

# Blackout Tracker

## United States Annual Report 2013



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*Powering Business Worldwide*

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## Introduction

Welcome to Eaton's Blackout Tracker Annual Report for 2013. This marks the sixth year that Eaton has been following the flickering of lights across the nation. From massive failures instigated by Mother Nature in the form of hurricanes and ice storms, to local disruptions affecting just a single street or neighborhood, we have compiled data on more than 3,000 power outages that caused problems for people and businesses in all 50 states.

This annual report is based on reported power outages in the U.S., with sources of data including: news services, newspapers, websites (including those of newspapers and TV stations) and personal accounts. We at Eaton hope that you find this report insightful and that it prompts you to take appropriate action to prepare for power outages that could affect you and your business or organization.

The main body of the report follows this introduction and is organized into two sections:

1. Overview of national power outage data
2. Power outage data by state

In all, 3,236 outages were tabulated and used as the basis for the 2013 report. This represents an increase of about 15 percent from the 2,808 outages covered in 2012. The reported number of people affected by outages actually decreased from 25 million in 2012 to more than 14 million in 2013. However, it is important to note that complete data is often unavailable on certain aspects of reported outages, including the number of people affected and the duration of the blackout.

The following chart outlines some overall data accumulated since 2008:

Year	Total number of outages	People affected
2008*	2,169	25.8 million
2009	2,840	13.5 million
2010	3,149	17.5 million
2011	3,071	41.8 million
2012	2,808	25.0 million
2013	3,236	14.0 million

\*Partial-year data. Data collection began on February 16, 2008.

## The costs and consequences of downtime

No matter how you look at it, the benefits of investing in power backup solutions to protect critical systems far outweigh the astonishing price tag related to downtime.

With the ability to cause irreparable damage and irretrievable loss of revenue in a matter of minutes, downtime has the power to unleash a hurricane of costs and consequences that are both direct and indirect, short-term and long-term.

Electrical power outages, surges and spikes are estimated to ring up more than \$150 billion in annual damages to the U.S. economy. Downtime costs vary not only by industry, but by the scale of business operations. For a medium-size business, the exact hourly cost may be lower, yet the impact on the business can be proportionally much larger. Nailing down the cost of each hour of downtime varies widely on a number of factors, such as the nature of the business, the size of the company, and the criticality of its IT systems related to revenue generating processes. For instance, a global financial services organization may lose millions of dollars for every hour of downtime, whereas a small firm might lose only a margin of productivity.

According to Dunn & Bradstreet, 59 percent of Fortune 500 companies experience a minimum of 1.6 hours of downtime per week. Assuming an average staff of 10,000 employees who are paid an average of \$56 per hour (including benefits), the downtime loss in labor alone for a Fortune 500 firm would ring up at \$896,000 per week — or more than \$46 million annually.

It isn't always easy to put an exact price tag on the consequences of downtime. Consider some of the tangible and intangible costs:

#### **Tangible/Direct Costs**

- Lost transaction revenue
- Lost wages
- Lost inventory
- Remedial labor costs
- Marketing costs
- Bank fees
- Legal penalties from not delivering on service level agreements

#### **Intangible/Indirect Costs**

- Lost business opportunities
- Loss of employees and/or employee morale
- Decrease in stock value
- Loss of customer/partner goodwill
- Brand damage
- Driving business to competitors
- Bad publicity/press

## **Gridlock: examining the power grid**

Even the White House weighed in on the severity of blackouts in 2013— releasing a report showing that outages caused by harsh weather cost the U.S. economy an average of \$18 billion to \$33 billion a year. The price tag takes into account lost output and wages, spoiled inventory, delayed production and damage to the electric grid.

The report maintains that more investments are needed in the nation's electric grid — high-voltage transmission lines connected to power plants, local distribution systems, and power management and control systems. Seventy percent of these transmission lines and power transformers are more than 25 years old.

Noting that severe weather is likely to become more frequent due to climate change, the report concludes by emphasizing that, "Developing a smarter, more resilient electric grid is one step that can be taken now to ensure the welfare of the millions of current and future Americans who depend on the grid for reliable power."

Yet the price tag to achieve that level of reliability is staggering. A recent study from the Electric Power Research Institute estimated that it could cost up to \$476 billion over the next 20 years to establish a nationwide smart grid. However, doing so could also generate trillions in benefits, according to the group. For example, sensors would allow grid operators to identify problems and avert or isolate outages and blackouts, and it would be easier to integrate renewable power into the grid. At the same time, investing in grid improvement would help utility companies to better juggle demand, as well as lower costs.

The latter of which would be music to the ears of consumers, whose utility bills continue to climb while reliability worsens, according to a 2013 Associated Press story. Although U.S. electric

customers are now paying 43 percent more to build and maintain local power grids than they did back in 2002, the grid is becoming less reliable, with blackouts taking 20 percent longer to resolve.

## Top 10 most significant reported outages worldwide

1. **No gift from Santa.** An ice storm that pummeled Michigan the weekend of Dec. 21 left more than 500,000 customers in the dark. Some 150,000 of those remained powerless on Christmas Day, with full restoration not projected until Dec. 28.
2. **Deep freeze.** A deadly blizzard of historic proportions pounded the Northeast on Feb. 8, bringing more than 3 feet of snow to some areas and cutting power to 650,000 homes and businesses, including 350,000 across Rhode Island.
3. **Rain, rain, (wouldn't) go away.** Massive rainfall and flooding caused outages in Mississauga, Ontario on July 8, leaving 560,000 customers in the dark.
4. **Fire power.** Smoke from forest fires caused a transmission line to seize up on the 4<sup>th</sup> of July, knocking out power to 500,000 people in Montreal.
5. **Taken by storm.** A Midwestern storm packing strong winds and heavy rain pounded Detroit on Nov. 17, leaving 450,000 customers without electricity. The storm, which packed wind gusts of up to 70 mph, knocked down trees and power lines across Michigan.
6. **Gone with the wind.** A powerful windstorm knocked out power to 350,000 in Montreal Nov. 1. The storm caused two electrical currents to surge in front of one home, where the owner filmed an incredible "fireball" of electricity on the power lines outside. A highly charged orb passes in front of his house and then seems to explode when it reaches the next electric pole.
7. **Significant storms = sustained outages.** On June 21, Twin Cities, Minn., faced a level of power outages that was "one of the highest we've ever faced," according to the utility president, after strong storms caused massive outages. Some customers were expected to be without power for up to six days, even though 1,000 technicians were called in from Ohio, Nebraska, Missouri and Iowa to help.
8. **Pounded power poles.** A summer storm brought down at least nine power poles in Borrego Springs, Calif., on Sept. 6, leaving 1,200 customers without power for 48 hours. The extent of the damage made the repair process lengthy.
9. **Windy City woes.** More than 300,000 Chicago customers lost power on June 24 after a major storm system, moving at about 60 mph, resulted in severe thunderstorm and tornado warnings.
10. **Rain check on power.** Torrential rain was blamed for blacking out 300,000 customers on July 8. Environment Canada said some parts of the GTA were drenched with more than 100 millimeters of rain, trouncing the previous one-day rainfall record of 29.2 mm in 2008 for Toronto and even beating the 74.4 mm monthly average for July.

## The top 5 data center outages

There's no denying it: unplanned data center outages are extremely painful. In fact, the potential repercussions are so unappealing that 84 percent of respondents in a recent Ponemon Institute survey said they'd rather walk barefoot over hot coals than experience downtime at their facility.

Perhaps that choice isn't surprising, considering that the 2013 Study on Data Center Outages — which surveyed 584 individuals in U.S. organizations who have responsibility for data center operations — also revealed that the price of downtime is skyrocketing, with the average cost per minute now ringing it at \$7,900. That's up a whopping 41 percent from the \$5,600 per minute tabulated in 2010. Ouch.

Soaring costs are a result of data centers becoming increasingly valuable to their operators, a natural consequence resulting from more and more business operations being supported by the data center, according to the survey.

Other highlights of the study include:

- The average length of an outage was 86 minutes, resulting in an average cost per incident of approximately \$690,200. (In 2010 it was 97 minutes at approximately \$505,500.)
- Eighty-five percent of respondents reported that their organization had experienced a loss of primary utility power in the past 24 months, with 91 percent revealing the outage was unplanned.
- When it comes to the cause of unplanned outages, 83 percent of respondents were able to point to a specific source, citing the most frequent root causes as: UPS battery failure (55 percent), UPS capacity exceeded (46 percent) and accidental EPO/human error (48 percent).
- Fifty-two percent of those surveyed believe all or most of the unplanned outages could have been prevented. The most common prevention tactics to avoid downtime were thought to be investing in improved equipment (49 percent), bolstering security and surveillance practices (28 percent), and allotting more money in the budget (26 percent).

Below, in chronological order, are five data center problems that were caused by power issues in the U.S. in 2013. Please note that while it is difficult to ascertain the exact financial impact of these outages, it is reasonable to expect that they were significant.

1. **DreamHost**, March 20 — Irvine, Calif. The Web hosting provider experienced an extended outage when power systems failed, creating hours of downtime across two days for DreamHost's 350,000+ customers.
2. **Michigan County Services**, April 17 — Macomb County, Mich. IT services were knocked offline after a fire damaged the building that houses the county's data center. Because Macomb County didn't have a backup facility, officials had to resort to pen and paper, carbon copies, and makeshift networks of laptops in an attempt to maintain services.
3. **Web hosting nightmare**, August 2 — Provo, Utah. One of the year's most extensive web hosting outages occurred when a data center supporting some of the industry's best known brands suffered extended networking outage. The problems — attributed to "hardware failure during routine server maintenance that quickly cascaded throughout the network" — led to downtime for customers of BlueHost, HostGator and HostMonster.

4. **New Jersey state government**, Sept. 12 – Cherry Hill, N.J. An outage in a state data center knocked out services for a number of state agencies, including the Motor Vehicle Commission and many state web sites. New Jersey had one of the worst outage track records among state and local governments in 2013, as it also suffered lengthy outages in January and July.
5. **Amazon cloud outages**, Sept. 13 — Northern Virginia. The Friday the 13<sup>th</sup> outage for Amazon Web Services affected services for Heroku and Github, among other sites.

Information on how to protect a data center from downtime due to power problems may be found in several white papers available on the [Eaton website](#).

## Top 10 most unusual outages/causes

1. **Anger (mis)management.** A Clallam County, Wash., man was so mad at his neighbors that he went on a rampage with a bulldozer May 10, damaging four homes, knocking over a 70-foot pole and cutting power to thousands of people. Investigators were told that the man and his neighbors had a long-running dispute, but it's not clear over what.
2. **On his bucket list?** A transit worker stole a bucket truck then drove it through the streets of Queens, N.Y. with its boom extended, knocking down power lines and poles and cutting electricity to thousands of people for six hours.
3. **Powerless over poop.** The accumulation of waste left by ravens nesting in power lines led wires to arc in Kennewick, Wash., cutting power on May 31. The incident also sent sparks below, which ignited a blaze.
4. **What the Hay?** A blackout occurred when a hay grinder hit a power line on Iowa Highway 31 near Anthon March 28. The break caused a fuse to blow in a high-voltage power line, sending sparks showering into a dry ditch, which then started a small fire. The driver was cited for striking a fixed object on a highway.
5. **Lit up, then lights out.** A bungling U.K. thief cut power to 1,000 people — and set himself on fire — on May 30. The thief was attempting to steal cable from a power line, which he planned to sell in order to pay his phone bill. Instead, he set himself on fire after using a screwdriver to try pry out part of the 11,000-watt cable.
6. **Internal affair.** On Nov. 14, a truck hit a power pole in Charlotte, N.C., knocking a transformer down into nearby trees and cutting power to 500 people. Did we mention this was a *utility company* truck?
7. **A banner approach to advertising.** A banner fell off an airplane while it was flying over the San Francisco area and became entangled in power lines, knocking out electricity to 2,000 people on Jan. 26.
8. **Bad intent.** Claiming that the Mid-South Family Park in Eads, Tenn., had an unpaid bill, a utility worker intentionally pulled the plug on the center's power supply July 12, knocking out electricity to an inflatable 50-foot water slide — while kids were still on it! The park owner said he told the worker that he had paid his bill and he could call to verify but the worker refused, leading to the dangerous result.
9. **Don't trash talk.** A runaway trash truck in Naugatuck, Conn., rolled down the street and smashed into a utility pole after the driver exited to take a phone call. The June 7 crash snapped the pole into pieces — damaging the truck, knocking out power, and closing the residential road for hours.



10. **Polly want a blackout?** Wild parrots roosting on an overhead line knocked out power to more than 6,100 Redondo Beach, Calif., customers for three hours on Dec. 9. It was unclear whether the birds were also responsible for a subsequent outage in neighboring Hermosa Beach that left 900 in the dark.

## Industries severely hindered by downtime

In an age where it is unimaginable for businesses to continue functioning in the absence of electrical power, even a brief power outage can cause significant losses of revenue, productivity and product. While the degree of impact varies by industry, unappealing consequences range from disruptive to literally life-threatening.

Here, we look at 10 industries whose need for continuous, clean power is vital:

1. **Data centers.** Widely regarded as the backbone of operations for numerous organizations across a wide spectrum of industries, data centers are absolutely mission-critical. As a result, the facilities take some of the deadliest hits when it comes to downtime, from the irrecoverable loss of stored records to disruption of daily transactions.
2. **Financial institutions.** As if the stock market wasn't already volatile enough, consider the potential chaos a power outage can wreak. In an industry where millions of dollars can be turned to profit — or turned to dust — in a matter of seconds, power outages have the ability to render financial firms completely powerless. When corporations can't execute crucial transactions on time, they lose millions of unrecoverable dollars per minute of downtime, not to mention several additional hours of recovery time.
3. **Manufacturing industries.** There's nothing like a blackout to bring production lines to a grinding halt. From losses of materials to machinery breakdown to loss of production time, downtime can take a significant toll on manufacturing processes, even causing supply chains to collapse completely.
4. **Consulting/IT services**  
Crashed computer systems, lost data and cut-off communications with customers are among the havoc created by outages in the IT world. In addition to the likelihood of requiring several subsequent weeks spent on attempted recovery of corrupt programs and data, these services staff highly paid professionals who are left stranded even during a brief period of downtime, resulting in the loss of billable hours.
5. **Medical facilities.** Power truly becomes a matter of life or death when an outage strikes a hospital. When patients' lives are supported by highly sensitive and critical monitoring systems, any discontinuity in the normal functioning of this equipment can directly translate to loss of life.
6. **Military operations.** Power outages have the ability to render service personnel defenseless. If equipment and weaponry cease to function, it can leave armed forces at the risk of attack.
7. **Control centers.** Consider the possible mayhem if an outage was to disrupt the functionality of traffic signal operations, public transport systems, air traffic control centers, telecommunications firms and utilities, all of whom rely heavily on continuous power. The resulting interruption could significantly threaten the safety and security of millions of consumers.

8. **Perishable items.** For industries that rely on the continuous availability of power for storage and preservation of perishables with very limited life spans — such as pharmaceutical firms, petrochemical companies and food processing plants —outages can cause damage or contamination to in-process products worth millions of dollars.
9. **Public safety.** For most people, an unplanned outage ranks somewhere between a minor nuisance and a major inconvenience. However, in some cases, a blackout holds the power to endanger lives. Consider someone trapped in elevator that comes to a grinding halt or plunges into darkness; a building on fire where alarms and water sprinklers have become inoperable; or a citizen's inability to contact emergency services because communications are down.
10. **Entertainment venues.** Revenue takes a huge hit when big-ticket events are cancelled or postponed, even for brief periods of time. In many entertainment venues, such as casinos and sporting events, an abrupt loss of power can also pose a dangerous situation for visitors and staff.

## What you can do to protect your business

The most important thing you can do to safeguard your organization is to develop a solid power protection plan. If you don't know where to start, or need assistance honing in on the optimal solution, you can contact an Eaton sales partner who specializes in power protection and get the expert advice needed. From a small uninterruptible power systems (UPS) for your PC or home entertainment system, like the [Eaton 3S UPS](#), to models for large data centers such as the [Power Xpert 9395 UPS](#), Eaton offers a complete range of battery backup products. Eaton sales partners also supply standby and portable generators, as well as surge protection devices.



*Eaton 3S UPS 750 VA*

## Overview of 2013 national power outage data

This section provides aggregate data for the U.S. and includes all the data found in the subsequent state section.

### Outage summary

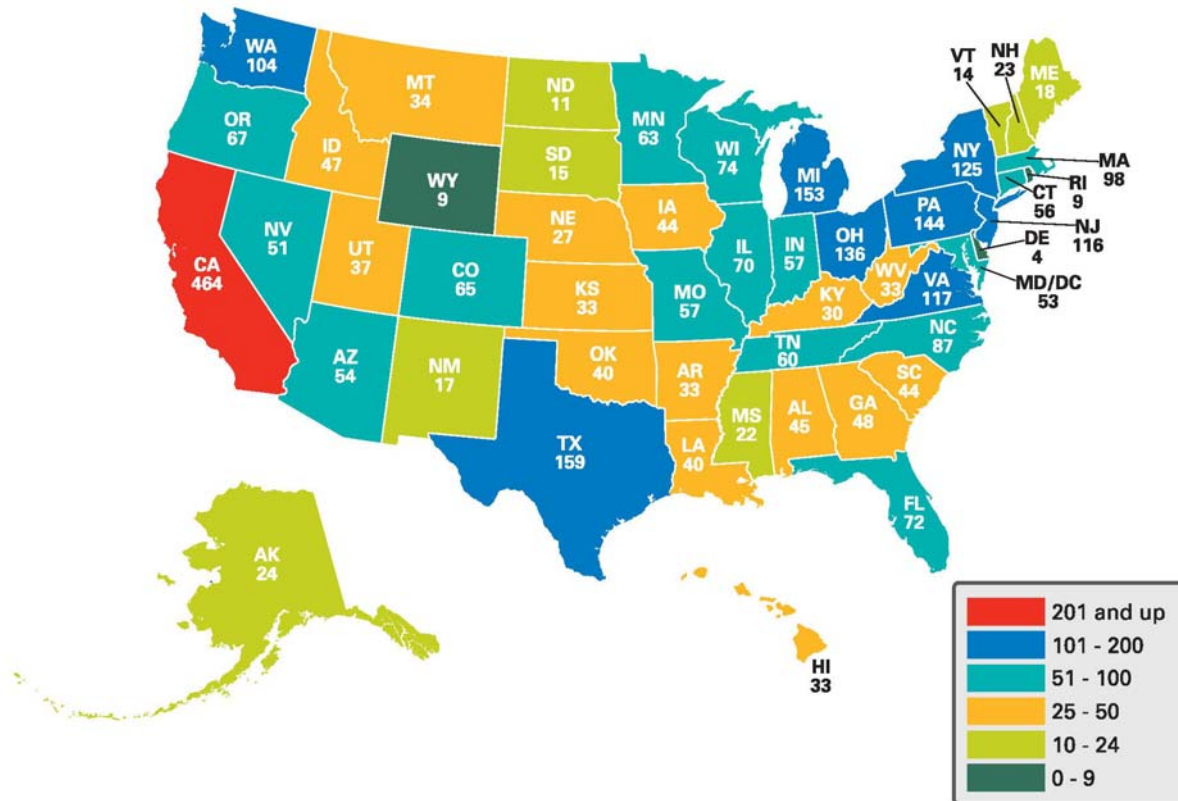
Total number of people affected by outages <i>(This is the sum of the number of people affected by reported power outages in the USA for 2013.)</i>	14,067,884
Total duration of outages <i>(This is the sum of the durations of the reported power outages.)</i>	128,447 minutes (approximately 2,140 hours or 89 days)
Total number of outages <i>(The sum of the number of reported power outages.)</i>	3,236
Average number of people affected per outage <i>(This number is determined by dividing the "Total number of people affected by outages" by the number of outages that reported the number of people affected. Not all reports of outages included number of people affected. The number of outages used for this calculation can be found in the note following this table.)</i>	6,534
Average duration of outage <i>(This number is determined by dividing the "Total duration of outages" by the number of outages that reported durations. Not all reports of outages included the duration. The number of outages used for this calculation can be found in the note following this table.)</i>	197 minutes (over 3 hours)

*Notes: Total number of people affected (and average) is based on 2,153 (66%) of the total reported outages. Total duration of outages (and average) is based on 652 (20%) of the total reported outages. These are the number of outages that had reports that included data for number of people affected and duration, respectively.*

## Top ten states with most reported outages

2013	2012	2011
1. California (464)	1. California (510)	1. California (371)
2. Texas (159)	2. New York (133)	2. New York (159)
3. Michigan (153)	3. Texas (131)	3. Texas (153)
4. Pennsylvania (144)	4. Michigan (125)	4. Michigan (143)
5. Ohio (136)	5. New Jersey (119)	5. Pennsylvania (134)
6. New York (125)	6. Pennsylvania (109)	6. Illinois (129)
7. Virginia (117)	7. Ohio (91)	7. Ohio (121)
8. New Jersey (116)	8. Washington (90)	8. New Jersey (107)
9. Washington (104)	9. Illinois (76) tie	9. Washington (91)
10. Massachusetts (98)	9. Virginia (76) tie	10. Wisconsin (89)

## Number of Power Outages by State



## Top states for outages caused by weather/falling trees

2013 (966 total outages)	2012 (953 total outages)	2011 (1,229 total outages)	2010 (1,127 total outages)
1. California (65)	1. California (90)	1. California (81)	1. California (111)
2. Michigan (60)	2. New York (58)	2. Michigan (76)	2. New York (79)
3. Texas (47)	3. Texas (52)	3. New York (75)	3. Washington (50)
4. New York (41)	4. New Jersey (48)	4. Illinois (62)	4. Michigan (45)
5. Ohio (41)	5. Pennsylvania (44)	5. Pennsylvania (57)	5. New Jersey (42)
6. Virginia (41)	6. Washington (38)	6. Texas (55)	6. Pennsylvania (41)
7. Pennsylvania (38)	7. Michigan (36)	7. Ohio (52)	6. Texas (41)
8. Illinois (30)	8. Oregon (32)	8. Wisconsin (48)	8. Connecticut (39)
9. New Jersey (30)	8. Virginia (32)	9. Virginia (37)	9. Ohio (38)
10. Missouri (27) Wisconsin (27) North Carolina (27)	10. North Carolina (29) Ohio (29)	10. New Jersey (37)	10. North Carolina (37)

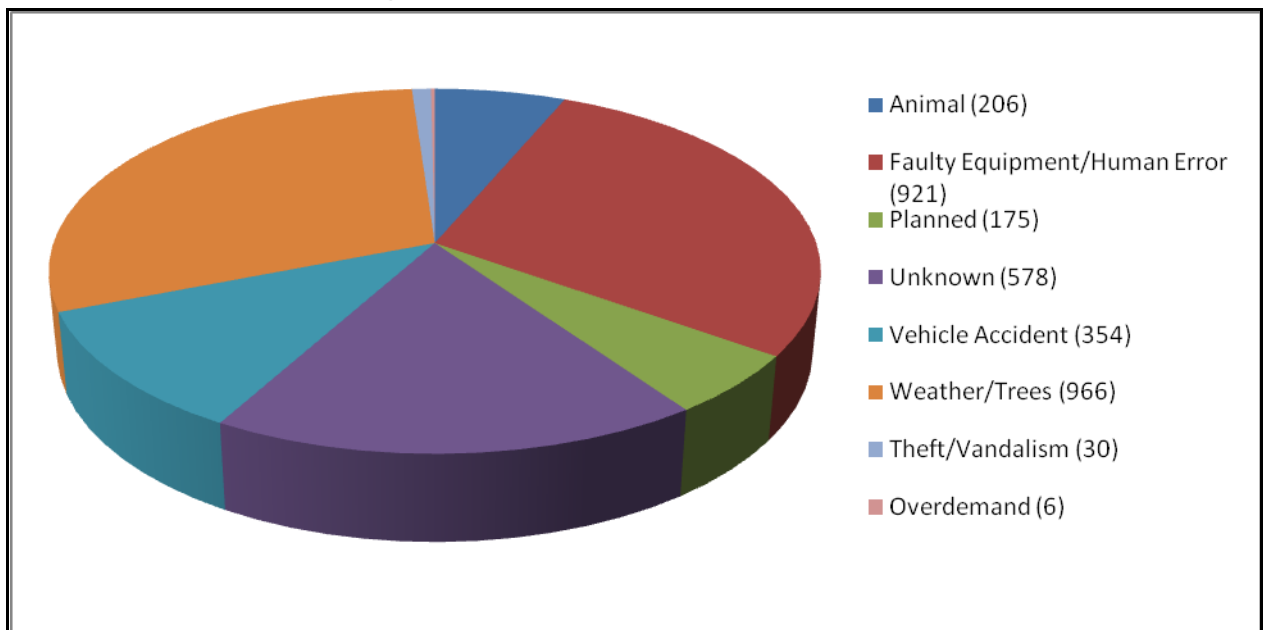
## Top states for outages caused by vehicle accident

2013 (354 total outages)	2012 (246 total outages)	2011 (245 total outages)	2010 (296 total outages)
1. California (53)	1. California (46)	1. California (31)	1. California (40)
2. Texas (23)	2. Pennsylvania (14)	2. Oregon (15)	2. New York (17)
3. New York (21)	3. Missouri (9)	2. Texas (15)	3. Texas (16)
4. Pennsylvania (21)	3. North Carolina (9)	3. Pennsylvania (12)	4. New Jersey (15)
5. Ohio (16)	3. New Jersey (9)	4. Illinois (11)	5. Wisconsin (15)
6. Virginia (16)	3. Ohio (9)	4. Washington (11)	6. Indiana (14)
7. New Jersey (15)	3. Texas (9)	5. New Jersey (10)	7. Pennsylvania (13)
8. Massachusetts (12)	3. Virginia (9)	5. New York (10)	8. Ohio (11)
9. Alabama (11) Arizona (11) North Carolina (11)	4. Arizona (7) Michigan (7) New York (7)	6. Maine (8) Ohio (8)	9. Florida (10) Oregon (10)

## Top states for outages caused by faulty equipment/human error

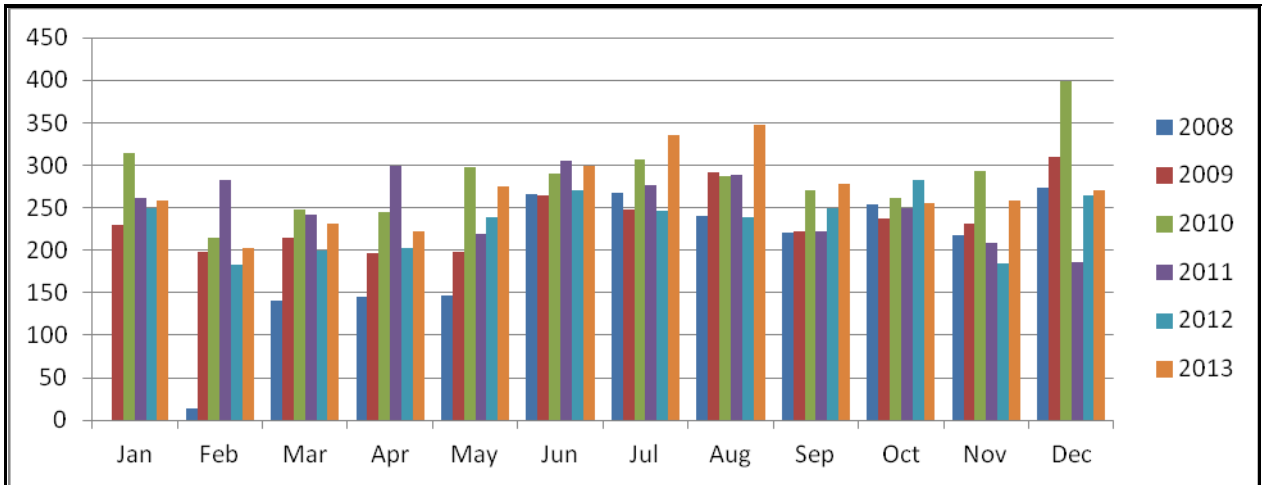
2013 (921 total outages)	2012 (791 total outages)	2011 (767 total outages)	2010 (895 total outages)
1. California (159)	1. California (197)	1. California (141)	1. California (171)
2. Pennsylvania (42)	2. Michigan (41)	2. New York (39)	2. Texas (43)
3. New Jersey (41)	3. Texas (40)	3. Texas (38)	3. Florida (35)
4. Ohio (37)	4. Massachusetts (38)	4. New Jersey (35)	3. Illinois (35)
5. Texas (36)	5. New Jersey (34)	5. Pennsylvania (28)	3. Michigan (35)
6. Massachusetts (35)	6. New York (30)	6. Michigan (26)	4. Ohio (34)
7. Michigan (35)	7. Ohio (28)	7. Ohio (25)	5. New Jersey (32)
8. New York (32)	8. Pennsylvania (26)	8. Connecticut (24)	6. Washington (30)
8. Washington (32)	9. Washington (25)	8. Illinois (24)	7. Pennsylvania (24)
9. Virginia (30)	10. Wisconsin (21)	8. Massachusetts (24)	8. Virginia (29)

## Reported power outages by cause



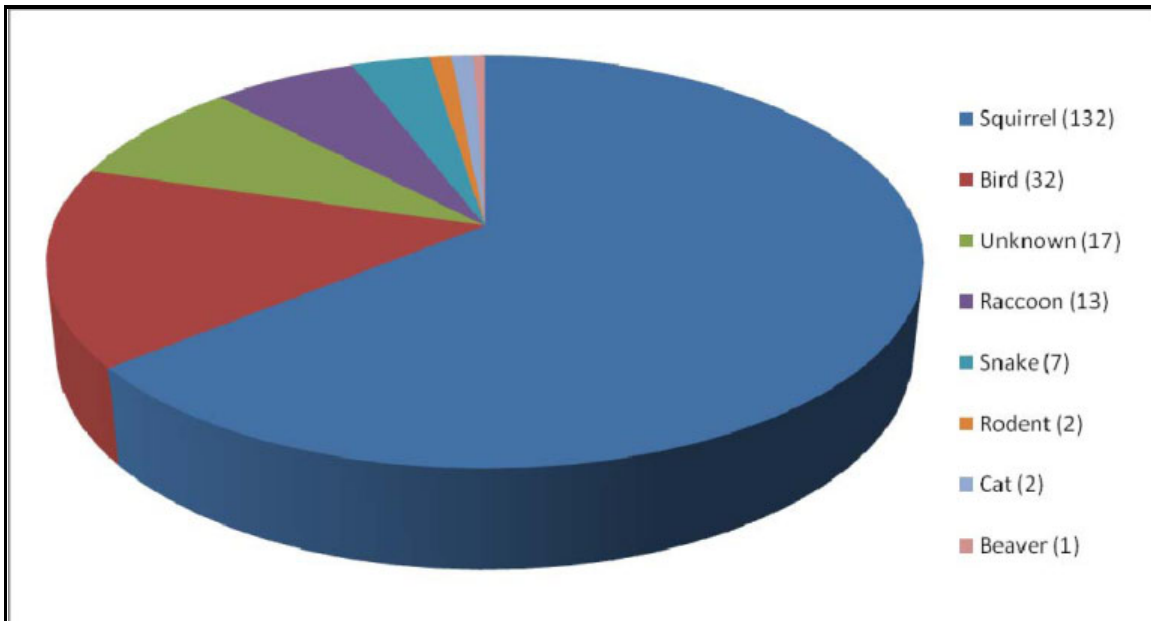
Note: Each power outage was grouped into one of eight possible causes. The number adjacent to the pie piece is the number of outages attributable to that cause.

## Reported power outages by month



Note: Data collection began February 16, 2008.

## Reported power outages by animal type



Notes: Number following animal type in the legend indicates number of reported outages caused by that animal. The bird category includes the following types: wild turkey, chicken, sea gull, goose, hawk, crow, turkey buzzard, magpie and unknown bird. January 21st is National Squirrel Appreciation day!

## Top states for outages caused by animals

2013 (206 total outages)	2012 (202 total outages)	2011 (208 total outages)	2010 (246 total outages)
1. California (19)	1. California (28)	1. Ohio (14)	1. California (24)
2. Texas (14)	2. Michigan (13)	2. Illinois (12)	2. Wisconsin (13)
3. Virginia (14)	3. Arizona (10)	3. Massachusetts (12)	3. Ohio (12)
4. Ohio (11)	4. Missouri (10)	4. California (11)	4. Texas (12)
5. Tennessee (10)	5. Indiana (9)	5. North Carolina (9)	5. Kansas (11)
6. Oregon (9)	6. New York (9)	6. Michigan (8)	6. New Jersey (10)
7. North Carolina (9)	7. Ohio (9)	7. New Jersey (8)	7. Michigan (9)
8. Michigan (7)	8. Wisconsin (9)	8. Washington (8)	8. Minnesota (9)
9. Colorado (6) Indiana, Florida, Louisiana, South Carolina (6)	9. New Jersey (8)	9. Virginia (8)	9. Pennsylvania (9)
	10. Texas (7)	10. New York (7)	10. New York (8)

## More about power outages caused by animals

According to [TE Connectivity](#) approximately seven percent of power outages are caused by animals. (The tracker confirms this estimate for 2013.) The estimated cost to utility companies for recovering from animal-related outages is between \$15 million and \$18 million annually.

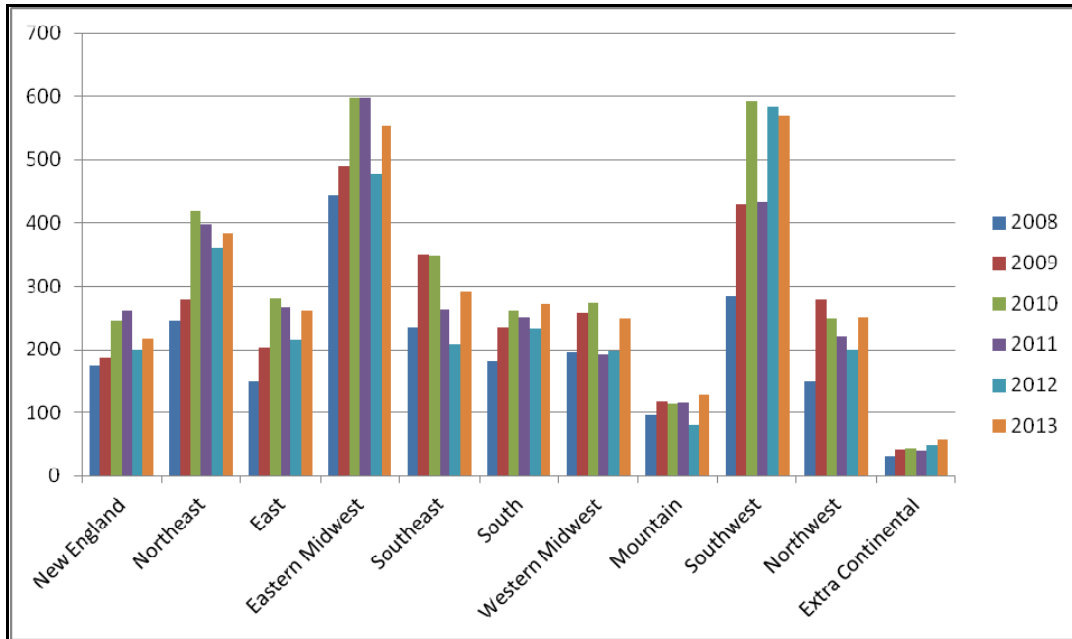
According to the Braintree Electric Department, by installing squirrel guards on the equipment most affected, animal-caused outages were reduced by approximately 80%.





# Power outage data by state

## Reported power outages by region



### Regions:

*New England: Connecticut, Massachusetts, Rhode Island, Vermont, New Hampshire, Maine*

*Northeast: New York, Pennsylvania, New Jersey*

*East: Virginia, North Carolina, Maryland (includes Washington DC), Delaware*

*Eastern Midwest: Wisconsin, Illinois, West Virginia, Ohio, Michigan, Kentucky, Indiana*

*Southeast: Tennessee, Georgia, Alabama, Mississippi, South Carolina, Florida*

*South: Texas, Louisiana, Arkansas, Oklahoma*

*Western Midwest: South Dakota, North Dakota, Nebraska, Minnesota, Missouri, Kansas, Iowa*

*Mountain: Colorado, Wyoming, Utah, New Mexico*

*Southwest: Nevada, California, Arizona*

*Northwest: Washington, Oregon, Idaho, Montana*

*Extra Continental: Alaska, Hawaii*

## State data overview

This section of the report provides an analysis of the power outages by state. There are four parts to each analysis.

1. The first part is an outage summary. The results are computed in the same manner as those in the outage summary found in the national power outage data in the previous part of this report. Only data pertaining to the particular state is used.
2. The second part of the analysis on each state is the outage fact. This is simply an interesting fact concerning a particular outage (or outages) in a state.
3. The third part of the analysis is a chart of the power outages by cause. This is the same type of chart that can be found in the national power outage data in the previous part of this report. Only data pertaining to the particular state is used.
4. The last part of each state section is the number of power outages by month. This is the same type of chart that can be found in the national power outage data in the previous part of this report. Only data pertaining to the particular state is used. From this chart it may be possible to determine particular times of the year when power outages are more common.

# Alabama

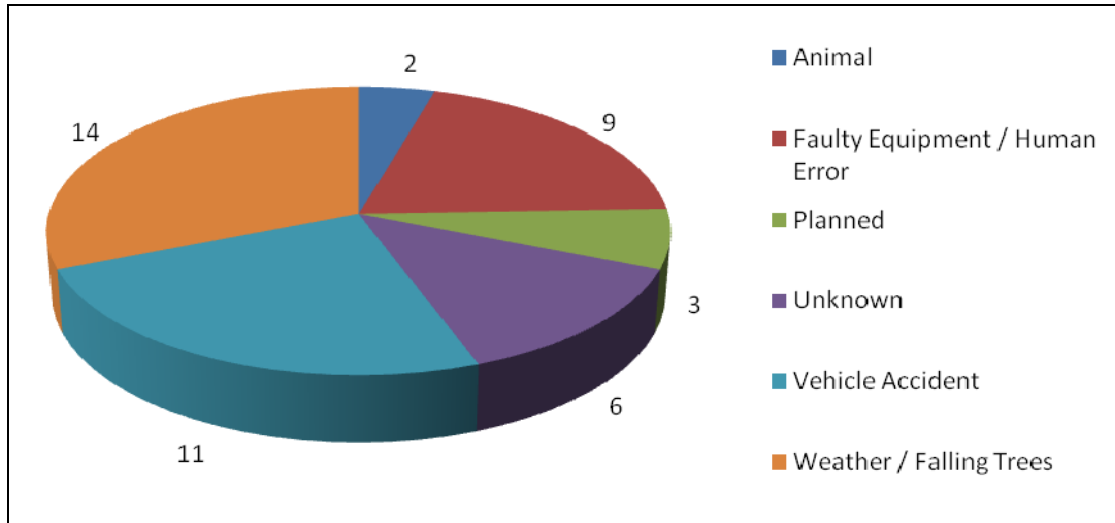
## Outage summary

Total number of people affected by outages	74,215
Total duration of outages	696 minutes (nearly 12 hours)
Total number of outages	45
Average number of people affected per outage	5,709
Average duration of outage	86 minutes

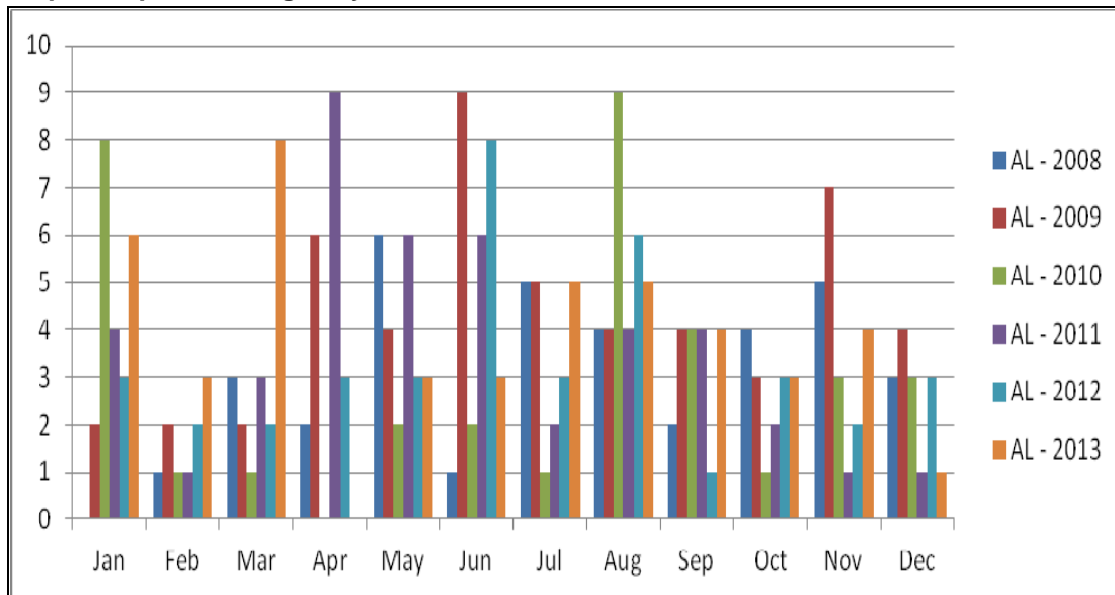
Note: Total number of people affected (and average) based on 11 (24%) of the total reported outages. Total duration of outages (and average) based on 6 (13%) of the total reported outages.

**Outage fact:** On August 27, a forklift operator working at a condominium construction site inadvertently pulled down a utility pole and electricity line.

## Reported power outages by cause



## Reported power outages by month



Note: Data collection began February 16, 2008.

## Alaska

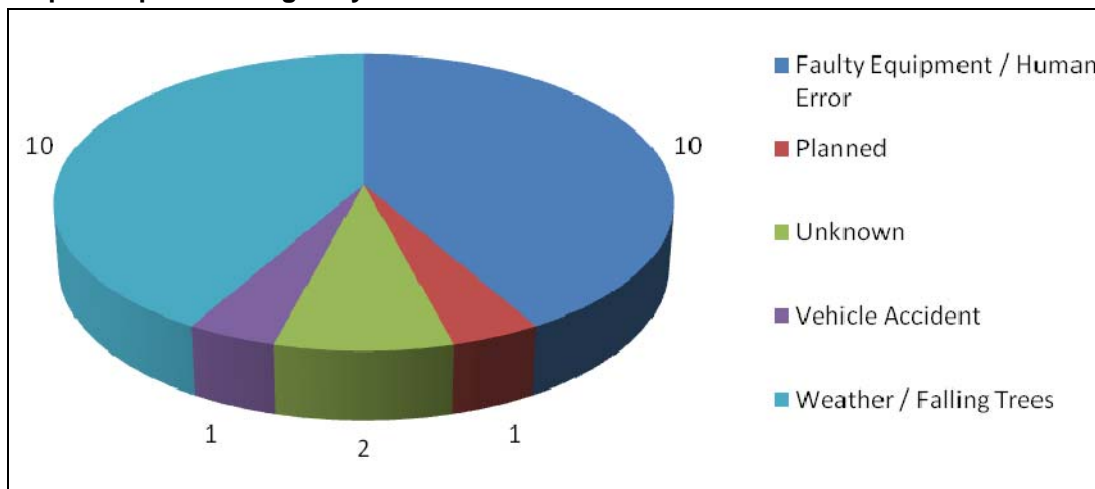
### Outage summary

Total number of people affected by outages	50,989
Total duration of outages	514 minutes (over 8 ½ hours)
Total number of outages	24
Average number of people affected per outage	4,635
Average duration of outage	86 minutes

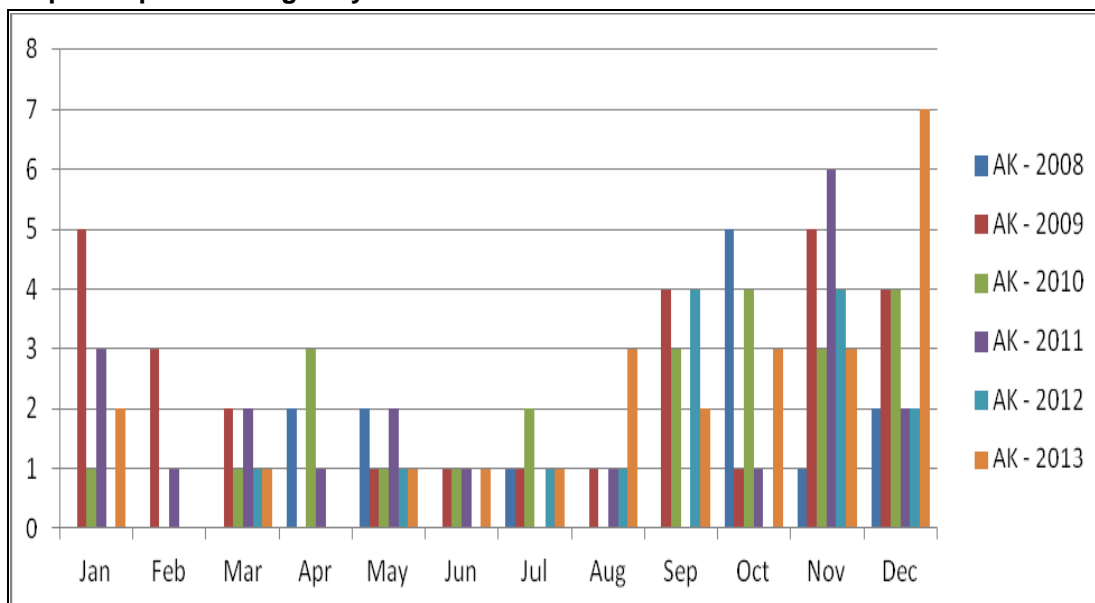
*Note: Total number of people affected (and average) based on 9 (38%) of the total reported outages. Total duration of outages (and average) based on 6 (25%) of the total reported outages.*

**Outage fact:** On Sept. 6, a loss of power caused a suspected carbon dioxide leak in a local refrigeration plant, prompting the Harbormaster to order an evacuation of the Fish Dock Road area.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

# Arizona

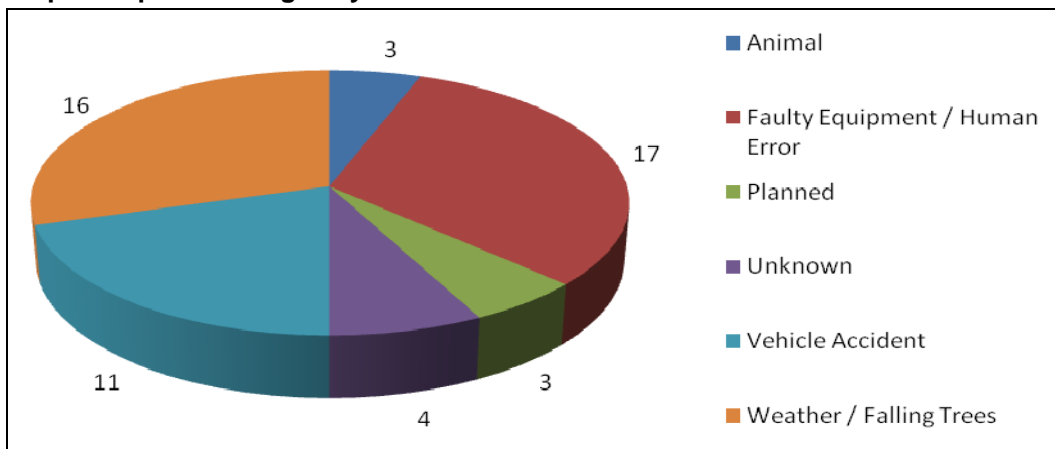
## Outage summary

Total number of people affected by outages	113,655
Total duration of outages	853 minutes (more than 14 hours)
Total number of outages	54
Average number of people affected per outage	1,918
Average duration of outage	185 minutes (over 3 hours)

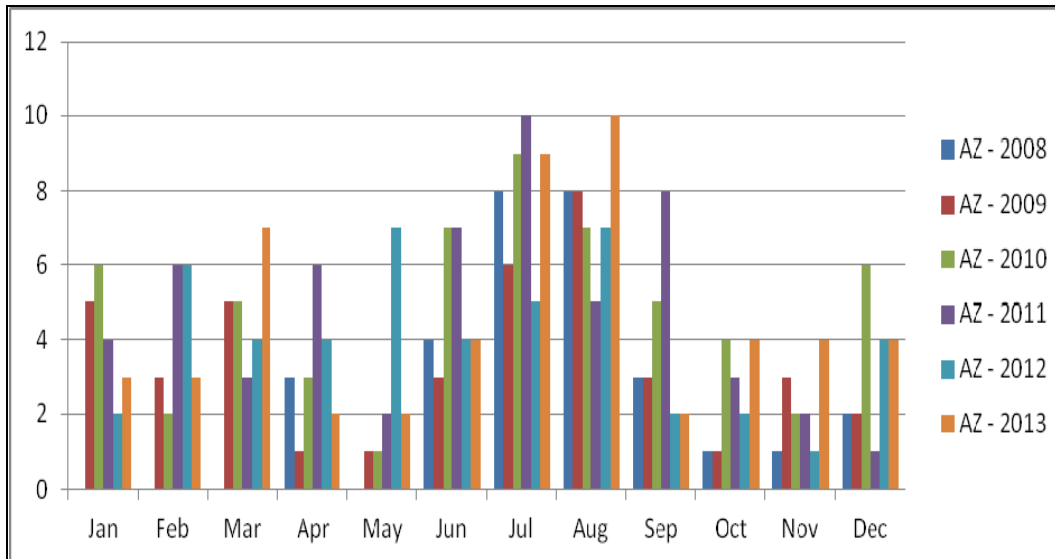
Note: Total number of people affected (and average) based on 27 (50%) of the total reported outages. Total duration of outages (and average) based on 12 (22%) of the total reported outages.

**Outage fact:** On March 14, a dumpster truck clipped overhead lines, cutting power and producing several bright flashes of lights in the Flagstaff area. The incident also caused a small brush fire.

## Reported power outages by cause



## Reported power outages by month



Note: Data collection began February 16, 2008.

## Arkansas

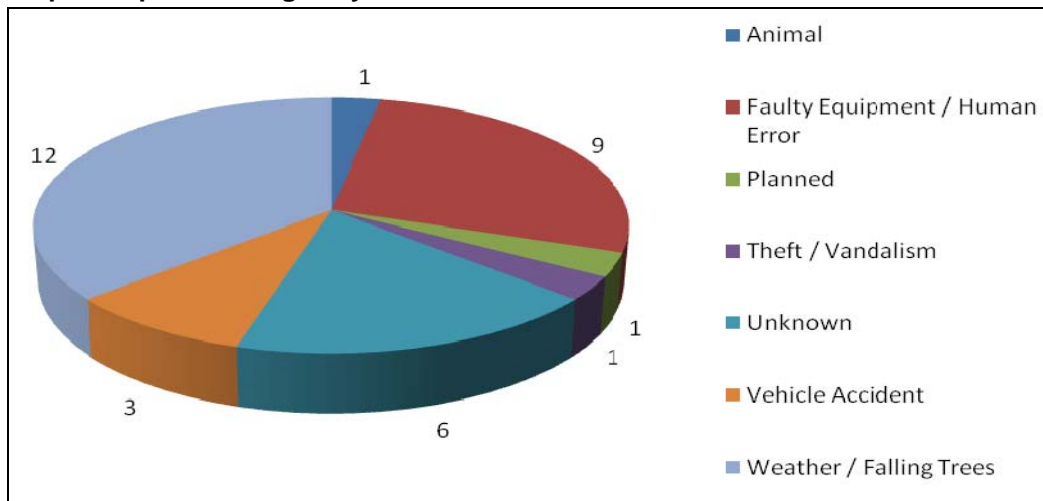
### Outage summary

Total number of people affected by outages	113,655
Total duration of outages	883 minutes (nearly 15 hours)
Total number of outages	33
Average number of people affected per outage	4,546
Average duration of outage	177 minutes

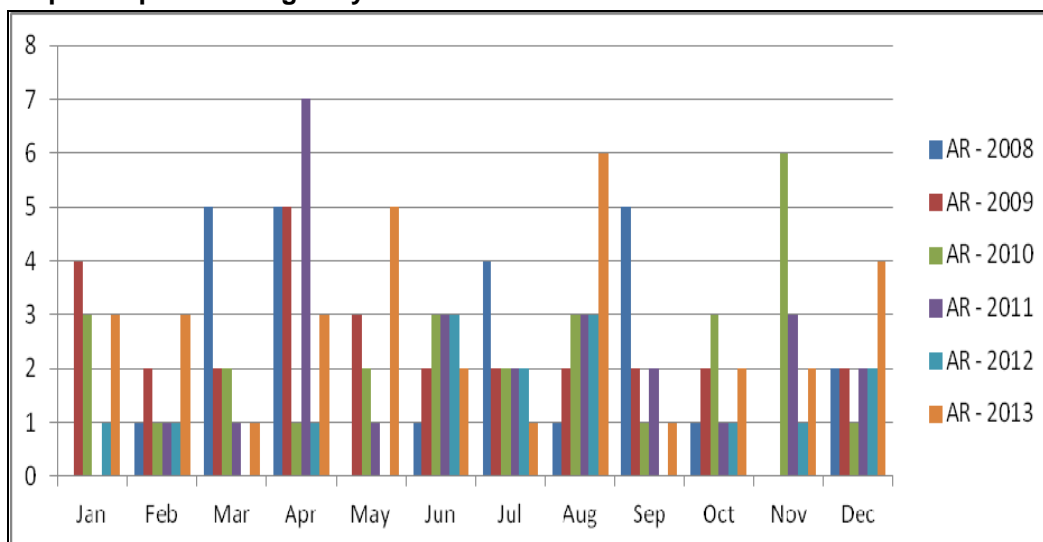
*Note: Total number of people affected (and average) based on 21 (64%) of the total reported outages. Total duration of outages (and average) based on 5 (15%) of the total reported outages.*

**Outage fact:** On Dec. 6, tens of thousands of Arkansans woke up with no electricity after an ice storm caused power outages.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

## California

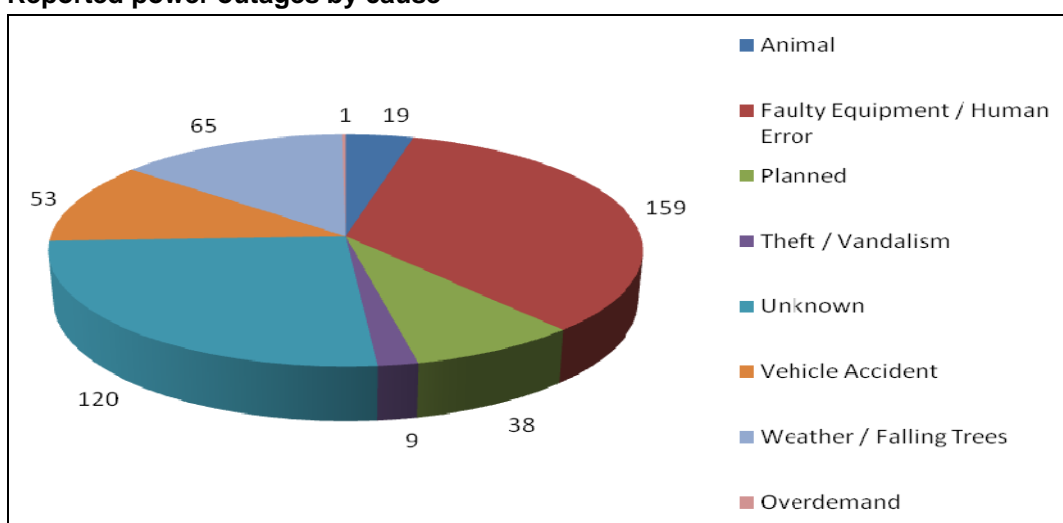
### Outage summary

Total number of people affected by outages	1,948,736
Total duration of outages	32,058 minutes (over 22 days)
Total number of outages	464
Average number of people affected per outage	5,428
Average duration of outage	317 minutes (over 5 hours)

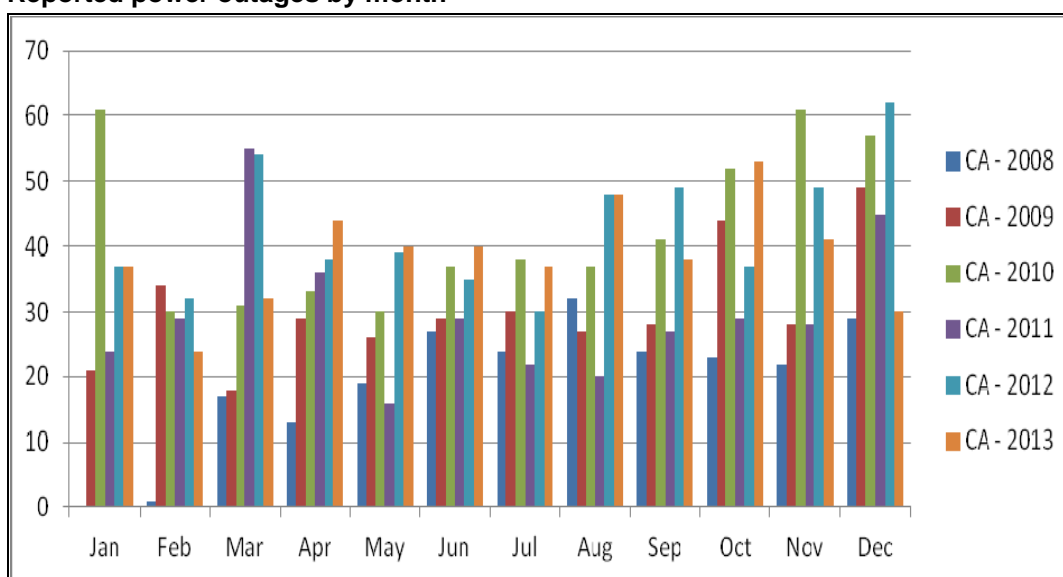
*Note: Total number of people affected (and average) based on 241 (52%) of the total reported outages. Total duration of outages (and average) based on 48 (10%) of the total reported outages.*

**Outage fact:** On April 16, one or more persons sprayed more than 100 rifle bullets and knocked out 17 of 23 transformers at a Silicon Valley substation. Months later, publicity over the event underscored concerns about the vulnerability of the country's electrical grid and prompted debate over whether it was an act of terrorism.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

## Colorado

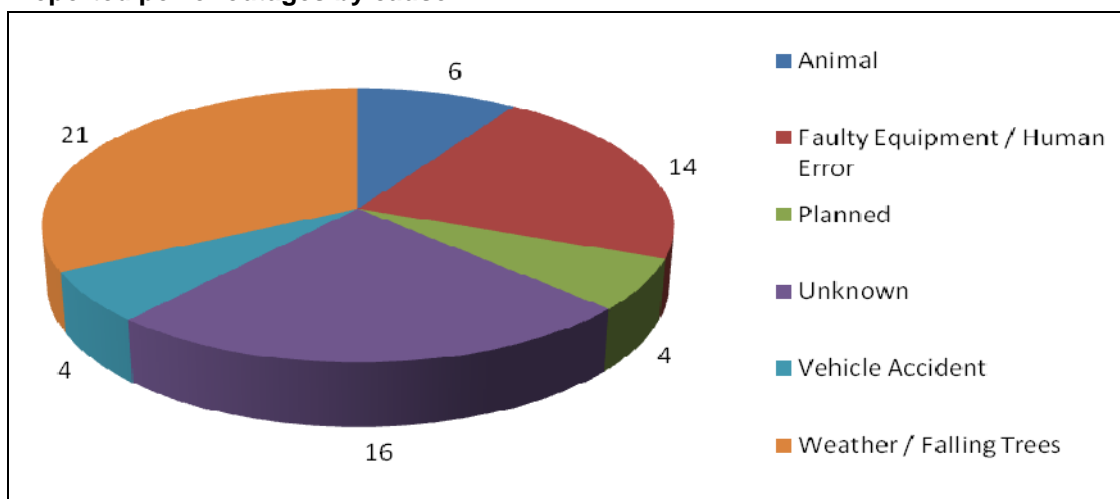
### Outage summary

Total number of people affected by outages	225,964
Total duration of outages	2,511 minutes (nearly 42 hours)
Total number of outages	65
Average number of people affected per outage	5,136
Average duration of outage	144 minutes

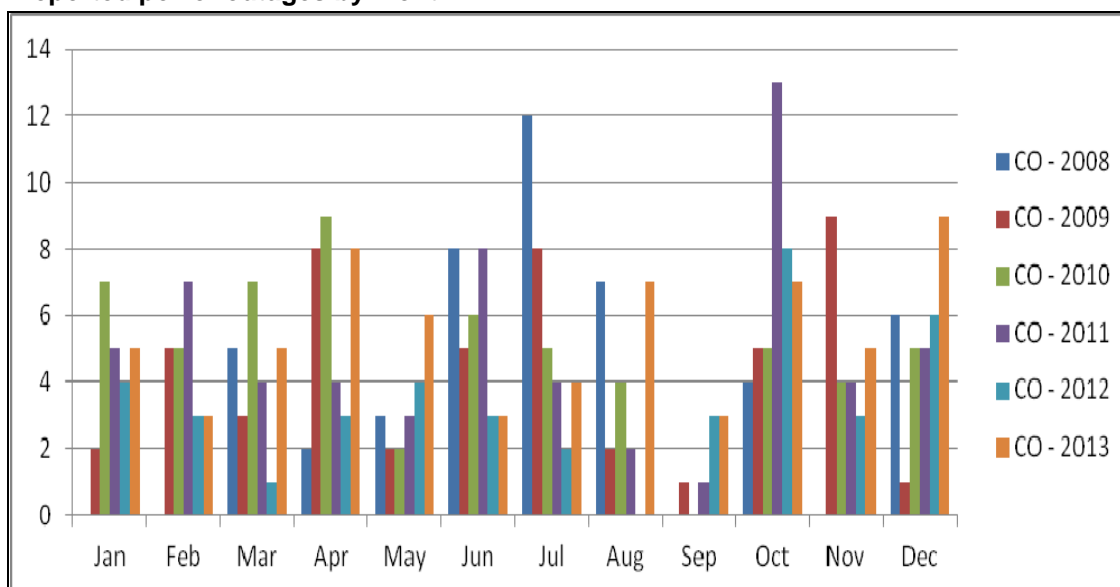
*Note: Total number of people affected (and average) based on 35 (54%) of the total reported outages. Total duration of outages (and average) based on 16 (25%) of the total reported outages.*

**Outage fact:** On Dec. 3, an Arctic blast knocked out power to 24,500 customers in Greeley.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

## Connecticut

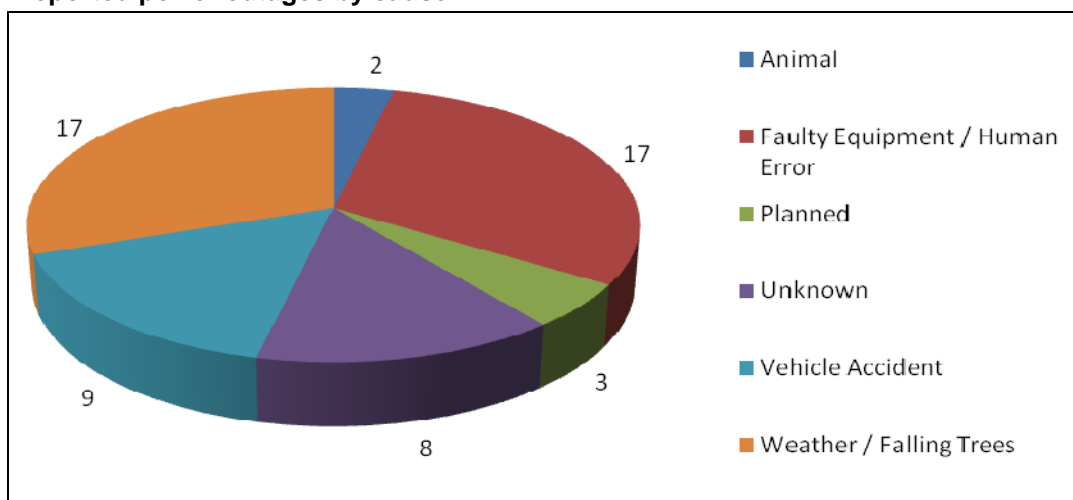
### Outage summary

Total number of people affected by outages	91,146
Total duration of outages	1,405 minutes (nearly 24 hours)
Total number of outages	56
Average number of people affected per outage	2,681
Average duration of outage	117 minutes

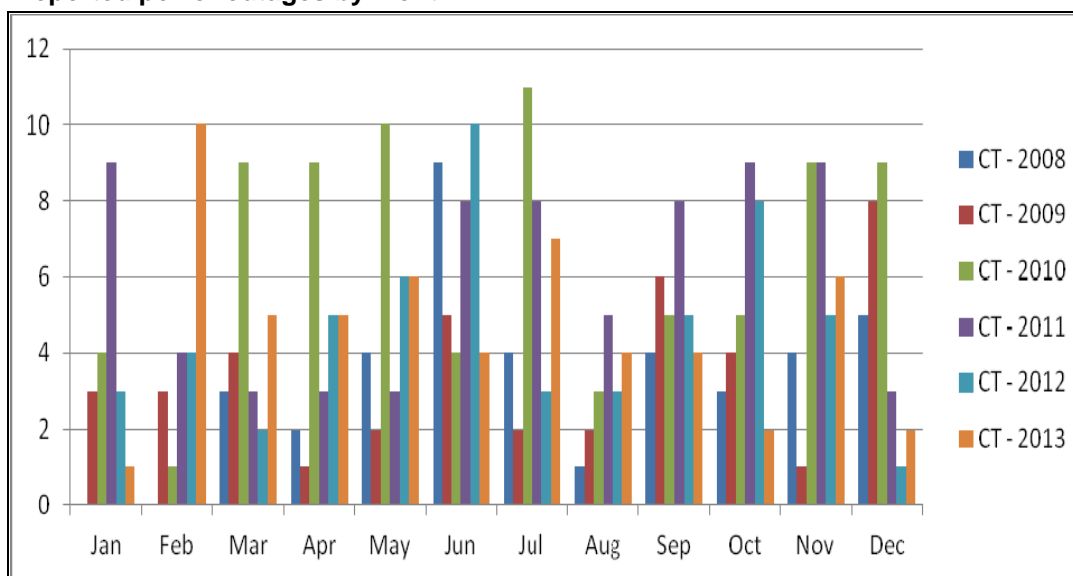
*Note: Total number of people affected (and average) based on 32 (57%) of the total reported outages. Total duration of outages (and average) based on 8 (14%) of the total reported outages.*

**Outage fact:** On June 6, some 6,000 Hartford customers were left in the dark following an explosion. The incident sent four Connecticut Light & Power line workers to the hospital.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*



## Delaware

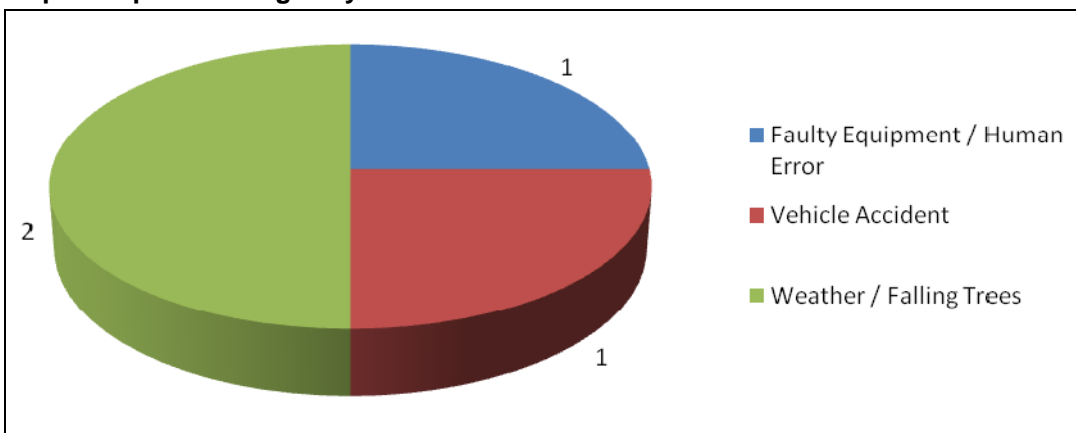
### Outage summary

Total number of people affected by outages	3,308
Total duration of outages	502 minutes (over 8 hours)
Total number of outages	4
Average number of people affected per outage	1,654
Average duration of outage	251 minutes (over 4 hours)

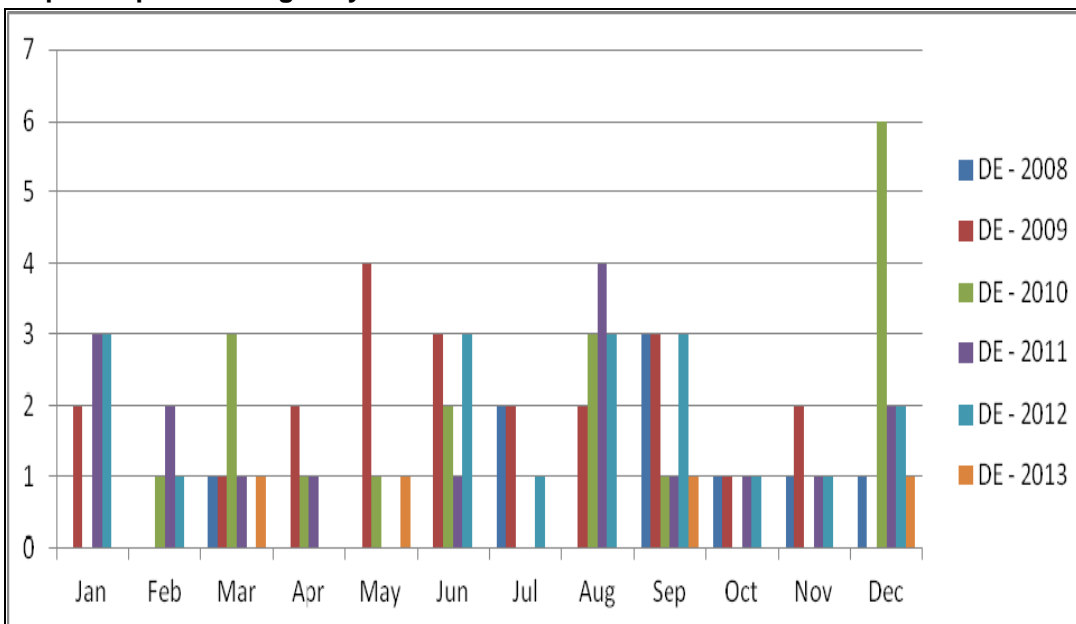
*Note: Total number of people affected (and average) based on 2 (50%) of the total reported outages. Total duration of outages (and average) based on 2 (50%) of the total reported outages.*

**Outage fact:** On Sept. 10, a utility bucket truck came into contact with some power lines, sparking a fire and causing a blackout for more than 1,300 Snow Hill residents.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

# Florida

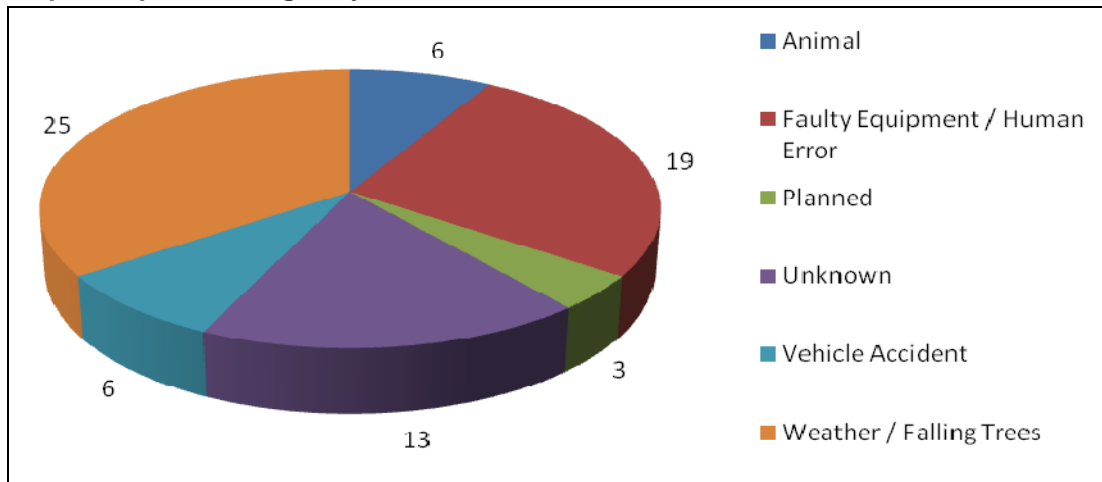
## Outage summary

Total number of people affected by outages	403,839
Total duration of outages	2,208 minutes (nearly 37 hours)
Total number of outages	72
Average number of people affected per outage	9,392
Average duration of outage	158 minutes (more than 2 ½ hours)

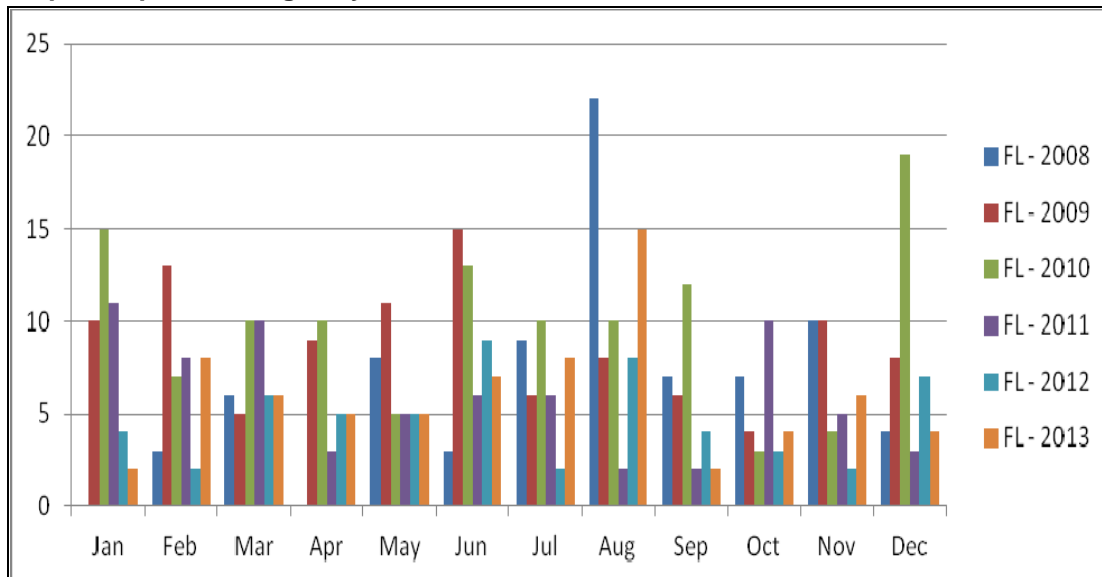
Note: Total number of people affected (and average) based on 34 (47%) of the total reported outages. Total duration of outages (and average) based on 11 (15%) of the total reported outages.

**Outage fact:** On New Year's Day, a 12-year-old boy shot a high-powered rifle and hit a 69,000-volt transmission line in Lynne, cutting power to 6,000. Sheriff's officials classified the incident as accidental, since the boy claimed he was shooting the rifle at tree limbs and was not targeting the transmission line.

## Reported power outages by cause



## Reported power outages by month



Note: Data collection began February 16, 2008.

# Georgia

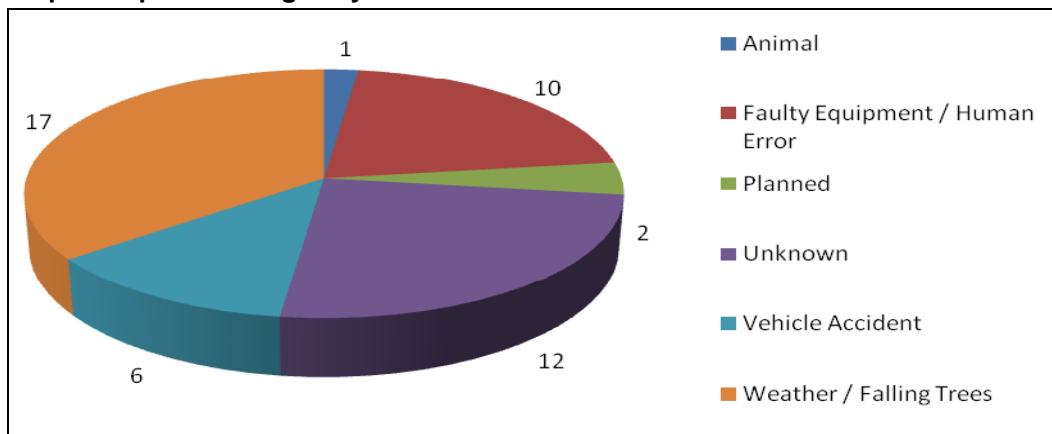
## Outage summary

Total number of people affected by outages	43,803
Total duration of outages	1,323 minutes (22 hours)
Total number of outages	48
Average number of people affected per outage	1,904
Average duration of outage	132 minutes

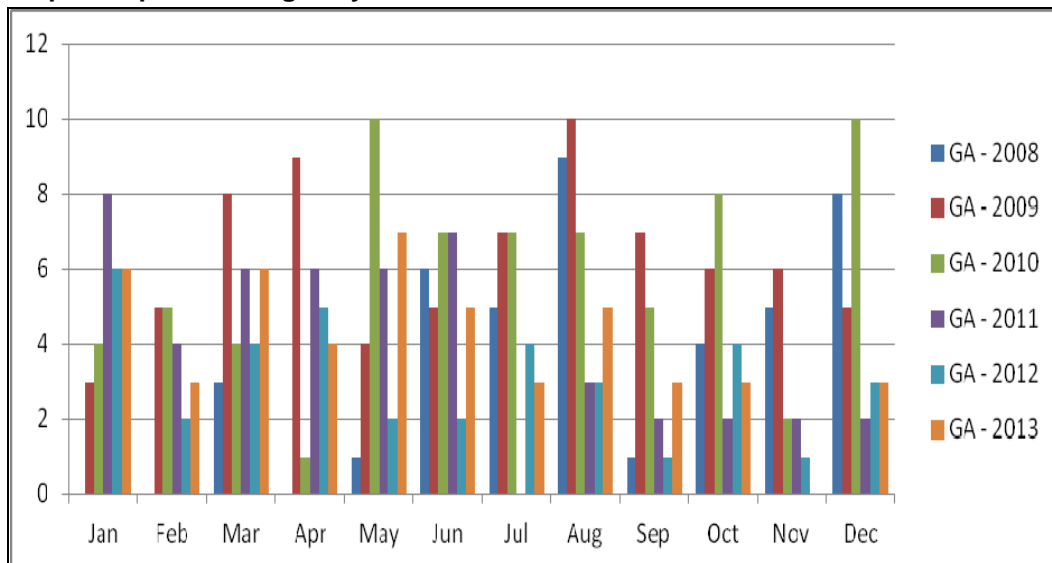
Note: Total number of people affected (and average) based on 20 (42%) of the total reported outages. Total duration of outages (and average) based on 10 (21%) of the total reported outages.

**Outage fact:** On May 21, an outage at Turner Field briefly knocked out the stadium lights and extended a third-inning rain delay by about 20 minutes during the Braves' game against the Minnesota Twins. No cause was specified for the blackout.

## Reported power outages by cause



## Reported power outages by month



Note: Data collection began February 16, 2008.

# Hawaii

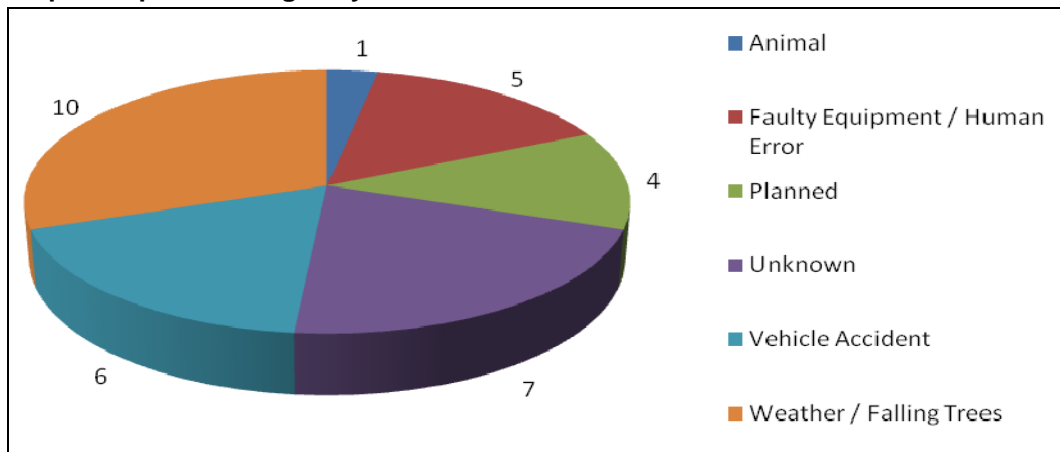
## Outage summary

Total number of people affected by outages	141,799
Total duration of outages	2,443 minutes (nearly 41 hours)
Total number of outages	33
Average number of people affected per outage	7,878
Average duration of outage	204 minutes (nearly 3 ½ hours)

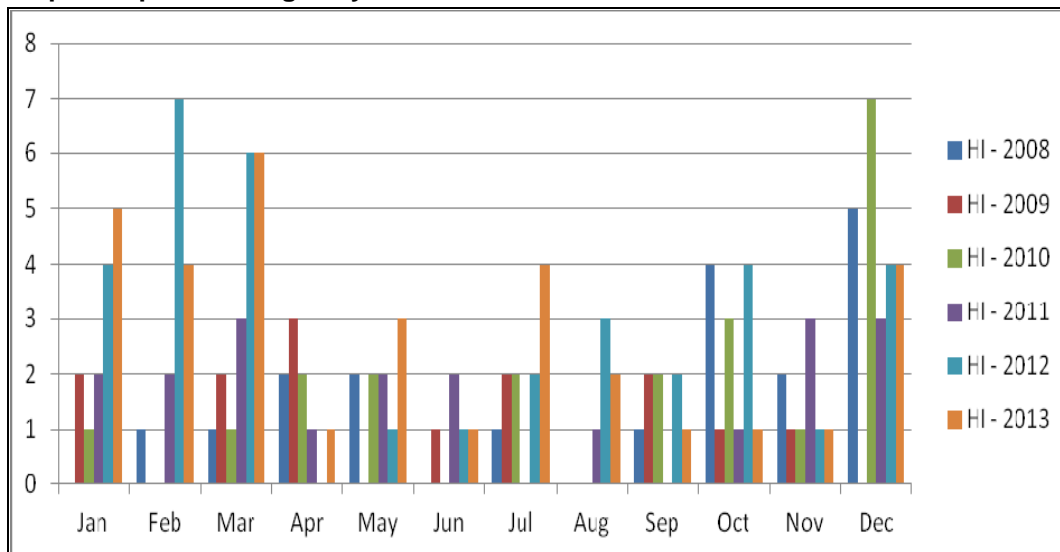
Note: Total number of people affected (and average) based on 18 (55%) of the total reported outages. Total duration of outages (and average) based on 11 (33%) of the total reported outages.

**Outage fact:** On Feb. 26, a roaming chicken caused a power outage and brief delays at Maui's Kahului Airport after the bird wandered into a transformer at the airport's rental car area.

## Reported power outages by cause



## Reported power outages by month



Note: Data collection began February 16, 2008.

## Idaho

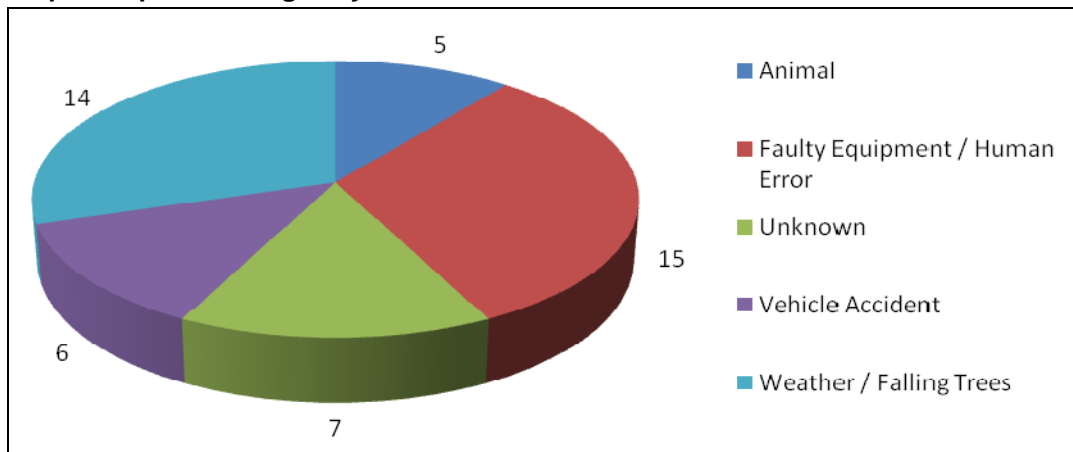
### Outage summary

Total number of people affected by outages	206,811
Total duration of outages	2,386 minutes (nearly 40 hours)
Total number of outages	47
Average number of people affected per outage	5,442
Average duration of outage	217 minutes (nearly 4 hours)

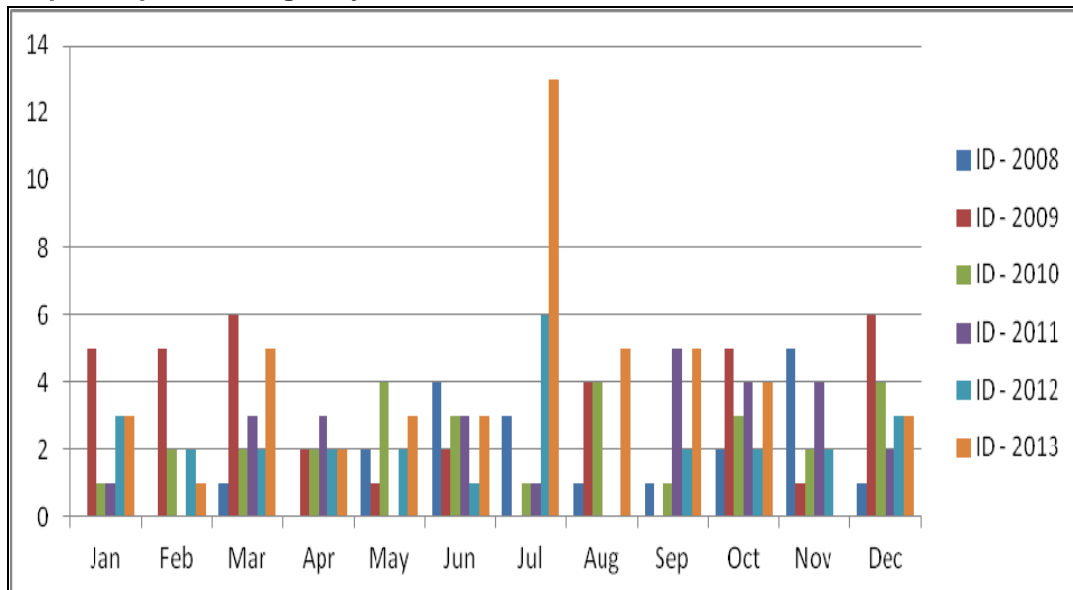
*Note: Total number of people affected (and average) based on 34 (72%) of the total reported outages. Total duration of outages (and average) based on 10 (21%) of the total reported outages.*

**Outage fact:** On Oct. 12, a squirrel shut down electricity to four buildings at the College of Southern Idaho, affecting databases and computer systems across the campus.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

## Illinois

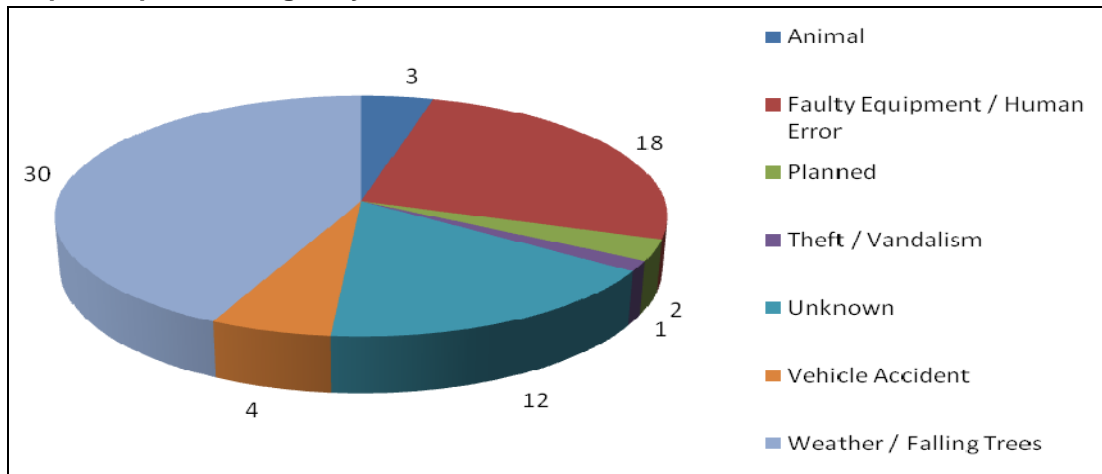
### Outage summary

Total number of people affected by outages	525,046
Total duration of outages	1,029 minutes (17 hours)
Total number of outages	70
Average number of people affected per outage	10,501
Average duration of outage	86 minutes

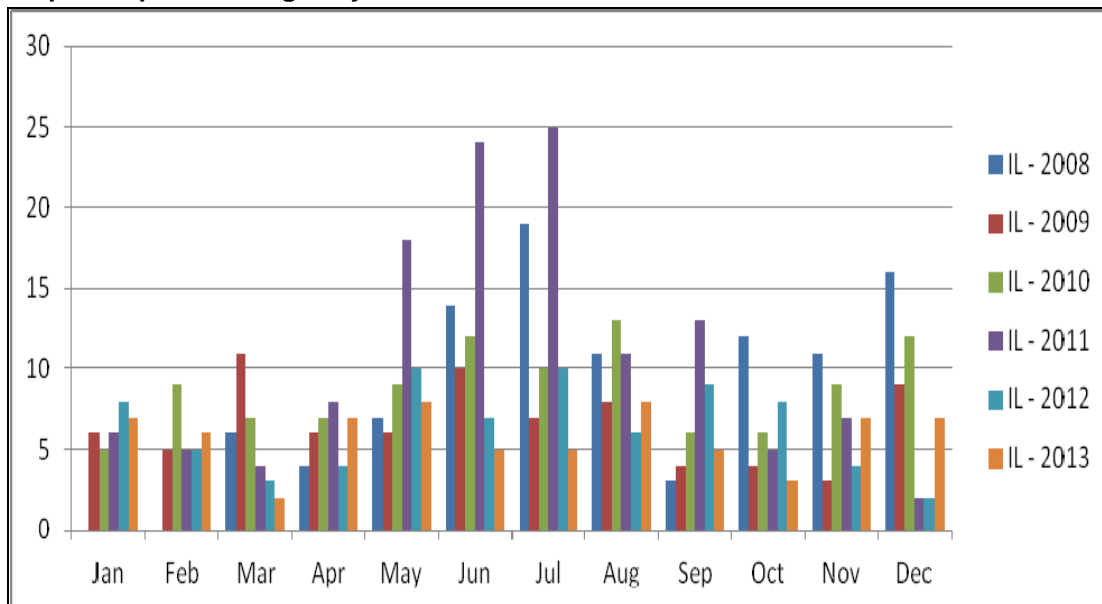
*Note: Total number of people affected (and average) based on 46 (66%) of the total reported outages. Total duration of outages (and average) based on 11 (16%) of the total reported outages.*

**Outage fact:** On June 24, a strong storm system moving at about 60 mph cut power to 300,000 Chicagoans. Rain fall was measured at more than 3 inches and there were reports of tornado sightings.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

## Indiana

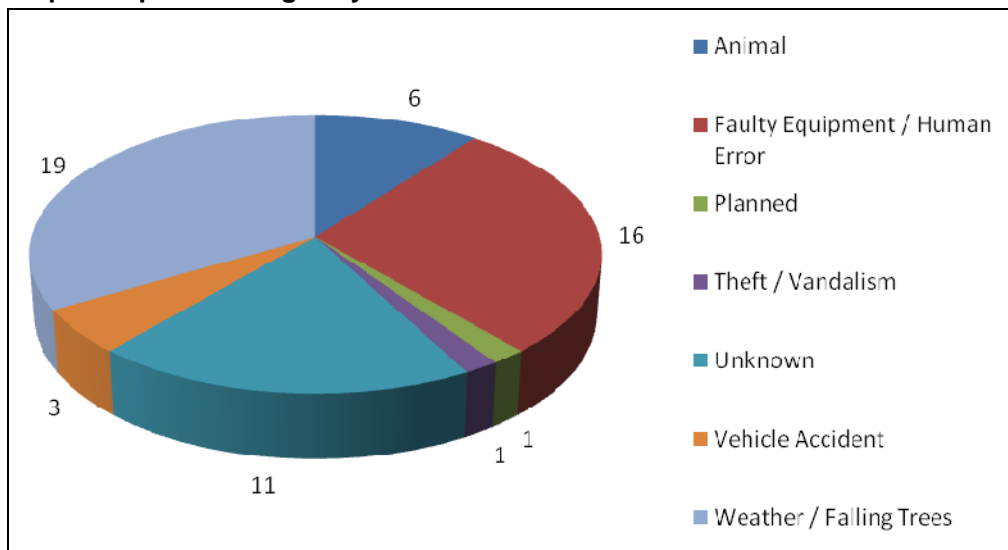
### Outage summary

Total number of people affected by outages	230,400
Total duration of outages	1,890 minutes (31 ½ hours)
Total number of outages	57
Average number of people affected per outage	5,358
Average duration of outage	145 minutes

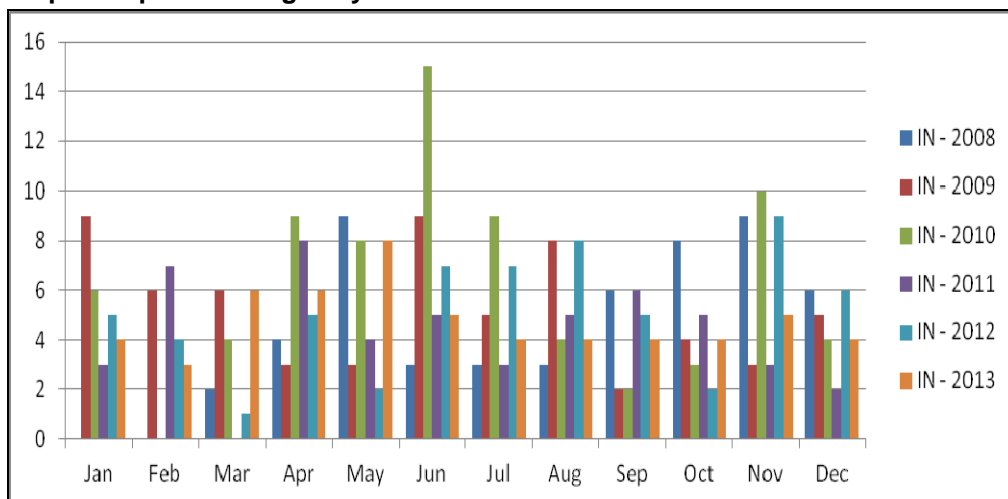
*Note: Total number of people affected (and average) based on 38 (67%) of the total reported outages. Total duration of outages (and average) based on 9 (16%) of the total reported outages.*

**Outage fact:** On August 24, a problem with wire-to-pole attachment caused a cut to 2,000 in Newburgh. During repairs, a hawk triggered an outage on same circuit when it landed on a transformer. There was no word on fate of the hawk.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

## Iowa

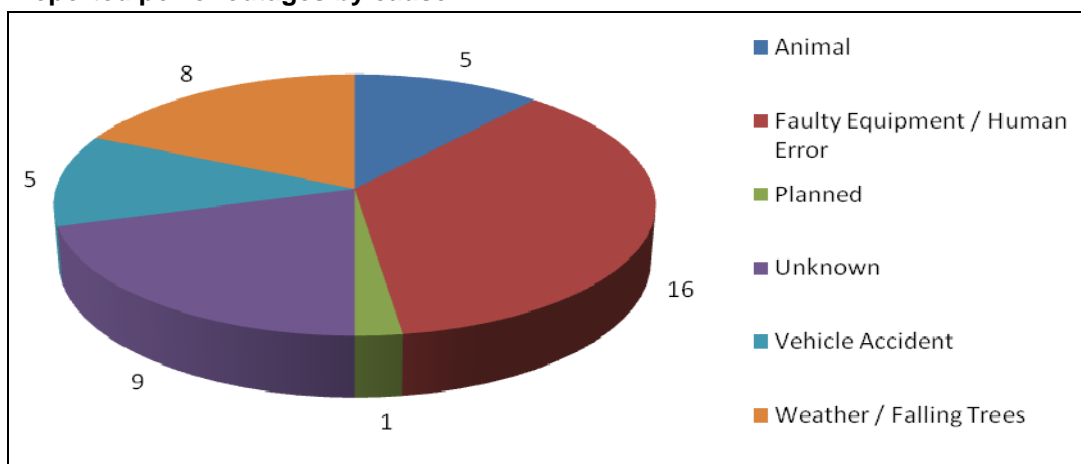
### Outage summary

Total number of people affected by outages	136,799
Total duration of outages	823 minutes (nearly 14 hours)
Total number of outages	44
Average number of people affected per outage	4,145
Average duration of outage	75 minutes

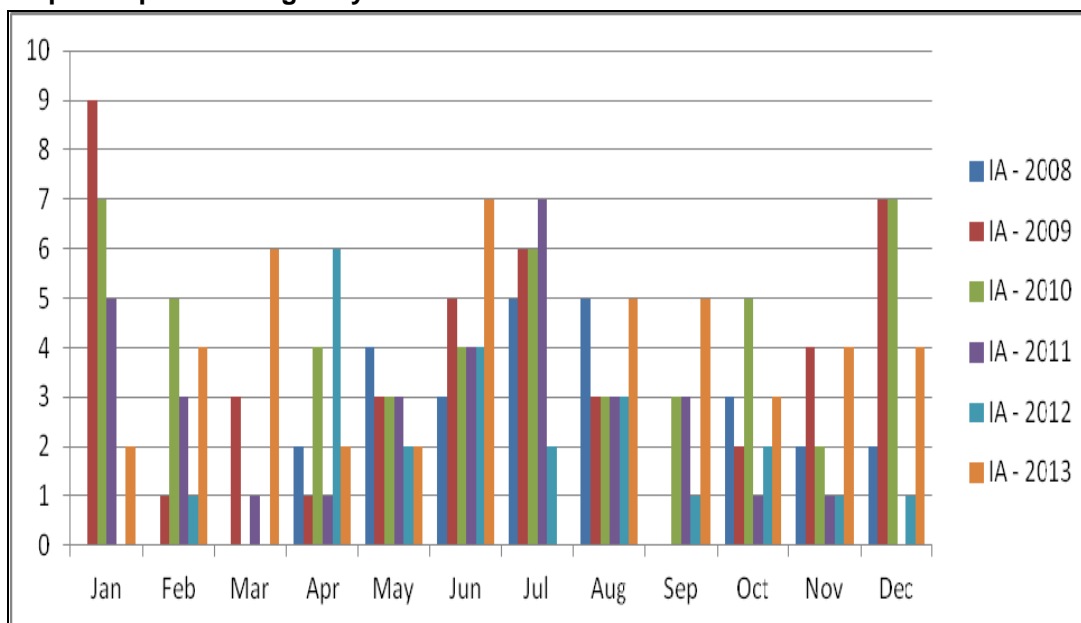
Note: Total number of people affected (and average) based on 32 (73%) of the total reported outages. Total duration of outages (and average) based on 7 (16%) of the total reported outages.

**Outage fact:** On Sept. 17, a cherry picker hit a line and knocked out power to 2,000 customers in Bettendorf.

### Reported power outages by cause



### Reported power outages by month



Note: Data collection began February 16, 2008.



## Kansas

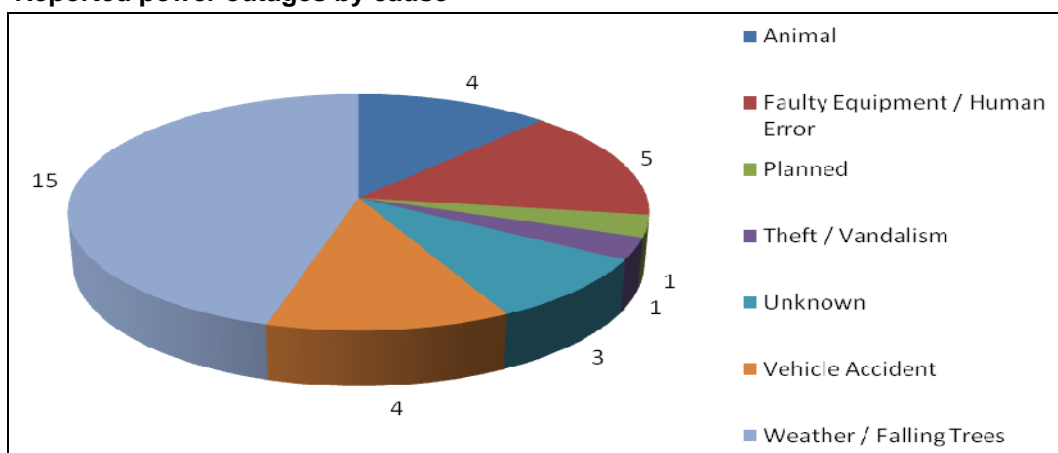
### Outage summary

Total number of people affected by outages	84,260
Total duration of outages	395 minutes (over 6.5 hours)
Total number of outages	33
Average number of people affected per outage	3,830
Average duration of outage	99 minutes

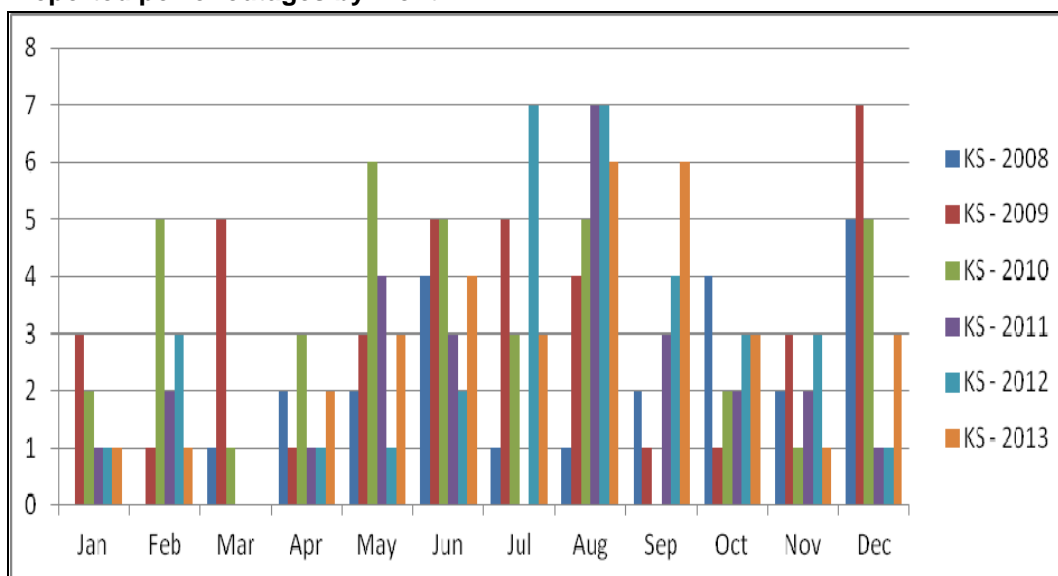
*Note: Total number of people affected (and average) based on 20 (61%) of the total reported outages. Total duration of outages (and average) based on 3 (9%) of the total reported outages.*

**Outage fact:** On August 21, a crop spray boom came into contact with a line, cutting power in Clay Center. The farmer told the Weststar crew that the exchange caused a tire to blow on his rig, so he changed the tire and continued spraying.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

## Kentucky

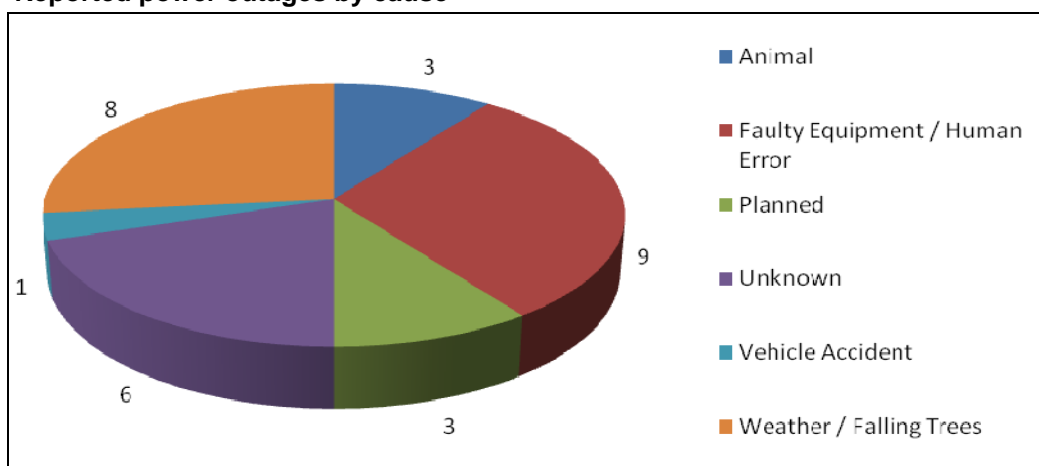
### Outage summary

Total number of people affected by outages	69,992
Total duration of outages	1,680 minutes (28 hours)
Total number of outages	30
Average number of people affected per outage	3,684
Average duration of outage	210 minutes (3 ½ hours)

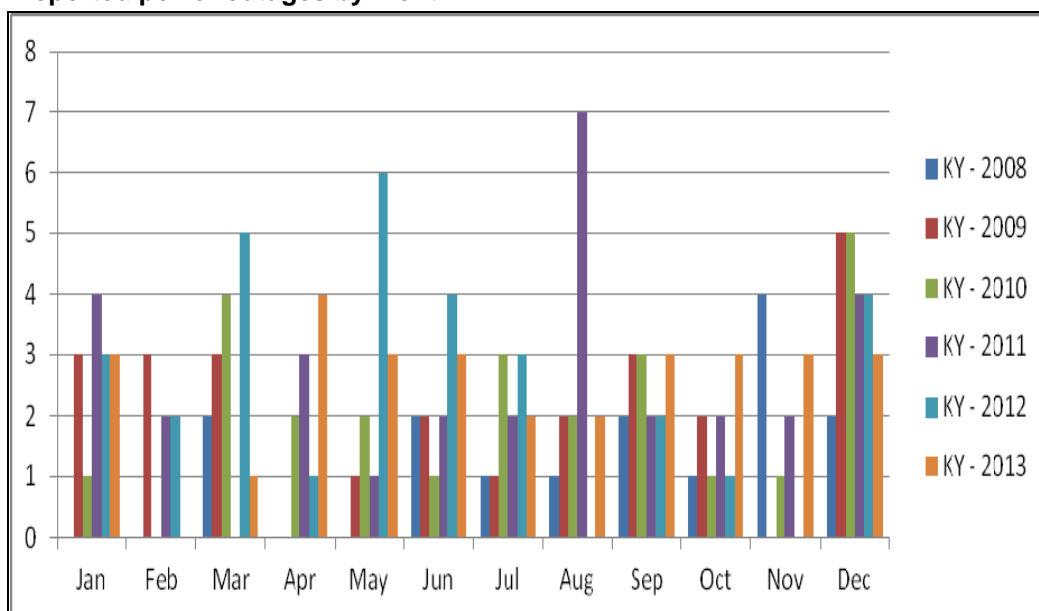
*Note: Total number of people affected (and average) based on 18 (60%) of the total reported outages. Total duration of outages (and average) based on 6 (20%) of the total reported outages.*

**Outage fact:** On June 30, the work of "one determined squirrel" left 6,500 Lexington customers in the dark. The rodent got inside a substation and when it "touched the wrong thing" it was electrocuted and the system shut down.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

# Louisiana

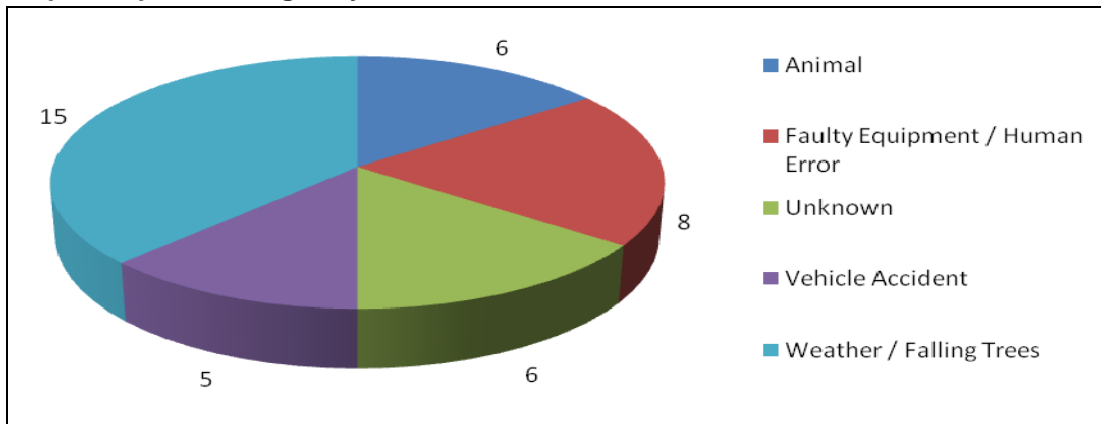
## Outage summary

Total number of people affected by outages	135,735
Total duration of outages	450 minutes (7 ½ hours)
Total number of outages	40
Average number of people affected per outage	5,429
Average duration of outage	90 minutes

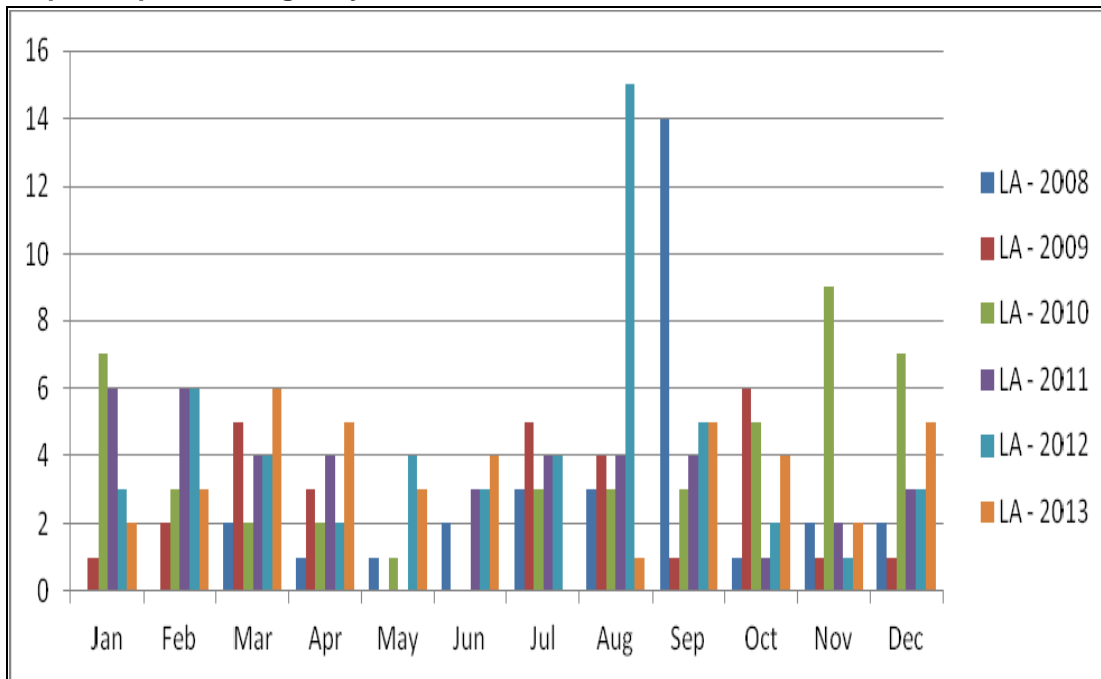
Note: Total number of people affected (and average) based on 22 (55%) of the total reported outages. Total duration of outages (and average) based on 5 (13%) of the total reported outages.

**Outage fact:** On Feb. 3, about 90 seconds into the second half of the Super Bowl, the lights on one half of the Superdome's roof suddenly went out. Internet connections in the press box were cut, and the scoreboards went dark. A faulty relay cable was ultimately blamed.

## Reported power outages by cause



## Reported power outages by month



Note: Data collection began February 16, 2008.

## Maine

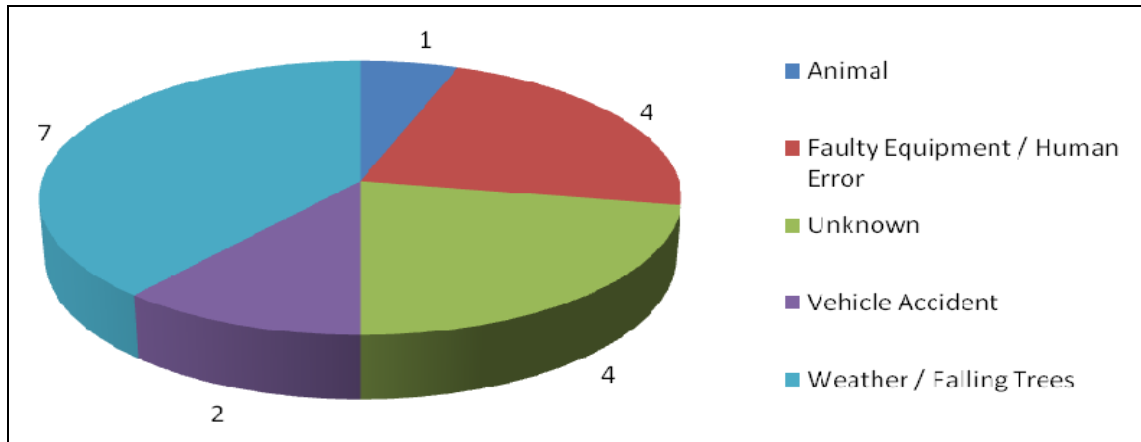
### Outage summary

Total number of people affected by outages	123,534
Total duration of outages	None reported
Total number of outages	18
Average number of people affected per outage	8,236
Average duration of outage	None reported

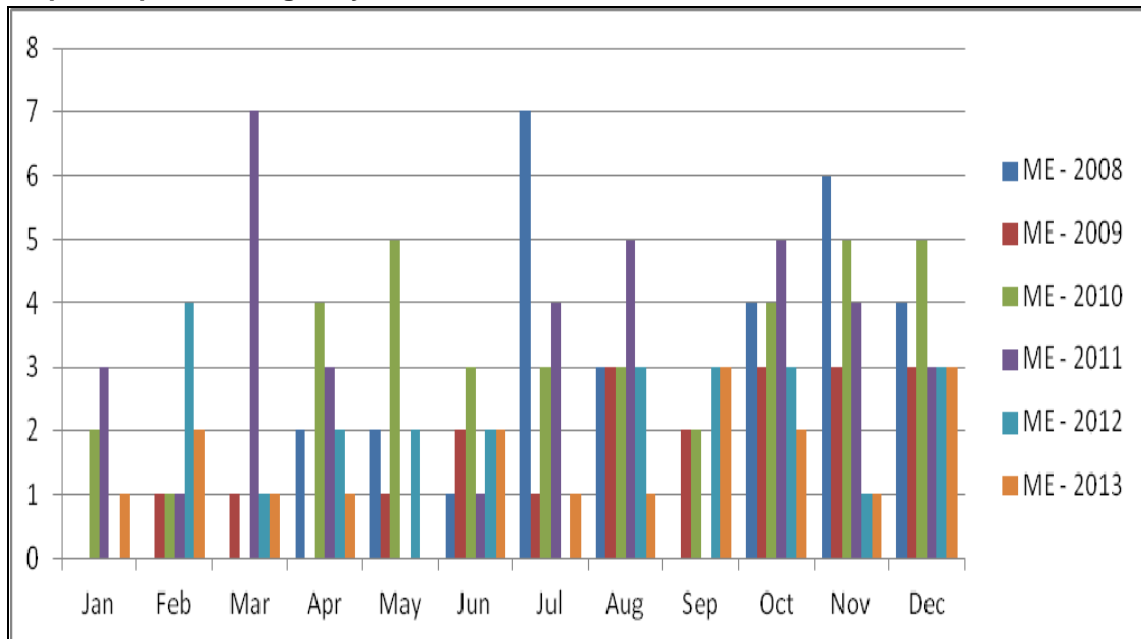
Note: Total number of people affected (and average) based on 14 (78%) of the total reported outages.

**Outage fact:** A Valentine's Day outage in Lebanon occurred after a car crash snapped a pole in multiple spots and was down on the side of the road. The vehicle fled the area just prior to emergency crews arriving on scene.

### Reported power outages by cause



### Reported power outages by month



Note: Data collection began February 16, 2008.

## Maryland / Washington, DC

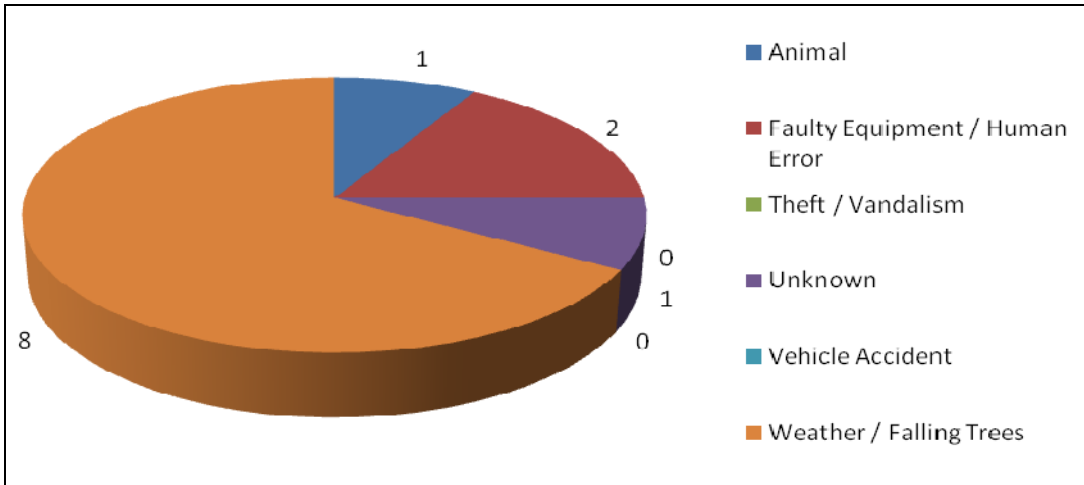
### Outage summary

Total number of people affected by outages	370,343
Total duration of outages	875 minutes (over 14 hours)
Total number of outages	53
Average number of people affected per outage	10,892
Average duration of outage	175 minutes (nearly 3 hours)

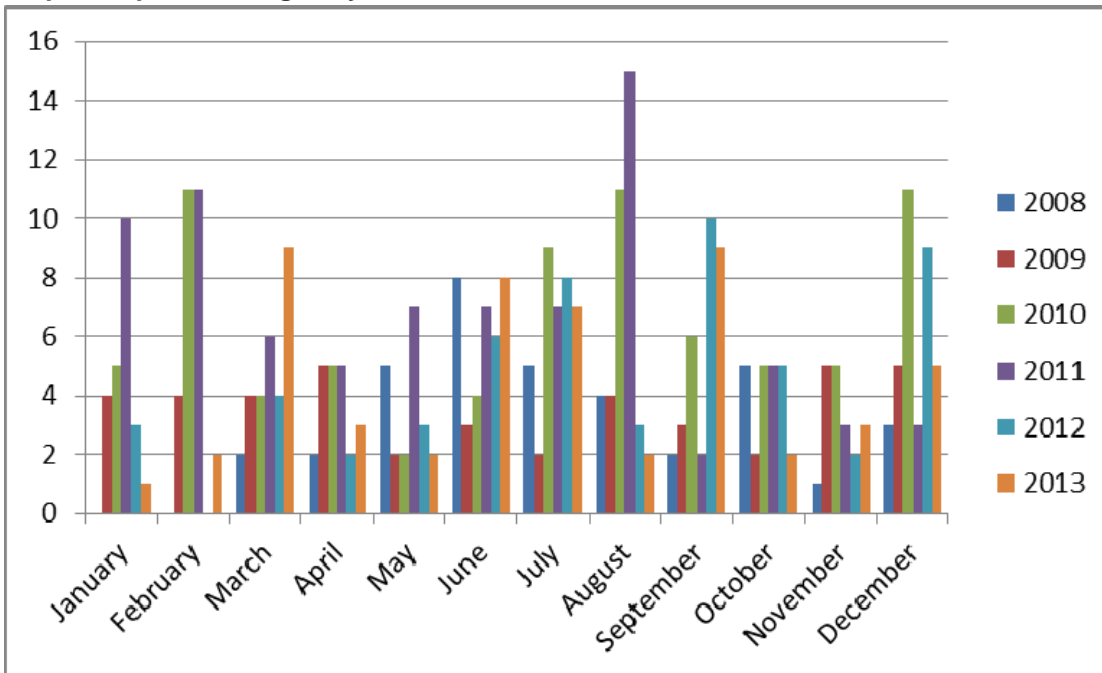
*Note: Total number of people affected (and average) based on 31 (58%) of the total reported outages. Total duration of outages (and average) based on 4 (8%) of the total reported outages.*

**Outage fact:** On May 28, a spring soaking left 12,000 without power in the nation's capital. Within an hour, 1.33 inches of rain was recorded, making it the second-rainiest day of 2013.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

## Massachusetts

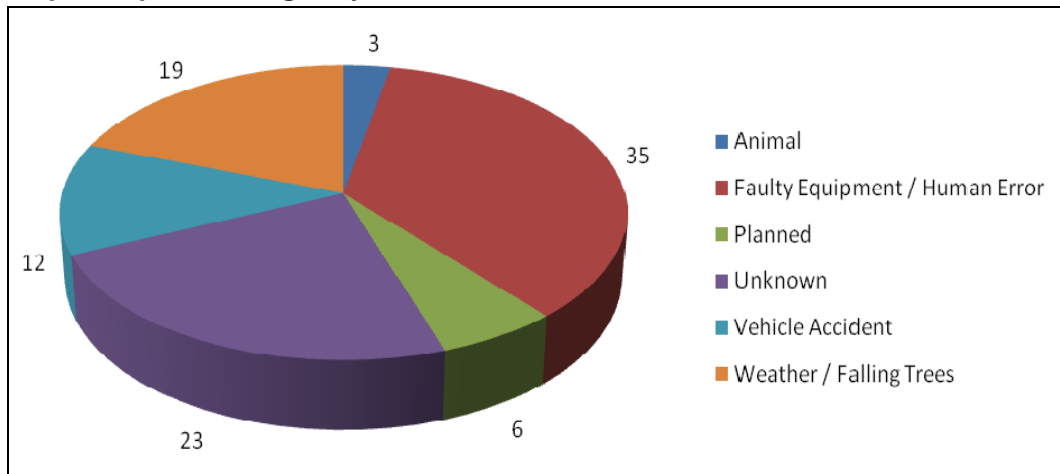
### Outage summary

Total number of people affected by outages	453,048
Total duration of outages	4,748 minutes (nearly 80 hours)
Total number of outages	98
Average number of people affected per outage	8,548
Average duration of outage	216 minutes

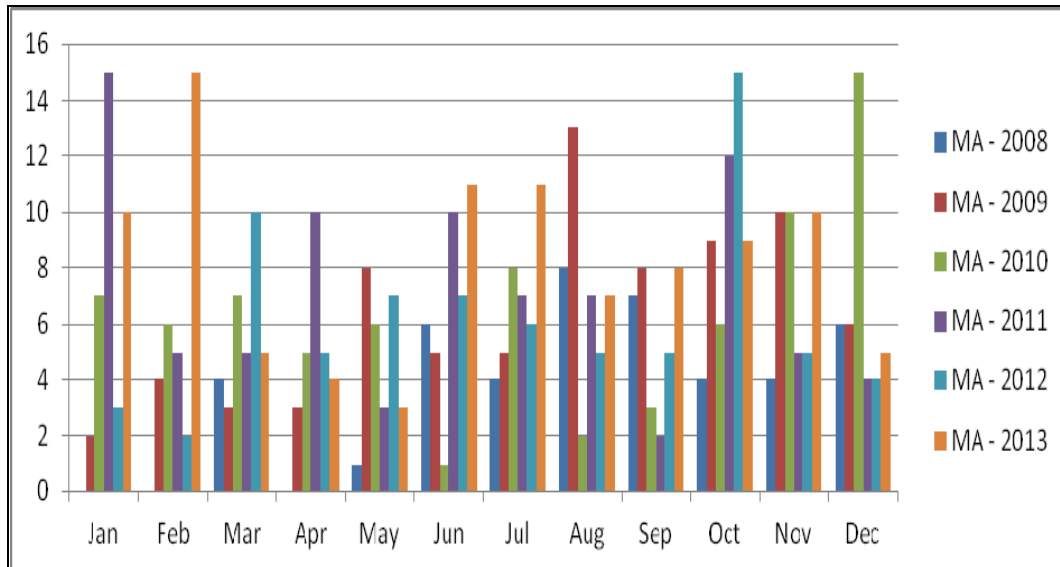
*Note: Total number of people affected (and average) based on 46 (47%) of the total reported outages. Total duration of outages (and average) based on 17 (17%) of the total reported outages.*

**Outage fact:** On August 10, Weston customers were left in the dark after a car flew through a telephone pole, caught fire, and careened about 40 feet into the woods, taking down a mess of wires and cutting power to 84. The utility then had to cut power to 820 customers to make it safe for first responders.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

# Michigan

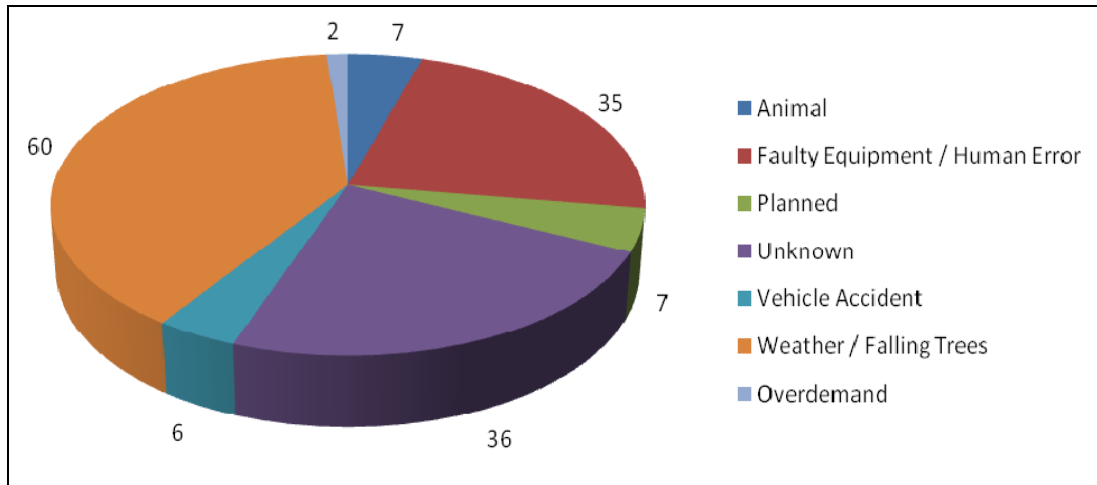
## Outage summary

Total number of people affected by outages	1,548,033
Total duration of outages	4,352 minutes (over 3 days)
Total number of outages	153
Average number of people affected per outage	13,946
Average duration of outage	256 minutes (over 4 hours)

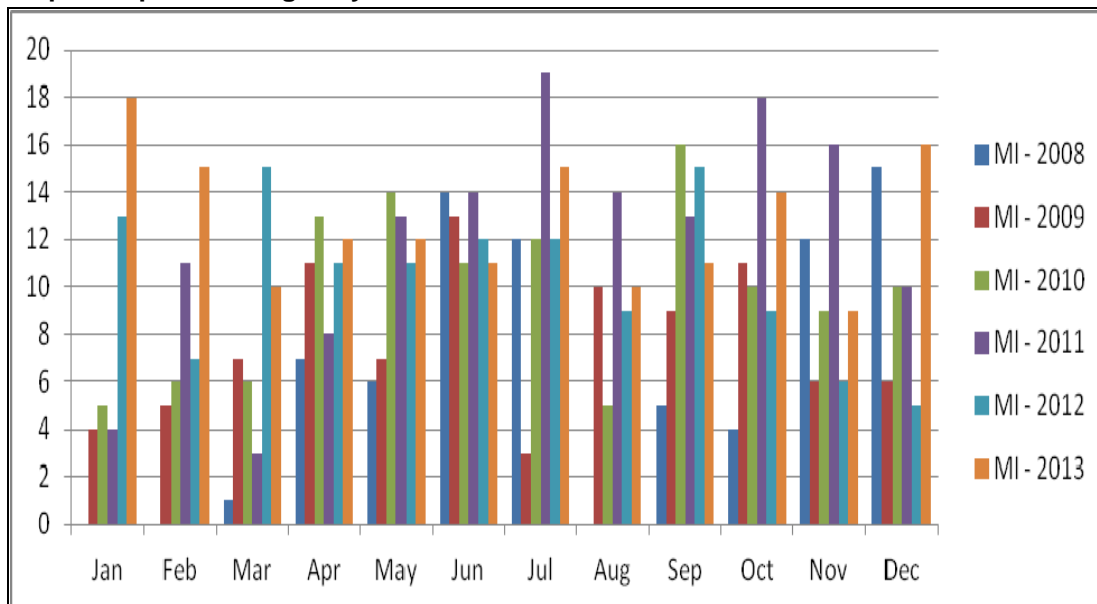
Note: Total number of people affected (and average) based on 85 (56%) of the total reported outages. Total duration of outages (and average) based on 15 (10%) of the total reported outages.

**Outage fact:** In late December, a major ice storm ravaged the state, leaving tens of thousands without power. Some had no electricity for more than a week, including on Christmas Day.

## Reported power outages by cause



## Reported power outages by month



Note: Data collection began February 16, 2008.

## Minnesota

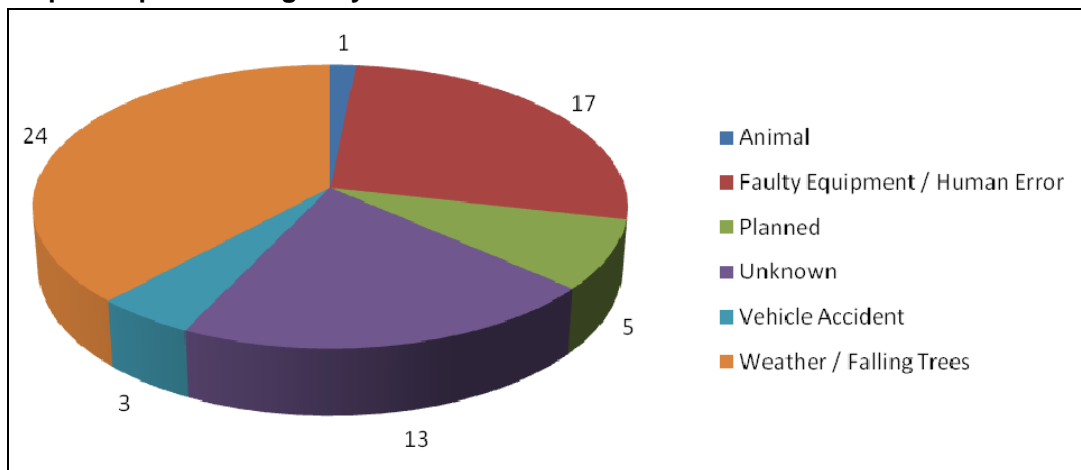
### Outage summary

Total number of people affected by outages	436,020
Total duration of outages	2,635 minutes (nearly 44 hours)
Total number of outages	63
Average number of people affected per outage	11,474
Average duration of outage	203 minutes (over 3 hours)

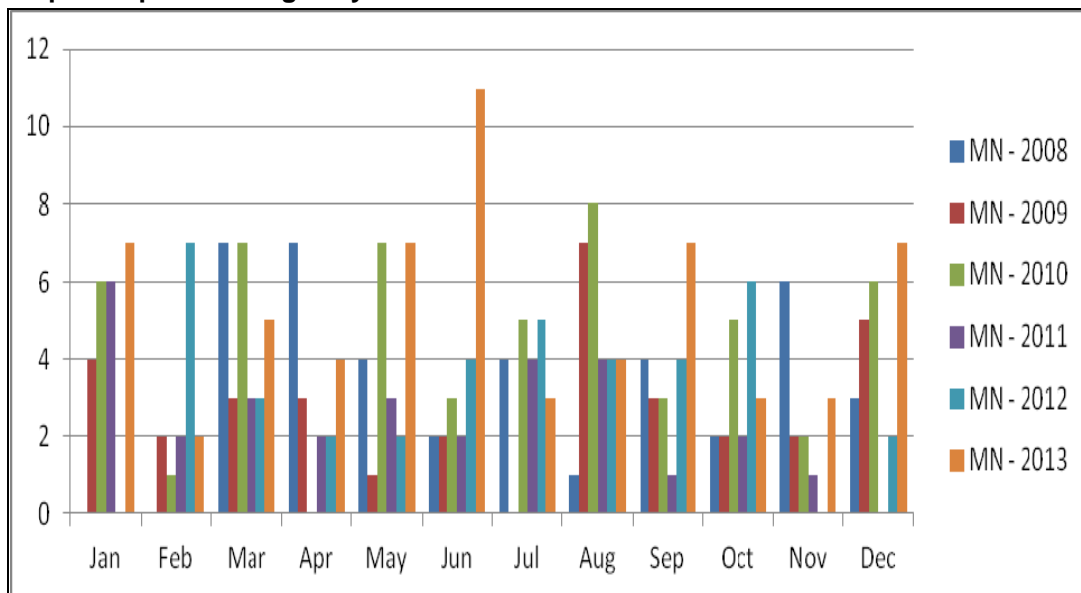
*Note: Total number of people affected (and average) based on 34 (54%) of the total reported outages. Total duration of outages (and average) based on 11 (17%) of the total reported outages.*

**Outage fact:** On Sept. 17, a lightning strike in Minneapolis caused an outage that took down an air travel system, disrupting air travelers throughout the U.S. as computerized reservations systems for several carriers went offline.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*



# Mississippi

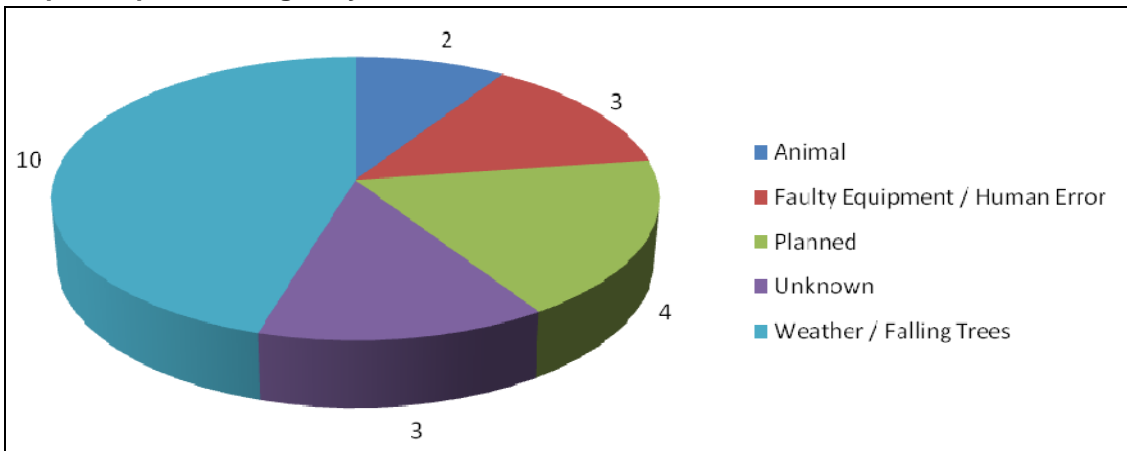
## Outage summary

Total number of people affected by outages	139,906
Total duration of outages	810 minutes (13 ½ hours)
Total number of outages	22
Average number of people affected per outage	13,991
Average duration of outage	135 minutes

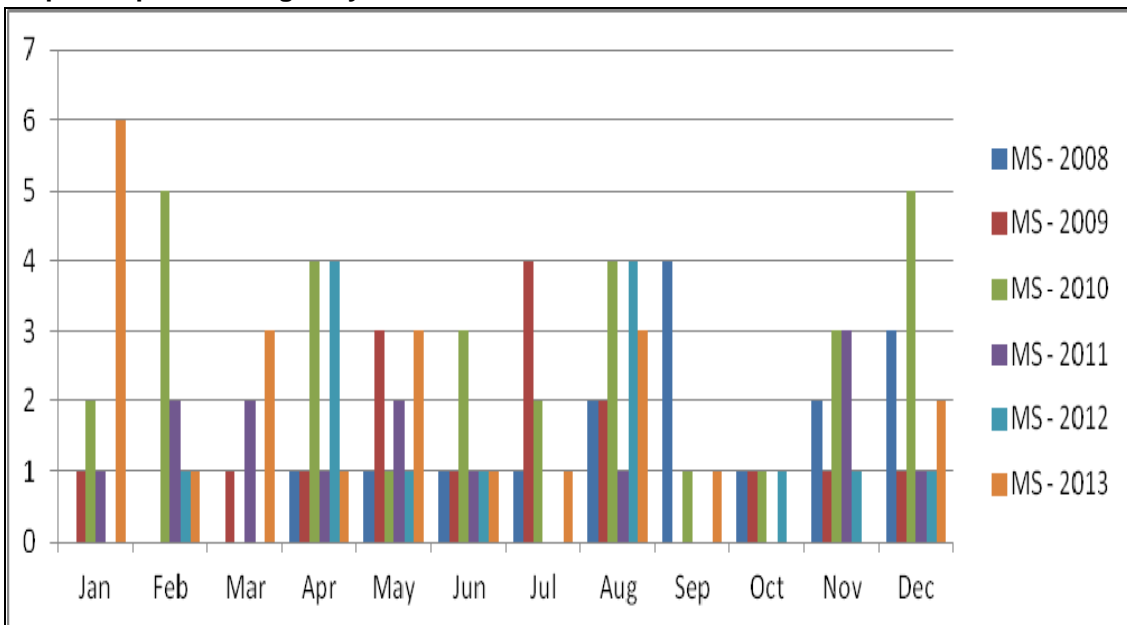
Note: Total number of people affected (and average) based on 10 (45%) of the total reported outages. Total duration of outages (and average) based on 4 (18%) of the total reported outages.

**Outage fact:** On March 18, powerful winds and massive hail cut power to 98,000 Jackson customers, busting car windows and pelting homes and businesses. Some hail was as large as baseballs.

## Reported power outages by cause



## Reported power outages by month



Note: Data collection began February 16, 2008.

## Missouri

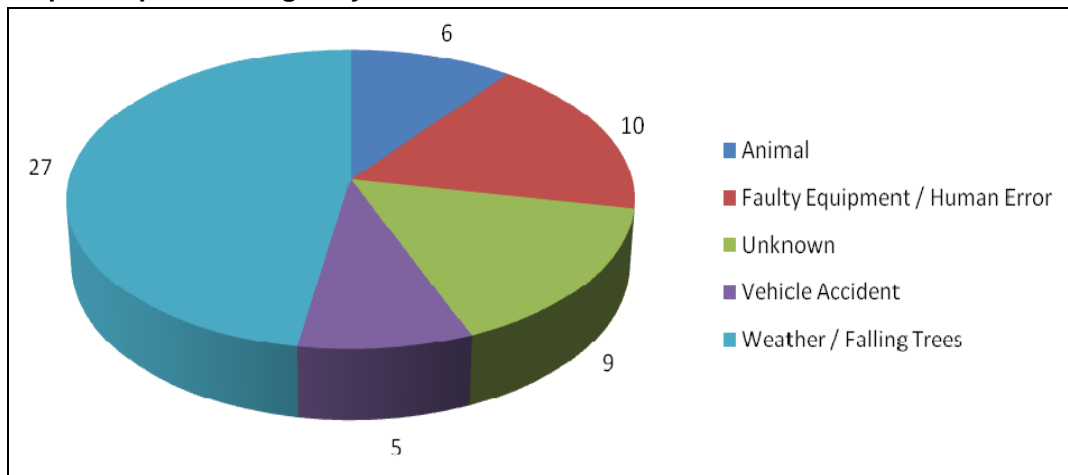
### Outage summary

Total number of people affected by outages	291,397
Total duration of outages	899 minutes (15 hours)
Total number of outages	57
Average number of people affected per outage	11,208
Average duration of outage	56 minutes

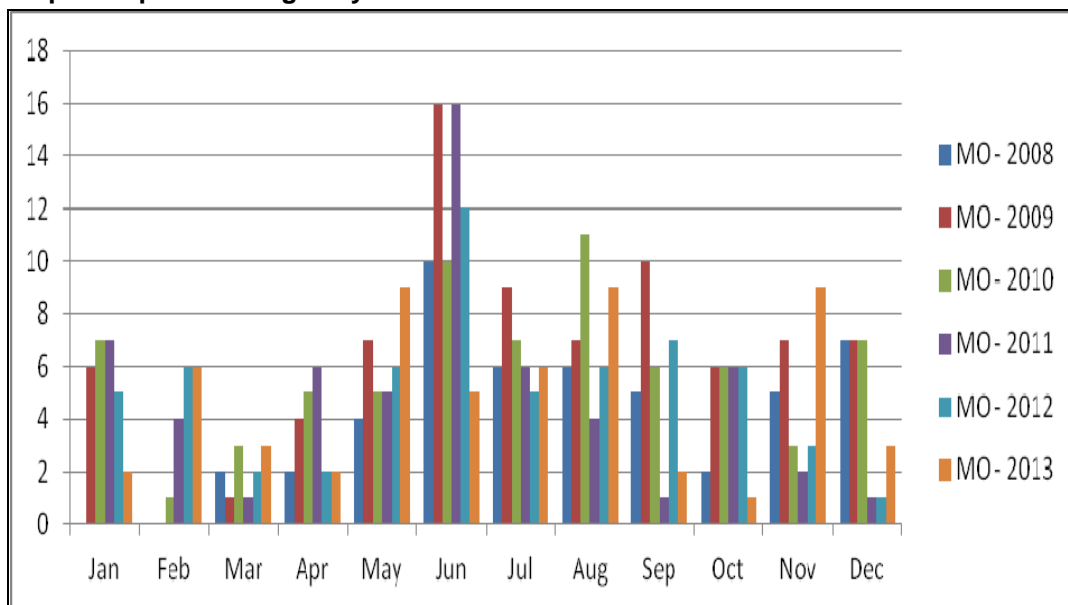
*Note: Total number of people affected (and average) based on 23 (40%) of the total reported outages. Total duration of outages (and average) based on 10 (18%) of the total reported outages.*

**Outage fact:** A squirrel caused a Thanksgiving Day outage, cutting power to 3,000 ovens in Leavenworth County. "Sorry about interrupting your cooking plans," a Westar employee tweeted.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

# Montana

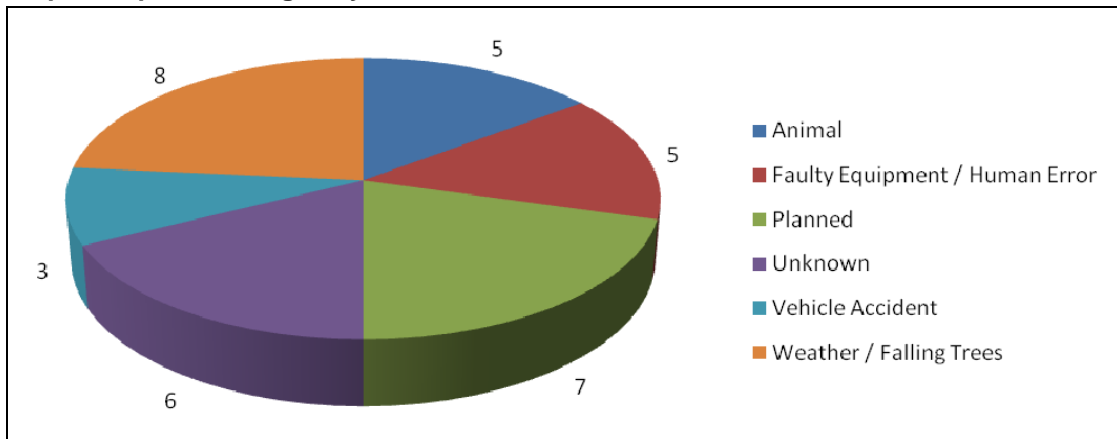
## Outage summary

Total number of people affected by outages	50,692
Total duration of outages	2,095 minutes (nearly 35 hours)
Total number of outages	34
Average number of people affected per outage	4,224
Average duration of outage	150 minutes

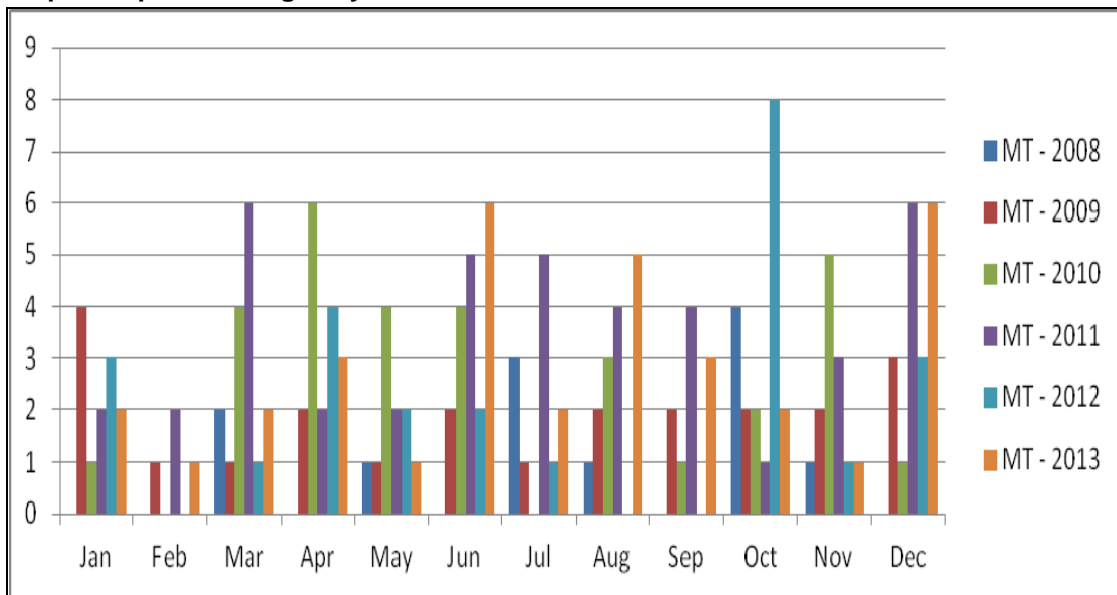
Note: Total number of people affected (and average) based on 10 (29%) of the total reported outages. Total duration of outages (and average) based on 10 (29%) of the total reported outages.

**Outage fact:** On June 15, a defective battery and relay switch resulted in an outage for 10,000 Lancaster residents, marking the second blackout in three days and the third in three months in the area.

## Reported power outages by cause



## Reported power outages by month



Note: Data collection began February 16, 2008.

## Nebraska

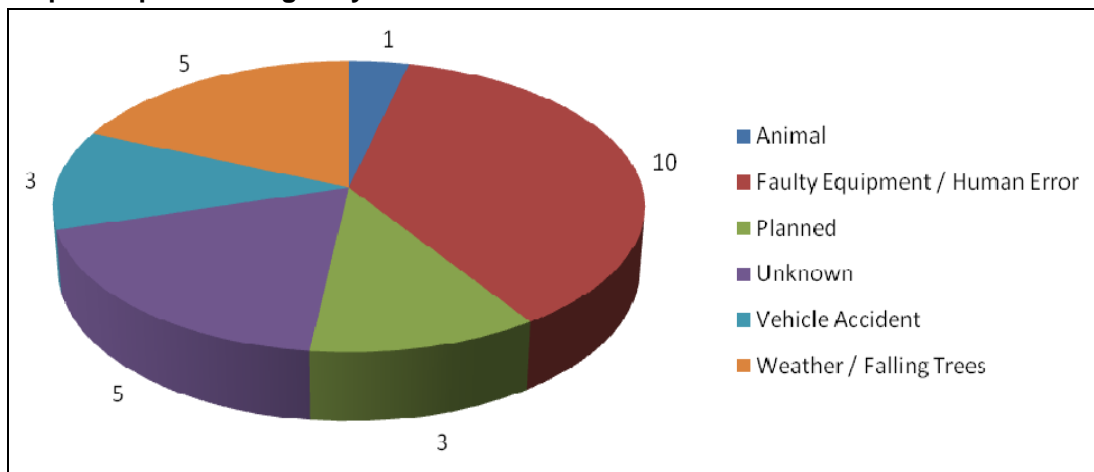
### Outage summary

Total number of people affected by outages	90,057
Total duration of outages	750 minutes (12 ½ hours)
Total number of outages	27
Average number of people affected per outage	5,003
Average duration of outage	150 minutes

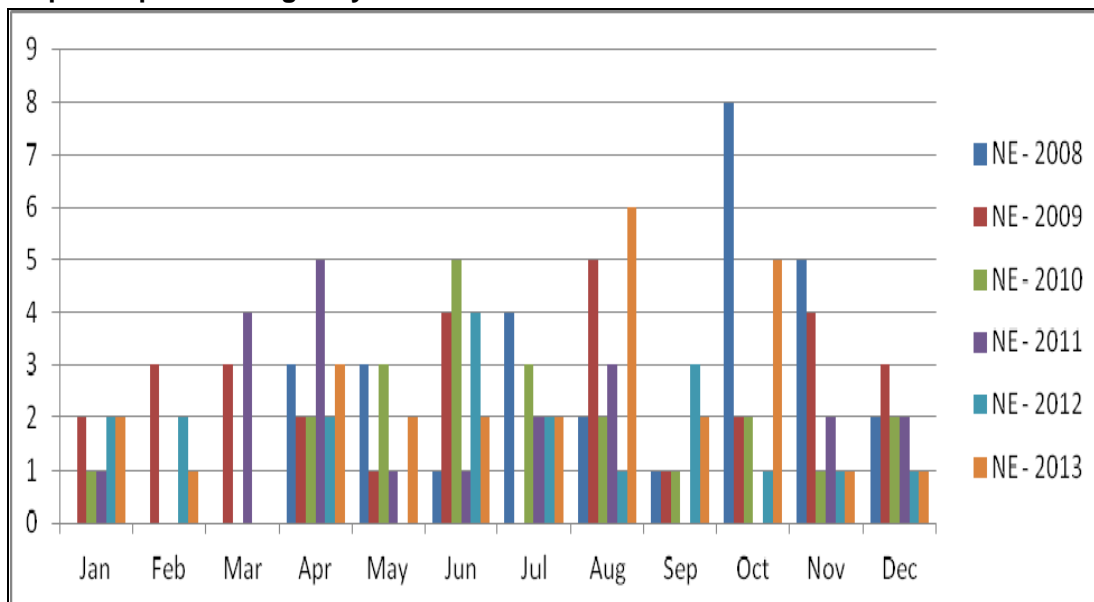
*Note: Total number of people affected (and average) based on 16 (59%) of the total reported outages. Total duration of outages (and average) based on 4 (15%) of the total reported outages.*

**Outage fact:** On Oct. 22, a work crew hit an underground power line in Lincoln, causing a blackout for 2,000 people. One man suffered an electric shock from the power line, which had between 7,000 to 12,000 volts of electricity running through it.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

## Nevada

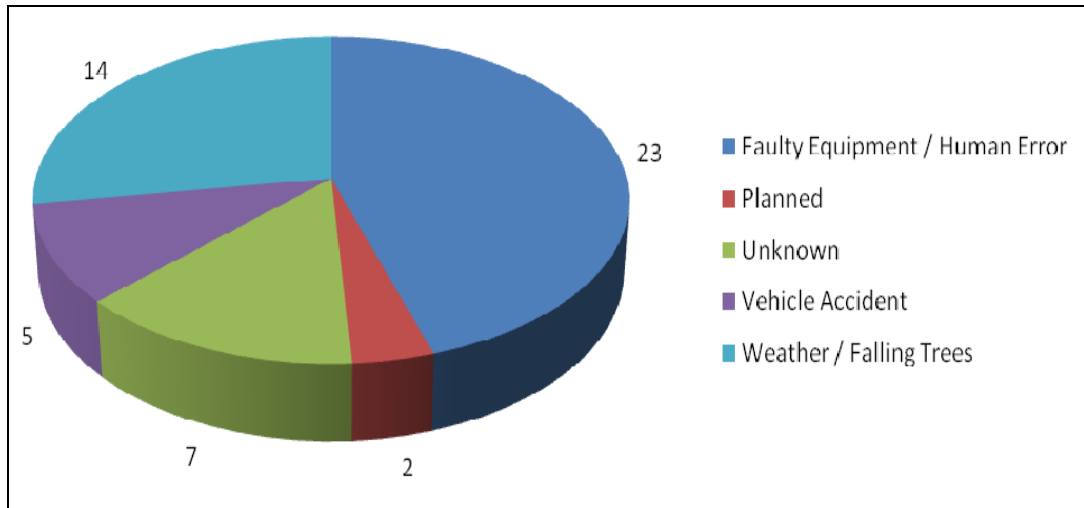
### Outage summary

Total number of people affected by outages	108,782
Total duration of outages	2,785 minutes (more than 46 hours)
Total number of outages	51
Average number of people affected per outage	2,863
Average duration of outage	199 minutes (over 3 hours)

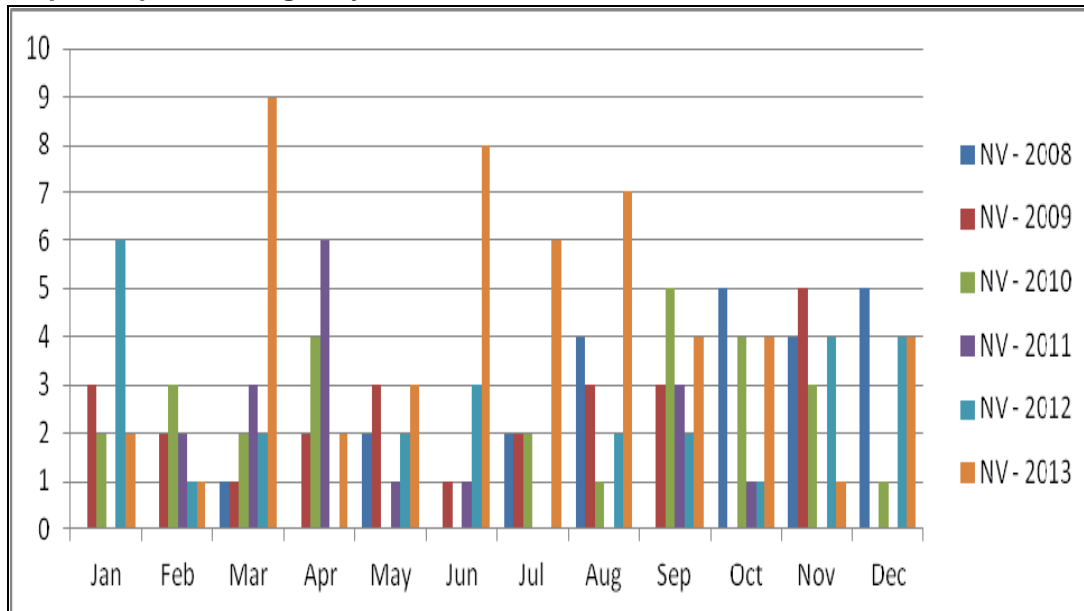
*Note: Total number of people affected (and average) based on 29 (57%) of the total reported outages. Total duration of outages (and average) based on 9 (18%) of the total reported outages.*

**Outage fact:** On June 8, a canopy blew into a power line, causing it to arc and cutting power to 3,200 in Carson City.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

## New Hampshire

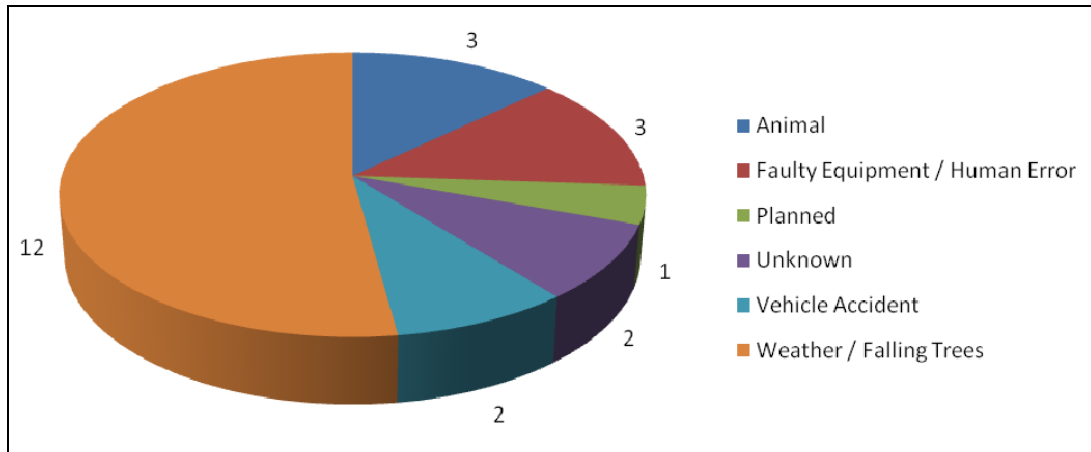
### Outage summary

Total number of people affected by outages	70,834
Total duration of outages	750 minutes (12 ½ hours)
Total number of outages	23
Average number of people affected per outage	4,167
Average duration of outage	250 minutes (over 4 hours)

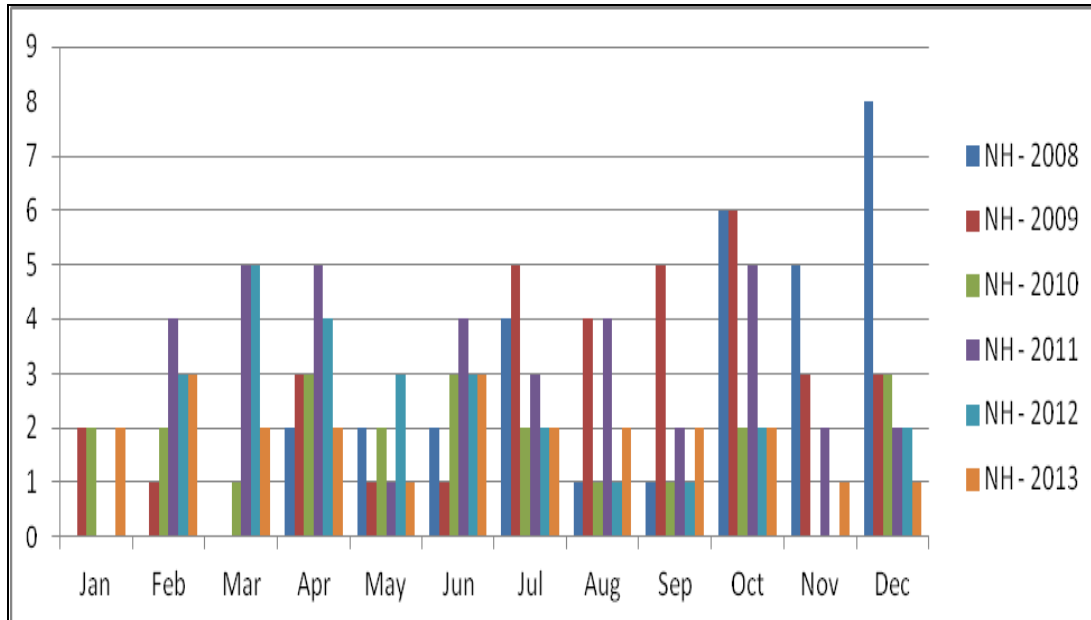
*Note: Total number of people affected (and average) based on 17 (74%) of the total reported outages. Total duration of outages (and average) based on 3 (13%) of the total reported outages.*

**Outage fact:** On June 21, a hot-air balloon crash caused nearly 1,500 to lose power in Hampstead after it collided with power lines.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

## New Jersey

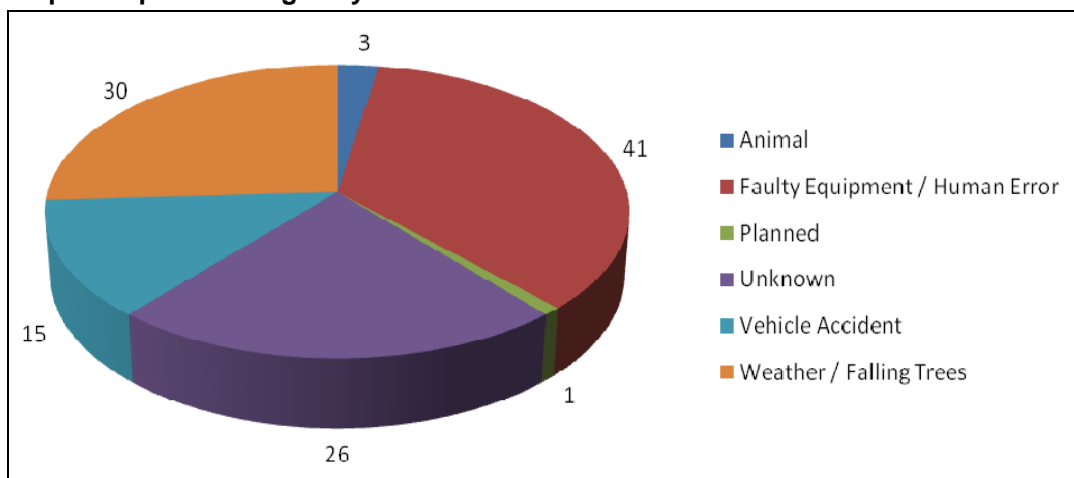
### Outage summary

Total number of people affected by outages	300,055
Total duration of outages	3,092 minutes (over 51 hours)
Total number of outages	116
Average number of people affected per outage	3,847
Average duration of outage	163 minutes (over 2.5 hours)

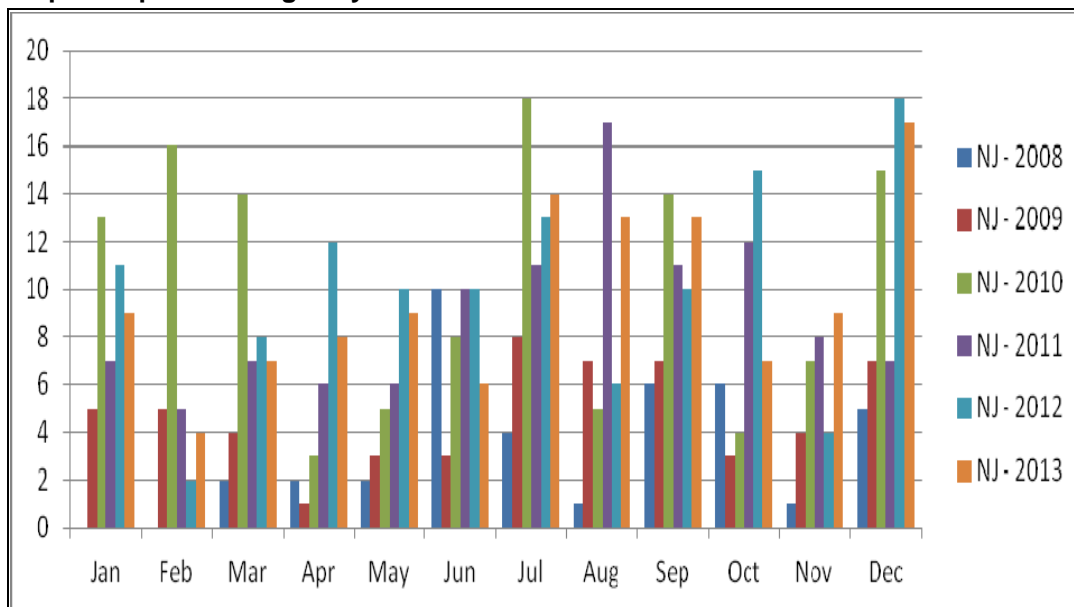
*Note: Total number of people affected (and average) based on 55 (47%) of the total reported outages. Total duration of outages (and average) based on 13 (11%) of the total reported outages.*

**Outage fact:** On Sept. 12, a blackout struck the state's data center in Cherry Hill. It came as quite a surprise to the hundreds of people who showed up at NJ DMV offices to find that there was no waiting in line — but that was because computers were down and no services were available.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

## New Mexico

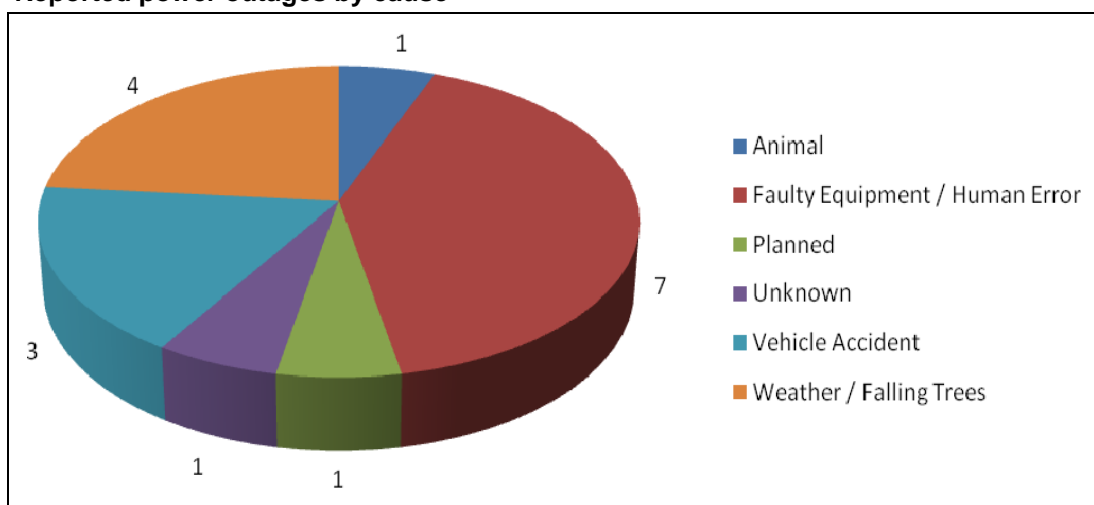
### Outage summary

Total number of people affected by outages	37,131
Total duration of outages	955 minutes (nearly 16 hours)
Total number of outages	17
Average number of people affected per outage	2,856
Average duration of outage	119 minutes

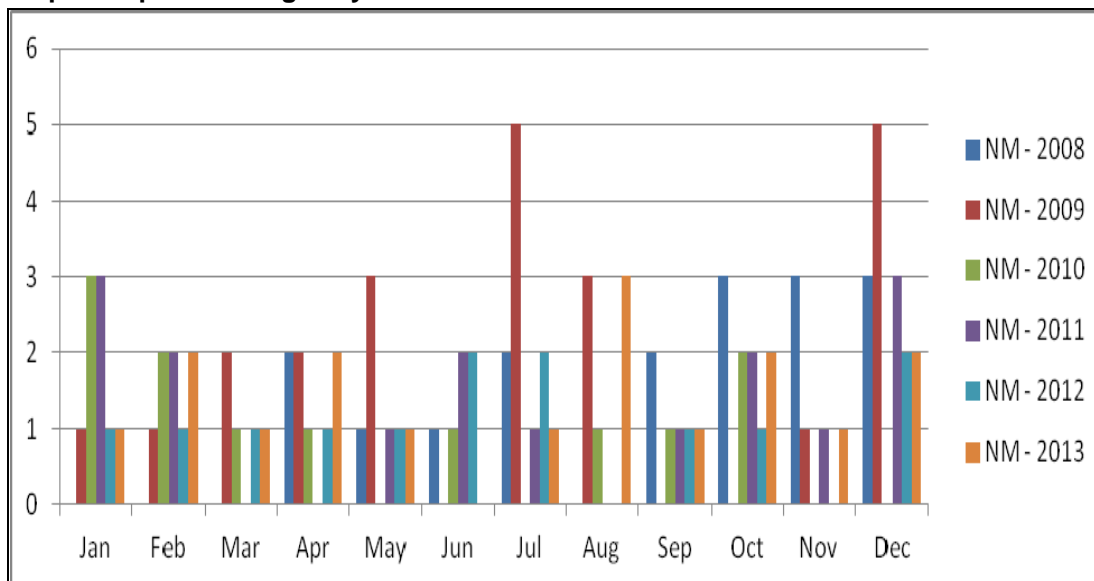
*Note: Total number of people affected (and average) based on 12 (70%) of the total reported outages. Total duration of outages (and average) based on 7 (41%) of the total reported outages.*

**Outage fact:** On Feb. 16 in Carlsbad, an outage opened the door for robbers to get easy money from the local Taco Bell and Pizza Inn. Because of the blackout, the safe couldn't be opened, but the suspects got away with cash from the registers.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*



## New York

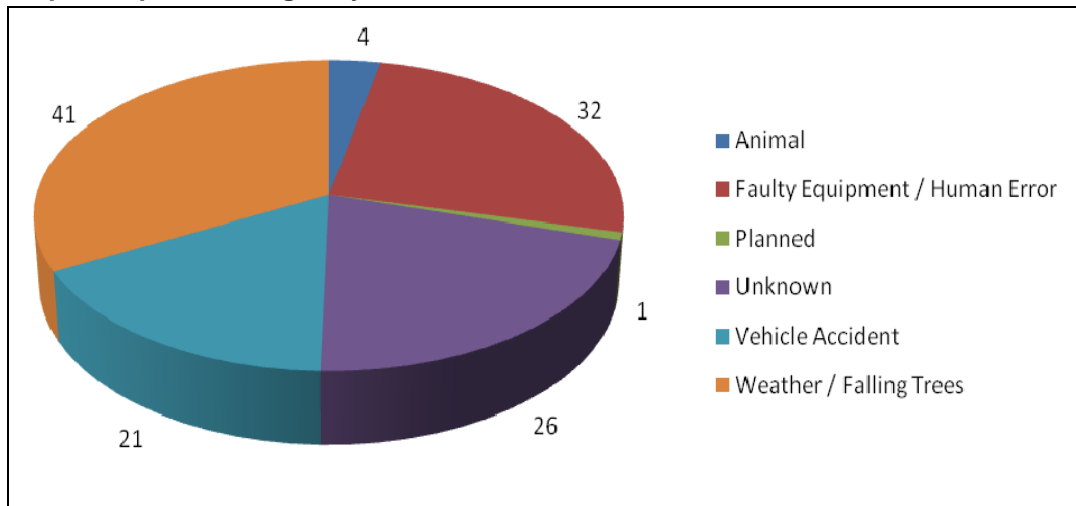
### Outage summary

Total number of people affected by outages	408,541
Total duration of outages	5,250 minutes (over 3 ½ days)
Total number of outages	125
Average number of people affected per outage	5,171
Average duration of outage	375 minutes (more than 6 hours)

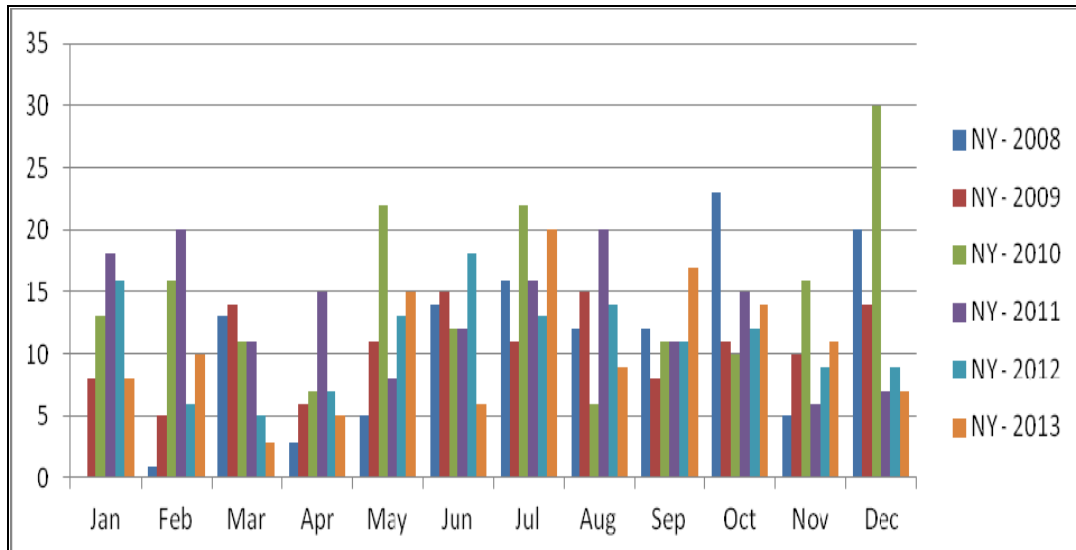
*Note: Total number of people affected (and average) based on 61 (49%) of the total reported outages. Total duration of outages (and average) based on 12 (10%) of the total reported outages.*

**Outage fact:** On May 13 in Brooklyn, an underground cable gave out, causing a chain reaction. Several manholes exploded, setting cars on fire and sending people running for their safety. Overhead wires also caught fire.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

## North Carolina

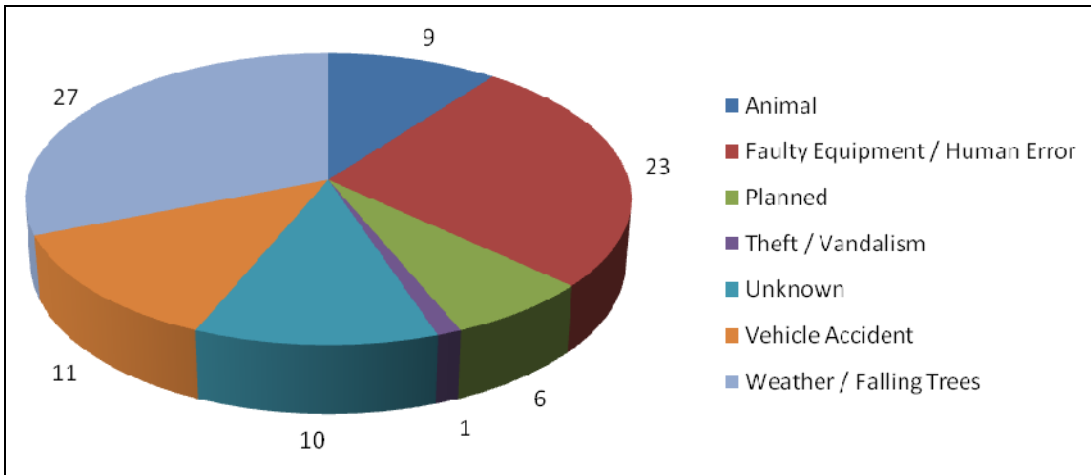
### Outage summary

Total number of people affected by outages	250,156
Total duration of outages	1,822 minutes (over 30 hours)
Total number of outages	87
Average number of people affected per outage	5,212
Average duration of outage	130 minutes (over 2 hours)

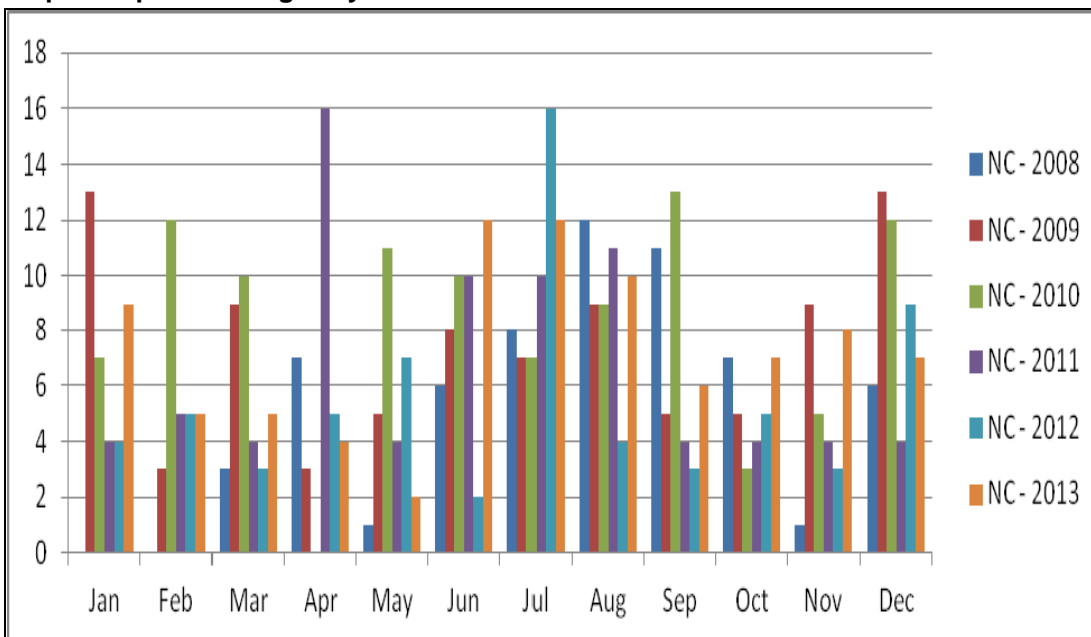
*Note: Total number of people affected (and average) based on 41 (47%) of the total reported outages. Total duration of outages (and average) based on 11 (13%) of the total reported outages.*

**Outage fact:** On July 9, a corn snake slithered in between an insulator and actually worked as a conductor, causing the insulator to blow and knocking out power to 1,200 in Greenville.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

## North Dakota

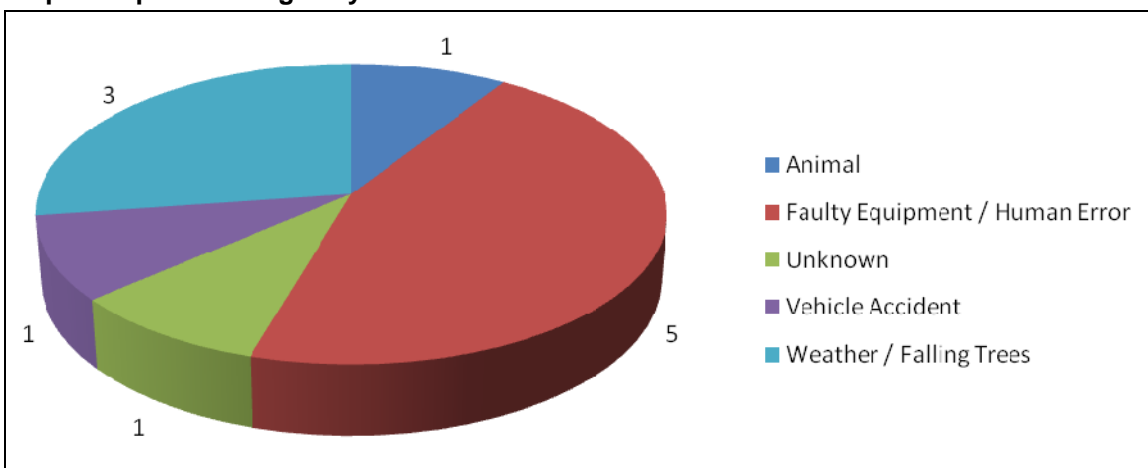
### Outage summary

Total number of people affected by outages	28,850
Total duration of outages	900 minutes (15 hours)
Total number of outages	11
Average number of people affected per outage	3,600
Average duration of outage	129 minutes

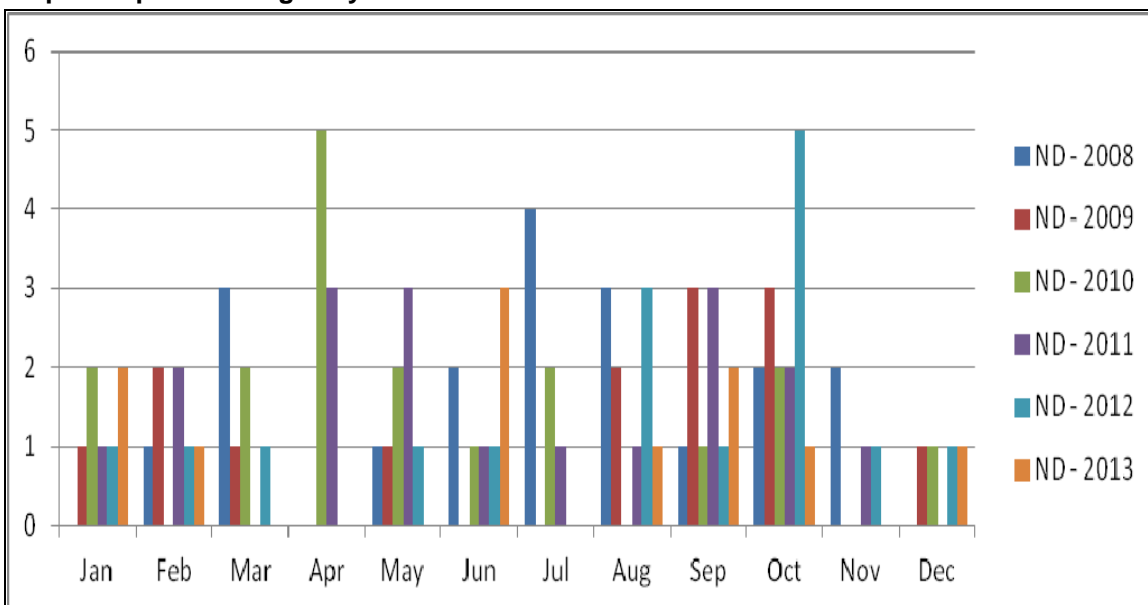
*Note: Total number of people affected (and average) based on 8 (73%) of the total reported outages. Total duration of outages (and average) based on 6 (55%) of the total reported outages.*

**Outage fact:** On Jan. 10, a faulty cable cut power midway through a Bismarck-Mandan girls' basketball game and Bismarck-Mandan Chamber of Commerce dinner, both held at the Civic Center.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

# Ohio

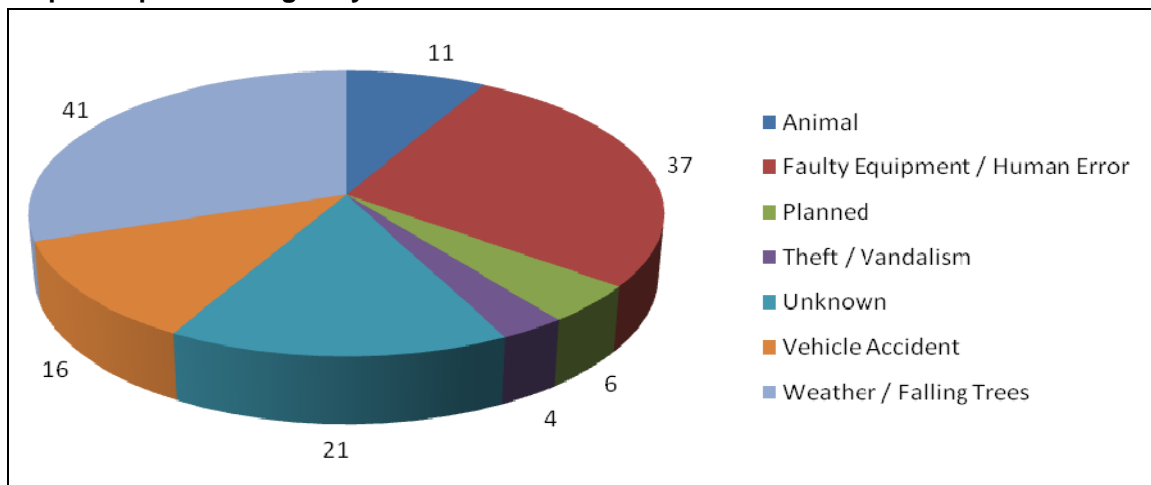
## Outage summary

Total number of people affected by outages	531,190
Total duration of outages	2,410 minutes (over 40 hours)
Total number of outages	136
Average number of people affected per outage	6,036
Average duration of outage	121 minutes

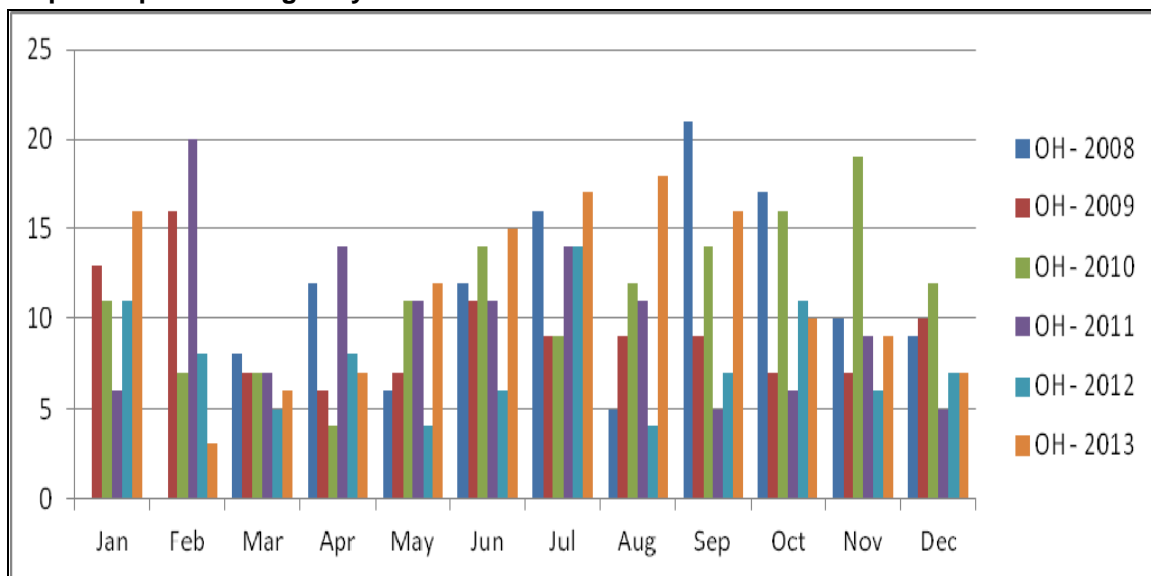
*Note: Total number of people affected (and average) based on 68 (50%) of the total reported outages. Total duration of outages (and average) based on 16 (12%) of the total reported outages.*

**Outage fact:** On June 26, a cable failure caused a string of outages that affected 21 buildings at Ohio State, including Baker Hall East and West, Hale Hall, the Ohio Union, Kennedy Commons and Park-Stradley Hall.

## Reported power outages by cause



## Reported power outages by month



*Note: Data collection began February 16, 2008*

# Oklahoma

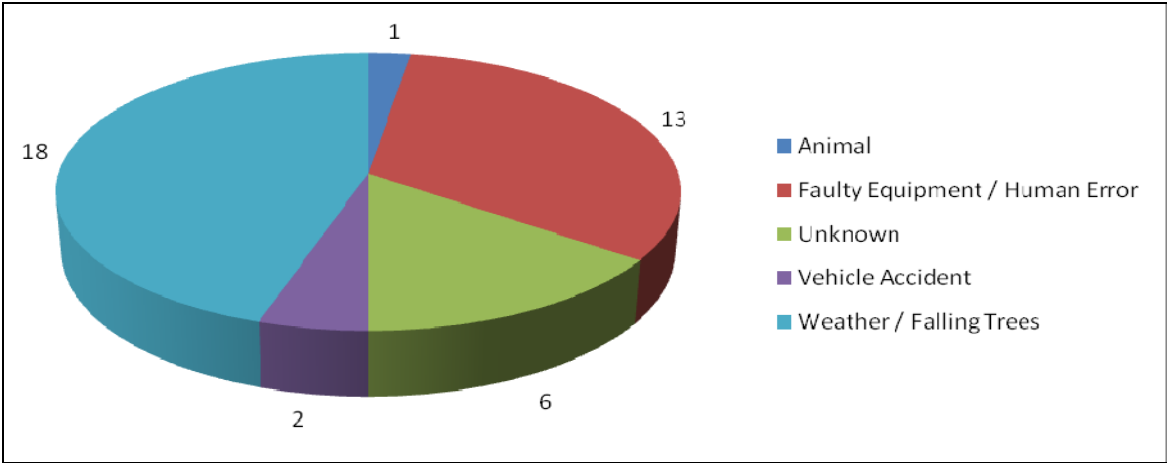
## Outage summary

Total number of people affected by outages	225,489
Total duration of outages	530 minutes (nearly 9 hours)
Total number of outages	40
Average number of people affected per outage	7,274
Average duration of outage	106 minutes

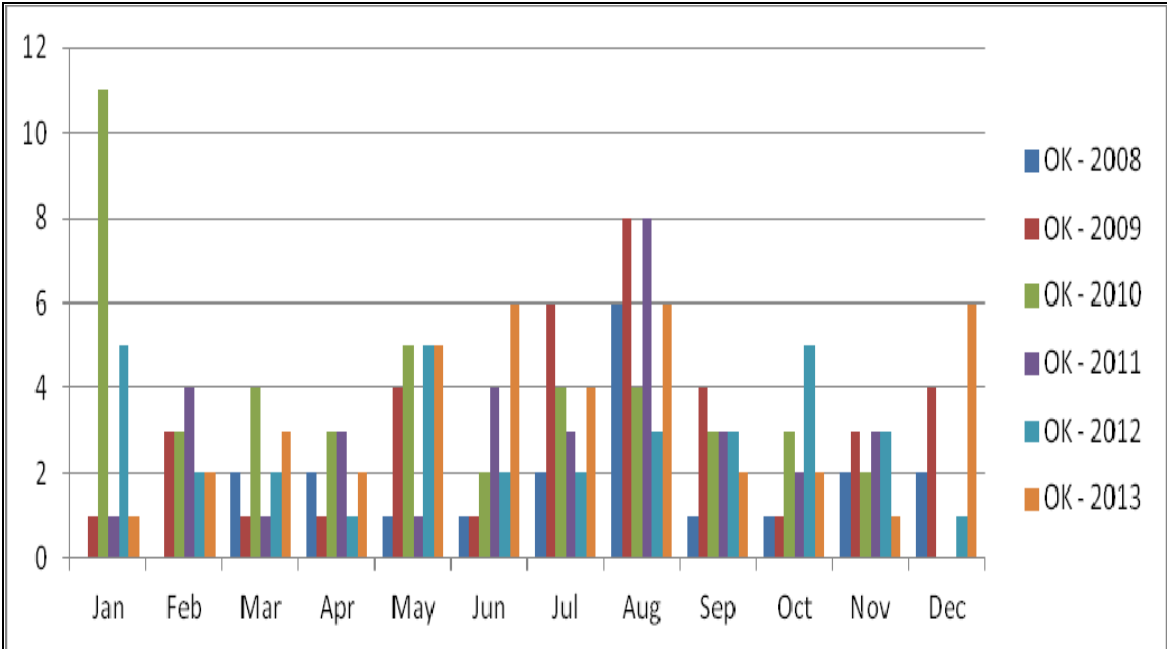
Note: Total number of people affected (and average) based on 30 (75%) of the total reported outages. Total duration of outages (and average) based on 5 (13%) of the total reported outages.

**Outage fact:** On May 18, power was cut in Enid due to a heat burst, which is created by winds in excess of 70 mph.

## Reported power outages by cause



## Reported power outages by month



Note: Data collection began February 16, 2008.

## Oregon

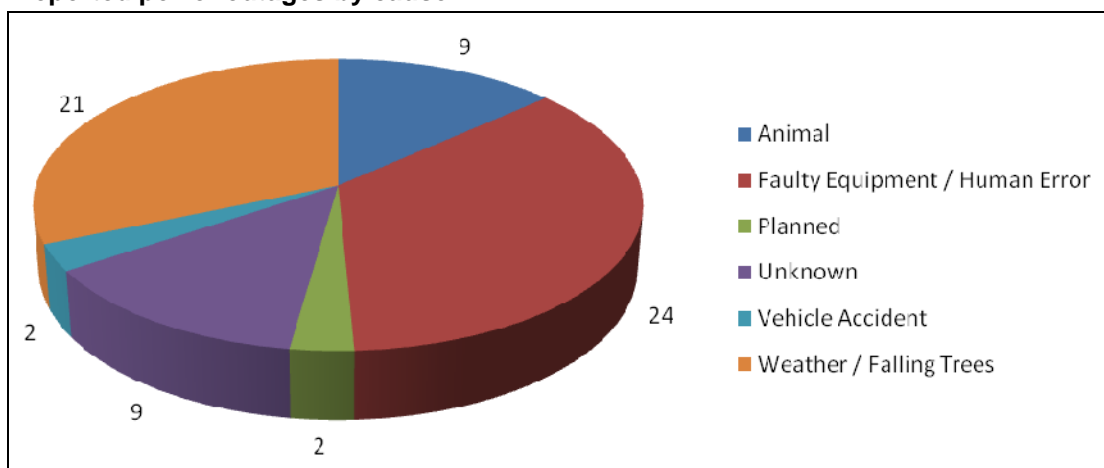
### Outage summary

Total number of people affected by outages	255,266
Total duration of outages	3,465 minutes (almost 58 hours)
Total number of outages	67
Average number of people affected per outage	4,641
Average duration of outage	217 minutes (over 4 ½ hours)

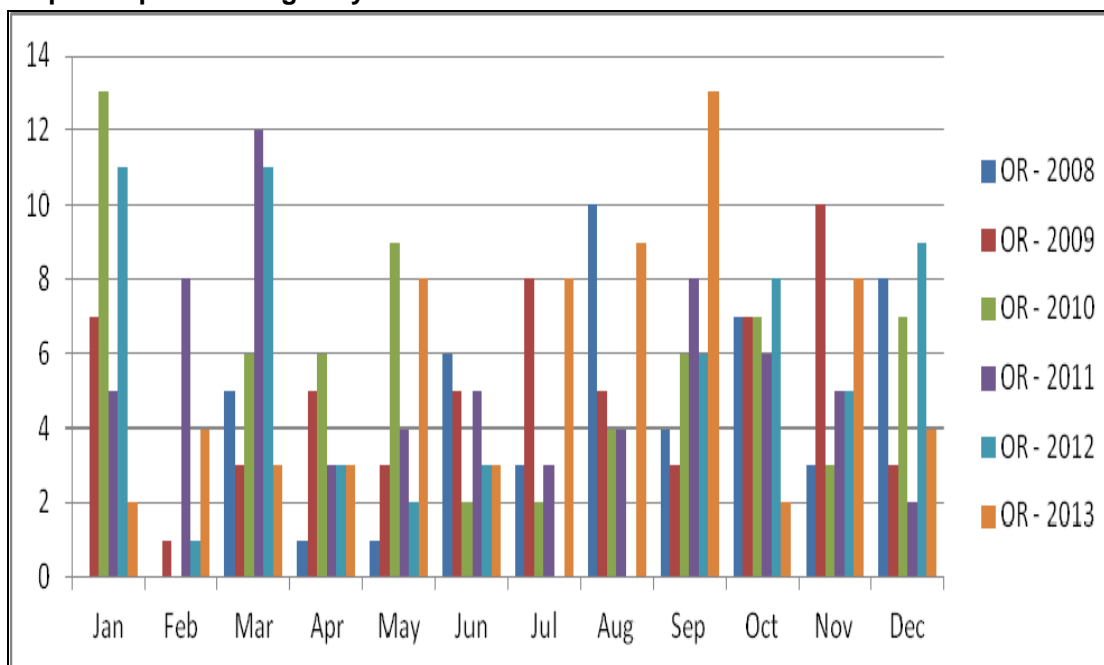
*Note: Total number of people affected (and average) based on 42 (63%) of the total reported outages. Total duration of outages (and average) based on 12 (18%) of the total reported outages.*

**Outage fact:** On August 6, a busy beaver gnawed down a tree, causing it to fall through power lines and leaving 100 customers in Baker City without electricity.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

## Pennsylvania

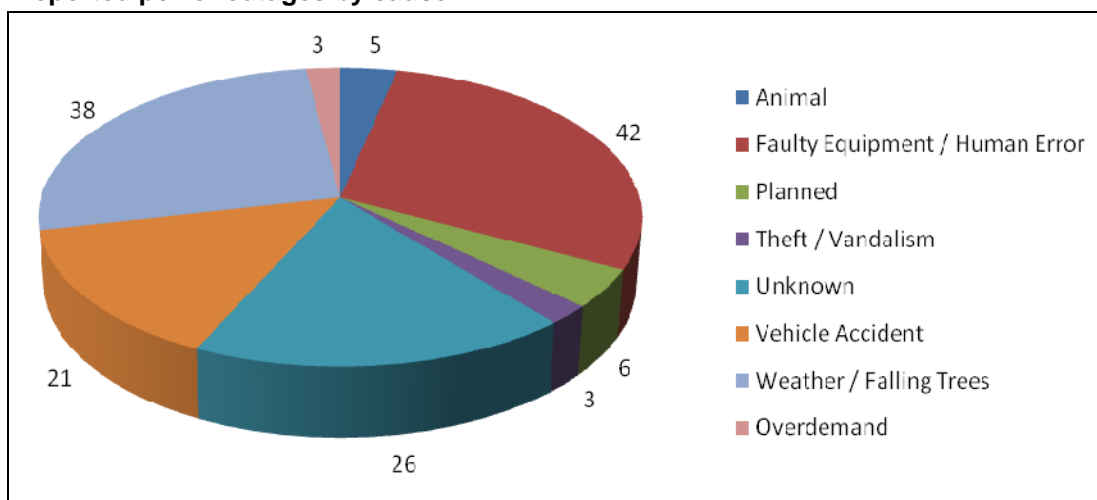
### Outage summary

Total number of people affected by outages	305,839
Total duration of outages	7,082 minutes (nearly 5 days)
Total number of outages	144
Average number of people affected per outage	3,153
Average duration of outage	221 minutes (over 3 ½ hours)

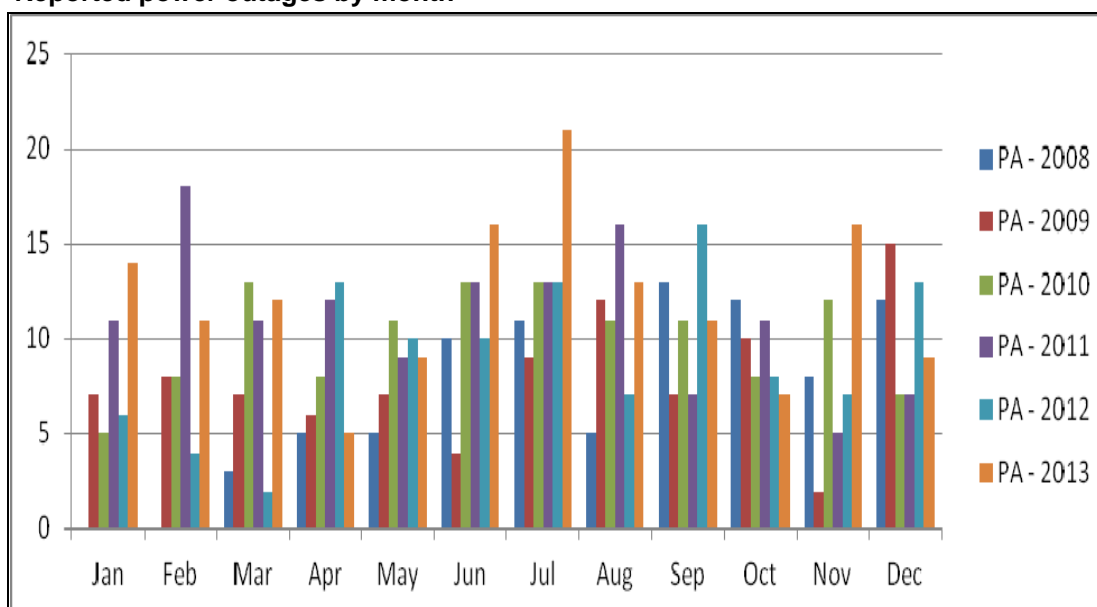
*Note: Total number of people affected (and average) based on 80 (56%) of the total reported outages. Total duration of outages (and average) based on 20 (14%) of the total reported outages.*

**Outage fact:** On Jan. 20, a cat shorted out a Philadelphia transformer. The four-legged feline caused power to go out in all three buildings of the West Park Housing Complex.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

## Rhode Island

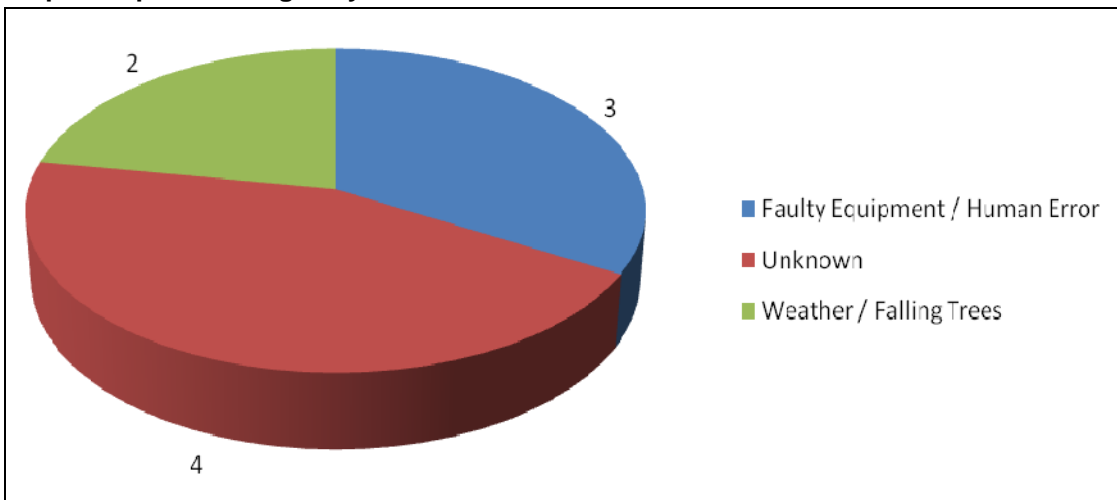
### Outage summary

Total number of people affected by outages	362,300
Total duration of outages	75 minutes
Total number of outages	9
Average number of people affected per outage	90,575
Average duration of outage	38 minutes

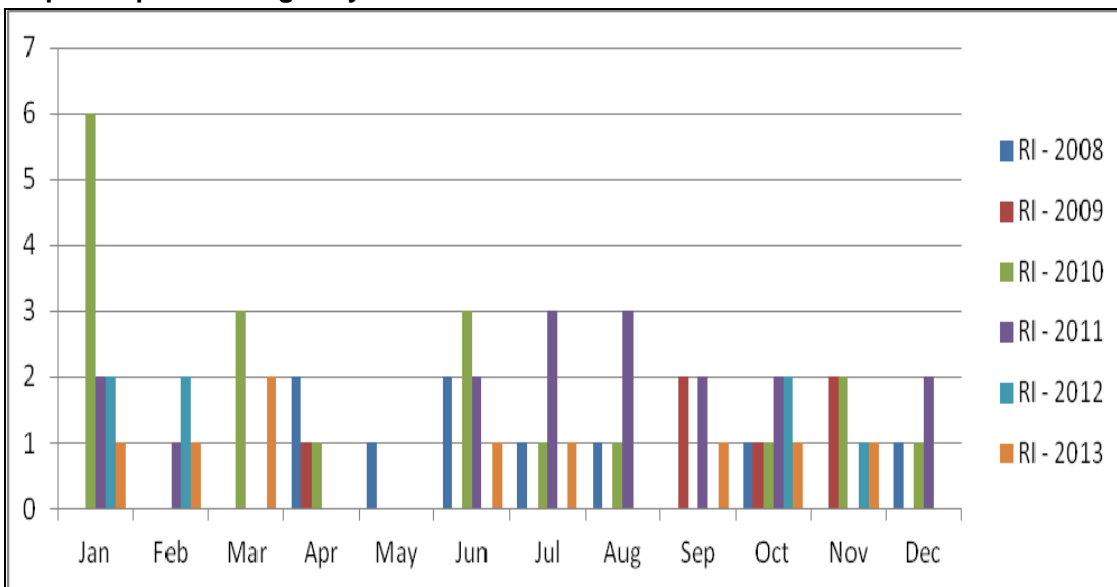
*Note: Total number of people affected (and average) based on 4 (44%) of the total reported outages. Total duration of outages (and average) based on 2 (22%) of the total reported outages.*

**Outage fact:** On March 10, a Mylar balloon came in contact with electricity lines in Woonsocket, blowing a transformer and cutting power to 3,700 people.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*



## South Carolina

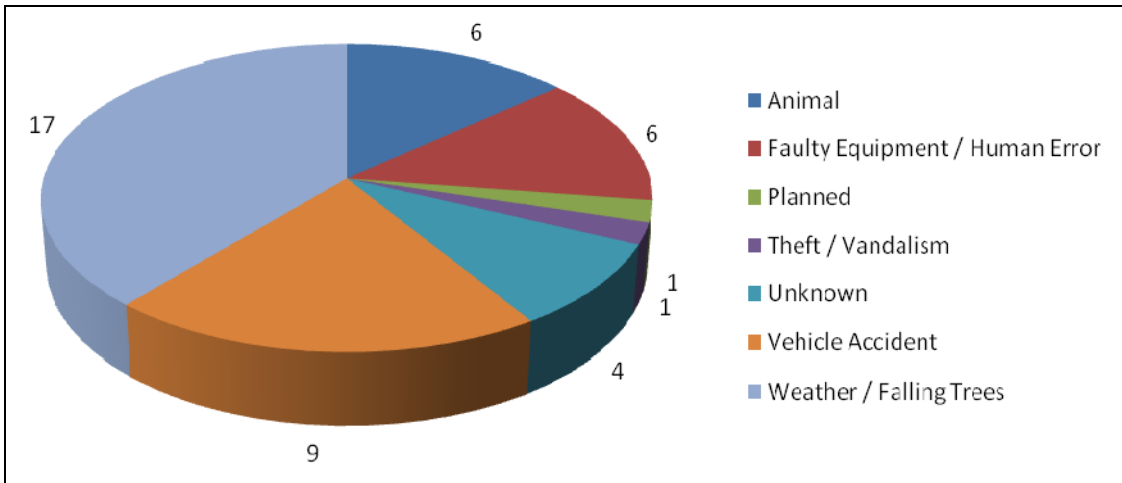
### Outage summary

Total number of people affected by outages	121,484
Total duration of outages	415 minutes (almost 7 hours)
Total number of outages	44
Average number of people affected per outage	4,049
Average duration of outage	138 minutes

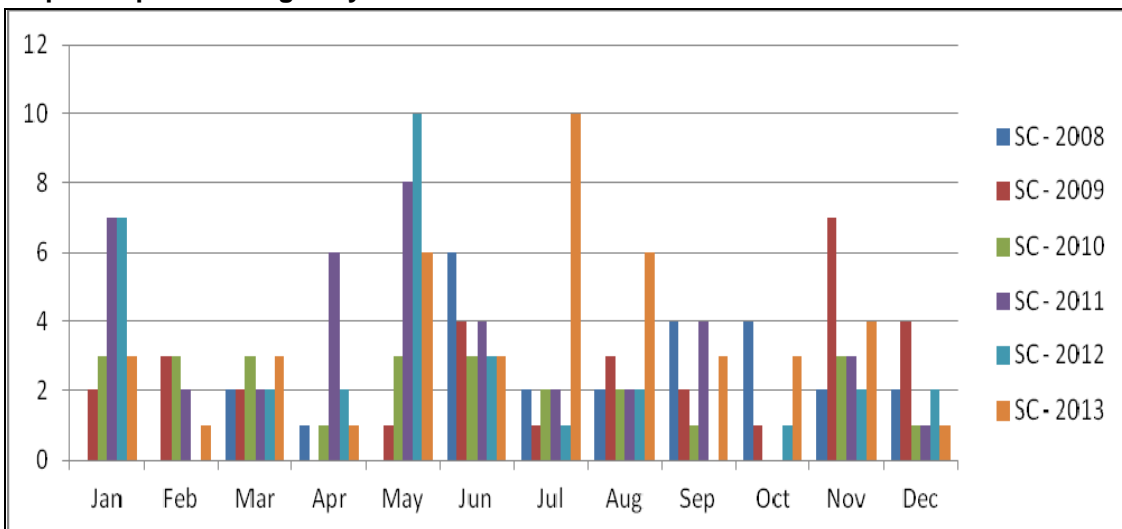
*Note: Total number of people affected (and average) based on 26 (59%) of the total reported outages. Total duration of outages (and average) based on 3 (7%) of the total reported outages.*

**Outage fact:** On July 17, a crow flew into a Rock Hill substation, knocking out power to 2,000. It was the third animal-related outage of the summer, following a squirrel and a snake.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

## South Dakota

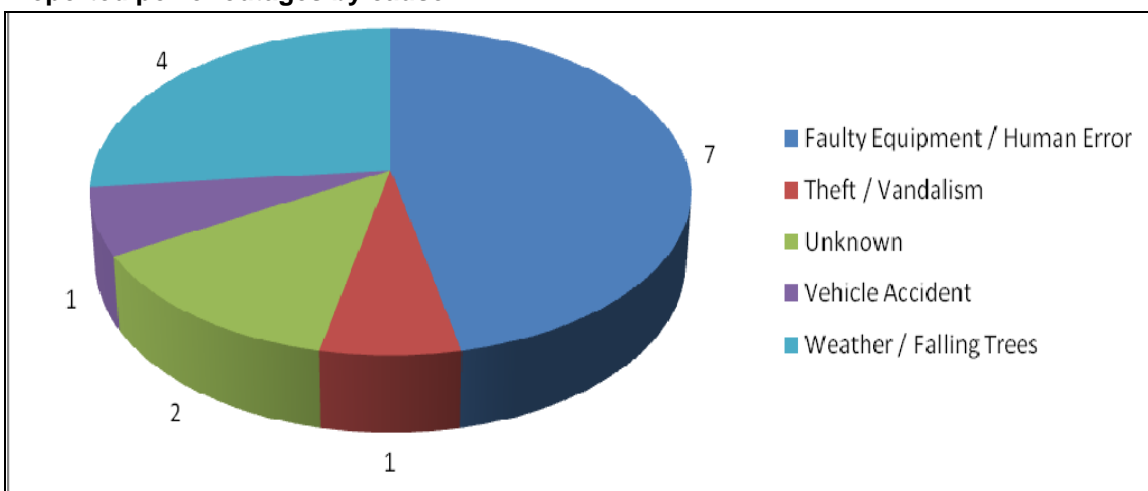
### Outage summary

Total number of people affected by outages	37,619
Total duration of outages	76 minutes
Total number of outages	15
Average number of people affected per outage	3,762
Average duration of outage	38 minutes

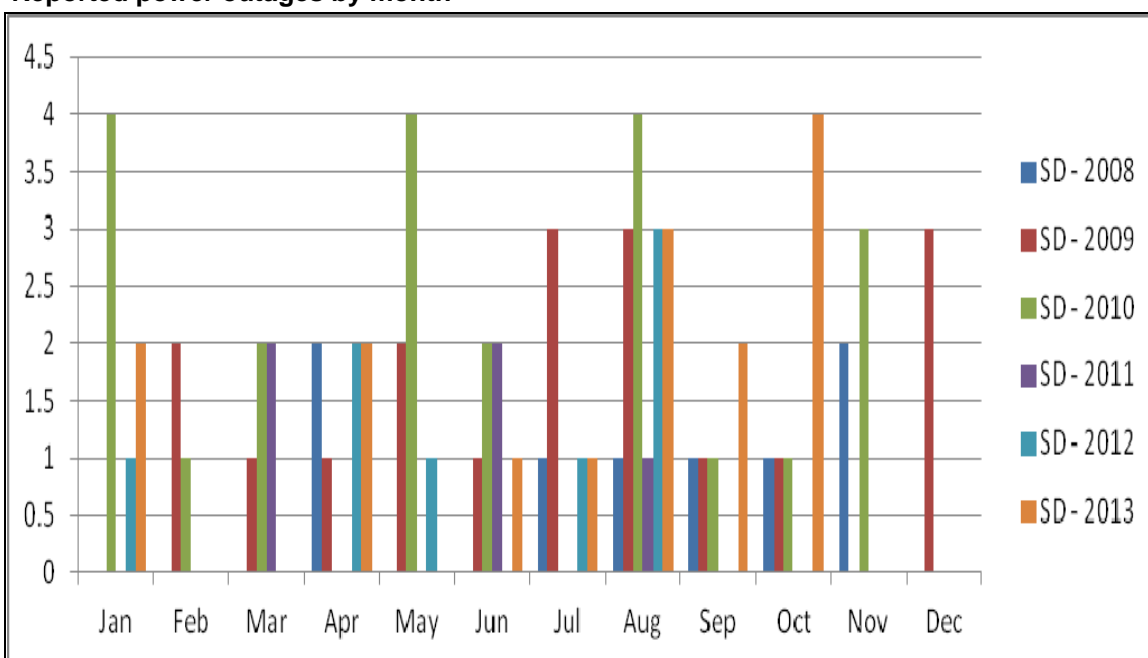
*Note: Total number of people affected (and average) based on 9 (60%) of the total reported outages. Total duration of outages (and average) based on 1 (7%) of the total reported outages.*

**Outage fact:** On Oct. 5, snow damaged transmission lines and cut power to 25,000 in Pierre. The autumn storm dumped up to 43 inches of snow in western South Dakota.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

# Tennessee

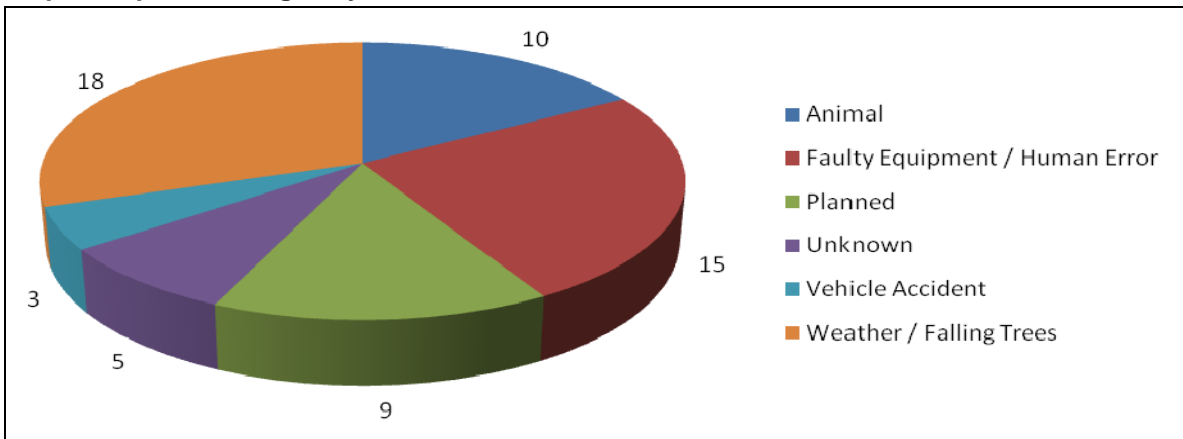
## Outage summary

Total number of people affected by outages	181,193
Total duration of outages	6,142 minutes (over 4 days)
Total number of outages	60
Average number of people affected per outage	5,033
Average duration of outage	361 minutes (over 6 hours)

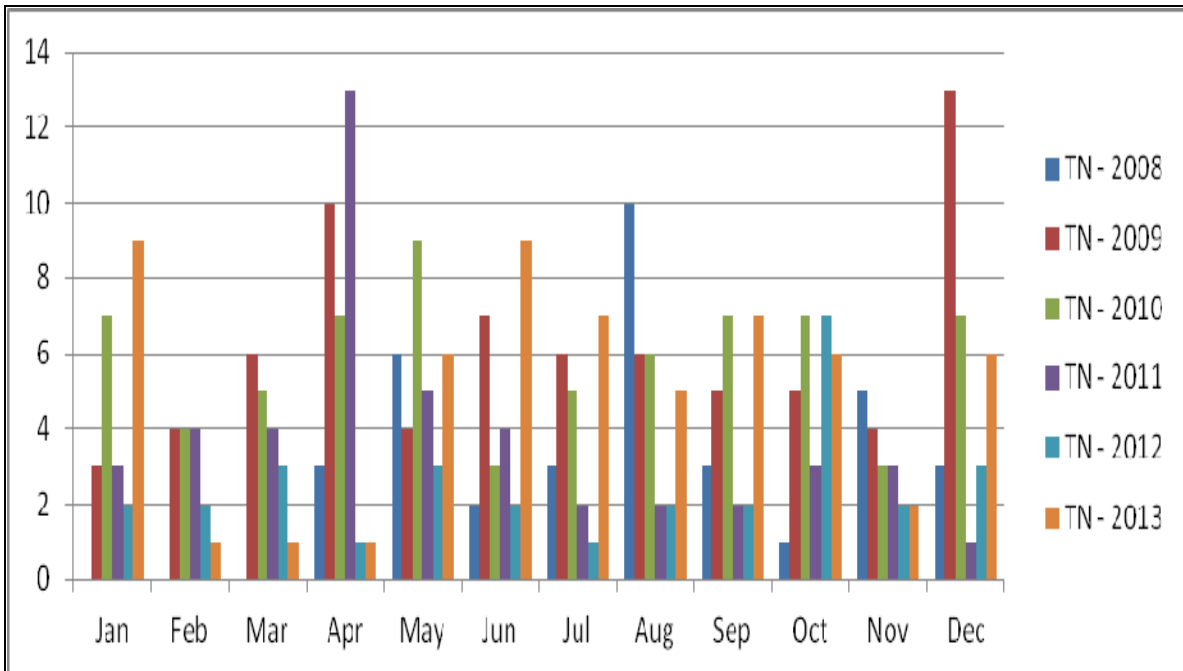
Note: Total number of people affected (and average) based on 24 (40%) of the total reported outages. Total duration of outages (and average) based on 15 (25%) of the total reported outages.

**Outage fact:** On Sept. 27, a raccoon made contact with some of the live components inside of a Cookeville substation, cutting power to 6,000. "When that happens you have a huge ball of fire," a utility representative said.

## Reported power outages by cause



## Reported power outages by month



Note: Data collection began February 16, 2008.

# Texas

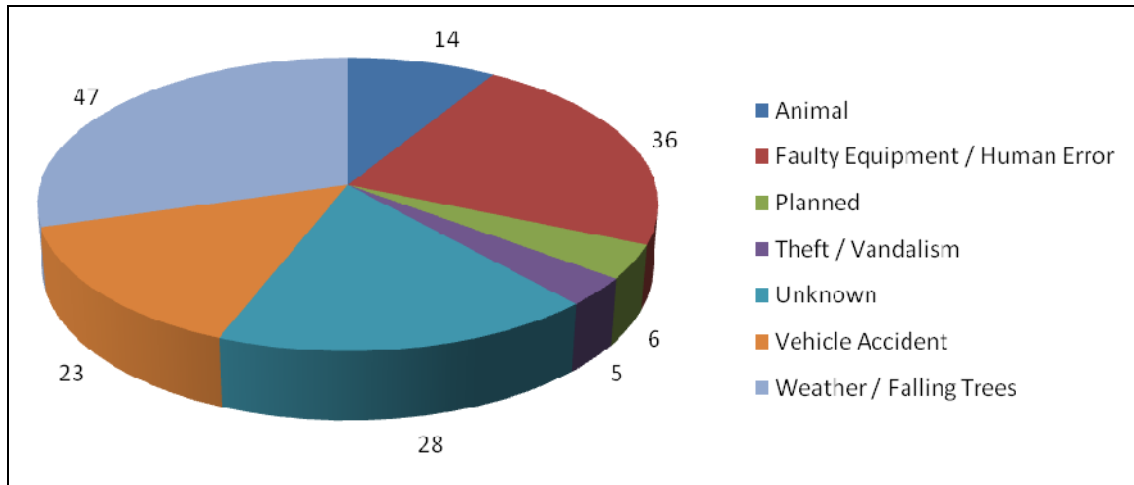
## Outage summary

Total number of people affected by outages	1,079,314
Total duration of outages	5,017 minutes (3 ½ days)
Total number of outages	159
Average number of people affected per outage	10,686
Average duration of outage	162 minutes (over 2 ½ hours)

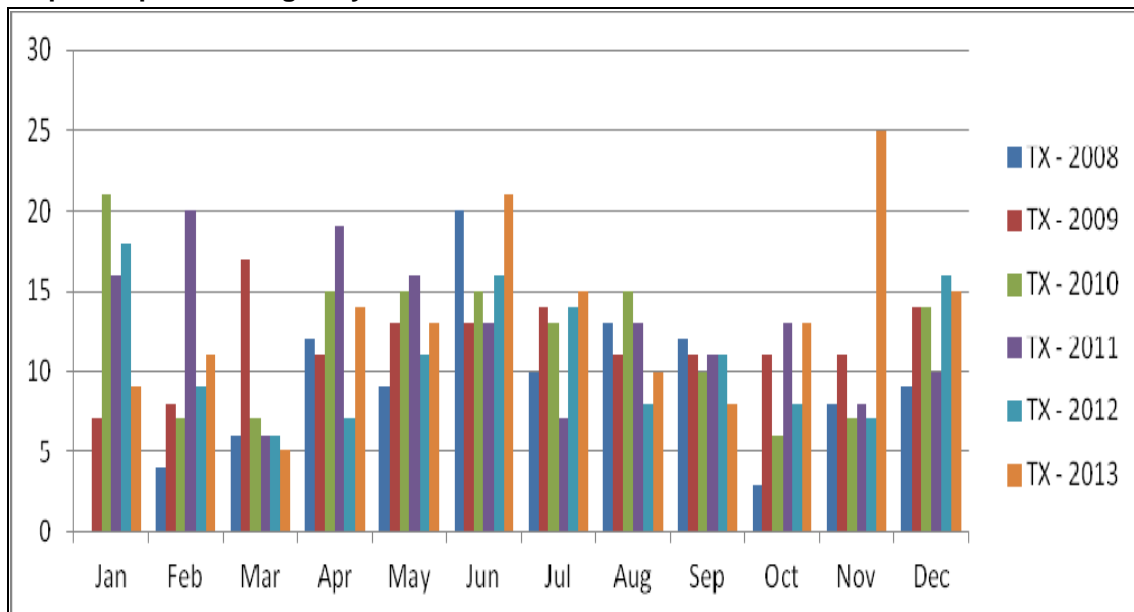
Note: Total number of people affected (and average) based on 71 (45%) of the total reported outages. Total duration of outages (and average) based on 18 (11%) of the total reported outages.

**Outage fact:** On Nov. 15, an illegal street race between two pickup trucks resulted in a Pasadena outage. Police said both drivers lost control, with one slamming into a utility pole.

## Reported power outages by cause



## Reported power outages by month



Note: Data collection began February 16, 2008.

## Utah

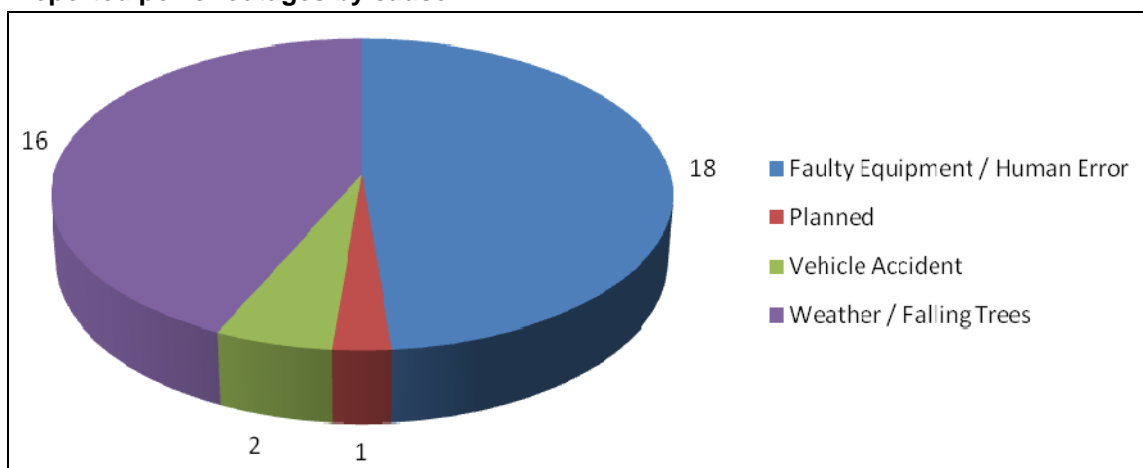
### Outage summary

Total number of people affected by outages	97,162
Total duration of outages	860 minutes (over 14 hours)
Total number of outages	37
Average number of people affected per outage	4,416
Average duration of outage	143 minutes

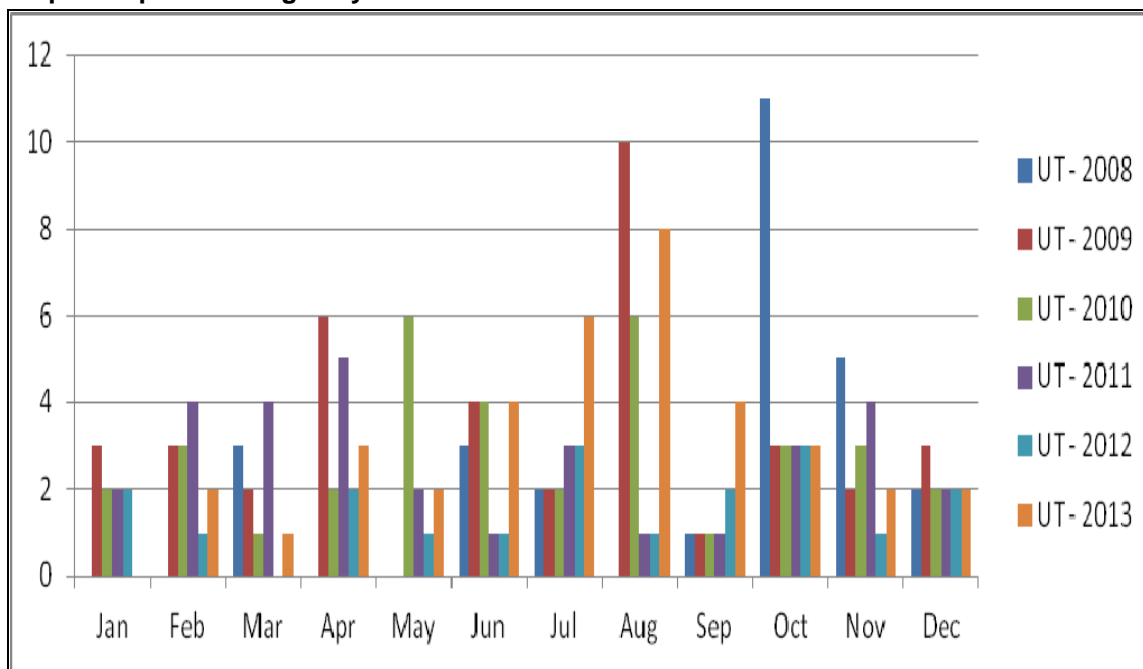
*Note: Total number of people affected (and average) based on 21 (57%) of the total reported outages. Total duration of outages (and average) based on 6 (16%) of the total reported outages.*

**Outage fact:** On July 1, a crane lifting construction equipment hit a power line, knocking out electricity to 15,000 in Cedar Hills.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

## Vermont

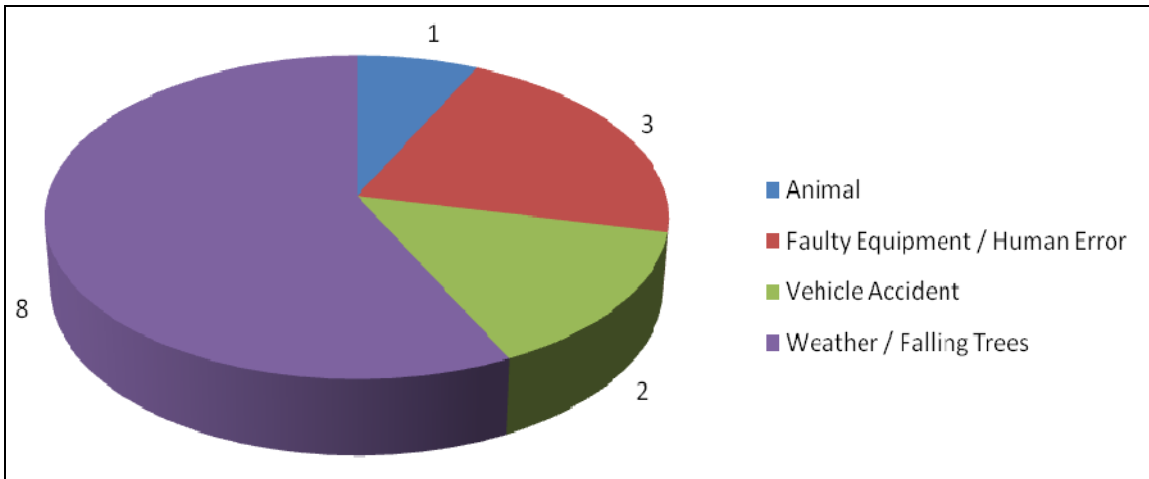
### Outage summary

Total number of people affected by outages	54,522
Total duration of outages	450 minutes (7 ½ hours)
Total number of outages	14
Average number of people affected per outage	4,957
Average duration of outage	150 minutes (2 ½ hours)

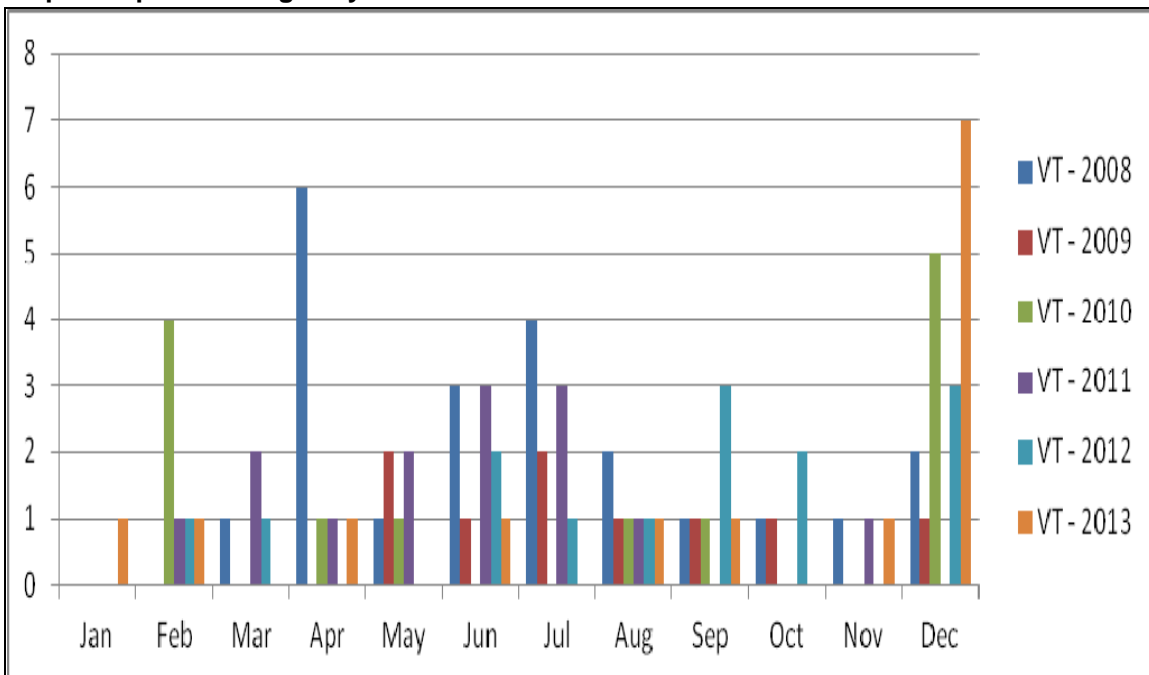
*Note: Total number of people affected (and average) based on 9 (64%) of the total reported outages. Total duration of outages (and average) based on 3 (21%) of the total reported outages.*

**Outage fact:** On Dec. 14, cold weather cracked a piece of equipment, cutting power to 3,000 busy holiday shoppers in South Burlington.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

## Virginia

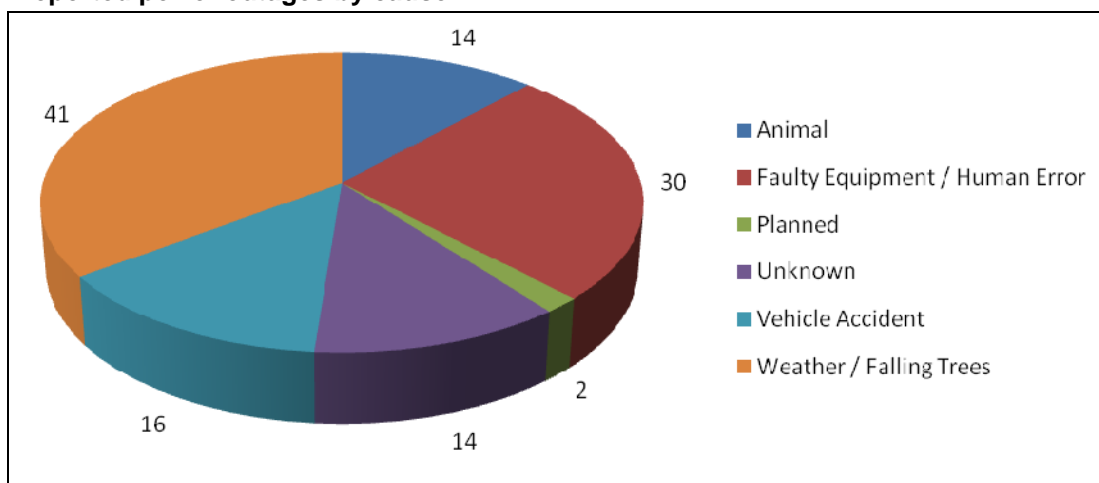
### Outage summary

Total number of people affected by outages	532,715
Total duration of outages	2,285 minutes (38 hours)
Total number of outages	117
Average number of people affected per outage	6,054
Average duration of outage	229 minutes (just under 4 hours)

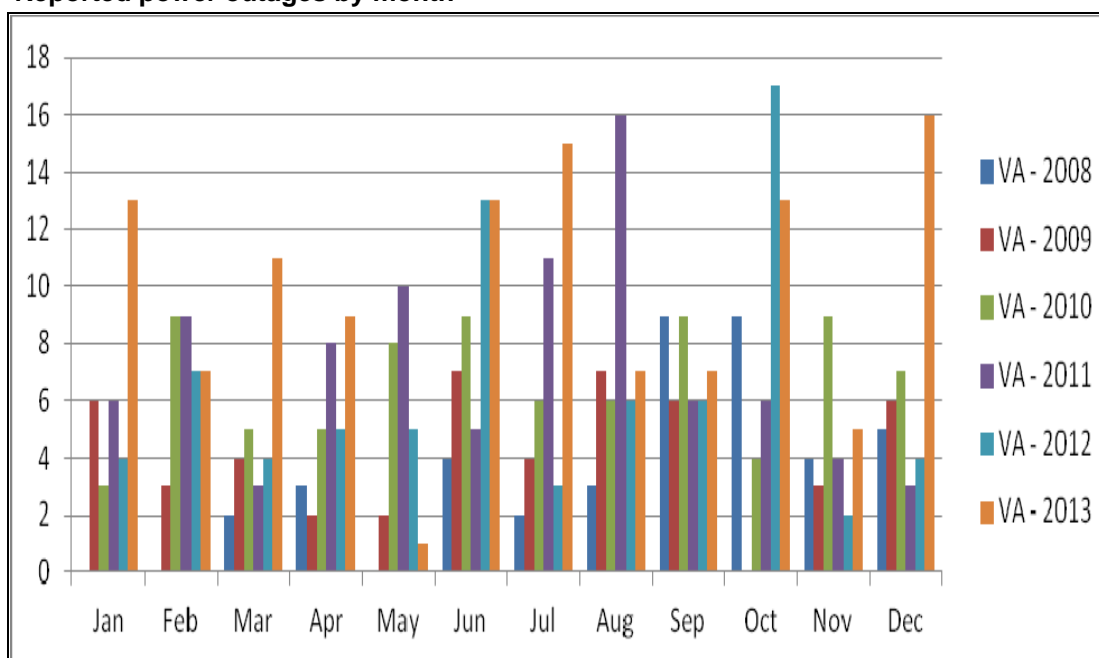
*Note: Total number of people affected (and average) based on 72 (62%) of the total reported outages. Total duration of outages (and average) based on 10 (9%) of the total reported outages.*

**Outage fact:** On March 7, a massive snowstorm that dumped more than 20 inches in some parts of Virginia also left more than 135,000 power outages in its wake.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

# Washington

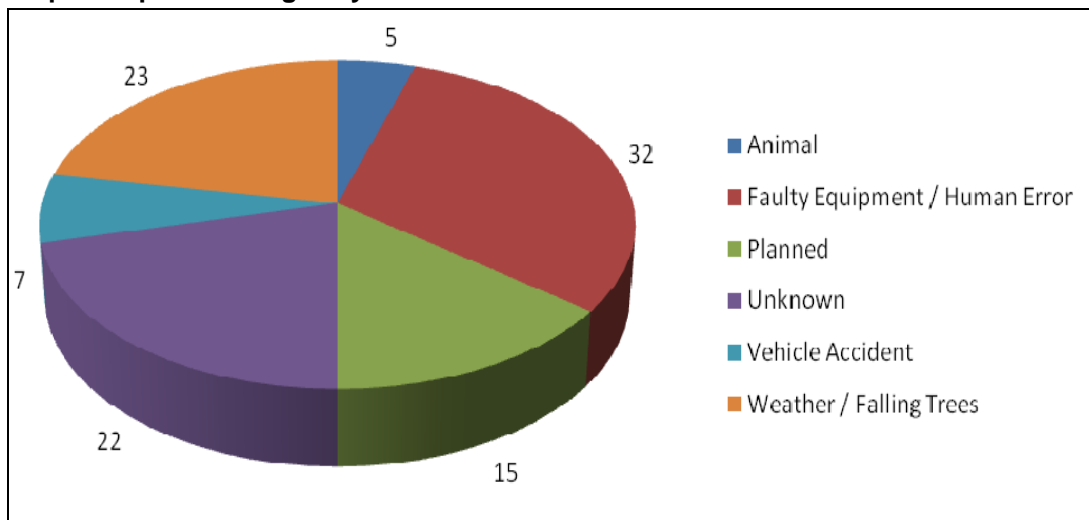
## Outage summary

Total number of people affected by outages	665,244
Total duration of outages	6,663 minutes (over 4 ½ days)
Total number of outages	104
Average number of people affected per outage	9,240
Average duration of outage	215 minutes (over 3 ½ hours)

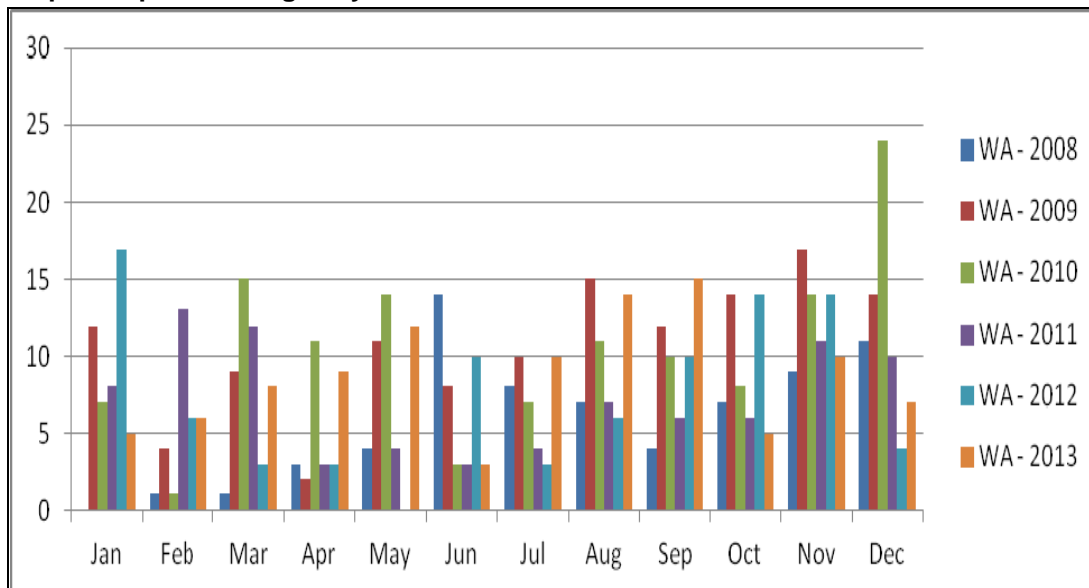
Note: Total number of people affected (and average) based on 58 (56%) of the total reported outages. Total duration of outages (and average) based on 19 (18%) of the total reported outages.

**Outage fact:** On Nov. 2, more than 200,000 Seattle customers lost power due to high winds, which injured at least three people and even forced officials to close the Highway 520 bridge for about two hours.

## Reported power outages by cause



## Reported power outages by month



Note: Data collection began February 16, 2008.



## West Virginia

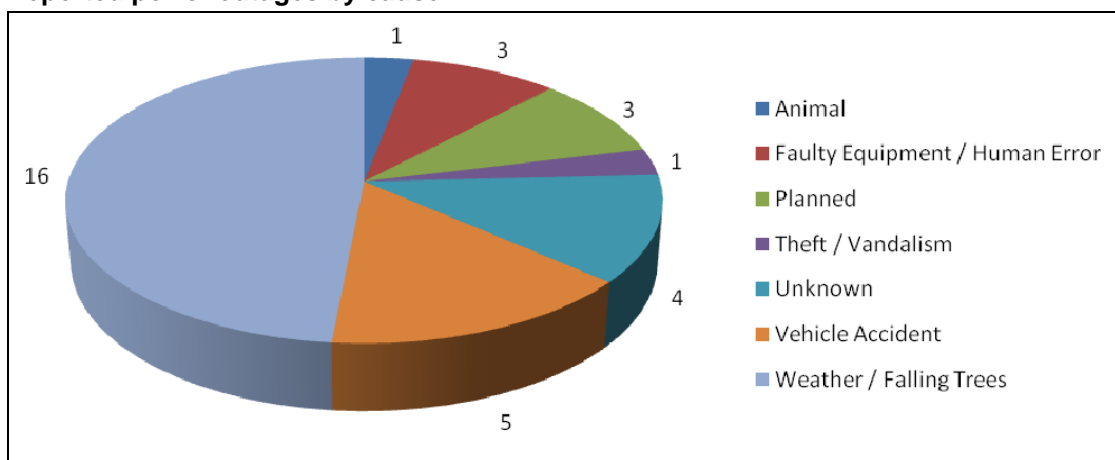
### Outage summary

Total number of people affected by outages	116,710
Total duration of outages	600 minutes (10 hours)
Total number of outages	33
Average number of people affected per outage	6,865
Average duration of outage	200 minutes (over 3 hours)

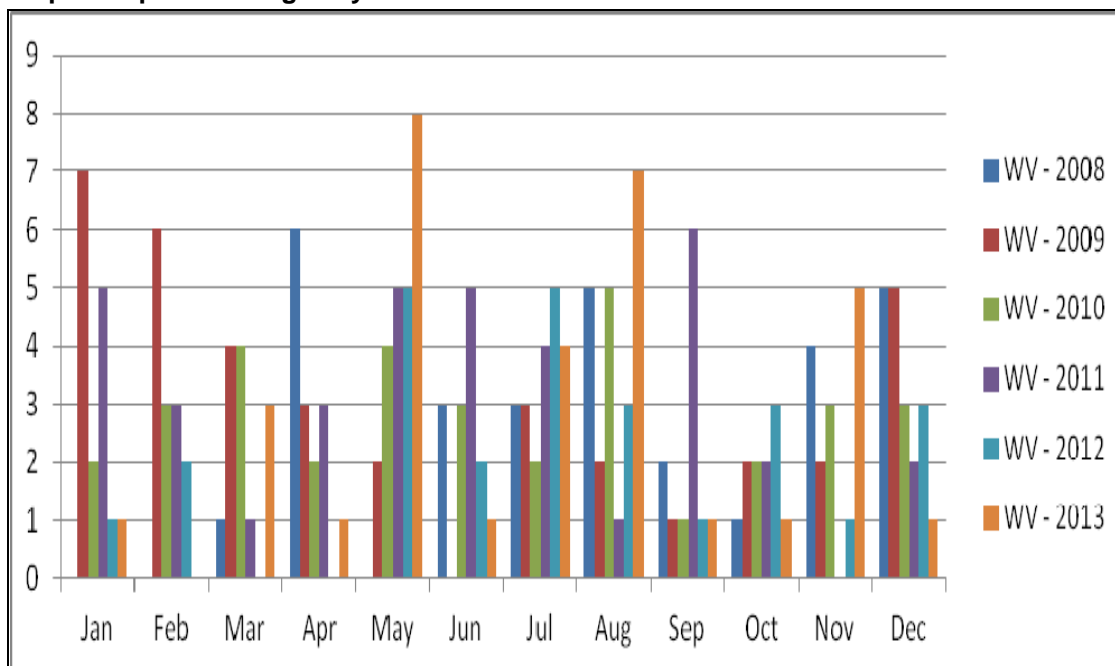
*Note: Total number of people affected (and average) based on 16 (48%) of the total reported outages. Total duration of outages (and average) based on 3 (9%) of the total reported outages.*

**Outage fact:** On Nov. 11, a cat got into a place where it shouldn't have been and caused an equipment failure, knocking out power to 1,800 in Harper's Ferry.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

## Wisconsin

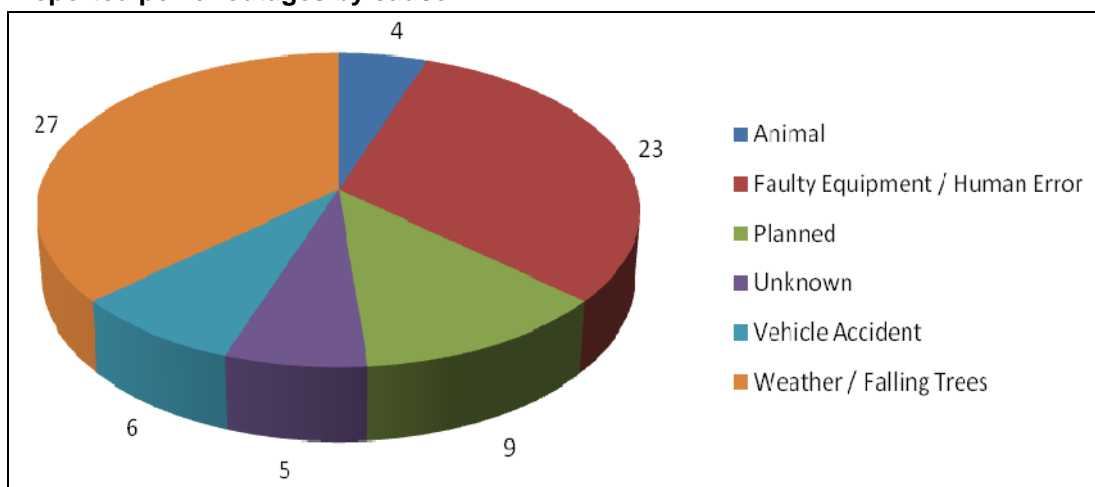
### Outage summary

Total number of people affected by outages	210,644
Total duration of outages	3,454 minutes (over 57 hours)
Total number of outages	74
Average number of people affected per outage	4,051
Average duration of outage	173 minutes (nearly 3 hours)

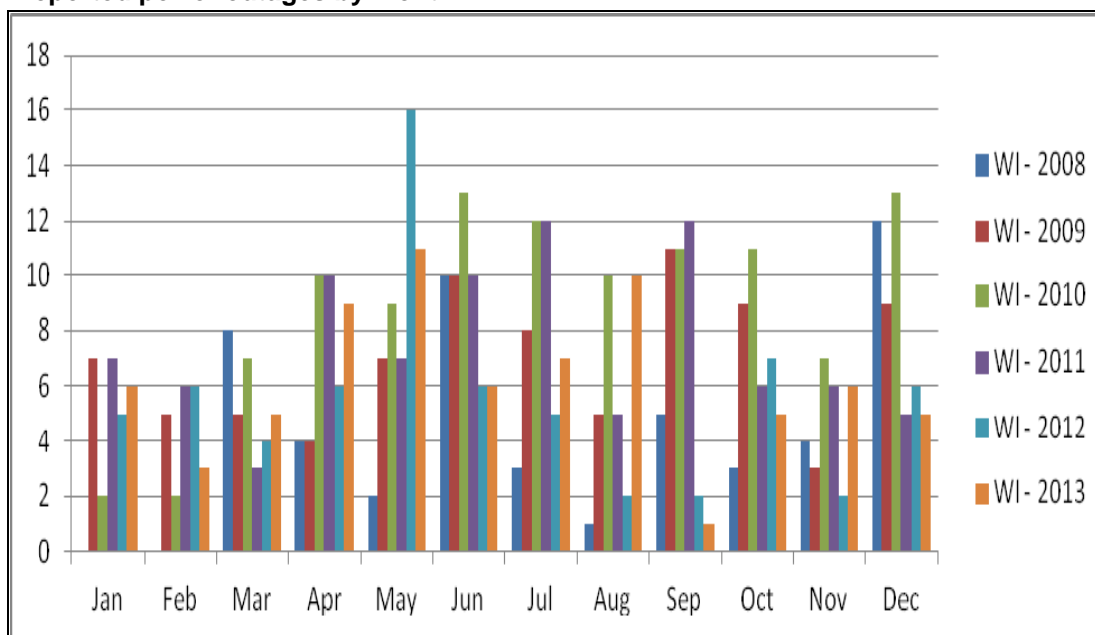
*Note: Total number of people affected (and average) based on 42 (57%) of the total reported outages. Total duration of outages (and average) based on 13 (18%) of the total reported outages.*

**Outage fact:** On Nov. 14, a failure occurred while the utility was working on equipment. The Milwaukee County Zoo was among the customers that went dark, but no animals were impacted.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*

## Wyoming

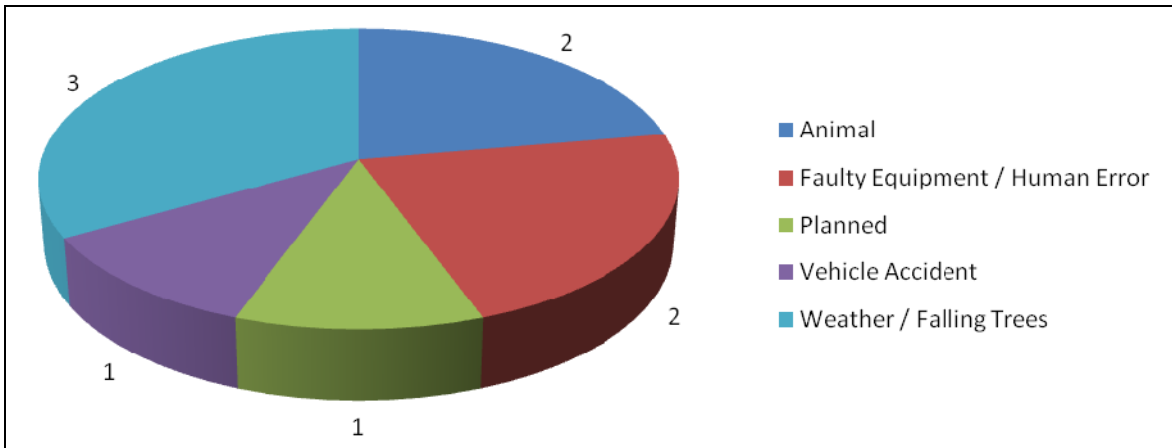
### Outage summary

Total number of people affected by outages	34,009
Total duration of outages	233 minutes (nearly 4 hours)
Total number of outages	9
Average number of people affected per outage	5,668
Average duration of outage	58 minutes

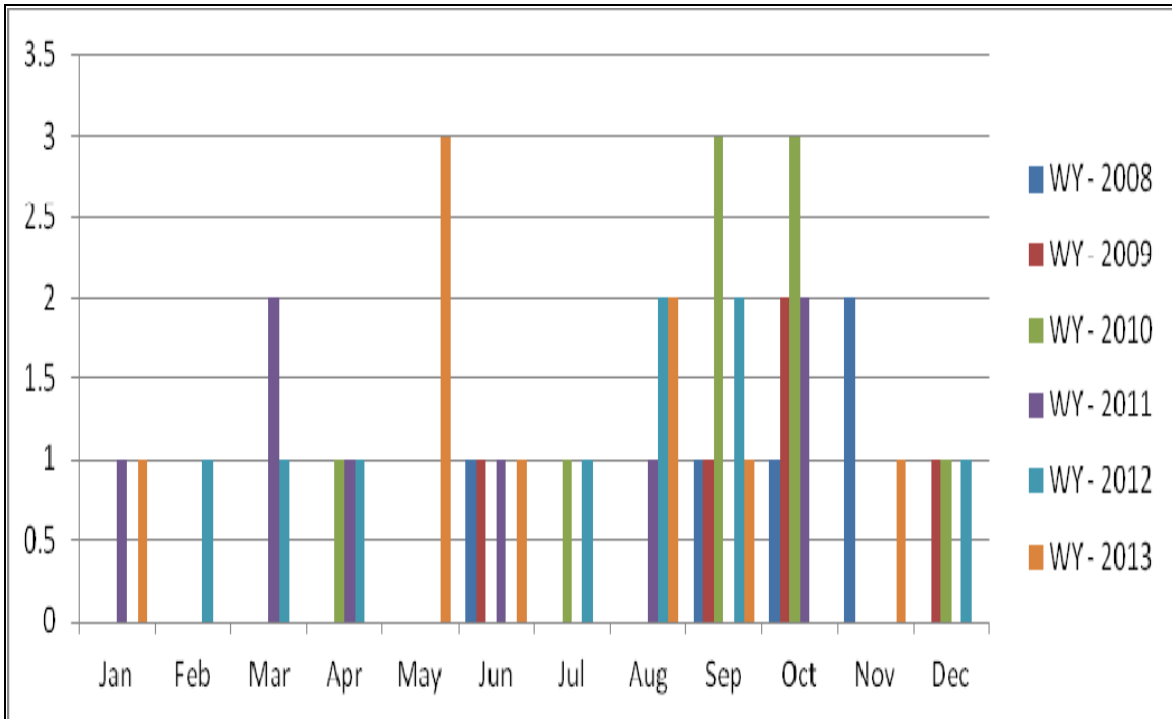
*Note: Total number of people affected (and average) based on 6 (67%) of the total reported outages. Total duration of outages (and average) based on 4 (44%) of the total reported outages.*

**Outage fact:** On June 5, a raccoon met a shocking end when it tinkered with substation equipment, cutting power to 3,000 people in Casper.

### Reported power outages by cause



### Reported power outages by month



*Note: Data collection began February 16, 2008.*



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