SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL℠ Company

# Circuit Reliability Review
# Rolling Hills

January 2015

# 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 District – (No Exclusions)

| | 2009 | | | | 2010 | | | | 2011 | | | | 2012 | | | | 2013 | | | | 2014 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| District Name | 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 | District SAIDI | SAIDI RANKING | District SAIFI | SAIFI Ranking |
| ANTELOPE VALLEY | 71.23 | 29 | 0.52 | 33 | 131.06 | 17 | 0.77 | 31 | 208.16 | 11 | 1.25 | 13 | 78.60 | 28 | 0.56 | 31 | 94.42 | 22 | 0.62 | 31 | 50.96 | 35 | 0.59 | 34 |
| ARROWHEAD | 534.08 | 2 | 3.41 | 1 | 537.40 | 4 | 3.84 | 2 | 792.79 | 3 | 4.40 | 1 | 129.58 | 13 | 1.31 | 7 | 180.59 | 7 | 1.39 | 8 | 193.25 | 5 | 1.59 | 5 |
| BARSTOW | 153.49 | 10 | 1.14 | 14 | 123.02 | 23 | 1.51 | 11 | 308.76 | 8 | 1.63 | 8 | 184.80 | 7 | 1.15 | 12 | 204.33 | 6 | 1.40 | 7 | 201.53 | 4 | 1.34 | 10 |
| BIG CREEK | 259.27 | 3 | 1.44 | 8 | 5700.99 | 1 | 12.89 | 1 | 1667.05 | 2 | 4.22 | 2 | 1184.25 | 1 | 4.52 | 1 | 176.51 | 8 | 3.08 | 1 | 920.25 | 1 | 1.34 | 11 |
| BISHOP | 143.55 | 12 | 1.36 | 9 | 407.92 | 6 | 2.50 | 5 | 666.06 | 5 | 1.55 | 10 | 463.09 | 2 | 1.25 | 9 | 104.44 | 17 | 0.51 | 35 | 118.79 | 17 | 0.59 | 35 |
| BLYTHE | 83.88 | 25 | 0.82 | 21 | 1332.78 | 2 | 2.03 | 6 | 378.39 | 7 | 1.40 | 11 | 225.88 | 6 | 1.53 | 3 | 483.13 | 1 | 1.38 | 9 | 707.22 | 2 | 2.42 | 2 |
| CATALINA | 98.59 | 19 | 2.54 | 2 | 67.23 | 35 | 1.55 | 10 | 65.03 | 34 | 3.45 | 3 | 78.46 | 30 | 0.72 | 29 | 105.94 | 16 | 2.97 | 2 | 97.02 | 24 | 4.17 | 1 |
| COVINA | 78.04 | 27 | 0.68 | 26 | 117.66 | 26 | 0.81 | 28 | 166.97 | 15 | 0.87 | 24 | 108.73 | 19 | 0.92 | 19 | 100.51 | 19 | 0.86 | 20 | 91.42 | 27 | 0.87 | 22 |
| DOMINGUEZ HILLS | 89.81 | 22 | 0.68 | 27 | 119.23 | 24 | 0.78 | 30 | 109.41 | 23 | 0.72 | 31 | 117.22 | 18 | 0.82 | 24 | 89.21 | 26 | 0.80 | 21 | 82.16 | 30 | 0.71 | 28 |
| FOOTHILL | 94.33 | 21 | 0.62 | 30 | 76.60 | 33 | 0.46 | 35 | 117.40 | 22 | 0.96 | 21 | 91.69 | 25 | 0.90 | 20 | 85.80 | 27 | 0.79 | 24 | 93.34 | 25 | 0.93 | 21 |
| FULLERTON | 62.35 | 31 | 0.46 | 34 | 135.22 | 16 | 1.19 | 15 | 90.11 | 30 | 0.61 | 32 | 68.99 | 33 | 0.42 | 35 | 90.57 | 25 | 0.79 | 22 | 82.20 | 29 | 0.72 | 27 |
| HUNTINGTON BEACH | 109.42 | 14 | 1.04 | 16 | 129.50 | 18 | 1.02 | 21 | 122.54 | 20 | 0.96 | 20 | 95.78 | 23 | 0.89 | 21 | 66.51 | 32 | 0.68 | 29 | 79.41 | 31 | 0.78 | 25 |
| KERNVILLE | 585.93 | 1 | 2.01 | 4 | 584.74 | 3 | 1.80 | 7 | 165.69 | 16 | 1.02 | 18 | 226.76 | 5 | 1.31 | 6 | 232.18 | 4 | 1.96 | 3 | 178.69 | 8 | 1.99 | 3 |
| LONG BEACH | 41.50 | 35 | 0.42 | 35 | 72.28 | 34 | 0.63 | 34 | 58.48 | 35 | 0.58 | 34 | 75.83 | 31 | 0.55 | 33 | 75.11 | 30 | 0.70 | 28 | 66.23 | 34 | 0.61 | 32 |
| MENIFEE | 106.45 | 16 | 1.81 | 5 | 100.65 | 29 | 0.76 | 32 | 100.48 | 27 | 0.89 | 22 | 99.32 | 22 | 0.84 | 23 | 107.39 | 15 | 1.26 | 10 | 156.64 | 11 | 1.32 | 12 |
| MONROVIA | 219.77 | 4 | 0.87 | 20 | 124.34 | 21 | 1.08 | 18 | 2414.04 | 1 | 1.89 | 6 | 108.11 | 20 | 1.13 | 15 | 99.12 | 20 | 1.02 | 16 | 133.31 | 14 | 1.16 | 16 |
| MONTEBELLO | 192.33 | 5 | 1.19 | 11 | 147.85 | 14 | 1.12 | 17 | 678.33 | 4 | 1.21 | 15 | 131.06 | 12 | 1.13 | 14 | 118.08 | 13 | 1.17 | 12 | 158.32 | 10 | 1.16 | 15 |
| ONTARIO | 88.19 | 23 | 0.75 | 23 | 90.45 | 32 | 0.81 | 26 | 117.66 | 21 | 0.82 | 26 | 93.09 | 24 | 0.87 | 22 | 77.39 | 29 | 0.79 | 23 | 97.88 | 23 | 1.00 | 19 |
| PALM SPRINGS | 151.66 | 11 | 1.11 | 15 | 180.69 | 11 | 1.04 | 20 | 164.77 | 17 | 0.89 | 23 | 175.92 | 8 | 1.27 | 8 | 112.80 | 14 | 0.77 | 25 | 106.96 | 20 | 0.71 | 29 |
| REDLANDS | 107.20 | 15 | 0.90 | 19 | 216.76 | 8 | 1.69 | 9 | 253.70 | 9 | 1.63 | 9 | 120.13 | 16 | 1.11 | 16 | 96.48 | 21 | 1.04 | 15 | 154.23 | 12 | 1.04 | 18 |
| RIDGECREST | 58.34 | 34 | 0.68 | 25 | 153.38 | 12 | 1.41 | 12 | 89.26 | 31 | 0.74 | 30 | 229.65 | 4 | 1.44 | 4 | 161.95 | 9 | 1.12 | 13 | 176.80 | 9 | 1.57 | 6 |
| SADDLEBACK | 78.99 | 26 | 0.70 | 24 | 137.24 | 15 | 0.96 | 24 | 75.94 | 33 | 0.55 | 35 | 83.04 | 27 | 0.73 | 27 | 70.66 | 31 | 0.53 | 34 | 99.07 | 22 | 0.74 | 26 |
| SAN JOAQUIN | 96.59 | 20 | 0.91 | 18 | 126.70 | 20 | 1.04 | 19 | 83.98 | 32 | 0.74 | 29 | 135.90 | 10 | 1.04 | 18 | 244.44 | 2 | 1.45 | 6 | 137.98 | 13 | 1.17 | 14 |
| SANTA ANA | 67.83 | 30 | 0.60 | 31 | 104.57 | 27 | 0.81 | 27 | 102.01 | 26 | 0.82 | 27 | 78.60 | 29 | 0.55 | 32 | 93.35 | 24 | 0.74 | 26 | 91.65 | 26 | 0.84 | 23 |
| SANTA BARBARA | 178.87 | 7 | 1.80 | 6 | 151.19 | 13 | 1.01 | 22 | 104.86 | 25 | 0.87 | 25 | 153.77 | 9 | 1.15 | 13 | 82.00 | 28 | 0.70 | 27 | 183.69 | 7 | 1.38 | 9 |
| SANTA MONICA | 86.23 | 24 | 0.65 | 28 | 98.32 | 30 | 0.89 | 25 | 95.08 | 29 | 0.58 | 33 | 101.69 | 21 | 0.79 | 25 | 122.78 | 12 | 1.00 | 17 | 110.74 | 19 | 0.99 | 20 |
| SOUTH BAY | 158.58 | 9 | 1.16 | 12 | 190.65 | 9 | 1.20 | 14 | 178.73 | 13 | 1.35 | 12 | 122.67 | 15 | 1.17 | 10 | 142.15 | 10 | 1.49 | 5 | 125.15 | 16 | 1.39 | 8 |
| TEHACHAPI | 168.04 | 8 | 2.01 | 3 | 434.02 | 5 | 3.23 | 3 | 231.23 | 10 | 1.81 | 7 | 117.96 | 17 | 1.43 | 5 | 232.67 | 3 | 1.12 | 14 | 130.70 | 15 | 1.29 | 13 |
| THOUSAND OAKS | 103.16 | 17 | 0.99 | 17 | 124.26 | 22 | 1.37 | 13 | 146.69 | 18 | 1.14 | 16 | 127.73 | 14 | 1.05 | 17 | 93.86 | 23 | 0.91 | 18 | 104.17 | 21 | 1.10 | 17 |
| VALENCIA | 101.70 | 18 | 0.81 | 22 | 117.82 | 25 | 0.81 | 29 | 130.85 | 19 | 1.04 | 17 | 62.01 | 35 | 0.46 | 34 | 51.04 | 34 | 0.53 | 33 | 79.22 | 32 | 0.61 | 33 |
| VENTURA | 112.42 | 13 | 1.29 | 10 | 182.74 | 10 | 1.72 | 8 | 167.85 | 14 | 2.25 | 4 | 134.81 | 11 | 1.15 | 11 | 100.52 | 18 | 1.21 | 11 | 183.77 | 6 | 1.65 | 4 |
| VICTORVILLE | 61.93 | 32 | 0.64 | 29 | 96.45 | 31 | 1.01 | 23 | 196.85 | 12 | 1.01 | 19 | 67.70 | 34 | 0.66 | 30 | 61.33 | 33 | 0.63 | 30 | 68.84 | 33 | 0.63 | 31 |
| WHITTIER | 74.92 | 28 | 0.53 | 32 | 101.33 | 28 | 0.70 | 33 | 99.74 | 28 | 0.75 | 28 | 72.60 | 32 | 0.74 | 26 | 135.04 | 11 | 0.86 | 19 | 87.60 | 28 | 0.70 | 30 |
| WILDOMAR | 59.71 | 33 | 1.48 | 7 | 127.12 | 19 | 1.12 | 16 | 109.41 | 24 | 1.22 | 14 | 88.55 | 26 | 0.72 | 28 | 40.50 | 35 | 0.56 | 32 | 118.49 | 18 | 0.81 | 24 |
| YUCCA VALLEY | 192.28 | 6 | 1.16 | 13 | 307.67 | 7 | 3.02 | 4 | 436.44 | 6 | 2.16 | 5 | 319.82 | 3 | 3.41 | 2 | 216.97 | 5 | 1.50 | 4 | 304.18 | 3 | 1.49 | 7 |
| SCE System Wide | 105.80 | | 0.90 | | 140.91 | | 1.05 | | 232.39 | | 1.04 | | 108.13 | | 0.89 | | 102.61 | | 0.91 | | 112.18 | | 0.97 | |

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

# Overview of Rolling Hills

## There are 8 circuits that serve the City of Rolling Hills

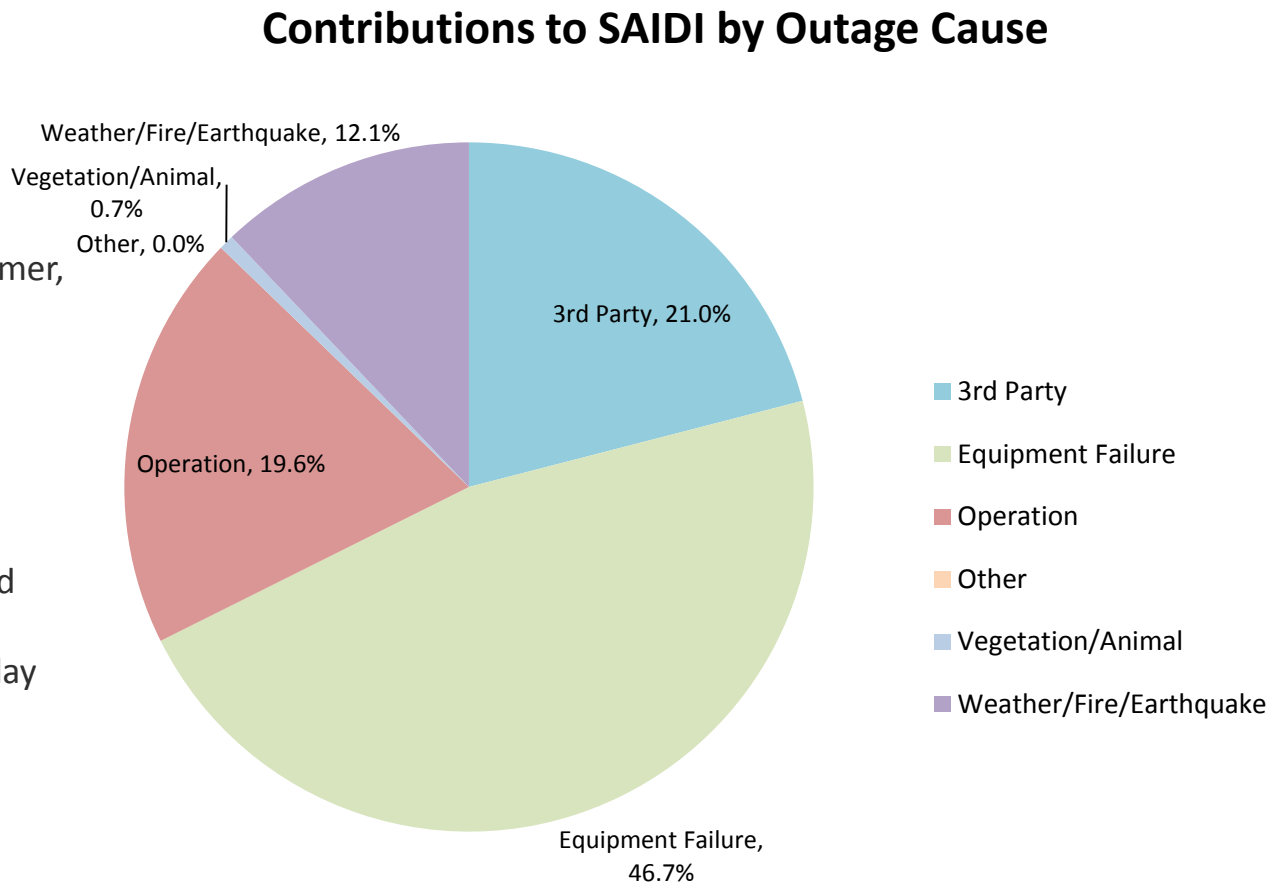
| Circuit Type | Sum of Customers | Circuit Type | Sum of Customers | Circuit Type | Sum of Customers | Circuit Type | Sum of Customers |
|---|---|---|---|---|---|---|---|
| BRIDLE(4KV) | 372 | | | | | | |
| BUGGY(4KV) | 23 | | | | | | |
| CODONA(4KV) | 481 | | | | | | |
| EASTFIELD(4KV) | 431 | | | | | | |
| FELDSPAR(16KV) | 1,141 | | | | | | |
| SILICONE(16KV) | 2,727 | | | | | | |
| STATLER(16KV) | 1,388 | | | | | | |
| SURREY(4KV) | 106 | | | | | | |
| **Grand Total** | 6,669 | | | | | | |

# Reliability History of Circuits Serving Rolling Hills (No Exclusions)

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

# Causes of Repair Outages in Rolling Hills Circuits 2014

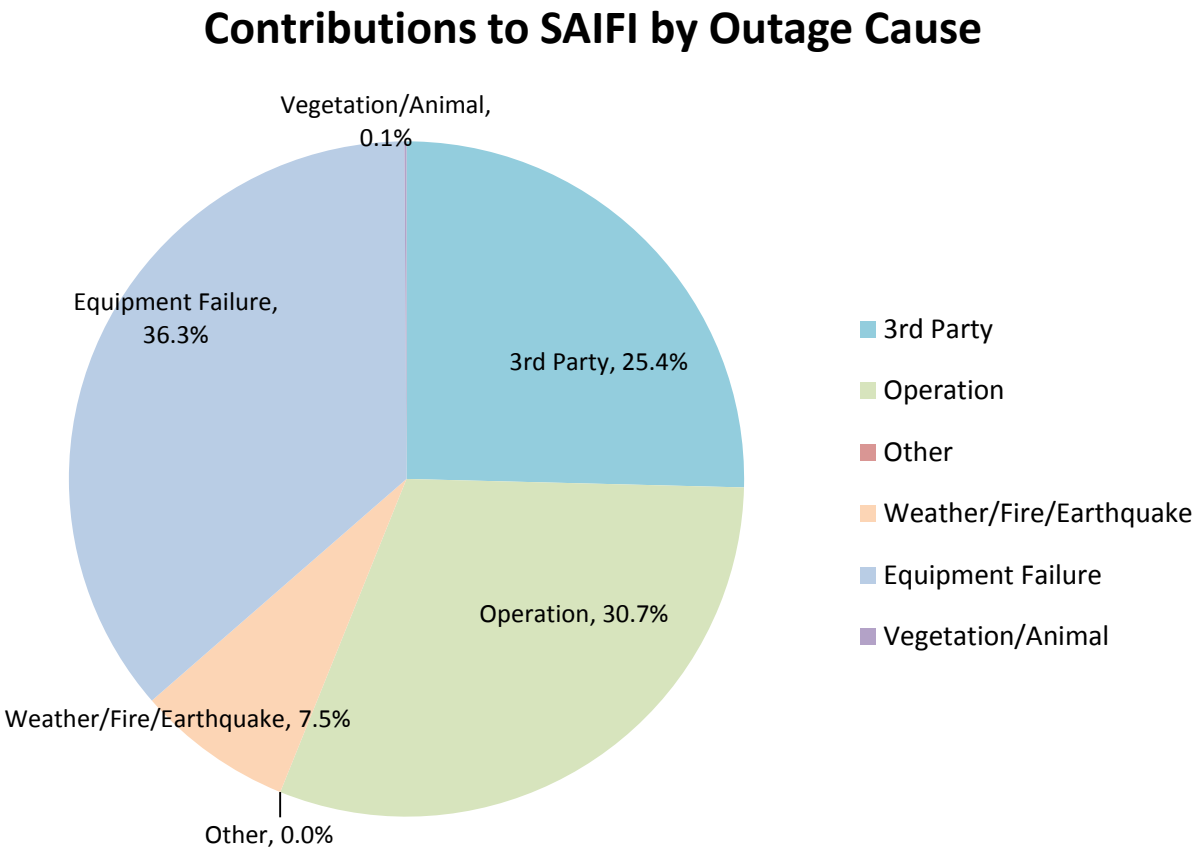
- **Equipment Failure**
  e.g., in-service failure of transformer, switch, or conductors
- **Vegetation/Animal**
  e.g., tree branch, rodent, or bird causing a short circuit between conductors
- **Other**
  e.g., patrolled but no cause found
- **Operations**
  e.g., urgent maintenance w/o 3-day notice
- **3rd Party**
  e.g., balloon, car hit pole, dig-in




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

# Causes of Repair Outages in Rolling Hills Circuits 2014

- **Equipment Failure**
  e.g., in-service failure of transformer, switch, or conductors
- **Vegetation/Animal**
  e.g., tree branch, rodent, or bird causing a short circuit between conductors
- **Other**
  e.g., patrolled but no cause found
- **Operations**
  e.g., urgent maintenance w/o 3-day notice
- **3rd Party**
  e.g., balloon, car hit pole, dig-in




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

# Circuit Reliability Management

To perform circuit rehabilitation in 2015, the process started in 2012

2012: Review circuit outage records for 2009 – 2011.

Note: The significant volatility in circuit performance requires evaluation of performance over a long period of time to ensure the targeting of "actual" versus "apparent" problem circuits.

2012: Identify candidate "worst" circuits based on outage statistics.

Refine list of circuits based on field personnel input, e.g., engineering, operations, public affairs.

2013: For each targeted circuit, identify improvements and/or replacements which would cost-effectively improve future reliability based on past outage causes and locations, equipment age, and circuit design.

Work may include equipment replacement, installation of isolation devices, and provisions for providing alternate sources of power

2014: Survey the job sites, develop the construction Work Orders, obtain easements, & identify needed permits.

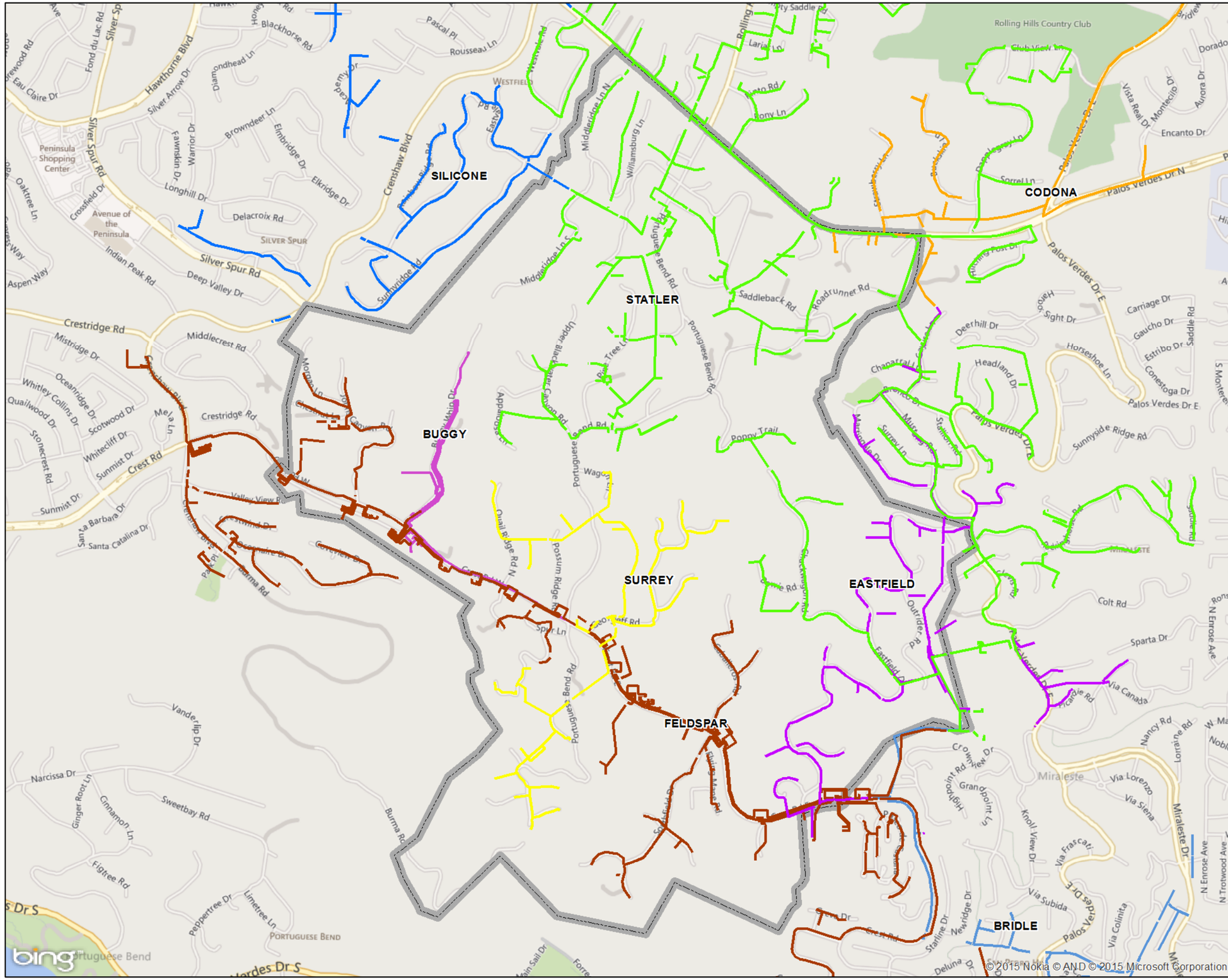
2015: Project construction.

**Rehabilitating circuits is a systematic and objective process.**

# Rolling Hills

## 2015

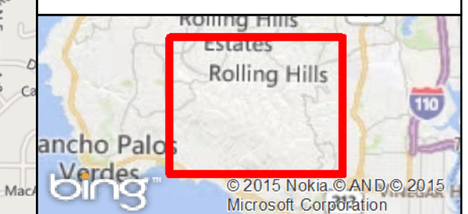
## Capital Improvement Plan
## All Circuits




**City of Rolling Hills**

**All Rolling Hills Circuits:**

- BRIDLE
- BUGGY
- CODONA
- EASTFIELD
- FELDSPAR
- SILICONE
- STATLER
- SURREY




0 550 1,100 2,200 Feet

Notification #: 203059468 Date: 4/10/2015
File Name: Rolling_Hills_2015_AC_v2

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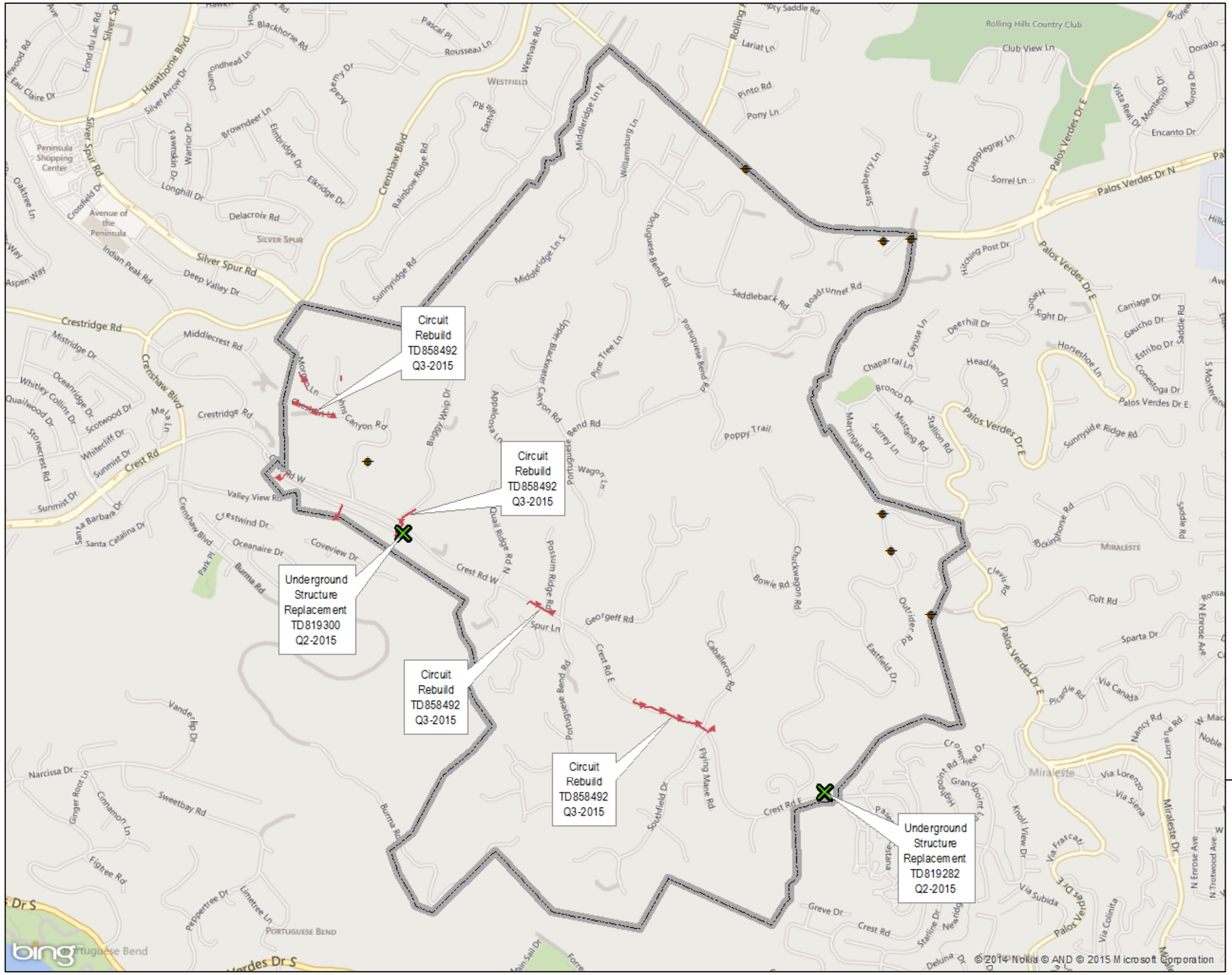
# Rolling Hills
## 2015
## Capital Improvement Plan




**City of Rolling Hills**

**UG Structure Replacements:**

**Q2-2015**

**Wood Pole Replacements:**

**7 Poles**

**Circuit Rebuilds:**

**Feldspar Circuit**

0 550 1,100 2,200 Feet

Notification #: 203059468 Date: 1/15/2015
File Name: Rolling_Hills_2015_CIP_v1

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# Back-up Slides

## Reliability Histories of Circuits Serving Rolling Hills

## Updated through Year-End 2014

# Average Reliability of 8 Circuits Serving Rolling Hills

| | 2011 | | | 2012 | | | 2013 | | | 1st Qtr 2014 | | | 2nd Qtr 2014 | | | 3rd Qtr 2014 | | | 4th Qtr 2014 | | | 2014 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAIDI | SAIFI | MAIFI | SAIDI | SAIFI | MAIFI | SAIDI | SAIFI | MAIFI | SAIDI | SAIFI | MAIFI | SAIDI | SAIFI | MAIFI | SAIDI | SAIFI | MAIFI | SAIDI | SAIFI | MAIFI | SAIDI | SAIFI | MAIFI |
| **ROLLING HILLS** | **216.3** | **2.4** | **1.3** | **280.1** | **1.9** | **2.3** | **142.5** | **1.5** | **1.9** | **46.1** | **0.3** | **1.3** | **5.5** | **0.0** | **0.4** | **16.1** | **0.0** | **0.9** | **37.9** | **0.5** | **0.0** | **106.5** | **0.9** | **2.5** |
| 3rd Party | 0% | 0% | 17% | 1% | 2% | 25% | 18% | 5% | 30% | 12% | 4% | 17% | 0% | 0% | 0% | 0% | 0% | 0% | 44% | 40% | 0% | 22% | 26% | 8% |
| Equipment Failure | 49% | 66% | 17% | 67% | 59% | 38% | 62% | 73% | 24% | 49% | 12% | 7% | 96% | 63% | 81% | 90% | 67% | 0% | 18% | 46% | 0% | 46% | 37% | 17% |
| Operation | 6% | 1% | 17% | 6% | 10% | 0% | 9% | 10% | 0% | 39% | 84% | 21% | 4% | 38% | 0% | 6% | 31% | 18% | 4% | 1% | 0% | 19% | 29% | 16% |
| Other | 5% | 7% | 20% | 11% | 12% | 1% | 1% | 1% | 45% | 0% | 0% | 0% | 0% | 0% | 19% | 0% | 0% | 51% | 0% | 0% | 0% | 0% | 0% | 21% |
| Vegetation/Animal | 7% | 6% | 30% | 0% | 0% | 17% | 10% | 11% | 1% | 0% | 0% | 29% | 0% | 0% | 0% | 4% | 1% | 31% | 0% | 0% | 0% | 1% | 0% | 25% |
| Weather/Fire/Earthquake | 33% | 20% | 0% | 15% | 16% | 19% | 0% | 0% | 0% | 0% | 0% | 26% | 0% | 0% | 0% | 0% | 0% | 0% | 34% | 12% | 0% | 13% | 8% | 13% |
| **SCE Systemwide** | **232.4** | **1.0** | **1.5** | **108.1** | **0.9** | **1.4** | **102.6** | **0.9** | **1.2** | **21.4** | **0.2** | **0.3** | **26.4** | **0.2** | **0.4** | **29.5** | **0.2** | **0.3** | **35.0** | **0.3** | **0.4** | **112.2** | **1.0** | **1.4** |

**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 Rolling Hills

| | 2011 | | | 2012 | | | 2013 | | | 1st Qtr 2014 | | | 2nd Qtr 2014 | | | 3rd Qtr 2014 | | | 4th Qtr 2014 | | | 2014 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAIDI | SAIFI | MAIFI | SAIDI | SAIFI | MAIFI | SAIDI | SAIFI | MAIFI | SAIDI | SAIFI | MAIFI | SAIDI | SAIFI | MAIFI | SAIDI | SAIFI | MAIFI | SAIDI | SAIFI | MAIFI | SAIDI | SAIFI | MAIFI |
| **BRIDLE(4KV) - Customers: 372** | **240.4** | **3.1** | **1.0** | **0.6** | **0.0** | **1.0** | **358.0** | **2.0** | **0.0** | **0.0** | **0.0** | **1.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **1.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **2.0** |
| Weather/Fire/Earthquake | 26% | 33% | 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% | 100% | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Vegetation/Animal | 44% | 33% | 100% | 0% | 0% | 100% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 50% |
| Other | 30% | 33% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 0% | 0% | 50% |
| 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% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **SILICONE(16KV) - Customers: 2,727** | **182.2** | **2.7** | **0.0** | **413.8** | **3.5** | **4.8** | **108.2** | **1.2** | **3.6** | **42.0** | **0.7** | **1.6** | **1.4** | **0.0** | **1.0** | **8.8** | **0.0** | **0.0** | **11.1** | **0.1** | **0.0** | **61.0** | **0.7** | **2.3** |
| Weather/Fire/Earthquake | 0% | 0% | 0% | 14% | 23% | 28% | 0% | 0% | 0% | 0% | 0% | 61% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 38% |
| Operation | 3% | 1% | 0% | 0% | 0% | 0% | 2% | 10% | 0% | 100% | 100% | 39% | 1% | 50% | 0% | 11% | 50% | 0% | 0% | 0% | 0% | 63% | 80% | 24% |
| 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% |
| Other | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 28% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| 3rd Party | 0% | 0% | 0% | 0% | 0% | 21% | 0% | 0% | 34% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Equipment Failure | 96% | 99% | 0% | 86% | 77% | 51% | 98% | 90% | 38% | 0% | 0% | 0% | 99% | 50% | 100% | 89% | 50% | 0% | 100% | 100% | 0% | 37% | 20% | 38% |
| **BUGGY(4KV) - Customers: 23** | **134.8** | **2.1** | **1.1** | **0.0** | **0.0** | **1.0** | **42.0** | **1.0** | **1.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **12.0** | **1.0** | **0.0** | **12.3** | **1.0** | **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% |
| 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% |
| 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% |
| 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% |
| 3rd Party | 0% | 0% | 100% | 0% | 0% | 100% | 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% | 0% | 0% | 0% | 100% | 100% | 0% | 100% | 100% | 0% |
| **SURREY(4KV) - Customers: 106** | **152.3** | **2.2** | **3.2** | **470.9** | **1.5** | **1.1** | **180.5** | **2.2** | **1.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **12.0** | **1.0** | **0.0** | **12.1** | **1.0** | **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% |
| Operation | 0% | 0% | 0% | 0% | 0% | 0% | 26% | 7% | 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% |
| Other | 0% | 0% | 66% | 0% | 0% | 0% | 50% | 47% | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| 3rd Party | 0% | 0% | 34% | 0% | 0% | 100% | 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% | 24% | 47% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 100% | 0% | 100% | 100% | 0% |

# Reliability Histories for Individual Circuits Serving Rolling Hills

| | 2011 | | | 2012 | | | 2013 | | | 1st Qtr 2014 | | | 2nd Qtr 2014 | | | 3rd Qtr 2014 | | | 4th Qtr 2014 | | | 2014 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAIDI | SAIFI | MAIFI | SAIDI | SAIFI | MAIFI | SAIDI | SAIFI | MAIFI | SAIDI | SAIFI | MAIFI | SAIDI | SAIFI | MAIFI | SAIDI | SAIFI | MAIFI | SAIDI | SAIFI | MAIFI | SAIDI | SAIFI | MAIFI |
| **CODONA(4KV) - Customers: 481** | **238.8** | **1.0** | **0.0** | **59.3** | **1.2** | **0.0** | **523.5** | **4.0** | **1.9** | **31.0** | **0.2** | **0.0** | **0.0** | **0.0** | **1.0** | **0.0** | **0.0** | **2.0** | **0.0** | **0.0** | **0.0** | **31.2** | **0.2** | **3.0** |
| Weather/Fire/Earthquake | 100% | 99% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Operation | 0% | 1% | 0% | 0% | 0% | 0% | 0% | 2% | 0% | 100% | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 100% | 67% |
| Vegetation/Animal | 0% | 0% | 0% | 0% | 0% | 0% | 32% | 49% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Other | 0% | 0% | 0% | 73% | 15% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 33% |
| 3rd Party | 0% | 0% | 0% | 0% | 0% | 0% | 60% | 24% | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Equipment Failure | 0% | 0% | 0% | 27% | 85% | 0% | 8% | 24% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **STATLER(16KV) - Customers: 1,388** | **218.9** | **1.9** | **3.8** | **228.5** | **1.1** | **1.3** | **60.1** | **1.0** | **0.2** | **26.7** | **0.1** | **1.9** | **15.0** | **0.0** | **0.0** | **54.0** | **0.2** | **2.2** | **80.0** | **1.0** | **0.0** | **176.4** | **1.3** | **4.1** |
| Weather/Fire/Earthquake | 69% | 49% | 0% | 44% | 11% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Operation | 9% | 2% | 25% | 0% | 0% | 0% | 2% | 1% | 0% | 0% | 0% | 0% | 2% | 26% | 0% | 4% | 27% | 0% | 0% | 0% | 0% | 1% | 4% | 0% |
| Vegetation/Animal | 0% | 0% | 26% | 0% | 0% | 82% | 0% | 0% | 50% | 0% | 0% | 50% | 0% | 0% | 0% | 0% | 0% | 45% | 0% | 0% | 0% | 0% | 0% | 47% |
| Other | 0% | 0% | 24% | 50% | 87% | 9% | 0% | 0% | 50% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 55% | 0% | 0% | 0% | 0% | 0% | 30% |
| 3rd Party | 0% | 0% | 0% | 0% | 0% | 9% | 0% | 0% | 0% | 89% | 77% | 50% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 100% | 0% | 59% | 84% | 23% |
| Equipment Failure | 22% | 49% | 25% | 6% | 2% | 0% | 98% | 99% | 0% | 11% | 23% | 0% | 98% | 74% | 0% | 96% | 73% | 0% | 0% | 0% | 0% | 39% | 12% | 0% |
| **EASTFIELD(4KV) - Customers: 431** | **370.3** | **3.6** | **1.2** | **898.1** | **3.8** | **2.0** | **166.6** | **2.4** | **3.6** | **318.2** | **0.5** | **3.3** | **0.8** | **0.0** | **0.0** | **12.3** | **0.0** | **2.5** | **197.0** | **1.0** | **0.0** | **527.8** | **1.5** | **5.8** |
| Weather/Fire/Earthquake | 45% | 38% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 100% | 0% | 37% | 65% | 0% |
| Operation | 3% | 1% | 0% | 25% | 68% | 0% | 70% | 50% | 0% | 5% | 11% | 23% | 100% | 100% | 0% | 20% | 60% | 0% | 0% | 0% | 0% | 4% | 6% | 13% |
| Vegetation/Animal | 26% | 28% | 100% | 0% | 0% | 61% | 0% | 0% | 0% | 0% | 0% | 36% | 0% | 0% | 0% | 80% | 40% | 30% | 0% | 0% | 0% | 2% | 1% | 34% |
| Other | 23% | 33% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 70% | 0% | 0% | 0% | 0% | 0% | 31% |
| 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 | 3% | 1% | 0% | 75% | 32% | 39% | 30% | 50% | 0% | 95% | 89% | 40% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 57% | 28% | 23% |
| **FELDSPAR(16KV) - Customers: 1,141** | **204.2** | **2.2** | **1.0** | **49.7** | **0.3** | **1.0** | **56.5** | **1.1** | **1.0** | **0.0** | **0.0** | **0.0** | **8.0** | **0.0** | **0.1** | **0.0** | **0.0** | **0.0** | **21.8** | **1.1** | **0.0** | **29.8** | **1.1** | **0.1** |
| 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% |
| Operation | 16% | 2% | 0% | 2% | 1% | 0% | 17% | 5% | 0% | 0% | 0% | 0% | 5% | 31% | 0% | 0% | 0% | 0% | 43% | 4% | 0% | 33% | 5% | 0% |
| Vegetation/Animal | 4% | 1% | 0% | 5% | 9% | 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% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| 3rd Party | 0% | 0% | 100% | 36% | 68% | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Equipment Failure | 80% | 96% | 0% | 56% | 22% | 0% | 83% | 95% | 0% | 0% | 0% | 0% | 95% | 69% | 100% | 0% | 0% | 0% | 57% | 96% | 0% | 67% | 95% | 100% |