



1407 W North Temple, Suite 310  
Salt Lake City, Utah 84116

October 16, 2017

***VIA ELECTRONIC FILING***

Public Service Commission of Utah  
Heber M. Wells Building, 4th Floor  
160 East 300 South  
Salt Lake City, UT 84111

Attention: Gary Widerburg  
Commission Secretary

Re: Docket No.17-035-57  
Major Event Report for Septemeber 4-5, 2017

Rocky Mountain Power is requesting major event exclusion for the weather-related events on September 4–5, 2017, which exceeded the Commission approved threshold for customer minutes lost in a 24-hour period.

Attached you will find details including costs incurred, restoration resources, number of customers off supply, customer minutes lost, and SAIDI, SAIFI, CAIDI figures.

Upon Commission approval, the company will exclude outage information for these events from its network performance reporting and from customer guarantee failure payments.

Informal inquiries may be made to Jana Saba at (801) 220-2823 or Heide Caswell, Director Engineering, at (503) 813-6216.

Sincerely,

A handwritten signature in blue ink that reads "Jeffrey K. Larsen".

Jeffrey K. Larsen  
Vice President, Regulation

Enclosures

<b>Report to the Utah Public Utility Commission</b> <b>Electric Service Reliability - Major Event Report UT-17-2</b>
---

Event Dates:	September 4 – 5, 2017
Date Submitted:	October 16, 2017
Primary Affected Locations:	Cedar City, American Fork, and Ogden
Primary Cause:	Loss of transmission
Exclude from Reporting Status:	Yes
Report Prepared by:	April Brewer
Report Approved by:	Heide Caswell / Ken Shortt / Jody Berger / Dan Bodily

**Event Description and Restoration Summary**

Event Outage Summary	
<b># Interruptions (sustained)</b>	80
<b>Total Customer Interrupted (sustained)</b>	32,677
<b>Total Customer Minutes Lost</b>	5,560,421
<b>Event SAIDI</b>	6.20 Minutes
<b>CAIDI</b>	170
<b>Major Event Start</b>	9/4/17 9:57 PM
<b>Major Event End</b>	9/5/17 9:57 PM

From the evening of September 4 to the evening of September 5, 2017, Rocky Mountain Power experienced a series of unrelated loss of transmission outages which affected customers across the state. Below is a description of each event, including the cause, customers impacted and the restoration steps the company took to safely restore power in a timely manner.

**Cedar City**

On the evening of September 4, 2017, Cedar City experienced a loss of transmission outage when a lightning storm passed through the area tripping circuit breakers at the Middleton Substation. Dispatch contacted the on-call relay technician to the substation in addition to sending out two linemen to patrol the 34.5 kV line which feeds the Middleton Substation. The relay tech reported that an instantaneous ground fault occurred approximately 7.5 miles from the substation. The night patrolmen drove the route using trouble lights mounted on the truck in an attempt to locate any issues with the line. After a partial ground patrol was performed the first circuit breaker was closed. Upon completion of the ground patrol the second circuit breaker was closed restoring power to the remaining customers. The outage

affected five substations, feeding nine circuits, which serve approximately 5,500 customers, with outage durations ranging from 3 hours 52 minutes to 4 hours 51 minutes.

An aerial patrol was performed the following day using a helicopter and no issues were discovered. In addition to the aerial patrol a lineman drove to the 7.5 mile mark of the line and found no problems. However, crews determined that several pole grounds in the area appeared to have been stolen, whose absence may have contributed to the effect of the lightning strike to the circuit breaker.

### **American Fork/Eagle Mountain/Saratoga Spring**

At 4:07 AM, on September 5, 2017, a second loss of transmission outage event occurred when transmission lightning arrestors failed at the Eagle Mountain Substation. The event initially affected only those customers served from the Saratoga Substation, however just over an hour and a half later, at 5:41 AM, another arrestor failed causing additional outages to customers served from the Parkside and Pony Express Substations.

Crews were first dispatched to patrol the 138 kV line. Once it was determined that arrestors had failed, the switches at the Saratoga tap were operated to restoring power to customers in Saratoga Springs. Meanwhile crews worked to replace the damaged arrestors on the Eagle Mountain switchrack. Once repairs were completed the remaining customers served from the Pony Express and Parkside substations were restored. A later investigation determined the arrestors were underrated and dispatch was contacted to change the system to alarm when voltage hit 143 kV. An additional survey was conducted on all the substations recently acquired from Eagle Mountain and it was noted that all the arrestors will need to be replaced to bring to Rocky Mountain Power standards.

The two events affected approximately 17,900 customers in the American Fork operating area. The 8,900 customers served out of the Saratoga Substation were without power for 2 hours 41 minutes, while the remaining 9,000 customers served from the Parkside and Pony Express Substation were without power for 3 hours 33 minutes.

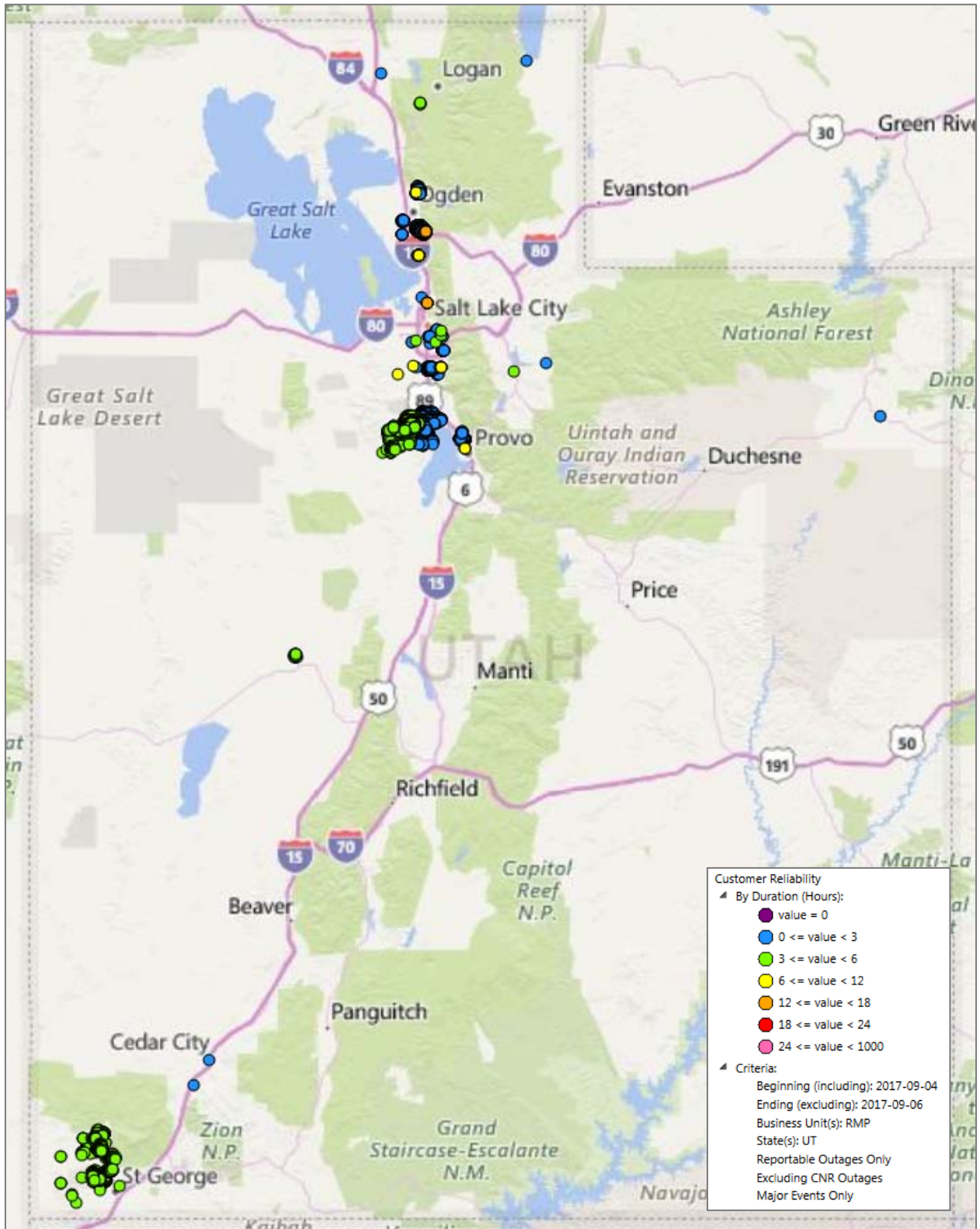
### **Uintah**

In addition to the events above customers served out of the Uintah Substation also experienced a loss of transmission outage when, at 7:13 AM, a 46 kV conductor was damaged and fell to the ground causing a fault, tripping the substation circuit breaker. The failed 46 kV section of the line was isolated and power was restored to the 5,200 customers served by the Uintah Substation in 1 hour 66 minutes.

High winds coupled with an area wildfire severely strained portions of the line, as multiple structures were burned. Once the fire was extinguished crews had to build a road and landings along the mountain side before structures could be replaced on September 9. Other poles along the line were assessed for fire damage and replaced as needed.

There were no company and one customer commission complaint (with five petitioners in Cedar City) made regarding the major event.

# Outage Map by Duration



## Restoration Intervals

Total Customers Sustained	< 3 Hrs.	3 - 24 Hrs.	24+ Hrs.
<b>32,677</b>	17,887	14,789	1

## Restoration Resources

Personnel Resources	
Troublemembers/Assessors	4
Internal Crewmembers (local)	1
Internal Crewmembers (borrowed/non-local)	24
External Crewmembers (contract)	5
Substation Crewmembers	5
<b>TOTAL</b>	<b>39</b>

Materials	
# Poles (transmission)	12
Approximate Line Feet (conductor)	4,600
# Crossarms	6

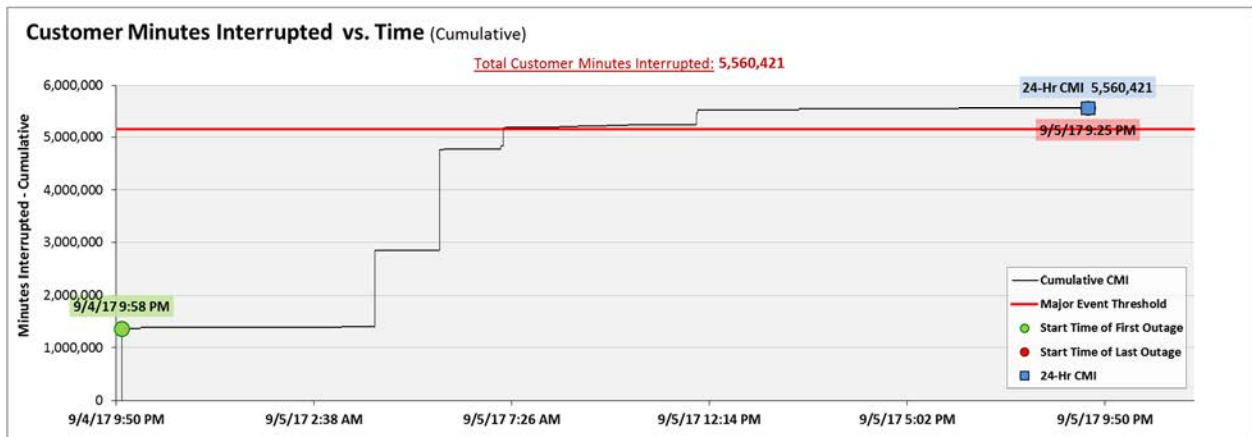
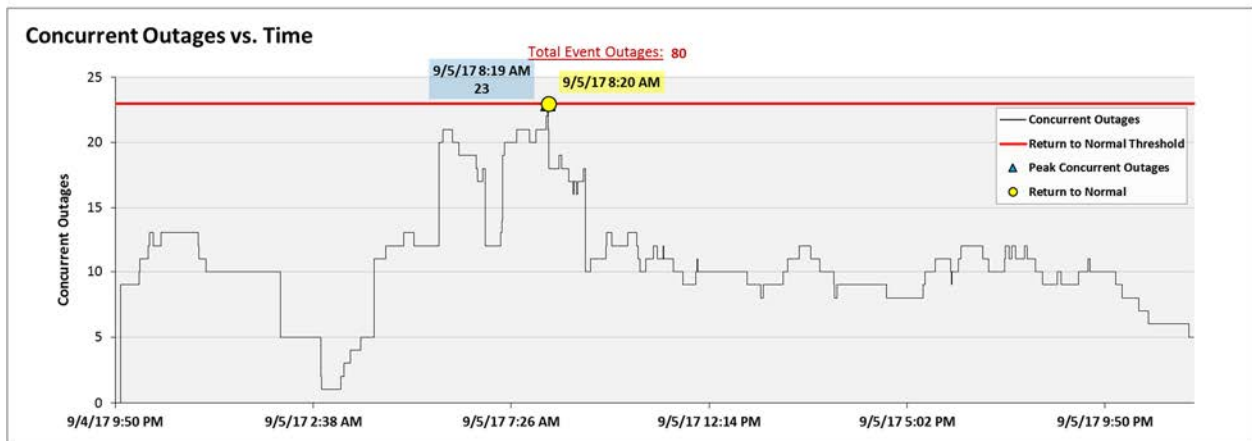
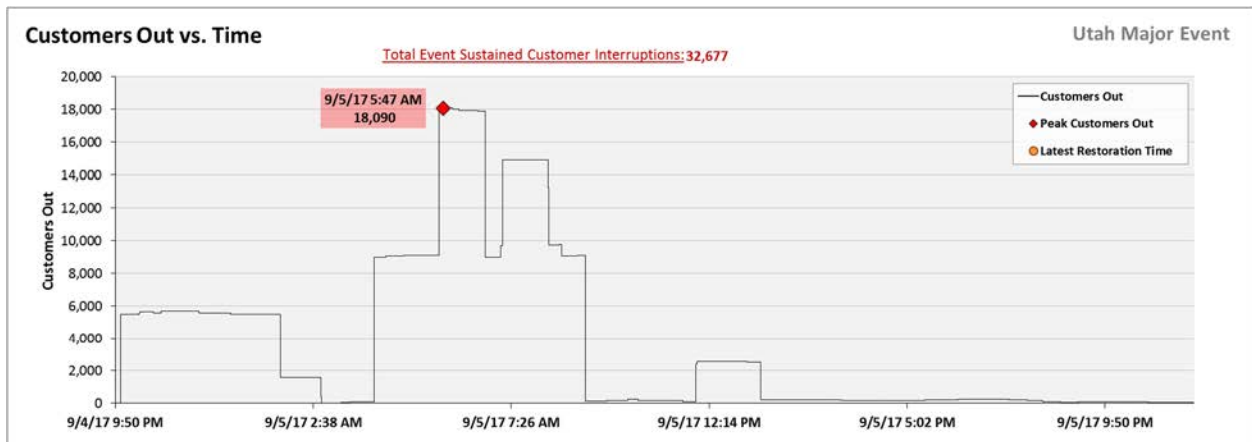
## State Estimated Major Event Costs

Estimate \$	Labor	Contracts	Materials	Overhead	Total
<b>Capital</b>	\$ 76,272	\$ 33,300	\$ 34,651	\$ 30,084	\$ 174,307
<b>Expense</b>	\$ 3,235	\$ 0	\$ 0	\$ 0	\$ 3,235
<b>Total</b>	<b>\$ 79,507</b>	<b>\$ 33,300</b>	<b>\$ 34,651</b>	<b>\$ 30,084</b>	<b>\$ 177,542</b>

## Major Event Declaration

Rocky Mountain Power is requesting designation of this storm and its consequences to be classified as a "Major Event" for exclusion from network performance reporting. This major event exceeded the company's current Utah threshold for customer minutes lost in a 24-hour period, consistent with Utah Administrative Code R746-313. The 2017 annual threshold for Utah is 5,152,204 minutes (i.e., 5.74 state SAIDI minutes).

# Event Detail



## SAIDI, SAIFI, CAIDI by Reliability Reporting Region

Please see the attached system-generated reports.

**PacifiCorp Major Event Report**  
Customer Analysis

	Utah	Customer Analysis 9/4/2017 through 9/5/2017					Customers Restored by Intervals									Major Event Only - metric by operating area customer counts		
		Sustained Customers Off	% Sustained Customers Off	CML	Number of Sustained Interruptions	Customer Count	< 5 min	5 min - 3 hrs	3 hrs - 24 hrs	24 hrs - 48 hrs	48 hrs - 72 hrs	72 hrs - 96 hrs	96 + hrs	% Sustained Customers Restored in 3 Hours PS4	SAIDI	SAIFI	CAIDI	
PC	PACIFICORP	32,677	2%	5,560,421	81	1,900,047	4,848	17,887	14,789	-	-	-	1	55%	2.93	0.017	170	
RMP	Rocky Mountain Power	32,677	3%	5,560,421	81	1,120,570	4,848	17,887	14,789	-	-	-	1	55%	4.96	0.029	170	
UT	Utah	32,677	4%	5,560,421	81	897,258	4,848	17,887	14,789	-	-	-	1	55%	6.20	0.036	170	
UT	AMERICAN FORK	18,666	19%	3,423,759	18	100,729	3,718	9,679	8,987	-	-	-	-	52%	33.99	0.185	183	
UT	CEDAR CITY	5,505	17%	1,371,202	10	32,969	1	1	5,504	-	-	-	-	0%	41.59	0.167	249	
UT	CEDAR CITY (MILFORD)	-	0%	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	
UT	EVANSTON	-	0%	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	
UT	JORDAN VALLEY	2,584	1%	247,004	14	221,832	-	2,568	16	-	-	-	-	99%	1.11	0.012	96	
UT	LAYTON	241	0%	70,825	3	70,573	-	93	148	-	-	-	-	39%	1.00	0.003	294	
UT	MOAB	-	0%	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	
UT	MONTPELIER	1	0%	131	1	3,169	-	1	-	-	-	-	-	100%	0.04	0.000	131	
UT	OGDEN	5,359	5%	394,923	11	106,920	1,129	5,317	41	-	-	-	1	99%	3.69	0.050	74	
UT	PARK CITY	3	0%	306	3	31,158	-	2	1	-	-	-	-	67%	0.01	0.000	102	
UT	PRICE	-	0%	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	
UT	RICHFIELD	-	0%	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	
UT	RICHFIELD (DELTA)	28	1%	6,902	1	3,833	-	-	28	-	-	-	-	0%	1.80	0.007	246	
UT	SLC METRO	282	0%	44,341	15	218,170	-	222	60	-	-	-	-	79%	0.20	0.001	157	
UT	SMITHFIELD	5	0%	815	2	23,677	-	1	4	-	-	-	-	20%	0.03	0.000	163	
UT	TOOELE	-	0%	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	
UT	TREMONTON	1	0%	55	1	10,161	-	1	-	-	-	-	-	100%	0.01	0.000	55	
UT	VERNAL	2	0%	159	2	12,839	-	2	-	-	-	-	-	100%	0.01	0.000	79	

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

Date*	Customer Interrupted by Date 9/4/2017 through 9/5/2017					Customers Restored by Intervals									Major Event Only - metric by state customer counts		
	Sustained Customers Off	% Sustained Customers Off	CML	Number of Sustained Interruptions	Average Customer Count	< 5 min	5 min - 3 hrs	3 hrs - 24 hrs	24 hrs - 48 hrs	48 hrs - 72 hrs	72 hrs - 96 hrs	96 + hrs	% Sustained Customers Restored in 3 Hours PS4	SAIDI	SAIFI	CAIDI	
9/4/2017	5,762	1%	1,394,324	14	897,258	-	247	5,515	-	-	-	-	4%	1.55	0.006	242	
9/5/2017	26,915	3%	4,166,098	67	897,258	4,848	17,640	9,274	-	-	-	1	66%	4.64	0.030	155	

Data as of
10/10/2017

**PacifiCorp Major Event Report**  
SSC by State Analysis

	Utah	Event 09/04/17 through 09/05/17						Month 09/01/17 through 09/30/17						YTD FY2017 01/01/17 through 09/30/17					
		Major Events Included			Major Event Excluded			Major Events Included			Major Events Excluded*			Major Events Included			Major Events Excluded*		
		SAIDI	SAIFI	CAIDI	SAIDI	SAIFI	CAIDI	SAIDI	SAIFI	CAIDI	SAIDI	SAIFI	CAIDI	SAIDI	SAIFI	CAIDI	SAIDI	SAIFI	CAIDI
	<b>PacifiCorp Major Events Report SSC by State</b>																		
PC	PACIFICORP	3.34	0.020	166	0.42	0.003	140	15.51	0.125	124	10.42	0.103	101	190.01	1.251	152	103.99	0.965	108
RMP	Rocky Mountain Power	5.33	0.031	169	0.37	0.002	158	18.18	0.155	117	13.22	0.126	105	131.64	1.061	124	114.35	0.969	118
UT	Utah	6.50	0.038	171	0.30	0.002	191	18.26	0.132	139	12.07	0.095	127	122.06	0.916	133	105.25	0.824	128
UT	AMERICAN FORK	3.83	0.021	184	0.02	0.000	227	4.50	0.030	149	0.69	0.009	73	12.04	0.099	122	7.30	0.074	99
UT	CEDAR CITY	1.53	0.006	249	0.00	0.000	66	2.05	0.010	204	0.52	0.004	133	7.99	0.067	119	6.06	0.057	106
UT	CEDAR CITY (MILFORD)	-	-	-	-	-	-	0.70	0.002	325	0.70	0.002	325	1.67	0.007	243	1.57	0.007	237
UT	EVANSTON	-	-	-	-	-	-	0.00	0.000	136	0.00	0.000	136	0.14	0.001	168	0.14	0.001	168
UT	JORDAN VALLEY	0.31	0.003	101	0.034	0.000	195	2.55	0.019	136	2.28	0.016	143	21.88	0.144	152	20.71	0.137	151
UT	LAYTON	0.11	0.001	161	0.03	0.000	70	2.21	0.009	236	2.13	0.009	234	8.54	0.057	149	8.41	0.056	149
UT	MOAB	-	-	-	-	-	-	0.10	0.000	294	0.10	0.000	294	1.60	0.025	64	1.19	0.020	59
UT	MONTPELIER	0.00	0.000	131	-	-	-	0.00	0.000	117	0.00	0.000	116	4.03	0.007	619	4.02	0.007	618
UT	OGDEN	0.52	0.006	81	0.08	0.000	193	1.34	0.012	108	0.90	0.006	141	12.53	0.088	143	10.86	0.075	146
UT	PARK CITY	0.00	0.000	104	0.000	0.000	108	1.33	0.003	395	1.33	0.003	395	7.46	0.038	197	6.58	0.035	189
UT	PRICE	-	-	-	-	-	-	0.09	0.001	84	0.09	0.001	84	1.56	0.024	66	1.55	0.024	65
UT	RICHFIELD (DELTA)	-	-	-	-	-	-	0.10	0.001	70	0.10	0.001	70	2.87	0.030	97	2.76	0.029	95
UT	RICHFIELD (DELTA)	0.01	0.000	246	-	-	-	0.03	0.001	24	0.03	0.001	19	0.80	0.007	120	0.49	0.005	100
UT	SLC METRO	0.17	0.001	230	0.12	0.000	286	2.24	0.028	79	2.19	0.028	78	28.97	0.243	119	23.98	0.219	109
UT	SMITHFIELD	0.00	0.000	163	-	-	-	0.05	0.001	89	0.05	0.001	88	3.54	0.022	157	3.35	0.021	158
UT	TOOELE	0.00	0.000	149	0.000	0.000	149	0.50	0.005	91	0.50	0.005	91	3.27	0.030	110	3.20	0.029	108
UT	TREMONTON	0.00	0.000	60	0.00	0.000	61	0.33	0.006	57	0.33	0.006	57	2.25	0.021	106	2.20	0.021	107
UT	VERNAL	0.02	0.000	232	0.02	0.000	236	0.13	0.001	186	0.13	0.001	186	0.93	0.009	103	0.90	0.009	102

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

Data as/of
<b>10/10/2017</b>