



Circuit Reliability Review

Hawthorne

January 2017

Providing Safe, Reliable, and Affordable Power

Southern California Edison is modernizing the power grid to meet the changing needs and expectations of our customers and to help California achieve its clean energy goals.

We are investing more than \$12 billion into our power grid between 2015 – 2017 with the goal of increasing power reliability through significant upgrades. These investments include:

- Updating thousands of transmission and distribution poles
- Replacing hundreds of miles of underground cables
- Replacing hundreds of underground structures such as vaults and manholes
- Upgrading critical distribution equipment; capacitor banks, switches, and circuit breakers
- Building new distribution circuits to serve electrical demands in our communities
- Inspecting and replacing overhead conductor and equipment to improve public safety

Our investments in local communities will help ensure that customers receive safe, reliable, and affordable electricity now and in the future.

Understanding Your Reliability Report

As your electric utility, we want you to always have power when you need it. To get there, we constantly track and monitor electric outages across our service territory, and we measure our “system reliability” from this data.

The two metrics we rely on are common in the electric utility industry: the System Average Interruption Duration Index (SAIDI) and the System Average Interruption Frequency Index (SAIFI). Both are described in more detail on the next page.

Replacing and upgrading our infrastructure will help SCE maintain or improve SAIDI and SAIFI measurements.

This report provides historical reliability data for the circuits that serve your jurisdiction and our proposed infrastructure upgrades for the current year.

To view other reliability reports, visit [sce.com>Outage Center>Maintaining Reliable Service](https://www.sce.com/Outage-Center/Maintaining-Reliable-Service)

Reliability Metrics

MOMENTARY OUTAGES:

OUTAGES LASTING 5 MINUTES OR LESS

MAIFI:

- The number of times the average customer is interrupted by Momentary outages each year.

SUSTAINED OUTAGES:

OUTAGES LASTING LONGER THAN 5 MINUTES

SAIFI:

- The number of times the average customer is interrupted by Sustained outages each year.

SAIDI:

- The cumulative amount of time the average customer is interrupted by Sustained outages each year.

Cities in the South Bay District

Alondra Park

Del Aire

El Segundo

Gardena

Hawthorne

Hermosa Beach

Inglewood

Ladera Heights

Lawndale

Lennox

Lomita

Los Angeles

Manhattan Beach

Palos Verdes Estates

Rancho Palos Verdes

Redondo Beach

Rolling Hills

Rolling Hills Estates

Torrance

View Park-Windsor Hills

West Athens

Westmont

Reliability by SCE District (No Exclusions)

District Name	2012				2013				2014				2015				2016			
	District SAIDI	SAIDI RANKING	District SAIFI	SAIFI Ranking	District SAIDI	SAIDI RANKING	District SAIFI	SAIFI Ranking	District SAIDI	SAIDI RANKING	District SAIFI	SAIFI Ranking	District SAIDI	SAIDI RANKING	District SAIFI	SAIFI Ranking	District SAIDI	SAIDI RANKING	District SAIFI	SAIFI Ranking
ANTELOPE VALLEY	78.60	28	0.56	31	94.42	22	0.62	31	51.05	35	0.59	34	104.34	22	0.68	30	107.67	24	0.87	29
ARROWHEAD	129.58	13	1.31	7	180.59	7	1.39	8	193.25	5	1.59	5	362.61	4	3.97	1	659.46	3	2.85	5
BARSTOW	184.80	7	1.15	12	204.33	6	1.40	7	201.53	4	1.34	10	187.11	8	1.17	12	134.83	18	1.35	9
BIG CREEK	1184.25	1	4.52	1	176.51	8	3.08	1	920.25	1	1.34	11	422.77	2	3.42	2	1062.01	2	4.99	1
BISHOP	463.09	2	1.25	9	104.44	17	0.51	35	118.79	17	0.59	35	298.11	6	2.22	4	168.59	8	1.22	14
BLYTHE	225.88	6	1.53	3	483.13	1	1.38	9	707.54	2	2.42	2	427.00	1	1.52	7	396.38	5	2.71	6
CATALINA	78.46	30	0.72	29	105.94	16	2.97	2	97.02	24	4.17	1	42.56	35	2.25	3	65.01	35	3.66	3
COVINA	108.73	19	0.92	19	100.51	19	0.86	20	91.60	27	0.87	22	100.08	23	0.81	25	112.13	22	0.97	24
DOMINGUEZ HILLS	117.22	18	0.82	24	89.17	26	0.80	21	82.30	29	0.71	28	130.63	15	0.97	17	146.38	12	1.11	17
FOOTHILL	91.69	25	0.90	20	85.80	27	0.79	24	93.35	25	0.93	21	109.64	20	0.95	20	142.81	14	1.03	21
FULLERTON	68.99	33	0.42	35	90.57	25	0.79	22	82.23	30	0.72	27	76.59	29	0.67	31	92.72	30	0.76	34
HUNTINGTON BEACH	95.78	23	0.89	21	66.51	32	0.68	29	79.61	31	0.78	25	98.32	25	0.95	19	128.02	20	1.26	12
KERNVILLE	226.76	5	1.31	6	232.18	4	1.96	3	178.69	8	1.99	3	286.38	7	0.96	18	2421.32	1	3.67	2
LONG BEACH	75.83	31	0.55	33	75.11	30	0.70	28	66.33	34	0.61	32	164.46	9	0.89	23	135.16	17	0.86	31
MENIFEE	99.32	22	0.84	23	107.39	15	1.26	10	156.68	11	1.32	12	111.46	19	0.98	16	156.75	9	1.31	10
MONROVIA	108.11	20	1.13	15	99.12	20	1.02	16	133.32	14	1.16	16	96.68	26	0.88	24	116.57	21	0.84	32
MONTEBELLO	131.06	12	1.13	14	118.08	13	1.17	12	158.34	10	1.16	15	150.28	12	1.18	11	133.52	19	1.17	15
ONTARIO	93.09	24	0.87	22	77.39	29	0.79	23	97.91	23	1.00	19	94.04	27	0.74	27	105.07	27	0.93	27
PALM SPRINGS	175.92	8	1.27	8	112.80	14	0.77	25	107.04	20	0.71	29	99.54	24	0.80	26	107.58	25	1.07	19
REDLANDS	120.13	16	1.11	16	96.48	21	1.04	15	154.25	12	1.04	18	124.52	17	1.01	14	137.11	16	0.98	23
RIDGECREST	229.65	4	1.44	4	161.95	9	1.12	13	176.84	9	1.57	6	148.90	13	1.01	15	254.31	6	1.05	20
SADDLEBACK	83.01	27	0.73	27	70.69	31	0.53	34	99.07	22	0.74	26	46.03	34	0.39	35	65.99	34	0.65	35
SAN JOAQUIN	135.90	10	1.04	18	244.44	2	1.45	6	138.25	13	1.17	14	127.50	16	1.05	13	108.44	23	1.09	18
SANTA ANA	78.60	29	0.55	32	93.35	24	0.74	26	91.68	26	0.84	23	67.46	32	0.71	29	97.27	29	1.00	22
SANTA BARBARA	153.81	9	1.15	13	82.00	28	0.70	27	183.78	7	1.38	9	152.37	11	1.52	6	156.66	10	1.41	8
SANTA MONICA	101.69	21	0.79	25	122.78	12	1.00	17	110.76	19	0.99	20	75.41	30	0.62	32	91.08	31	0.95	26
SOUTH BAY	122.68	15	1.17	10	142.15	10	1.49	5	125.28	16	1.39	8	164.07	10	1.31	8	183.90	7	1.88	7
TEHACHAPI	117.96	17	1.43	5	232.67	3	1.12	14	130.70	15	1.29	13	298.96	5	1.21	9	97.29	28	1.13	16
THOUSAND OAKS	127.73	14	1.05	17	93.86	23	0.91	18	104.37	21	1.10	17	106.59	21	0.92	21	143.78	13	1.31	11
VALENCIA	62.01	35	0.46	34	51.04	34	0.53	33	79.23	32	0.61	33	72.27	31	0.61	33	105.09	26	0.97	25
VENTURA	134.81	11	1.15	11	100.52	18	1.21	11	183.79	6	1.65	4	148.85	14	1.19	10	150.41	11	1.24	13
VICTORVILLE	67.70	34	0.66	30	61.33	33	0.63	30	68.85	33	0.63	31	87.03	28	0.91	22	79.35	33	0.92	28
WHITTIER	72.60	32	0.74	26	135.04	11	0.86	19	87.60	28	0.70	30	114.52	18	0.73	28	137.34	15	0.81	33
WILDOMAR	88.54	26	0.72	28	40.51	35	0.56	32	118.49	18	0.81	24	52.70	33	0.60	34	84.01	32	0.87	30
YUCCA VALLEY	319.82	3	3.41	2	216.97	5	1.50	4	304.25	3	1.49	7	389.08	3	1.80	5	463.68	4	3.39	4
SCE SystemWide	108.13		0.89		102.61		0.91		112.00		0.96		114.83		0.92		134.48		1.10	

Exclusions are days which utilities are allowed to remove from their metrics because the outages on those days were caused by a severe acts of nature.

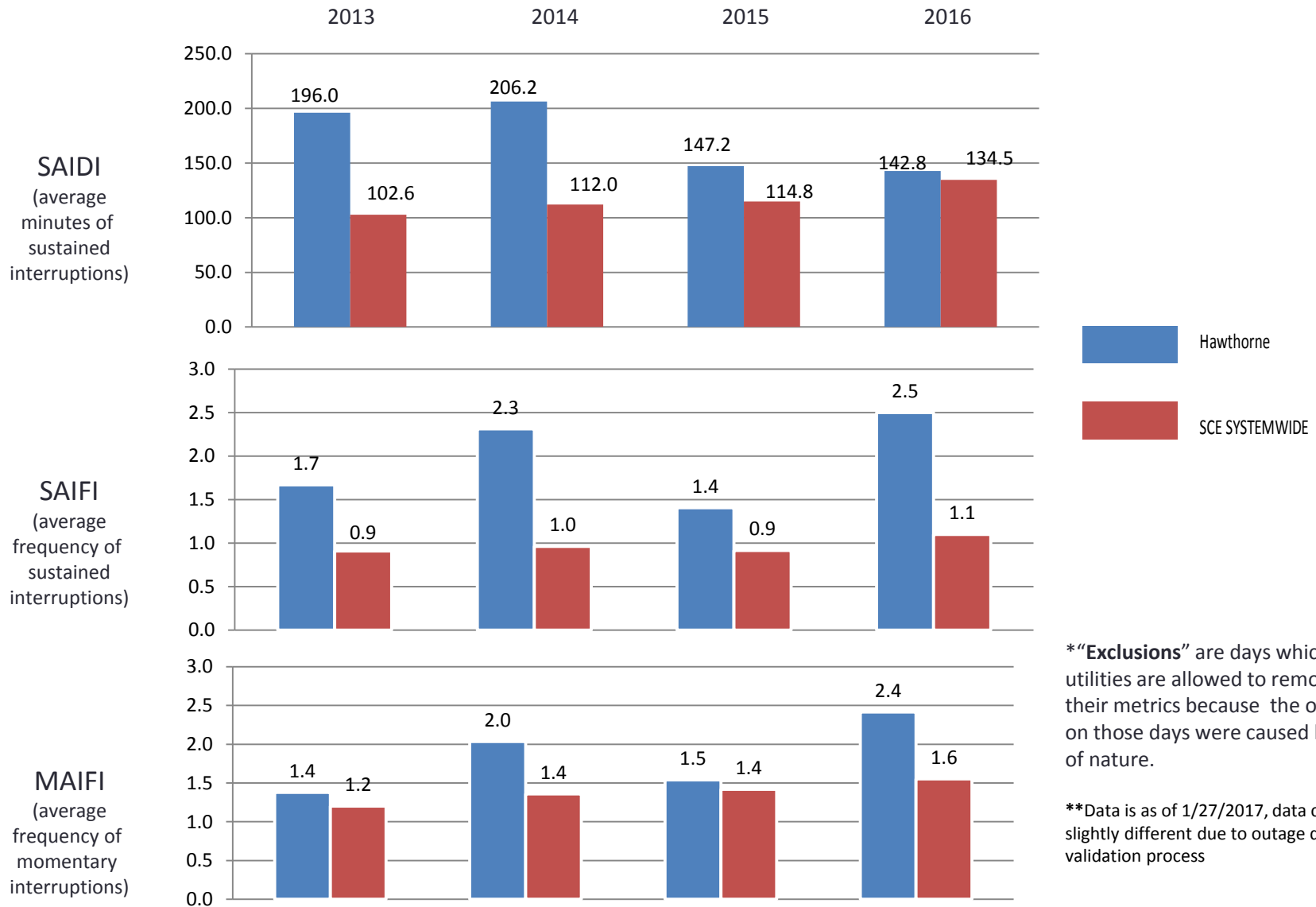
**In the columns showing "Rank," lower numbers indicate poorer performance.

Overview of Hawthorne

There are 42 circuits that serve Hawthorne

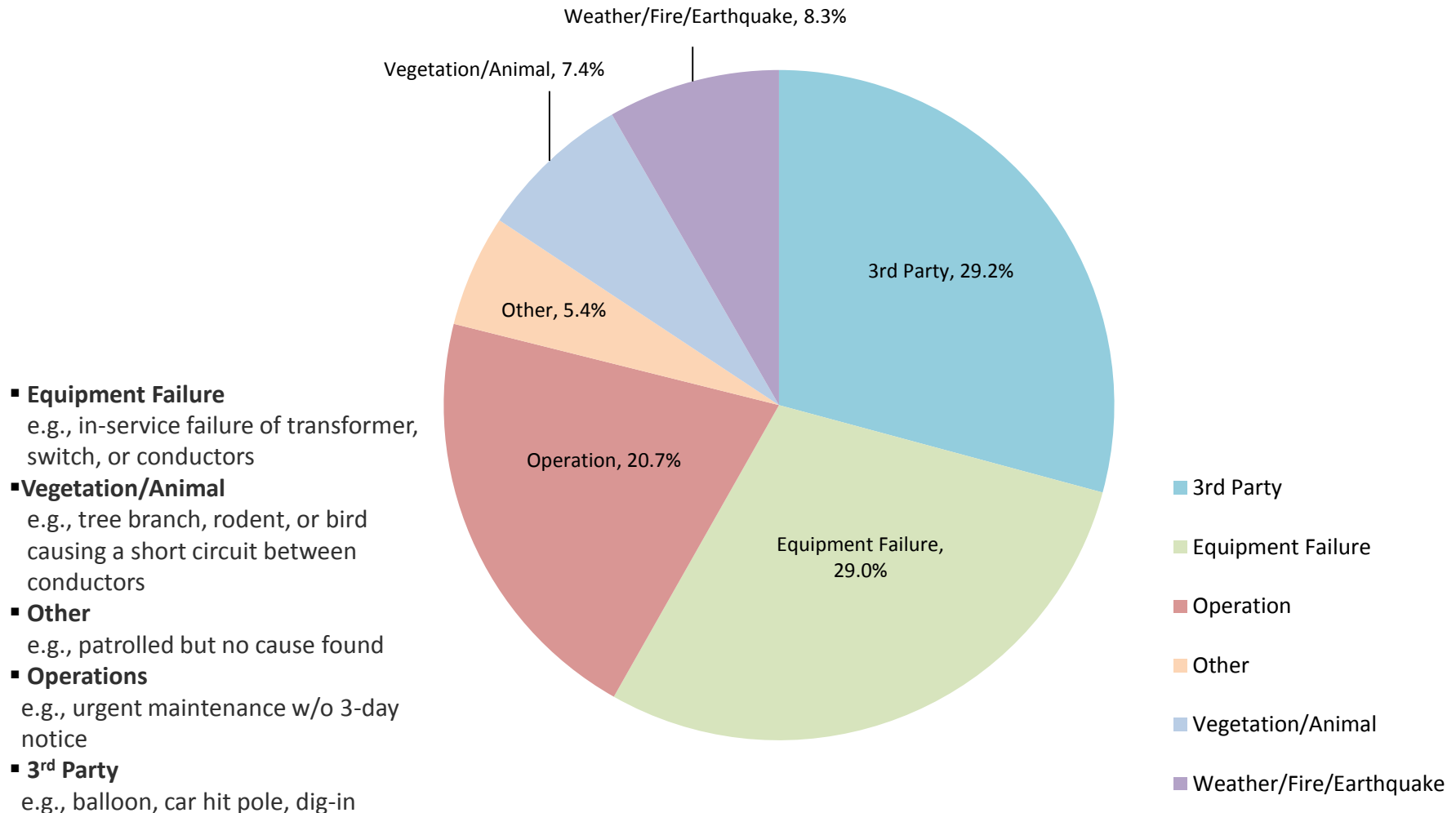
Circuit Type	Sum of Customers	Circuit Type	Sum of Customers	Circuit Type	Sum of Customers	Circuit Type	Sum of Customers
ADAK(16KV)	749	PENGUIN(16KV)	455				
ALASKA(16KV)	1,762	SALMON(16KV)	3,803				
ALBACORE(16KV)	1,756	SANDRA(16KV)	4,318				
ANZA(4.16KV)	775	SEABASS(16KV)	34				
BARRACUDA(16KV)	245	SHOUP(4.16KV)	936				
BLUEGILL(16KV)	3,197	SITKA(16KV)	16				
BURLEIGH(4.16KV)	695	STACY(4.16KV)	793				
CRANBROOK(4.16KV)	741	SUNDALE(4.16KV)	991				
DALESIDE(16KV)	3,520	WESTERN(16KV)	148				
DEBORAH(16KV)	2,712	WHALE(16KV)	751				
EZRA(4.16KV)	1,028	YORK(4.16KV)	412				
FACTOR(16KV)	387	ZEBRA(16KV)	2,063				
FAIRBANKS(4.16KV)	798						
GEARLINE(16KV)	382						
GRANDVIEW(4.16KV)	904						
GRIZZLEY(16KV)	3,496						
HALLDALE(16KV)	2,748						
HAWTHORNE(16KV)	2,499						
HINDRY(4.16KV)	467						
JUDAH(4.16KV)	979						
JUNEAU(4.16KV)	629						
KATHLEEN(16KV)	676						
KORNBLUM(4.16KV)	977						
MARGARET(16KV)	5,082						
MCDONNELL(16KV)	2,040						
MENLO(4.16KV)	957						
MINNOW(16KV)	71						
OCTANE(16KV)	3,429						
OXFORD(4.16KV)	940						
PACOMA(4.16KV)	1,129						
Grand Total	60,490						

Reliability History of Circuits Serving Hawthorne (No Exclusions)



Causes of Repair Outages in Hawthorne Circuits 2016 YTD

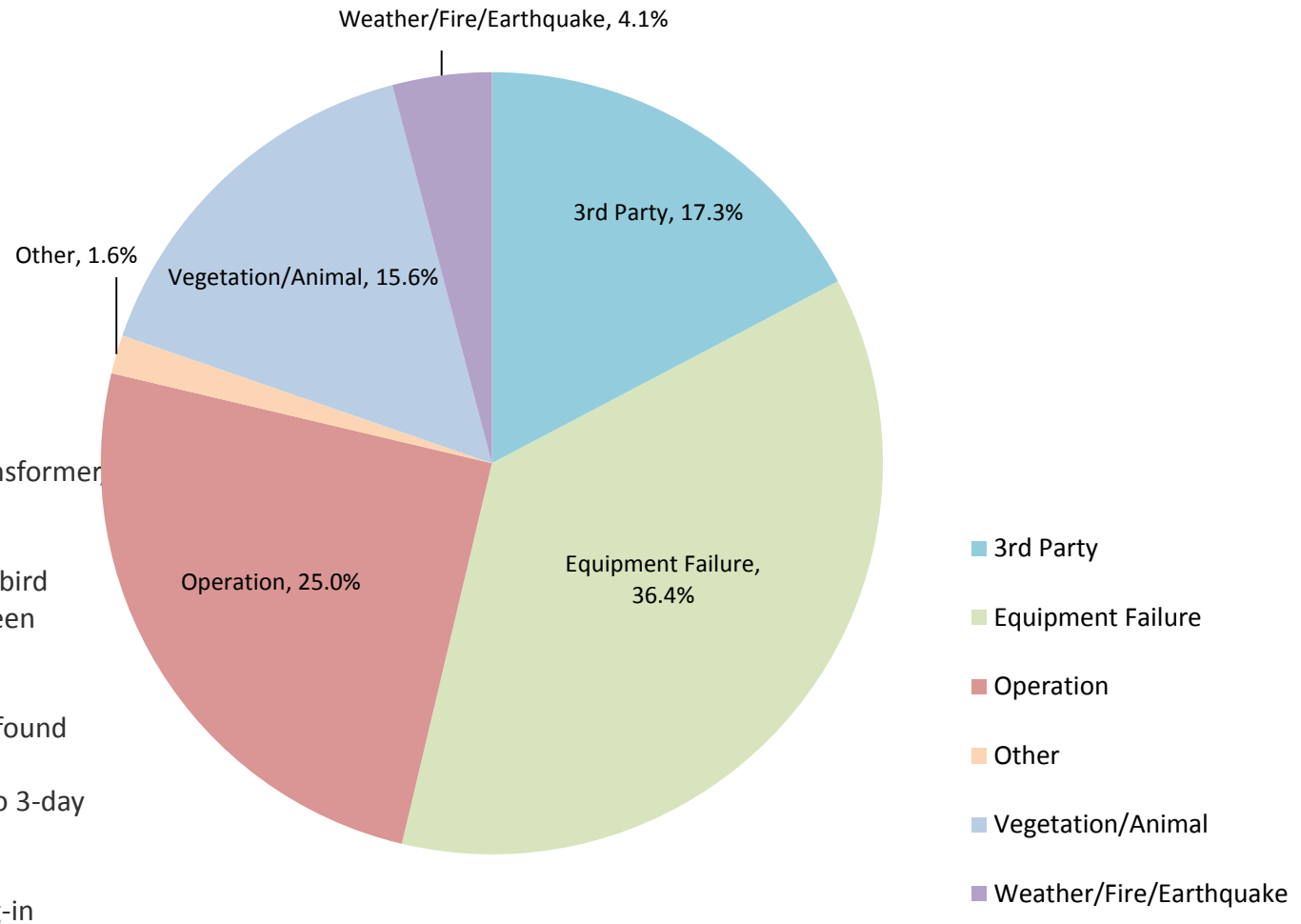
Contributions to SAIDI by Outage Cause



SAIDI = the cumulative amount of time the average customer is interrupted by “sustained” outages each year.

Causes of Repair Outages in Hawthorne Circuits 2016 YTD

Contributions to SAIFI by Outage Cause



SAIFI = the number of times the average customer is interrupted by “sustained” outages each year.



Hawthorne 2017 Capital Improvement Plan

Replacement/Equipment Upgrade

- ✦ Pole Replacement

Other Work

- Circuit Public Safety Upgrade
- Circuit Rebuild
- Structures & Equipment
- ✕ Underground Structure Replacement

Replacement/Equipment Upgrade (Transmission)

- ✕ Electrical Equipment Replacement
- ✕ Pole Replacement

Other Work (Transmission)

- Circuit Reliability Upgrade

Disclaimer: This report is intended solely for informational purposes. The information included is reflective as of January 1, 2017 and is subject to change without further notice.



0 650 1,300 2,600
Feet
1 in = 1,713 feet

Date: 1/26/2017

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Back-up Slides

Reliability Histories of Circuits Serving Hawthorne

Updated through Year-End 2016

Average Reliability of 42 Circuits Serving Hawthorne

	2013			2014			2015			1st Qtr 2016			2nd Qtr 2016			3rd Qtr 2016			4th Qtr 2016			2016		
	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI
Hawthorne	196.0	1.7	1.4	206.2	2.3	2.0	147.2	1.4	1.5	35.5	0.3	0.6	34.8	0.6	0.6	41.9	1.0	0.9	30.7	0.6	0.3	142.8	2.5	2.4
3rd Party	38%	32%	28%	7%	10%	11%	11%	10%	21%	41%	49%	15%	59%	25%	50%	15%	12%	34%	0%	0%	44%	29%	17%	35%
Equipment Failure	45%	42%	31%	41%	31%	20%	53%	60%	20%	15%	17%	21%	15%	19%	4%	53%	69%	42%	30%	11%	0%	29%	36%	22%
Operation	8%	15%	4%	6%	2%	20%	10%	15%	7%	1%	2%	0%	11%	9%	4%	17%	7%	5%	58%	87%	36%	21%	25%	7%
Other	8%	5%	10%	9%	28%	26%	17%	10%	14%	17%	3%	37%	1%	2%	10%	1%	1%	0%	2%	1%	12%	5%	2%	13%
Vegetation/Animal	2%	5%	26%	10%	16%	15%	5%	3%	29%	0%	0%	10%	14%	46%	30%	13%	10%	20%	0%	0%	5%	7%	16%	18%
Weather/Fire/Earthquake	1%	1%	0%	27%	13%	9%	4%	2%	9%	25%	29%	17%	0%	0%	3%	0%	0%	0%	9%	1%	3%	8%	4%	5%
SCE Systemwide	102.6	0.9	1.2	112.0	1.0	1.4	114.8	0.9	1.4	40.5	0.3	0.4	34.8	0.3	0.4	29.4	0.2	0.3	29.8	0.3	0.4	134.5	1.1	1.6

Notes:

No outages are excluded from the metrics.

Outage Causes:

Other: e.g., patrolled but no cause could be found

Operations: e.g., urgent maintenance w/o 3-day notice to customers

3rd Party: e.g., balloons, car hit pole, dig-in

Vegetation/Animal: e.g., tree branch, rodent, or bird causing short circuit across conductors

SAIDI (minutes) = the cumulative amount of time the average customer is interrupted by "sustained" (longer than 5 minutes) outages.

SAIFI (interruptions) = the number of times the average customer is interrupted by "sustained" outages.

MAIFI (interruptions) = the number of times the average customer is interrupted by "momentary" (lasting 5 minutes or less) outages.

Reliability Histories for Individual Circuits Serving Hawthorne

	2013			2014			2015			1st Qtr 2016			2nd Qtr 2016			3rd Qtr 2016			4th Qtr 2016			2016		
	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI
ADAK(16KV) - Customers: 749	69.9	0.2	0.0	206.8	2.6	1.6	103.3	1.2	0.7	15.1	0.2	0.7	0.0	0.0	0.0	50.6	3.1	3.1	30.0	1.0	0.0	95.7	4.4	3.8
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	93%	68%	0%	65%	60%	33%	29%	78%	0%	0%	0%	0%	0%	0%	0%	78%	67%	34%	0%	0%	0%	41%	47%	27%
Operation	7%	32%	0%	0%	0%	0%	0%	0%	0%	55%	50%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	40%	26%	0%
Other	0%	0%	0%	0%	0%	67%	0%	0%	0%	45%	50%	100%	0%	0%	0%	22%	33%	0%	0%	0%	0%	19%	26%	19%
Vegetation/Animal	0%	0%	0%	35%	40%	0%	71%	22%	100%	0%	0%	0%	0%	0%	0%	0%	0%	66%	0%	0%	0%	0%	0%	53%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ALASKA(16KV) - Customers: 1,762	189.3	3.1	1.0	316.8	2.7	2.5	12.4	0.1	1.3	63.2	1.0	2.0	1.1	0.0	0.0	37.9	2.0	1.0	35.9	1.0	1.0	138.1	4.1	4.0
3rd Party	47%	33%	100%	1%	2%	0%	0%	0%	0%	94%	96%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	43%	25%	25%
Equipment Failure	5%	1%	0%	0%	0%	0%	27%	19%	0%	3%	0%	100%	0%	0%	0%	100%	100%	100%	20%	2%	0%	34%	50%	75%
Operation	22%	34%	0%	0%	1%	0%	16%	18%	0%	3%	4%	0%	100%	100%	0%	0%	0%	0%	80%	98%	0%	23%	26%	0%
Other	0%	0%	0%	0%	0%	80%	56%	63%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	27%	32%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	99%	97%	20%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ALBACORE(16KV) - Customers: 1,756	376.4	4.0	1.3	296.1	4.7	1.2	360.1	4.6	1.3	1.4	0.0	0.0	46.0	1.5	1.4	3.1	0.0	0.0	114.9	1.0	0.0	165.3	2.5	1.4
3rd Party	61%	34%	48%	0%	0%	0%	0%	0%	82%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	11%	19%	18%	38%	16%	18%	54%	39%	0%	34%	14%	0%	58%	36%	30%	100%	100%	0%	100%	100%	0%	88%	62%	30%
Operation	27%	28%	34%	3%	1%	0%	44%	58%	18%	66%	86%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%
Other	0%	0%	0%	51%	61%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	1%	19%	0%	8%	21%	82%	2%	2%	0%	0%	0%	0%	42%	64%	70%	0%	0%	0%	0%	0%	0%	12%	38%	70%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ANZA(4.16KV) - Customers: 775	95.7	1.9	4.0	0.4	0.0	3.0	6.0	0.0	3.0	55.3	1.1	0.0	6.5	0.0	1.0	0.0	0.0	2.0	0.0	0.0	0.0	61.8	1.1	3.0
3rd Party	0%	0%	50%	100%	100%	33%	0%	0%	33%	88%	94%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	79%	92%	66%
Equipment Failure	100%	100%	25%	0%	0%	33%	100%	100%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	10%	2%	34%
Operation	0%	0%	0%	0%	0%	0%	0%	0%	0%	12%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	11%	6%	0%
Other	0%	0%	0%	0%	0%	33%	0%	0%	67%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Reliability Histories for Individual Circuits Serving Hawthorne

	2013			2014			2015			1st Qtr 2016			2nd Qtr 2016			3rd Qtr 2016			4th Qtr 2016			2016		
	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI
BARRACUDA(16KV) - Customers: 245	46.9	1.0	0.0	58.2	0.1	2.0	0.0	0.0	0.0	148.1	1.1	0.0	8.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	156.0	2.1	0.0
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	99%	99%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	94%	51%	0%
Equipment Failure	100%	100%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%
Operation	0%	0%	0%	100%	100%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	5%	48%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
BLUEGILL(16KV) - Customers: 3,197	15.3	0.3	1.0	251.2	5.7	1.1	208.8	3.4	2.9	3.9	0.5	1.5	22.0	1.0	0.0	0.5	0.0	0.0	110.2	0.3	1.0	136.6	1.8	2.5
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	0%	0%	100%	5%	0%	0%	11%	26%	12%	100%	100%	32%	0%	0%	0%	0%	0%	0%	48%	44%	0%	41%	35%	19%
Operation	100%	100%	0%	0%	0%	0%	13%	24%	0%	0%	0%	0%	4%	1%	0%	100%	100%	0%	3%	11%	83%	3%	3%	34%
Other	0%	0%	0%	48%	64%	72%	39%	31%	24%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	47%	35%	28%	36%	20%	30%	0%	0%	68%	96%	99%	0%	0%	0%	0%	0%	0%	0%	15%	55%	40%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	34%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	44%	17%	40%	8%	7%
BURLEIGH(4.16KV) - Customers: 695	0.0	0.0	2.0	85.0	2.0	3.0	0.0	0.0	2.0	0.0	0.0	2.0	17.3	0.1	1.0	43.9	2.1	1.0	28.5	1.0	0.0	89.6	3.1	4.0
3rd Party	0%	0%	50%	0%	0%	0%	0%	0%	100%	0%	0%	50%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	50%
Equipment Failure	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	93%	49%	0%	87%	97%	100%	0%	0%	0%	60%	66%	25%
Operation	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	51%	0%	13%	3%	0%	100%	100%	0%	40%	34%	0%
Other	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
CRANBROOK(4.16KV) - Customers: 741	0.0	0.0	2.0	56.8	1.0	1.0	27.3	1.0	1.0	0.0	0.0	1.0	3.5	0.0	0.0	37.9	2.0	2.0	28.8	1.0	0.0	70.2	3.0	3.0
3rd Party	0%	0%	50%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	67%
Equipment Failure	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	43%	75%	0%	100%	100%	50%	0%	0%	0%	56%	67%	33%
Operation	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	57%	25%	0%	0%	0%	0%	100%	100%	0%	44%	33%	0%
Other	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Reliability Histories for Individual Circuits Serving Hawthorne

	2013			2014			2015			1st Qtr 2016			2nd Qtr 2016			3rd Qtr 2016			4th Qtr 2016			2016		
	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI
DALESIDE(16KV) - Customers: 3,520	276.0	1.5	0.5	33.9	2.0	3.9	170.1	0.9	2.1	3.4	0.0	0.0	0.0	0.0	2.0	57.1	1.5	1.0	40.1	1.0	0.0	100.6	2.5	3.0
3rd Party	80%	62%	18%	58%	50%	22%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	33%
Equipment Failure	18%	36%	82%	0%	0%	0%	97%	97%	4%	100%	100%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	60%	60%	33%
Operation	2%	2%	0%	24%	1%	26%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	40%	40%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	18%	50%	26%	3%	3%	96%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	33%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	26%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
DEBORAH(16KV) - Customers: 2,712	73.4	1.0	1.0	1270.2	6.0	3.6	293.7	1.4	1.3	6.7	0.0	0.0	213.9	1.3	1.7	20.3	1.1	0.0	0.0	0.0	0.0	240.9	2.4	1.7
3rd Party	93%	99%	0%	0%	0%	0%	8%	47%	74%	0%	0%	0%	100%	100%	41%	0%	0%	0%	0%	0%	0%	89%	55%	41%
Equipment Failure	7%	1%	0%	40%	56%	27%	90%	50%	26%	86%	70%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%
Operation	0%	0%	0%	0%	0%	0%	2%	3%	0%	14%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%
Other	0%	0%	0%	0%	0%	28%	0%	0%	0%	0%	0%	0%	0%	0%	59%	0%	0%	0%	0%	0%	0%	0%	0%	59%
Vegetation/Animal	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	8%	45%	0%
Weather/Fire/Earthquake	0%	0%	0%	60%	44%	45%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
EZRA(4.16KV) - Customers: 1,028	0.0	0.0	1.0	3.5	0.0	5.0	10.1	0.0	2.0	56.8	1.0	0.0	10.4	0.0	1.0	96.0	2.6	2.0	29.0	1.0	0.0	192.2	4.6	3.0
3rd Party	0%	0%	0%	0%	0%	81%	0%	0%	50%	100%	100%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	30%	22%	33%
Equipment Failure	0%	0%	100%	100%	100%	0%	80%	41%	0%	0%	0%	0%	0%	0%	0%	50%	78%	50%	0%	0%	0%	25%	44%	33%
Operation	0%	0%	0%	0%	0%	0%	20%	59%	0%	0%	0%	0%	100%	100%	0%	50%	22%	0%	100%	100%	0%	45%	35%	0%
Other	0%	0%	0%	0%	0%	19%	0%	0%	50%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	33%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
FACTOR(16KV) - Customers: 387	0.0	0.0	1.0	18.2	0.1	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	38.3	2.0	3.0	29.3	1.0	0.0	67.5	3.0	3.0
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	33%	0%	0%	0%	57%	67%	33%
Operation	0%	0%	100%	100%	100%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	43%	33%	0%
Other	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	67%	0%	0%	0%	0%	0%	67%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Reliability Histories for Individual Circuits Serving Hawthorne

	2013			2014			2015			1st Qtr 2016			2nd Qtr 2016			3rd Qtr 2016			4th Qtr 2016			2016		
	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI
FAIRBANKS(4.16KV) - Customers: 798	116.7	2.1	2.0	127.2	1.0	2.0	12.1	0.1	5.0	0.0	0.0	1.0	0.0	0.0	0.0	53.6	2.0	1.0	28.9	1.0	0.0	82.5	3.0	2.0
3rd Party	0%	0%	100%	0%	0%	0%	53%	38%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	94%	97%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	65%	67%	50%
Operation	6%	3%	0%	0%	0%	0%	47%	62%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	35%	33%	0%
Other	0%	0%	0%	0%	0%	49%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	51%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
GEARLINE(16KV) - Customers: 382	354.5	1.8	1.0	137.3	2.1	2.7	0.0	0.0	1.0	0.0	0.0	0.0	61.3	2.0	0.0	9.7	0.1	1.0	0.0	0.0	0.0	70.9	2.1	1.0
3rd Party	14%	42%	0%	13%	2%	32%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	86%	58%	0%	87%	98%	32%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Operation	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	86%	97%	0%
Vegetation/Animal	0%	0%	100%	0%	0%	36%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	14%	3%	100%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
GRANDVIEW(4.16KV) - Customers: 904	138.6	2.0	0.0	107.2	1.0	0.0	0.0	0.0	1.0	101.6	1.0	1.0	0.0	0.0	0.0	50.0	2.0	2.0	37.6	1.0	0.0	189.3	4.1	3.0
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	7%	1%	50%	0%	0%	0%	2%	0%	66%
Equipment Failure	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	93%	99%	50%	0%	0%	0%	24%	50%	34%
Operation	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	20%	26%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	54%	25%	0%
GRIZZLEY(16KV) - Customers: 3,496	207.7	4.1	2.2	508.4	10.0	0.0	114.4	2.2	2.2	0.4	0.0	0.0	13.1	1.0	0.0	0.0	0.0	0.0	0.7	0.0	1.0	14.2	1.0	1.0
3rd Party	0%	0%	0%	14%	7%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	94%	75%	55%	53%	33%	0%	99%	99%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Operation	6%	25%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	5%	0%	100%
Other	0%	0%	45%	14%	42%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	3%	12%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	92%	99%	0%
Weather/Fire/Earthquake	0%	0%	0%	16%	7%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%

Reliability Histories for Individual Circuits Serving Hawthorne

	2013			2014			2015			1st Qtr 2016			2nd Qtr 2016			3rd Qtr 2016			4th Qtr 2016			2016		
	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI
HALLDALE(16KV) - Customers: 2,748	16.9	0.1	0.0	111.9	1.0	3.0	309.1	2.1	2.1	0.0	0.0	0.0	0.0	0.0	1.0	79.6	1.3	4.8	94.4	3.0	1.0	174.0	4.3	6.8
3rd Party	3%	7%	0%	100%	100%	0%	73%	49%	2%	0%	0%	0%	0%	0%	0%	26%	4%	79%	0%	0%	100%	12%	1%	71%
Equipment Failure	91%	83%	0%	0%	0%	0%	24%	48%	2%	0%	0%	0%	0%	0%	0%	71%	95%	21%	0%	0%	0%	33%	29%	15%
Operation	3%	7%	0%	0%	0%	33%	1%	1%	0%	0%	0%	0%	0%	0%	0%	3%	2%	0%	100%	100%	0%	56%	70%	0%
Other	0%	0%	0%	0%	0%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	3%	3%	0%	0%	0%	35%	0%	0%	97%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	15%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	2%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
HAWTHORNE(16KV) - Customers: 2,499	66.2	1.1	0.0	66.0	1.8	1.4	189.8	2.5	2.6	301.9	1.1	0.9	3.5	0.1	0.0	127.4	2.5	2.0	36.5	1.0	0.0	469.3	4.7	2.9
3rd Party	0%	0%	0%	54%	54%	31%	18%	17%	23%	81%	50%	50%	0%	0%	0%	57%	42%	0%	0%	0%	0%	68%	34%	16%
Equipment Failure	19%	7%	0%	46%	46%	0%	19%	40%	0%	18%	50%	50%	0%	0%	0%	43%	58%	50%	0%	0%	0%	23%	43%	50%
Operation	0%	0%	0%	0%	0%	0%	46%	40%	0%	0%	1%	0%	17%	14%	0%	0%	0%	0%	100%	100%	0%	8%	22%	0%
Other	81%	93%	0%	0%	0%	69%	4%	2%	39%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	13%	2%	38%	0%	0%	0%	83%	86%	0%	0%	0%	50%	0%	0%	0%	1%	1%	34%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
HINDRY(4.16KV) - Customers: 467	64.8	1.0	1.0	122.8	1.0	0.7	485.1	0.6	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	143.6	1.0	0.0	143.6	1.0	0.0
3rd Party	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	0%	0%	0%	100%	100%	100%	100%	100%	44%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	100%	100%	0%
Operation	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	56%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
JUDAH(4.16KV) - Customers: 979	64.8	1.0	1.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0
3rd Party	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%
Operation	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Reliability Histories for Individual Circuits Serving Hawthorne

	2013			2014			2015			1st Qtr 2016			2nd Qtr 2016			3rd Qtr 2016			4th Qtr 2016			2016		
	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI
JUNEAU(4.16KV) - Customers: 629	110.6	2.0	0.0	30.9	1.0	0.0	55.3	0.1	1.0	0.0	0.0	4.0	0.0	0.0	1.0	38.1	2.0	1.0	29.0	1.0	0.0	67.0	3.0	6.0
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	33%
Equipment Failure	100%	100%	0%	0%	0%	0%	98%	66%	0%	0%	0%	25%	0%	0%	0%	100%	100%	100%	0%	0%	0%	57%	67%	33%
Operation	0%	0%	0%	100%	100%	0%	2%	34%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	43%	33%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
KATHLEEN(16KV) - Customers: 676	304.4	2.1	0.8	110.3	3.1	1.0	39.6	1.0	2.1	0.0	0.0	0.0	67.4	1.1	0.0	0.0	0.0	1.0	1.3	0.0	0.0	68.7	1.1	1.0
3rd Party	20%	48%	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	38%	46%	0%	54%	66%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	100%	100%	0%	100%	100%	0%
Operation	42%	6%	100%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%
Weather/Fire/Earthquake	0%	0%	0%	46%	34%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
KORNBLUM(4.16KV) - Customers: 977	249.7	2.5	1.1	143.6	0.9	0.0	53.3	1.0	1.0	0.0	0.0	0.0	73.9	3.0	2.0	72.6	1.0	0.0	0.0	0.0	0.0	146.5	4.1	2.0
3rd Party	70%	82%	50%	0%	0%	0%	99%	99%	100%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	50%
Equipment Failure	30%	18%	50%	93%	50%	0%	0%	0%	0%	0%	0%	0%	8%	33%	0%	100%	100%	0%	0%	0%	0%	54%	50%	0%
Operation	0%	0%	0%	7%	50%	0%	1%	1%	0%	0%	0%	0%	81%	34%	0%	0%	0%	0%	0%	0%	0%	41%	25%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	11%	33%	50%	0%	0%	0%	0%	0%	0%	5%	25%	50%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
MARGARET(16KV) - Customers: 5,082	92.4	3.0	2.0	183.3	1.1	3.0	259.1	3.2	1.0	5.0	0.8	0.2	104.1	1.0	1.0	46.7	0.1	0.0	0.1	0.0	0.0	155.8	2.0	1.2
3rd Party	58%	33%	0%	0%	0%	0%	7%	5%	0%	100%	100%	100%	99%	99%	100%	0%	0%	0%	100%	100%	0%	69%	92%	100%
Equipment Failure	41%	67%	50%	65%	93%	0%	65%	89%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%
Operation	2%	0%	0%	35%	7%	67%	1%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	0%	0%	0%	0%	0%	33%	9%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	30%	7%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	18%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Reliability Histories for Individual Circuits Serving Hawthorne

	2013			2014			2015			1st Qtr 2016			2nd Qtr 2016			3rd Qtr 2016			4th Qtr 2016			2016		
	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI
MCDONNELL(16KV) - Customers: 2,040	184.0	2.8	3.5	110.1	0.2	2.0	164.2	1.4	1.0	1.7	0.0	0.0	41.4	0.3	2.0	42.8	0.1	0.0	14.5	0.2	0.0	100.4	0.6	2.0
3rd Party	0%	0%	0%	0%	0%	0%	4%	5%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	27%	14%	0%	4%	4%	50%
Equipment Failure	64%	91%	14%	76%	57%	0%	69%	79%	0%	0%	0%	0%	93%	95%	0%	59%	60%	0%	13%	14%	0%	66%	59%	0%
Operation	0%	0%	29%	7%	6%	50%	21%	7%	0%	0%	0%	0%	7%	5%	0%	13%	23%	0%	8%	16%	0%	10%	13%	0%
Other	25%	5%	0%	0%	0%	50%	7%	9%	100%	100%	100%	0%	0%	0%	0%	28%	17%	0%	52%	55%	0%	21%	24%	0%
Vegetation/Animal	10%	3%	57%	17%	37%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	50%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
MENLO(4.16KV) - Customers: 957	2274.4	2.0	2.0	195.7	3.0	2.0	87.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.2	1.5	0.7	31.3	1.0	0.8	59.4	2.5	1.5
3rd Party	0%	0%	100%	57%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	81%	50%	0%	42%	66%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	47%	60%	48%
Operation	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	53%	40%	0%
Other	19%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	52%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
MINNOW(16KV) - Customers: 71	115.3	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	186.4	3.3	0.0	14.9	2.1	0.0	3.1	0.0	0.0	0.0	0.0	0.0	204.4	5.4	0.0
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	100%	100%	0%	0%	0%	0%	0%	0%	0%	96%	68%	0%	43%	50%	0%	0%	0%	0%	0%	0%	0%	91%	61%	0%
Operation	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	32%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	19%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	2%	0%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	57%	50%	0%	0%	0%	0%	0%	0%	0%	4%	20%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
OCTANE(16KV) - Customers: 3,429	325.6	1.3	3.5	116.9	1.6	2.4	311.0	1.6	3.4	104.1	0.1	0.0	95.2	0.8	1.2	173.5	3.0	3.2	65.9	1.2	0.0	438.7	5.2	4.4
3rd Party	97%	98%	71%	0%	0%	0%	0%	0%	0%	0%	0%	0%	31%	25%	66%	0%	0%	0%	0%	0%	0%	7%	4%	18%
Equipment Failure	0%	0%	29%	91%	61%	42%	6%	37%	71%	0%	0%	0%	25%	3%	0%	34%	46%	32%	2%	4%	0%	19%	29%	23%
Operation	3%	2%	0%	6%	1%	41%	0%	0%	0%	0%	1%	0%	43%	71%	34%	61%	34%	24%	98%	96%	0%	48%	53%	27%
Other	0%	0%	0%	4%	38%	17%	90%	62%	0%	100%	99%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	24%	2%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	3%	1%	29%	0%	0%	0%	0%	0%	0%	6%	20%	44%	0%	0%	0%	2%	12%	32%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Reliability Histories for Individual Circuits Serving Hawthorne

	2013			2014			2015			1st Qtr 2016			2nd Qtr 2016			3rd Qtr 2016			4th Qtr 2016			2016		
	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI
OXFORD(4.16KV) - Customers: 940	86.3	1.1	1.0	74.6	2.0	1.0	24.6	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	38.0	2.0	1.0	28.3	1.0	1.0	66.3	3.0	2.0
3rd Party	0%	0%	0%	24%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	23%	2%	0%	76%	50%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	57%	67%	51%
Operation	5%	5%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	43%	33%	0%
Other	0%	0%	100%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	49%
Weather/Fire/Earthquake	73%	92%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PACOMA(4.16KV) - Customers: 1,129	28.1	1.1	0.0	0.0	0.0	2.0	101.2	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	37.8	2.0	1.0	28.9	1.0	1.0	66.7	3.0	2.0
3rd Party	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	54%	5%	0%	0%	0%	0%	17%	2%	2%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	57%	67%	50%
Operation	46%	95%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	43%	33%	0%
Other	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	50%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	83%	98%	98%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PENGUIN(16KV) - Customers: 455	286.8	1.0	0.6	46.3	3.4	1.2	19.5	0.0	1.0	0.0	0.0	0.0	57.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	57.5	1.0	0.0
3rd Party	10%	60%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	90%	40%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Operation	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	2%	0%	0%	0%	0%	0%	0%	0%	7%	2%	0%
Other	0%	0%	99%	70%	75%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	30%	25%	100%	0%	0%	100%	0%	0%	0%	93%	98%	100%	0%	0%	0%	0%	0%	0%	93%	98%	100%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
SALMON(16KV) - Customers: 3,803	73.9	0.9	2.2	93.4	4.0	0.0	226.4	2.5	0.0	129.4	1.2	0.0	23.8	1.0	0.0	6.9	0.0	0.0	6.6	0.0	0.0	166.7	2.2	0.0
3rd Party	0%	0%	46%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	13%	58%	0%	0%	0%	0%	1%	1%	0%
Equipment Failure	100%	100%	8%	27%	1%	0%	79%	91%	0%	23%	2%	0%	0%	0%	0%	83%	28%	0%	100%	100%	0%	26%	2%	0%
Operation	0%	0%	0%	2%	1%	0%	2%	2%	0%	1%	1%	0%	0%	0%	0%	3%	13%	0%	0%	0%	0%	1%	1%	0%
Other	0%	0%	46%	54%	73%	0%	13%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	17%	24%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	14%	44%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	76%	97%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	59%	52%	0%

Reliability Histories for Individual Circuits Serving Hawthorne

	2013			2014			2015			1st Qtr 2016			2nd Qtr 2016			3rd Qtr 2016			4th Qtr 2016			2016		
	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI
SANDRA(16KV) - Customers: 4,318	297.3	2.0	2.0	173.7	1.2	3.7	9.5	0.0	2.0	1.3	0.0	2.0	0.0	0.0	0.0	34.3	1.0	1.0	4.1	0.0	0.0	39.7	1.0	2.9
3rd Party	71%	49%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	86%	98%	34%
Equipment Failure	1%	0%	50%	9%	6%	54%	60%	57%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Operation	28%	50%	0%	6%	6%	0%	18%	28%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	14%	2%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	66%
Vegetation/Animal	0%	0%	50%	85%	88%	46%	22%	15%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
SEABASS(16KV) - Customers: 34	15.0	1.0	0.0	0.0	0.0	0.0	357.0	2.9	0.1	0.0	0.0	0.0	13.2	1.9	0.1	703.8	1.0	0.0	0.0	0.0	0.0	716.9	2.9	0.1
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	44%	52%	50%	100%	100%	0%	0%	0%	0%	99%	68%	50%
Operation	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	56%	48%	50%	0%	0%	0%	0%	0%	0%	1%	32%	50%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
SHOUP(4.16KV) - Customers: 936	0.0	0.0	0.0	565.0	1.3	0.0	28.9	0.1	1.0	5.9	0.0	0.0	13.9	2.0	2.0	13.1	0.0	0.0	0.0	0.0	0.0	32.9	2.0	2.0
3rd Party	0%	0%	0%	0%	0%	0%	32%	89%	100%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	50%
Equipment Failure	0%	0%	0%	94%	85%	0%	68%	11%	0%	0%	0%	0%	43%	50%	0%	100%	100%	0%	0%	0%	0%	58%	50%	0%
Operation	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	1%	10%	0%	0%	0%	0%	0%	0%	0%	57%	50%	50%	0%	0%	0%	0%	0%	0%	24%	49%	50%
Weather/Fire/Earthquake	0%	0%	0%	4%	3%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	18%	1%	0%
SITKA(16KV) - Customers: 16	0.0	0.0	0.0	54.5	1.0	1.0	299.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.1	2.9	2.0	28.4	1.0	0.0	72.6	3.9	2.0
3rd Party	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	84%	67%	50%	0%	0%	0%	51%	50%	50%
Operation	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	39%	25%	0%
Other	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	16%	33%	50%	0%	0%	0%	9%	25%	50%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Reliability Histories for Individual Circuits Serving Hawthorne

	2013			2014			2015			1st Qtr 2016			2nd Qtr 2016			3rd Qtr 2016			4th Qtr 2016			2016		
	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI
STACY(4.16KV) - Customers: 793	95.5	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	1.0	2.6	0.0	0.0	4.3	0.1	0.0	7.7	0.1	1.0
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Equipment Failure	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Operation	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	44%	48%	0%
Other	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	56%	52%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
SUNDALE(4.16KV) - Customers: 991	514.2	3.3	2.0	51.0	1.0	1.0	88.9	0.5	0.5	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	3.0
3rd Party	16%	60%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	33%
Equipment Failure	69%	11%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Operation	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	16%	29%	50%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%
Vegetation/Animal	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	33%
WESTERN(16KV) - Customers: 148	0.0	0.0	0.0	11.9	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	38.7	2.0	3.1	166.3	1.2	1.9	205.0	3.2	4.9
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	54%	0%	0%	20%
Equipment Failure	0%	0%	0%	40%	17%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	33%	0%	0%	0%	19%	64%	21%
Operation	0%	0%	0%	60%	83%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	18%	87%	0%	14%	32%	0%
Other	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	82%	13%	46%	67%	5%	18%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	67%	0%	0%	0%	0%	0%	41%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WHALE(16KV) - Customers: 751	113.1	3.0	2.0	103.8	1.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	13.9	2.0	0.0	0.0	0.0	0.0	87.5	1.0	0.0	101.4	3.0	0.0
3rd Party	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	81%	67%	50%	100%	100%	0%	100%	100%	0%	0%	0%	0%	43%	50%	0%	0%	0%	0%	99%	98%	0%	91%	66%	0%
Operation	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	2%	0%	1%	1%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	18%	33%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	57%	50%	0%	0%	0%	0%	0%	0%	0%	8%	33%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Reliability Histories for Individual Circuits Serving Hawthorne

	2013			2014			2015			1st Qtr 2016			2nd Qtr 2016			3rd Qtr 2016			4th Qtr 2016			2016		
	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI
YORK(4.16KV) - Customers: 412	0.0	0.0	0.0	52.3	0.9	3.0	0.1	0.0	0.0	84.6	1.0	0.0	3.9	0.1	0.0	37.5	2.0	1.0	28.6	1.0	0.0	154.5	4.1	1.0
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	0%	0%	0%	100%	100%	31%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	24%	49%	100%
Operation	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	100%	100%	0%	21%	26%	0%
Other	0%	0%	0%	0%	0%	69%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	55%	25%	0%
ZEBRA(16KV) - Customers: 2,063	0.0	0.0	0.0	129.2	1.1	1.0	10.1	0.0	0.0	41.8	0.2	2.8	14.8	2.0	0.0	0.7	0.0	0.0	0.0	0.0	1.0	57.3	2.2	3.8
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	4%	0%	26%
Equipment Failure	0%	0%	0%	0%	0%	0%	100%	100%	0%	14%	8%	0%	41%	50%	0%	0%	0%	0%	0%	0%	0%	21%	47%	0%
Operation	0%	0%	0%	38%	6%	100%	0%	0%	0%	0%	0%	0%	5%	0%	0%	100%	100%	0%	0%	0%	0%	3%	0%	0%
Other	0%	0%	0%	62%	94%	0%	0%	0%	0%	9%	29%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	2%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	54%	50%	0%	0%	0%	0%	0%	0%	0%	14%	46%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	72%	58%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	52%	4%	74%