We Energies
231 W. Michigan Street
Milwaukee, WI 53203

www.we-energies.com

28
SKA

March 19, 2015

Michigan Public Service Commission
Attn: Executive Secretary
P. O. Box 30221
Lansing, MI 48909

Dear Executive Secretary:

RE: U-10000 ANNUAL INTERRUPTION SUMMARY

Enclosed are three copies of Wisconsin Electric Power Company d/b/a We Energies' 2014 Annual Interruption Summary pursuant to the Commission's Order Approving Settlement Agreement in MPSC Case No. U-10000 dated January 17, 1992.

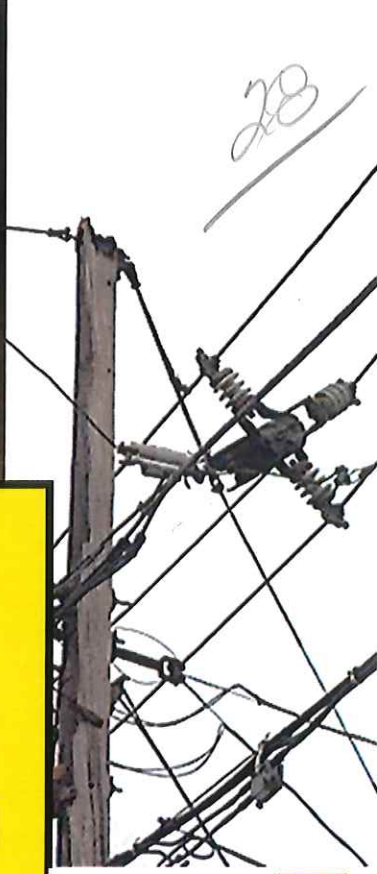
Sincerely,

James A. Schubilske
Vice President
State Regulatory Affairs

Enclosures

cc: Don Mazuchowski (MPSC) (w/encl.)
R. Patterson (w/o encl.)
D. Tschudy (w/o encl.)
Rates File (w/encl.)

Copies to Mazuchowski 3/26/15 SKA

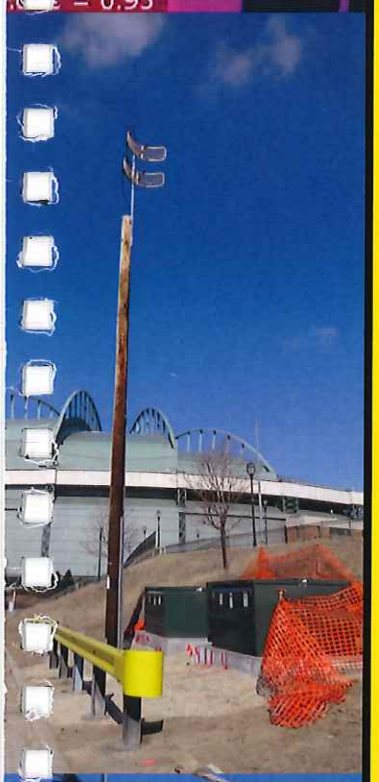


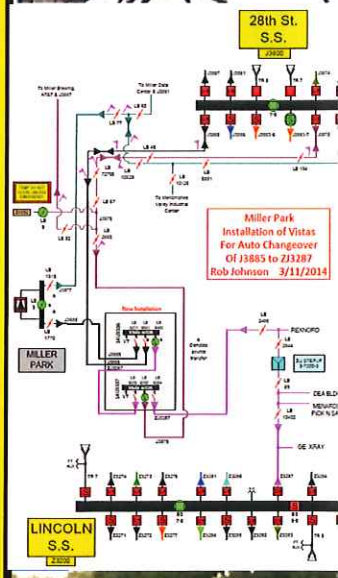
2014

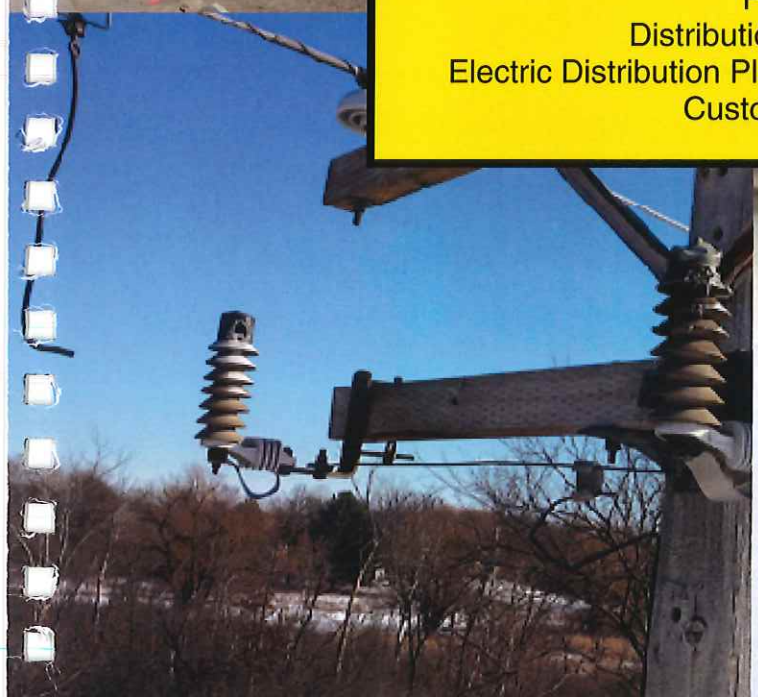
ELECTRIC DISTRIBUTION SYSTEM RELIABILITY REPORT

FOR THE MICHIGAN PUBLIC SERVICE COMMISSION
RELEASED: MARCH 2015

Prepared By:
Distribution Reliability Group,
Electric Distribution Planning, Protection and Reliability
Customer Operations







We Energies

2014 Electric Distribution System Reliability Report (EDSRR)

For the Michigan Public Service Commission

Please Note

This document reports only on the We Energies electric distribution system consisting of voltage levels of 34.5 kV or below. It does not report on any part of the We Energies gas distribution system.

Interpretation of reliability data is complex. If you have any questions regarding the content of this report, or if you require additional information or a more in depth explanation of any of the material presented, please contact a member of the Distribution Reliability Group listed below.

Jennifer Rothwell
Supervising Engineer

Val Werner
Principal Electrical Engineer

Andy Lemminger
Senior Engineer

THE 2014 ELECTRIC DISTRIBUTION SYSTEM RELIABILITY REPORT WAS PRODUCED BY:

Val Werner

ADDITIONAL CONTRIBUTIONS BY:

Jennifer Rothwell

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CONGRATULATIONS!

Ten Out of the Last Thirteen Years We Energies' Electric Reliability Judged Best in the Midwest!

For the fourth year in a row, We Energies has received the ReliabilityOne™ Award in the Midwest for the superior reliability of its electric system. The award, which is based on the company's performance for the year 2013, is given annually by PA Consulting Group to utilities that have excelled in delivering the most reliable electric service to their customers. The award was accepted by Kevin Fletcher, Senior Vice President – Customer Operations at an awards ceremony on November 18, 2014. The awards reception was held at the New York Academy of Sciences at 7 World Trade Center in New York City.

"Receiving the ReliabilityOne award for four consecutive years is a testament to our employees who focus everyday on delivering outstanding customer care," said Gale Klappa, Chairman, President and Chief Executive of We Energies.

All utilities operating electric delivery networks in North America are eligible for the ReliabilityOne Award. There are a total of six regional awards including Northeast, Mid-Atlantic, Midwest, Plains, West and Southeast. The selection is based primarily on system reliability statistics that measure the frequency and duration of customer outages. After provisional recipients are selected, each company undergoes an extensive on-site certification – an independent review of the processes and systems used to collect, analyze and report a company's reliability results.

"ReliabilityOne™ Award winners have a common thread: customers come first," said Jeff Lewis, PA Consulting Group's ReliabilityOne™ Program Director. "We Energies has kept its customers' needs at the forefront, hinging its business success on maintaining the highest level of reliability."

We Energies has made significant investments in recent years to strengthen the reliability of its network by rebuilding hundreds of miles of distribution lines, and building and upgrading substations and other critical infrastructure. The company's forestry management also has been recognized for responsible tree trimming practices to keep branches from coming into contact with power lines.

Note: See Appendix for PA Consulting ReliabilityOne™ award history.

EXECUTIVE SUMMARY

This report presents and evaluates the 2014 reliability performance of the We Energies electric distribution system and its effects on customers. This report is intended to provide information on the 2014 system performance as well as background information concerning distribution system reliability. The information in sections I and II use Michigan customers only in accordance with MPUC Order U-16065. The rest of the report is based on the entire We Energies service territory. The following items summarize the contents of the report:

For Michigan Customers only

- Including all outage events:
  - SAIFI of 1.27 is the highest since 2011.
  - SAIDI of 214 is the highest since 2011 but nearly equal to last year.
  - CAIDI of 169 is lower than last year.
  - SAIDI, CAIDI and ASAI performed better than the five year average; SAIFI did not.

- Excluding IEEE Major Event Days:
  - SAIFI of 0.94 is the highest in the past four years.
  - SAIDI of 126 is the highest in the past four years.
  - CAIDI of 133 is the highest in the past four years.
  - SAIFI, SAIDI, CAIDI and ASAI all performed worse than the five year averages.

- Four Major Event Days occurred in 2014 compared to six in 2013. The Major Event Days average is four and a half per year over the last four years.

For the We Energies Entire Service Territory

- The major outage causes in 2014 include: Equipment Failure/Deterioration 33%, Vegetation 28%, Weather 15%, and Wildlife 10%.

- The 10,210 outage events in 2014 is the second lowest number of outage events since 2009.
  - The number of Equipment and Other caused outage events in each category was the lowest in the past five years.
  - Cutout, Cable, and Connector (including insulinks) failures were the leading causes of Equipment caused outage events and were responsible for 22% of all outage events.
  - The number of weather related outage events is the second lowest in the past five years.
  - Raccoon caused outage events in 2014 are at the lowest in the past five years.

- Vegetation outage events were responsible for 48% of the Customer Minutes of Interruption in 2014

DEFINITIONS

Customer: For reliability reporting purposes, a customer is defined as a separate electrical service point. Customers may be residential, commercial, industrial, or municipal. If a customer has more than one service point assigned to an account, the account is considered a "customer" for reliability reporting purposes.

Outage: An outage is a failure of the power supply system to serve customers causing an interruption to one or more customers. For example, a service drop failure, a fuse operation affecting a portion of a feeder, and a substation breaker trip affecting an entire feeder are each counted as single outages. The loss of a one leg of a single phase service is considered an outage; this is often called partial power. The loss of one or two phases of a three phase service is also considered an outage.

Unplanned Outage: An unplanned outage is one that cannot be avoided or deferred.

Planned Outage: A planned outage is one that can be avoided or deferred, and any customer that is to be interrupted is notified in advance in accordance with Public Service Commission and internal company guidelines.

Momentary Outage: A momentary outage is an unplanned outage lasting five minutes or less, resulting in a loss of power to a customer or group of customers.

Sustained Outage: A sustained outage is an unplanned outage lasting more than five minutes, resulting in a loss of power to a customer or group of customers.

Customer Interruption: The loss of service (power) due to an outage for one or more customers. For example, a service drop failure results in one customer interruption, while failure of a transformer serving four customers results in four customer interruptions.

Customer Minutes of Interruption: The number of minutes of outage duration multiplied by the number of customers affected. For instance a 90 minute outage on a circuit serving 100 customers would result in a total of 9,000 Customer Minutes of Interruption.

Number of Customers Served: The sum of the number of customers served by the distribution system over a defined area. Examples include single circuits, geographic areas, or the total system.

Outage Duration (Minutes): Duration is measured in minutes from the time of the outage until a restoration is made. A restoration can be anything from one customer put back in service or a whole feeder put back in service or any partial restoration in between. The number of customers does not enter into the outage duration.

SAIFI or System Average Interruption Frequency Index: SAIFI is an industry standard reliability measurement index that is designed to give information about the average frequency of sustained interruptions per customer over a defined area during a year. In words it is defined as:

$$\text{SAIFI} = \frac{\text{Total Number of Customer Interruptions}}{\text{Total Number of Customers Served}}$$

As an example, a system SAIFI of 1.0 means that on average, a customer on the distribution system would experience one interruption in a year, while a SAIFI of 0.5 would equate to one interruption every two years.

SAIDI or System Average Interruption Duration Index: SAIDI is an industry standard reliability measurement index that is designed to give information about the average time that customers are interrupted over a defined area during a year. In words it is defined as:

$$\text{SAIDI} = \frac{\text{Total Number of Customer Minutes of Interruption}}{\text{Total Number of Customers Served}}$$

As an example, a system SAIDI of 50 minutes means that on average a customer on the distribution system would experience 50 minutes of interruption in a year.

CAIDI or Customer Average Interruption Duration Index: CAIDI is an industry standard reliability measurement index that is designed to approximate the average length of time required to complete service restoration following a sustained interruption over a defined area. In words it is defined as:

$$\text{CAIDI} = \frac{\text{Total Number of Customer Minutes of Interruption}}{\text{Total Number of Customer Interruptions}}$$

As an example, a system CAIDI of 100 minutes means that if a customer experiences an interruption, the average duration of the interruption would be 100 minutes.

ASAI or Average Service Availability Index: ASAI is an industry standard reliability measurement index that is designed to represent the fraction of time, often in percentage, that a customer has power provided during a defined time period. In words the definition is:

$$\text{ASAI} = \frac{\text{Customer Hours of Available Service}}{\text{Customer Hours of Demand}}$$

As an example: a system ASAI of 0.99975 means that the electric service to a customer was available 99.975% of the time.

Blue Sky: This refers to all times that do not include one of the following: Major Storm, Extraordinary Event (Storm). A Blue Sky day may contain storm activity (Minor Storm) that did not meet the criteria that defines a Major Storm. When Blue Sky is used in describing a year's worth of data, as in the EDSRR, Blue Sky data will contain some storm activity that did not meet the criteria that defines a Major Storm.

Minor Storm: A Minor Storm is not large enough to meet the criteria for a Major Storm. The impact to performance from a Minor Storm is included in the Blue Sky data. Minor Storms are defined so as to better explain the fluctuation in Blue Sky performance. A Minor Storm is defined by a string of hours where there are several outages per hour with weather conditions that were reported as something other than calm.

Major Storm: To be classified as a Major Storm, there must be 10,000 sustained customer interruptions over a widespread geographical area. It begins in the hour when several, weather related sustained outages occur and continues through the last hour that has several, weather related sustained outages. Often this may not occur within a 24 hour period. A new Major Storm can only begin if one to two hours pass since the end of the previous Major Storm.

Extraordinary Storm or Event: An Extraordinary Storm or Event is a significant event that occurs and is declared when one of the following conditions are met: severe weather conditions that result in 100,000 or more unplanned and sustained customer interruptions within a single day, or events of sufficient intensity to give rise to a state of emergency declaration by the local, state, or federal government.

INTRODUCTION

This report summarizes the 2014 reliability performance of the We Energies electric distribution system and its effects on customers. It is intended to provide information on the 2014 system performance as well as background information concerning distribution system reliability. The report will continue to evolve to meet the current and future needs of its readers.

The tool used to aggregate electric distribution outage information is called the CADOPS* Outage Reporting System (CORS). Outage information is both manually and automatically entered in CORS through CADOPS and the CORS Outage Detail Form. Mobile Data (CAD) was implemented for Troubleshooters in Southeastern Wisconsin in 2004, Fox Valley in 2007, and Iron Range in 2008. The Troubleshooters enter some or all of the outage information directly into CORS using Mobile Data. In 2009, most crews were trained in Mobile Data (CAD) to enter customer restoration data during storms and/or to complete a multi-step customer restoration outage event. Communication between EMS and CADOPS to automatically transfer device status was rolled out to the entire service territory in 2013. In addition, code was added to auto-populate some of the outage data including customers based on the interrupting device, tag number, and phase as reported in Mobile CAD.

The use of CADOPS has increased the accuracy of outage reporting. In ten of the past 13 years, including 2014, PA Consulting Group certified We Energies' process for collecting, analyzing, verifying and reporting reliability for its accuracy and completeness. As was done in past years, the customer count at the circuit level was reviewed and updated. These updated customer numbers were used in reporting of 2014 reliability performance. For 2014, a customer count of 27,677 We Energies Michigan electric customer accounts was used to compute reliability indices.

A review of the information contained in this report indicates that the performance of the majority of the distribution system remained relatively the same when compared to years prior to 2014. This report graphically presents various causes of the outages affecting the distribution system and includes monthly trends. It is reported using unplanned and sustained outage data that includes all outage causes except where noted. It examines outage duration, response time, and momentary interruption issues based on recloser and circuit breaker operations counts. It contains a section on CAIDI improvement, defining and explaining CAIDI's role in reliability. This report contains information on the progress of various reliability-related programs designed to identify portions of the system where improvement is most needed, and then to take corrective action, as required, to improve the system. The ultimate goal is providing acceptable service to We Energies customers.

*Computer Aided Distribution OPeration System

I. Transmission Events

Below is a listing of transmission events by month. Months with no activity are not shown.

There was one Transmission related outage during the month of February.

A transmission related outage occurred in the Iron Range Area that began at 5:59 PM on February 20, 2014. This affected 3,247 customers originating from the Chalk Hills Substation with outage durations greater than five minutes, for a total of 914,222 customer minutes of interruption and a CAIDI of 282 minutes.

There was one reportable Transmission related outage during the month of March.

A transmission related outage occurred in the IR Area and began at 6:14 AM on March 28, 2014. This affected 142 customers originating from the Brule Substation with outage durations greater than five minutes, for a total of 1,358 customer minutes of interruption and a CAIDI of 10 minutes.

There was one Transmission related outage during the month of June.

A transmission related outage occurred in the Iron Range Area that began at 11:57 AM on June 15, 2014. This affected 1,587 customers originating from the Greenstone Substation with outage durations greater than five minutes, for a total of 50,784 customer minutes of interruption and a CAIDI of 32 minutes.

There was one Transmission related outage during the month of November.

A transmission related outage occurred in the Iron Range Area that began at 1:15 AM on November 19, 2014. This affected 2,516 customers originating from the Felch Mountain Substation with outage durations greater than five minutes, for a total of 414,574 customer minutes of interruption and a CAIDI of 165 minutes.

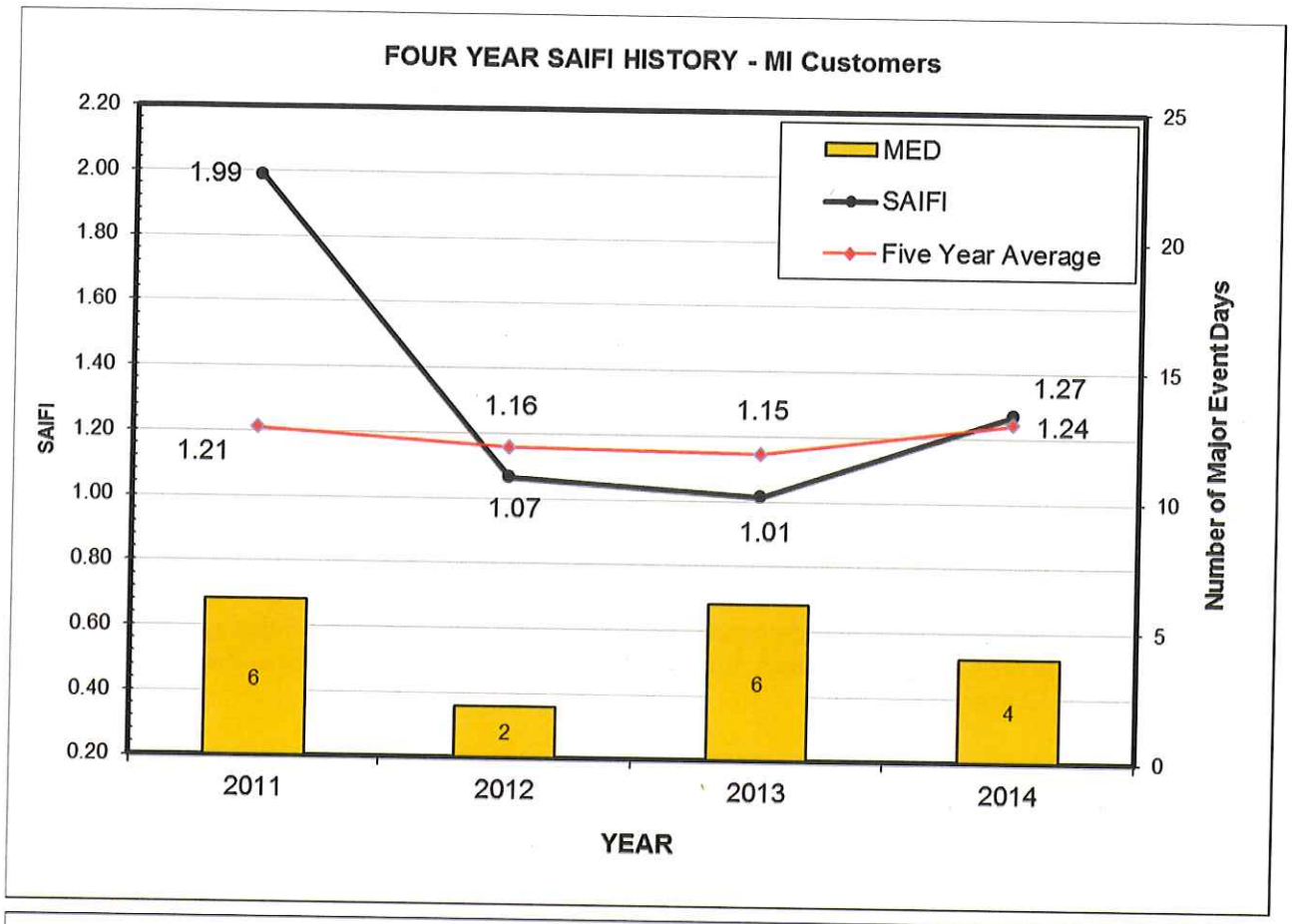
II. RELIABILITY INDICES

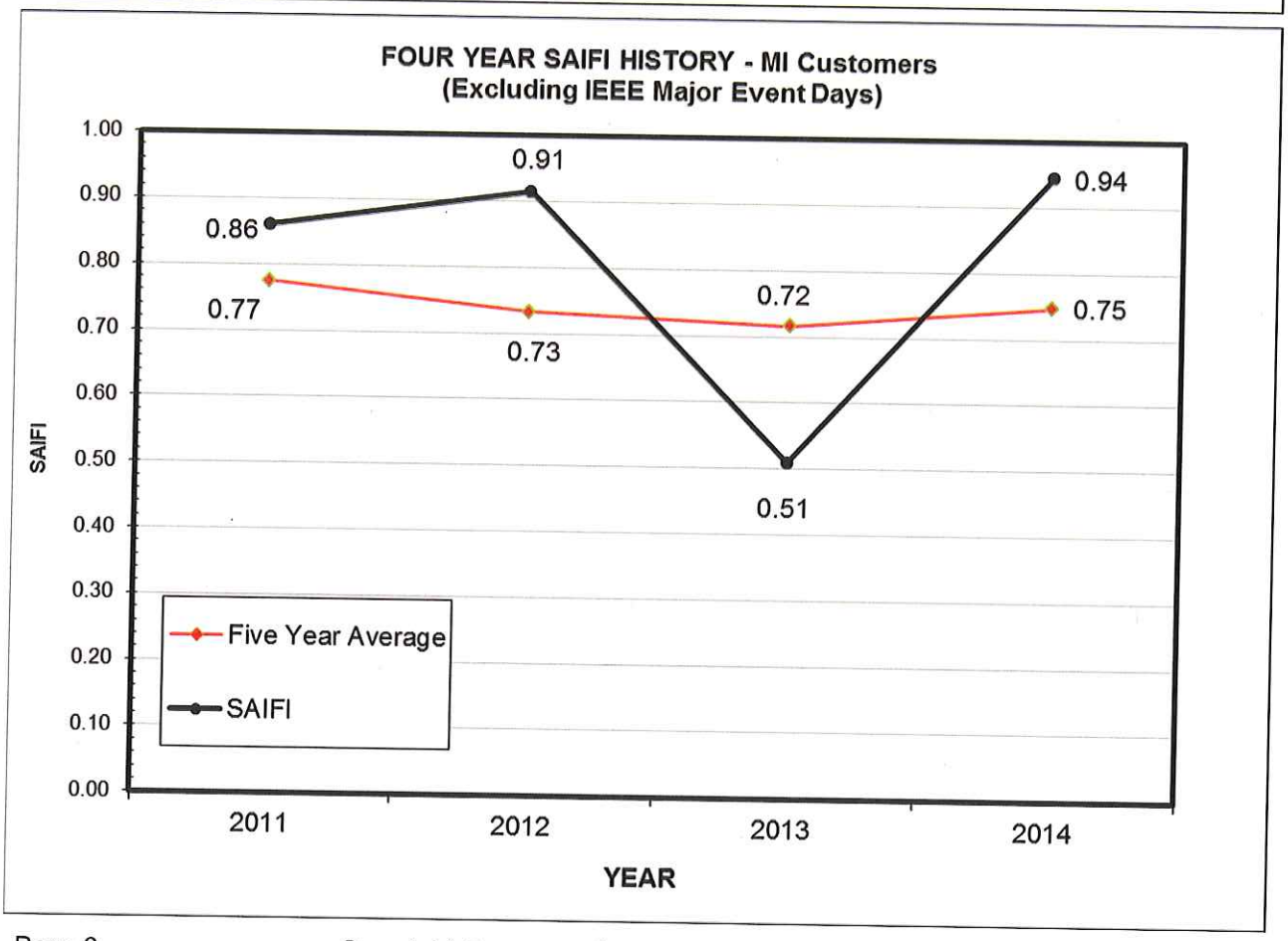
Indices Explanation

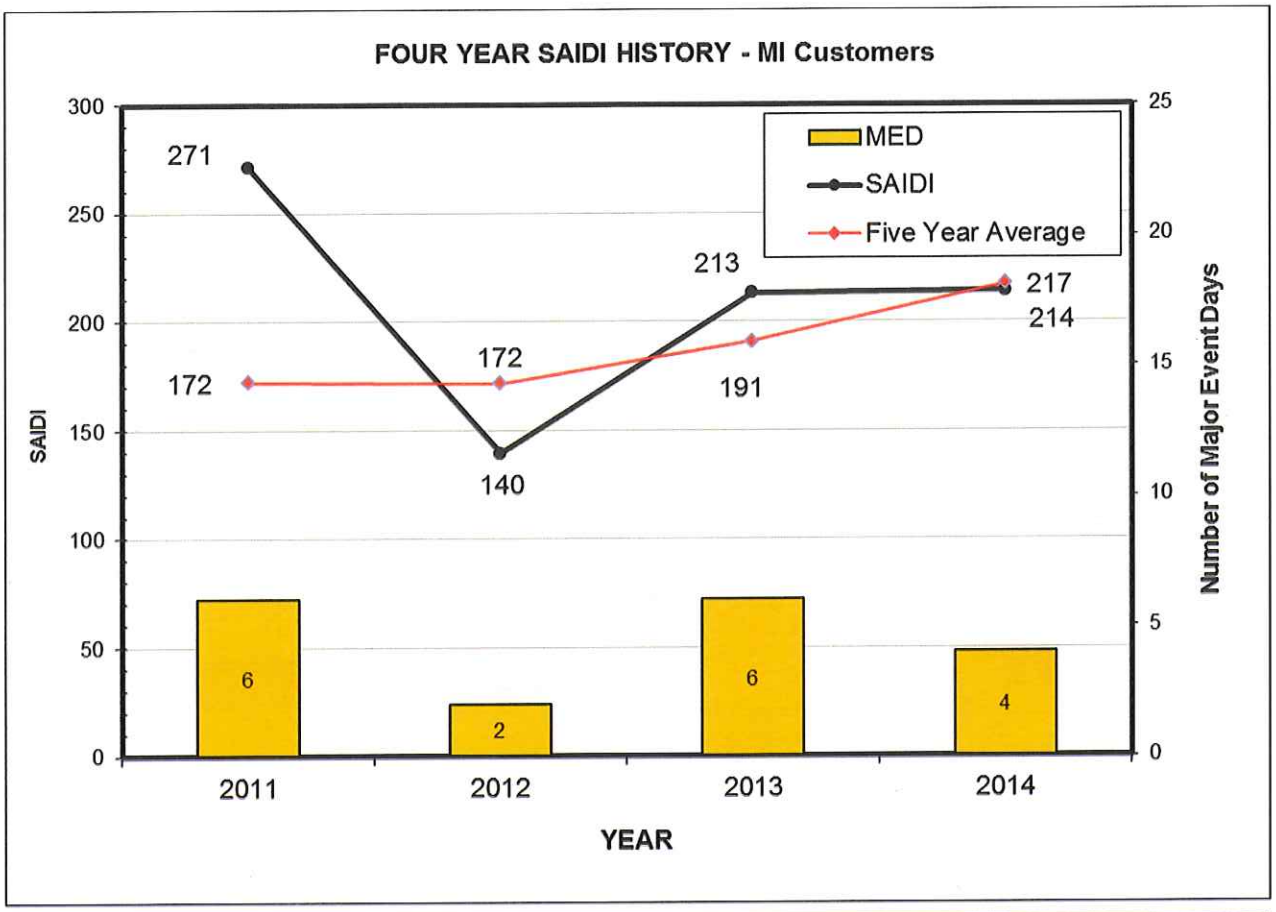
We Energies uses the industry standard distribution system reliability indices SAIFI, SAIDI, CAIDI, and ASAI to measure and track performance. The charts on the following pages display the four-year historical performance of the distribution system for these indices. Each chart shows the yearly reliability index values as well as the rolling five-year average. The top chart on each page shows the indices with all sustained customer interruptions included. The bottom chart shows the indices without customer interruptions on Major Event Days. The 2014 indices in this report are based on a count of 27,677 customers of We Energies' Michigan customers. The indices shown are based on unplanned, sustained (interruption duration greater than 5 minutes) customer interruptions.

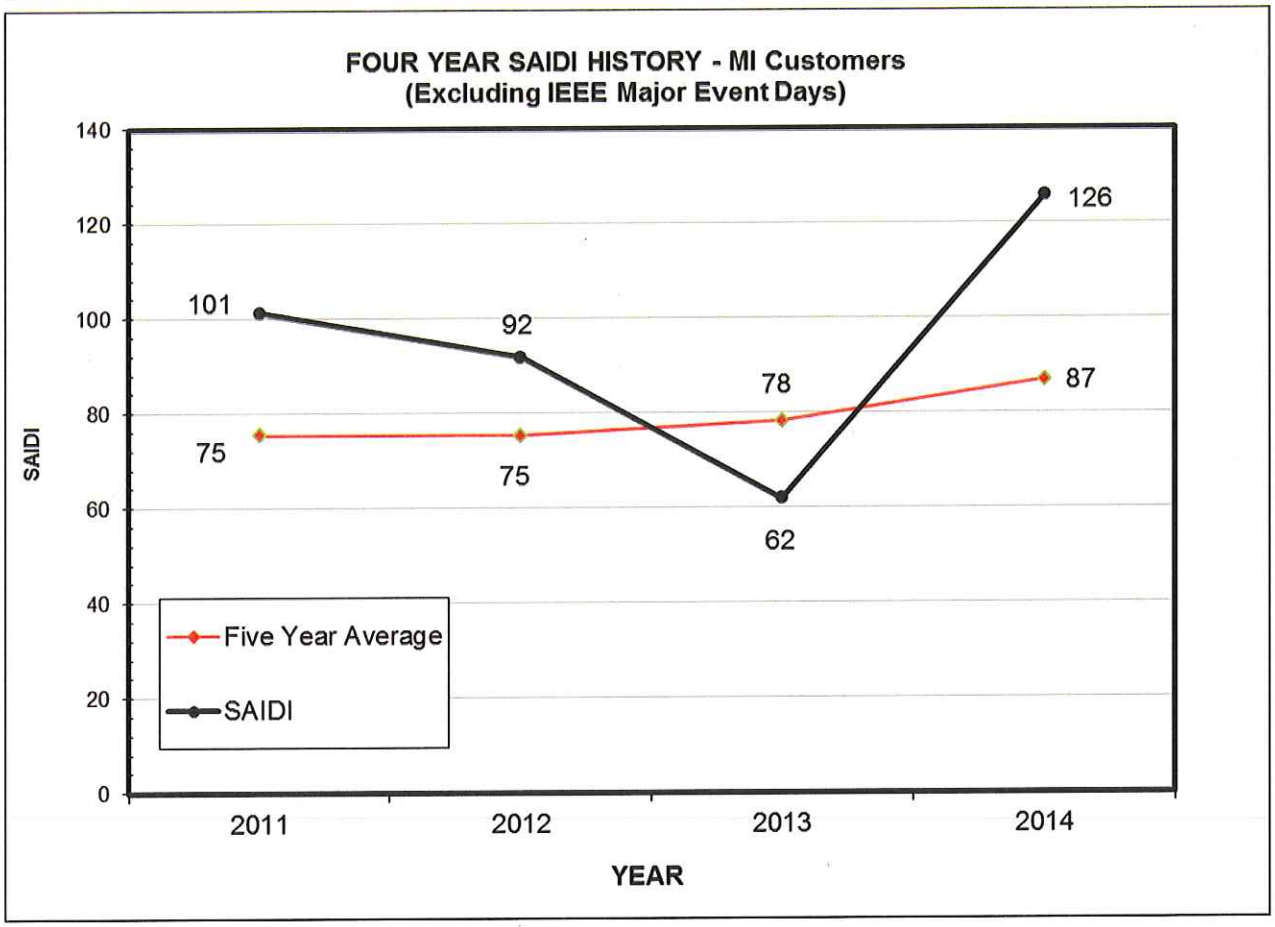
As described in the Definitions section of this report, SAIFI is a measure that is designed to give an indication of the frequency of outages that affect customers. SAIDI, CAIDI, and ASAI are measures that are designed to give indications of the duration of outages that affect customers.

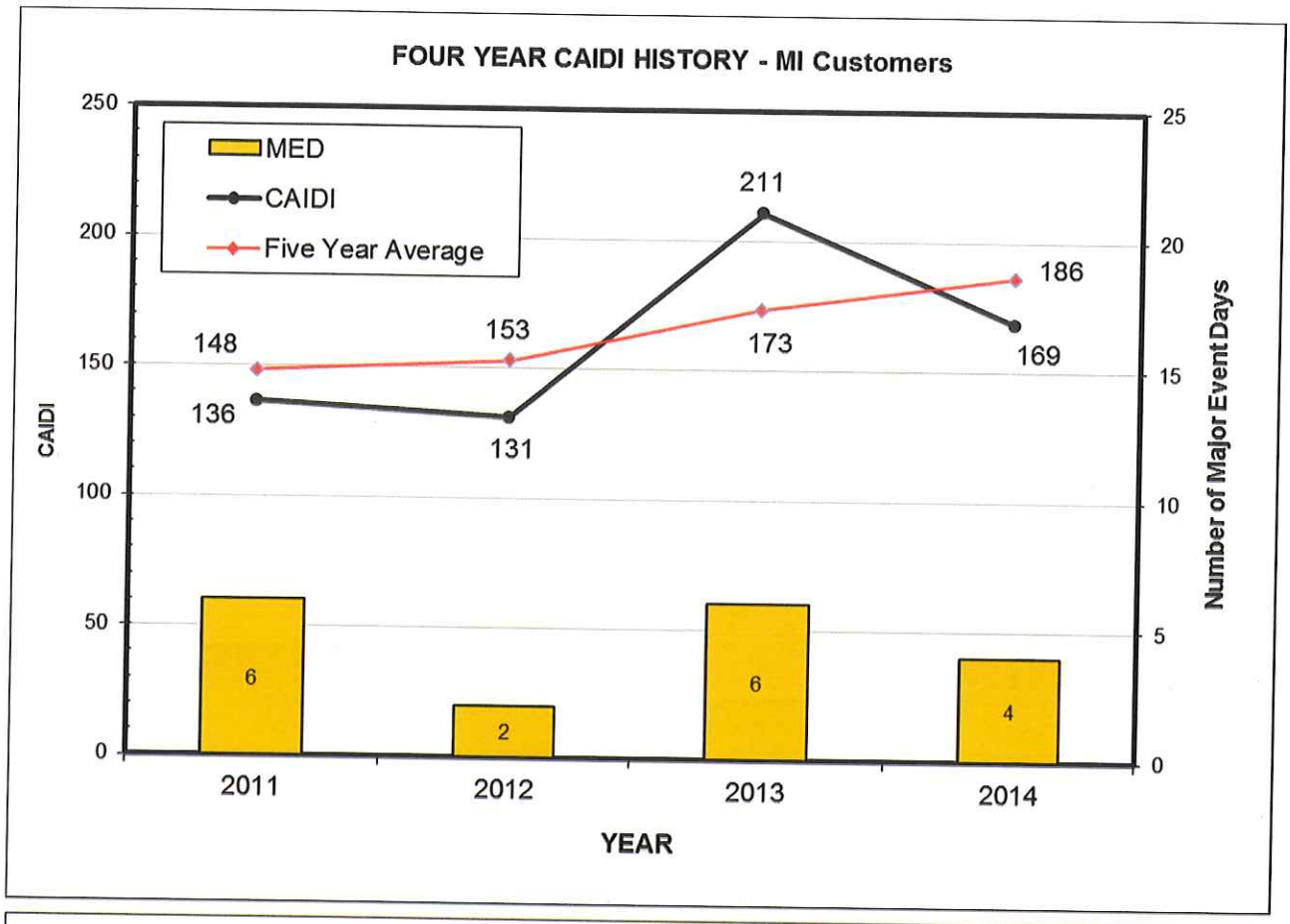
We Energies participates in various reliability benchmarking studies. We Energies is typically a top quartile performer for SAIFI, a second/third quartile performer for SAIDI, and a second/third quartile performer for CAIDI. This is according to surveys based on electrical system performance *prior* to 2014. It is expected that We Energies' SAIFI index will remain in the top quartile, and make strides to improve SAIDI, CAIDI, and ASAI in future benchmarking studies.

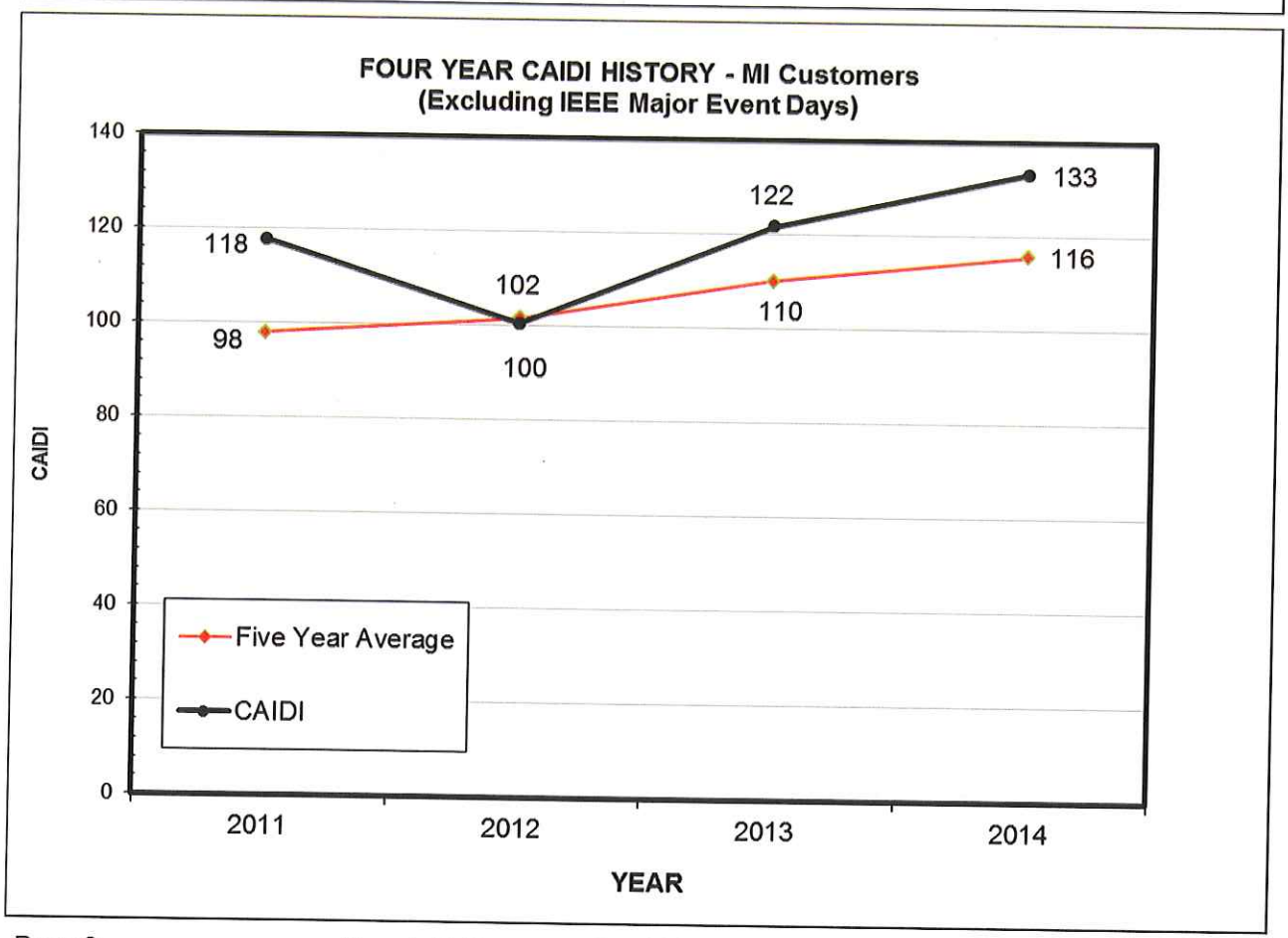


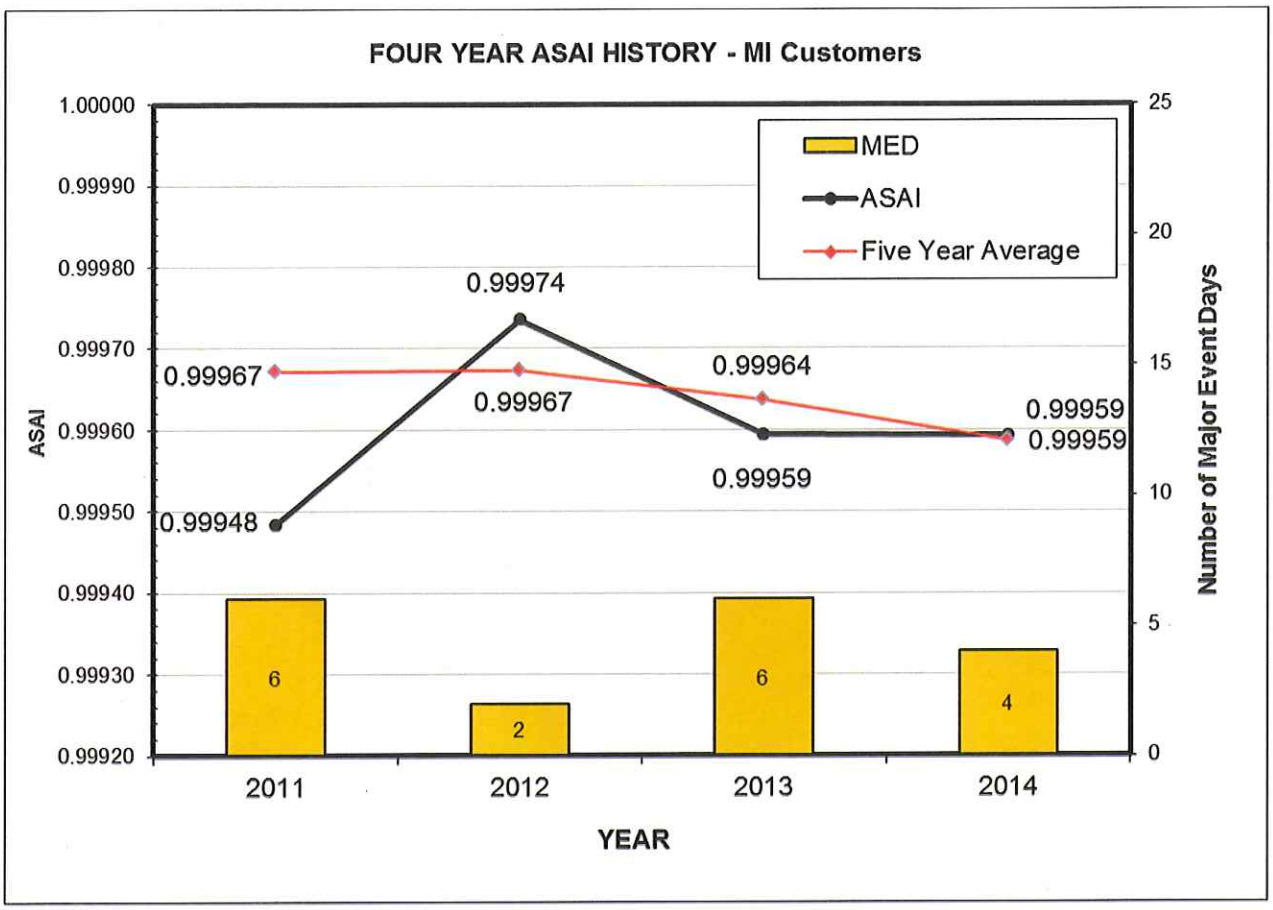


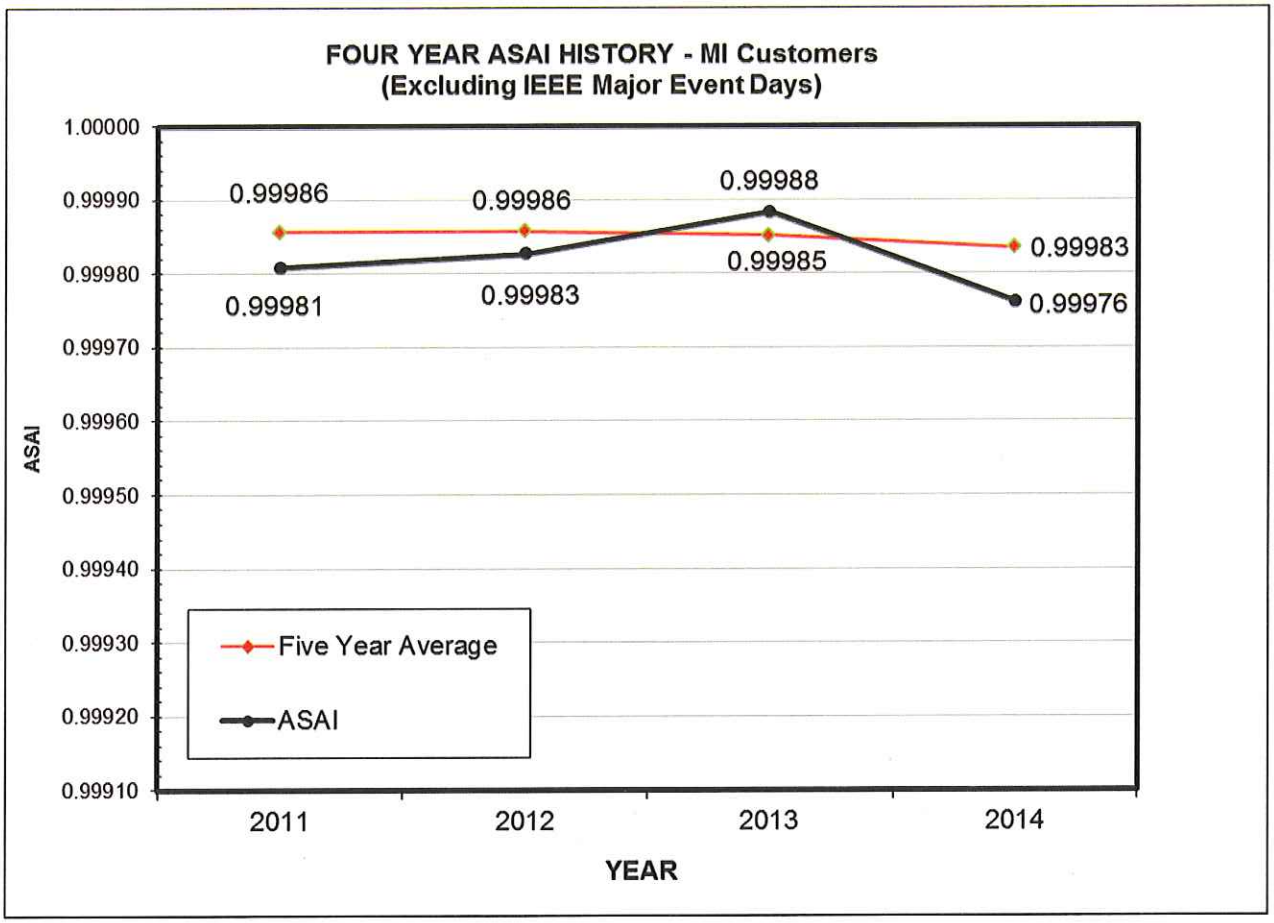






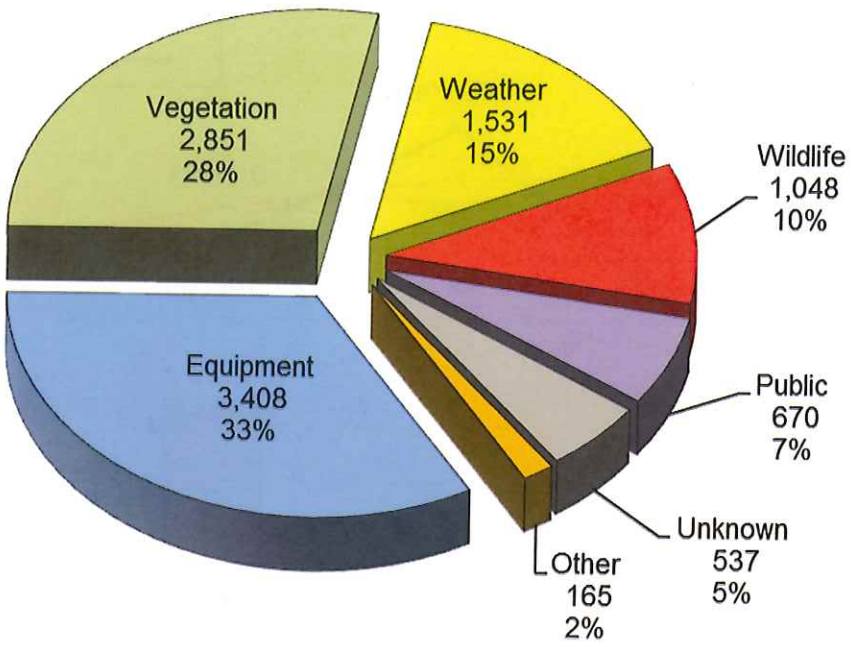






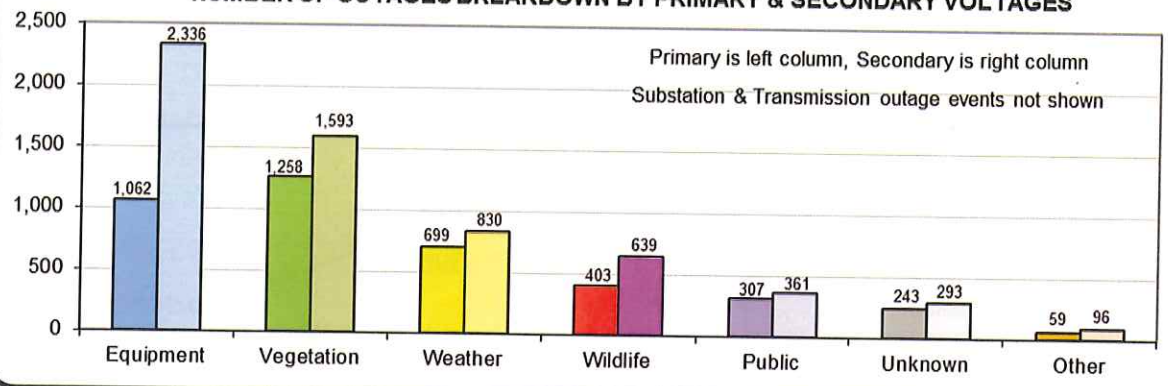
III. CAUSES OF OUTAGE EVENTS

2014 OUTAGES BY CAUSE

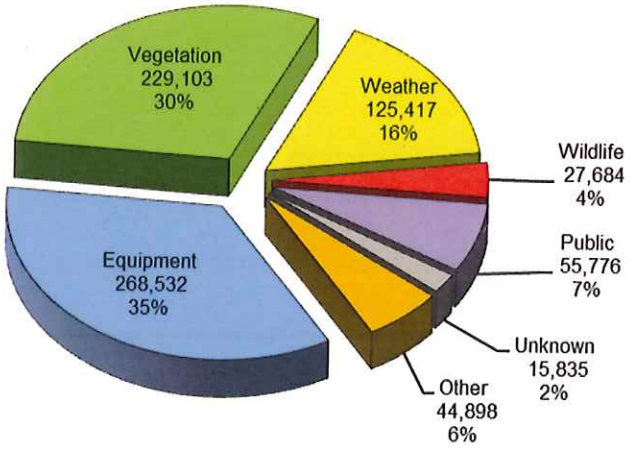


NUMBER OF OUTAGES	
Primary	4,031
Secondary	6,148
Substation	24
Transmission	7
Total	10,210

NUMBER OF OUTAGES BREAKDOWN BY PRIMARY & SECONDARY VOLTAGES

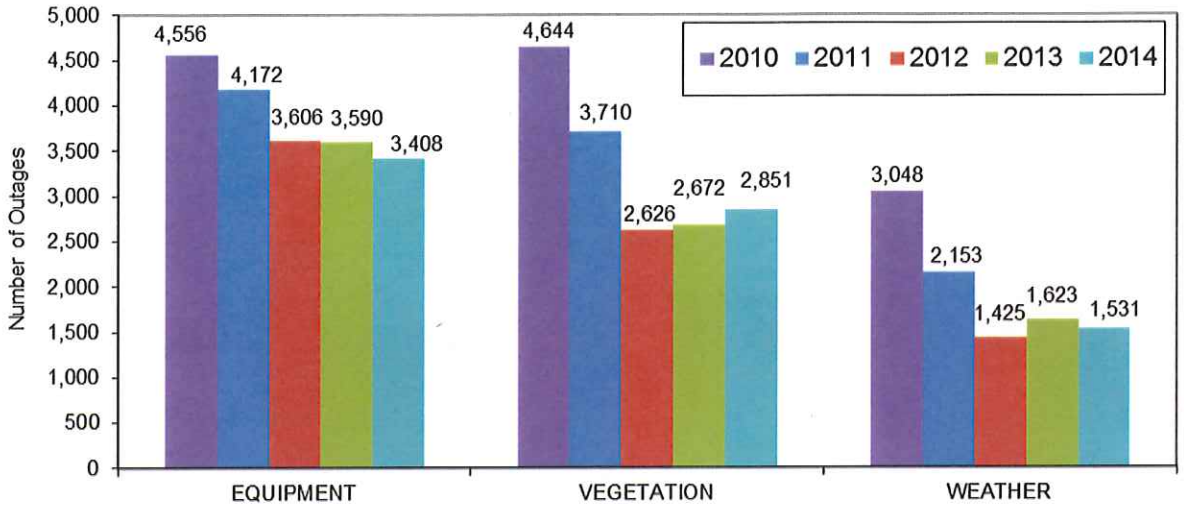


2014 CI BY CAUSE

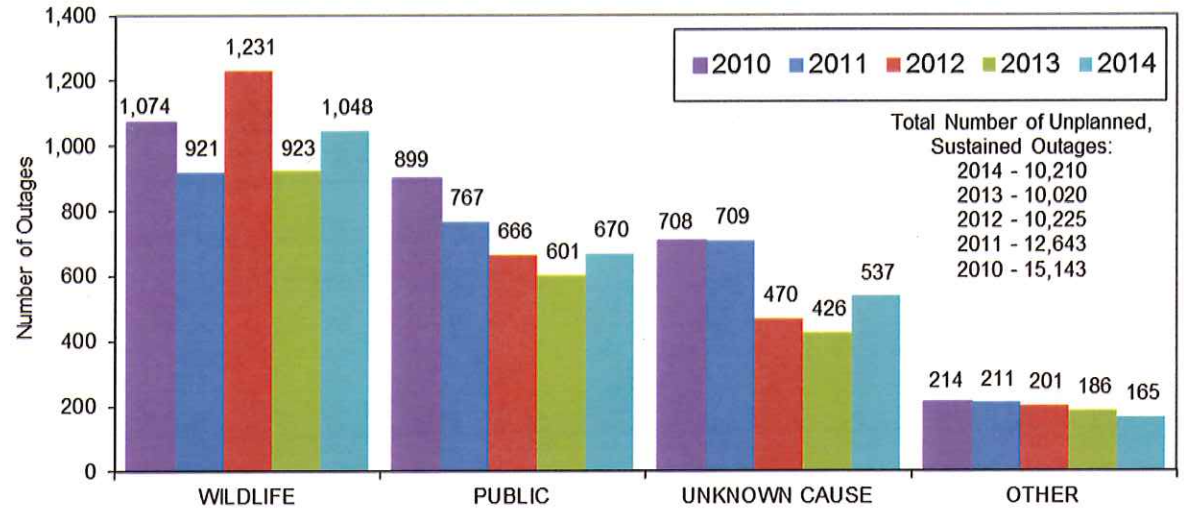


NUMBER OF CI's	
Primary	662,154
Secondary	24,948
Substation	59,442
Transmission	20,701
Total	767,245

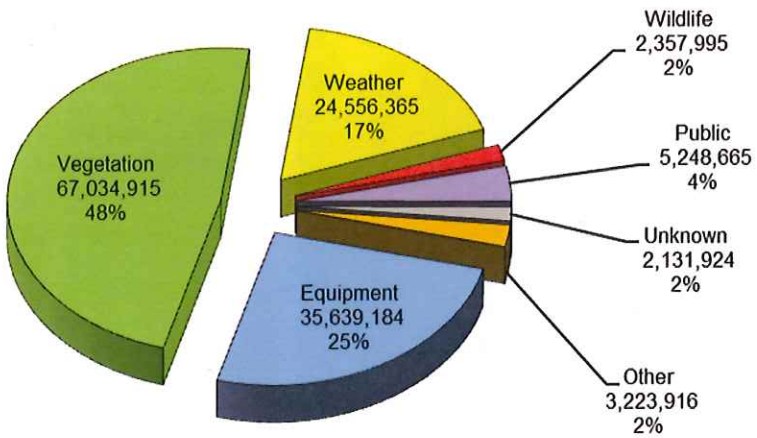
FIVE YEAR OUTAGE CAUSES (PART 1)



FIVE YEAR OUTAGE CAUSES (PART 2)

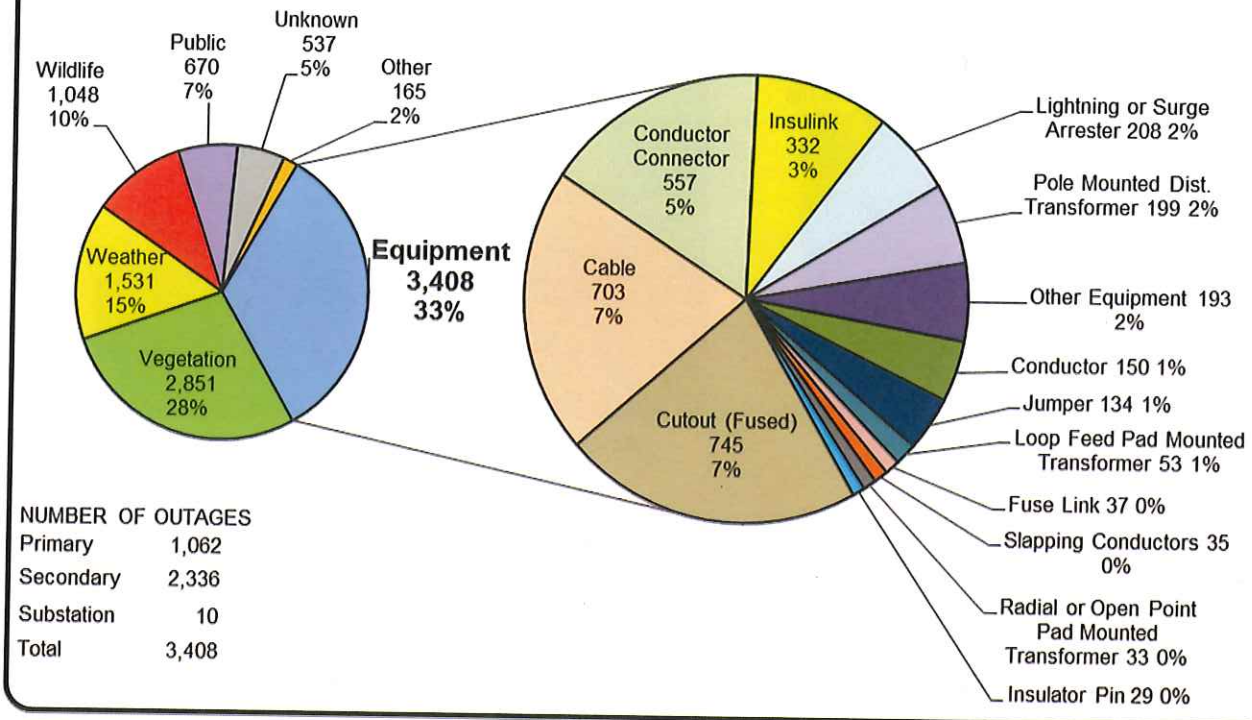


2014 CMI BY CAUSE



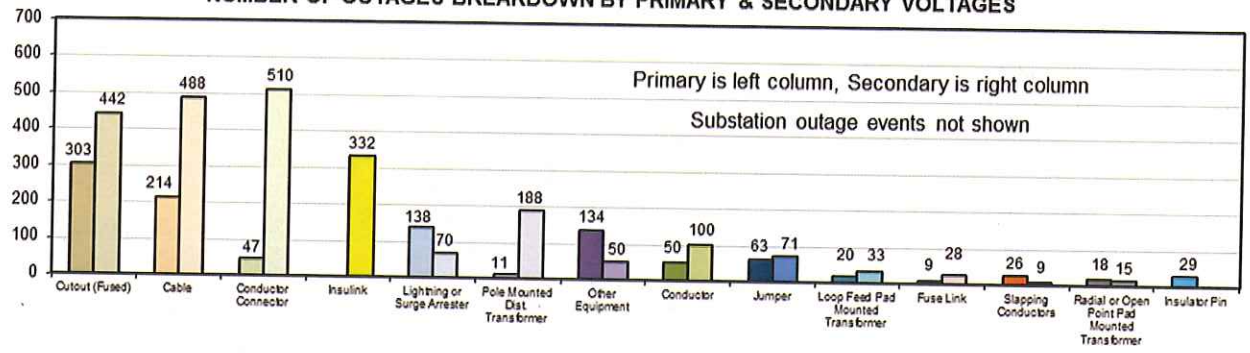
NUMBER OF CMI's	
Primary	121,504,024
Secondary	4,923,801
Substation	11,846,895
Transmission	1,918,244
Total	140,192,964

2014 OUTAGE CAUSES- EQUIPMENT FAILURE / DETERIORATION

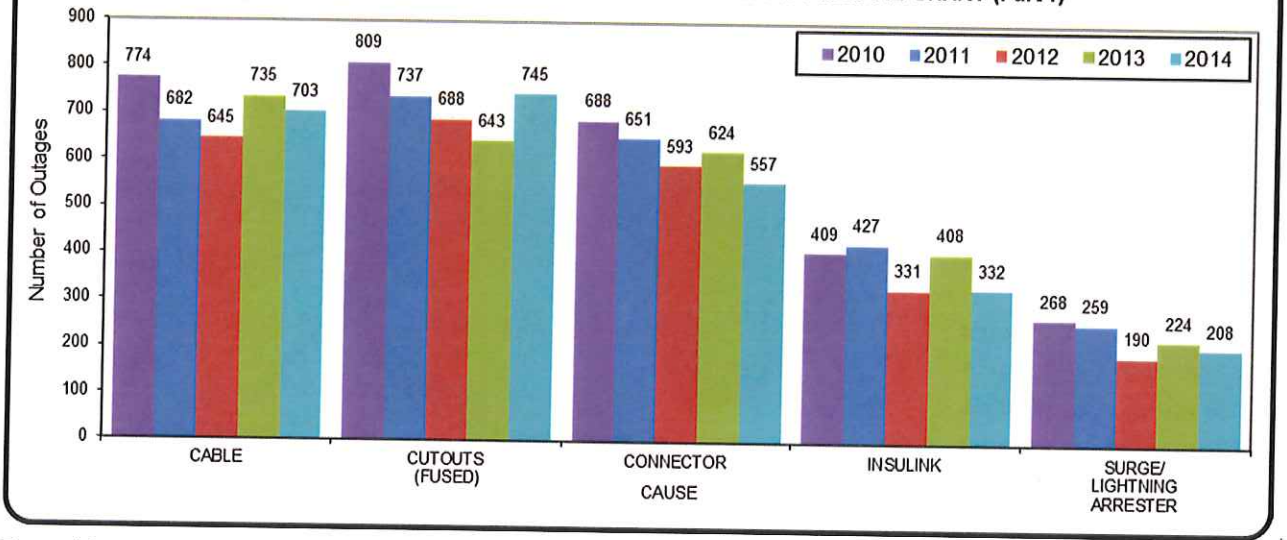


NUMBER OF OUTAGES	
Primary	1,062
Secondary	2,336
Substation	10
Total	3,408

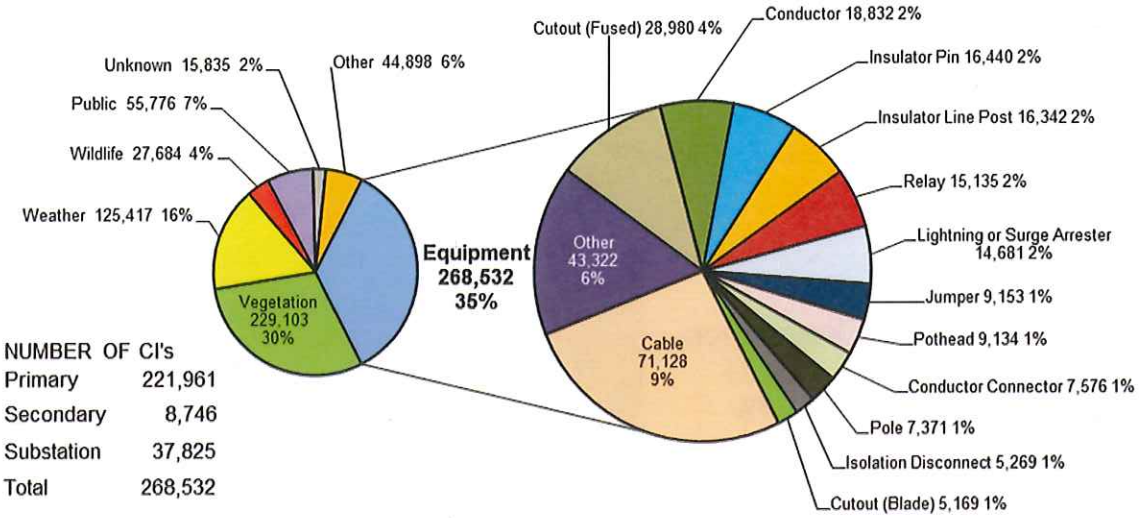
NUMBER OF OUTAGES BREAKDOWN BY PRIMARY & SECONDARY VOLTAGES



FIVE YEAR OUTAGE CAUSES - FAILED EQUIPMENT COMPARISON FROM PIE CHART (Part 1)



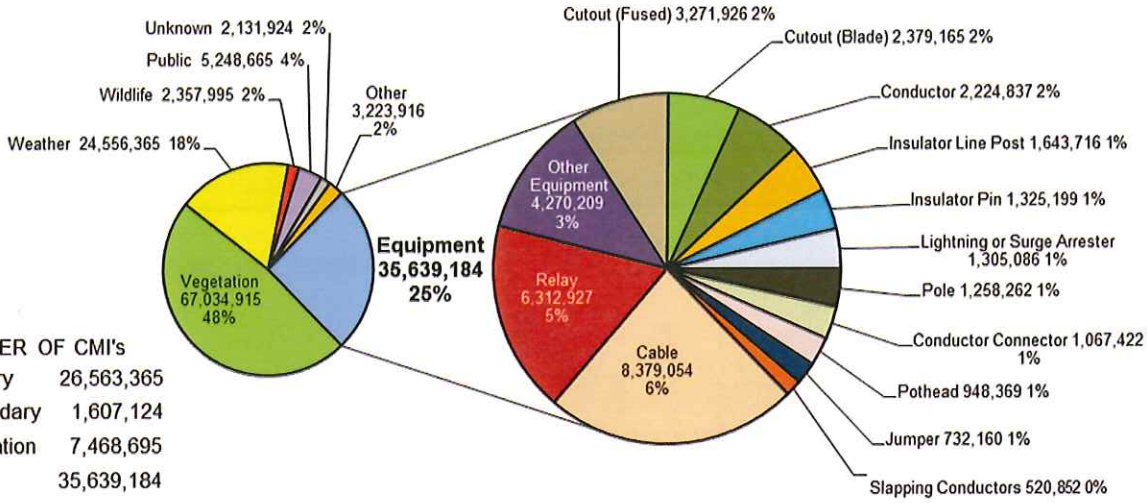
2014 OUTAGE CAUSES- EQUIPMENT FAILURE / DETERIORATION - CI



NUMBER OF CI's

Primary	221,961
Secondary	8,746
Substation	37,825
Total	268,532

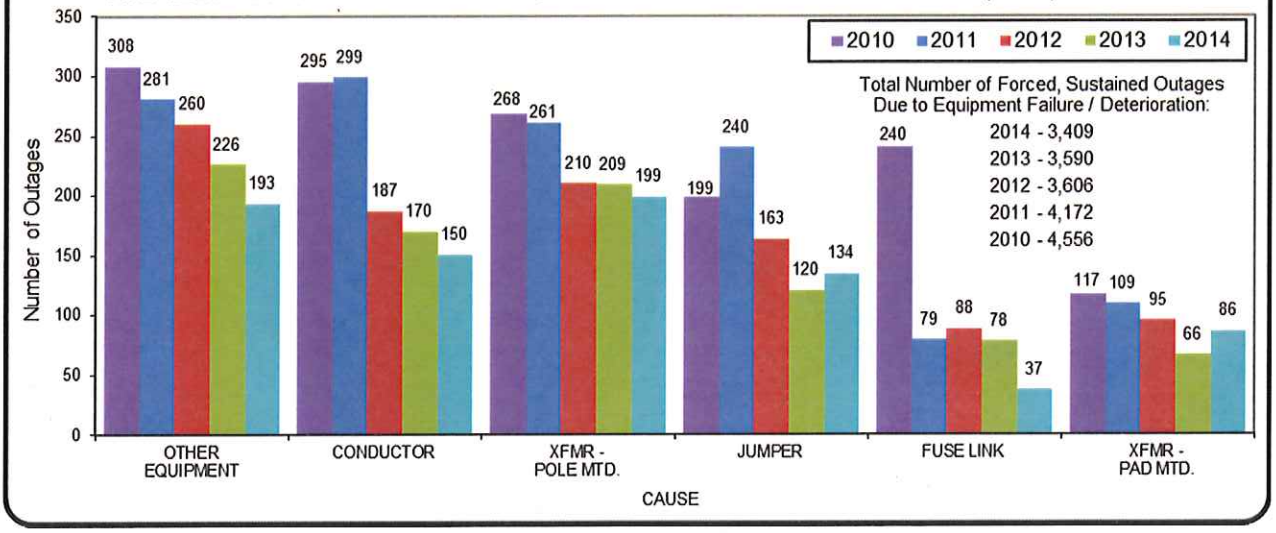
2014 OUTAGE CAUSES- EQUIPMENT FAILURE / DETERIORATION - CMI



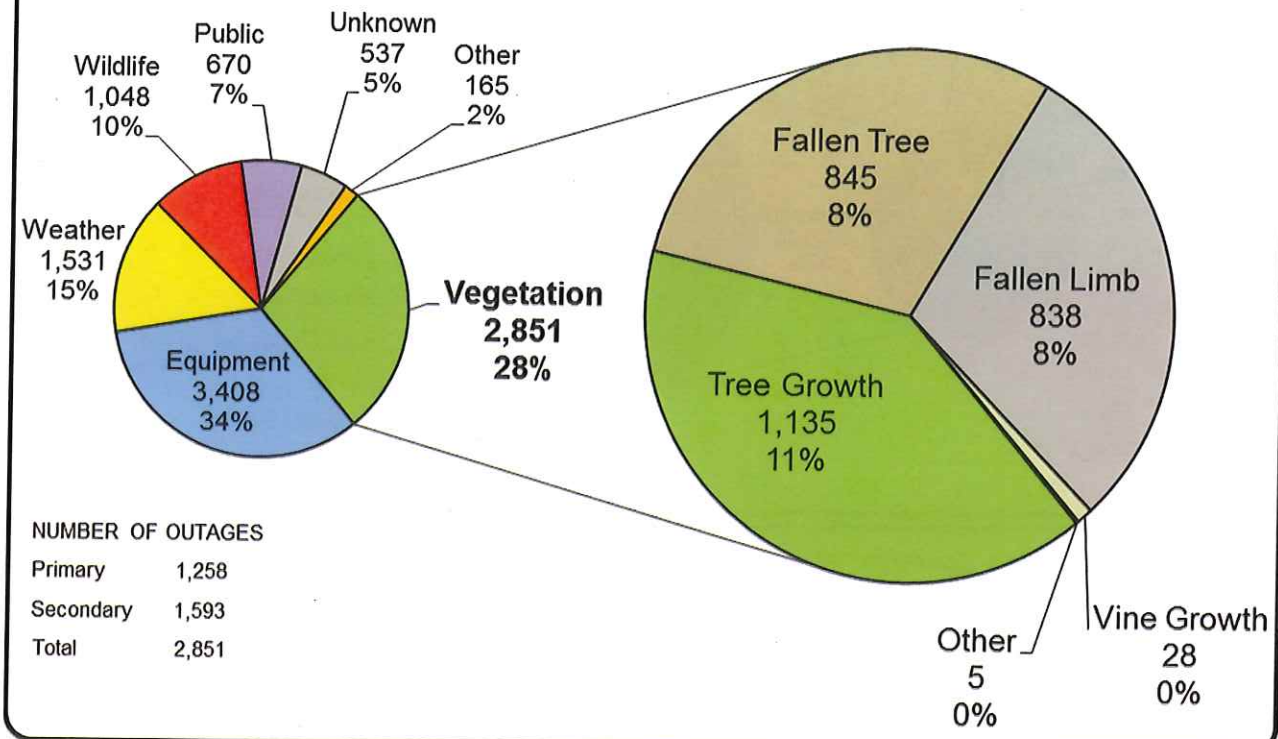
NUMBER OF CMI's

Primary	26,563,365
Secondary	1,607,124
Substation	7,468,695
Total	35,639,184

FIVE YEAR OUTAGE CAUSES - FAILED EQUIPMENT COMPARISON FROM PIE CHART (Part 2)



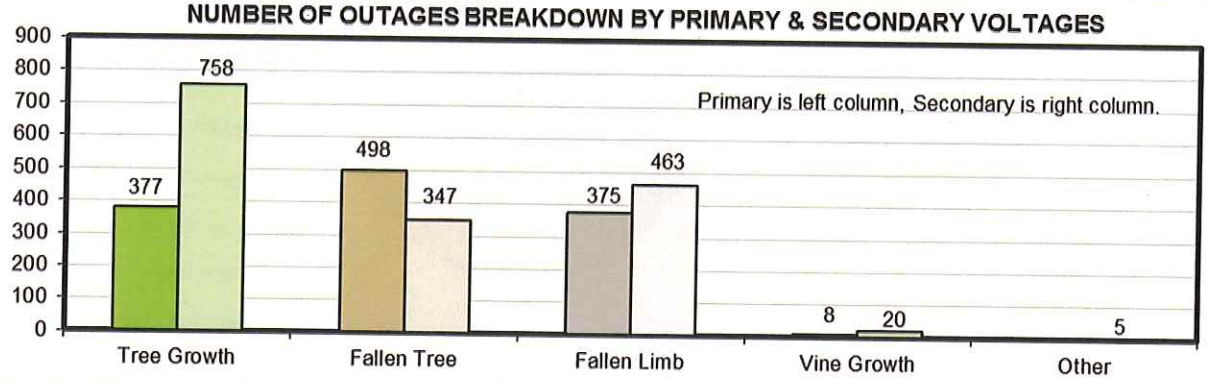
2014 OUTAGE CAUSES - VEGETATION



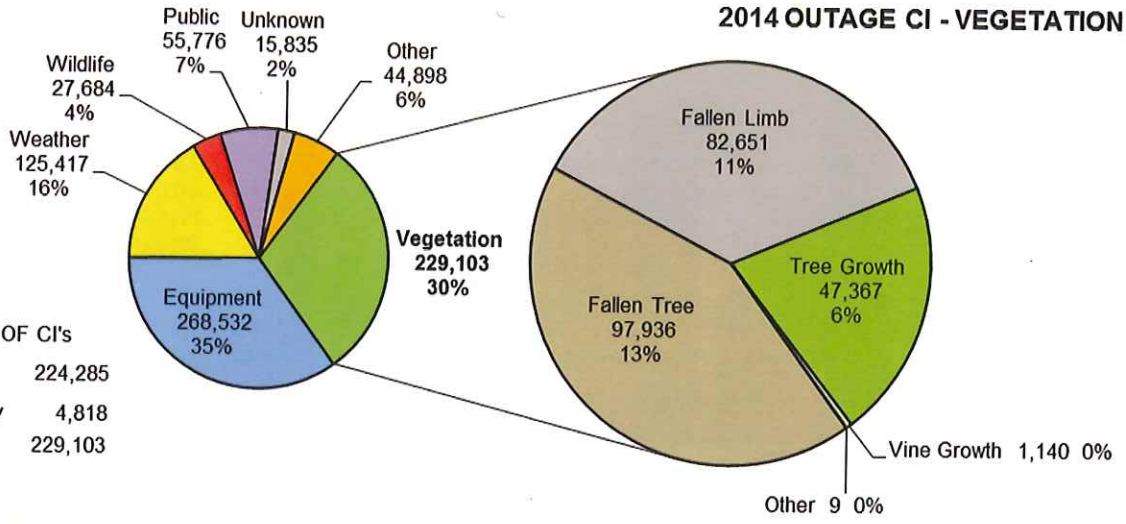
NUMBER OF OUTAGES

Primary	1,258
Secondary	1,593
Total	2,851

NUMBER OF OUTAGES BREAKDOWN BY PRIMARY & SECONDARY VOLTAGES

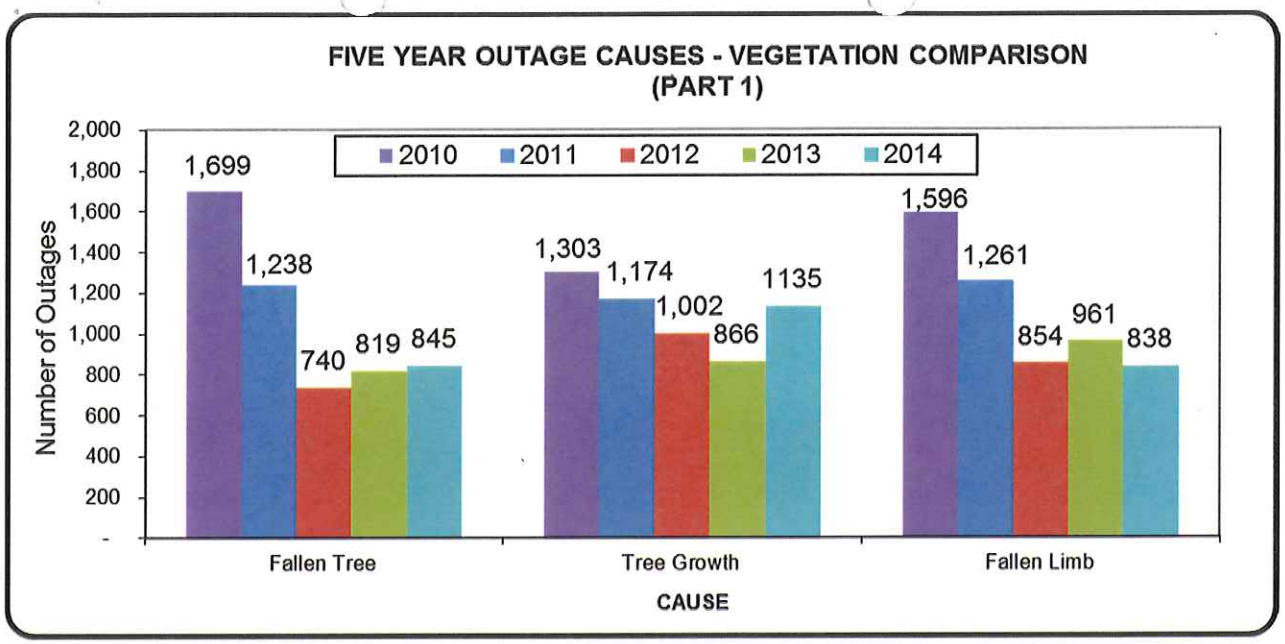


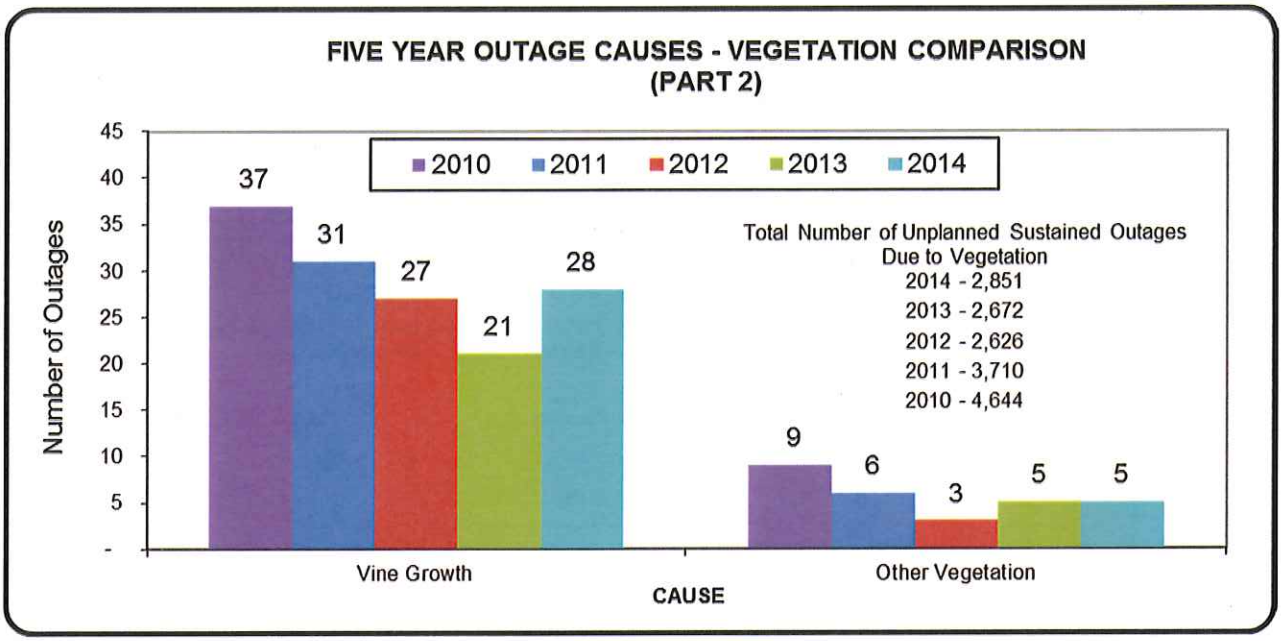
2014 OUTAGE CI - VEGETATION

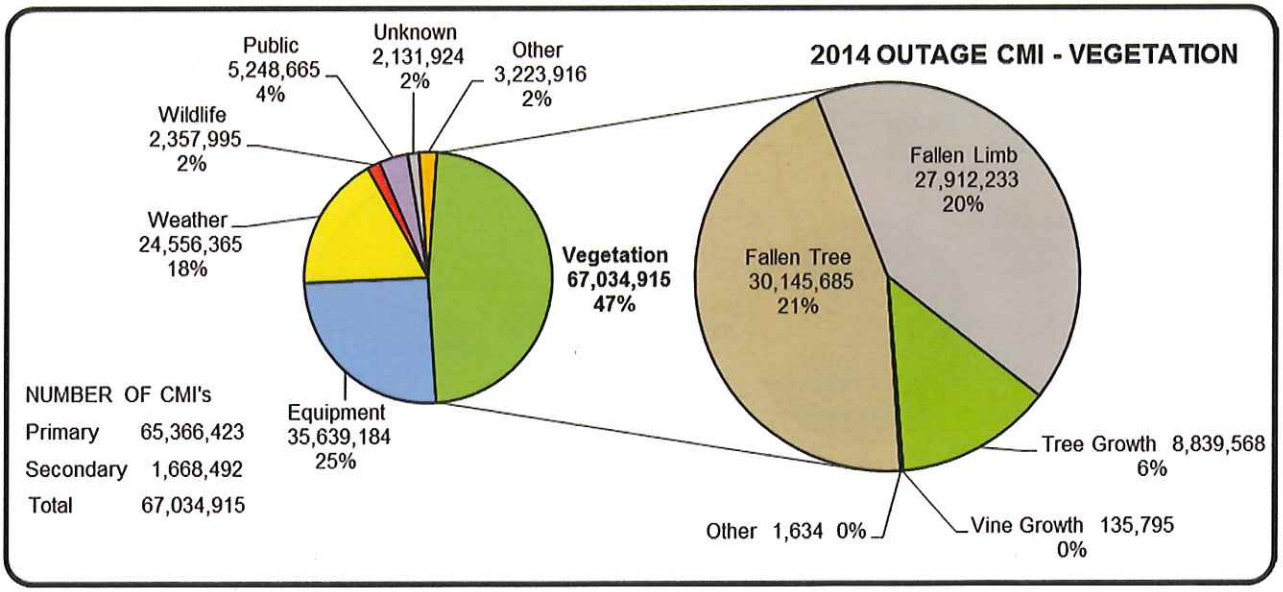


NUMBER OF CI's

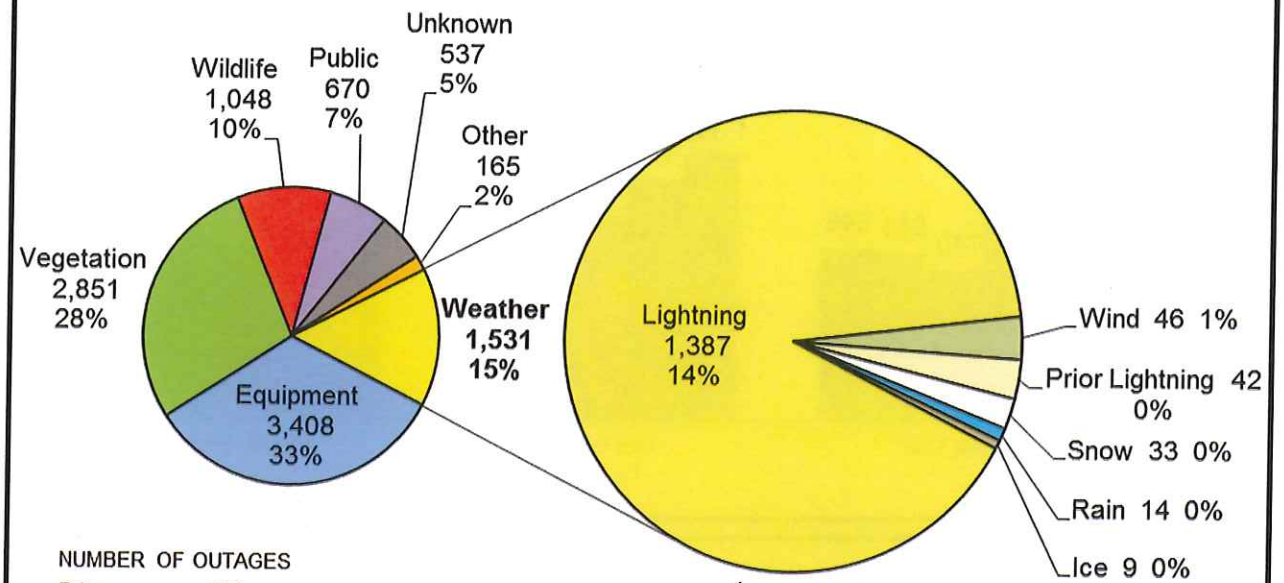
Primary	224,285
Secondary	4,818
Total	229,103





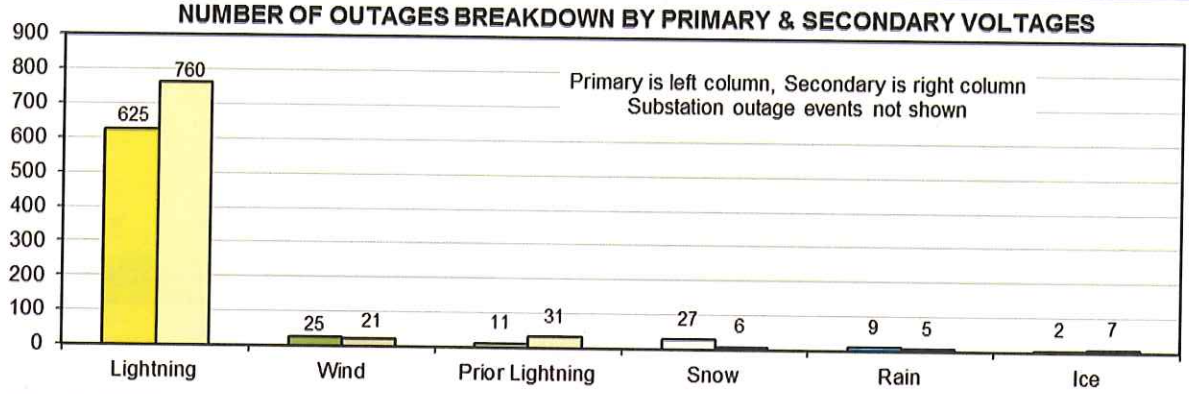


2014 OUTAGE CAUSES - WEATHER

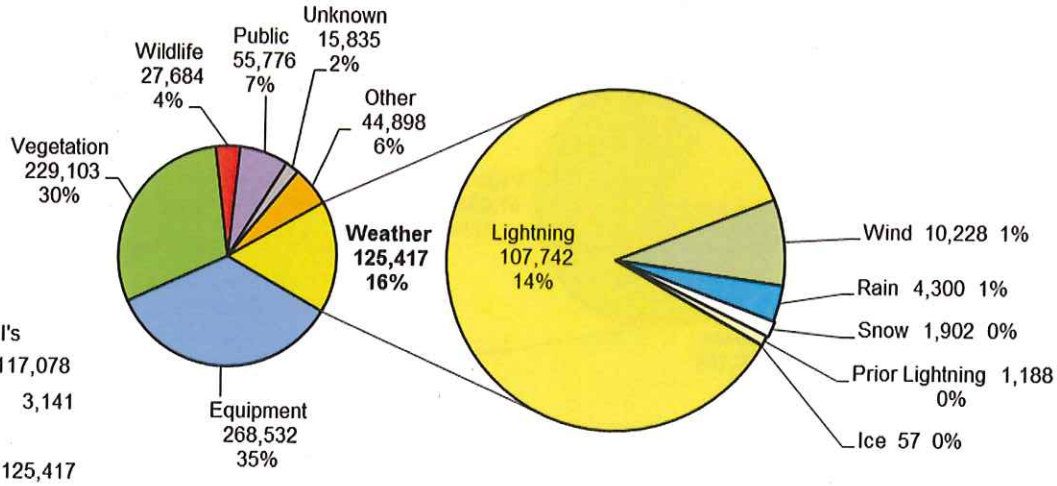


NUMBER OF OUTAGES	
Primary	699
Secondary	830
Substation	2
Total	1,531

NUMBER OF OUTAGES BREAKDOWN BY PRIMARY & SECONDARY VOLTAGES

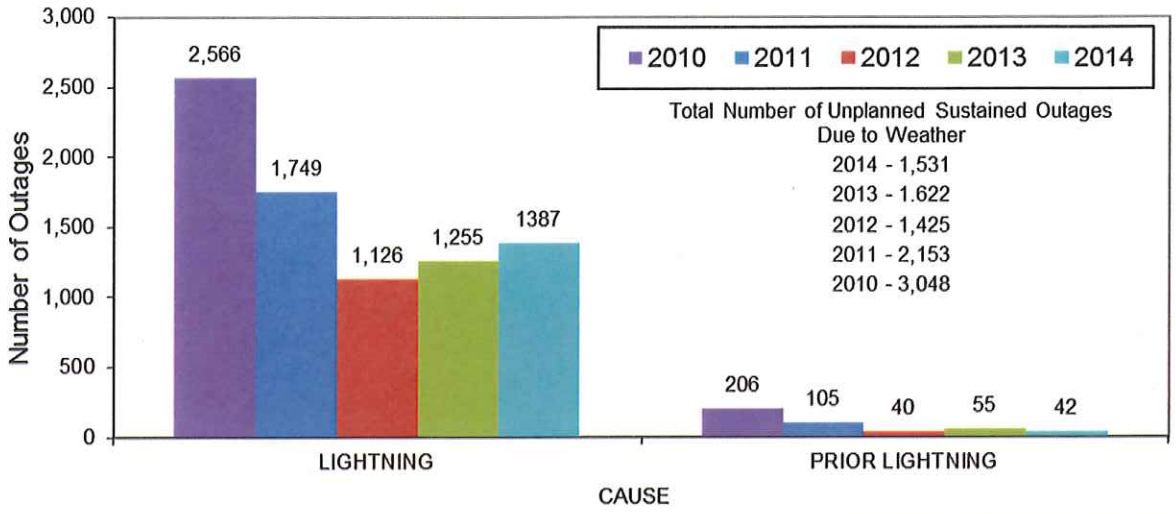


2014 OUTAGE CI - WEATHER

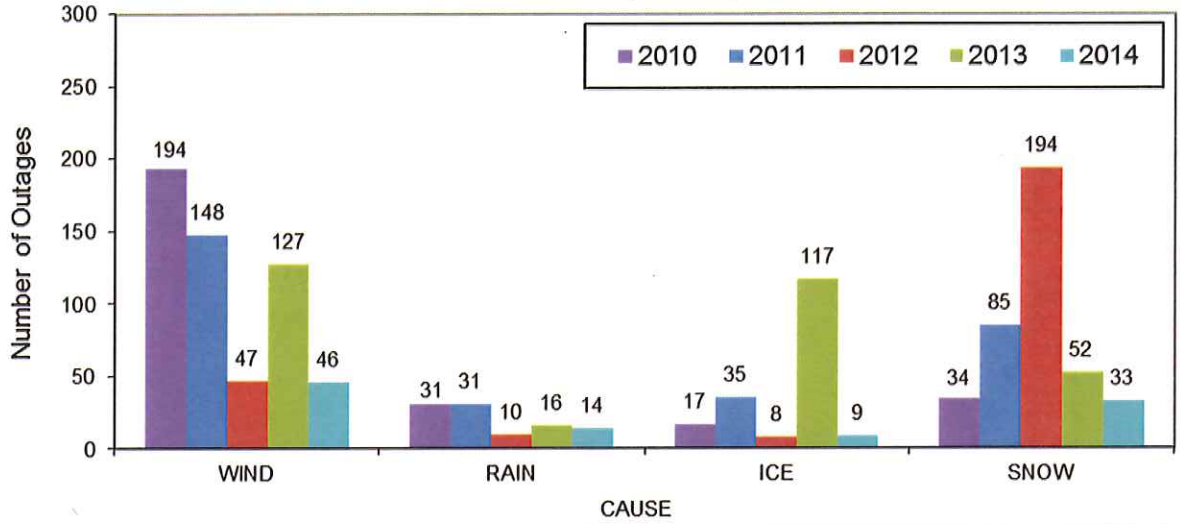


NUMBER OF CI's	
Primary	117,078
Secondary	3,141
Total	125,417

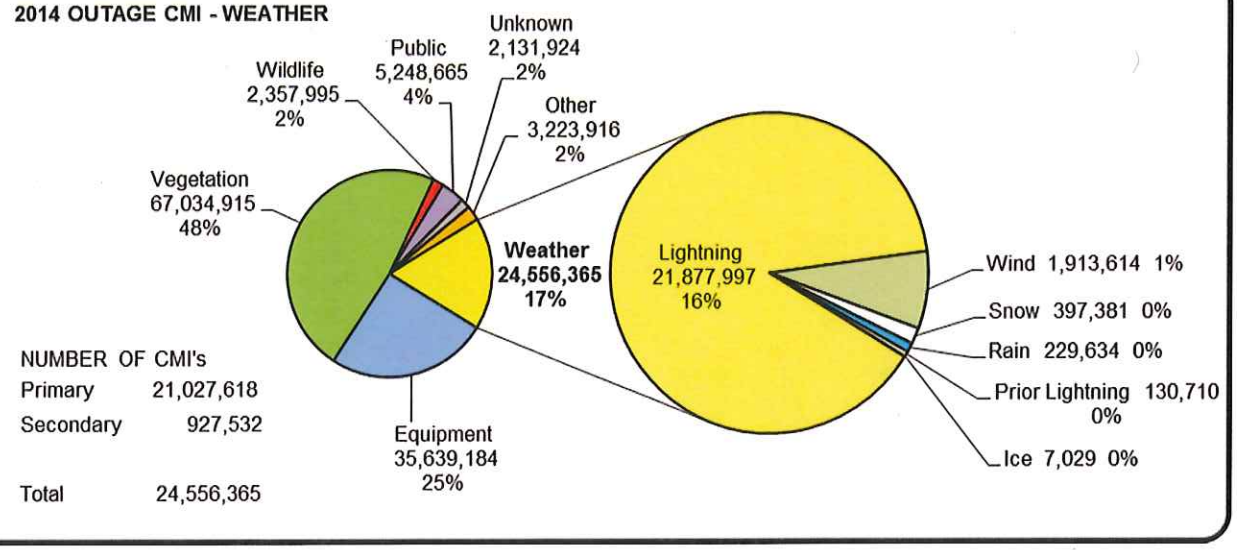
FIVE YEAR OUTAGE CAUSES - WEATHER COMPARISON (PART 1)



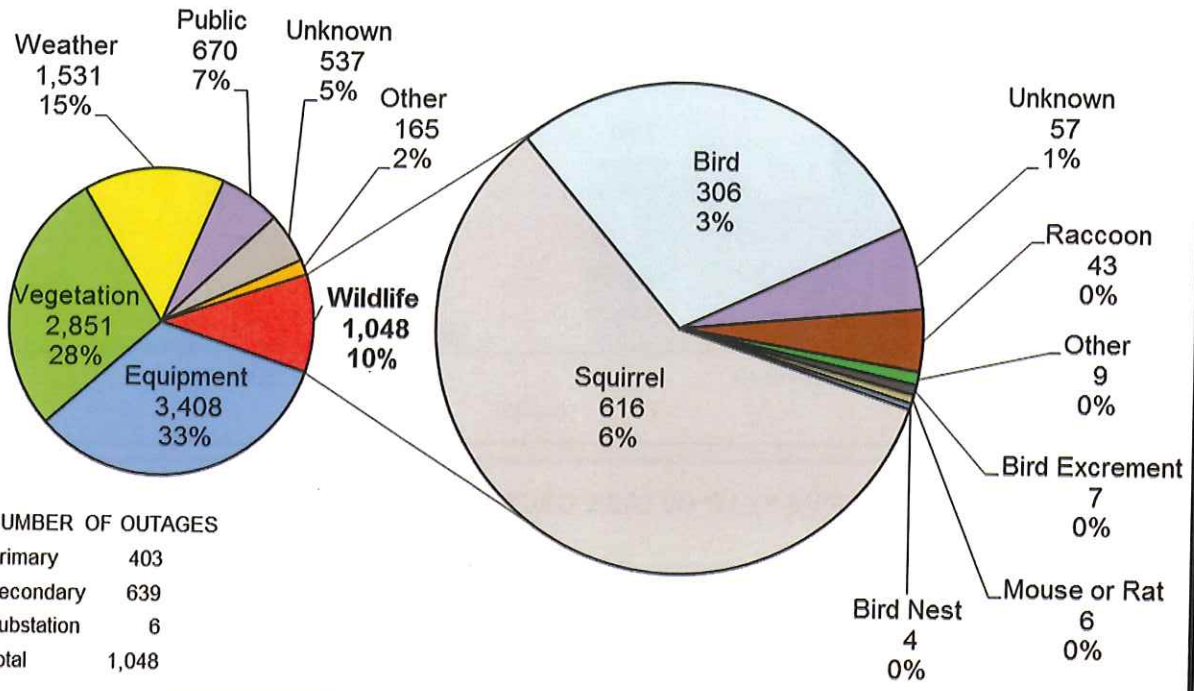
FIVE YEAR OUTAGE CAUSES - WEATHER COMPARISON (PART 2)



2014 OUTAGE CMI - WEATHER



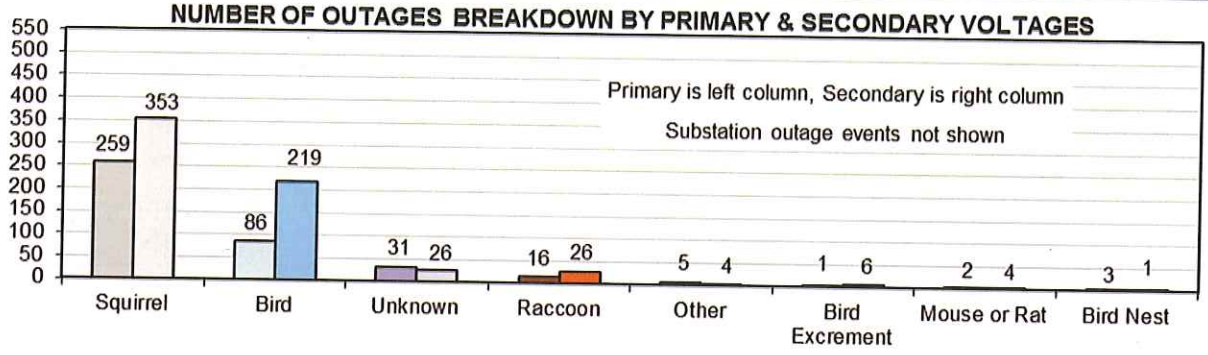
2014 OUTAGE CAUSES - WILDLIFE



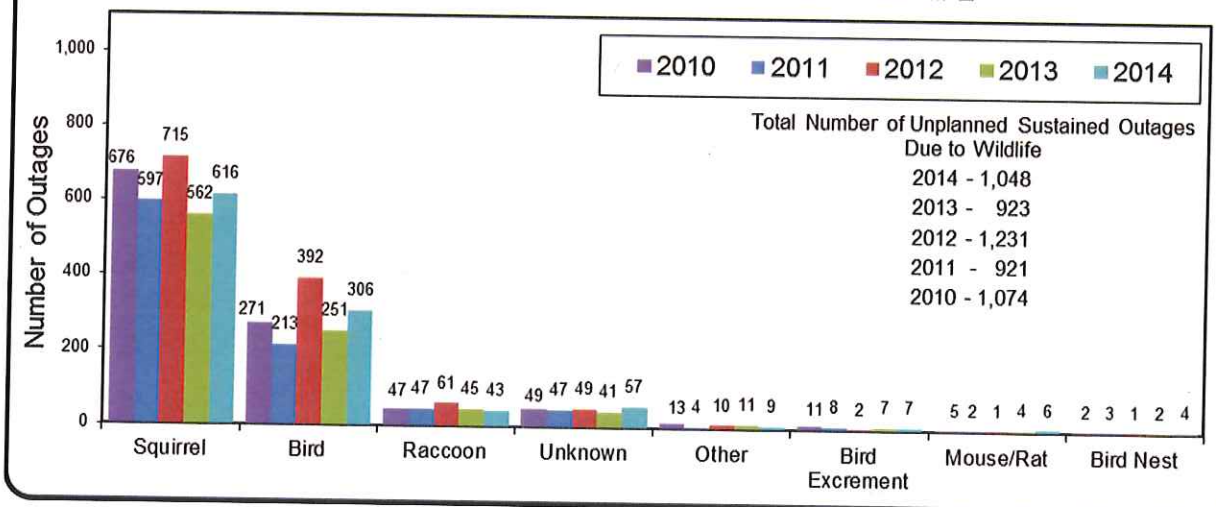
NUMBER OF OUTAGES

Primary	403
Secondary	639
Substation	6
Total	1,048

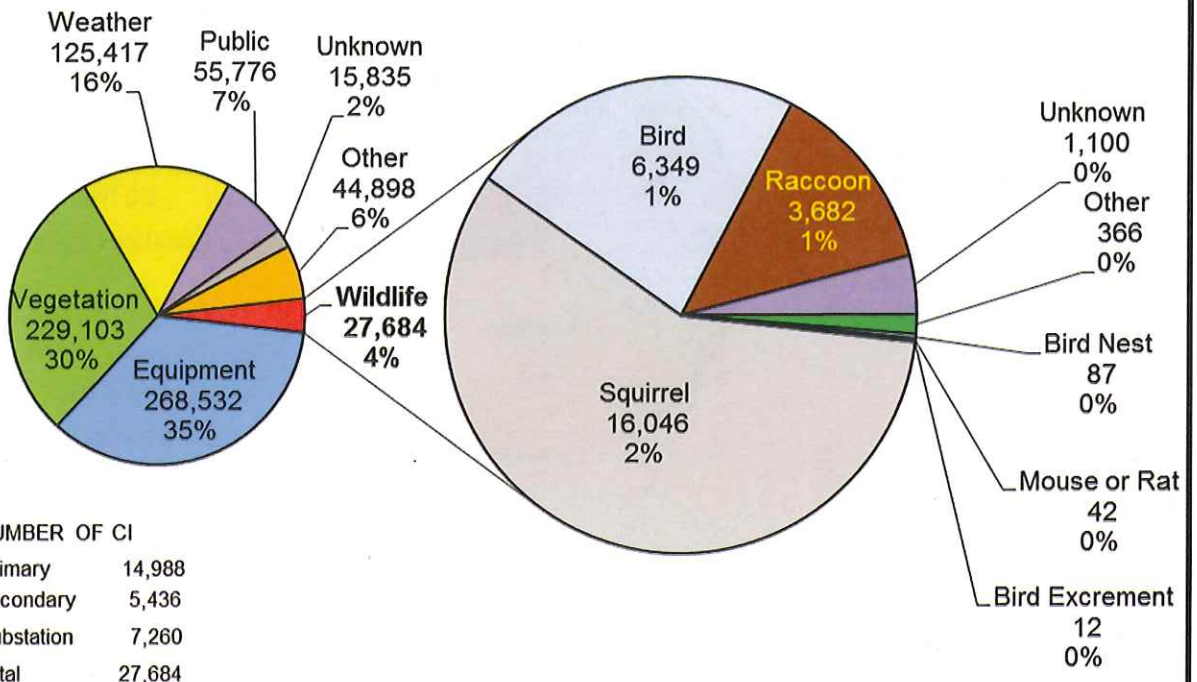
NUMBER OF OUTAGES BREAKDOWN BY PRIMARY & SECONDARY VOLTAGES



FIVE YEAR OUTAGE CAUSES - WILDLIFE

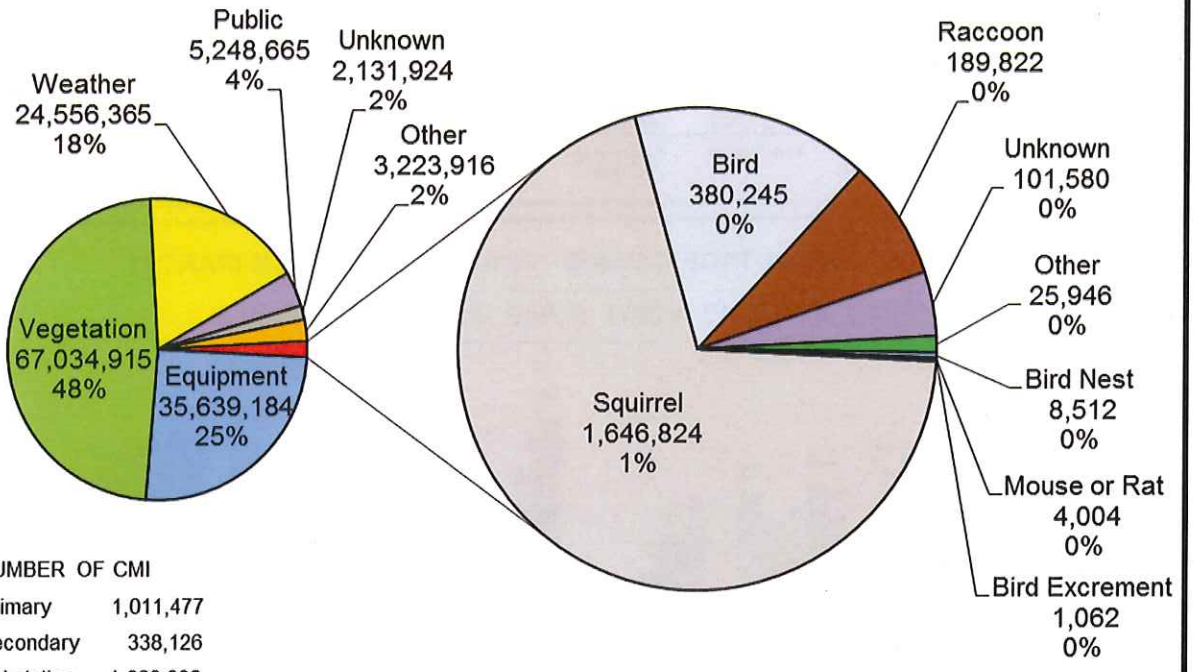


2014 OUTAGE CAUSES - WILDLIFE - CI



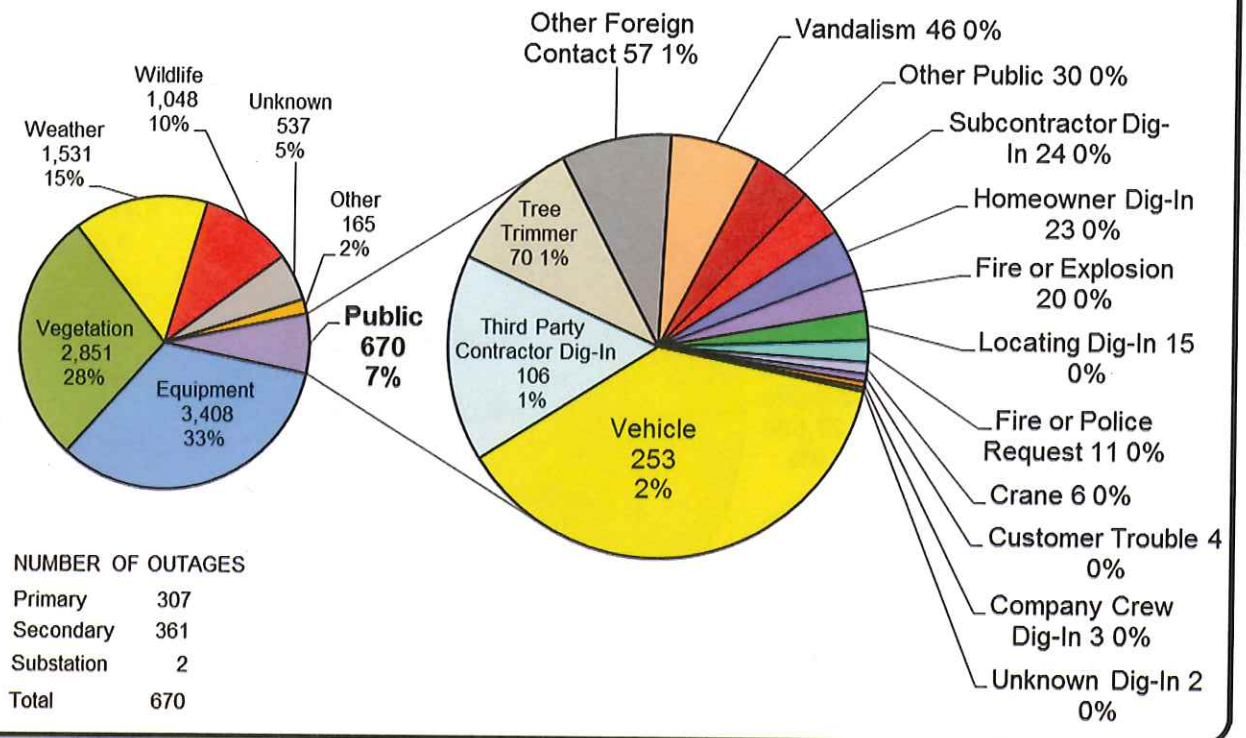
NUMBER OF CI	
Primary	14,988
Secondary	5,436
Substation	7,260
Total	27,684

2014 OUTAGE CAUSES - WILDLIFE - CMI



NUMBER OF CMI	
Primary	1,011,477
Secondary	338,126
Substation	1,008,392
Total	2,357,995

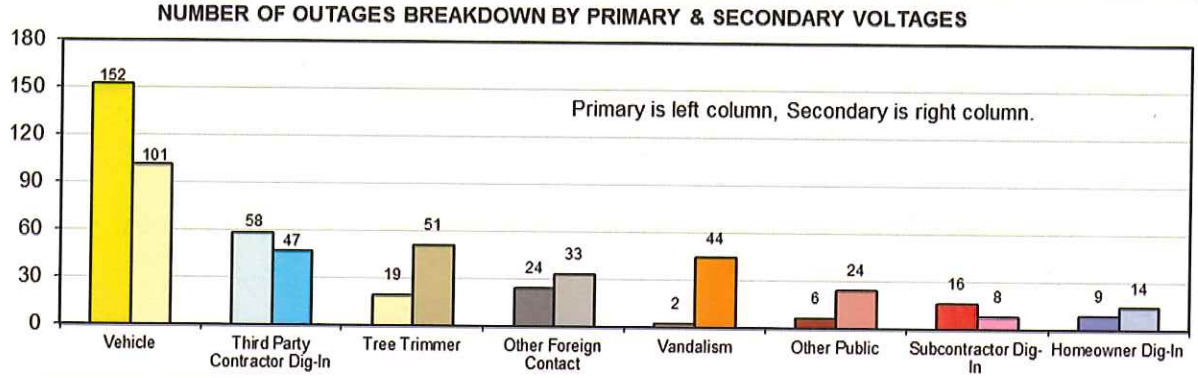
2014 OUTAGE CAUSES - PUBLIC



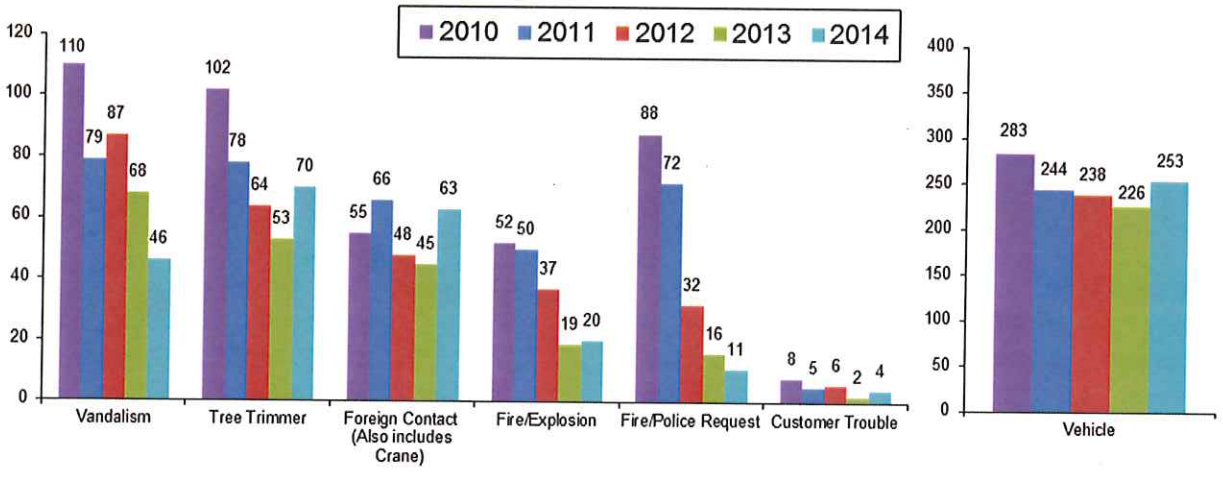
NUMBER OF OUTAGES

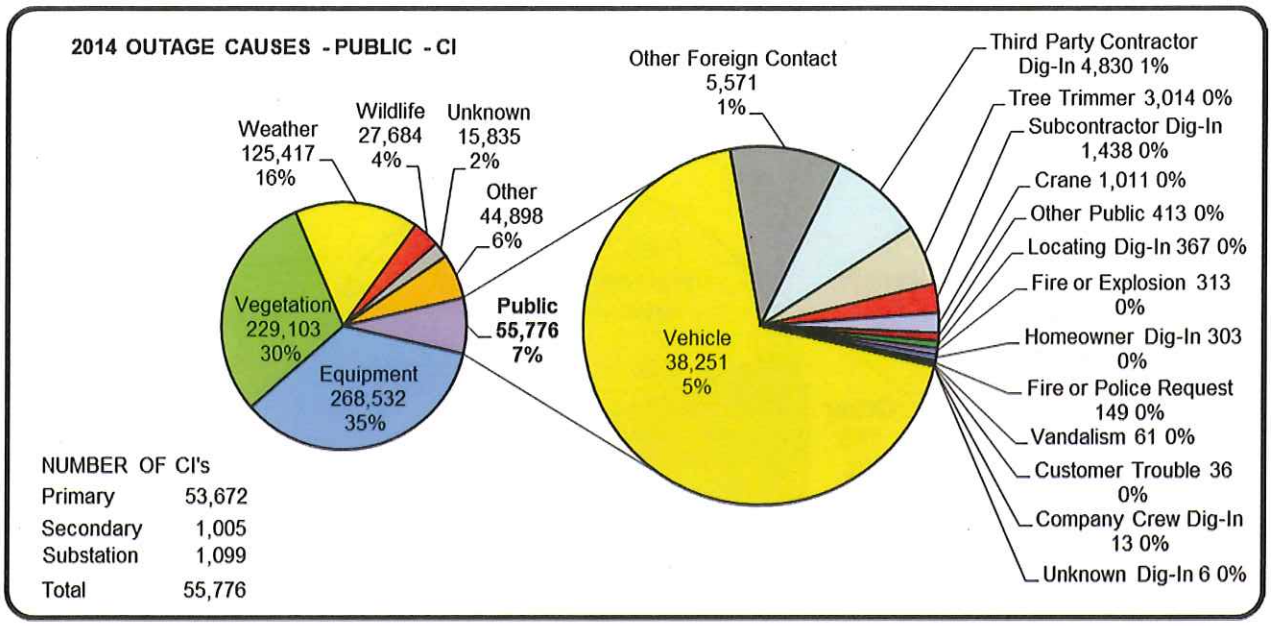
Primary	307
Secondary	361
Substation	2
Total	670

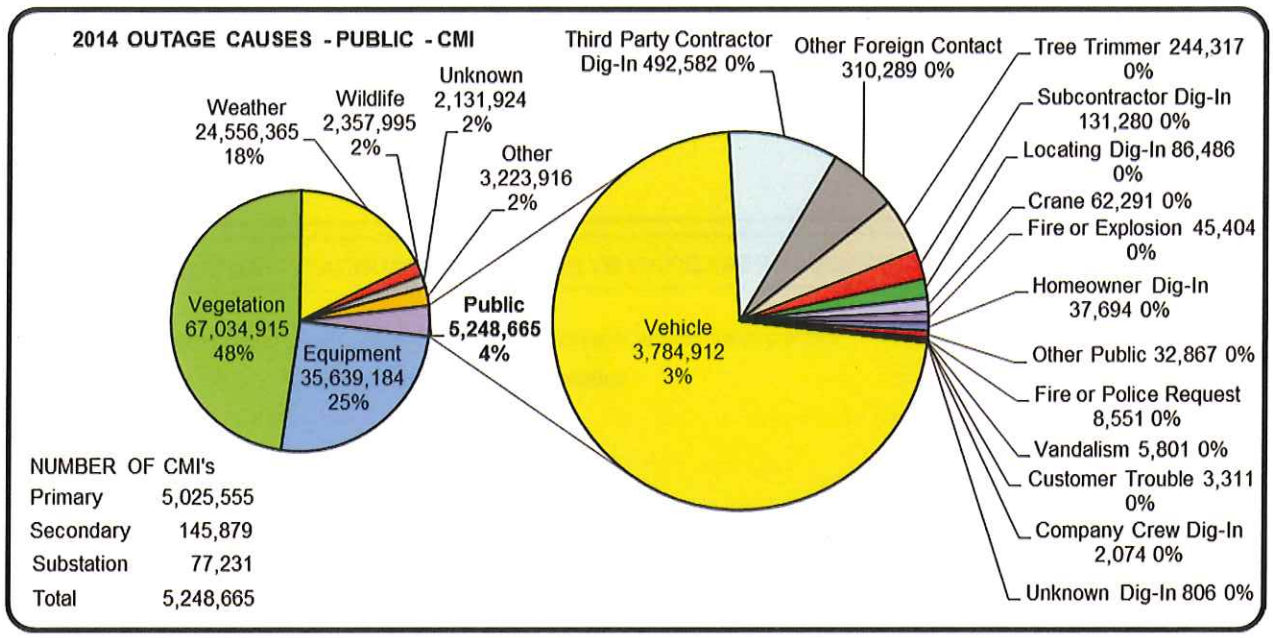
NUMBER OF OUTAGES BREAKDOWN BY PRIMARY & SECONDARY VOLTAGES

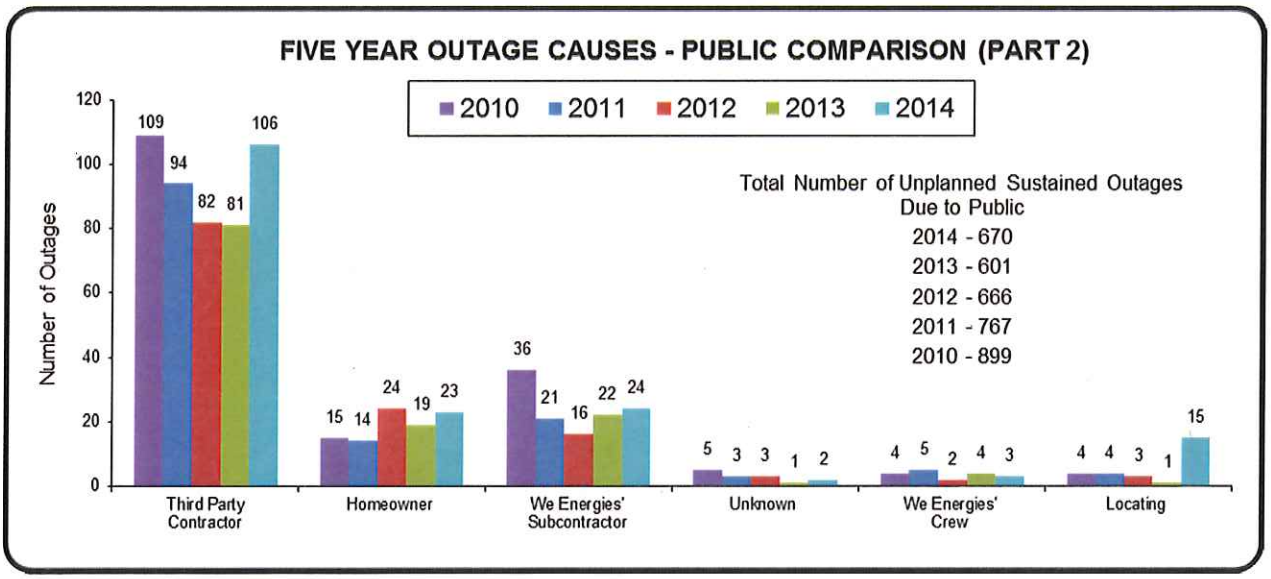


FIVE YEAR OUTAGE CAUSES - PUBLIC COMPARISON (PART 1)

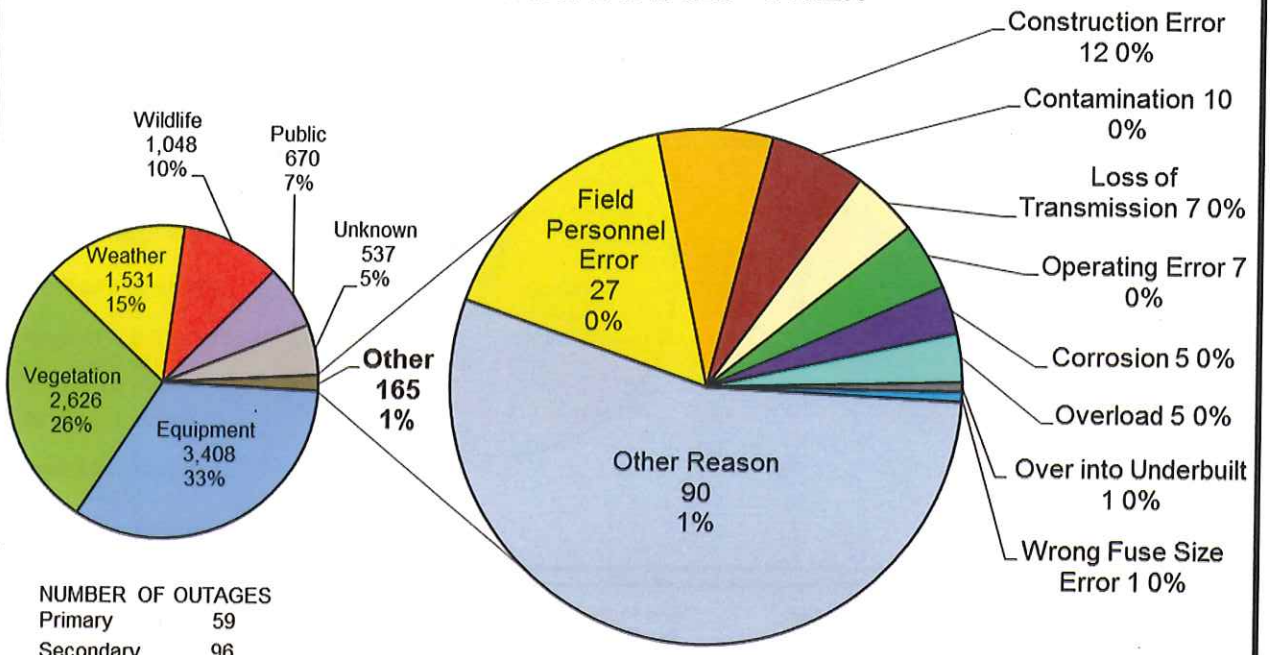








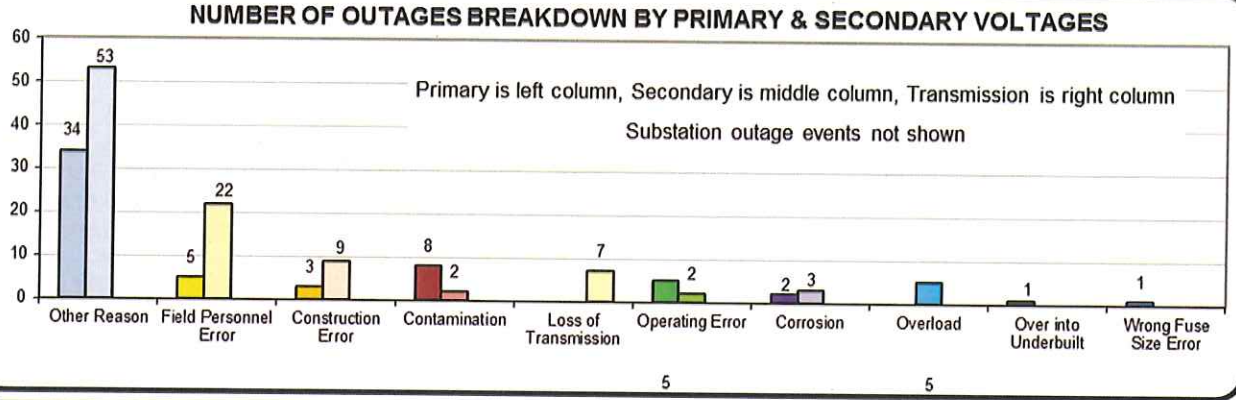
2014 OUTAGE CAUSES - OTHER



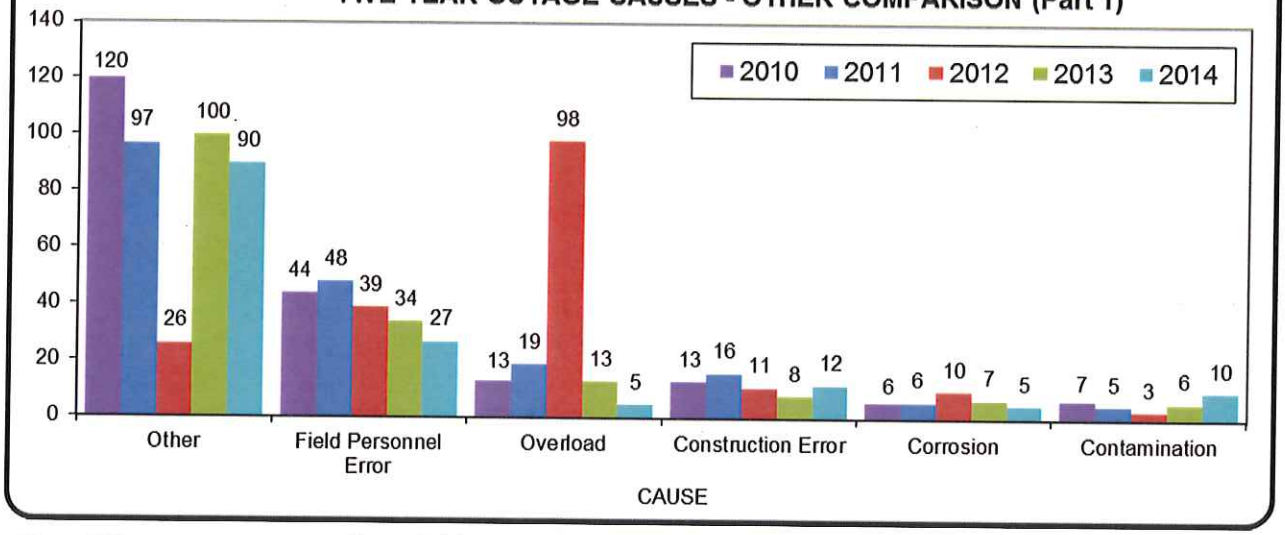
NUMBER OF OUTAGES

Primary	59
Secondary	96
Substation	3
Transmission	7
Total	165

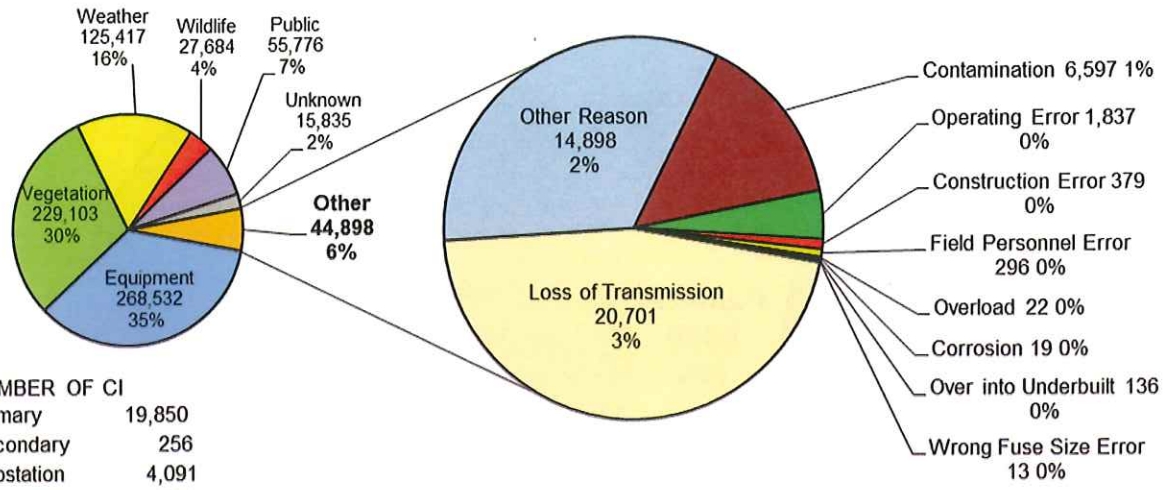
NUMBER OF OUTAGES BREAKDOWN BY PRIMARY & SECONDARY VOLTAGES



FIVE YEAR OUTAGE CAUSES - OTHER COMPARISON (Part 1)



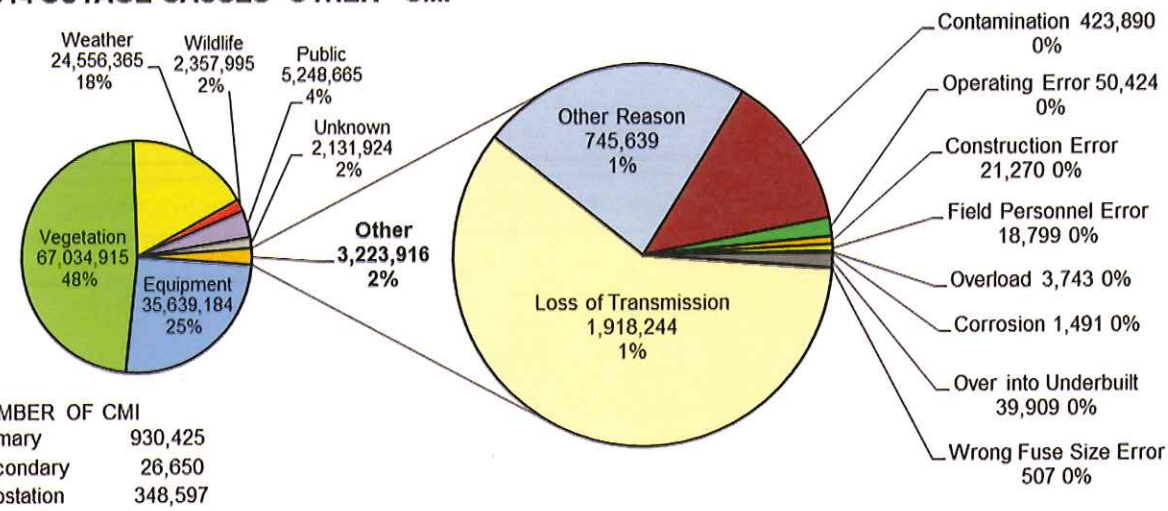
2014 OUTAGE CAUSES- OTHER - CI



NUMBER OF CI

Primary	19,850
Secondary	256
Substation	4,091
Transmission	20,701
Total	44,898

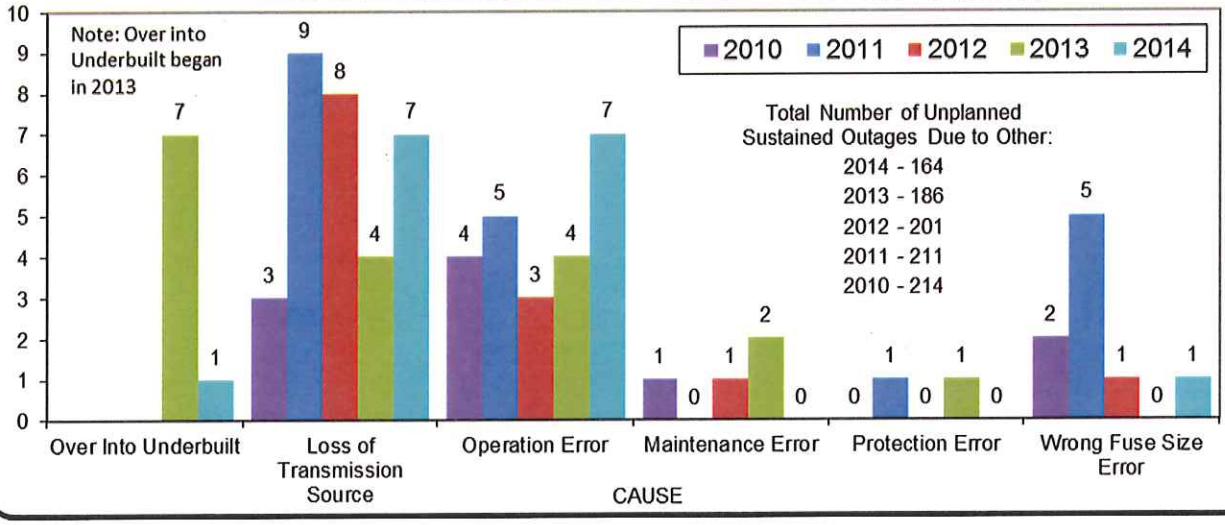
2014 OUTAGE CAUSES- OTHER - CMI



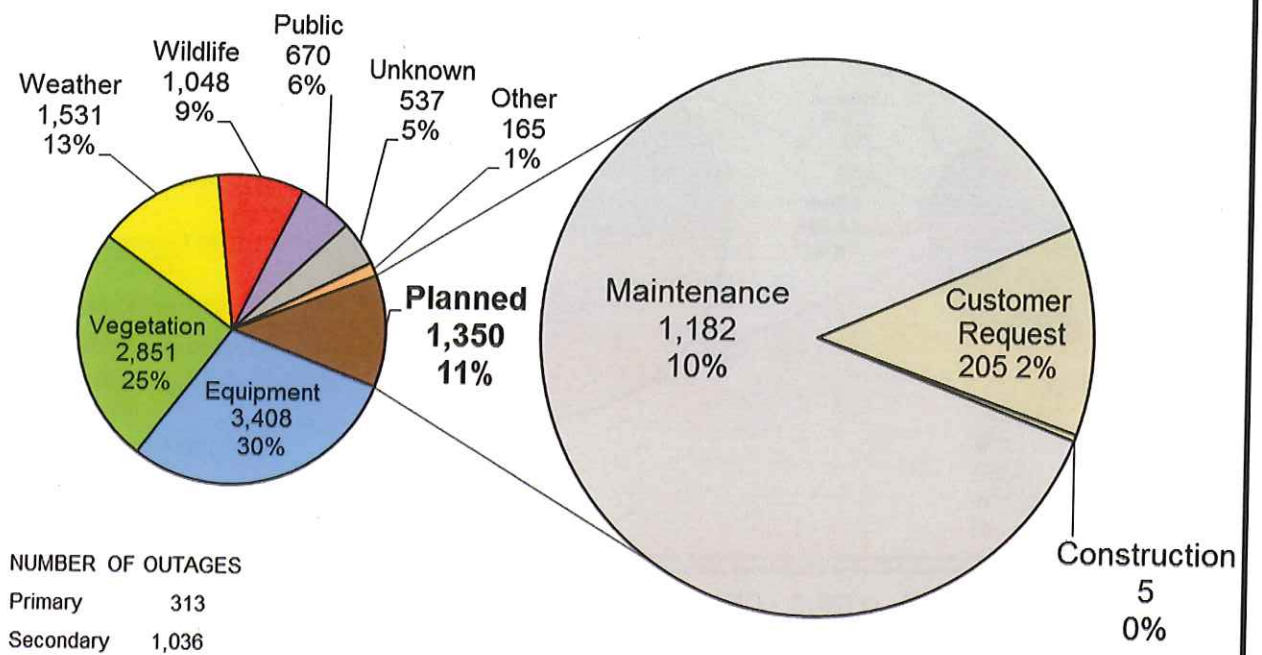
NUMBER OF CMI

Primary	930,425
Secondary	26,650
Substation	348,597
Transmission	1,918,244
Total	3,223,916

FIVE YEAR OUTAGE CAUSES - OTHER COMPARISON (Part 2)

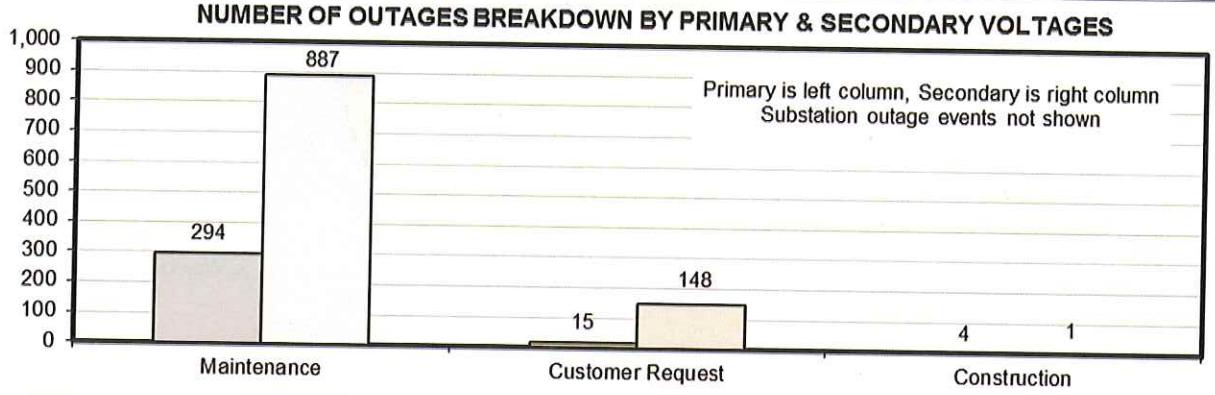


2014 OUTAGE CAUSES - PLANNED

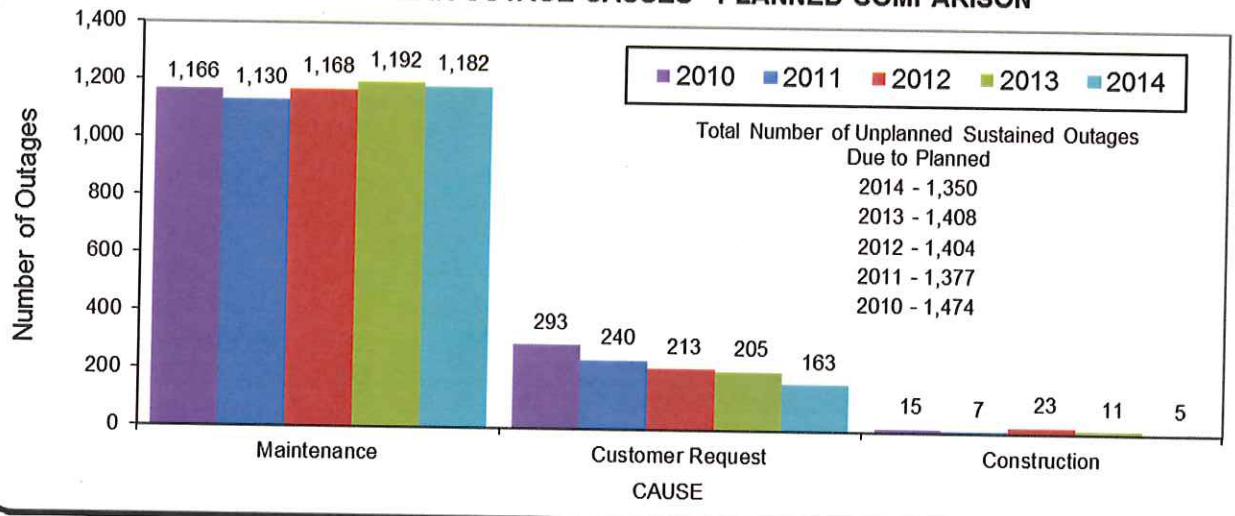


NUMBER OF OUTAGES	
Primary	313
Secondary	1,036
Substation	1
Total	1,350

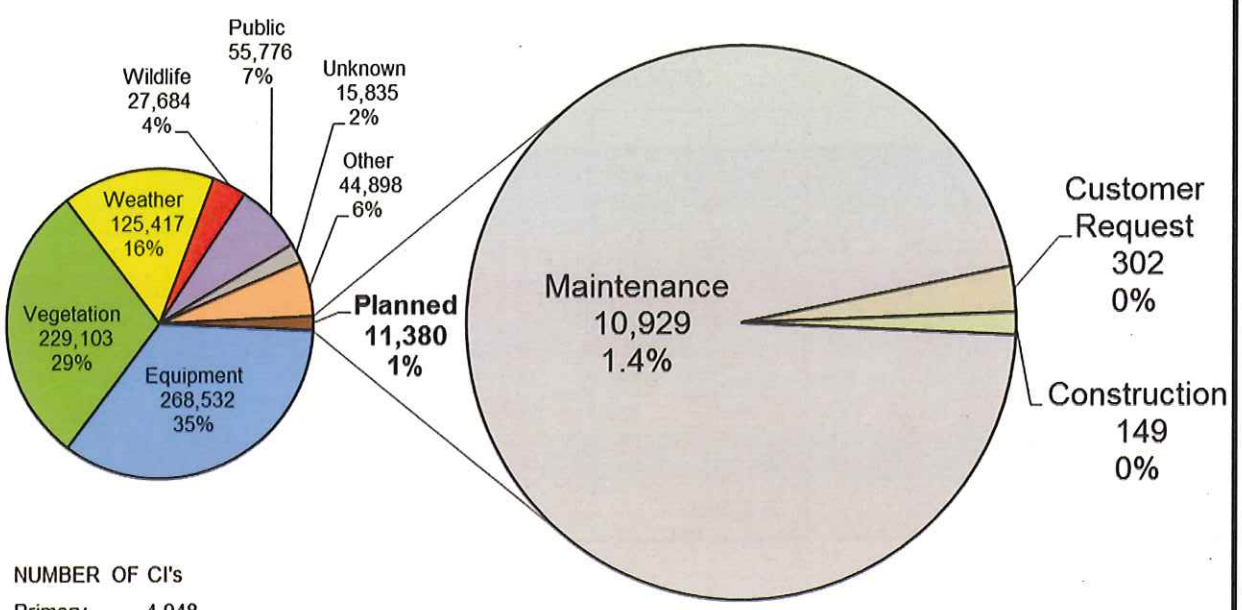
NUMBER OF OUTAGES BREAKDOWN BY PRIMARY & SECONDARY VOLTAGES



FIVE YEAR OUTAGE CAUSES - PLANNED COMPARISON

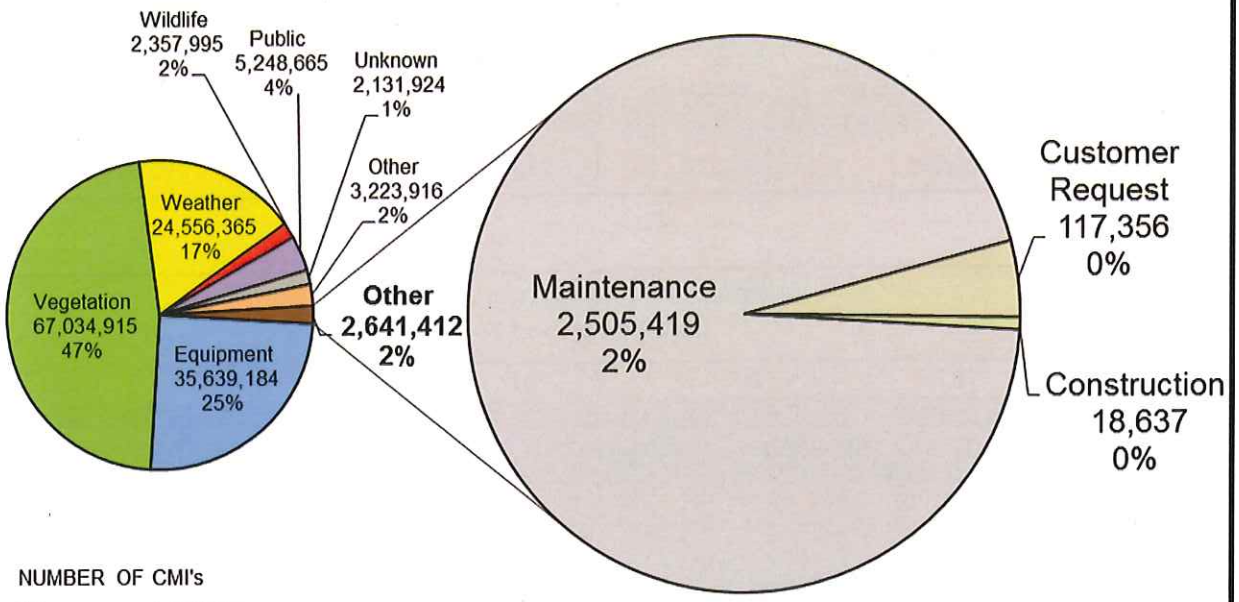


2014 OUTAGE CI - PLANNED



NUMBER OF CI's	
Primary	4,948
Secondary	5,393
Substation	1,039
Total	11,380

2014 OUTAGE CMI - PLANNED



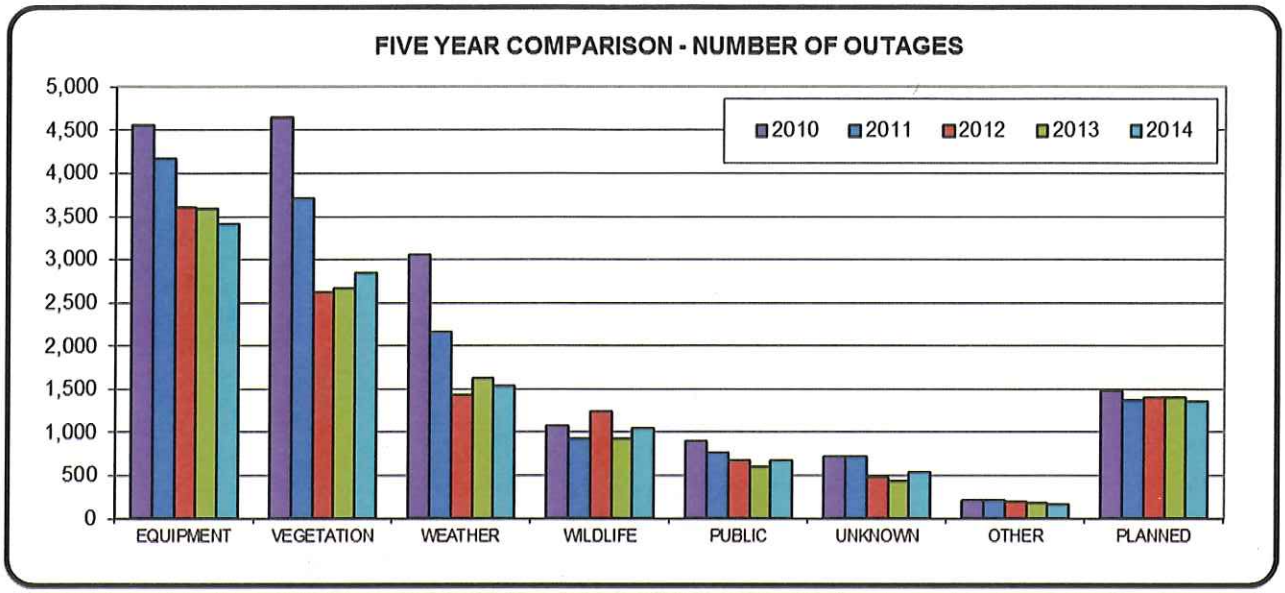
NUMBER OF CMI's	
Primary	1,196,571
Secondary	1,418,866
Substation	25,975
Total	2,641,412

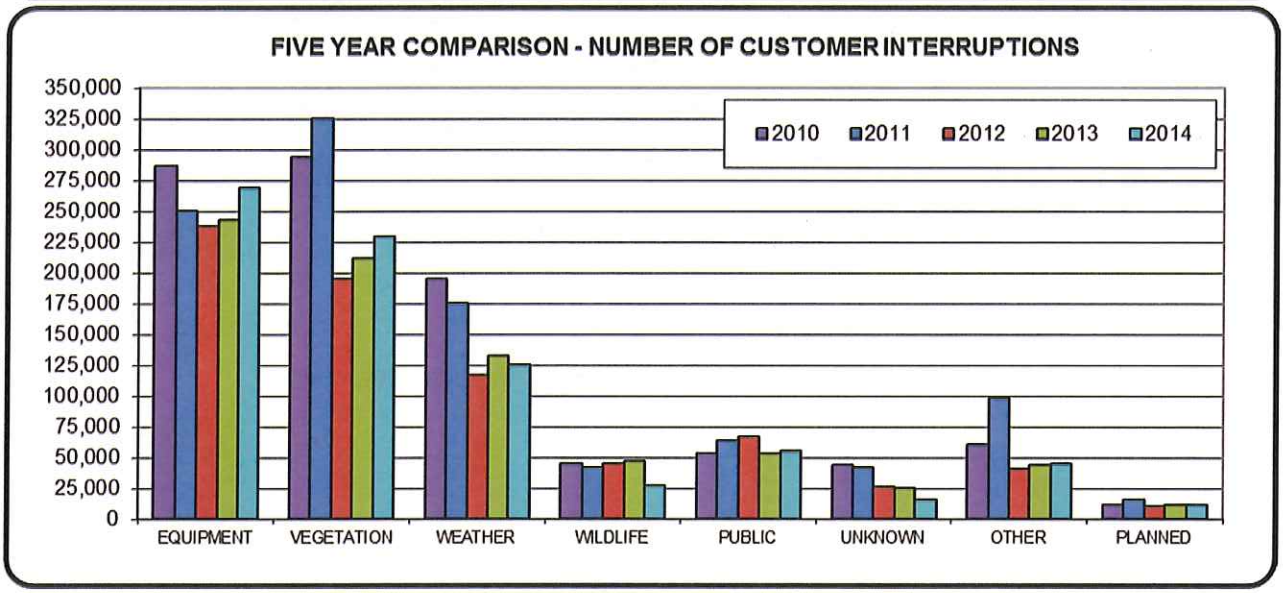
We Energies Five Year Cause Comparison

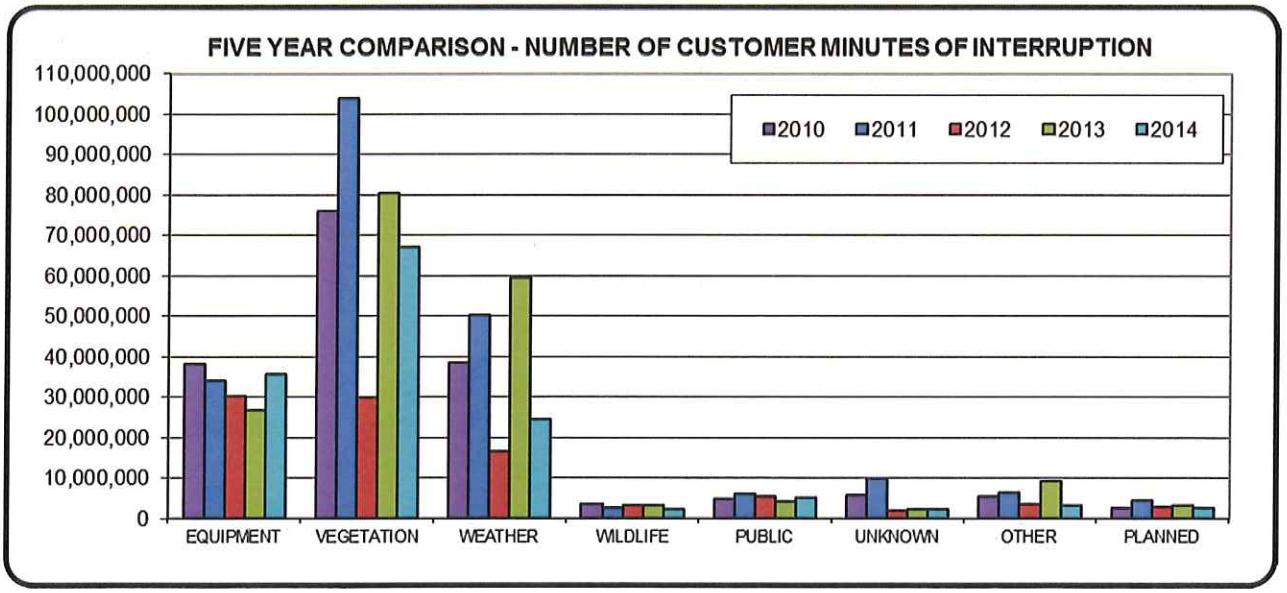
	NUMBER OF OUTAGES (followed by % of Total for each year)									
CAUSE CATEGORY	2010		2011		2012		2013		2014	
EQUIPMENT	4,556	27%	4,172	30%	3,606	31%	3,590	31%	3,408	29%
VEGETATION	4,644	28%	3,710	26%	2,626	23%	2,672	23%	2,851	25%
WEATHER	3,048	18%	2,153	15%	1,425	12%	1,622	14%	1,531	13%
WILDLIFE	1,074	6%	921	7%	1,231	11%	923	8%	1,048	9%
PUBLIC	899	5%	767	5%	666	6%	601	5%	670	6%
UNKNOWN	708	4%	709	5%	470	4%	426	4%	537	5%
OTHER	214	1%	211	2%	201	2%	186	2%	165	1%
PLANNED	1,475	9%	1,377	10%	1,404	12%	1,408	12%	1,350	12%
TOTAL	16,618		14,020		11,629		11,428		11,560	

	NUMBER OF CUSTOMER INTERRUPTIONS (followed by % of Total for each year)									
CAUSE CATEGORY	2010		2011		2012		2013		2014	
EQUIPMENT	287,060	29%	250,291	25%	237,544	32%	242,799	32%	268,532	34%
VEGETATION	293,632	30%	325,448	32%	194,662	26%	211,974	28%	229,103	29%
WEATHER	194,975	20%	175,604	17%	117,231	16%	132,278	17%	125,417	16%
WILDLIFE	44,662	5%	42,234	4%	44,556	6%	47,461	6%	27,684	4%
PUBLIC	53,385	5%	64,027	6%	66,974	9%	53,714	7%	55,776	7%
UNKNOWN	43,440	4%	41,800	4%	25,926	4%	25,348	3%	15,835	2%
OTHER	60,646	6%	97,934	10%	41,202	6%	44,163	6%	44,898	6%
PLANNED	12,034	1%	16,184	2%	10,744	1%	11,950	2%	11,380	1%
TOTAL	989,834		1,013,522		738,839		769,687		778,625	

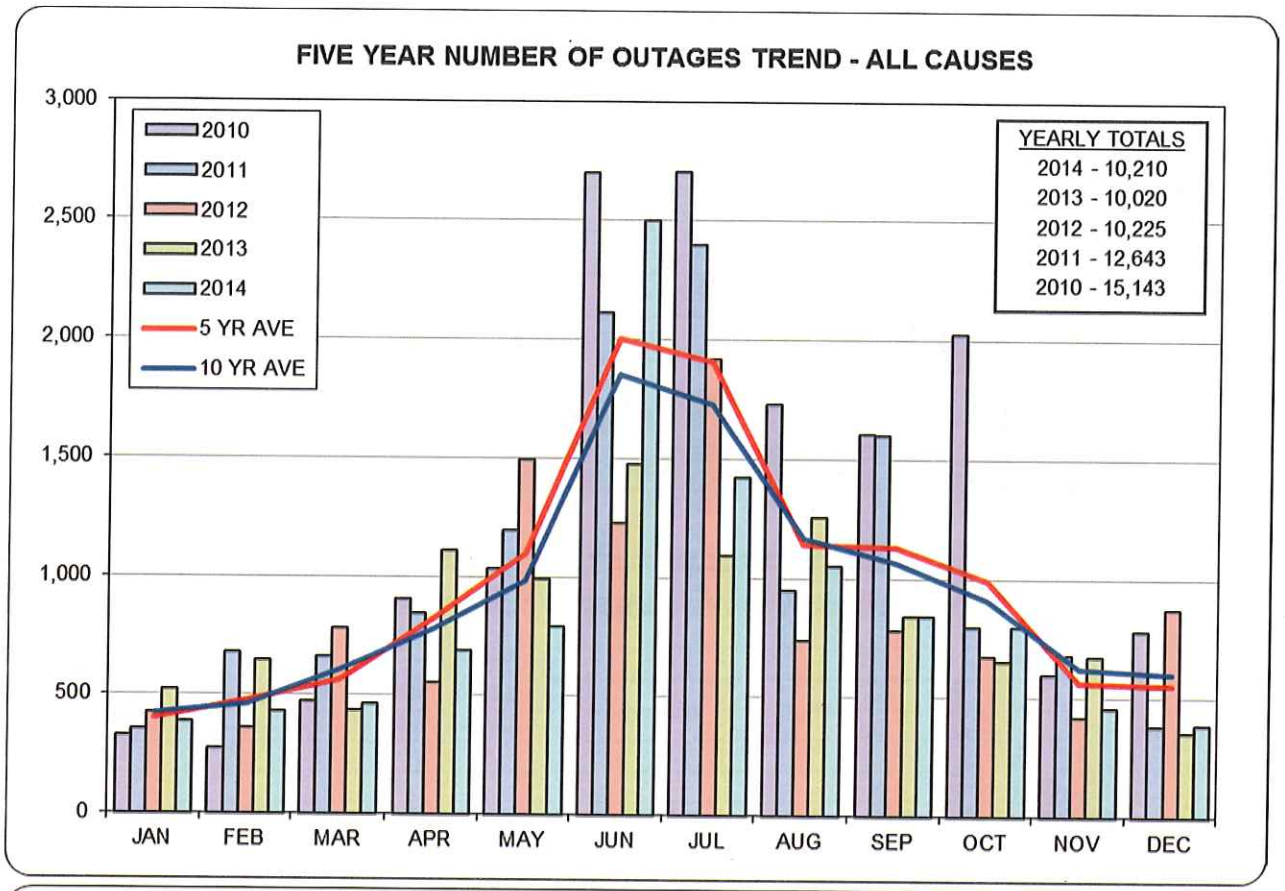
	NUMBER OF CUSTOMER MINUTES OF INTERRUPTION (followed by % of Total for each year)									
CAUSE CATEGORY	2010		2011		2012		2013		2014	
EQUIPMENT	38,207,700	22%	34,177,410	16%	30,255,048	32%	26,763,859	14%	35,639,184	25%
VEGETATION	76,026,289	43%	103,757,103	48%	29,944,944	32%	80,389,273	43%	67,034,915	47%
WEATHER	38,486,928	22%	50,346,441	23%	16,435,039	18%	59,329,235	31%	24,556,365	17%
WILDLIFE	3,577,965	2%	2,727,028	1%	3,121,469	3%	3,110,703	2%	2,357,995	2%
PUBLIC	4,805,732	3%	5,973,798	3%	5,384,304	6%	4,271,295	2%	5,248,665	4%
UNKNOWN	5,802,219	3%	9,912,176	5%	1,879,309	2%	2,390,236	1%	2,131,924	1%
OTHER	5,380,686	3%	6,554,928	3%	3,566,036	4%	9,361,700	5%	3,223,916	2%
PLANNED	2,733,135	2%	4,402,358	2%	2,847,880	3%	3,083,346	2%	2,641,412	2%
TOTAL	175,020,654		217,851,242		93,434,029		188,699,647		142,834,376	

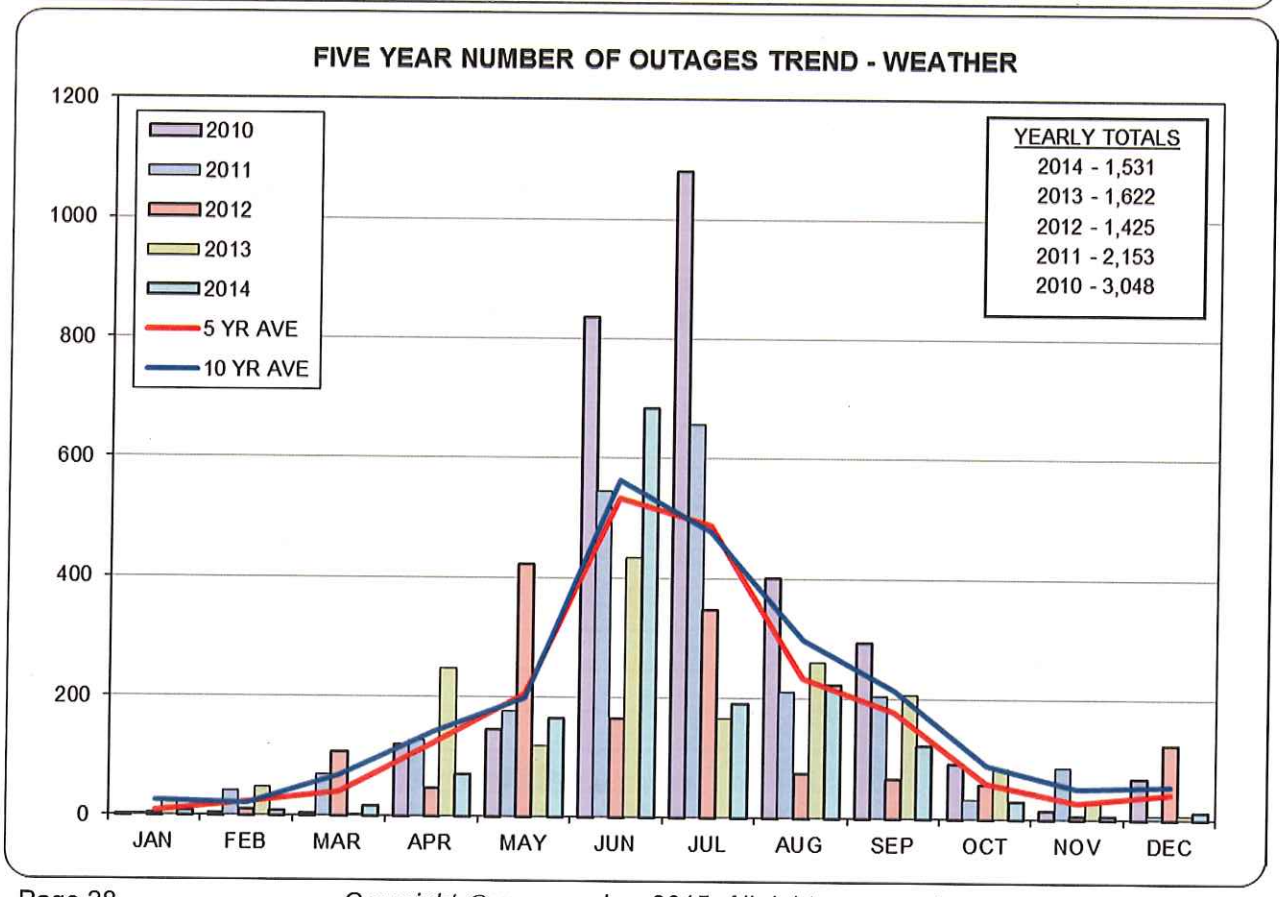




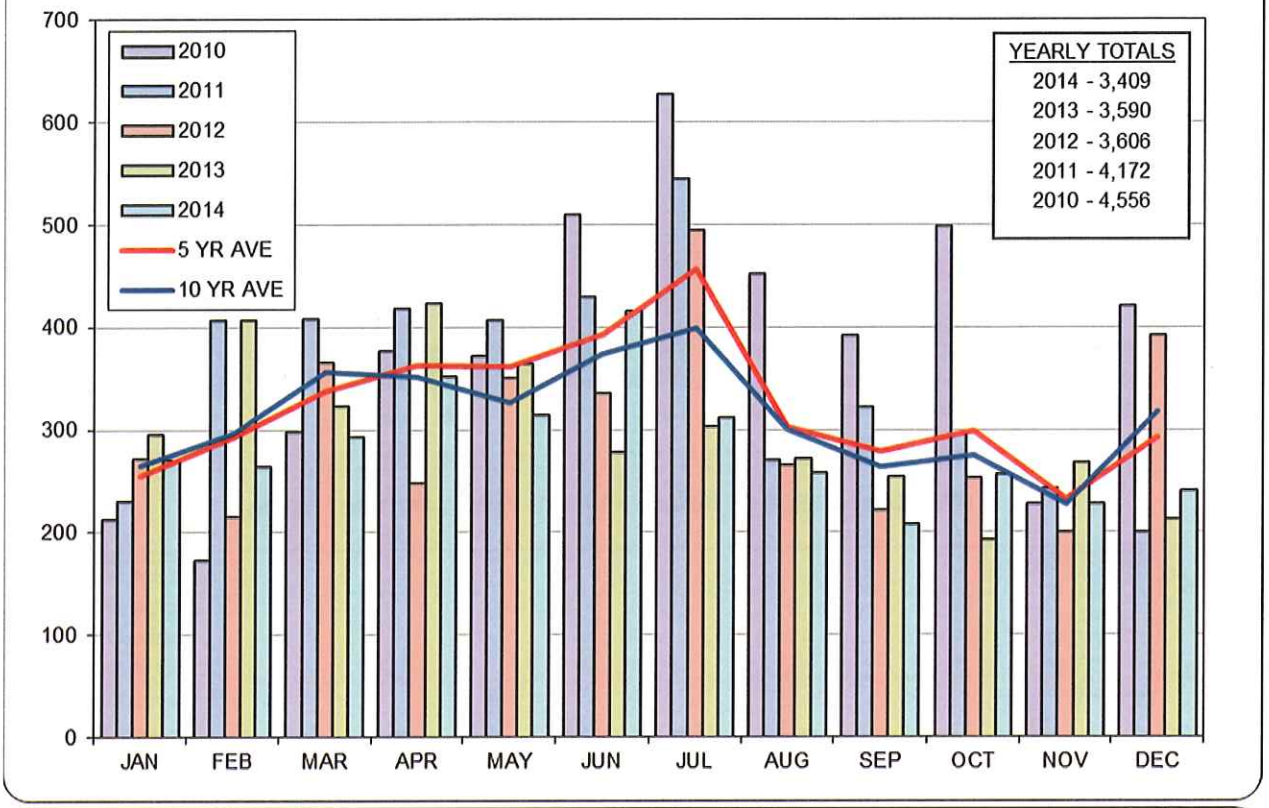


IV. MONTHLY OUTAGE TRENDS

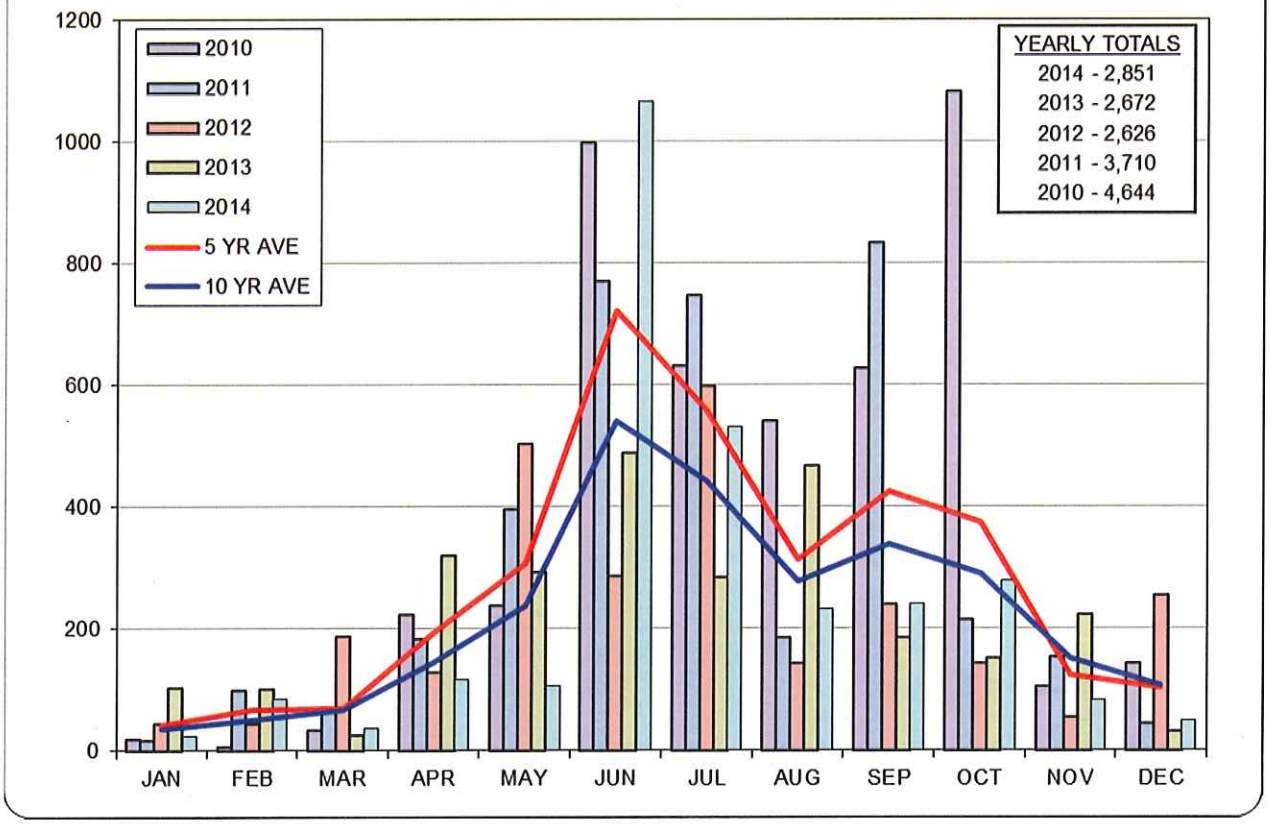


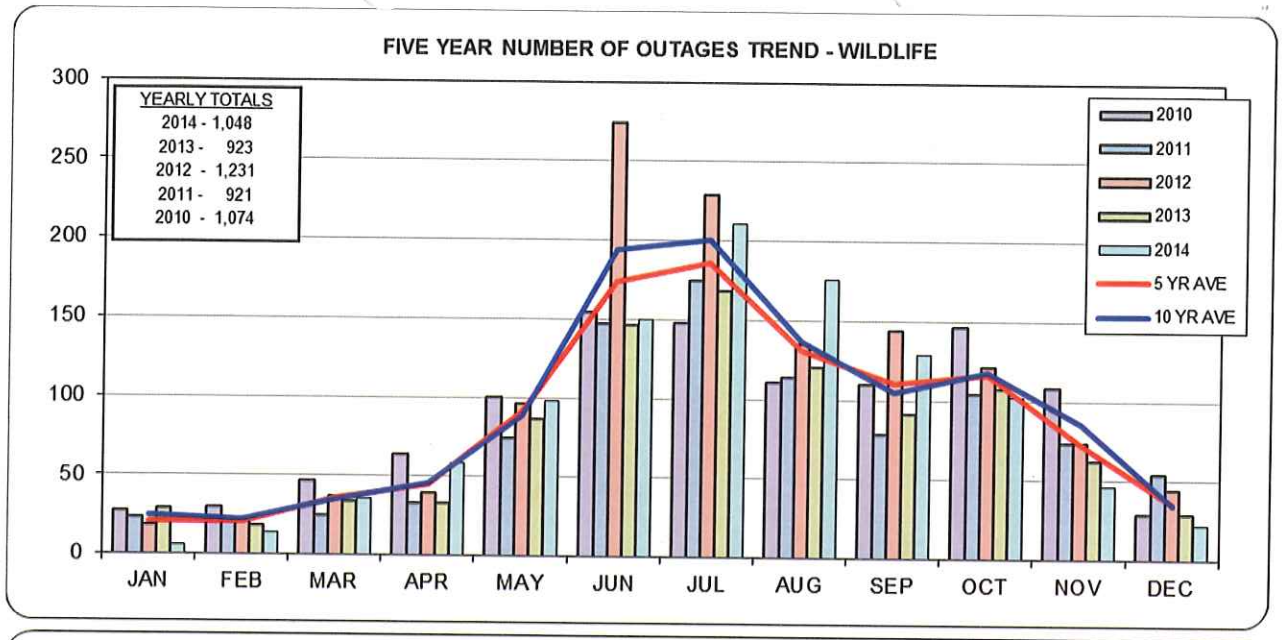


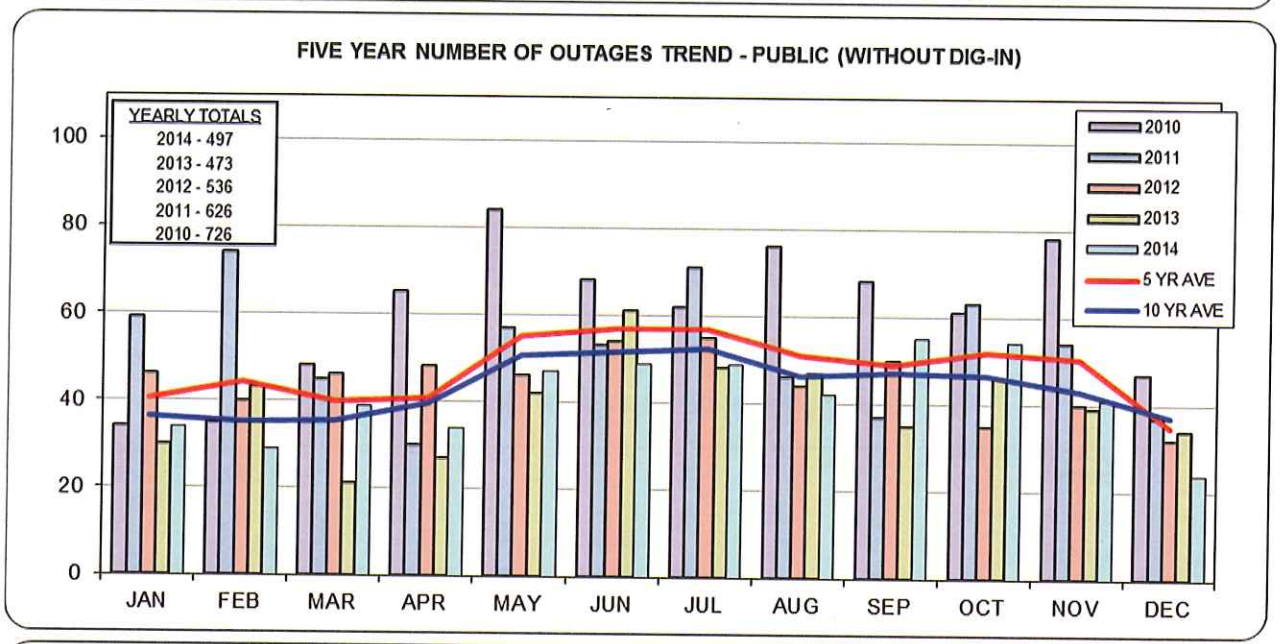
FIVE YEAR NUMBER OF OUTAGES TREND - EQUIPMENT FAILURE / DETERIORATION

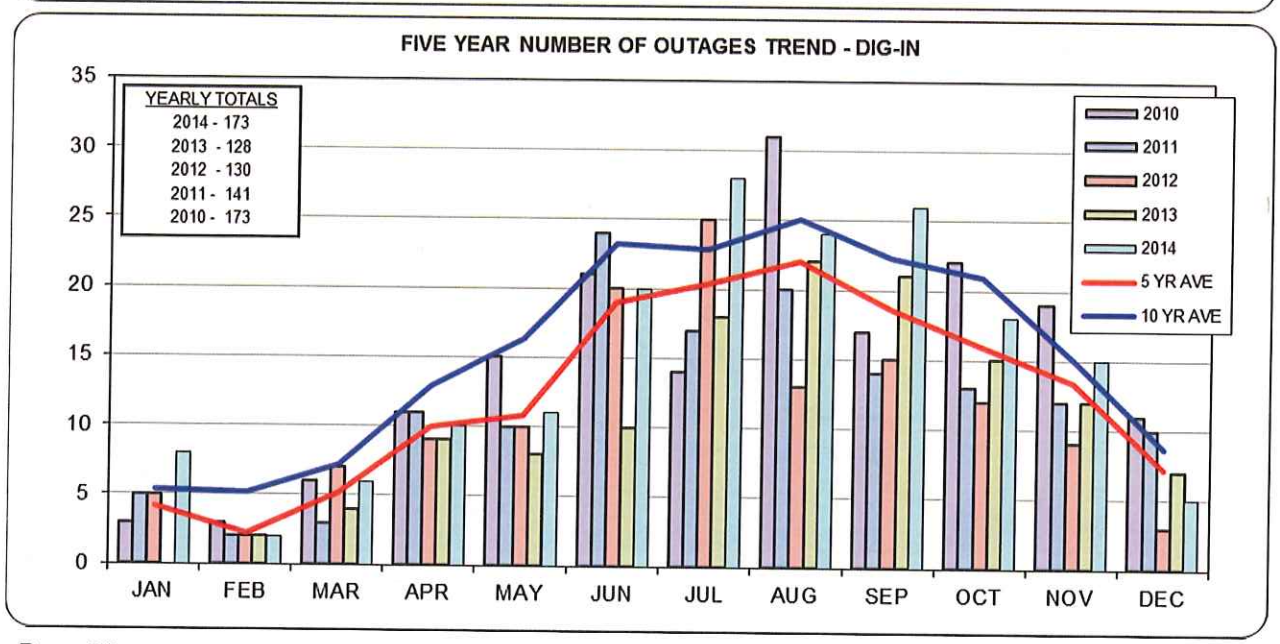


FIVE YEAR NUMBER OF OUTAGES TREND - VEGETATION









V. RELIABILITY IMPROVEMENT

This section summarizes the reliability improvement work completed in 2014, results, and future efforts. Programs to address system reliability issues have been in place since the mid-1990s, and include the Top Feeder Program and various equipment targeted initiatives. Efforts focused on improving customer satisfaction through CAIDI reduction began in 2003.

Top Feeder Program

The Top Feeder Program (TFP) has been a key reliability program since 1998, addressing approximately 100-150 circuits each year. Criteria for selecting TFP circuits have been agreed to with the Wisconsin PSC, and include SAIFI, SAIDI, and Number of Customer Complaints, along with Operating, Customer Service, and Area input. Customer Minutes of Interruption was added as a criterion in 2003 to identify feeders for Faulted Circuit Indicator application. The TFP focuses on analyzing reliability performance and outage causes, conducting field patrols to identify improvements and design issues, and completing most field remediation and forestry prior to storm season.

The 2014 Top Feeder Program included 123 circuits selected based on their fourth quarter 2012 through third quarter 2013 performance. Remediation included forestry work, installation of lightning arresters and faulted circuit indicators, tap fuse additions or cutout replacements, hardware repairs and applications of wildlife protection. All of these items are associated with improving feeder reliability performance. The majority of the remediation work was completed in the field prior to the start of the 2014 storm season.

Other Reliability Efforts

In addition to the TFP program, other efforts undertaken in 2014 to improve system reliability included:

- Completed the majority of field work for the Targeted Reliability Improvement Project (TRIP). TRIP applies new distribution automation guidelines to mature areas of our system (Barton 8 kV and Calumet 8 kV). In 2013 predictive reliability studies were completed and new substation reclosers were installed. Six of seven SCADA line reclosers (SVRs) were installed in 2014, with the seventh to be completed the first quarter of 2015.
- Continued annual recloser and breaker operations count program, completing analysis, patrols, and field remediation as appropriate to address momentary outages.
- Continued use of customer level reliability information to make field improvements for customers experiencing high numbers of outages
- Continued periodic reviews of significant outages to identify system design or equipment issues to prevent future outages, and restoration practices to reduce CAIDI.

Results

Blue Sky CAIDI improved slightly over 2013, but still did not achieve the 2014 goal of $\leq$85 minutes. Major Storm CAIDI of 156 minutes was the lowest in the past 6 years and met the 2014 goal of $\leq$200 minutes.