



# Circuit Reliability Review

## **Gardena**

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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://sce.com/OutageCenter/MaintainingReliableService)

# 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
<b>SCE SystemWide</b>	<b>108.13</b>		<b>0.89</b>		<b>102.61</b>		<b>0.91</b>		<b>112.00</b>		<b>0.96</b>		<b>114.83</b>		<b>0.92</b>		<b>134.48</b>		<b>1.10</b>	

\*\*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.

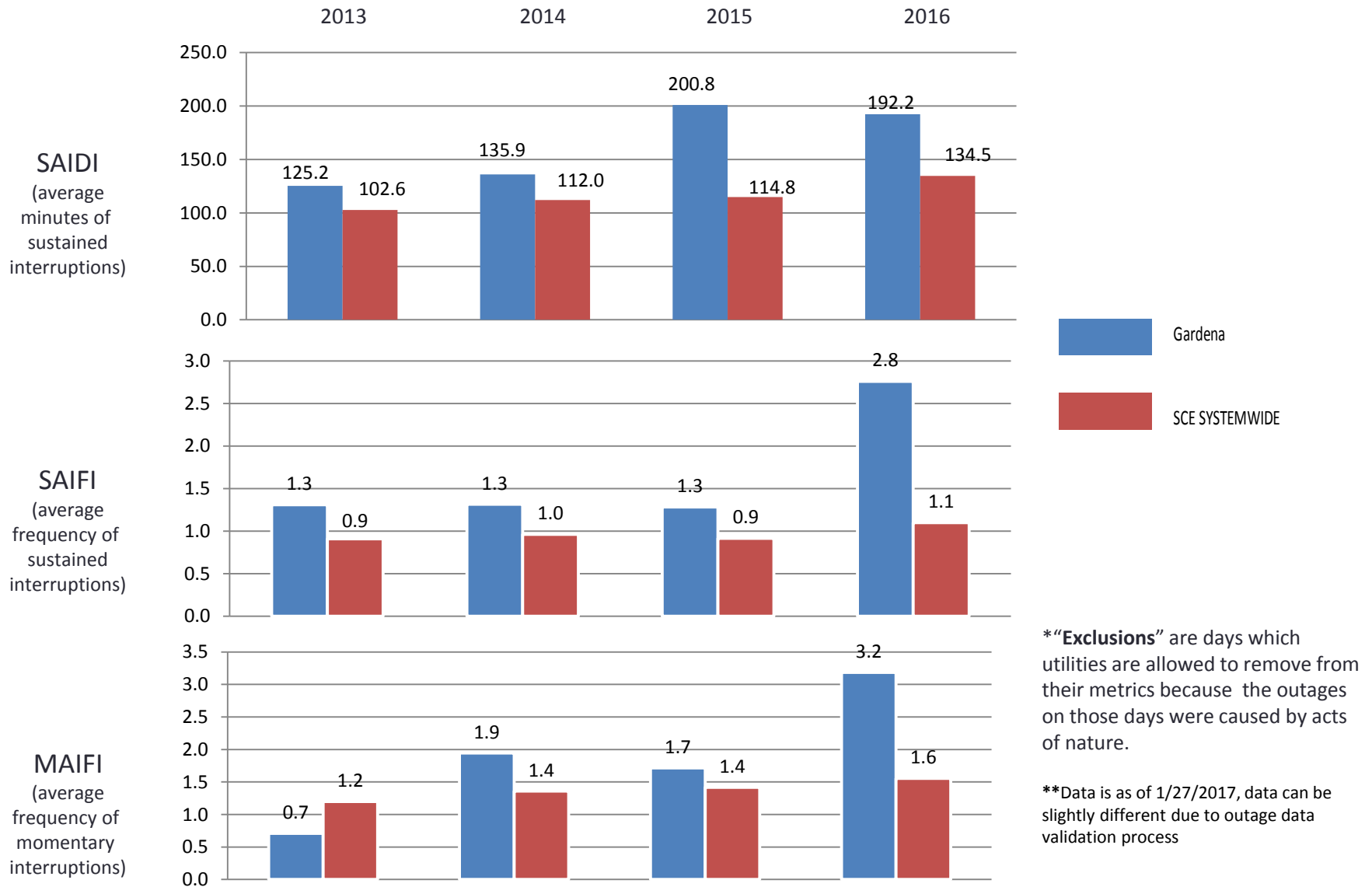
# Overview of Gardena

## There are 28 circuits that serve Gardena

Circuit Type	Sum of Customers	Circuit Type	Sum of Customers	Circuit Type	Sum of Customers	Circuit Type	Sum of Customers
ALASKA(16KV)	1,762						
AMESTOY(4.16KV)	1,011						
BLAKE(16KV)	3,357						
CARTER(4.16KV)	1,139						
CHADRON(16KV)	972						
COPRA(4.16KV)	670						
CRENSHAW(4.16KV)	1,102						
DALESIDE(16KV)	3,520						
DELID(4.16KV)	1,165						
DOMINGUEZ(16KV)	1,514						
EZRA(4.16KV)	1,028						
FACTOR(16KV)	387						
FIRMONA(16KV)	1,897						
GIRDER(4.16KV)	1,243						
GRANDVIEW(4.16KV)	904						
HALLDALE(16KV)	2,748						
ILLINOIS(4.16KV)	1,058						
JOHANNA(4.16KV)	914						
JUNEAU(4.16KV)	629						
OCCIDENTAL(16KV)	702						
PACOMA(4.16KV)	1,129						
PALM(4.16KV)	1,574						
PENTHOUSE(16KV)	1,253						
RHUMBA(16KV)	4,029						
RIVET(4.16KV)	716						
RUTHELLEN(16KV)	1,817						
TRUSS(4.16KV)	1,499						
WESTERN(16KV)	148						

**Grand Total** 39,887

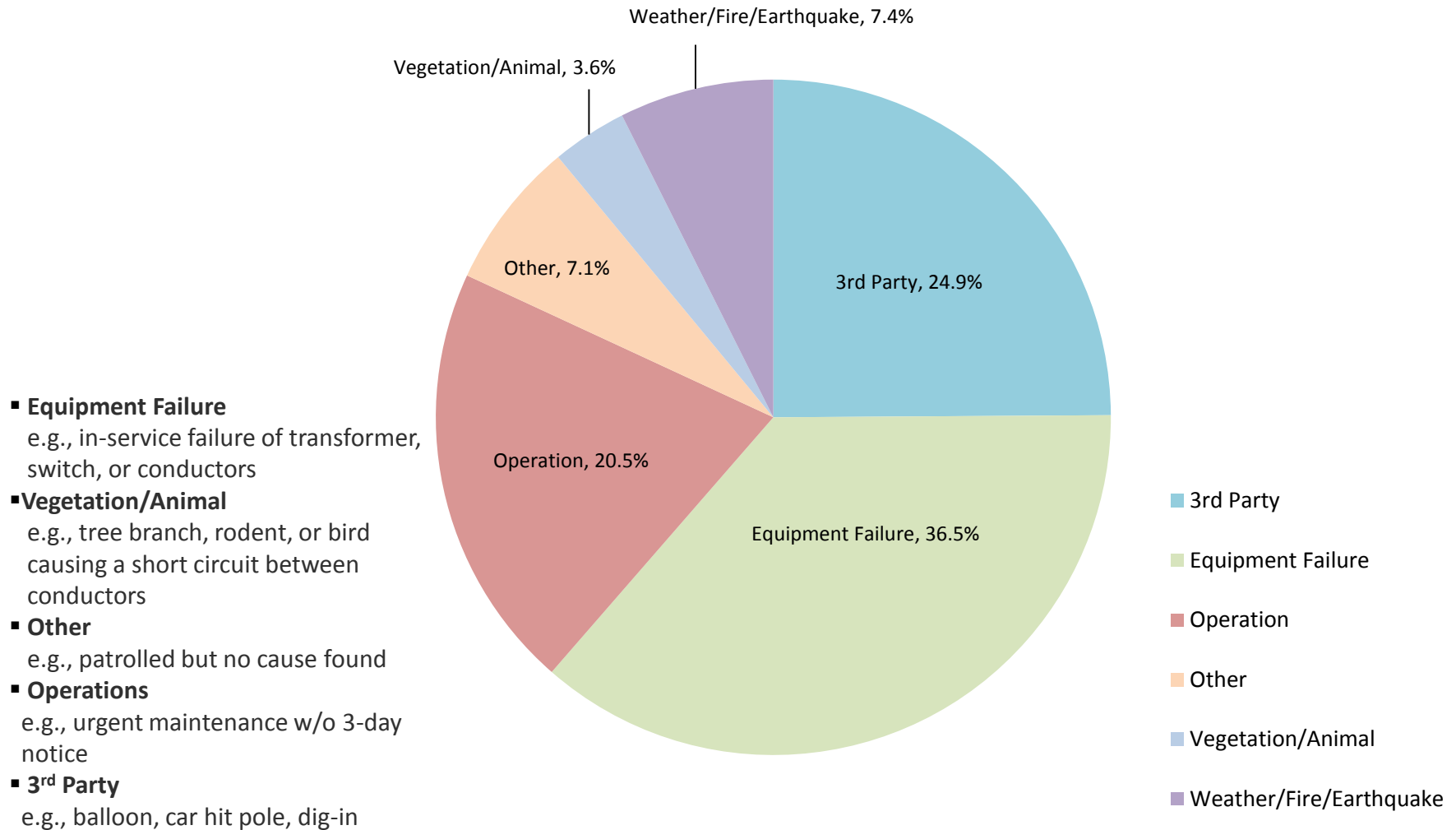
## Reliability History of Circuits Serving Gardena (No Exclusions)





# Causes of Repair Outages in Gardena Circuits 2016 YTD

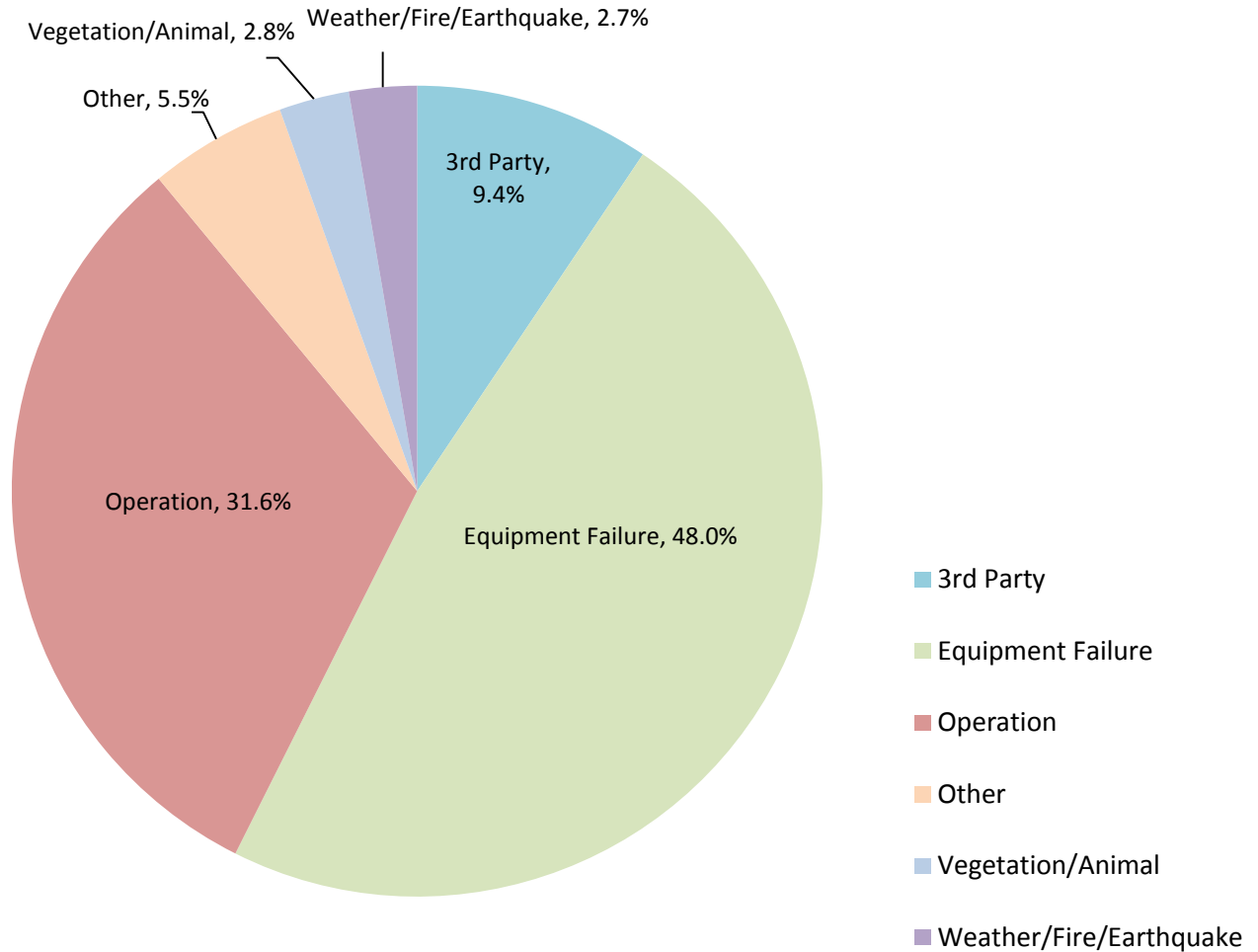
## Contributions to SAIDI by Outage Cause



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

# Causes of Repair Outages in Gardena Circuits 2016 YTD

## Contributions to SAIFI by Outage Cause



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



## Gardena 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)

✦ Pole Replacement

**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.



0 800 1,600 3,200  
Feet  
1 in = 2,013 feet

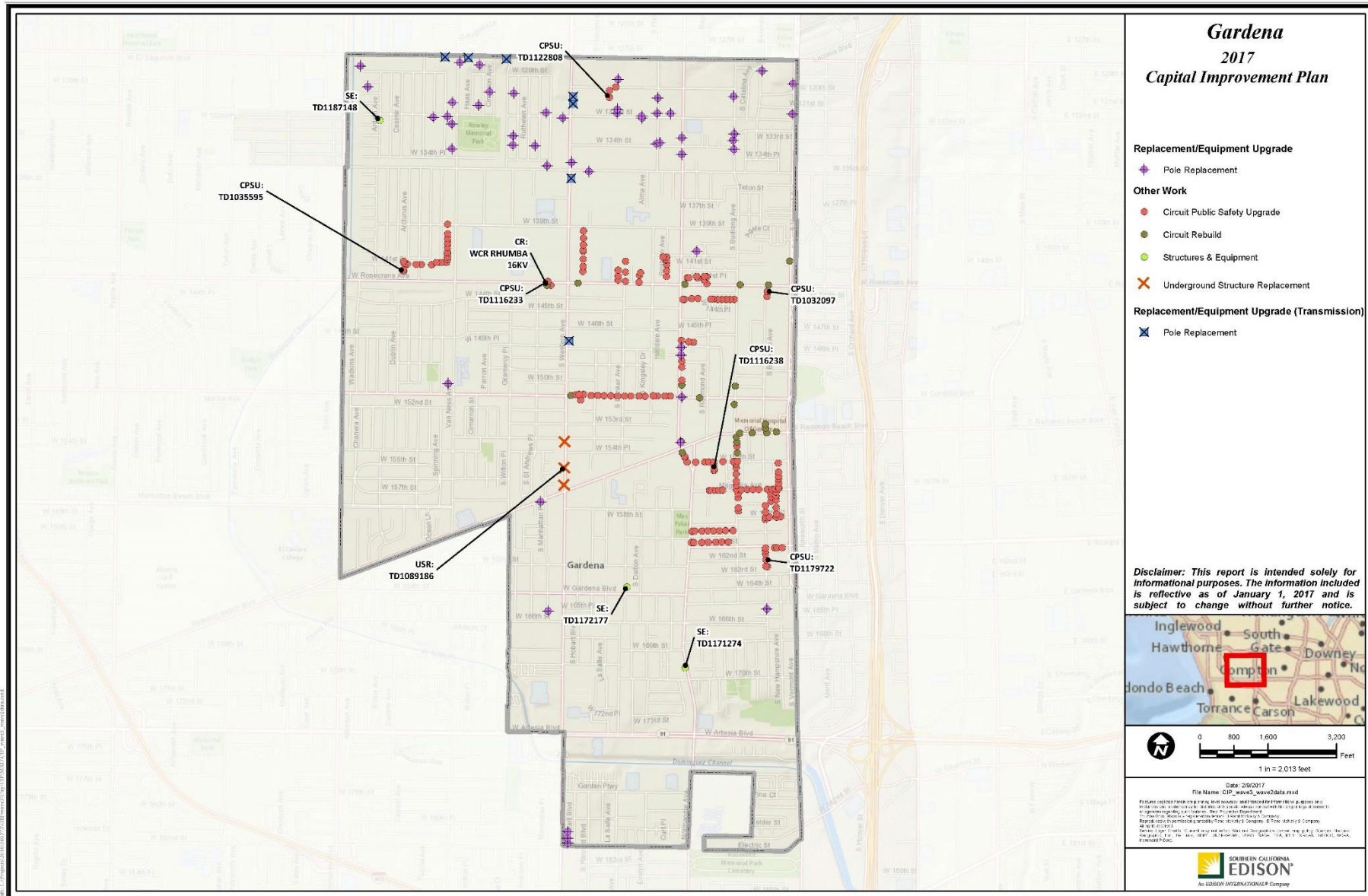
Date: 2/6/2017

File Name: CIP\_2017\_02\_06\_2017.mxd

Project: Capital Improvement Plan 2017  
Prepared by: Southern California Edison  
Reviewed by: Southern California Edison  
Approved by: Southern California Edison  
Project Manager: Southern California Edison  
Project Engineer: Southern California Edison  
Project Designer: Southern California Edison  
Project Checker: Southern California Edison  
Project Approver: Southern California Edison  
Project Sponsor: Southern California Edison  
Project Stakeholder: Southern California Edison  
Project Contact: Southern California Edison  
Project Address: Southern California Edison  
Project Phone: Southern California Edison  
Project Email: Southern California Edison  
Project Website: Southern California Edison  
Project Social Media: Southern California Edison  
Project Other: Southern California Edison



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# Back-up Slides

Reliability Histories of Circuits Serving Gardena

**Updated through Year-End 2016**



## Average Reliability of 28 Circuits Serving Gardena

	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
<b>Gardena</b>	<b>125.2</b>	<b>1.3</b>	<b>0.7</b>	<b>135.9</b>	<b>1.3</b>	<b>1.9</b>	<b>200.8</b>	<b>1.3</b>	<b>1.7</b>	<b>50.1</b>	<b>0.4</b>	<b>0.8</b>	<b>9.7</b>	<b>0.1</b>	<b>0.8</b>	<b>92.0</b>	<b>1.3</b>	<b>1.4</b>	<b>40.4</b>	<b>0.9</b>	<b>0.2</b>	<b>192.2</b>	<b>2.8</b>	<b>3.2</b>
3rd Party	20%	11%	23%	31%	29%	23%	25%	27%	19%	9%	17%	26%	24%	39%	21%	37%	6%	43%	17%	6%	70%	25%	9%	35%
Equipment Failure	47%	58%	25%	35%	23%	4%	35%	34%	2%	51%	34%	23%	39%	33%	11%	43%	86%	51%	2%	0%	16%	37%	48%	31%
Operation	4%	10%	6%	5%	9%	8%	10%	10%	5%	2%	12%	10%	6%	3%	0%	12%	4%	0%	67%	86%	0%	21%	32%	2%
Other	21%	12%	21%	9%	7%	35%	8%	13%	15%	0%	7%	19%	0%	0%	15%	8%	4%	2%	14%	8%	14%	7%	5%	10%
Vegetation/Animal	3%	5%	16%	0%	7%	19%	3%	5%	48%	8%	11%	13%	30%	24%	53%	0%	0%	4%	0%	0%	0%	4%	3%	19%
Weather/Fire/Earthquake	5%	4%	9%	20%	25%	10%	18%	11%	12%	28%	18%	9%	1%	0%	0%	0%	0%	0%	0%	0%	0%	7%	3%	2%
<b>SCE Systemwide</b>	<b>102.6</b>	<b>0.9</b>	<b>1.2</b>	<b>112.0</b>	<b>1.0</b>	<b>1.4</b>	<b>114.8</b>	<b>0.9</b>	<b>1.4</b>	<b>40.5</b>	<b>0.3</b>	<b>0.4</b>	<b>34.8</b>	<b>0.3</b>	<b>0.4</b>	<b>29.4</b>	<b>0.2</b>	<b>0.3</b>	<b>29.8</b>	<b>0.3</b>	<b>0.4</b>	<b>134.5</b>	<b>1.1</b>	<b>1.6</b>

### 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

3<sup>rd</sup> 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 Gardena

	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
<b>ALASKA(16KV) - Customers: 1,762</b>	<b>189.3</b>	<b>3.1</b>	<b>1.0</b>	<b>316.8</b>	<b>2.7</b>	<b>2.5</b>	<b>12.4</b>	<b>0.1</b>	<b>1.3</b>	<b>63.2</b>	<b>1.0</b>	<b>2.0</b>	<b>1.1</b>	<b>0.0</b>	<b>0.0</b>	<b>37.9</b>	<b>2.0</b>	<b>1.0</b>	<b>35.9</b>	<b>1.0</b>	<b>1.0</b>	<b>138.1</b>	<b>4.1</b>	<b>4.0</b>
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%
<b>AMESTOY(4.16KV) - Customers: 1,011</b>	<b>282.9</b>	<b>2.7</b>	<b>1.0</b>	<b>2.8</b>	<b>0.0</b>	<b>1.0</b>	<b>987.1</b>	<b>1.5</b>	<b>2.0</b>	<b>311.2</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>	<b>123.5</b>	<b>1.0</b>	<b>0.0</b>	<b>99.4</b>	<b>1.0</b>	<b>0.0</b>	<b>534.2</b>	<b>3.0</b>	<b>1.0</b>
3rd Party	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	23%	33%	100%
Equipment Failure	30%	37%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Operation	0%	0%	0%	100%	100%	0%	38%	28%	50%	2%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%
Other	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	19%	33%	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	70%	63%	100%	0%	0%	0%	61%	70%	0%	98%	96%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	57%	33%	0%
<b>BLAKE(16KV) - Customers: 3,357</b>	<b>153.0</b>	<b>2.1</b>	<b>1.0</b>	<b>268.2</b>	<b>1.9</b>	<b>0.0</b>	<b>18.6</b>	<b>1.0</b>	<b>0.0</b>	<b>0.9</b>	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>0.0</b>	<b>23.1</b>	<b>0.2</b>	<b>0.8</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>24.1</b>	<b>0.2</b>	<b>0.8</b>
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	96%	96%	100%
Equipment Failure	96%	98%	0%	98%	99%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Operation	3%	1%	0%	2%	1%	0%	0%	0%	0%	100%	100%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	4%	4%	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	1%	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%
<b>CARTER(4.16KV) - Customers: 1,139</b>	<b>20.4</b>	<b>0.1</b>	<b>0.0</b>	<b>20.0</b>	<b>1.0</b>	<b>8.0</b>	<b>303.2</b>	<b>1.4</b>	<b>0.0</b>	<b>179.8</b>	<b>1.1</b>	<b>2.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>431.3</b>	<b>3.5</b>	<b>3.5</b>	<b>31.9</b>	<b>1.0</b>	<b>0.0</b>	<b>643.0</b>	<b>5.7</b>	<b>5.5</b>
3rd Party	0%	0%	0%	100%	100%	25%	18%	70%	0%	0%	0%	0%	0%	0%	0%	47%	7%	43%	0%	0%	0%	31%	5%	27%
Equipment Failure	100%	100%	0%	0%	0%	0%	82%	29%	0%	96%	10%	0%	0%	0%	0%	9%	57%	29%	0%	0%	0%	33%	37%	18%
Operation	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	42%	7%	0%	100%	100%	0%	33%	23%	0%
Other	0%	0%	0%	0%	0%	75%	0%	0%	0%	4%	90%	100%	0%	0%	0%	3%	28%	29%	0%	0%	0%	3%	35%	55%
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 Gardena

	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
<b>CHADRON(16KV) - Customers: 972</b>	<b>47.2</b>	<b>1.0</b>	<b>0.0</b>	<b>747.5</b>	<b>2.0</b>	<b>1.5</b>	<b>3.0</b>	<b>0.0</b>	<b>2.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>47.3</b>	<b>1.0</b>	<b>1.0</b>	<b>34.8</b>	<b>2.0</b>	<b>1.0</b>	<b>30.8</b>	<b>1.0</b>	<b>0.0</b>	<b>112.9</b>	<b>4.0</b>	<b>2.0</b>
3rd Party	0%	0%	0%	49%	50%	34%	0%	0%	0%	0%	0%	0%	99%	100%	0%	0%	0%	0%	0%	0%	0%	42%	25%	0%
Equipment Failure	100%	100%	0%	51%	50%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	100%	100%	100%	0%	0%	0%	31%	50%	50%
Operation	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	27%	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%	66%	0%	0%	100%	0%	0%	0%	0%	0%	100%	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%
<b>COPRA(4.16KV) - Customers: 670</b>	<b>106.4</b>	<b>1.0</b>	<b>0.0</b>	<b>6.8</b>	<b>0.0</b>	<b>0.0</b>	<b>33.2</b>	<b>1.0</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>
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%	100%	100%	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	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
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%
<b>CRENSHAW(4.16KV) - Customers: 1,102</b>	<b>81.5</b>	<b>1.0</b>	<b>0.0</b>	<b>0.9</b>	<b>0.0</b>	<b>0.0</b>	<b>269.0</b>	<b>2.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>2.0</b>
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%	50%
Equipment Failure	100%	100%	0%	22%	25%	0%	96%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Operation	0%	0%	0%	78%	75%	0%	4%	50%	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%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	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%
<b>DALESIDE(16KV) - Customers: 3,520</b>	<b>276.0</b>	<b>1.5</b>	<b>0.5</b>	<b>33.9</b>	<b>2.0</b>	<b>3.9</b>	<b>170.1</b>	<b>0.9</b>	<b>2.1</b>	<b>3.4</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>2.0</b>	<b>57.1</b>	<b>1.5</b>	<b>1.0</b>	<b>40.1</b>	<b>1.0</b>	<b>0.0</b>	<b>100.6</b>	<b>2.5</b>	<b>3.0</b>
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%



# Reliability Histories for Individual Circuits Serving Gardena

	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
<b>DELID(4.16KV) - Customers: 1,165</b>	<b>173.0</b>	<b>3.0</b>	<b>0.0</b>	<b>97.4</b>	<b>1.0</b>	<b>1.9</b>	<b>211.4</b>	<b>1.3</b>	<b>1.9</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
3rd Party	0%	0%	0%	100%	100%	47%	0%	0%	54%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	66%	67%	0%	0%	0%	0%	3%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Operation	0%	0%	0%	0%	0%	0%	53%	60%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	34%	33%	0%	0%	0%	53%	44%	39%	46%	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%
<b>DOMINGUEZ(16KV) - Customers: 1,514</b>	<b>285.1</b>	<b>3.4</b>	<b>2.7</b>	<b>18.5</b>	<b>0.0</b>	<b>0.0</b>	<b>712.4</b>	<b>3.1</b>	<b>0.0</b>	<b>9.9</b>	<b>0.1</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>2.3</b>	<b>0.0</b>	<b>1.0</b>	<b>12.2</b>	<b>0.1</b>	<b>2.0</b>
3rd Party	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	68%	58%	26%	39%	52%	0%	100%	99%	0%	69%	19%	0%	0%	0%	0%	0%	0%	0%	55%	41%	100%	66%	23%	50%
Operation	1%	12%	0%	61%	48%	0%	0%	0%	0%	31%	81%	100%	0%	0%	0%	0%	0%	0%	45%	59%	0%	34%	77%	50%
Other	30%	30%	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%	37%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	1%	0%	37%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>EZRA(4.16KV) - Customers: 1,028</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>	<b>3.5</b>	<b>0.0</b>	<b>5.0</b>	<b>10.1</b>	<b>0.0</b>	<b>2.0</b>	<b>56.8</b>	<b>1.0</b>	<b>0.0</b>	<b>10.4</b>	<b>0.0</b>	<b>1.0</b>	<b>96.0</b>	<b>2.6</b>	<b>2.0</b>	<b>29.0</b>	<b>1.0</b>	<b>0.0</b>	<b>192.2</b>	<b>4.6</b>	<b>3.0</b>
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%
<b>FACTOR(16KV) - Customers: 387</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>	<b>18.2</b>	<b>0.1</b>	<b>1.0</b>	<b>0.5</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>38.3</b>	<b>2.0</b>	<b>3.0</b>	<b>29.3</b>	<b>1.0</b>	<b>0.0</b>	<b>67.5</b>	<b>3.0</b>	<b>3.0</b>
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 Gardena

	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
<b>FIRMONA(16KV) - Customers: 1,897</b>	<b>93.2</b>	<b>1.1</b>	<b>0.0</b>	<b>12.6</b>	<b>0.1</b>	<b>0.0</b>	<b>54.4</b>	<b>1.1</b>	<b>2.0</b>	<b>85.8</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>14.5</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>100.3</b>	<b>1.0</b>	<b>0.0</b>
3rd Party	0%	0%	0%	0%	0%	0%	14%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	91%	93%	0%	84%	84%	0%	47%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Operation	9%	7%	0%	16%	16%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	14%	4%	0%
Other	0%	0%	0%	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%	39%	88%	50%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	86%	96%	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%
<b>GIRDER(4.16KV) - Customers: 1,243</b>	<b>344.8</b>	<b>1.5</b>	<b>2.0</b>	<b>329.4</b>	<b>1.0</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>4.5</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>74.2</b>	<b>1.5</b>	<b>1.0</b>	<b>37.1</b>	<b>1.0</b>	<b>0.0</b>	<b>115.8</b>	<b>2.6</b>	<b>1.0</b>
3rd Party	0%	0%	0%	96%	97%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	0%	0%	49%	4%	2%	0%	0%	0%	0%	94%	30%	0%	0%	0%	0%	99%	100%	100%	0%	0%	0%	67%	59%	100%
Operation	0%	0%	0%	0%	1%	0%	0%	0%	0%	6%	70%	0%	0%	0%	0%	1%	0%	0%	100%	100%	0%	33%	41%	0%
Other	100%	100%	51%	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%	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%
<b>GRANDVIEW(4.16KV) - Customers: 904</b>	<b>138.6</b>	<b>2.0</b>	<b>0.0</b>	<b>107.2</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>	<b>101.6</b>	<b>1.0</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>50.0</b>	<b>2.0</b>	<b>2.0</b>	<b>37.6</b>	<b>1.0</b>	<b>0.0</b>	<b>189.3</b>	<b>4.1</b>	<b>3.0</b>
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%
<b>HALLDALE(16KV) - Customers: 2,748</b>	<b>16.9</b>	<b>0.1</b>	<b>0.0</b>	<b>111.9</b>	<b>1.0</b>	<b>3.0</b>	<b>309.1</b>	<b>2.1</b>	<b>2.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>	<b>79.6</b>	<b>1.3</b>	<b>4.8</b>	<b>94.4</b>	<b>3.0</b>	<b>1.0</b>	<b>174.0</b>	<b>4.3</b>	<b>6.8</b>
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%

## Reliability Histories for Individual Circuits Serving Gardena

	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
<b>ILLINOIS(4.16KV) - Customers: 1,058</b>	<b>84.9</b>	<b>1.0</b>	<b>2.0</b>	<b>331.1</b>	<b>2.2</b>	<b>1.7</b>	<b>294.2</b>	<b>5.8</b>	<b>0.0</b>	<b>152.2</b>	<b>1.0</b>	<b>1.0</b>	<b>0.4</b>	<b>0.0</b>	<b>0.0</b>	<b>57.7</b>	<b>0.1</b>	<b>0.0</b>	<b>54.5</b>	<b>1.0</b>	<b>1.0</b>	<b>264.9</b>	<b>2.1</b>	<b>2.0</b>
3rd Party	0%	0%	100%	16%	46%	0%	12%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	21%	47%	50%
Equipment Failure	100%	100%	0%	45%	8%	100%	44%	35%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Operation	0%	0%	0%	0%	0%	0%	27%	20%	0%	1%	0%	0%	100%	100%	0%	100%	100%	0%	0%	0%	0%	22%	6%	0%
Other	0%	0%	0%	39%	46%	0%	18%	28%	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%	99%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	57%	47%	50%
<b>JOHANNA(4.16KV) - Customers: 914</b>	<b>460.0</b>	<b>2.1</b>	<b>0.0</b>	<b>73.7</b>	<b>1.0</b>	<b>2.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>319.8</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>319.8</b>	<b>1.0</b>	<b>1.0</b>
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Equipment Failure	19%	48%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Operation	1%	4%	0%	4%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	81%	48%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	100%	100%	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%	96%	98%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>JUNEAU(4.16KV) - Customers: 629</b>	<b>110.6</b>	<b>2.0</b>	<b>0.0</b>	<b>30.9</b>	<b>1.0</b>	<b>0.0</b>	<b>55.3</b>	<b>0.1</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>4.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>	<b>38.1</b>	<b>2.0</b>	<b>1.0</b>	<b>29.0</b>	<b>1.0</b>	<b>0.0</b>	<b>67.0</b>	<b>3.0</b>	<b>6.0</b>
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%
<b>OCCIDENTAL(16KV) - Customers: 702</b>	<b>160.6</b>	<b>2.0</b>	<b>0.9</b>	<b>55.1</b>	<b>0.1</b>	<b>1.0</b>	<b>677.2</b>	<b>2.0</b>	<b>4.2</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>6.5</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>6.5</b>	<b>0.0</b>	<b>0.0</b>
3rd Party	0%	0%	0%	100%	100%	100%	61%	50%	16%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	99%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	76%	33%	0%	0%	0%	0%	0%	0%	0%	76%	33%	0%
Operation	1%	0%	0%	0%	0%	0%	5%	17%	0%	0%	0%	0%	24%	67%	0%	0%	0%	0%	0%	0%	0%	24%	67%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	23%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	35%	33%	61%	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 Gardena

	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
<b>PACOMA(4.16KV) - Customers: 1,129</b>	<b>28.1</b>	<b>1.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>2.0</b>	<b>101.2</b>	<b>1.0</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>37.8</b>	<b>2.0</b>	<b>1.0</b>	<b>28.9</b>	<b>1.0</b>	<b>1.0</b>	<b>66.7</b>	<b>3.0</b>	<b>2.0</b>
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%
<b>PALM(4.16KV) - Customers: 1,574</b>	<b>85.2</b>	<b>1.0</b>	<b>1.0</b>	<b>161.8</b>	<b>1.0</b>	<b>1.0</b>	<b>31.8</b>	<b>0.1</b>	<b>2.0</b>	<b>203.8</b>	<b>1.2</b>	<b>3.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>203.8</b>	<b>1.2</b>	<b>4.0</b>
3rd Party	0%	0%	0%	1%	1%	100%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	25%
Equipment Failure	100%	100%	0%	0%	0%	0%	100%	100%	0%	94%	18%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	94%	18%	25%
Operation	0%	0%	0%	1%	2%	0%	0%	0%	50%	6%	82%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	82%	0%
Other	0%	0%	100%	99%	96%	0%	0%	0%	0%	0%	0%	33%	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%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%
<b>PENTHOUSE(16KV) - Customers: 1,253</b>	<b>73.8</b>	<b>1.1</b>	<b>0.0</b>	<b>213.5</b>	<b>2.0</b>	<b>4.0</b>	<b>278.2</b>	<b>2.0</b>	<b>4.7</b>	<b>0.6</b>	<b>0.0</b>	<b>0.0</b>	<b>97.0</b>	<b>1.0</b>	<b>3.9</b>	<b>36.0</b>	<b>2.0</b>	<b>1.0</b>	<b>72.0</b>	<b>1.1</b>	<b>0.0</b>	<b>205.6</b>	<b>4.1</b>	<b>4.9</b>
3rd Party	0%	0%	0%	83%	49%	25%	38%	50%	18%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	89%	97%	100%	1%	0%	0%	0%	0%	0%	100%	100%	0%	4%	3%	0%	97%	100%	100%	0%	0%	0%	19%	49%	20%
Operation	0%	0%	0%	0%	0%	0%	3%	1%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	100%	100%	0%	36%	27%	0%
Other	11%	3%	0%	11%	1%	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%	50%	0%	0%	43%	0%	0%	0%	96%	97%	100%	0%	0%	0%	0%	0%	0%	45%	24%	80%
Weather/Fire/Earthquake	0%	0%	0%	5%	50%	25%	59%	50%	39%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>RHUMBA(16KV) - Customers: 4,029</b>	<b>2.4</b>	<b>0.0</b>	<b>0.0</b>	<b>170.2</b>	<b>2.9</b>	<b>1.5</b>	<b>447.4</b>	<b>3.2</b>	<b>4.7</b>	<b>109.6</b>	<b>1.0</b>	<b>2.0</b>	<b>18.3</b>	<b>0.0</b>	<b>3.0</b>	<b>137.0</b>	<b>2.0</b>	<b>2.5</b>	<b>42.7</b>	<b>1.0</b>	<b>0.0</b>	<b>307.4</b>	<b>4.1</b>	<b>7.4</b>
3rd Party	0%	0%	0%	0%	0%	0%	48%	52%	29%	6%	1%	50%	0%	0%	0%	15%	2%	40%	0%	0%	0%	9%	1%	27%
Equipment Failure	61%	57%	0%	66%	38%	0%	0%	0%	0%	94%	99%	0%	100%	100%	33%	85%	98%	60%	8%	1%	0%	78%	74%	33%
Operation	0%	0%	0%	11%	27%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	92%	99%	0%	13%	25%	0%
Other	0%	0%	0%	0%	0%	0%	24%	32%	19%	0%	0%	0%	0%	0%	34%	0%	0%	0%	0%	0%	0%	0%	0%	14%
Vegetation/Animal	39%	43%	0%	1%	0%	68%	0%	0%	42%	0%	0%	50%	0%	0%	34%	0%	0%	0%	0%	0%	0%	0%	0%	27%
Weather/Fire/Earthquake	0%	0%	0%	23%	35%	32%	28%	16%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

## Reliability Histories for Individual Circuits Serving Gardena

	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
<b>RIVET(4.16KV) - Customers: 716</b>	<b>5.4</b>	<b>0.0</b>	<b>1.0</b>	<b>124.6</b>	<b>1.0</b>	<b>4.0</b>	<b>69.2</b>	<b>0.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>6.4</b>	<b>0.0</b>	<b>0.0</b>	<b>48.2</b>	<b>2.0</b>	<b>1.0</b>	<b>28.7</b>	<b>1.0</b>	<b>0.0</b>	<b>83.3</b>	<b>3.0</b>	<b>1.0</b>
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%	100%	100%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	58%	66%	100%
Operation	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	100%	100%	0%	42%	34%	0%
Other	0%	0%	100%	100%	100%	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%	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%
<b>RUTHELLEN(16KV) - Customers: 1,817</b>	<b>32.9</b>	<b>0.3</b>	<b>0.7</b>	<b>49.6</b>	<b>0.4</b>	<b>2.4</b>	<b>82.0</b>	<b>0.1</b>	<b>3.0</b>	<b>46.9</b>	<b>0.6</b>	<b>0.6</b>	<b>30.1</b>	<b>0.6</b>	<b>1.4</b>	<b>532.1</b>	<b>2.5</b>	<b>1.8</b>	<b>219.7</b>	<b>2.6</b>	<b>0.4</b>	<b>828.8</b>	<b>6.4</b>	<b>4.2</b>
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	87%	94%	30%	81%	22%	23%	54%	23%	100%	69%	27%	30%
Equipment Failure	0%	0%	0%	92%	99%	57%	1%	3%	0%	100%	100%	100%	0%	0%	0%	19%	78%	77%	0%	0%	0%	18%	41%	47%
Operation	19%	9%	0%	8%	1%	0%	77%	82%	0%	0%	0%	0%	4%	5%	0%	0%	0%	0%	18%	38%	0%	5%	16%	0%
Other	81%	91%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	39%	0%	7%	16%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	43%	21%	16%	100%	0%	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%	0%	0%	0%	23%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>TRUSS(4.16KV) - Customers: 1,499</b>	<b>3.2</b>	<b>0.0</b>	<b>4.0</b>	<b>23.6</b>	<b>1.0</b>	<b>2.0</b>	<b>7.0</b>	<b>0.0</b>	<b>1.0</b>	<b>5.4</b>	<b>0.0</b>	<b>2.0</b>	<b>45.0</b>	<b>1.0</b>	<b>0.0</b>	<b>108.1</b>	<b>2.7</b>	<b>1.0</b>	<b>28.8</b>	<b>1.0</b>	<b>0.0</b>	<b>187.3</b>	<b>4.7</b>	<b>3.0</b>
3rd Party	0%	0%	25%	100%	100%	50%	0%	0%	100%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%
Equipment Failure	78%	77%	25%	0%	0%	0%	70%	45%	0%	0%	0%	0%	100%	100%	0%	56%	74%	100%	0%	0%	0%	56%	64%	33%
Operation	22%	23%	25%	0%	0%	0%	30%	55%	0%	100%	100%	50%	0%	0%	0%	44%	26%	0%	100%	100%	0%	44%	36%	33%
Other	0%	0%	25%	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%	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%
<b>WESTERN(16KV) - Customers: 148</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>11.9</b>	<b>0.0</b>	<b>2.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>38.7</b>	<b>2.0</b>	<b>3.1</b>	<b>166.3</b>	<b>1.2</b>	<b>1.9</b>	<b>205.0</b>	<b>3.2</b>	<b>4.9</b>
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%