

Welcome

Liberty Utilities Reliability Reporting Workshop

October 11, 2018

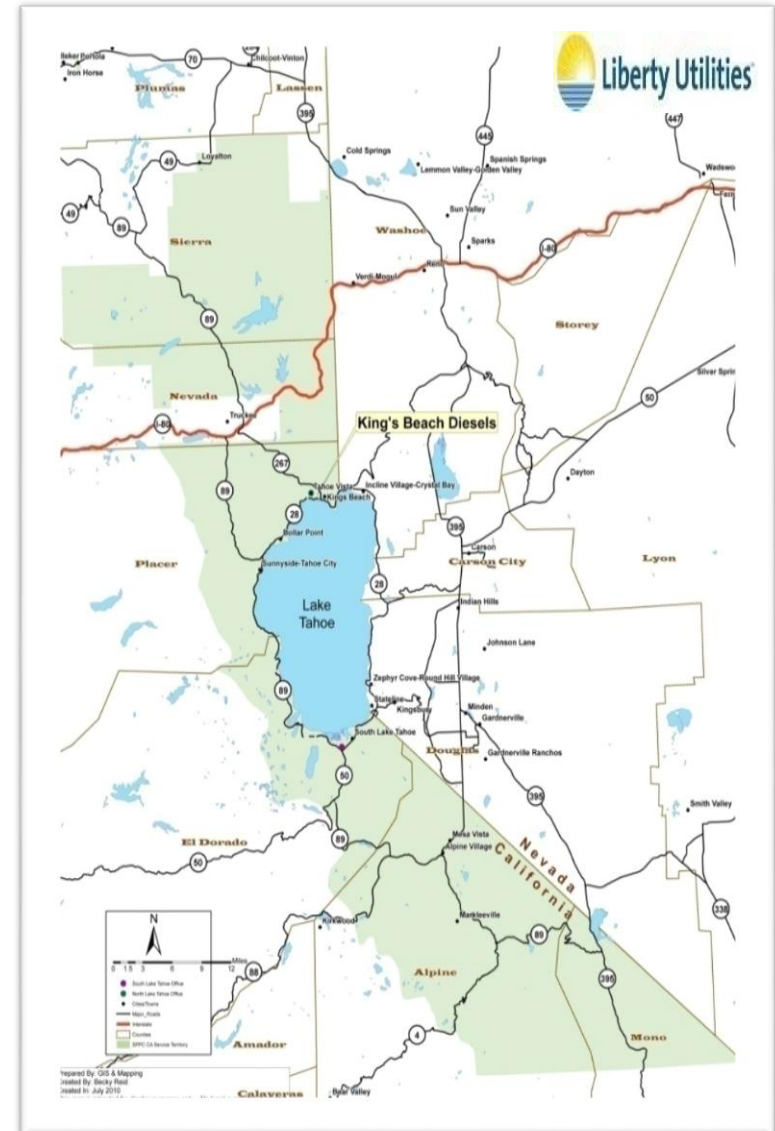
Agenda



- **Purpose of Workshops**
- **System Overview**
- **Key Utility Initiatives**
- **Reliability Performance**
- **Questions**

Service Territory Overview

- Purchased NV Energy's (SPPCo) California service territory in 2011
- 1,476 square miles; 50,000 customers
- Two office locations: South Lake Tahoe and Tahoe Vista
- Pay \$2.8 million in annual property taxes and franchise fees in 7 counties
- 87 employees (43 in NLT; 44 in SLT)
- Regulated by the California Public Utilities Commission (CPUC)
- Winter Peaking Utility

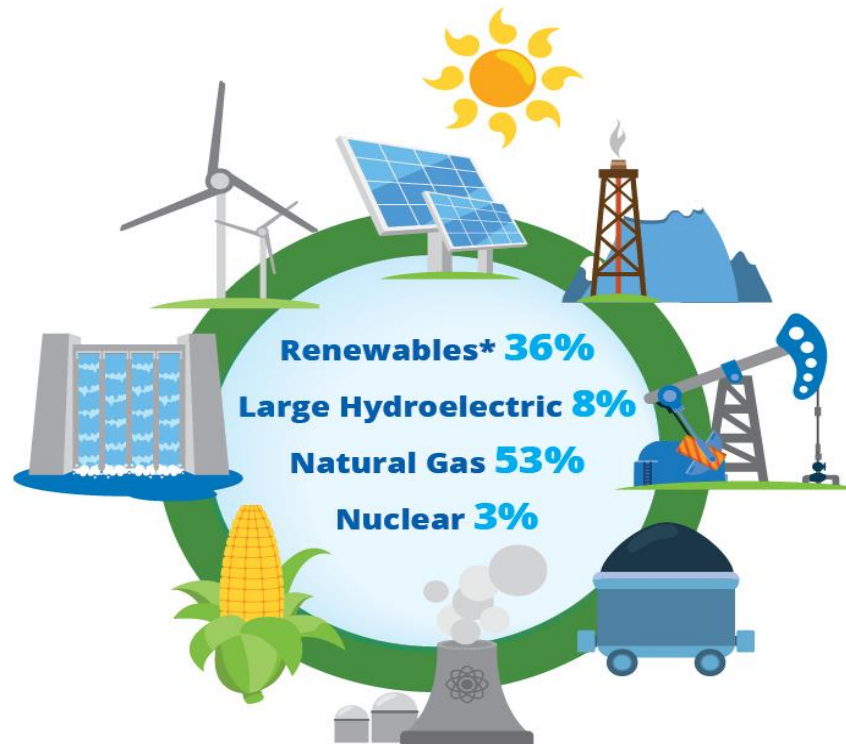


What's it take to run an electric utility?

- 1,880 miles of O/H (1,400) and U/G (480) Distribution lines
- 13 Substations
- 12MW of Emergency Diesel Generation
- Max System Load: 144.5 MW (Dec 2012)
- 57% Residential
- 43% Commercial



Where does the power come from?



What's important to our customers?

- 84% overall satisfaction
- Reliability (89%) and safe service (88%) top reasons for satisfaction
- 75% of customers said LU environmentally responsible
- Outage Notification
- How can I save money and energy?




Liberty Utilities

News & Events Smart Energy Use Safety New Service Emergencies & Outages Rates My Account

Home > Residential > Emergencies > Outages Map

Emergency: 1-844-245-6868

Customer Care: 1-800-782-2506

Outage Map

We work hard to provide our customers with safe and reliable service. Despite our best efforts to prevent outages, there are factors beyond our control that will occasionally knock out power. Scroll down to view map and outage information; be sure to refresh this page if you have this bookmarked.

Region	Incidents	Aff Served	%	Estimated Restoration Times
Alpine	0	0	477	0%
El Dorado	0	0	23721	0%
Mono	0	0	661	0%
Nevada	0	0	1310	0%
Placer	0	65	16614	0.4% 65 Customers by 08/09/17 8:00 PM
Plumas	0	0	1774	0%
Sierra	0	0	791	0%
Total	0	65	45348	0.1%



Liberty Utilities

Local and Responsive. We Care.

SAVE ENERGY AND MONEY

Luning Solar Energy Center

- 50 MW solar facility
- Supplies approx. 25% of customers' energy needs
- First Liberty Utilities-CA Electric owned generation facility



Solar Incentive Program (SIP)

- Launched Summer 2017
- Residential, small commercial and school customers eligible
- Incentives to help with installation costs (\$1.20/Watt AC)
- 25 applications in first month



What Else Do We Offer to Customers to Save Energy & Money?

- TOU Rates
- Commercial Rebates
- Free Energy Audits
- Refrigerator Rebates and free recycling
- Income-eligible programs
- Incentives to install EV chargers (coming soon)



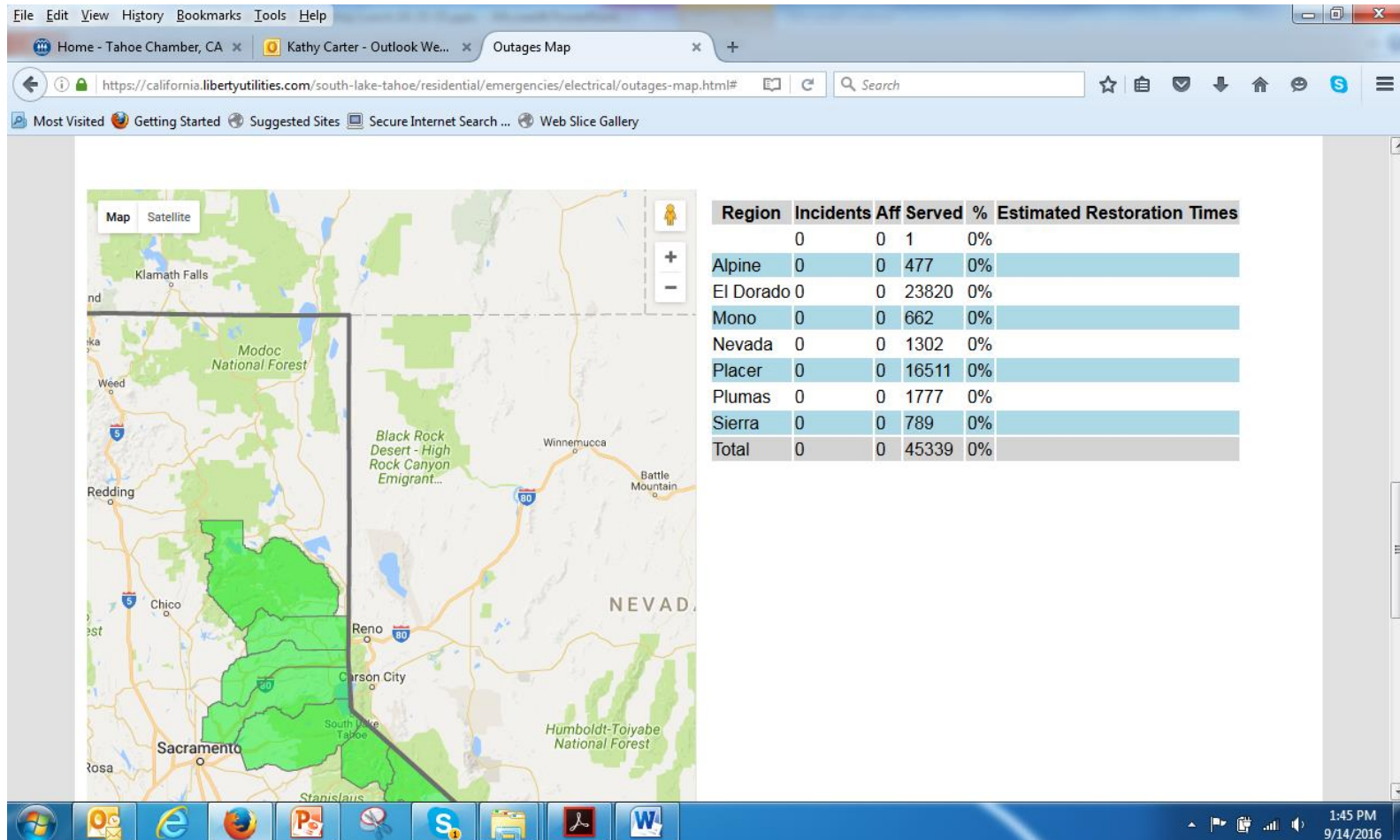
Community Involvement

- Annual budget for community sponsorships and grants
- Seven high school and one community college scholarship awarded each year
- Energy Efficiency booth at events
- Employees volunteer at events like parades and food banks
- Partnerships with local chambers and business organizations



Outage Reporting and Tracking

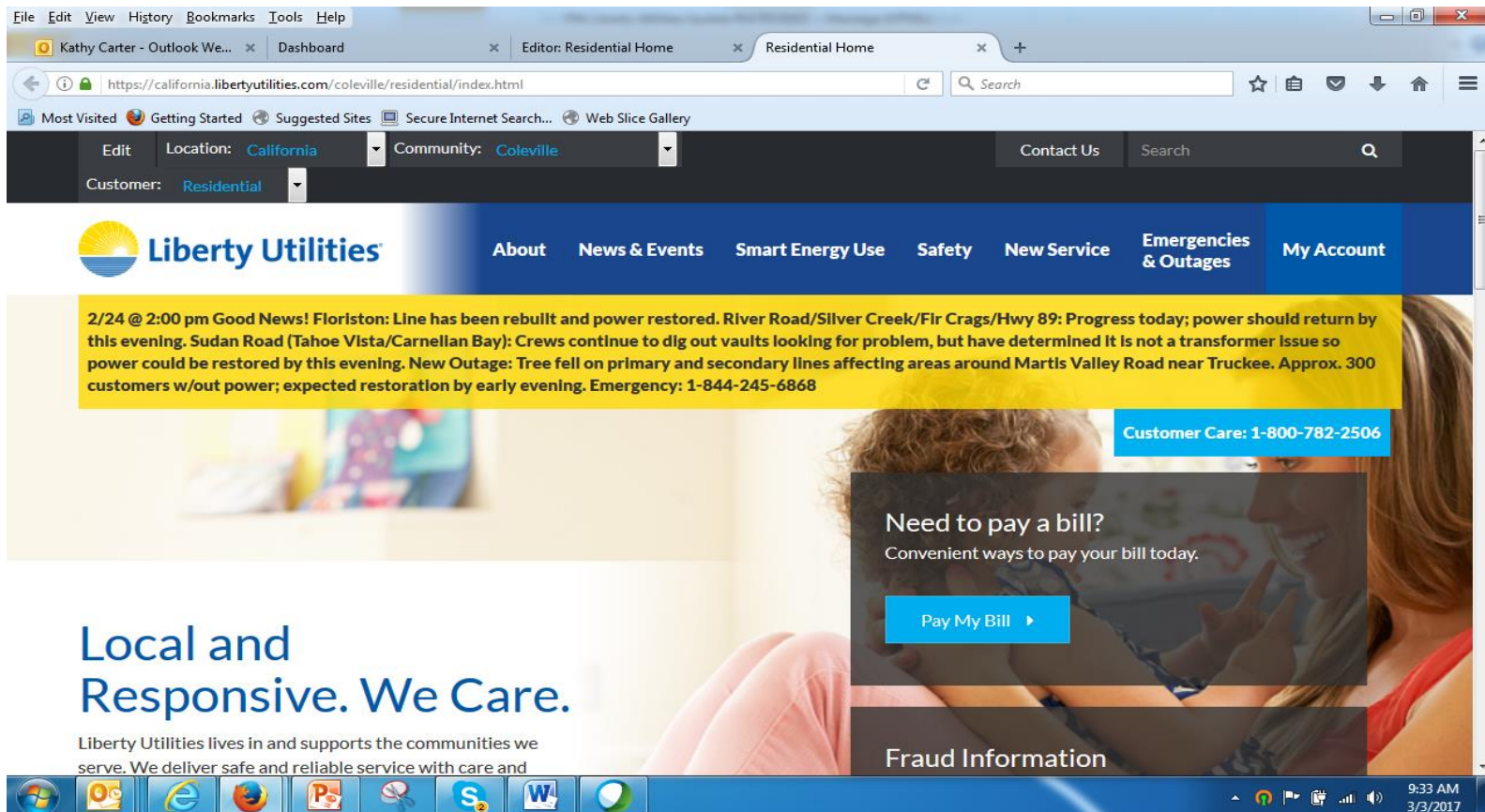
call 1-844-245-6868



Region	Incidents	Aff	Served	%	Estimated Restoration Times
	0	0	1	0%	
Alpine	0	0	477	0%	
El Dorado	0	0	23820	0%	
Mono	0	0	662	0%	
Nevada	0	0	1302	0%	
Placer	0	0	16511	0%	
Plumas	0	0	1777	0%	
Sierra	0	0	789	0%	
Total	0	0	45339	0%	

Emergency Notifications

www.libertyutilities.com and [Twitter@LibertyUtil_CA](https://twitter.com/LibertyUtil_CA)



The screenshot shows a web browser window displaying the Liberty Utilities website. The browser's address bar shows the URL <https://california.libertyutilities.com/coleville/residential/index.html>. The website header includes the Liberty Utilities logo and navigation links: About, News & Events, Smart Energy Use, Safety, New Service, Emergencies & Outages, and My Account. A yellow banner at the top of the page contains emergency notifications: "2/24 @ 2:00 pm Good News! Floriston: Line has been rebuilt and power restored. River Road/Silver Creek/Fir Crag/Hwy 89: Progress today; power should return by this evening. Sudan Road (Tahoe Vista/Carnellan Bay): Crews continue to dig out vaults looking for problem, but have determined it is not a transformer issue so power could be restored by this evening. New Outage: Tree fell on primary and secondary lines affecting areas around Martis Valley Road near Truckee. Approx. 300 customers w/out power; expected restoration by early evening. Emergency: 1-844-245-6868". Below the banner, a blue button displays "Customer Care: 1-800-782-2506". A dark overlay on the right side of the page contains the text "Need to pay a bill? Convenient ways to pay your bill today." and a "Pay My Bill" button. At the bottom of the page, there is a "Fraud Information" link. The Windows taskbar at the bottom shows the time as 9:33 AM on 3/3/2017.

Reliability Improvements



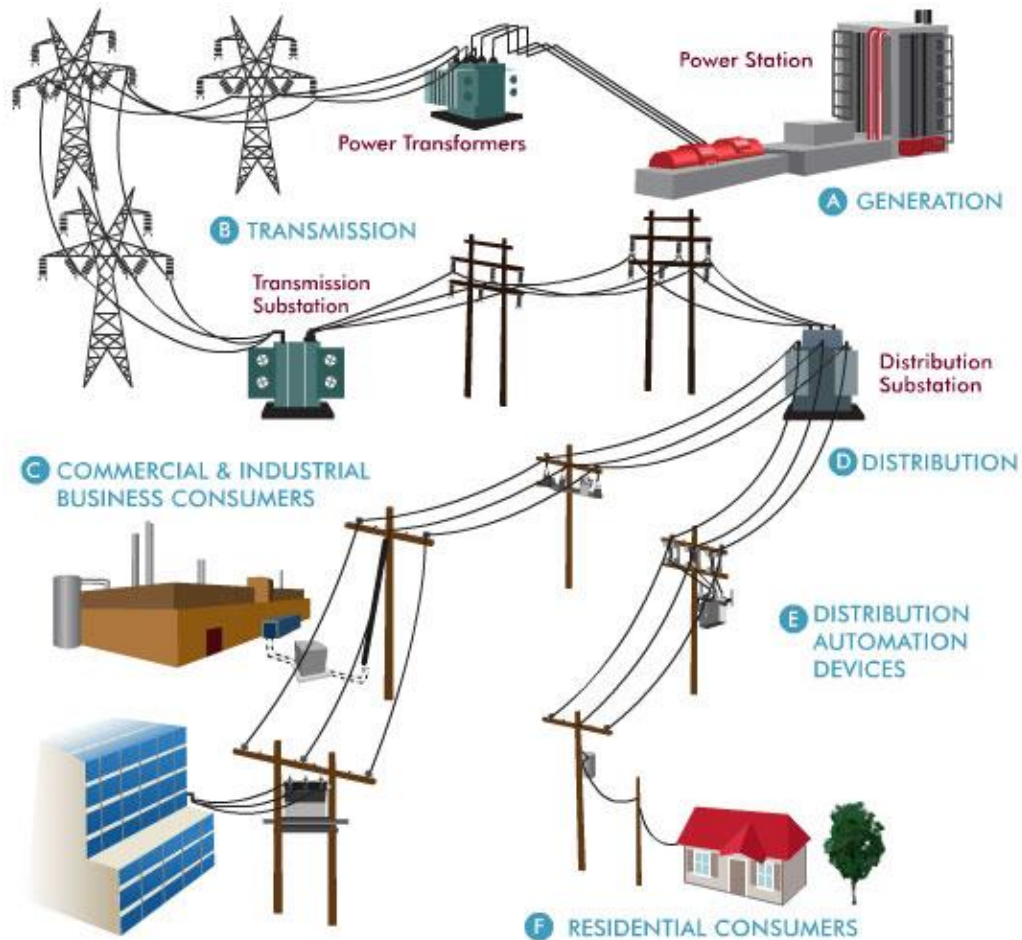
- **Veg Mgmt Program – about \$2.5 million per year**
- **650 Electric Line Rebuild Project (completed Phase I)**

Brockway Substation Repairs

- **Explosion during winter storms**
- **50+ years old structure**
- **Ideal: decommission Brockway and upgrade Kings Beach**
- **Interim: repair Brockway as much as possible**



Power System Overview



Power Outage Causes

- Weather – wind, snow, ice build up
- Trees
- Animals – birds / squirrels
- Motor Vehicle Accidents
- Equipment Failure
- Loss of Source Power from NV Energy



Momentary or Sustained Outages



- **Momentary** – outages that are less than or equal to 5 minutes in duration
 - Tree branches contact a power line, burns the branch clear, and the circuit recloses automatically
- **Sustained** – outages that are greater than 5 minutes in duration
 - Tree falls through the power line and must be removed before re-energizing the line

Planned Outages and Major Events

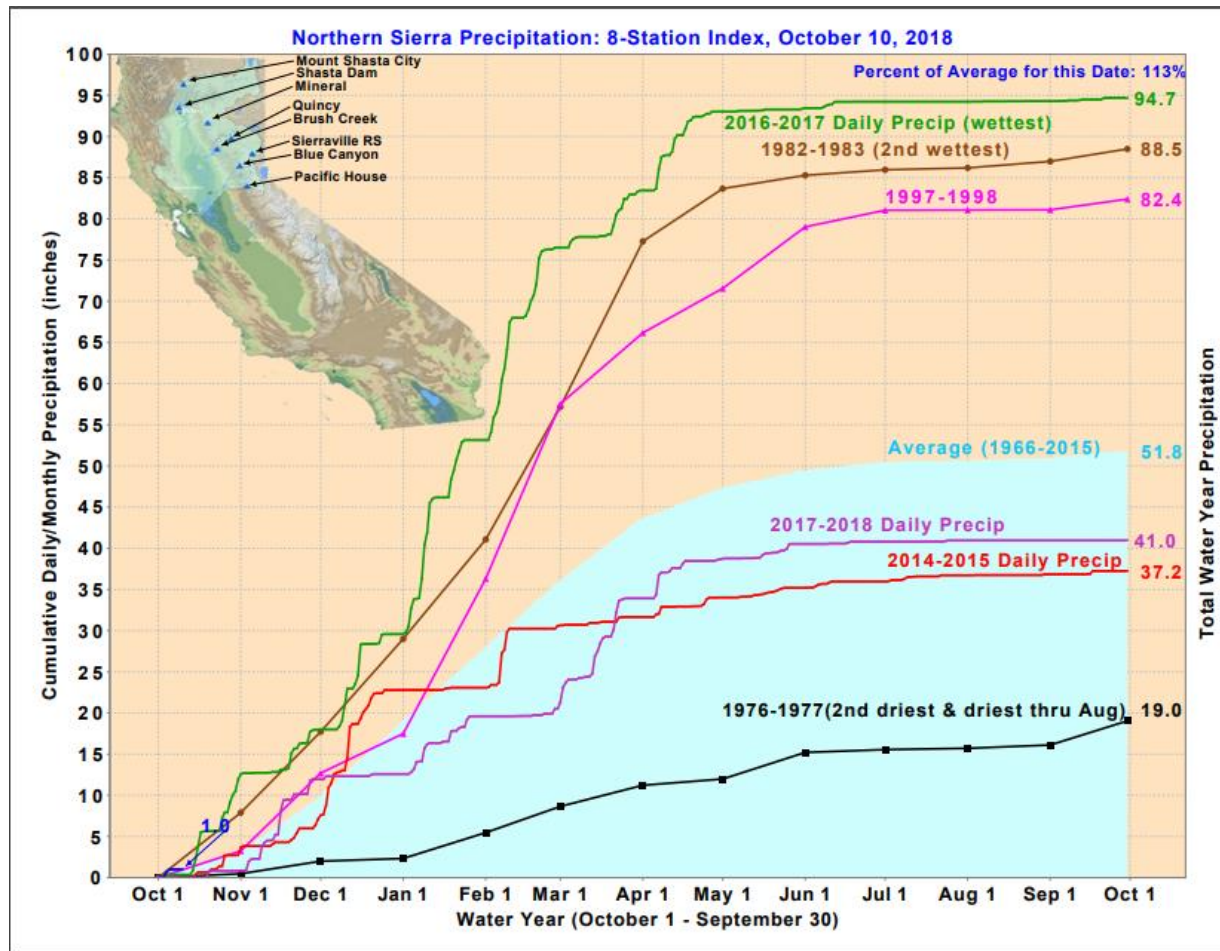
- **Planned Outage – Outages where a customer or public official has made a request, or Liberty Utilities has provided notification**
 - These are excluded from reliability metrics
- **Major Event – Institute of Electrical and Electronic Engineers (IEEE) standard 1366-2012, a set of outages that exceed the historically expected outage duration (SAIDI) for at least one day**

Measuring Reliability

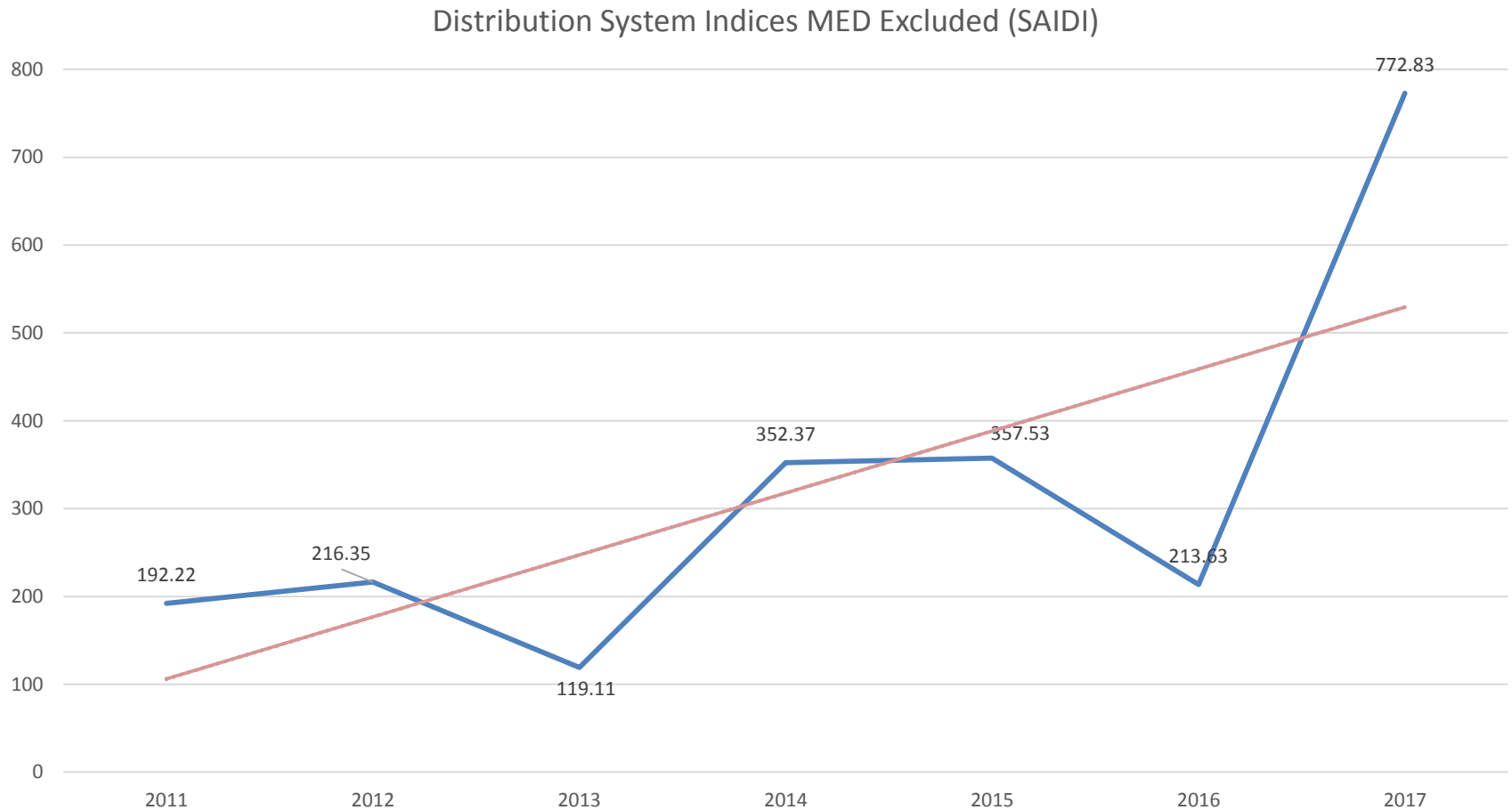
Every outages is analyzed to determine the following metrics:

- **SAIDI** =
$$\frac{\textit{Total of Customer Interruption Durations}}{\textit{Total number of customers served}}$$
- **SAIFI** =
$$\frac{\textit{Total Number of Customers Interrupted}}{\textit{Total number of customers served}}$$
- **CAIDI** =
$$\frac{\textit{Total Customer Interruption Durations}}{\textit{Total Number of Customer Interruptions}}$$
- **MAIFI** =
$$\frac{\textit{Tot.No.of Customer Momentary Interruptions}}{\textit{Total number of customers served}}$$

Historic Precipitation in 2017

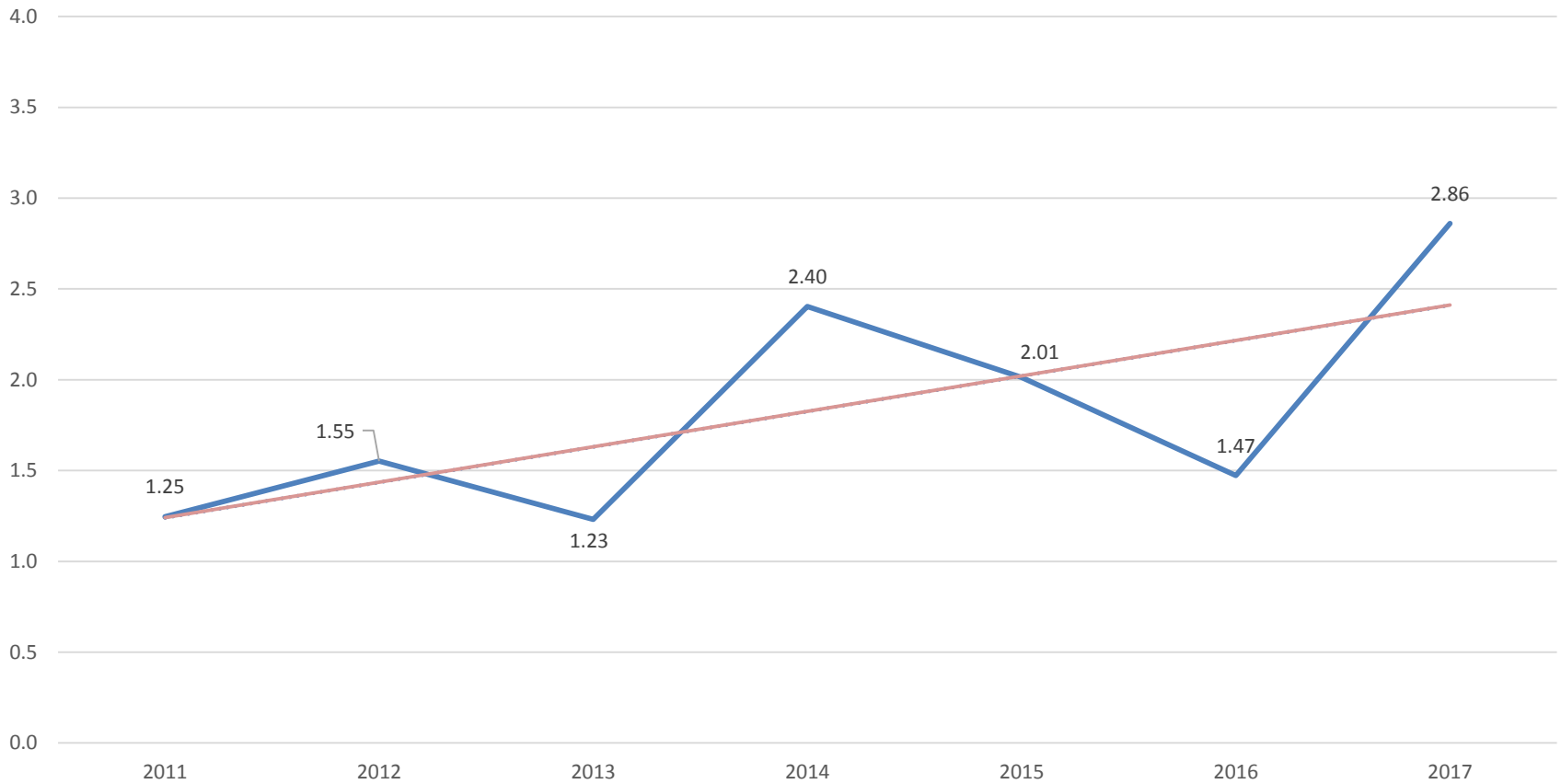


System SAIDI Performance



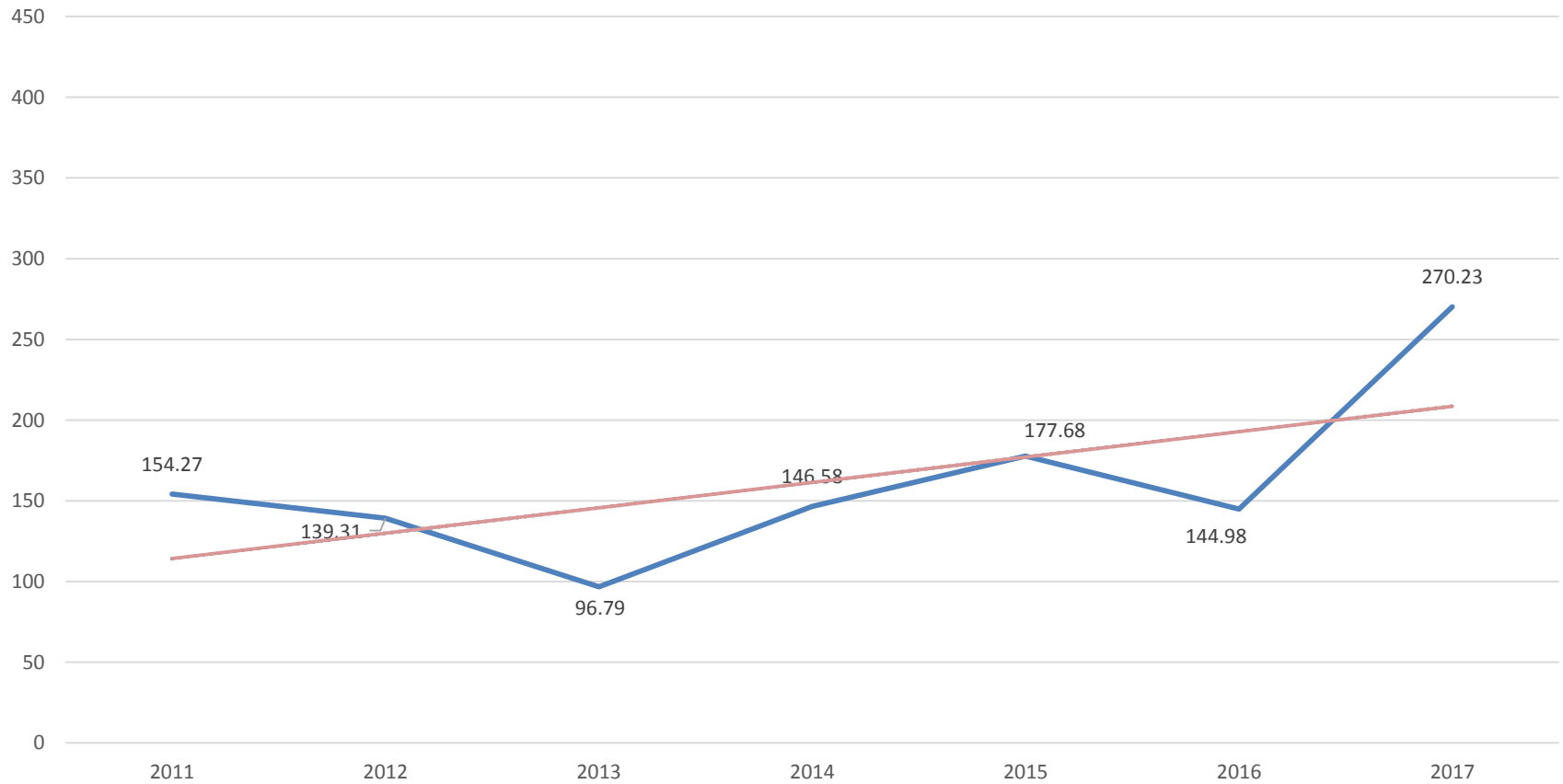
System SAIFI Performance

Distribution System Indices MED Excluded (SAIFI)



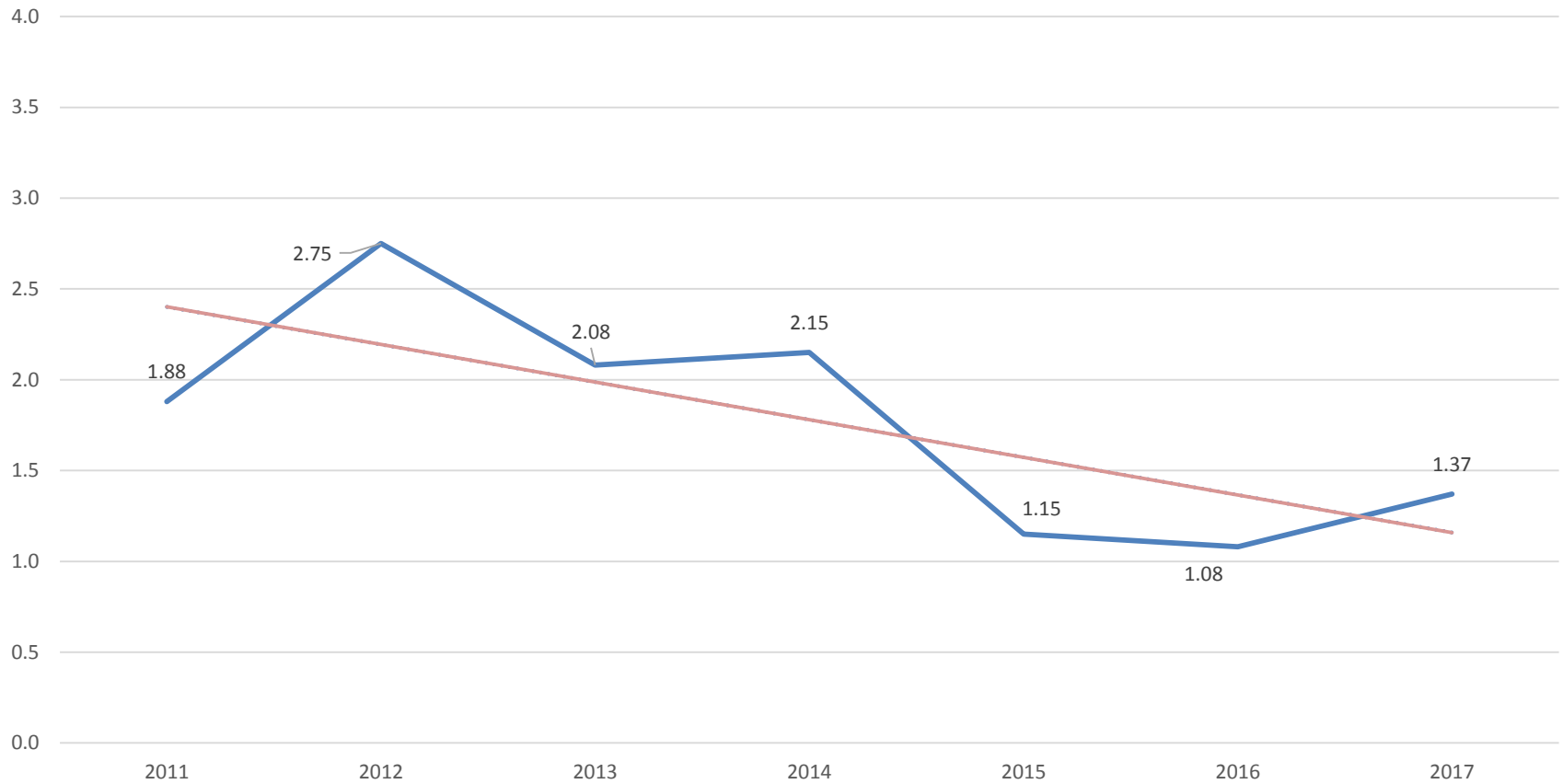
System CAIDI

Distribution System Indices MED Excluded (CAIDI)



System MAIFI

Distribution System Indices MED Excluded (MAIFI)



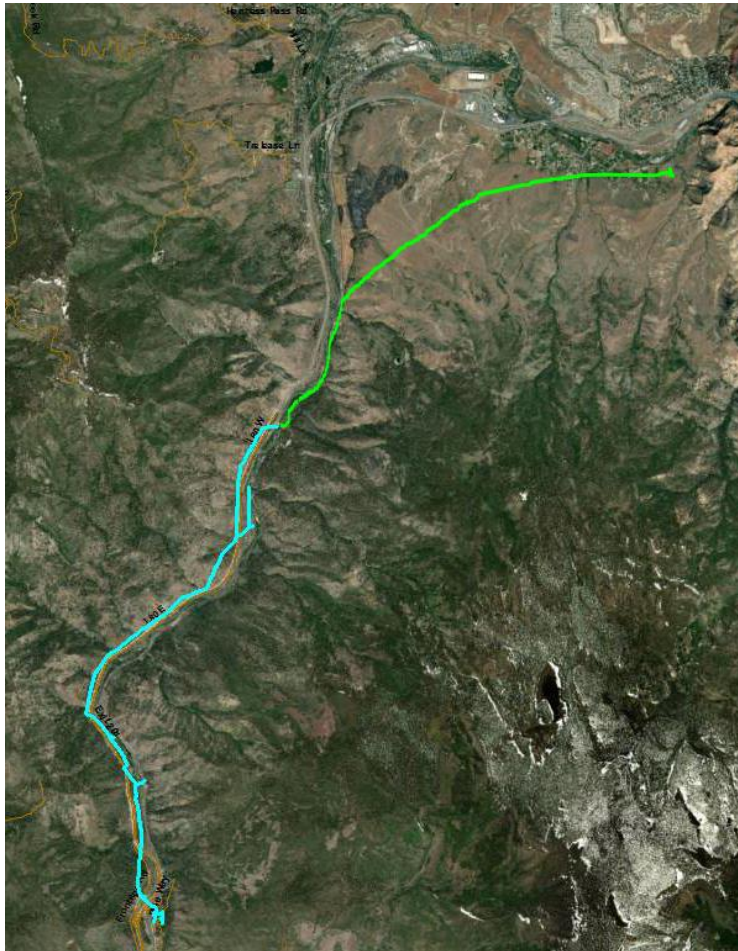
Worst Performing Circuits

Circuit	Customers	Substation	Circuit Miles	OH	UG	Circuit Outages	Circuit SAIDI	Circuit SAIFI
201	66	Washoe	8.7	99.8%	0.2%	8	7667	8.0
7202	187	Truckee	20.5	91.7%	8.3%	3	6082	2.4

Analysis of worst performing circuits excludes planned and Major Event outages.

The preferred metric for this analysis is circuit level SAIDI in order to account for population discrepancies between urban and rural circuits.

Washoe 201 Circuit

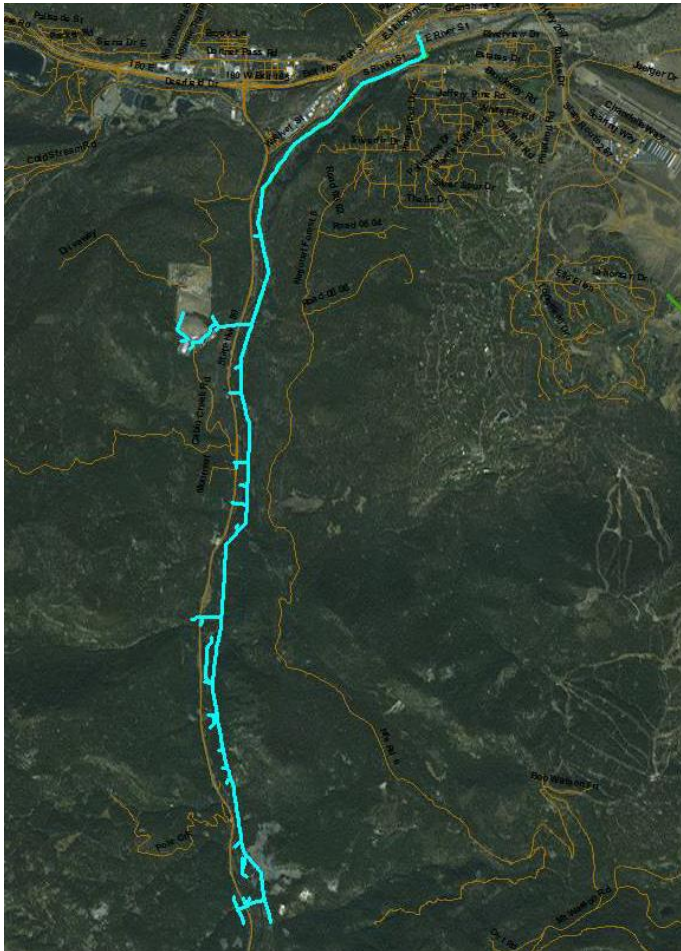


- Services Floriston
- Approximately 70 customers
- 247 poles
- 8.7 miles O/H
- Radial source from NV Energy's substation located near Mogul (additional 5 miles)

Significant Outages

- February 21, 2017
 - Major storms hit the area causing widespread outages
 - Access road along the canyon near I-80 was unavailable.
 - 70 hour outage
- July 10, 2017
 - Wildfire in the area burned several poles
 - After the fire was contained and Liberty was granted access, generators were brought in to restore service to Floriston while the line was rebuilt.
 - 38 hour outage

Truckee 7202 Circuit



- Services customers along Hwy 89 between Truckee and Squaw Valley
- Approximately 200 customers
- 411 poles
- 18.8 miles O/H
- 1.7 miles U/G

Significant Outages

- January and February storm events
 - A series of severe winter storms hit the area throughout January and mid-February
 - Extreme avalanche danger along Hwy 89 prevented access for several days
 - Sections of transmission and distribution lines had to be rebuilt due to multiple fallen trees
 - 143 hours of combined outages
- May 19, 2017
 - Section of wire down caused a 22 hour outage

Thank you.

powerquality@libertyutilities.com

Or call Customer Service at
1-800-782-2506