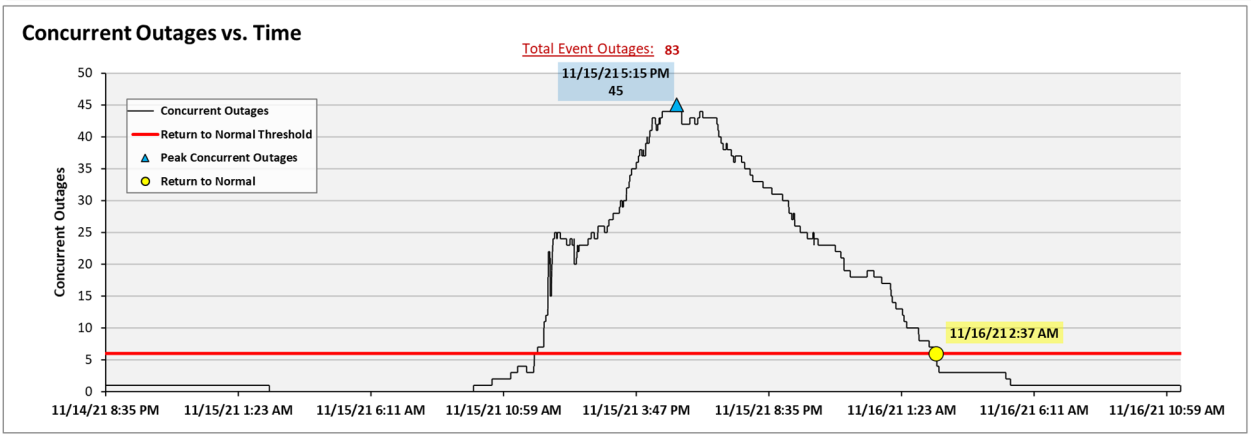
Major Event Declaration

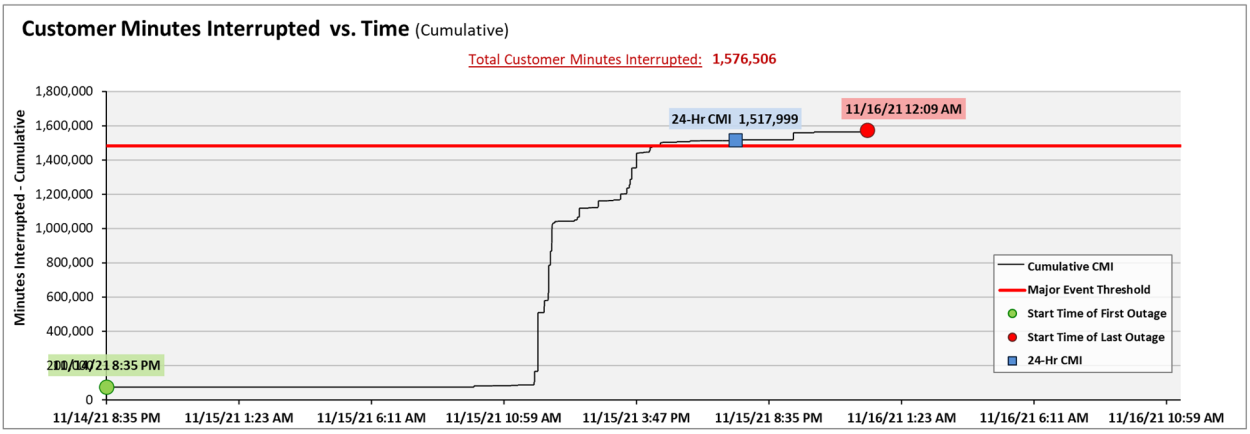
Pacific Power is requesting designation of this event and its consequences to be classified as a "Major Event" for exclusion from network performance reporting with the IEEE 1366-2003/2012. This major event exceeded the company's 2021 Washington threshold of 1,482,928 customer minutes lost (10.8 state SAIDI minutes) in a 24-hour period.

[14] Data provided represents specific system records for personnel, resources, and costs; and is specific to the event, not 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.

Event Detail







Report to the Washington Utilities and Transportation Commission

Electric Service Reliability - Major Event Report

Event Date:	December 31, 2021
Date Submitted:	February 2, 2022
Primary Affected Locations:	Sunnyside
Primary Cause:	Loss of Transmission Line
Exclude from Reporting Status:	Yes
Report Prepared by:	April Brewer
Report Approved by:	Heide Caswell / Mark Vanwinkle

Event Description and Restoration Summary

Event Outage Summary	
# Interruptions (sustained)	11
Total Customers Interrupted (sustained)	10,085
Total Customer Minutes Lost	109,641
State Event SAIDI	0.80 Minutes
CAIDI	11
Major Event Start	12/31/21 12:00 AM
Major Event End	1/1/22 12:00 AM

At 11:06 p.m. on December 31, 2021, Sunnyside, Washington, experienced a SAIFI-based major event due to a loss of supply outage. The event occurred when Bonneville Power Administration (BPA) reported a tree had cause a permanent fault on the BPA-owned North Bonneville (BPA) - Outlook (PP) – Midway (BPA) 230kV transmission line. The fault tripped Outlook substation 2Y76 and 2Y80 circuit breakers which resulted in a loss of supply to distribution-fed substations Toppenish and Punkin Center (via PacifiCorp 115kV transmission lines). Figure 1 below is a graphical representation of the affected network. Pacific Power immediately took actions to restore customers via alternate feed.

The Toppenish Substation lost feed to six distribution circuits serving a total of 6,031 customers. These customers were restored in nine minutes. The Punkin Center Substation lost feed to three distribution circuits, serving 4,046 customers. These customers were restored in 14 minutes. In total the event impacted 10,077 customers. Figure 2 depicts the customers out and the duration.

To date, there have been no commission or company complaints concerning this major event.

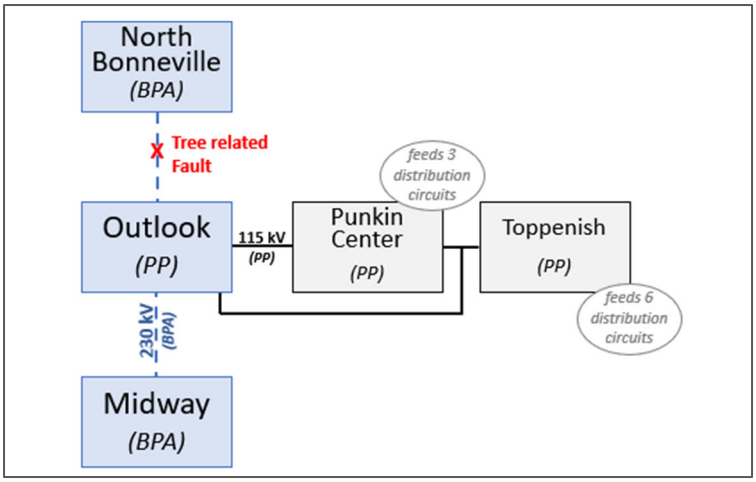


Figure 1. Affected system diagram

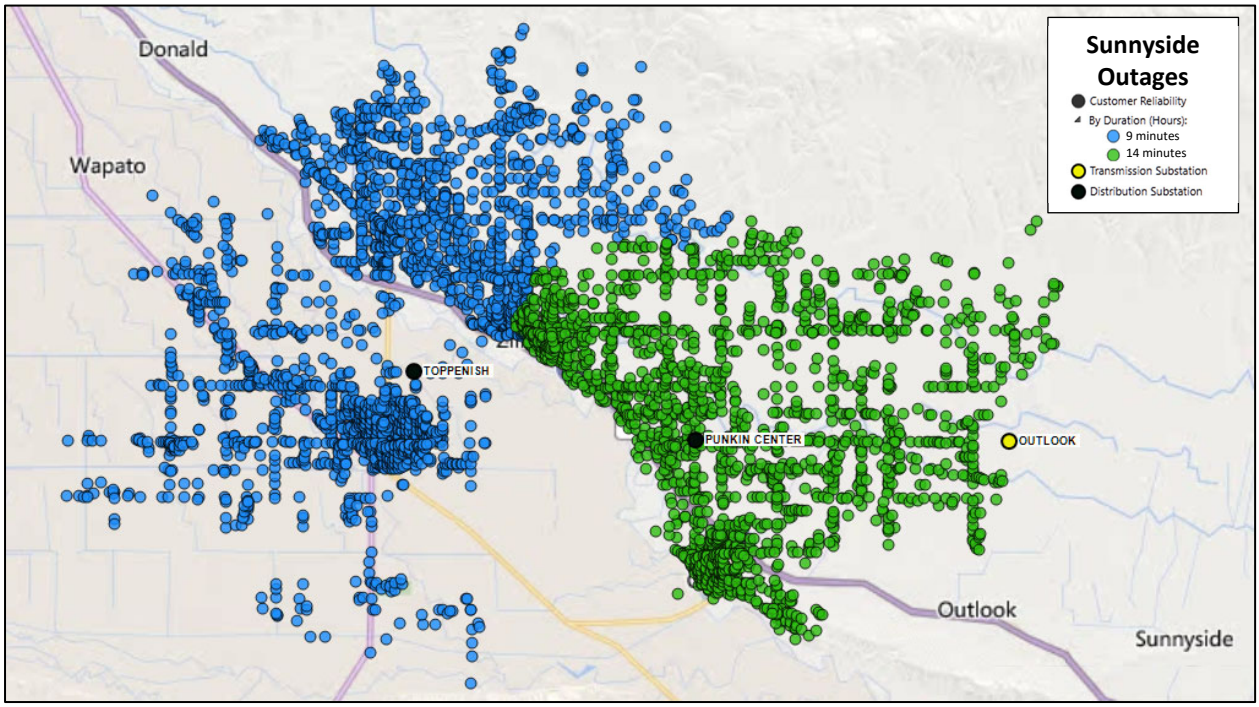


Figure 2. Sunnyside Major event outages.

Restoration Intervals

Total Customers Sustained	< 3 Hrs.	3 - 24 Hrs.	24-48 Hrs.
10,085	10,085	0	0

Restoration Resources [15]

Personnel Resources	
Support Staff	**1**
Substation Manager	**1**
Relay Tech	**1**
Total	**3**

State Estimated Major Event Costs

Estimate $	Labor	Contracts	Material	Total
Capital	$0	$0	$0	**$0**
Expense	$950	$0	$0	**$950**
Total	**$950**	**$0**	**$0**	**$950**

Major Event Declaration

Pacific Power is requesting designation of this event and its consequences to be classified as a "Major Event" for exclusion from underlying network performance reporting. This major event exceeded the company's current Washington system average interruption frequency index-driven (SAIFI) threshold of 10% total operating area customers served sustained interruptions (10,085 customers were interrupted out of 24,993 Sunnyside operating area customers, or 40% of the operating area customers) simultaneously in a 24-hour period.

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

Event Detail