Service Reliability Filing
For 2023 System Performance

(Case 24-E-0140)

March 31, 2023

Executive Summary

This document constitutes Orange and Rockland Utilities, Inc.'s ("O&R", or "the Company") Service Reliability Filing for its 2023 electric system performance. The Company outperformed its reliability targets for 2023, as established by the New York Public Service Commission ("NYPSC" or the "Commission"). The Company's overall 2023 System Average Interruption Frequency Index ("SAIFI") performance of 1.07 was 10.8% better than the established target of 1.20. The Company's 2023 Customer Average Interruption Duration Index ("CAIDI") performance of 102.9 minutes was 7.3% better than the established target of 111 minutes – translating to an overall reduction in the average length of outages experienced by our customers. During 2023, the Company experienced nine excludable weather events, one affecting all operating divisions and the other eight affecting one or several divisions at once.

Weather played a significant role in the performance of the transmission and distribution ("T&D") system in 2023. While the Company's 2023 SAIFI was better than the established target, it increased from the 2022 performance level. (See Figure 2.12 – 20-Year SAIFI Trend).

The performance of CAIDI improved from one of its highest levels in 2022 and was still within the established target that made it the third best performance of the last five years. (See Figure 2.13 – 20-Year CAIDI Trend). It represented a three-minute improvement with respect to the Company's 2022 performance level.

The Company's System Average Interruption Duration Index ("SAIDI") increased 12 minutes to 110.2 making it the second highest in the last five-years and almost equal to the 20-year average of 110.4. (see Figure 2.14 – 20-Year SAIDI Trend). Although New York State does not officially recognize SAIDI as a key performance metric target or goal, the index is widely accepted throughout the electric utility industry as a key indicator of the overall performance of a utility's electric delivery system. The Company continues to use it as an internal indicator of its reliability. The Company will continue to implement its portfolio of reliability programs and specific projects targeted to maintain and improve reliability performance.

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Acronyms and Abbreviations

Acronym	Definition
AAAC	All aluminum alloy conductor
AAC	All aluminum conductor
ACS	Aerial Cable System
ACSR	Aluminum conductor, steel reinforced
ALT	Alternate key
ADMS	Advanced Distribution Management System
ANSI	American National Standards Institute
CAIDI	Customer average interruption duration index
CR	County Road
CT	Current transformer
Cu	Copper
DA	Distribution automation
DC	Direct current
DCC	Distribution Control Center
DLRO	Digital low resistance ohmmeter
DPW	Department of Public Works
DSCADA	Distribution supervisory control and data acquisition
EHV	Extra high voltage
EIMS	Electric Information Management System
EPR	Ethylene propylene rubber
GOAB	Ground or Group Operated Air-Break
HMWPE	High molecular weight polyethylene
HP	Horsepower
IR	Infrared
LATE	Lightning, animal, tree, equipment failure
LTC	Load tap changer
MAD	Minimum approach distance
MAIFI	Momentary average interruption frequency index
MOAB	Motor Operated Air-Break
MVA	Mega-volt ampere (transformer sizing)
MVC	Motor vehicle collision (outages causes)
MW	Megawatt
NY or NYS	New York State
NYISO	New York Independent System Operator
NYPSC	New York Public Service Commission
OCB	Oil circuit breaker

Acronym	Definition
OH	Overhead
OMS	Outage Management System
PQ	Power quality
RFI	Radio frequency interference
ROW	Right of way
RT	Route
SAIFI	System average interruption frequency index
SAIDI	System average interruption duration index
SCADA	Supervisory control and data acquisition
SIS	Substation Information System
TBWP	Triple braided weatherproof conductor
TIMS	Transmission inspection and maintenance system
TLM	Transmission line maintenance
TRES	Trim evaluation and report system
TTR	Transformer turns ratio
UG	Underground
URD	Underground residential distribution
US	United States
VM	Vegetation management
kV	kilovolt
WMS	Work management system
WO	Work order
WPC	Worst performing circuit
XLPE	Cross-linked polyethylene

1. OVERVIEW

1.1. Geographic Territory

O&R's New York service territory, set forth in the map below, is comprised of three distinct geographic areas. For reliability reporting purposes, the Company apportions these areas into three separate operating divisions: Eastern Division, Central Division, and Western Division. The Eastern Division includes all of Rockland County. The Central Division encompasses the southwestern portion of Orange County, while the Western Division encompasses the northwestern portion of Orange County, as well as a section of southern Sullivan County. Individual towns served within each of the operating divisions are listed in the table on the following page.

	Square Miles	*(% of State)*	*(% of Company)*
Eastern	195	17.86	15.01
Central	376	34.43	28.95
Western	521	47.71	40.11
Total	1,092	100	84.06

Major Tax Districts (By Division and County)			
Eastern (Rockland)	***Central (Orange)***	***Western (Orange)***	***Western (Sullivan)***
Clarkstown	Blooming Grove	Crawford	Forestburgh
Haverstraw	Chester	Deerpark	Lumberland
Orangetown	Goshen	Greenville	Mamakating
Ramapo	Highlands	Middletown	
Stony Point	Monroe	Minisink	
	Tuxedo	Mount Hope	
	Warwick	Port Jervis	
		Wallkill	
		Wawayanda	

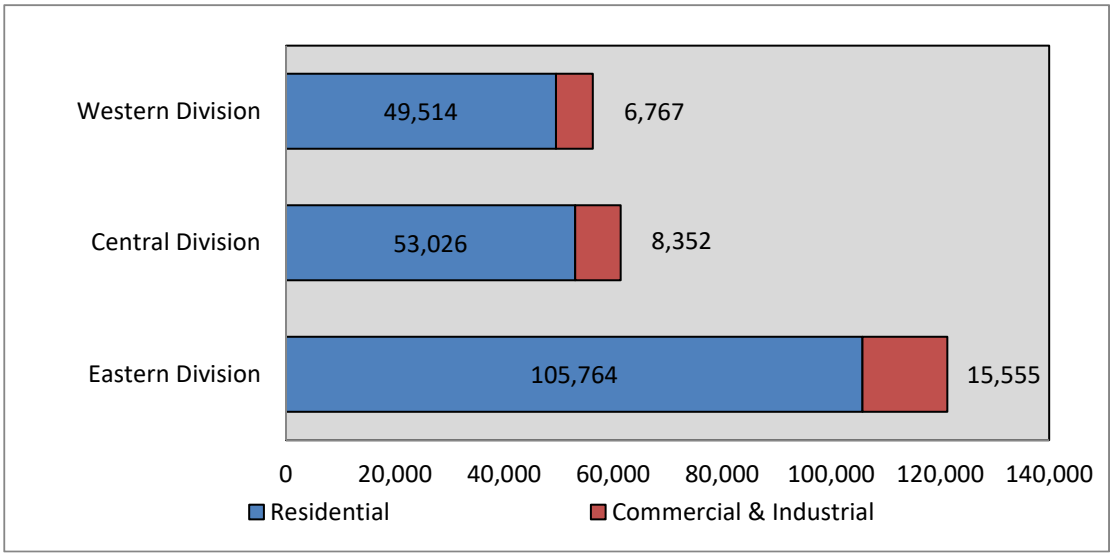
1.2. Customers Served

Shown below are the 2023 customers served totals for both residential and commercial/industrial ("C&I") rate codes all with corresponding percentages,[1] as of December 31, 2023.

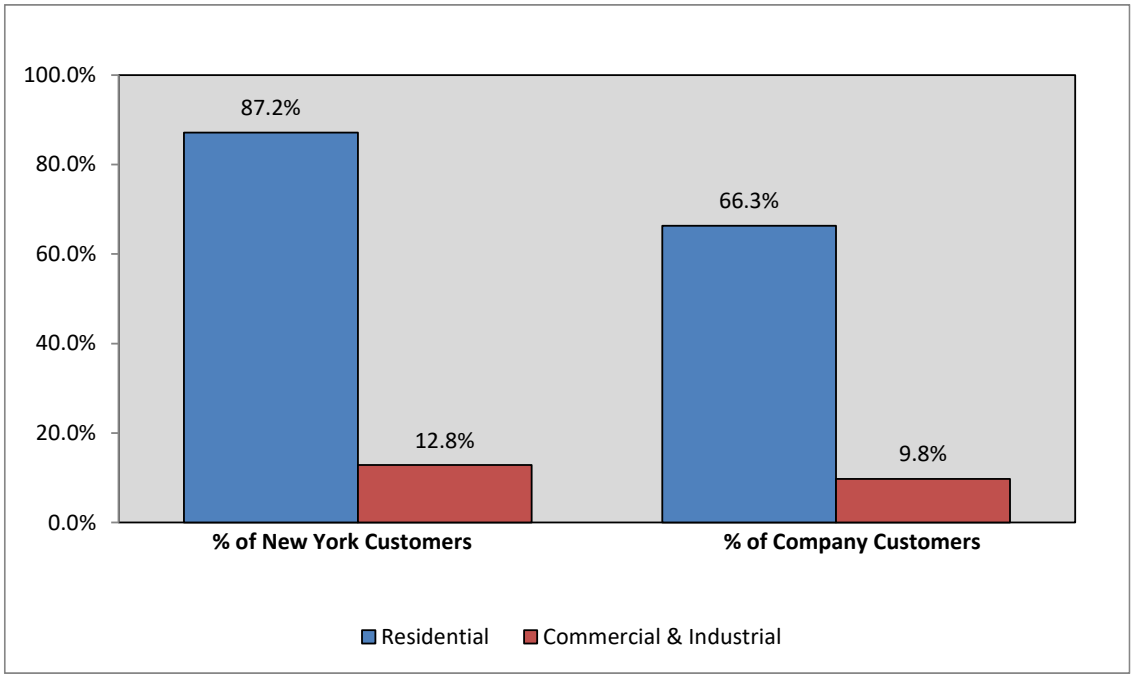
	Residential			**Commercial & Industrial**			**All Customers**		
	Customers	**Pct. of State**	**Pct. of Company**	**Customers**	**Pct. of State**	**Pct. of Comp**	**Customers**	**Pct. of State**	**Pct. of Company**
Eastern Division	105,764	44.3%	33.7%	15,555	6.5%	5.0%	121,319	50.8%	38.6%
Central Division	53,026	22.2%	16.9%	8,352	3.5%	2.7%	61,378	25.7%	19.5%
Western Division	49,514	20.7%	15.8%	6,767	2.8%	2.2%	56,281	23.6%	17.9%
Total New York	208,304	87.2%	66.3%	30,674	12.8%	9.8%	238,978	100.0%	76.1%
Total Company	274,506			39,592			314,098		

[1] "% of State" refers solely to O&R; "% of Company" refers to the entire O&R System (i.e., O&R and its New Jersey utility subsidiary, Rockland Electric Company).

Customers Served (Numbers)



Customers Served (Percent)



1.3. Field Personnel 10-Year Staffing Levels

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Electric Operations											
Mgr. & Staff	0	0	0	0	0	0	0	0	0	0	0
Eastern Line Ops	66	63	70	51	65	62	68	68	66	74	62
Central Line Ops	27	26	27	27	27	23	24	21	20	21	21
Western Line Ops	27	26	27	23	20	20	20	20	21	20	22
Joint Use Facilities	0	1	1	1	1	1	1	1	1	1	1
Trouble Shooters – East	0	0	0	9	10	10	10	9	6	6	6
Trans Dist. Maint.	0	0	0	0	0	0	0	0	0	0	0
EHV Line Ops	9	10	10	9	9	9	8	8	9	7	9
Eastern Underground	24	29	21	26	25	27	24	24	24	24	23
Central Underground	14	10	16	16	16	12	15	15	16	16	20
Operations Flagperson	0	0	0	0	0	0	5	5	9	11	9
Trouble Shooters – North	0	0	0	8	8	7	8	8	8	7	8
Total	167	165[1]	172	170	181	171	183	179	180	187	181
Contractor Linemen	37	44	40	45	43[2]	36	38	35	35	32	30
Substation Operations											
Eastern	19	20	17	19	20	19	20	18	18	18	17
Central & West	12	12	11	12	11	12	12	13	13	12	11
Relay	15	14	11	8	13	12	14	14	13	15	13
Total	46	46	39	39	44	43	46	45	44	44	41
Tree Contractors											
Distribution Crews/Workers	24/81	35/80	33/90	35/76	23/45	25/52	23/46	26/52	28/58	20/40	26/52
Capital Projects Crews/Workers	3/10	6/20	8/29	10/25	8/18	10/22	10/22	08/16	08/16	08/16	08/16
Transmission Crews/Workers	10/52	5/25	2/7	7/68	6/45	5/30	4/18	4/24	4/24	4/24	02/20

[1] Joint Use Facilities, Troubleshooters – East and Troubleshooters – North not included in staffing level table prior to 2017. The addition changes East, Central and West Line Operations and Total Electric Operations staffing reported for 2014, 2015 and 2016.

[2] The Company's contractor line force was reduced significantly after September when most were released to respond to hurricane damage in Puerto Rico and the Virgin Islands

1.4. Definitions – General

Customers Served These customers include residential and C&I customers within O&R's electric service territory. Excluded from these are all Street Lighting customers (Municipal Street Lighting, Traffic Lights, all Dusk to Dawn Lighting), and all sales to other utilities.

Interruption (Sustained) An interruption is the loss of service for five minutes or more to one or more customers.

Momentary Interruption The brief loss of power delivery caused by the opening and closing operation of an interrupting device, in most cases to clear a fault. These interruptions are typically 15 to 30 seconds in duration and may occur multiple times while clearing a fault on a distribution circuit. Multiple operations for a single event are counted only once. Momentary Interruptions that result in a sustained interruption are not included.

Customers Affected Represents the total number of customers affected as a result of an interruption.

Customer - Hours of Interruption Represents the total customer hours of interruption, which is calculated by multiplying the total customers affected during an interruption by the duration (i.e., hours) of the interruption. Hours of interruption are subject to rounding differences.

O/H Distribution (O/H Dist) Represents interruptions caused by incidents occurring on the overhead distribution system.

U/G Distribution (U/G Dist) Represents interruptions caused by incidents occurring on the underground distribution system.

Transmission/Substation (Trans/Sub) Represents interruptions caused by incidents occurring on the transmission system or in a substation.

Storm A period of adverse weather during which the interruptions affect either (a) at least ten percent of the customers served an operating area; (b) results in customers being without electric service for a duration of at least 24 hours; or (c) both.

1.5. Definitions – Cause of Outages

Interruptions are classified by the cause of the interruption and include the following ten categories:

Animal Contact	Interruptions caused by an animal, such as a squirrel, bird, snake or raccoon, coming in contact with electrical equipment.
Customer's Equipment	Interruptions resulting from the failure of customer-owned equipment.
Equipment Failure	Interruptions caused by the breakdown or failure of Company owned equipment.
Lightning	Interruptions caused by lightning.
Non-Company Accident	Interruptions caused by an event outside of the control of the Company, such as a motor vehicle accident or an act of vandalism.
Overload	Interruptions caused when the electrical load on a utility device or conductor exceeds its rated capacity.
Prearranged	Interruptions caused by actions deliberately taken by the utility with advance notice to the customer(s) affected such as scheduled pre-arranged outages for voltage conversions.
Tree Contact	Interruptions caused by a tree or tree limb coming in contact with the electrical equipment.
Unknown/Other	Interruptions for which no cause can be found, or for which none of the other classifications are appropriate.
Work Error	Interruptions caused by Company or Company contract personnel, such as Company hired tree trimmers.

1.6. Definitions - Reliability Indices

Frequency (SAIFI)[2] Represents the number of times an average customer is affected by an interruption. It is calculated by dividing the total customers affected by the customers served within a specific territory.

Restoration (CAIDI)[3] Represents the time in minutes (hours) it takes to restore electric service to an average customer that is affected by an interruption. It is calculated by dividing the customer minutes (hours) of interruption by the customers affected.

Duration (SAIDI)[4] Represents the time in minutes (hours) that an average customer is without electric service over a specific period of time. It is calculated by dividing the customer minutes (hours) of interruption over a specified period of time by the customers served over the same period of time. For that same defined period of time, this performance ratio can be calculated by the formula SAIFI * CAIDI.

Momentary Interruption Frequency ($MAIFI_e$)[5] Represents the number of times an average customer is affected by a momentary interruption. It is calculated as the result of the total customers affected by all momentary interruptions by the customers served within a specific territory. In this document, a momentary interruption is the number of events where a customer is momentarily interrupted by substation breaker operation.

[2] SAIFI is the System Average Interruption Frequency Index.
[3] CAIDI is the Customer Average Interruption Duration Index.
[4] SAIDI is the System Average Interruption Duration Index.
[5] $MAIFI_e$ is the Momentary Average Interruption Frequency Index, for an Event.

2. 2023 CORPORATE PERFORMANCE

2.1. Summary of Performance

The Company's 2023 New York SAIFI performance of 1.07 underperformed the previous five-year average of 1.05. Much of the SAIFI performance for the year was driven by extreme weather conditions that lasted for short time frames while affecting all operating regions.

The Company's 2023 CAIDI performance of 103.0 minutes was the third lowest in the past 6 years. O&R's 2023 CAIDI represents an improvement over the previous five-year average of 108.7 minutes and within the Commission's goal of 111 minutes.

The Company experienced nine weather events which qualified for exclusion from the reliability indices in 2023. One event impacted all three operating divisions, four events occurred twice in the eastern division and twice in the western division. The last four events each singularly affected a combination of two different regions each time.

Comparison of Tree Contact Outages on High Wind Days (40+ mph) in 2022 and 2023 Vs. 20-Year Daily Tree Outage Averages			
	20-Year Average	**2022 High Wind Days**	**2023 High Wind Days**
Number of tree interruptions per day	2.53	13	8
Number of days wind gusts exceeded 40 mph	13.6	17	5
Number of customers affected by tree contact per interruption	86.8	74	44
No. customers affected per day by tree contacts	216.5	981	335

Note: All factors above exclude major storm data

Table 1

The challenges faced by the Company during excludable weather events, notwithstanding the challenges on non-excludable days, were significantly greater in 2023 than 2022 with seven more events than the previous year. This was driven in part by the rainfall across the O&R service territory in 2023. At approximately 50", the total rainfall was the fourth highest rainfall the O&R service territory has experienced in the past ten years. The month of December was the wettest with 11", and the driest was July with 0.34".

High winds days did not play a large role in tree contact and tree contact outages as in 2022. This is substantiated by the decrease in number of tree interruptions per day when peak wind gusts

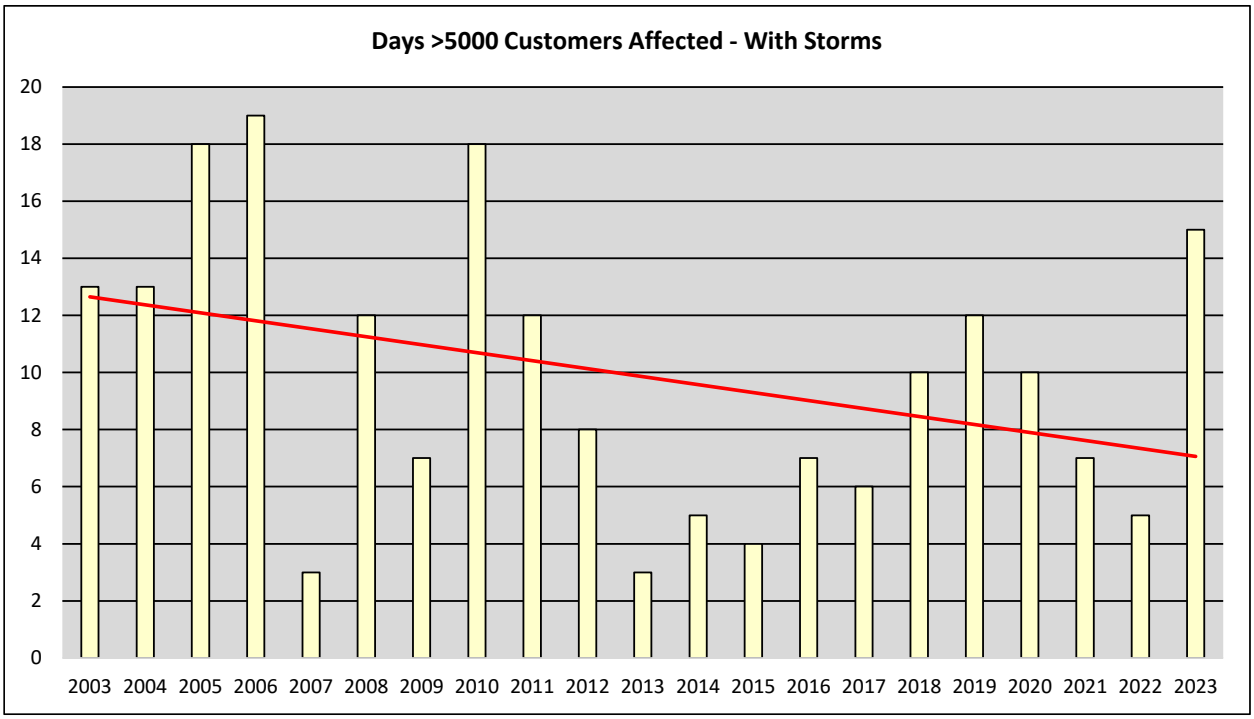
exceeded 40 mph (see Table 1 above). Decelerated vegetation growth, possibly due to the lowest record rainfall in 2022, and the decrease in high wind days, both reduced the number of tree contacts with the conductors, which helped to decrease the number of tree interruptions per day in 2023. As compared to 2022, the number of customers affected by tree contact per interruption and the number of customers affected by tree contact both also declined in 2023.

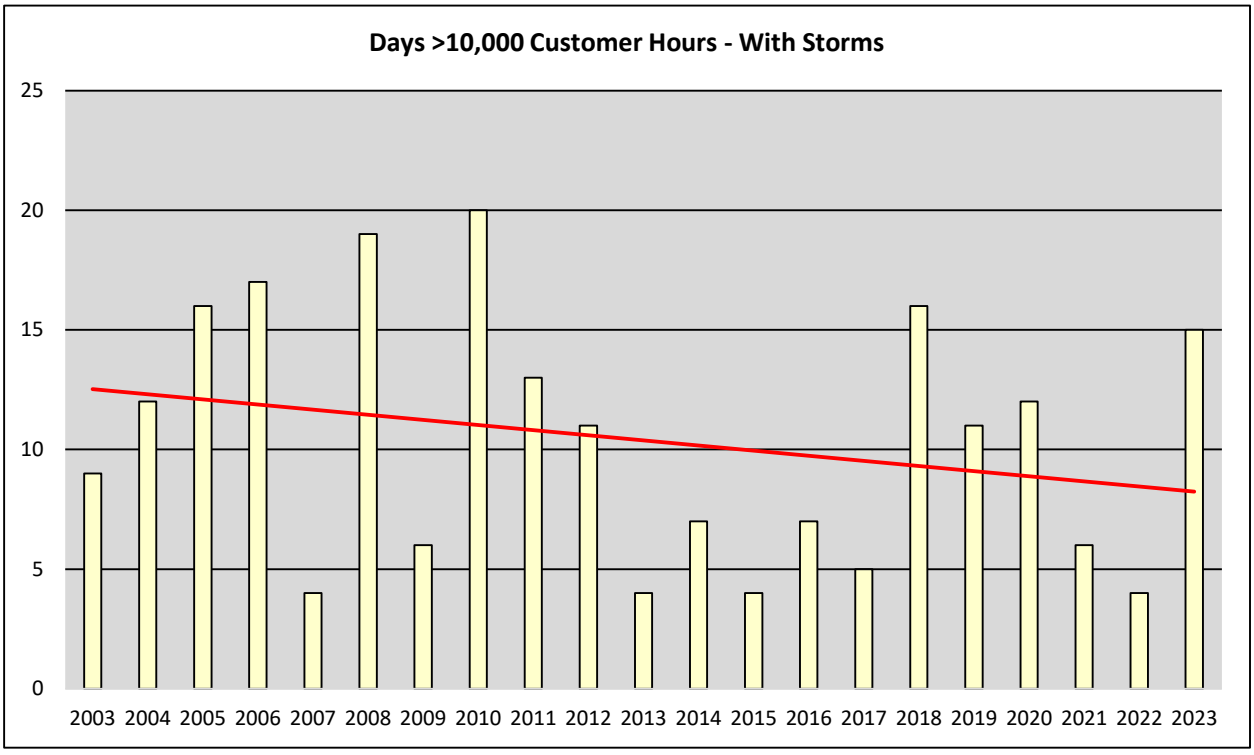
Customer low voltage, flickering lights and frequent outage complaints (often associated with protection device trip and reclose activity on the distribution system) were up 22% from 2022 levels. Trip and reclose activity was below the five-year average performance.

The Company's overall 2023 year-end reliability performance changed over its previous five-year performance. As shown in the graphs below, both the days with greater than 5,000 customers affected and the days with greater than 10,000 customer-hours of interruption have increased in comparison to 2022 due to the nine excludable weather events for the year. Both performances had been trending downward since 2001 previous to 2023. The Company's continued implementation of its distribution automation program and ongoing storm hardening investments will help with diverting the increase of large numbers of customers affected, as well as the large number of customers-hours of interruption.

There were fifteen days in 2023 when greater than 5,000 customers were affected by an interruption, up from five days in 2022. The elevated numbers of customers affected on those days were the result of nine excludable weather events that covered ten days, five non-excludable weather events, of which one was a high wind day in June with high winds of 20 mph and gusts of 41 mph, and the others were tree related events with high customer counts.

There were fifteen days in 2023 with greater than 10,000 customer-hours of interruption for the day, ten days occurred during excludable weather events, one during a non-excludable weather event in February which was a high wind day with wind gust of 40 mph and the other four days were the results of a tree contact, equipment failure, and lighting on the same day with large customer counts.





The regress in SAIFI from 2022 to 2023 (from 0.93 to 1.07) is a result of an increase of 35,044 customers affected year-over-year. The majority of the interruption categories saw an increase in

the number of customers affected as compared to 2022. Tree contact, and equipment failure outages accounted for 59% of all customers affected which has been the lowest level in six years.

Tree contact outages accounted for 38% of all customers affected in 2023, matching the 2022 performance. The number of customers affected by a tree contact outage increased 13% from 2022 but continued its levels below 100,000 which was last reached in 2021.

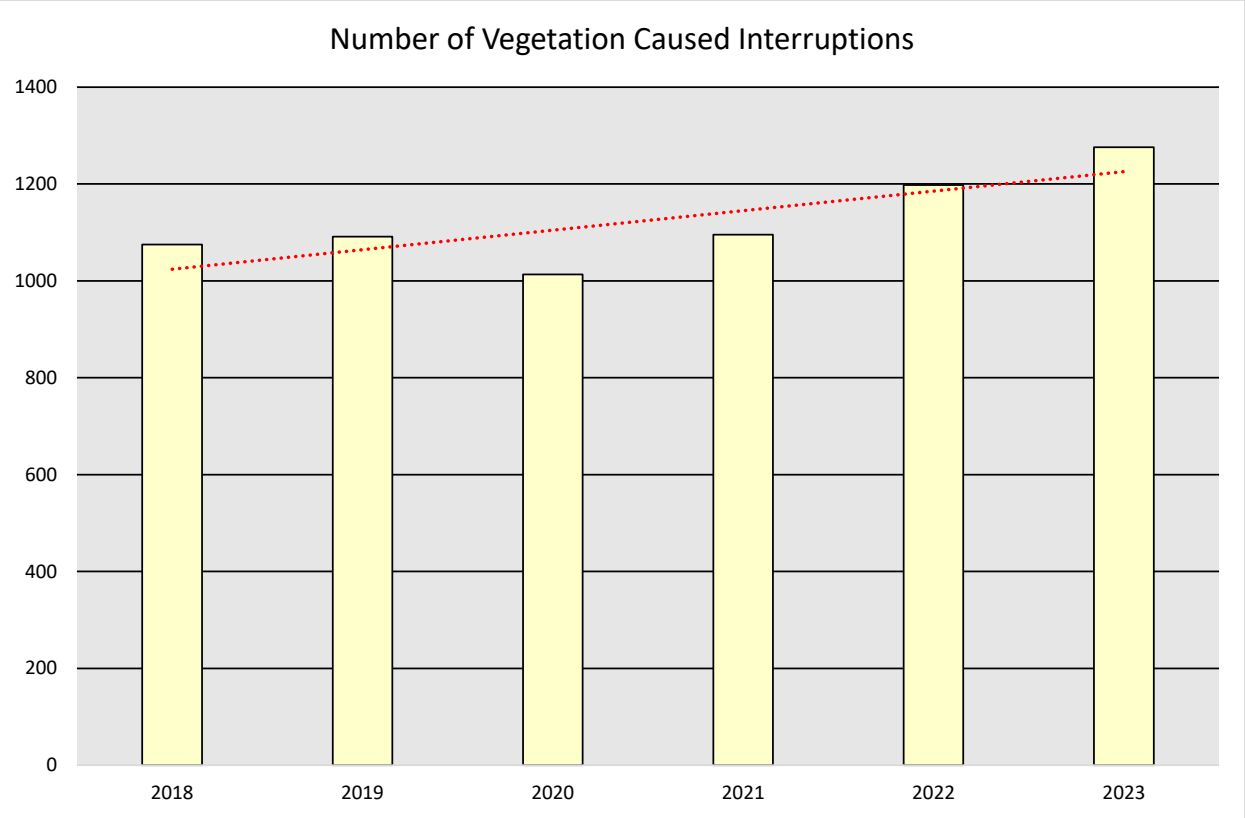


Figure 2.1 – Vegetation Caused Outages – 2018 - 2023

The improvement of CAIDI in 2023 compared to the Company's 2022 performance (i.e., from 105.4 to 103.0) can be attributed to the increase in the number of automated isolating devices that reduce the number of customers out by larger blocks in our distribution system. Overall, the total number of customer-hours of interruption is consistent with historical norms.

There were 76 days when greater than 1,000 customers were affected for the day (excluding weather events data) as compared to 2022 when there were 72. The number of customers affected per interruption in 2023 was 64, slightly below the previous five-year average of 65.

In 2023, the number of customers affected increased, while the number of customer hours of interruption decreased from 2022 levels. Inclement weather did play a major role in the

performance of the electric distribution system as compared to 2022, with 2023 having the fourth highest rainfall in the last ten years in the O&R service territory. The number of inclement weather days[6] in 2023 increased 24% from the 2022 level (101 to 125), below the 20-year average of 135 days. Historically, the number of interruptions/inclement days and the number of customers affected/interruptions (which would drive customer-hours as well) on inclement weather days increase above the 20-year averages.

At twenty, the number of high-volume days (defined as being days when greater than 24 interruptions occur) is the highest level in the last five years. The number of customers affected on high volume days was 56,874 or about 22% of all customers affected during the year. This was slightly above the 20-year average of 17% but was consistent with historical norms. There were 72 days during which the maximum sustained winds exceeded 30 mph in 2023 vs 68 days in 2022, the 2023 numbers were consistent with historical norms.

The performance ratios for all three Divisions and the total O&R service territory are shown in Table 2-1. A five-year history and five-year average are tabulated according to the standard reporting that was initiated by the NYPSC in 1989. The standards set by the Commission for each index are also listed for each of the Divisions that reflect the 2005 revised standard levels, and those overall, Company standards that were maintained by the Commission in Case 21-E-0074.

The SAIFI, CAIDI and SAIDI trends by Division are shown graphically in Figures 2-1, 2-2 and 2-3, respectively. Further discussion of these trends is included in each Division's summary of performance.

Figures 2-4, 2-5, and 2-6 show the annual performance trends, from 2018 through 2023, for the Company's three Divisions. Figure 2-4 shows the number of interruptions that occur annually due to all causes, excluding major storms. Figure 2-5 represents the annual number of customers affected. Figure 2-6 shows the annual customer hours of interruption. Detailed analyses of these trends are provided in the individual Division's performance summaries.

Figure 2-7 shows a summary, by cause, for the number of interruptions, customers affected, and the customer-hours of interruption experienced in 2023. The two major causes of interruptions are equipment failure and tree contacts, similar to the previous five years. Tree contacts slightly rose from 2022 numbers and were at the highest level since the Company began keeping records. In 2023, these two categories combined accounted for 60% of all interruptions, 59% of customers affected (which was the lowest percentage in six years) and 73% of all customer hours of interruption.

[6] For purposes of this report, inclement weather days are defined as those days in which traceable precipitation is observed and recorded by the US Geological Survey National Water Information System rain gauge on the Mahwah River in Suffern, NY

Partial power and single customer interruptions accounted for 32% of all interruptions in 2023, equaling 2022 when they accounted for the same 23% of all outages. The majority of these interruptions (53%) were the result of a tree contact or equipment failure. Of the 4,001 total interruptions reported throughout 2023, 227 were partial power conditions resulting from an equipment failure or a tree contact (as compared to 289 in 2021 and 241 in 2022). Likewise, 441 out of the 4,001 interruptions for the year involved a single customer interruption resulting from a tree contact or an equipment failure.

Table 2-2 shows a summary of the equipment failures in 2023 as compared to the previous five years, for the entire O&R service territory (excluding major storms). In 2023, for interruptions caused by equipment failure, overhead equipment was responsible for 71% of the interruptions, equaling 2022, 78% of the customers affected (down from 79% in 2022), and 66% of the customer-hours of interruption (up from the 56% in 2022).

The number of equipment failures occurring in 2023 declined by 5% as compared to 2022. Failure rates for the majority of hardware components used on the T&D system were within expected levels in 2023. The Company continues to monitor the performance of all equipment to identify trends in any single system component and take mitigating actions, as necessary.

Figures 2-8, 2-9 and 2-10 show the annual performance trending by major cause, from 2018 through 2023, excluding major storms, for the entire O&R service territory. As was the case in previous years, Figure 2-8 (total number of interruptions), indicates that interruptions caused by equipment failure and tree contact dominate throughout the entire six-year time frame represented. The performance trends relating to equipment failure and tree contact remain consistent throughout each Operating Division as well.

Table 2-3 demonstrates the effects of removing non-excludable major outage statistics from these indices for 2023 and the prior five years. A major outage is defined as one event affecting more than 5,000 customers. In 2023, there were three non-excludable major events.

In 2023, $MAIFI_e$ was 8.79 for New York customers, based on 238,978 customers served, and a total of 2,100,863 momentary interruptions experienced by customers. This represented a 22% increase in the number of momentary interruptions as compared to 2022, due to the increase of tree contacts which were brought on by an increase of high wind days. Currently, the Company calculates $MAIFI_e$ based on operations from the substation breaker that supply the circuit.

O&R's grid modernization, distribution automation and climate resilience upgrade are to reduce the number of outages experienced by the typical customer and will continue to play a role in the Company's overall performance that is projected to continue and improve prospectively. The success of these programs can be seen in the downward trend in SAIFI (Figure 2.12), as well as the downward trend in the number of customers affected per interruption (Figure 2.15) over time. With

both SAIFI and the number of customers affected per interruption decreasing over time, this continues with the overall 20-year downward trend that remains consistent with expectations. Conversely, CAIDI has risen steadily over the same time period. This mixed performance can be attributed, in part, to the inverse relationship between SAIFI and CAIDI over the past 20 years and is also consistent with expectations and with previous years' performance.

With fewer customers being affected per interruption on average over the previous five years and distribution automation averting interruptions for large blocks of customers, there are fewer opportunities to gain the CAIDI benefit of restoring those large blocks of customers quickly had they experienced an interruption. As a result, over time, CAIDI has been trending slightly upward over the 20-year trend, concurrently with the decrease in SAIFI and customers affected per interruption. This trend can be seen in Figure 2.13.

2.2. Worst Performing Circuit Selection

O&R applies its own methodology, instead of that proposed by the NYPSC, for selecting each Division's Worst Performing Circuits. The methodology and the circuit priority-rating list for each Division is outlined in detail and are included in Appendix A.

O&R has used its own methodology for many years to direct the Company's service reliability improvement programs and to establish priorities. The Company maintains that this methodology is a superior indicator of poor performance for its system, and it identifies areas where corrective measures will have the greatest impact on customer service reliability.

2.3. List of New York Figures and Tables - 2023 Company Performance

Tables

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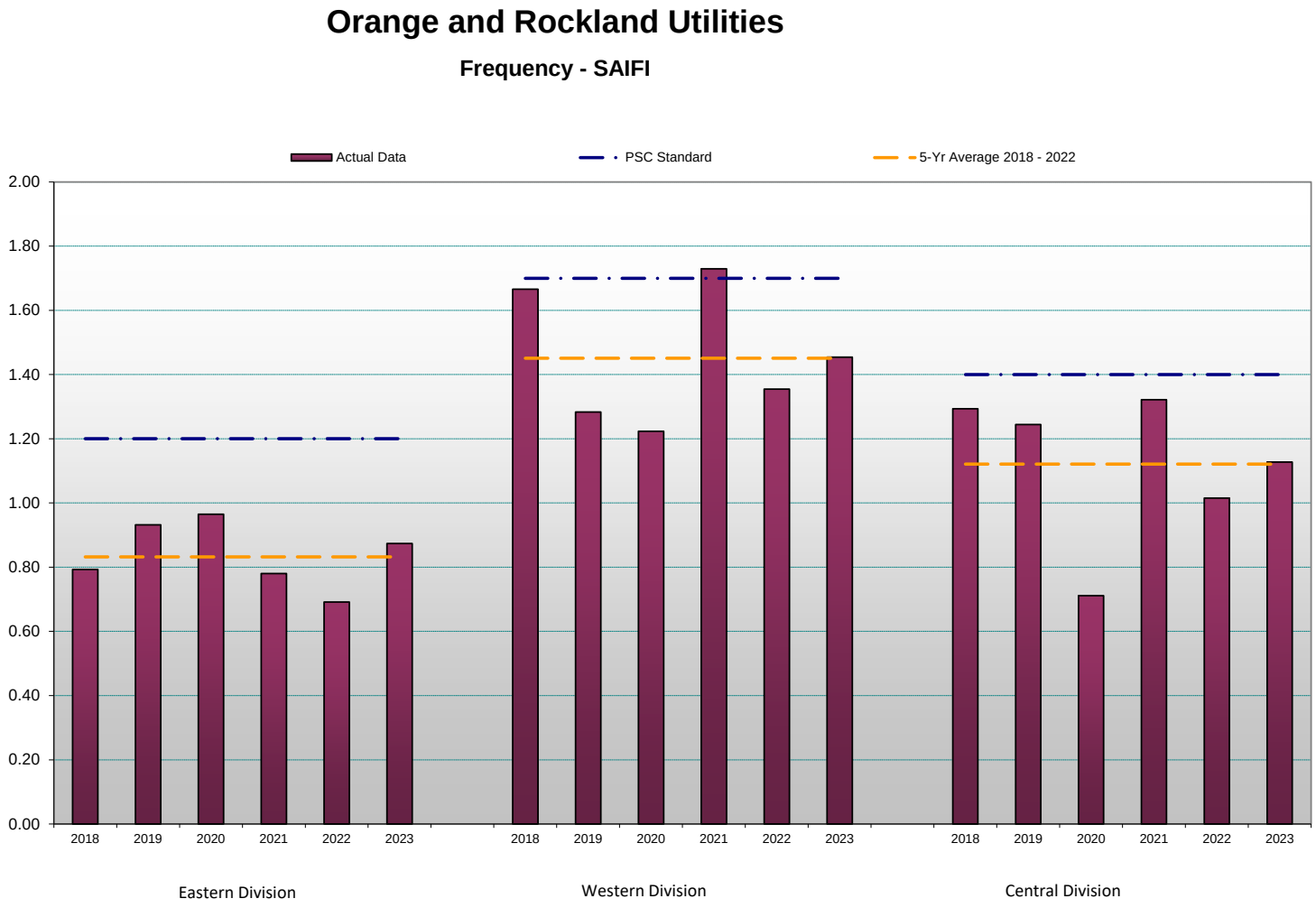
Table 2.1 - Electric Performance Ratios 2018 through 2023

Electric Performance Ratios 2018 - 2023

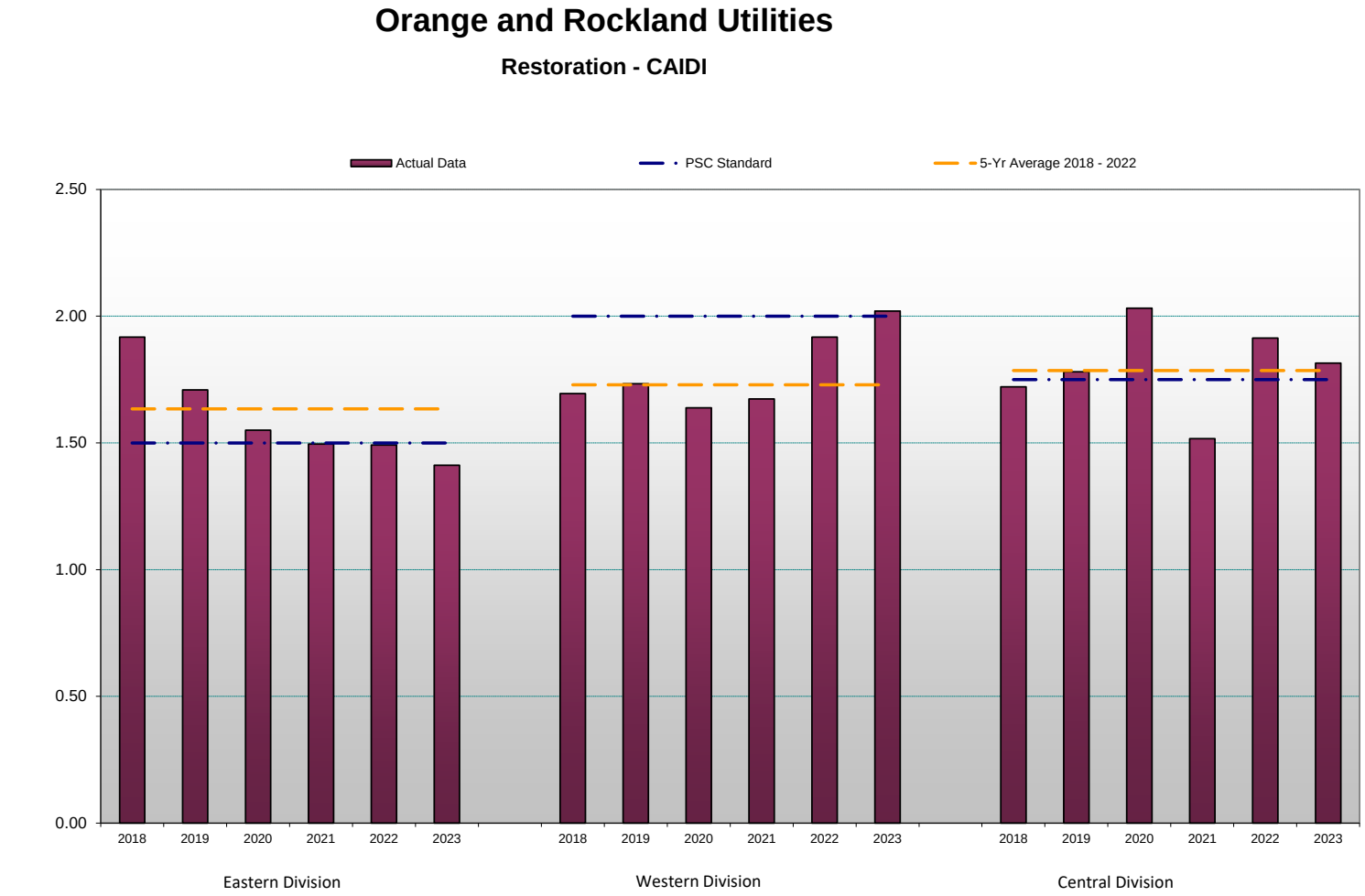
Division	Year	SAIFI - Frequency (Cust Aff / Cust Srvd)	CAIDI - Restoration (Cust - Hrs / Cust Aff)	SAIDI - Duration (Cust - Hrs / Cust Srvd)
Eastern	2018	0.79	1.92	1.52
	2019	0.93	1.71	1.59
	2020	0.96	1.55	1.50
	2021	0.78	1.50	1.17
	2022	0.69	1.49	1.03
5-Yr Average 2018 - 2022		0.83	1.63	1.36
	Standard	1.20	1.50	
	2023	0.87	1.41	1.23
Western	2018	1.67	1.69	2.82
	2019	1.28	1.73	2.22
	2020	1.22	1.64	2.00
	2021	1.73	1.67	2.89
	2022	1.35	1.92	2.60
5-Yr Average 2018 - 2022		1.45	1.73	2.51
	Standard	1.70	2.00	
	2023	1.43	2.03	2.90
Central	2018	1.29	1.72	2.23
	2019	1.24	1.78	2.22
	2020	0.71	2.03	1.45
	2021	1.32	1.52	2.00
	2022	1.02	1.91	1.94
5-Yr Average 2018 - 2022		1.12	1.79	2.00
	Standard	1.40	1.75	
	2023	1.13	1.82	2.05
Company	2018	1.13	1.78	2.01
	2019	1.09	1.74	1.90
	2020	0.96	1.67	1.60
	2021	1.14	1.57	1.79
	2022	0.93	1.76	1.64
5-Yr Average 2018 - 2022		1.05	1.70	1.79
	Standard	1.20	1.85	
	2023	1.07	1.72	1.84

Figure 2.1 - Frequency - SAIFI



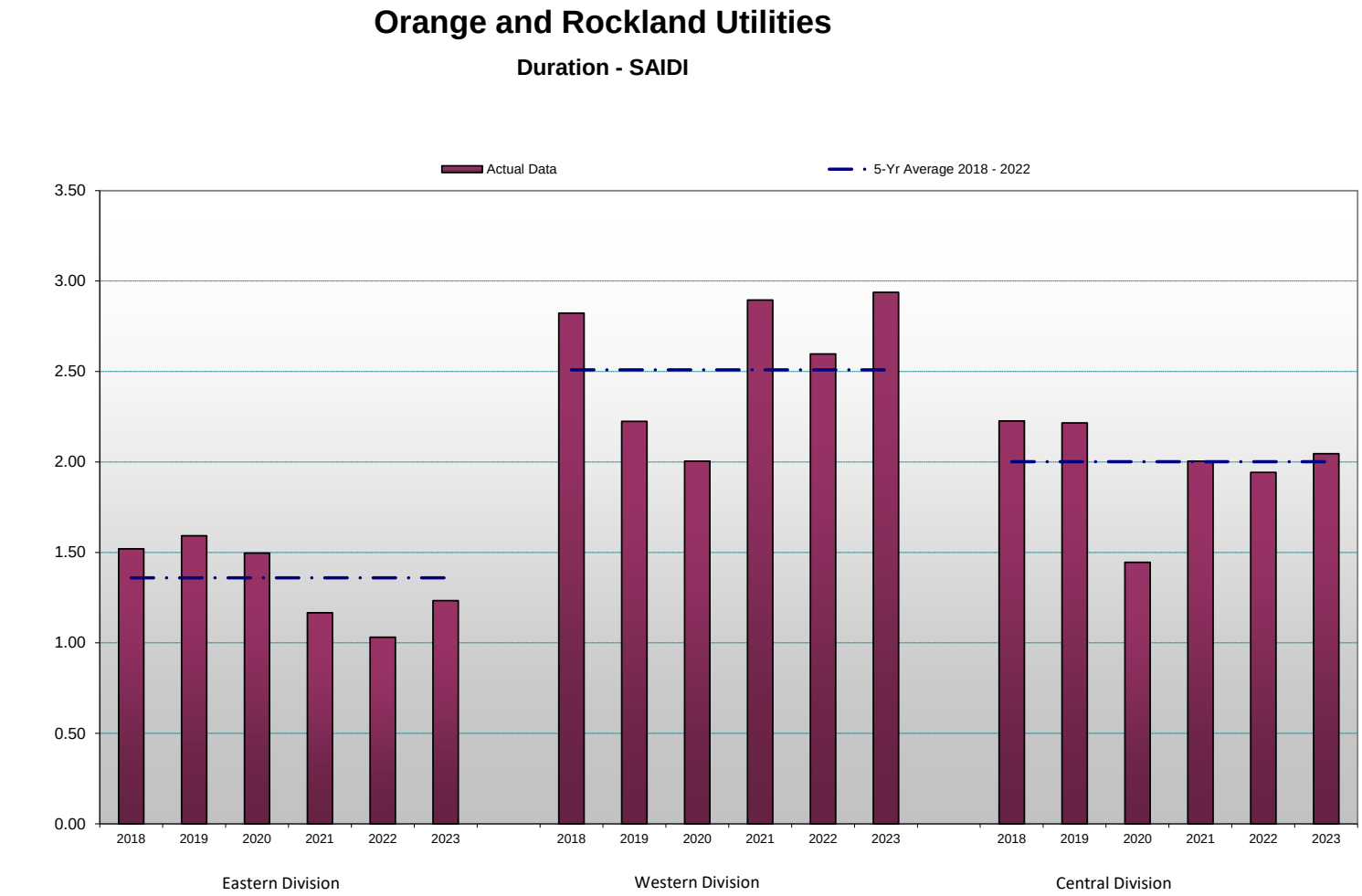
Includes Partial Powers, Single No Lights
Excludes Storm Activity

Figure 2.2 - Restoration - CAIDI



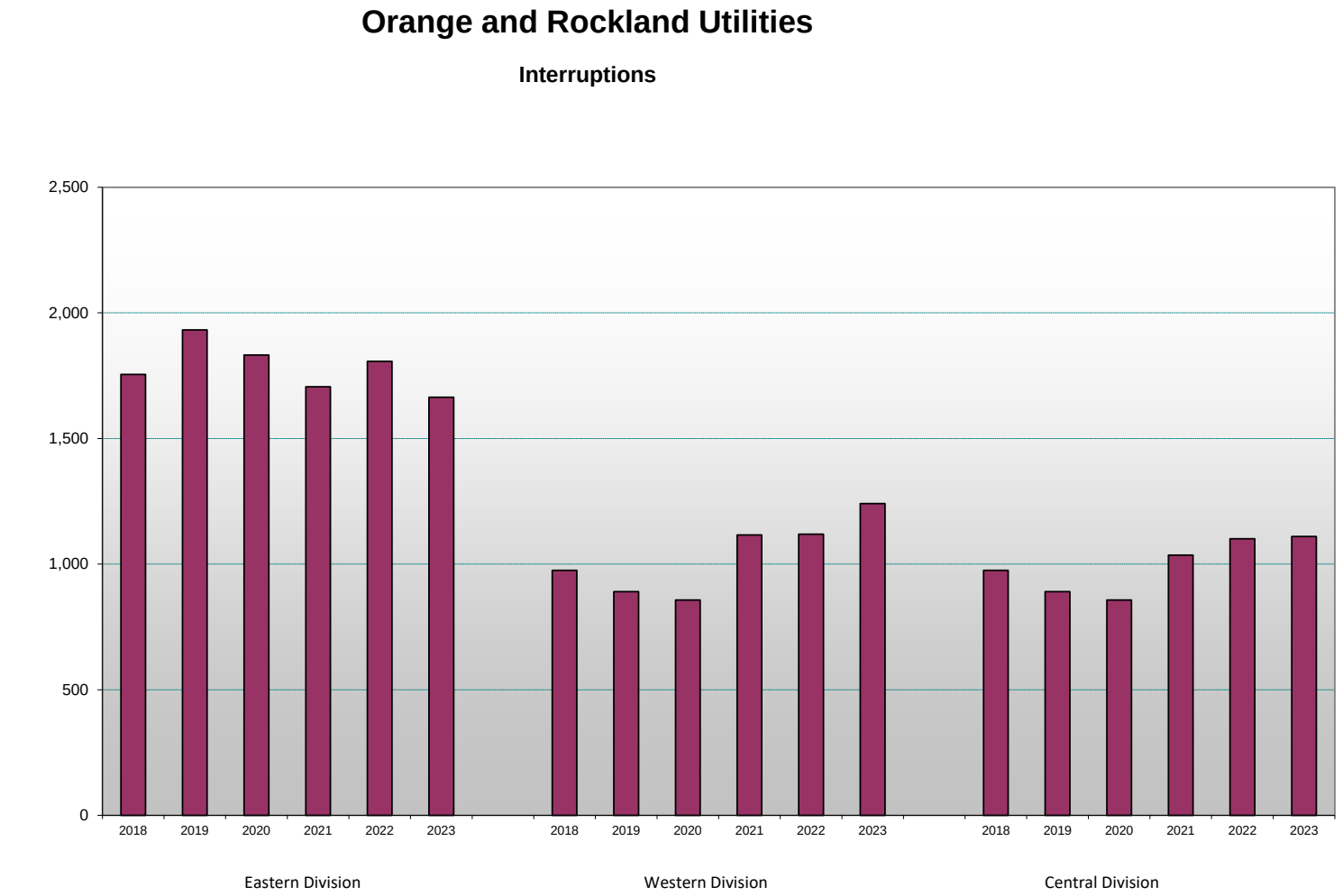
Includes Partial Powers, Single No Lights
Excludes Storm Activity

Figure 2.3 - Duration - SAIDI



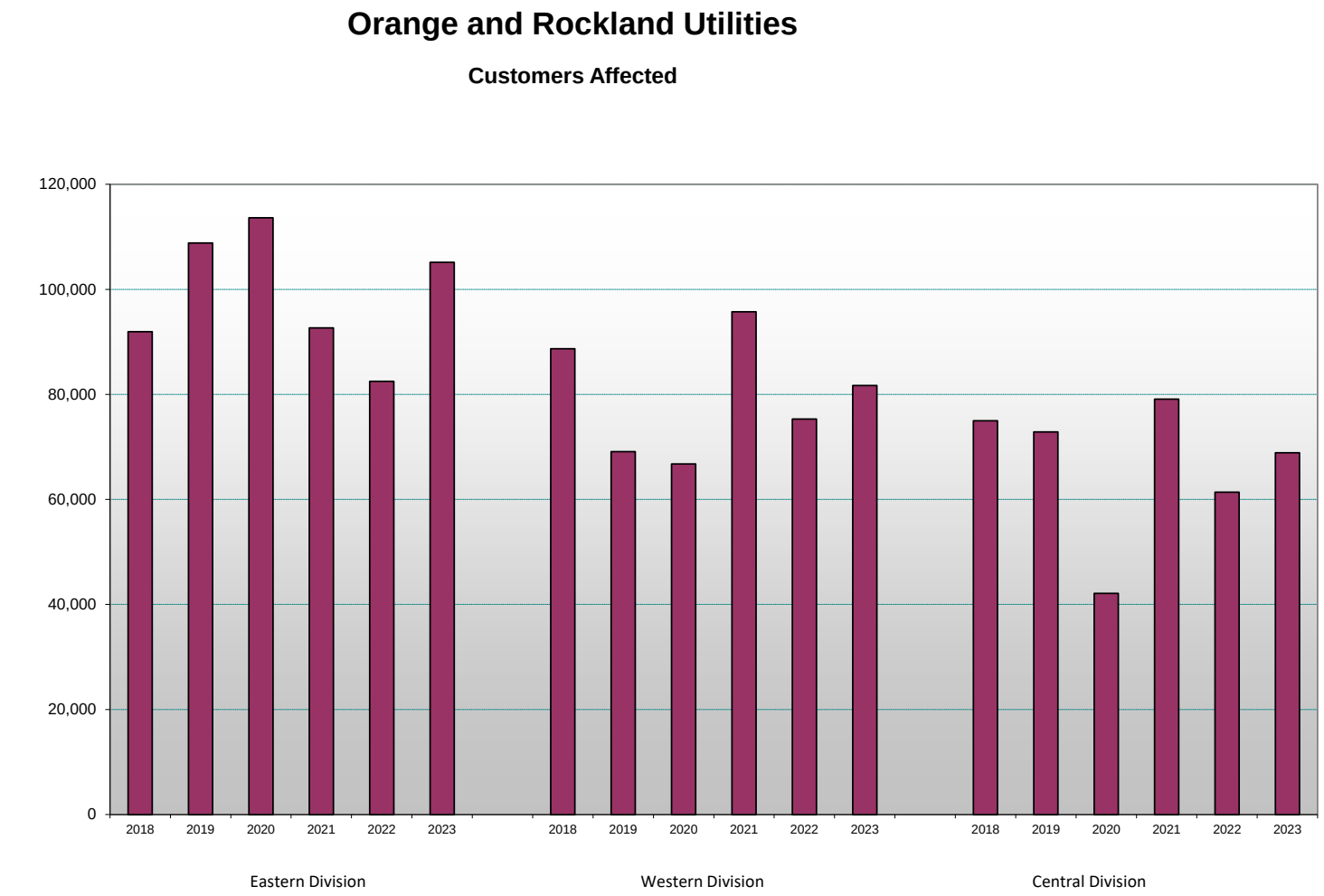
Includes Partial Powers, Single No Lights
Excludes Storm Activity

Figure 2.4 - Interruptions



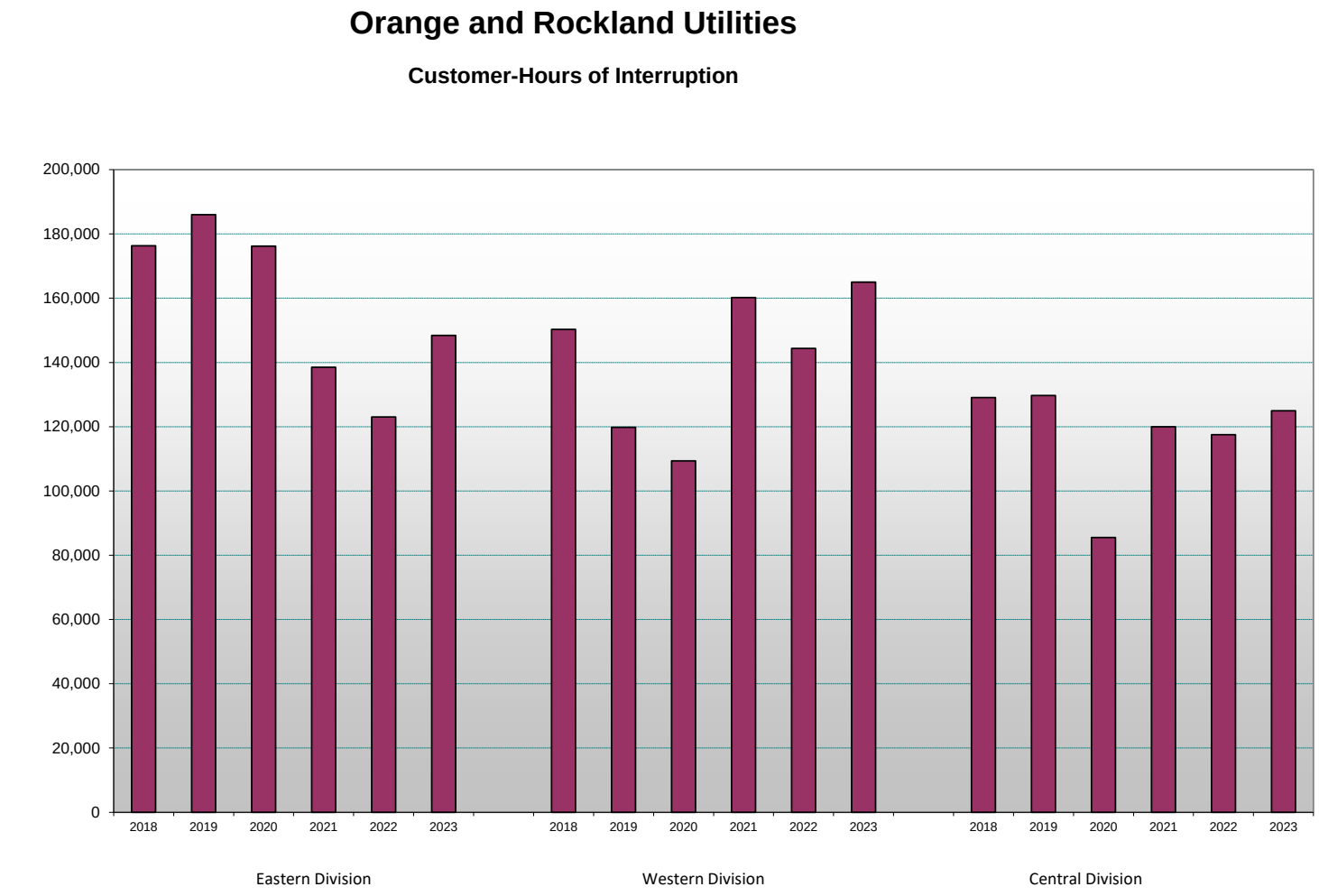
Includes Partial Powers, Single No Lights
Excludes Storm Activity

Figure 2.5 - Customers Affected



Includes Partial Powers, Single No Lights
Excludes Storm Activity

Figure 2.6 - Customer-Hours of Interruption



Includes Partial Powers, Single No Lights
Excludes Storm Activity

Figure 2.7 - Outage Statistics by Cause

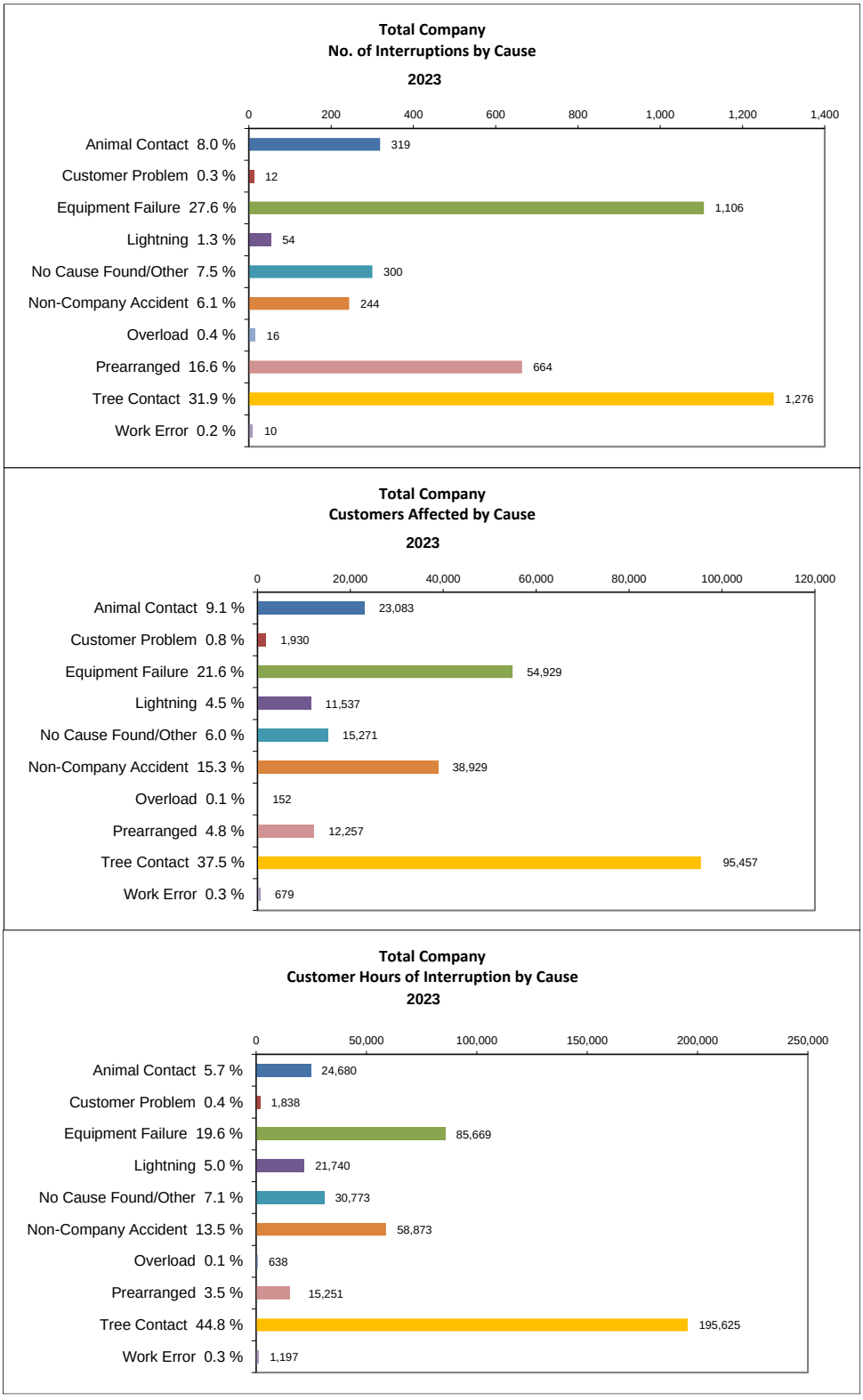


Table 2.2 – 5-Year New York Equipment Failures by Type and Failure Code

		Number of Interruptions by Year						
		2018	2019	2020	2021	2022	5-Yr Avg.	2023
Outage Type	Equipment							
Overhead	Arrester	18	8	14	15	10	13	9
	Capacitor	1	0	0	0	0	0	1
	Connecter/Splice - Pri	65	64	74	65	72	68	69
	Connecter/Splice - Sec	340	278	207	215	227	253	183
	Disconnect	5	0	0	3	0	2	1
	Elbow	0	0	1	0	0	0	0
	Electric Meter	7	8	11	9	13	10	18
	Fuse/Cutout/Eld	56	69	40	35	50	50	79
	GOAB	2	3	2	0	2	2	1
	Hardware/Pole	75	47	56	60	78	63	70
	Insulator	3	4	3	2	3	3	7
	Not Coded	12	0	0	0	0	2	0
	O/H Step Transf	11	6	5	15	6	9	12
	O/H Transformer	177	161	157	164	179	168	145
	Recloser	5	1	2	1	0	2	1
	Regulator	0	1	0	0	1	0	0
	Riser Pole Cutout	20	5	22	24	22	19	12
	Sectionalizer	0	0	0	0	0	0	2
	Splice/Junction - Sec	0	0	0	2	0	0	0
	Wire/Cable - Pri	62	66	130	122	62	88	57
	Wire/Cable - Sec	103	92	138	136	100	114	113
	Total - OH	962	813	862	868	825	866	780
Trans/Substa	Brkr/Kyle/Switch	4	15	13	1	3	7	3
	Buss	5	0	0	0	0	1	0
	Cable	0	0	0	1	0	0	0
	Hardware/Pole/Tower	0	0	0	0	2	0	0
	Insulator	0	4	0	8	0	2	0
	Not Coded	1	0	0	1	0	0	1
	Regulator	0	0	1	0	0	0	0
	Transformer	1	0	1	3	2	1	3
	Total - Trans/Substation	11	19	15	14	7	13	7
Underground	Arrester	0	1	1	0	0	0	1
	Boxpad/Silo/Vault	3	0	1	3	1	2	3
	Bushing	2	0	1	0	1	1	2
	Connecter/Splice - Pri	1	0	0	0	0	0	0
	Connecter/Splice - Sec	15	0	0	0	0	3	0
	Elbow	9	8	5	7	7	7	7
	Fuse/Cutout/Eld	1	0	0	0	0	0	0
	Hardware/Pole	5	0	4	2	5	3	7
	Not Coded	3	0	0	0	0	1	0
	O/H Transformer	3	1	0	0	0	1	0
	Padmount Transf	88	117	127	112	111	111	115
	Splice/Junction - Pri	5	7	3	2	1	4	4
	Splice/Junction - Sec	34	36	20	40	20	30	34
	Stress Cone	3	8	11	7	6	7	7
	Submersible Transf	2	0	0	0	1	1	0
	Switch	5	0	0	2	0	1	27
	Wire/Cable - Pri	54	66	68	89	97	75	64
	Wire/Cable - Sec	83	61	35	67	82	66	48
	Total - UG	316	305	276	331	332	312	319
	Total - Year	1,289	1,137	1,153	1,213	1,164	1,191	1,106

Note: Figures in red denote that the value exceeds the 5-year average

Table 2.2 – 5-Year New York Equipment Failures by Type and Failure Code (Cont.)

		Customers Affected by Year						
		2018	2019	2020	2021	2022	5-Yr Avg.	2023
Outage Type	Equipment							
Overhead	Arrester	540	632	3,421	379	1,527	1,300	423
	Capacitor	35	0	0	0	0	7	1,264
	Connecter/Splice - Pri	2,192	10,965	2,470	3,457	3,425	4,502	6,324
	Connecter/Splice - Sec	671	546	451	503	664	567	832
	Disconnect	6,270	0	0	2,142	0	1,682	112
	Elbow	0	0	4	0	0	1	0
	Electric Meter	11	8	12	10	29	14	31
	Fuse/Cutout/Eld	1,837	3,389	4,223	962	2,076	2,497	3,335
	GOAB	2,747	3,095	453	0	1,402	1,539	501
	Hardware/Pole	11,600	9,326	13,619	7,291	11,528	10,673	6,694
	Insulator	48	1,887	83	246	1,284	710	744
	Not Coded	2,641	0	0	0	0	528	0
	O/H Step Transf	984	835	788	1,221	239	813	1,459
	O/H Transformer	3,932	2,070	1,709	6,465	5,396	3,914	3,461
	Recloser	4,916	1,231	252	847	0	1,449	946
	Regulator	0	45	0	0	146	38	0
	Riser Pole Cutout	765	89	413	655	287	442	1,011
	Sectionalizer	0	0	0	0	0	0	4
	Splice/Junction - Sec	0	0	0	2	0	0	0
	Wire/Cable - Pri	21,681	19,189	35,329	31,325	11,895	23,884	13,503
	Wire/Cable - Sec	1,278	632	604	894	1,498	981	1,873
	Total - OH	62,148	53,939	63,831	56,399	41,396	55,543	54,292
Trans/Substa	Brkr/Kyle/Switch	4,318	18,812	5,965	573	1,384	6,210	7,228
	Buss	6,778	0	0	0	0	1,356	0
	Cable	0	0	0	326	0	65	0
	Hardware/Pole/Tower	0	0	0	0	304	61	0
	Insulator	0	1,931	0	8,492	0	2,085	0
	Not Coded	1,263	0	0	305	0	314	2
	Regulator	0	0	301	0	0	60	0
	Transformer	1,146	0	699	419	1,354	724	1,276
	Total - Trans/Substation	13,505	20,743	6,965	10,115	3,042	10,874	7,749
Underground	Arrester	0	1	1	0	0	0	1
	Boxpad/Silo/Vault	4	0	3	84	22	23	14
	Bushing	71	0	19	0	6	19	180
	Connecter/Splice - Pri	4	0	0	0	0	1	0
	Connecter/Splice - Sec	44	0	0	0	0	9	0
	Elbow	1,661	405	387	450	203	621	169
	Fuse/Cutout/Eld	54	0	0	0	0	11	0
	Hardware/Pole	57	0	152	186	208	121	64
	Not Coded	65	0	0	0	0	13	0
	O/H Transformer	19	9	0	0	0	6	0
	Padmount Transf	961	1,667	1,797	1,975	1,187	1,517	1,280
	Splice/Junction - Pri	131	378	119	40	43	142	1,737
	Splice/Junction - Sec	57	105	37	164	29	78	151
	Stress Cone	39	79	59	535	210	184	65
	Submersible Transf	10	0	0	0	1	2	0
	Switch	192	0	0	11	0	41	922
	Wire/Cable - Pri	1,743	1,995	2,422	3,873	6,002	3,207	2,579
	Wire/Cable - Sec	238	204	1,943	205	154	549	191
	Total - UG	5,350	4,843	6,939	7,523	8,065	6,544	7,268
	Total - Year	81,003	79,525	77,735	74,037	52,503	72,961	69,309

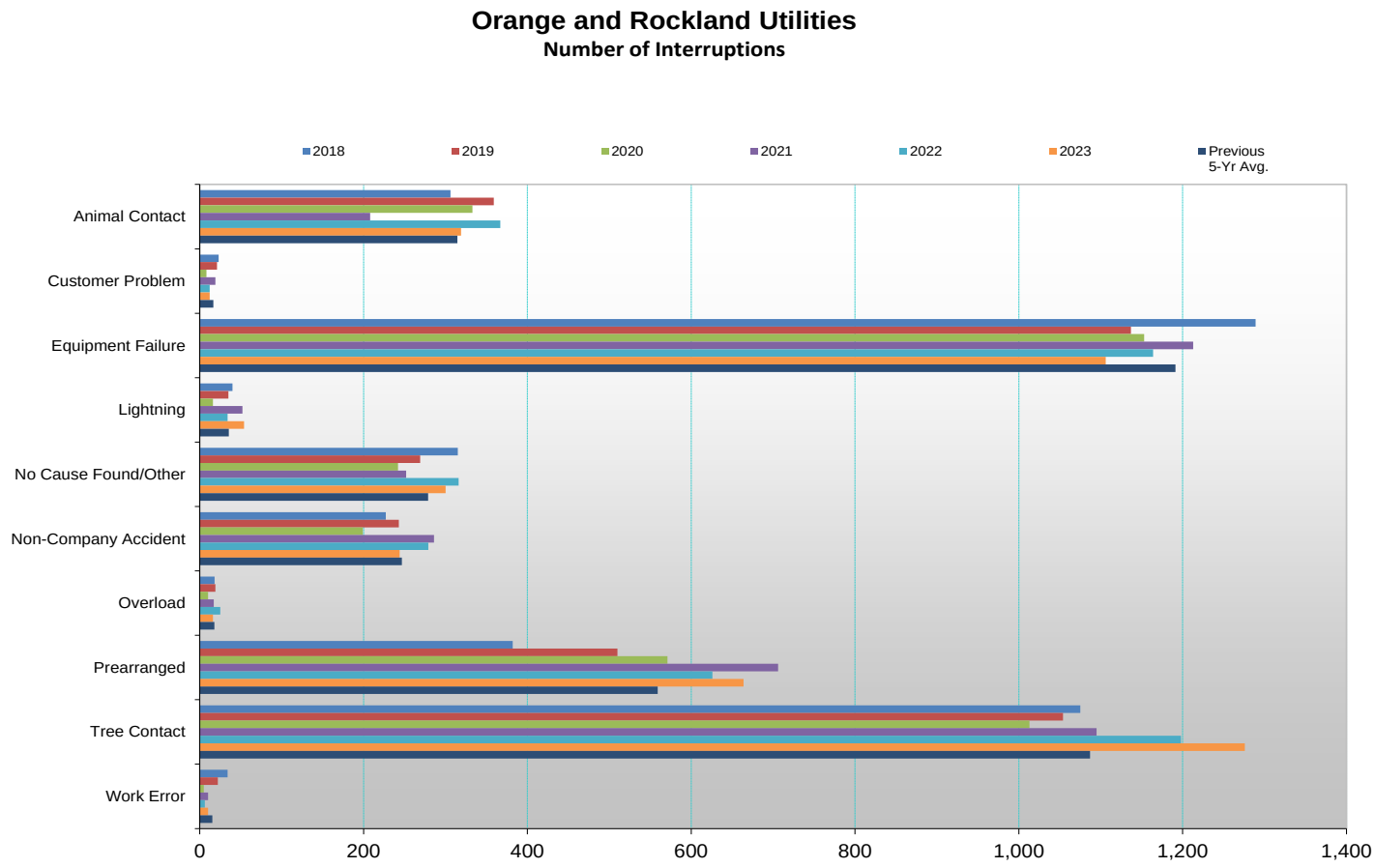
Note: Figures in red denote that the value exceeds the 5-year average

Table 2.2 – 5-Year New York Equipment Failures by Type and Failure Code (Cont.)

		Total Minutes of Interruptions by Year						
		2018	2019	2020	2021	2022	5-Yr Avg.	2023
Outage Type	Equipment							
Overhead	Arrester	104,179	54,898	407,821	70,458	106,784	148,828	56,069
	Capacitor	1,400	0	0	0	0	280	7,584
	Connecter/Splice - Pri	265,982	844,490	208,961	200,562	330,709	370,141	455,517
	Connecter/Splice - Sec	142,187	112,645	96,337	83,779	103,499	107,689	94,576
	Disconnect	207,966	0	0	23,933	0	46,380	17,808
	Elbow	0	0	1,684	0	0	337	0
	Electric Meter	1,958	2,769	4,624	2,104	4,556	3,202	7,814
	Fuse/Cutout/Eld	150,491	217,152	183,614	138,504	110,927	160,138	320,968
	GOAB	95,683	225,011	18,574	0	20,954	72,044	8,016
	Hardware/Pole	1,372,189	399,841	851,293	577,951	709,613	782,177	664,394
	Insulator	7,125	200,985	8,655	22,485	74,524	62,755	116,635
	Not Coded	30,117	0	0	0	0	6,023	0
	O/H Step Transf	267,959	241,697	75,145	290,710	83,198	191,742	221,024
	O/H Transformer	576,195	390,994	317,594	1,092,465	381,096	551,669	266,761
	Recloser	264,080	17,234	16,627	11,633	0	61,915	41,764
	Regulator	0	7,200	0	0	1,314	1,703	0
	Riser Pole Cutout	186,564	25,097	117,152	34,686	36,097	79,919	31,254
	Sectionalizer	0	0	0	0	0	0	990
	Splice/Junction - Sec	0	0	0	531	0	106	0
	Wire/Cable - Pri	1,989,480	2,038,045	2,781,064	2,200,178	1,377,331	2,077,220	857,202
	Wire/Cable - Sec	252,443	127,609	81,626	90,188	75,607	125,495	189,819
	Total - OH	5,915,998	4,905,667	5,170,771	4,840,167	3,416,209	4,849,762	3,358,195
Trans/Substa	Brkr/Kyle/Switch	424,777	2,372,437	343,560	4,584	111,651	651,402	76,057
	Buss	339,554	0	0	0	0	67,911	0
	Cable	0	0	0	20,375	0	4,075	0
	Hardware/Pole/Tower	0	0	0	0	3,521	704	0
	Insulator	0	145,637	0	154,422	0	60,012	0
	Not Coded	144,812	0	0	49,410	0	38,844	254
	Regulator	0	0	38,227	0	0	7,645	0
	Transformer	101,994	0	67,977	19,705	512,849	140,505	34,539
	Total - Trans/Substation	1,011,137	2,518,074	449,764	248,496	628,021	971,098	110,850
Underground	Arrester	0	298	452	0	0	150	344
	Boxpad/Silo/Vault	433	0	2,027	20,980	2,618	5,212	3,238
	Bushing	16,754	0	4,719	0	2,688	4,832	51,740
	Connecter/Splice - Pri	348	0	0	0	0	70	0
	Connecter/Splice - Sec	24,234	0	0	0	0	4,847	0
	Elbow	375,608	103,607	158,568	161,875	50,165	169,965	41,697
	Fuse/Cutout/Eld	13,122	0	0	0	0	2,624	0
	Hardeware/Pole	10,581	0	61,962	35,298	38,016	29,171	18,724
	Not Coded	23,413	0	0	0	0	4,683	0
	O/H Transformer	2,262	891	0	0	0	631	0
	Padmount Transf	277,832	369,612	384,225	258,310	352,605	328,517	334,633
	Splice/Junction - Pri	53,027	75,344	61,671	19,020	17,243	45,261	170,906
	Splice/Junction - Sec	28,066	30,387	10,420	37,895	8,555	23,065	21,872
	Stress Cone	2,778	28,121	12,959	113,515	37,689	39,012	14,749
	Submersible Transf	7,005	0	0	0	226	1,446	0
	Switch	48,300	0	0	2,579	0	10,176	263,346
	Wire/Cable - Pri	658,079	684,352	777,337	1,124,413	1,459,416	940,719	657,906
	Wire/Cable - Sec	118,659	90,724	93,137	81,779	56,462	88,152	91,927
	Total - UG	1,660,501	1,383,336	1,567,477	1,855,664	2,025,683	1,698,532	1,671,082
	Total - Year	8,587,636	8,807,077	7,188,012	6,944,327	6,069,913	7,519,392	5,140,127

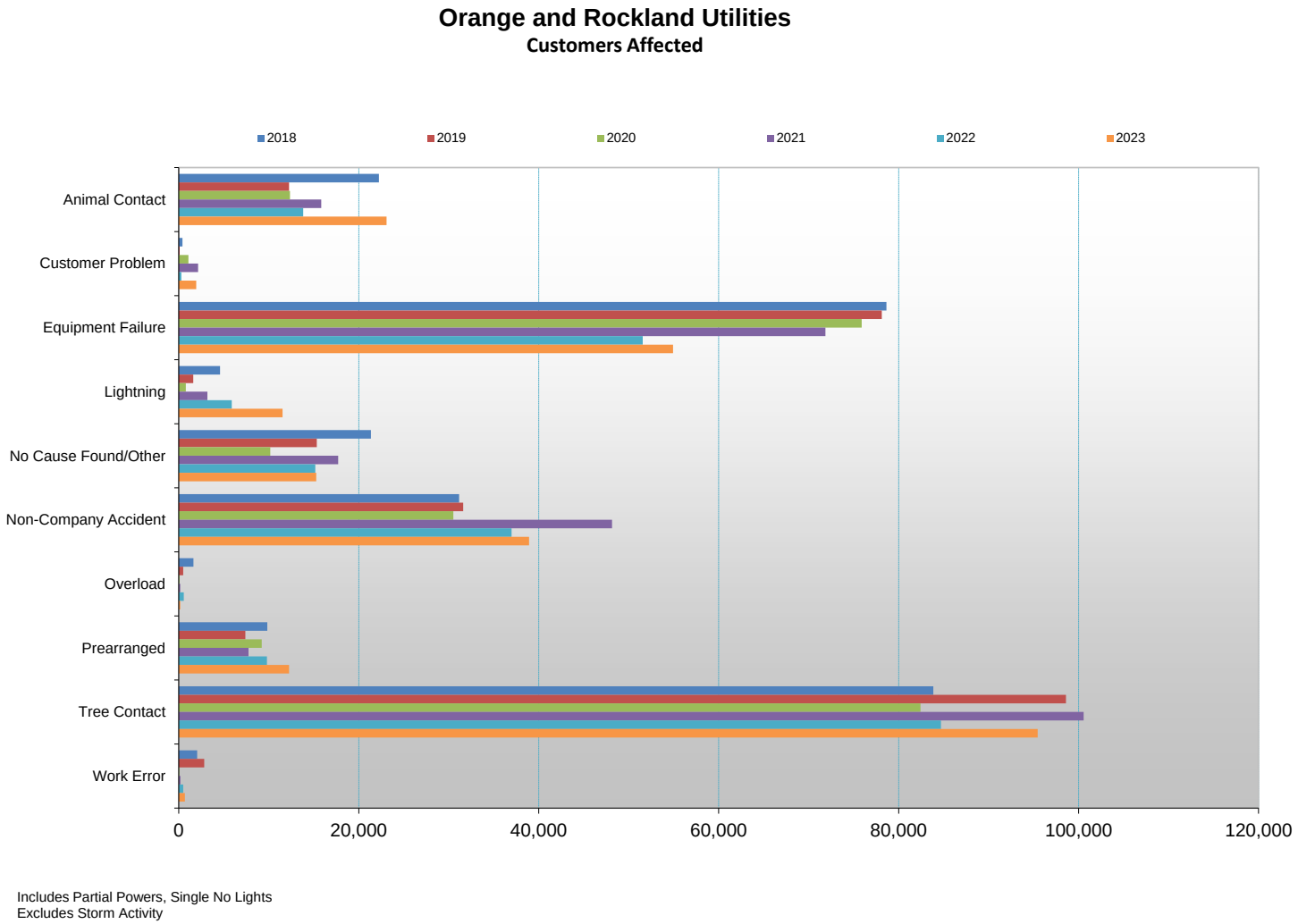
Note: Figures in red denote that the value exceeds the 5-year average

Figure 2.8 - 5-Year Comparison – Number of Interruptions by Cause



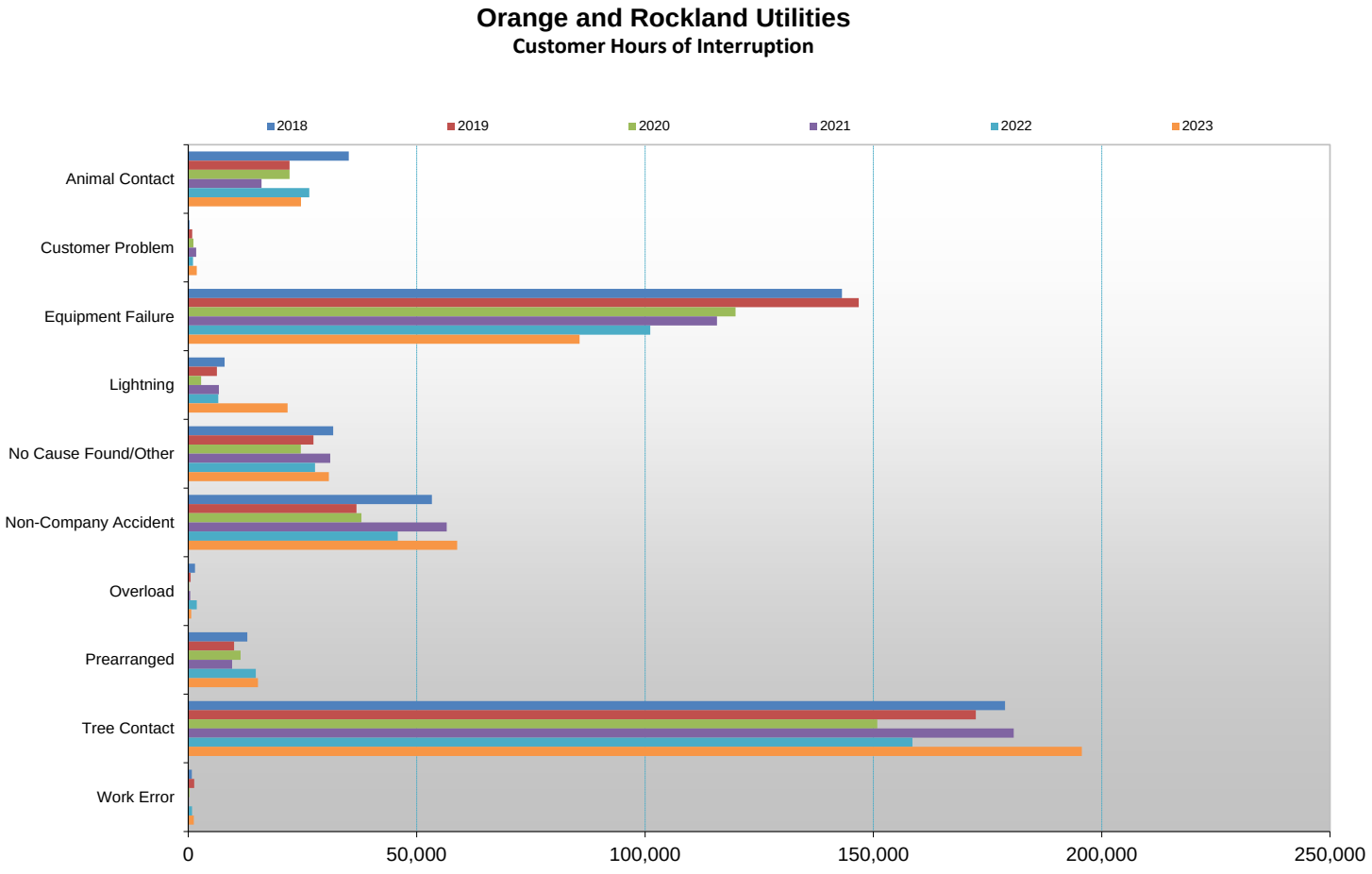
Includes Partial Powers, Single No Lights
Excludes Storm Activity

Figure 2.9 - 5-Year Comparison – Customers Affected by Cause



Includes Partial Powers, Single No Lights
Excludes Storm Activity

Figure 2.10 - 5-Year Comparison - Customer Hours of Interruption



Includes Partial Powers, Single No Lights
Excludes Storm Activity

Figure 2.11 - 5-Year Comparison - Customers per Interruption (With/Without Storm)

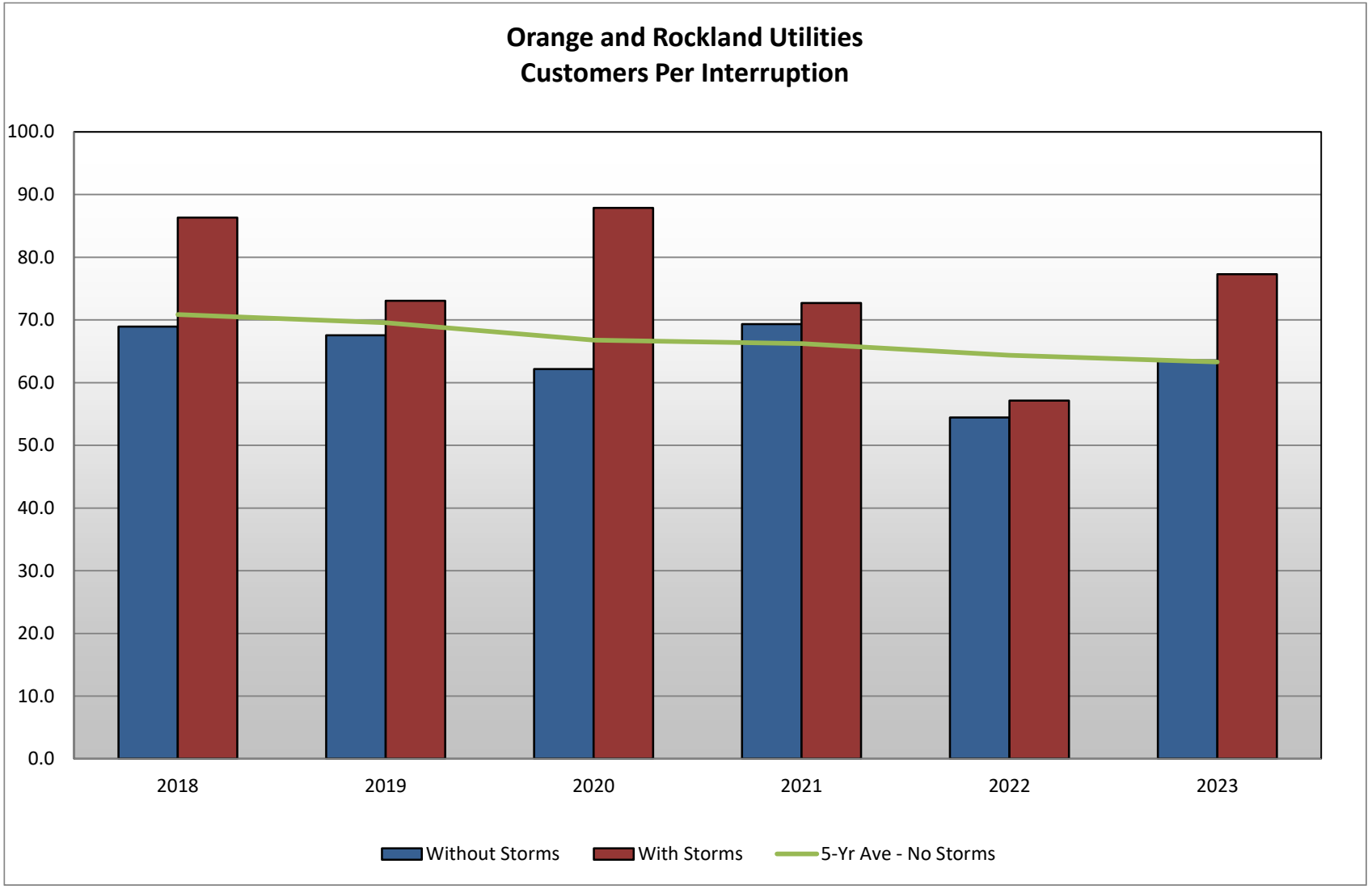


Table 2.3 - 5-Yr Comparison – Large Outage Impact on SAIFI, CAIDI & SAIDI

Company Without Storms

Effect of Interruptions Affecting 5,000 or more Customers

YEAR	CUSTOMERS SERVED (CS)	# OF INTERRUPTIONS	CUSTOMERS AFFECTED (CA)	CUSTOMER MINUTES OF INTERRUPTION (CM)	FREQUENCY (CA/CS)	RESTORATION (CM/CA)	DURATION (CM/CS)
WITHOUT STORMS							
2018	227,222	3,705	255,641	27,341,380	1.13	1.78	2.01
2019	229,181	3,712	250,784	26,127,693	1.09	1.74	1.90
2020	231,512	3,546	222,505	22,264,954	0.96	1.67	1.60
2021	233,903	3,858	267,493	25,121,815	1.14	1.57	1.79
2022	235,319	4,027	219,180	23,092,388	0.93	1.76	1.64
5-Yr Average	**231,427**	**3,770**	**243,121**	**24,789,646**	**1.05**	**1.70**	**1.79**
2023	237,593	4,015	255,698	26,303,504	1.08	1.71	1.85

WITHOUT STORMS - OUTAGES AFFECTING > 5000 CUSTOMERS

YEAR	SERVED	INTERR's	CUST AFF	CUST MIN
2018	227,222	1	6,403	357,472
2019	229,181	1	5,753	3,884
2020	231,512	-	-	-
2021	233,903	1	8,492	154,422
2022	235,319	-	-	-
5-Yr Average	**231,427**	**1**	**4,130**	**103,156**
2023	237,593	2	11,247	417,584

WITHOUT STORMS AND WITHOUT THOSE OUTAGES AFFECTING > 5000 CUSTOMERS

YEAR	SERVED	INTERR's	CUST AFF	CUST MIN			
2018	227,222	3,704	249,238	26,983,908	1.10	1.80	1.98
2019	229,181	3,711	245,031	26,123,809	1.07	1.78	1.90
2020	231,512	3,546	222,505	22,264,954	0.96	1.67	1.60
2021	233,903	3,857	259,001	24,967,393	1.11	1.61	1.78
2022	235,319	4,027	219,180	23,092,388	0.93	1.76	1.64
5-Yr Average	**230,454**	**3,705**	**243,944**	**25,085,016**	**1.06**	**1.71**	**1.81**
2023	237,593	4,013	244,451	25,885,920	1.03	1.76	1.82

Figure 2.12 – 20-Year SAIFI Trend

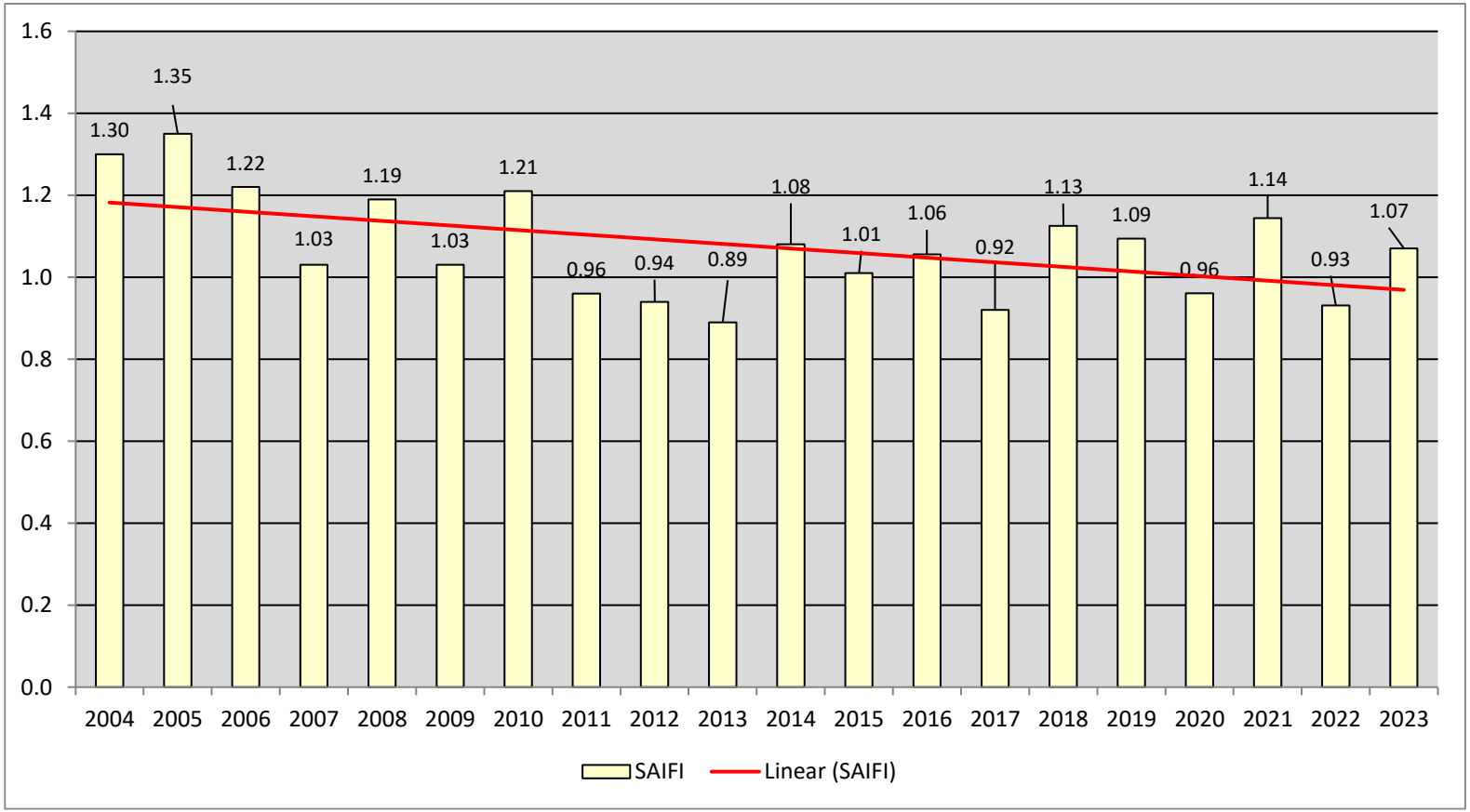


Figure 2.13 – 20-Year CAIDI Trend

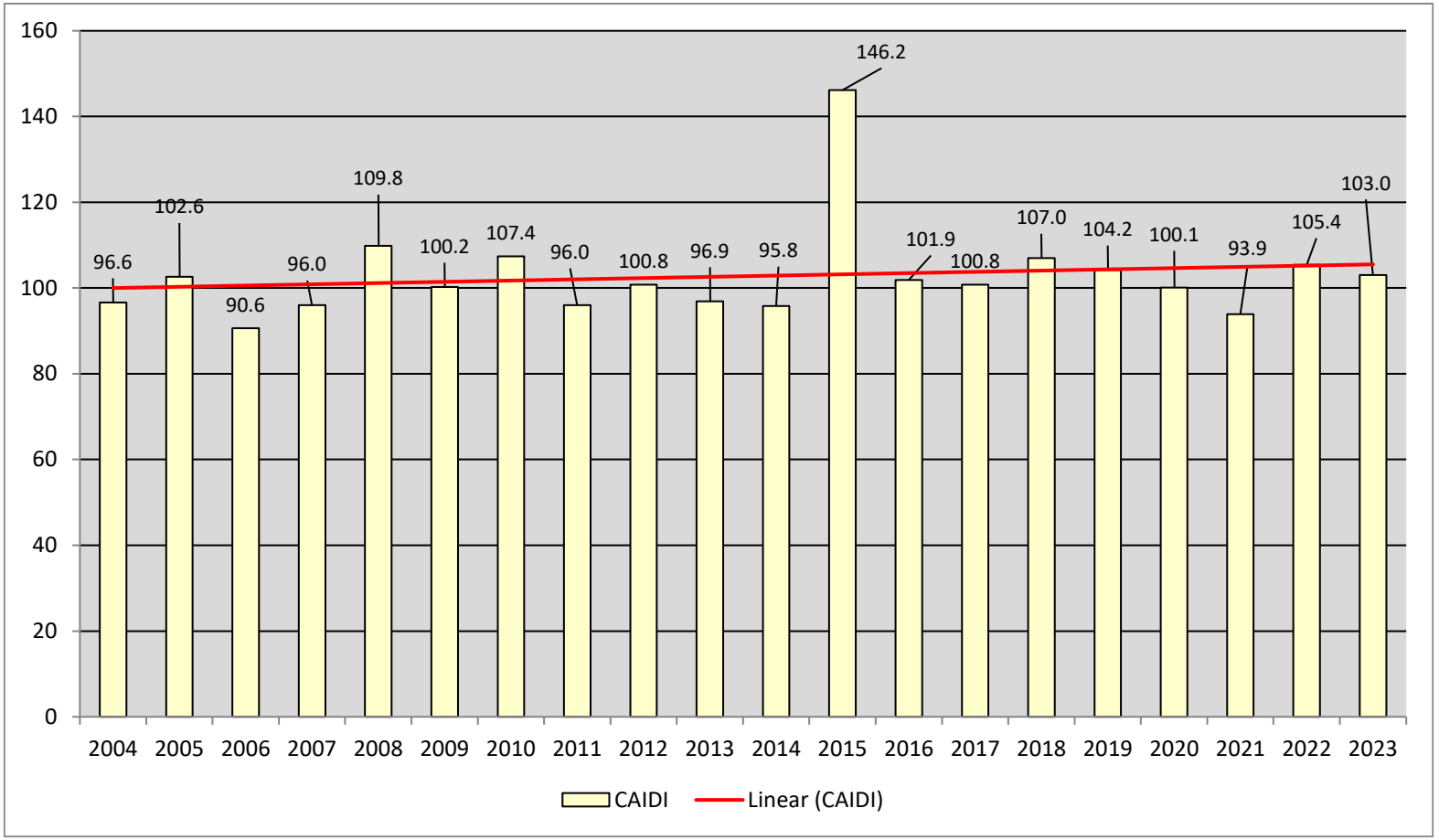


Figure 2.14 – 20-Year SAIDI Trend

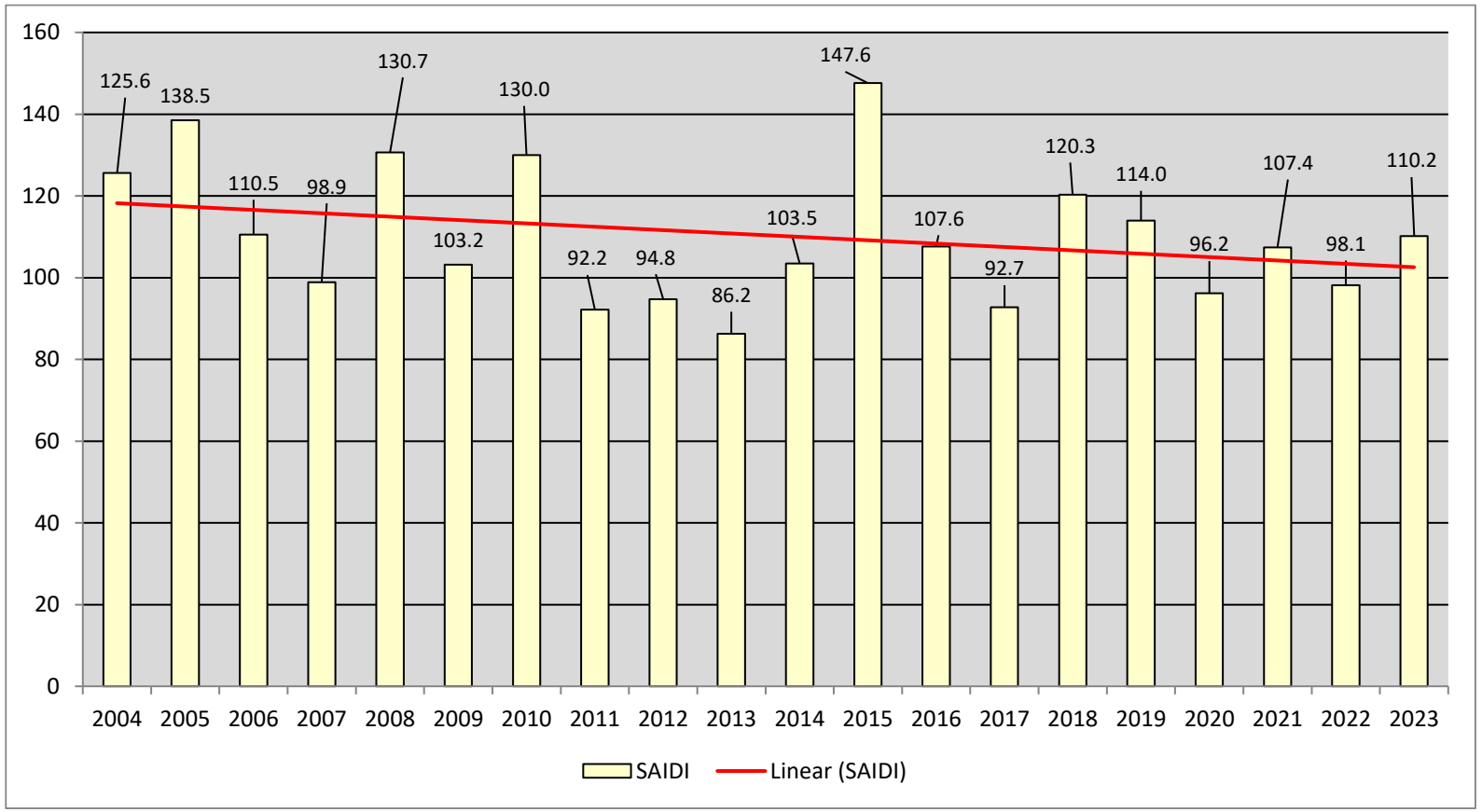
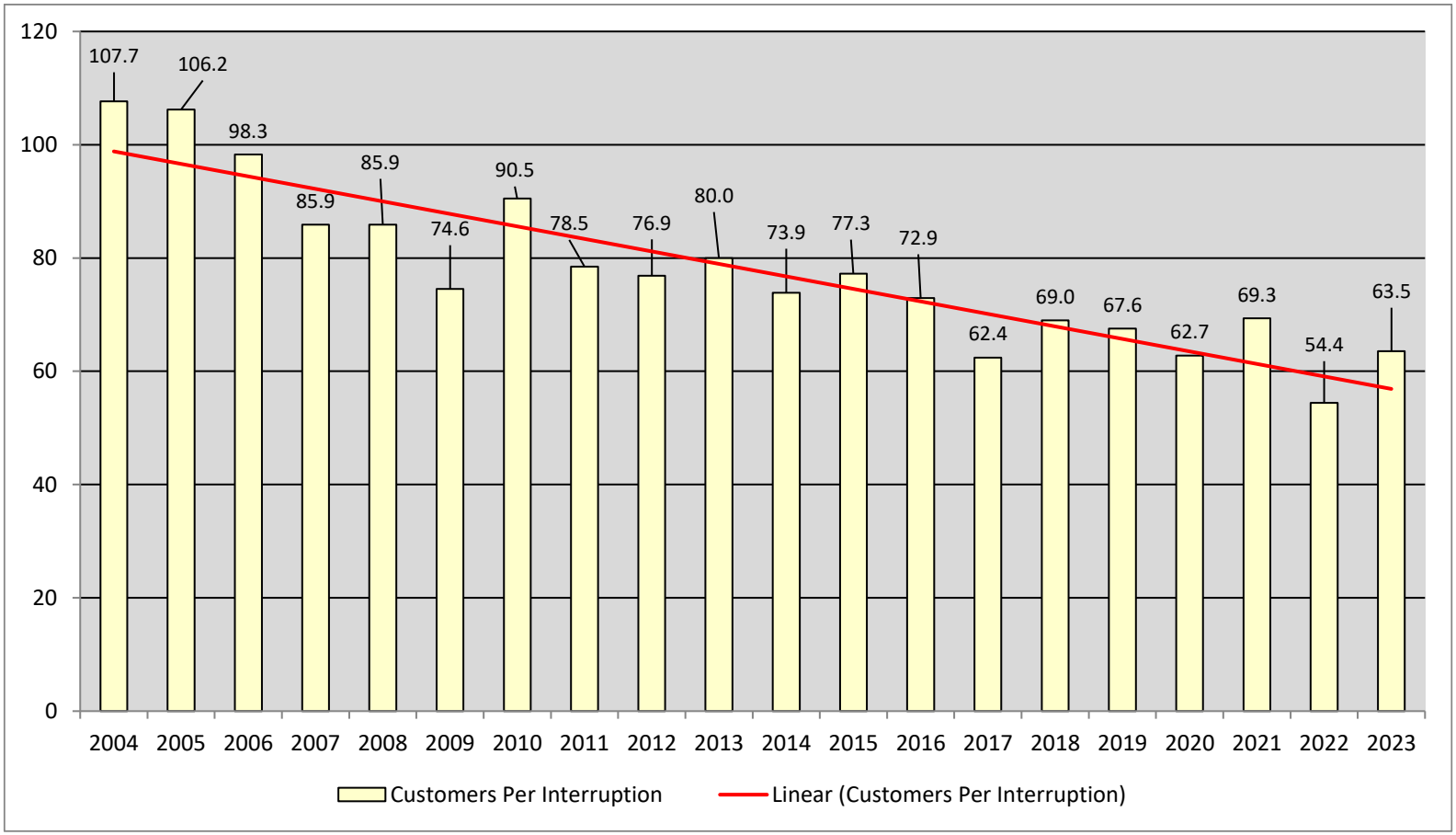


Figure 2.15 – 20-Year Customers Per Interruption Trend



3. EASTERN DIVISION

3.1. 2023 Divisional Performance

In 2023, the year-end frequency for the Eastern Division was 0.87 customers affected per customer served. This performance was better than the divisional standard of 0.99 but a regress from the Division's 2022 performance of 0.69 and the previous five-year average of 0.83. The year-end restoration of 1.41 customer hours of interruption per customer-affected was an improvement from the Division's 1.49 performance in 2022 and the divisional standard of 1.50, as well as the previous five-year average of 1.63. The monthly performance of these indices, from 2018 through 2023, is shown in Table 3-1.

Figures 3-1, 3-2, and 3-3, show performance trends, on a rolling 12-month basis, from 2018 through 2023. The rolling 12-monthly number of interruptions that had an upward trend between 2018 and 2019, took a downward turn in 2020 and continued into 2022. Excludable days during the year did have a minor impact on 2023 Eastern Division numbers with five excludable days as a result of weather events that affected the Eastern Division. This result contrasted to 2022's no excludable days.

The rolling 12-month average number of customers affected took a steep increase in 2023 with 105,152 customers affected in comparison to 2022, which was the lowest since 2015, with 82,493 customers affected. Likewise, in December 2023, the customer hours of interruption increased from the previous 12-month in December 2022. A review of the daily outage data shows that in 2023, the customer hours of interruption have been trending up from January to December.

Figure 3-4 shows a summary, by cause, for the number of interruptions, customers affected, and the customer hours of interruption experienced in 2023. The two major causes of interruptions were equipment failures and tree contacts, consistent with historical norms. The reporting of partial power and single customer interruptions greatly contributes to the number of interruptions for these two cause codes. Of the 361 interruptions in the tree contact category, 84 (23%) were attributable to partial power or single customer conditions. Of the 559 interruptions in the equipment failure category, 193 (35%) were attributable to partial power or single customer conditions. Both results were down from the 2022 results and were consistent with the Eastern Division's historical performance.

A graphic representation, by major cause, is depicted in Figures 3-5, 3-6, and 3-7, which shows the annual contribution to the number of interruptions, customers affected, and customer hours of interruption, respectively, from 2018 through 2023. The number of interruptions improved in six cause categories: animal, equipment failure, no cause found, non-Company accident, pre-arranged, and tree contact in 2023, as compared to 2022. Customers affected improved in three of the ten categories and of the remaining seven, no cause found was the largest underperformer which increased by 315%.

With the number of tree contact and equipment failures being the largest contributors to interruptions, both improved from 2022 levels by 13% and 10%, respectively. Equipment failure had an increase on the number of customers affected of 19% in 2022, while tree contact also regressed by 32%. Equipment failures had an improvement in customer-minutes of interruption of 7% behind animal contact which showed an improvement of 23% for 2023 in the Eastern Division.

As shown in Table 3.2, the number of customer-minutes of interruption improved for the fifth year in a row, with customers affected and minutes of interruptions also improving from 2022. All three: number of equipment failures, customers affected, and the minutes of interruption were lower than their respective five-year averages. The customer minutes of interruption for equipment failures improved by 7% with all three segments, overhead, substations and underground helping the cause while underground failures having the highest improvement of 13%.

In 2023, there was one major outage in the Eastern Division that affected more than 5,000 customers. The incident happened in September and was related to tropical storm Ophelia. The major incidents added 5,098 of affected customers with 258,525 customer-minutes of interruption. Table 3-3 shows the Eastern Division history from 2018 through 2023. The Company storm statistics and analysis table is shown in Appendix E. In 2023, there were five events that met the major storm criteria for the Eastern Division. With three of the five events having high winds that caused a total of 314 customers with outages over 24 hours.

There are 106 circuits serving the Eastern Division. Appendix A, details the circuit priority ratings for all of O&R's distribution circuits. Only circuits that serve at least 40% of the Company's customers, with respect to its total number of customers served, were included in the worst performing circuit analysis for this report.

All of the circuits are also listed in Appendix D, first in the order of decreasing frequency and then by decreasing restoration. Of the 106 circuits, 34 were not considered for this evaluation because the number of customers served did not exceed 100, or the number of interruptions did not exceed three. Of the 106 circuits, 73 (69%) met the frequency standard, and 54 (41%) met the restoration standard. The 2023 SAIFI and CAIDI regressed from their 2022 performance of 80 (78%) meeting SAIFI and 56 (55%) meeting CAIDI standards.

For the Eastern Division, $MAIFI_e$ in 2023 was 8.57, based upon 121,319 customers served and a total of 1,039,574 momentary interruptions experienced by customers. This was higher than 2022 performance. The increase brings $MAIFI_e$ performance below the previous three-year average of 8.96 in the Eastern Division. Currently, the Company calculates $MAIFI_e$ based on operations from the substation breaker that supply the circuit.

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TABLE 3.1 - 5-YEAR COMPARISON – FREQUENCY AND RESTORATION BY MONTH

EASTERN DIVISION - NYS - ALL OUTAGES - WITHOUT STORMS
calculations for calendar year reliability goals

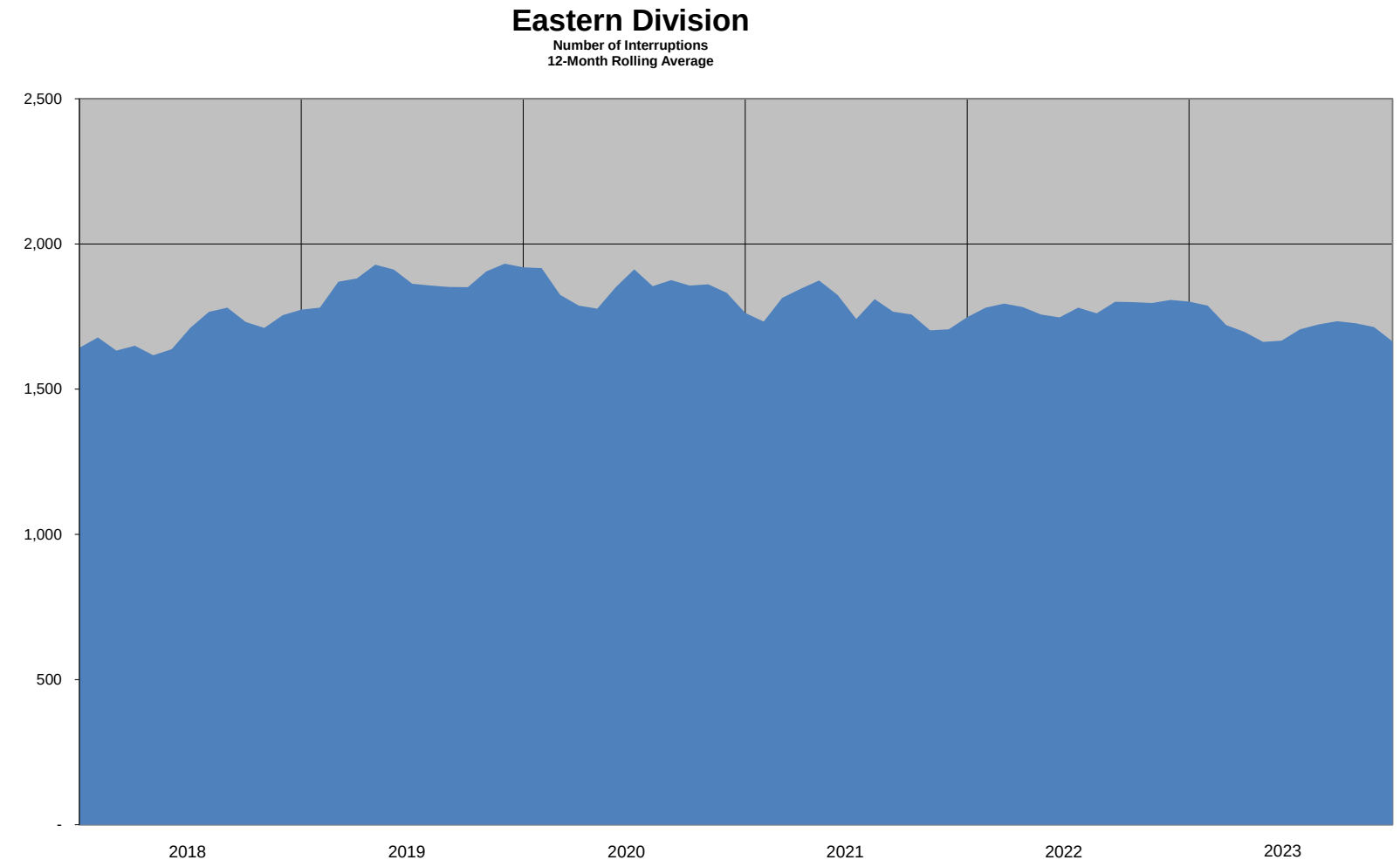
FREQUENCY - CUSTOMERS AFFECTED / CUSTOMERS SERVED

MONTH	2018	2019	2020	2021	2022	5 YR AVG	2023 ACTUAL Monthly	2023 ACTUAL Y-T-D
JAN	0.05	0.07	0.05	0.03	0.06	0.05	0.03	0.03
FEB	0.05	0.05	0.11	0.03	0.03	0.05	0.03	0.06
MAR	0.02	0.08	0.13	0.08	0.06	0.07	0.03	0.09
APR	0.06	0.07	0.21	0.05	0.03	0.08	0.02	0.11
MAY	0.09	0.08	0.32	0.12	0.06	0.13	0.04	0.15
JUN	0.10	0.08	0.45	0.06	0.09	0.16	0.18	0.33
JLY	0.12	0.08	0.57	0.11	0.09	0.19	0.15	0.49
AUG	0.09	0.06	0.64	0.09	0.06	0.19	0.06	0.54
SEP	0.04	0.04	0.74	0.09	0.05	0.19	0.13	0.68
OCT	0.06	0.08	0.82	0.06	0.04	0.21	0.07	0.74
NOV	0.04	0.16	0.91	0.05	0.06	0.24	0.08	0.83
DEC	0.07	0.08	0.96	0.03	0.06	0.24	0.05	0.87
YR END	0.79	0.93	0.96	0.78	0.69	0.83		0.87

RESTORATION - MINUTES OF INTERR / CUST AFFECTED

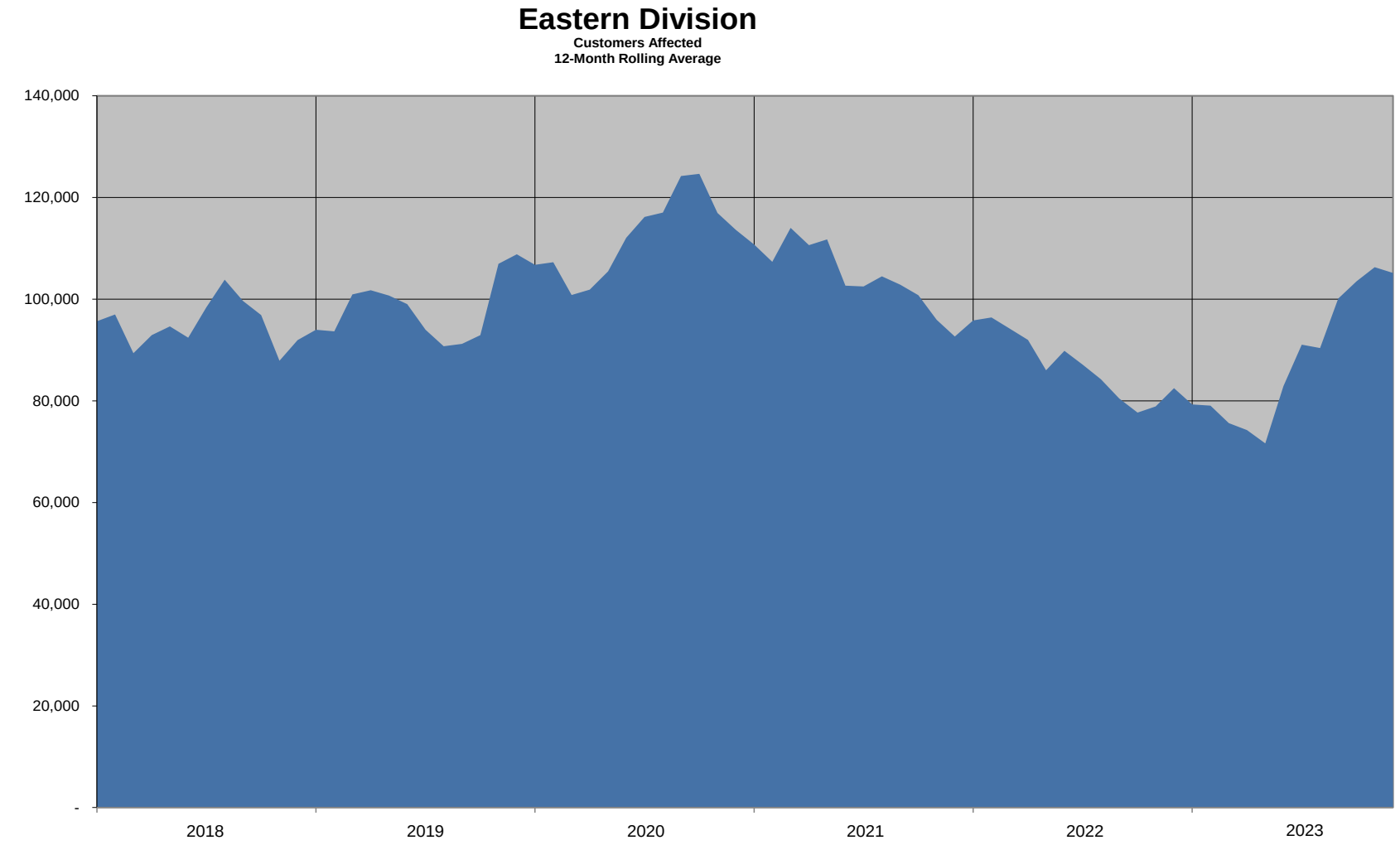
MONTH	2018	2019	2020	2021	2022	5 YR AVG	2023 ACTUAL Monthly	2023 ACTUAL Y-T-D
JAN	94.9	83.5	109.0	160.5	85.1	106.6	120.6	120.6
FEB	119.8	117.6	71.3	111.7	132.7	110.7	81.1	100.6
MAR	126.3	102.8	133.1	72.6	85.4	104.0	83.3	94.4
APR	106.6	101.3	68.5	104.3	76.7	91.5	109.2	96.8
MAY	94.8	77.8	63.6	69.9	89.2	79.1	63.3	87.3
JUN	97.8	111.4	137.5	104.3	104.5	111.1	83.5	85.2
JLY	118.5	132.7	108.7	86.5	76.6	104.6	85.6	85.3
AUG	160.3	106.5	81.2	92.9	76.2	103.4	102.2	87.1
SEP	139.0	94.9	86.2	78.6	90.3	97.8	108.5	91.3
OCT	139.2	76.4	75.3	99.7	88.4	95.8	52.1	87.8
NOV	100.0	105.3	102.7	81.2	96.7	97.2	69.4	86.0
DEC	88.7	114.7	67.6	100.7	84.0	91.2	62.8	84.7
YR END(Min)	115.1	102.5	93.0	89.7	89.5	98.0		84.7
YR END(Hr)	1.92	1.71	1.55	1.50	1.49	1.63		1.41

FIGURE 3.1 - 12-MONTH ROLLING AVERAGE – NUMBER OF INTERRUPTIONS



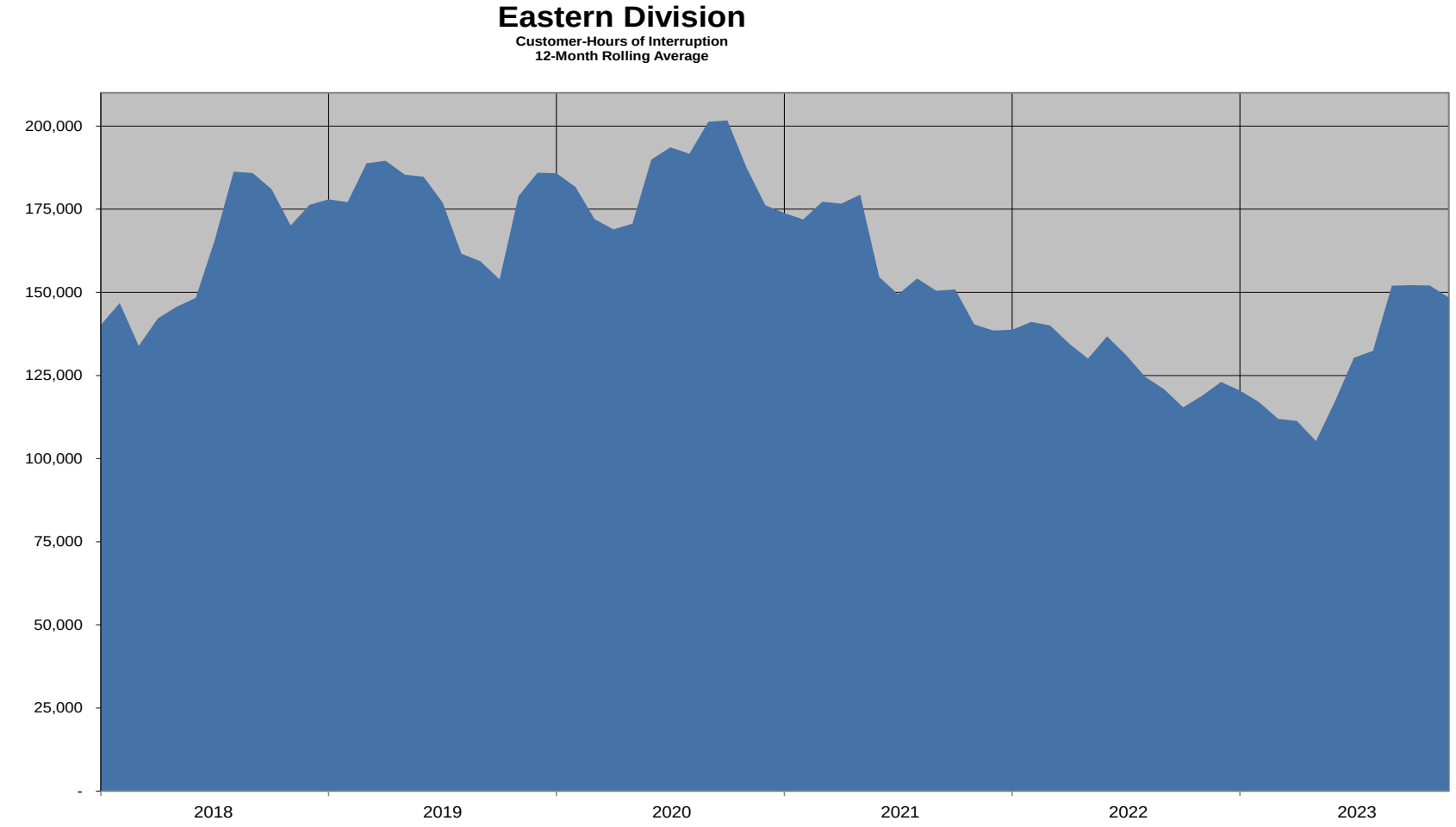
Includes Partial Powers, Single No Lights
Excludes Storm Activity

FIGURE 3.2 - 12-MONTH ROLLING – CUSTOMERS AFFECTED



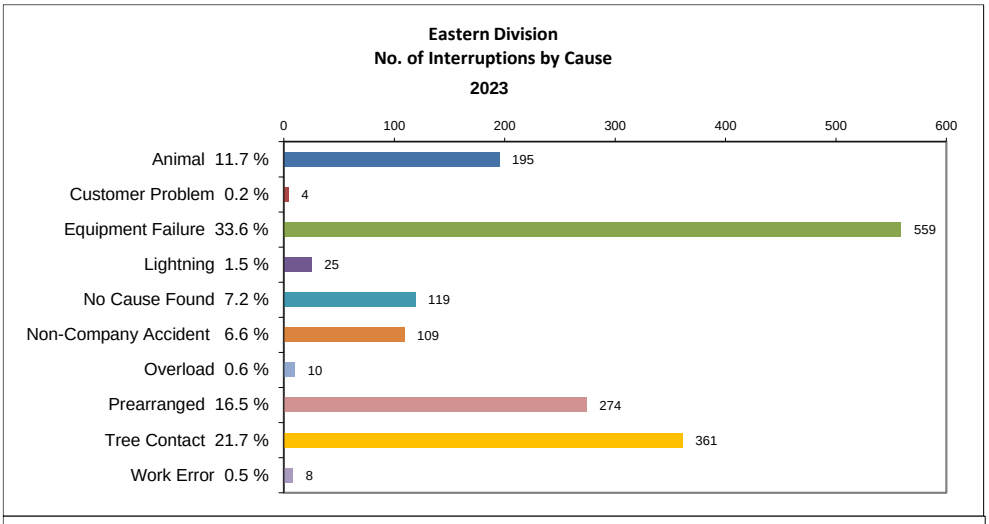
Includes Partial Powers, Single No Lights
Excludes Storm Activity

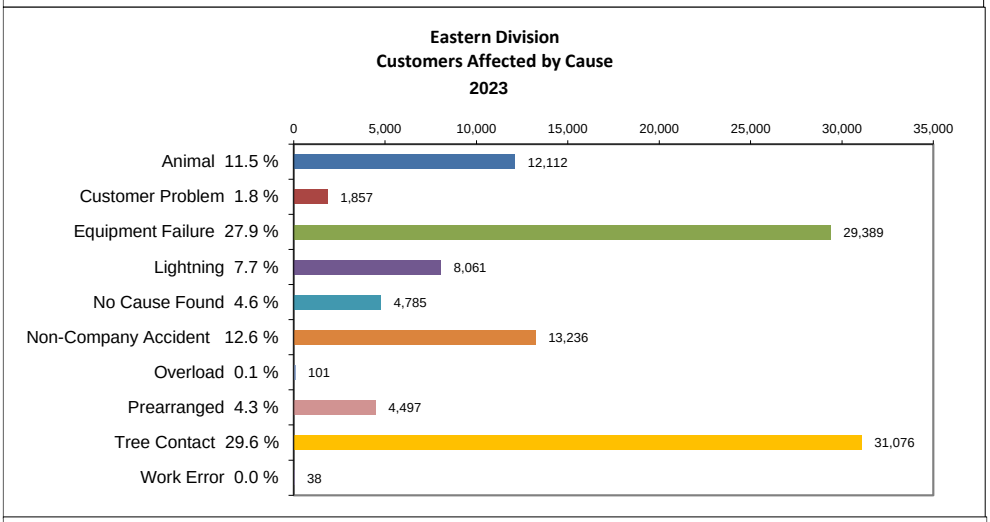
FIGURE 3.3 - 12-MONTH ROLLING AVERAGE – CUSTOMER-HOURS OF INTERRUPTIONS



Includes Partial Powers, Single No Lights
Excludes Storm Activity

FIGURE 3.4 - OUTAGE STATISTICS BY CAUSE





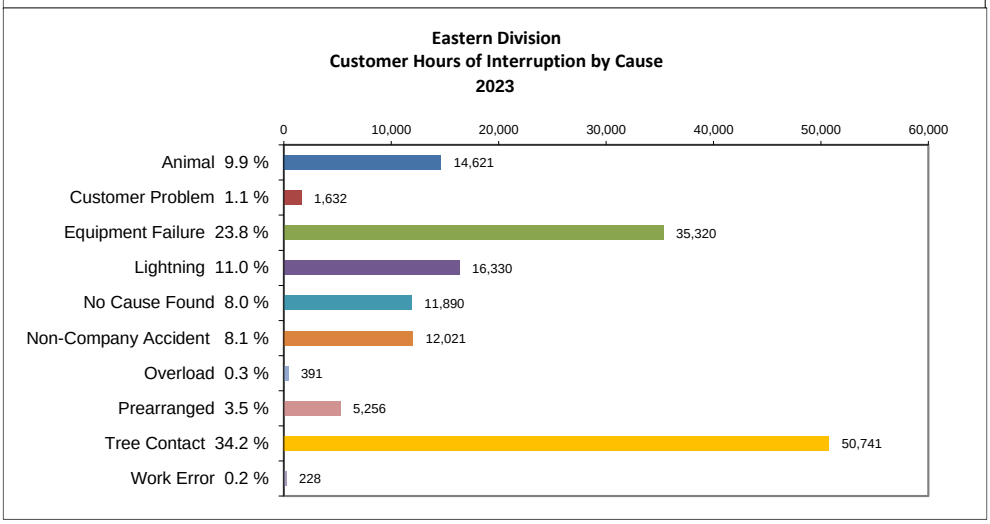


TABLE 3.2 - EQUIPMENT FAILURES – BY TYPE AND EQUIPMENT FAILURE CODE

		Number of Interruptions by Year						
		2018	2019	2020	2021	2022	5 Yr Avg.	2023
Outage Type	**Equipment**							
	Arrester	7	4	5	7	4	5	5
	Capacitor	0	0	0	0	0	0	1
	Connecter/Splice - Pri	52	43	56	43	48	48	40
	Connecter/Splice - Sec	199	194	144	134	146	163	102
	Disconnect	3	0	0	1	0	1	1
	Electric Meter	6	6	7	7	7	7	5
	Fuse/Cutout/Eld	20	29	23	20	22	23	14
	GOAB	0	2	0	0	2	1	0
	Hardware/Pole	35	22	29	14	35	27	28
Overhead	Insulator	1	0	1	2	2	1	3
	Not Coded	11	0	0	0	0	2	0
	O/H Step Transf	3	2	2	6	2	3	5
	O/H Transformer	79	76	81	70	64	74	54
	Recloser	1	1	1	1	0	1	0
	Riser Pole Cutout	10	2	8	4	11	7	7
	Splice/Junction - Sec	0	0	0	1	0	0	0
	Wire/Cable - Pri	31	23	52	35	23	33	22
	Wire/Cable - Sec	49	53	70	81	65	64	70
	Total - OH	507	457	479	426	431	460	357
	Brkr/Kyle/Switch	1	10	7	1	0	4	2
Trans/Substa	Transformer	1	0	0	0	0	0	3
	Total - Trans/Substa	2	10	7	1	0	4	5
	Arrester	0	0	1	0	0	0	0
	Boxpad/Silo/Vault	0	0	1	1	0	0	0
	Bushing	2	0	0	0	0	0	1
	Connecter/Splice - Pri	1	0	0	0	0	0	0
	Connecter/Splice - Sec	9	0	0	0	0	2	0
	Elbow	5	5	3	4	3	4	4
	Fuse/Cutout/Eld	1	0	0	0	0	0	0
	Hardware/Pole	5	0	3	1	5	3	5
	Not Coded	2	0	0	0	0	0	0
Underground	O/H Transformer	1	0	0	0	0	0	0
	Padmount Transf	49	82	91	50	51	65	68
	Splice/Junction - Pri	4	5	2	0	0	2	2
	Splice/Junction - Sec	23	29	10	24	14	20	16
	Stress Cone	2	5	6	6	5	5	4
	Submersible Transf	2	0	0	0	1	1	0
	Switch	4	0	0	1	0	1	6
	Wire/Cable - Pri	34	43	45	53	57	46	52
	Wire/Cable - Sec	44	42	25	50	55	43	39
	Total - UG	188	211	187	190	191	193	197
	Total - Year	697	678	673	617	622	657	559

Note: Figures in red denote that the value exceeds the five-year average

TABLE 3.2 - EQUIPMENT FAILURES – BY TYPE AND EQUIPMENT FAILURE CODE (CONT.)

		Customers Affected by Year						
		2018	2019	2020	2021	2022	5 Yr Avg.	2023
Outage Type	**Equipment**							
	Arrester	252	267	2,340	59	261	636	280
	Capacitor	0	0	0	0	0	0	1,264
	Connecter/Splice - Pri	1,553	2,054	1,690	554	2,086	1,587	3,200
	Connecter/Splice - Sec	494	434	349	370	362	402	614
	Disconnect	4,063	0	0	6	0	814	112
	Electric Meter	10	6	8	8	23	11	6
	Fuse/Cutout/Eld	1,172	957	1,564	493	1,238	1,085	1,300
	GOAB	0	1,726	0	0	1,402	626	0
	Hardware/Pole	4,351	1,873	7,823	1,592	6,765	4,481	2,894
Overhead	Insulator	18	0	44	246	1,087	279	541
	Not Coded	2,546	0	0	0	0	509	0
	O/H Step Transf	166	36	71	814	4	218	268
	O/H Transformer	1,882	1,312	984	3,797	3,002	2,195	1,950
	Recloser	16	1,231	251	847	0	469	0
	Riser Pole Cutout	114	66	261	37	179	131	995
	Splice/Junction - Sec	0	0	0	1	0	0	0
	Wire/Cable - Pri	15,553	6,005	15,092	10,003	4,406	10,212	8,171
	Wire/Cable - Sec	1,125	378	293	700	1,423	784	281
	Total - OH	33,315	16,345	30,770	19,527	22,238	24,439	21,876
	Brkr/Kyle/Switch	1,158	11,801	2,417	573	0	3,190	3,586
Trans/Substa	Transformer	1,146	0	0	0	0	229	1,276
	Total - Trans/Substa	2,304	11,801	2,417	573	0	3,419	4,862
	Arrester	0	0	1	0	0	0	0
	Boxpad/Silo/Vault	0	0	3	3	0	1	0
	Bushing	71	0	0	0	0	14	88
	Connecter/Splice - Pri	4	0	0	0	0	1	0
	Connecter/Splice - Sec	11	0	0	0	0	2	0
	Elbow	234	97	83	394	42	170	43
	Fuse/Cutout/Eld	54	0	0	0	0	11	0
	Hardeware/Pole	57	0	4	25	208	59	50
	Not Coded	63	0	0	0	0	13	0
Underground	O/H Transformer	4	0	0	0	0	1	0
	Padmount Transf	485	807	1,324	527	624	753	724
	Splice/Junction - Pri	81	340	10	0	0	86	9
	Splice/Junction - Sec	30	39	20	51	23	33	118
	Stress Cone	2	18	6	534	204	153	23
	Submersible Transf	10	0	0	0	1	2	0
	Switch	178	0	0	2	0	36	158
	Wire/Cable - Pri	951	1,236	1,617	2,386	1,547	1,547	1,846
	Wire/Cable - Sec	103	107	1,870	98	117	459	74
	Total - UG	2,338	2,644	4,938	4,020	2,766	3,341	3,133
	Total - Year	37,957	30,790	38,125	24,120	25,004	31,199	29,871

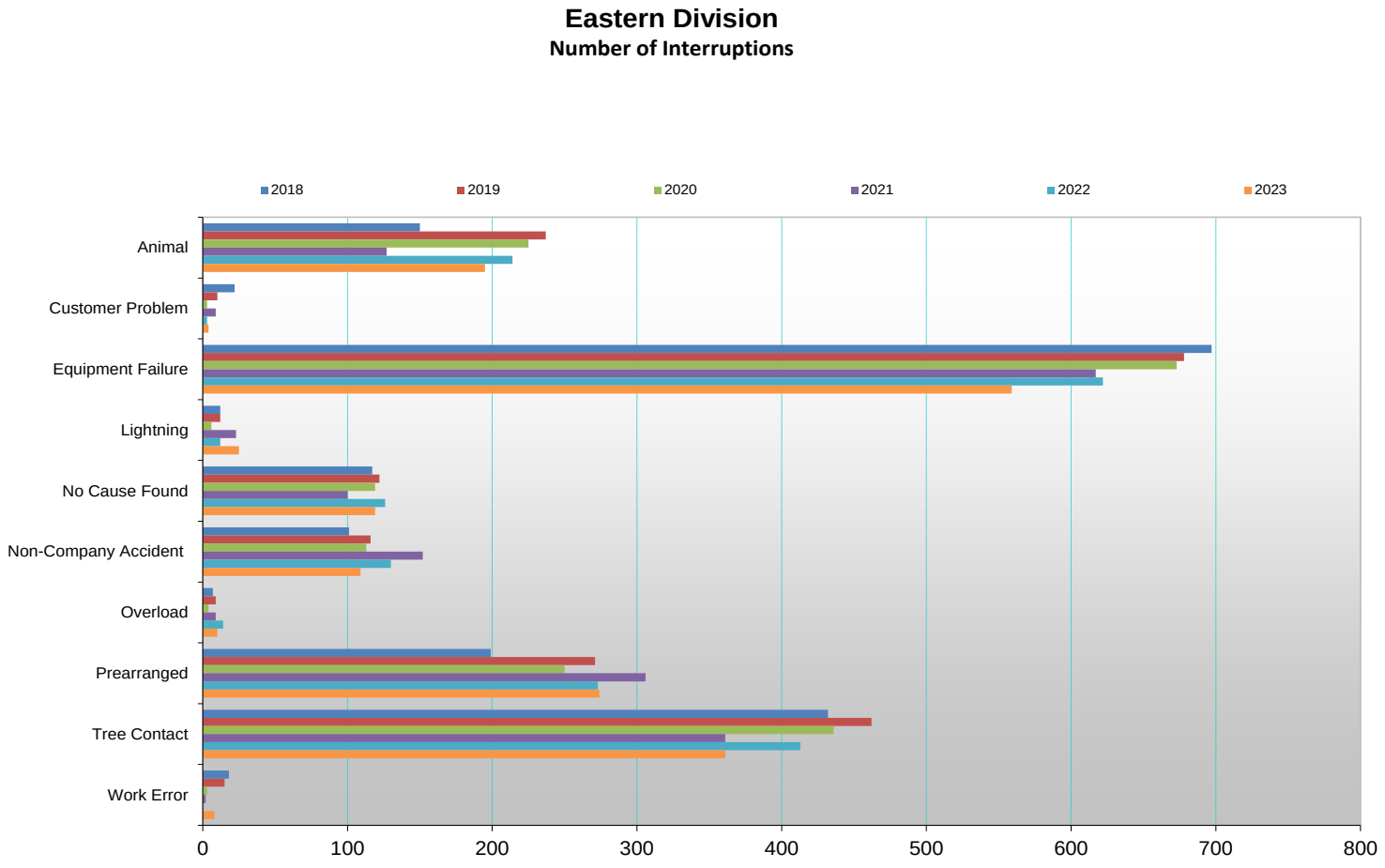
Note: Figures in red denote that the value exceeds the five-year average

TABLE 3.2 - EQUIPMENT FAILURES – BY TYPE AND EQUIPMENT FAILURE CODE (CONT.)

		Total Minutes of Interruption by Year						
		2018	2019	2020	2021	2022	5 Yr Avg.	2023
Outage Type	**Equipment**							
	Arrester	71,697	25,644	262,884	6,113	38,300	80,928	20,169
	Capacitor	0	0	0	0	0	0	7,584
	Connecter/Splice - Pri	199,496	218,735	164,649	73,339	186,031	168,450	290,823
	Connecter/Splice - Sec	110,030	96,668	77,320	64,922	60,878	81,964	67,079
	Disconnect	158,391	0	0	1,620	0	32,002	17,808
	Electric Meter	1,665	2,115	3,348	1,725	2,880	2,347	1,783
	Fuse/Cutout/Eld	59,078	104,686	102,911	43,141	58,828	73,729	27,519
	GOAB	0	86,028	0	0	20,954	21,396	0
	Hardware/Pole	228,460	73,269	333,024	140,850	341,770	223,475	138,770
Overhead	Insulator	1,962	0	7,040	22,485	60,956	18,489	57,498
	Not Coded	27,172	0	0	0	0	5,434	0
	O/H Step Transf	75,862	4,587	13,588	170,080	1,052	53,034	23,619
	O/H Transformer	232,941	190,314	188,580	656,967	169,931	287,747	74,243
	Recloser	3,962	17,234	16,566	11,633	0	9,879	0
	Riser Pole Cutout	19,678	11,487	101,001	5,355	20,294	31,563	28,334
	Splice/Junction - Sec	0	0	0	292	0	58	0
	Wire/Cable - Pri	1,562,222	488,286	1,112,058	882,837	299,901	869,061	423,388
	Wire/Cable - Sec	201,142	83,511	51,771	54,985	62,442	90,770	40,595
	Total - OH	2,953,758	1,402,564	2,434,740	2,136,344	1,324,217	2,050,325	1,219,212
	Brkr/Kyle/Switch	56,179	1,425,944	232,561	4,584	0	343,854	35,860
Trans/Substa	Transformer	101,994	0	0	0	0	20,399	34,539
	Total - Trans/Substa	158,173	1,425,944	232,561	4,584	0	364,252	70,399
	Arrester	0	0	452	0	0	90	0
	Boxpad/Silo/Vault	0	0	2,027	1,413	0	688	0
	Bushing	16,754	0	0	0	0	3,351	12,088
	Connecter/Splice - Pri	348	0	0	0	0	70	0
	Connecter/Splice - Sec	4,647	0	0	0	0	929	0
	Elbow	59,701	21,156	23,789	144,928	21,228	54,160	9,959
	Fuse/Cutout/Eld	13,122	0	0	0	0	2,624	0
	Hardeware/Pole	10,581	0	1,874	4,225	38,016	10,939	15,824
	Not Coded	21,619	0	0	0	0	4,324	0
Underground	O/H Transformer	464	0	0	0	0	93	0
	Padmount Transf	185,014	215,826	217,925	110,919	205,774	187,092	205,602
	Splice/Junction - Pri	39,927	70,714	2,278	0	0	22,584	12,183
	Splice/Junction - Sec	17,719	18,071	7,492	10,816	5,917	12,003	12,341
	Stress Cone	1,113	5,391	1,972	112,293	35,055	31,165	2,695
	Submersible Transf	7,005	0	0	0	226	1,446	0
	Switch	46,284	0	0	1,355	0	9,528	56,640
	Wire/Cable - Pri	417,677	451,030	547,737	682,341	601,528	540,063	469,164
	Wire/Cable - Sec	57,134	46,134	82,493	42,183	42,535	54,096	33,092
	Total - UG	899,109	828,322	888,039	1,110,473	950,279	935,244	829,588
	Total - Year	4,011,040	3,656,830	3,555,340	3,251,401	2,274,496	3,349,821	2,119,199

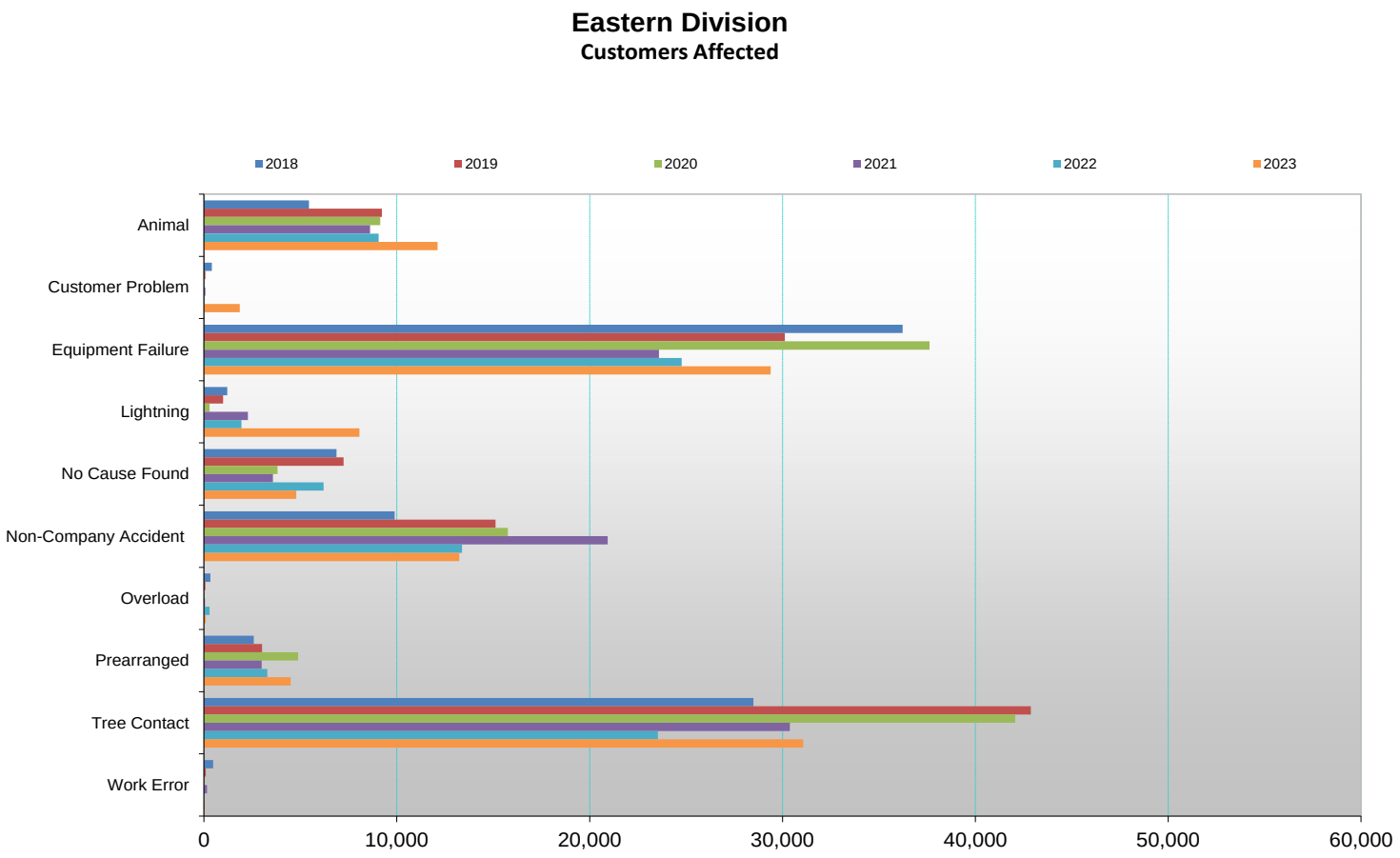
Note: Figures in red denote that the value exceeds the five-year average

FIGURE 3.5 - 5-YEAR COMPARISON – NUMBER OF INTERRUPTIONS BY MAJOR CAUSE



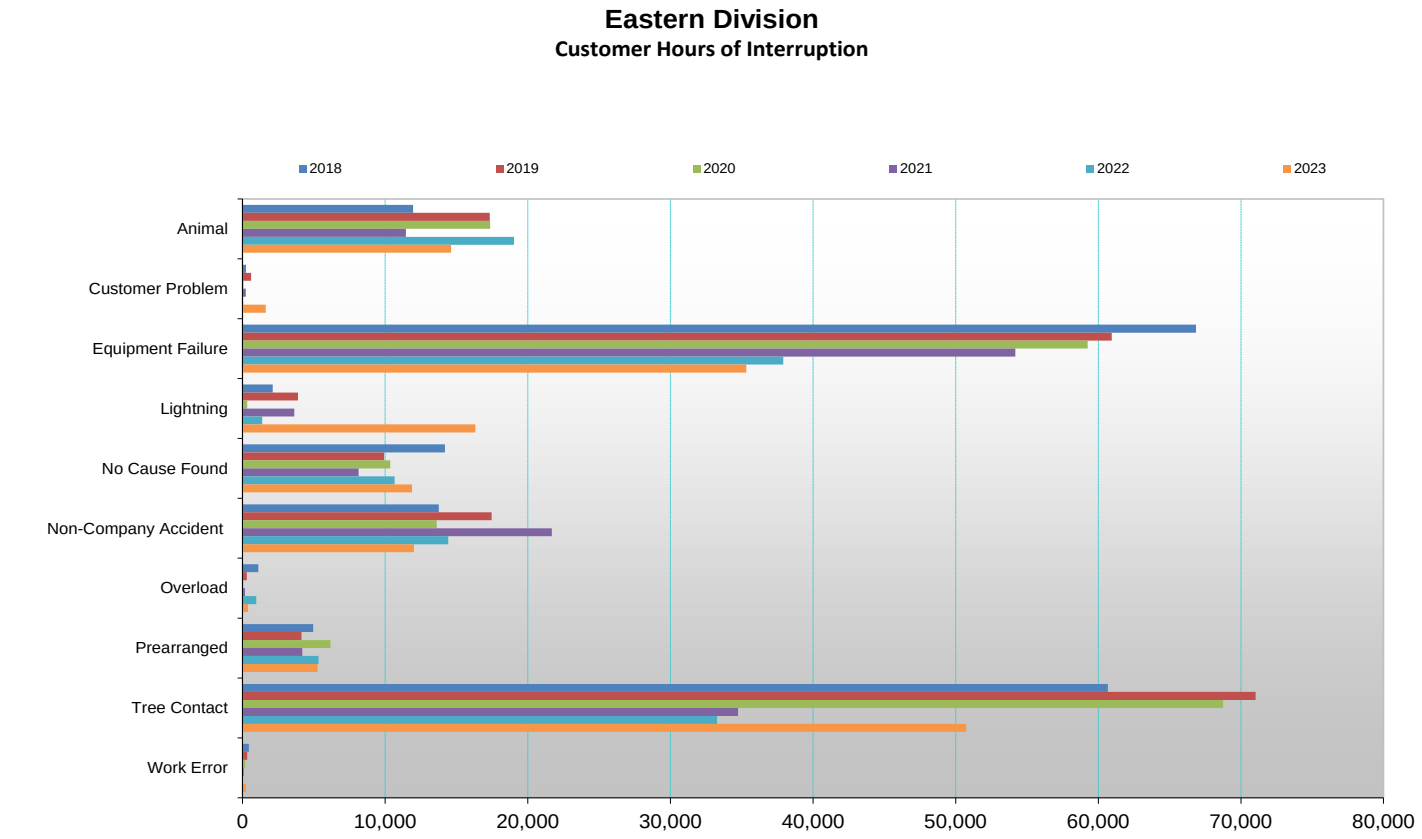
Includes Partial Powers, Single No Lights
Excludes Storm Activity

FIGURE 3.6 - 5-YEAR COMPARISON – CUSTOMERS AFFECTED BY MAJOR CAUSE



Includes Partial Powers, Single No Lights
Excludes Storm Activity

FIGURE 3.7 - 5-Year Comparison – Customer-Hours of Interruption by Major Cause



Includes Partial Powers, Single No Lights
Excludes Storm Activity

TABLE 3.3 - 5-YR COMPARISON – LARGE OUTAGE (>5,000 CUSTOMERS) IMPACT ON SAIFI, CAIDI & SAIDI

Eastern Division Without Storms
Effect of Interruptions Affecting 5,000 or more Customers

YEAR	CUSTOMERS SERVED (CS)	# OF INTERRUPTIONS	CUSTOMERS AFFECTED (CA)	CUSTOMER MINUTES OF INTERRUPTION (CM)	FREQUENCY (CA/CS)	RESTORATION (CM/CA)	DURATION (CM/CS)
WITHOUT STORMS							
2018	116,005	1,755	91,937	10,578,814	0.79	1.92	1.52
2019	116,797	1,932	108,835	11,158,495	0.93	1.71	1.59
2020	117,766	1,832	113,644	10,571,507	0.96	1.55	1.50
2021	118,722	1,706	92,661	8,312,171	0.78	1.50	1.17
2022	119,257	1,807	82,493	7,381,210	0.69	1.49	1.03
5-Yr Average	**117,709**	**1,806**	**97,914**	**9,600,439**	**0.83**	**1.63**	**1.36**
2023	120,350	1,664	105,152	8,905,778	0.87	1.41	1.23

WITHOUT STORMS - OUTAGES AFFECTING > 5000 CUSTOMERS

YEAR	SERVED	INTERR's	CUST AFF	CUST MIN
2018	116,005	-	-	-
2019	116,797	-	-	-
2020	117,766	-	-	-
2021	118,722	-	-	-
2022	119,257			
5-Yr Average	**117,323**	**-**	**-**	**-**
2023	120,350	1	5,098	258,525

WITHOUT STORMS AND WITHOUT THOSE OUTAGES AFFECTING > 5000 CUSTOMERS

2018	116,005	1,755	91,937	10,578,814	0.79	1.92	1.52
2019	116,797	1,932	108,835	11,158,495	0.93	1.71	1.59
2020	117,766	1,832	113,644	10,571,507	0.96	1.55	1.50
2021	118,722	1,706	92,661	8,312,171	0.78	1.50	1.17
2022	119,257	1,807	82,493	7,381,210	0.69	1.49	1.03
5-Yr Average	**117,709**	**1,806**	**97,914**	**9,600,439**	**0.83**	**1.63**	**1.36**
2023	120,350	1,663	100,054	8,647,253	0.83	1.44	1.20

3.3. Eastern Division Worst Performing Circuits

3.3.1. CIRCUIT 45-8-13

Circuit 45-8-13 is ranked first in the Eastern Division per 2023 Circuit Priority Rating system. The circuit originates from the New Hempstead Substation in Rockland County, New York and serves a total of 1,916 customers on 33.1 circuit miles.

In 2023, there were 24 interruptions, which affected 7,954 customers and resulted in 6,157 customer-hours of interruption. The table below identifies the one-year outage data associated with circuit 45-8-13, grouped by cause.

One-Year Summary (1/1/2023 - 12/31/2023) 45-8-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Squirrel	3	12.5	36	0.5	71.7	1.2
Equipment Failure	6	25.0	400	5.0	361.1	5.9
Lightning - Present	2	8.3	1,322	16.6	823.7	13.4
No Cause Found	2	8.3	114	1.4	266.5	4.3
Non-Company Accident - MVC	1	4.2	3,813	47.9	3,242.8	52.7
Prearranged - Company	4	16.7	40	0.5	50.1	0.8
Tree Contact (In Trim Zone)	6	25.0	2,229	28.0	1,341.7	21.8
Total	**24**		**7,954**		**6,157.6**	

In 2023, three incidents accounted for 88% of all customers affected and 79% of all customer-hours of interruption. These three incidents were non-Company accident – MVC, tree contact in trim zone and lightning – present which accounted for 4,788 (79%) of the 6,157 total customer-hours of interruption for the year.

The largest event occurred on September 23, 2023, on Little Tor Road, New City, NY. the outage was the result of a motor vehicle accident involving a double circuit pole. The accident snapped a transformer pole and caused an environmental spill. The event accounted for 3,242 (53%) of the total 6,157 customer-hours of interruption.

The second largest event occurred on December 27, 2023, on Gregory Street, New City, NY. The outage was the result of tree contact bringing down the primary conductors. The circuit was deenergized for safety as one of the phases was down on top of a house. The event accounted for 773 (13%) of the total 6,157 customer-hours of interruption.

The third largest event occurred on June 26, 2023, on New Hempstead Road, New City, NY. The outage was the result of a lightning strike on a double circuit pole. The primary conductor on the top (45-3-13) phase landed on the bottom circuit (45-8-13). The event accounted for 771 (13%) of the total 6,157 customer-hours of interruption.

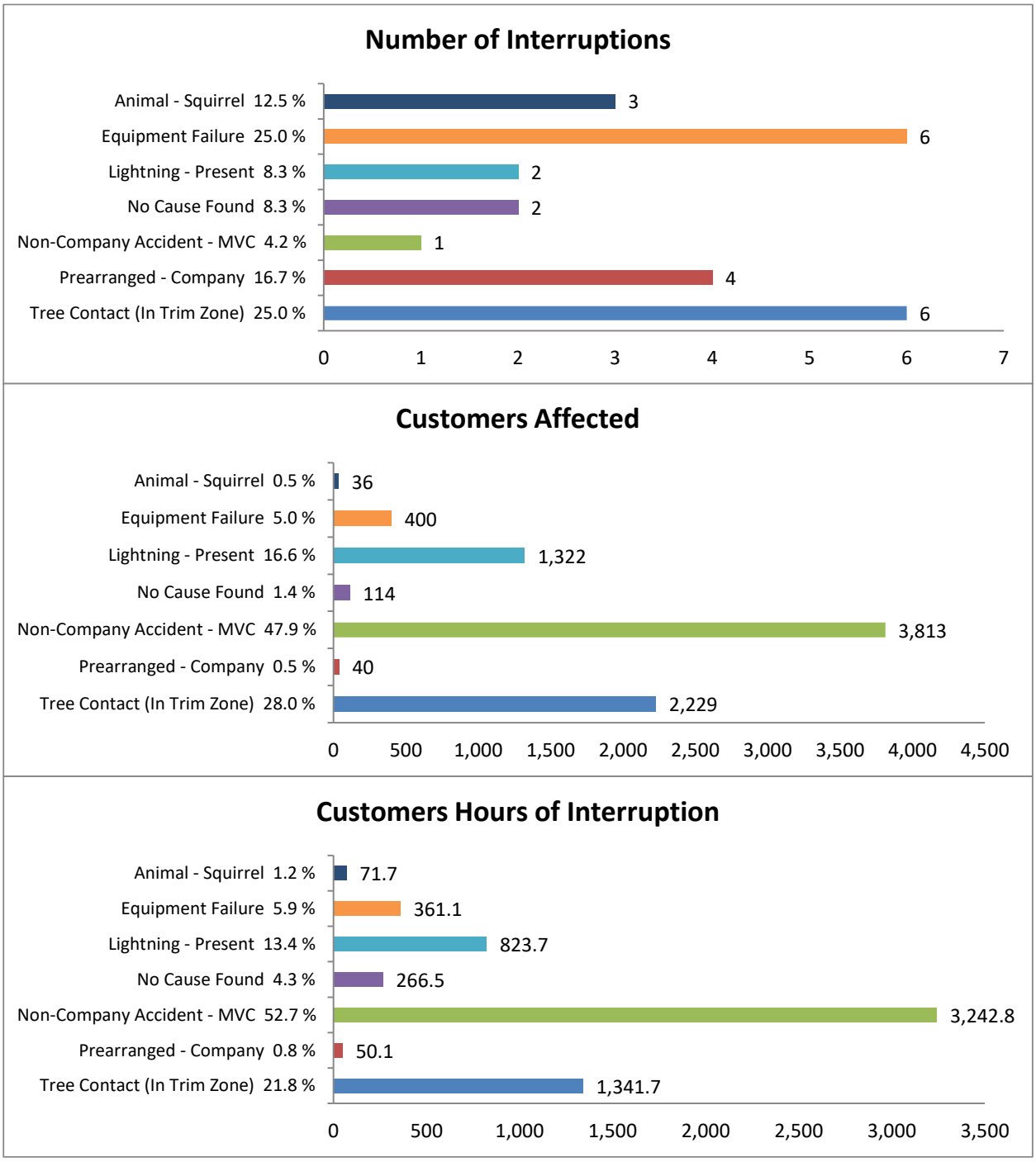
The remaining twenty-one interruptions were the result of three animal contact – squirrel, six equipment failures, one lightning present, two no cause found, four prearranged Company and five tree contact (in trim zone). These seventeen events accounted for 1,369 (21%) of the 6,157 total customer-hours of interruption.

In 2024, the Company has scheduled a detailed circuit patrol along with Distribution Infrared scan. This circuit will be thoroughly patrolled for defective components, animal guards, lightning protection, and overgrown vegetation. The Company intends to correct identified defects from the inspections.

45-8-13 At A Glance

Circuit Stats			
	Count	**Rank Division**	**Rank Company**
Customers	1,916	15	30
Critical Customers	7	47	78
Circuit Miles	33.1	8	51
Customers/Mile	58	102	135
Connected kVA	20,107	54	98
Automation			
	Y/N	**Sister Circuit**	
Auto-Loop	N	NA	

Graph 3.1 - Circuit 45-8-13 One-Year Performance



3.3.2. CIRCUIT 19-14-13

Circuit 19-14-13 is ranked second in the Eastern Division per 2023 Circuit Priority Rating system. The circuit originates from the Burns Substation in Rockland County, New York and serves a total of 2,194 customers over 11.3 circuit miles.

In 2023, there were 33 interruptions, which affected 2,469 customers and resulted in 6,616 customer-hours of interruption. The table below identifies the one-year outage data associated with circuit 19-14-13, grouped by cause.

One-Year Summary (1/1/2023 - 12/31/2023) 19-14-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Bird	1	3.0	133	5.4	279.3	4.2
Animal - Other	2	6.1	274	11.1	511.0	7.7
Equipment Failure	10	30.3	202	8.2	223.9	3.4
Lightning - Present	2	6.1	1,570	63.6	5,010.9	75.7
Non-Company Accident - MVC	1	3.0	2	0.1	8.6	0.1
Non-Company Accident - Other	2	6.06	14	0.57	19.4	0.29
Overload - Customer	1	3.03	7	0.28	2.2	0.03
Prearranged - Company	13	39.39	191	7.74	286.2	4.33
Vine Contact	1	3.03	76	3.08	274.9	4.15
Total	**33**		**2,469**		**6,616.45**	

In 2023, one incident accounted for 63% of all customers affected and 76% of all customer-hours of interruption. This one incident was the result of lightning present which accounted for 5,010 (76%) of the 6,616 total customer-hours of interruption for the year. Given that this single event had such a significant impact to the circuit's reliability performance, 2023 should be considered a deviation from the circuit's standard/benchmark performance.

The largest event occurred on June 2, 2023, on Clinton Street, Spring Valley, NY. The outage was the result of a lightning strike on three phase primary conductors. The outage occurred during a storm which caused a longer than usual restoration time. The event accounted for 5,010 (76%) of the total 6,616 customer-hours of interruption.

The remaining thirty-two interruptions were the result of one animal contact – bird, two animal contact – other, ten equipment failures, one non-Company accident – MVC, two non-Company accident – other, one overload – customer, thirteen prearranged – Company, one vine contact. These thirty-two events accounted for 1,606 (24%) of the 6,616 total customer-hours of interruption.

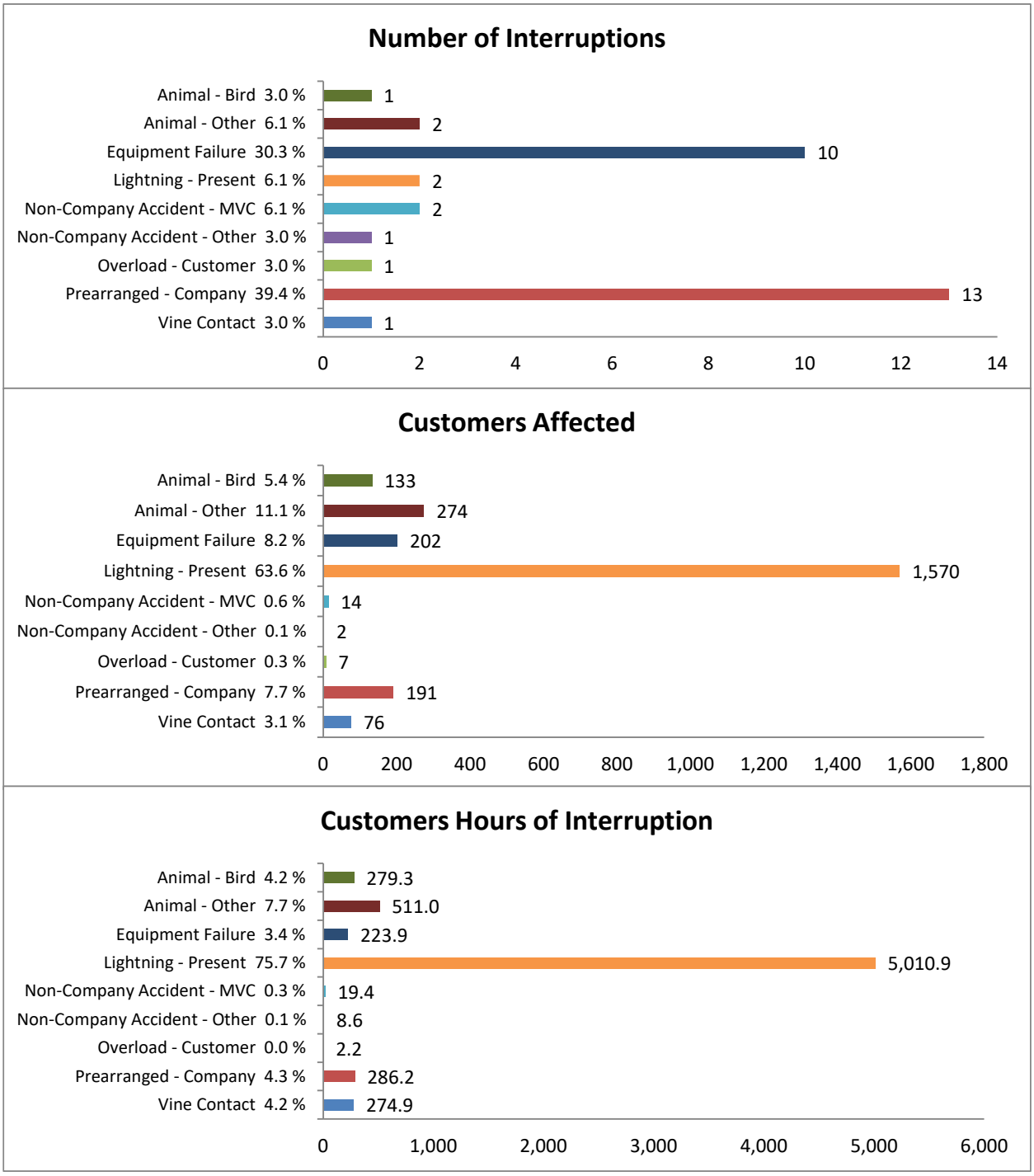
The Company installed nine MOABs (three are Tie MOABs), a sectionalizing and tie recloser on the circuit. The MOABs and reclosers will enhance the circuit by assisting with faster fault isolation and customer restoration, as well as providing enhanced reliability in cases of major storm events.

In 2024, the Company has scheduled a detailed circuit patrol along with Distribution Infrared scan. This circuit will be thoroughly patrolled for defective components, animal guards, lightning protection, and overgrown vegetation. The Company intends to correct identified defects from the inspections.

19-14-13 At A Glance

Circuit Stats			
	Count	**Rank Division**	**Rank Company**
Customers	2,194	9	16
Critical Customers	6	58	101
Circuit Miles	11.3	107	197
Customers/Mile	194	8	10
Connected kVA	31,880	6	13
Automation			
	Y/N	**Sister Circuit**	
Auto-Loop	Y	44-1-13	

Graph 3.2 - Circuit 19-14-13 One-Year Performance



3.3.3. CIRCUIT 19-10-13

Circuit 19-10-13 is ranked third in the Eastern Division per 2023 Circuit Priority Rating system. The circuit originates from the Burns Substation in Rockland County, New York and serves a total of 3,560 customers over 17.1 circuit miles.

In 2023, there were 31 interruptions, which affected 2,947 customers and resulted in 7,923 customer-hours of interruption. The table below identifies the one-year outage data associated with circuit 19-10-13, grouped by cause.

One-Year Summary (1/1/2023 - 12/31/2023) 19-10-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Bird	2	6.5	74	2.5	116.6	1.5
Animal - Other	1	3.2	35	1.2	88.7	1.1
Animal - Squirrel	3	9.7	247	8.4	550.2	6.9
Equipment Failure	5	16.1	40	1.4	136.3	1.7
Lightning - Present	1	3.2	2,258	76.6	6,090.0	76.9
No Cause Found	3	9.7	91	3.1	243.0	3.1
Non-Company Accident - MVC	1	3.2	13	0.4	152.8	1.9
Overload - Customer	1	3.2	10	0.3	185.7	2.3
Prearranged - Company	13	41.9	101	3.4	104.2	1.3
Vine Contact	1	3.2	78	2.7	256.1	3.2
Total	**31**		**2,947**		**7,923.5**	

In 2023, one incident accounted for 77% of all customers affected and 77% of all customer-hours of interruption. This one incident was the result of lightning present which accounted for 6,090 (77%) of the 7,923 total customer-hours of interruption for the year. Given that this single event had such a significant impact to the circuit's reliability performance, 2023 should be considered a deviation from the circuit's general performance.

The largest event occurred on June 2, 2023, on Clinton Street, Spring Valley, NY. The outage was the result of a lightning strike on three phase primary conductors. The outage occurred during a storm which caused a longer than usual restoration time. The event accounted for 6,090 (77%) of the total 7,923 customer-hours of interruption.

The remaining thirty interruptions were the result of: two animal contacts – bird, one animal contact – other, three animal contacts – squirrel, five equipment failures, three no cause found, one non-Company accident – MVC, one overload customer, thirteen prearranged – Company, one vine contact. These thirty events accounted for 1,833 (23%) of the 7,923 total customer-hours of interruption.

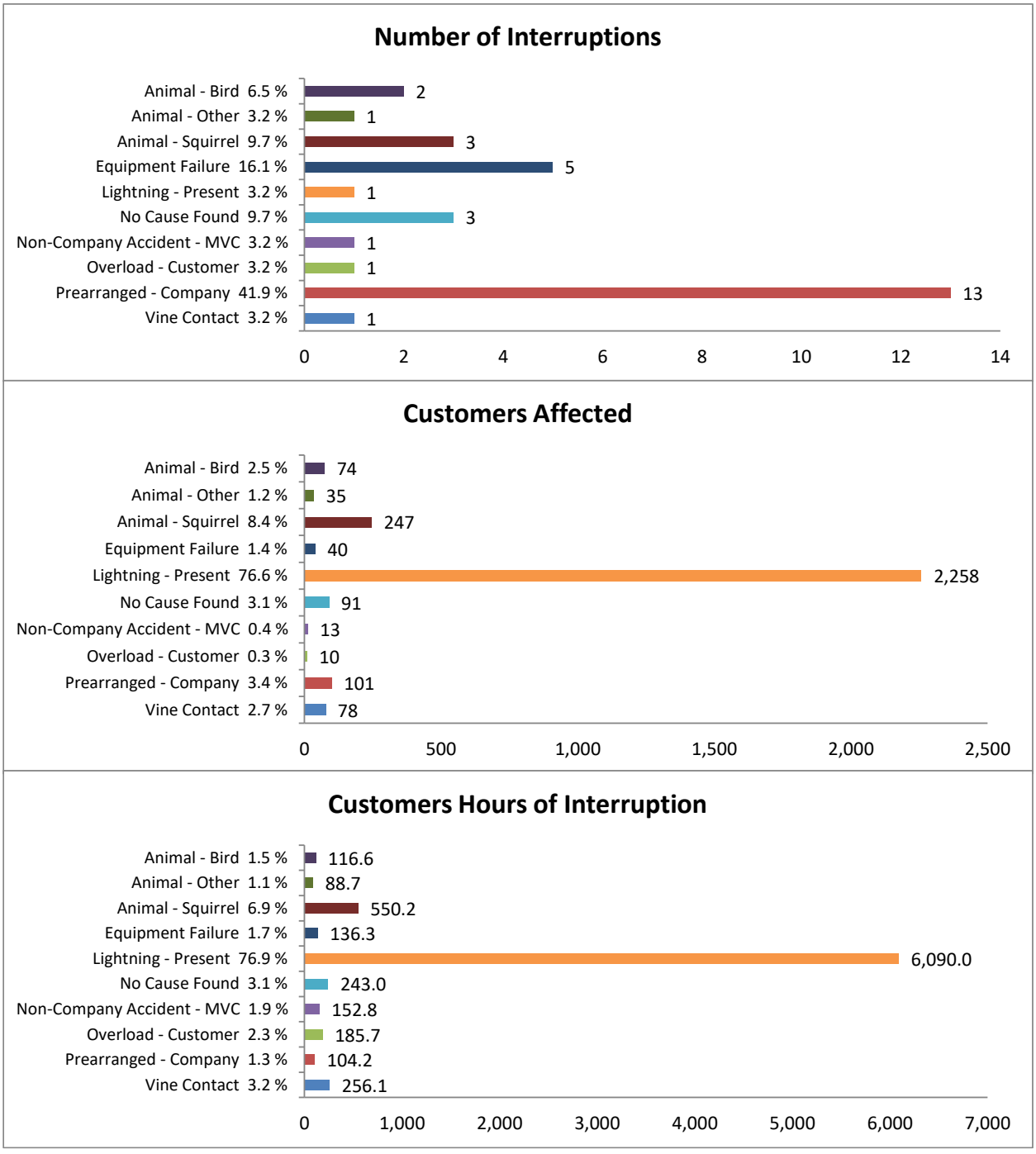
The Company Installed nine MOABs (three are Tie MOABs), a sectionalizing and tie recloser on the circuit. The MOABs and reclosers will enhance the circuit by assisting with faster fault isolation and customer restoration, as well as providing enhanced reliability in cases of major storm events.

In 2024, the Company has scheduled a detailed circuit patrol along with Distribution Infrared scan. This circuit will be thoroughly patrolled for defective components, animal guards, lightning protection, and overgrown vegetation. The Company intends to correct identified defects from the inspections.

19-10-13 At A Glance

Circuit Stats			
	Count	Rank Division	Rank Company
Customers	3,560	1	1
Critical Customers	18	6	6
Circuit Miles	17.1	65	140
Customers/Mile	208	6	8
Connected kVA	30,627	8	19
Automation			
	Y/N	Sister Circuit	
Auto-Loop	Y	51-5-13	

Graph 3.3 - Circuit 19-10-13 One-Year Performance



3.3.4. CIRCUIT 27-3-13

Circuit 27-3-13 is ranked fourth in the Eastern Division per 2023 Circuit Priority Rating system. The circuit originates from the West Haverstraw Substation in Rockland County, New York and serves a total of 2,664 customers over 10.8 circuit miles.

In 2023, there were 13 interruptions, which affected 3,033 customers and resulted in 4,345 customer-hours of interruption. The table below identifies the one-year outage data associated with circuit 27-3-13, grouped by cause.

One-Year Summary (1/1/2023–- 12/31/2023) 27-3-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal–- Other	1	7.7	62	2.0	75.4	1.7
Equipment Failure	7	53.9	2,432	80.2	2,832.7	65.2
Lightning–- Previous	1	7.7	228	7.5	687.8	15.8
Prearranged–- Company	2	15.4	34	1.1	37.5	0.9
Tree Contact (In Trim Zone)	1	7.7	49	1.6	256.4	5.9
Vine Contact	1	7.7	228	7.5	456.0	10.5
Total	**13**		**3,033**		**4,345.8**	

In 2023, three incidents accounted for 91% of all customers affected and 85% of all customer-hours of interruption. These three incidents were one equipment failure, one lightning-previous and one tree contact which accounted for 3,688 (85%) of the 4,345 total customer-hours of interruption for the year.

The largest event occurred on November 8, 2023, on Main Street, Haverstraw, NY. The outage was the result of equipment failure due to two primary phases being wrapped in the messenger cable. The event accounted for 2,544 (59%) of the total 4,345 customer-hours of interruption.

The second largest event occurred on September 8, 2023, on Broad Street, Haverstraw, NY. the outage was the result of a lightning strike beyond a fused cutout. The event accounted for 687 (16%) of the total 4,345 customer-hours of interruption.

The third largest event occurred on September 9, 2023, on Broad Street, Haverstraw, NY. The outage was the result of vine contact beyond a fused cutout. The event accounted for 456 (10%) of the total 4,345 customer-hours of interruption.

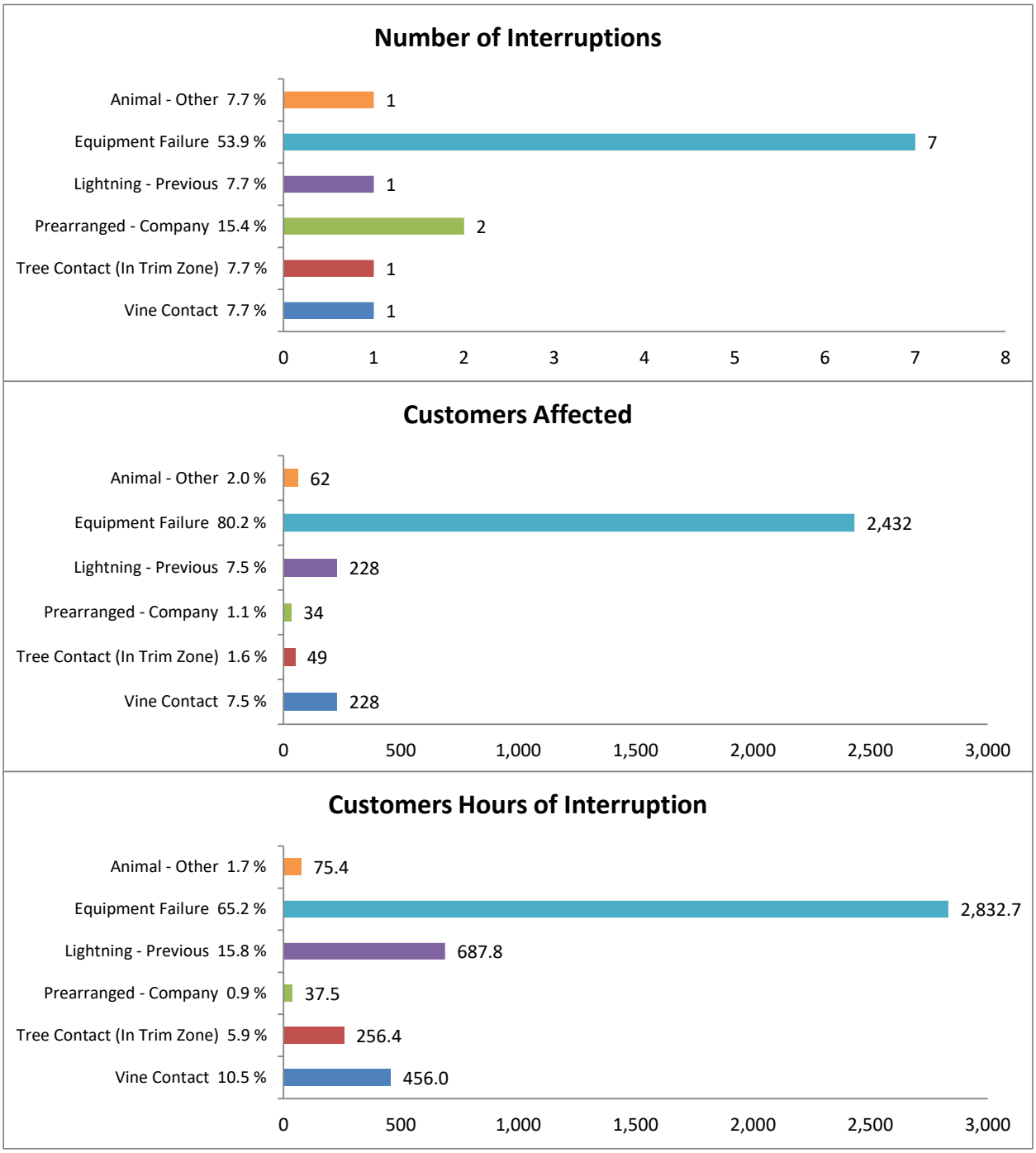
The remaining ten interruptions were the result of one animal contact – other, six equipment failures, 2 prearranged – Company, one tree contact (in trim zone). These ten events accounted for 657 (15%) of the 4,345 total customer-hours of interruption.

In 2024, the Company has scheduled a detailed circuit patrol along with Distribution Infrared scan. This circuit will be thoroughly patrolled for defective components, animal guards, lightning protection, and overgrown vegetation. The Company intends to correct identified defects from the inspections.

27-3-13 At A Glance

Circuit Stats			
	Count	**Rank Division**	**Rank Company**
Customers	2,664	3	6
Critical Customers	19	4	4
Circuit Miles	10.8	111	203
Customers/Mile	246	4	5
Connected kVA	26,244	21	42
Automation			
	Y/N	**Sister Circuit**	
Auto-Loop	N	NA	

Graph 3.4 - Circuit 27-3-13 One-Year Performance



3.3.5. CIRCUIT 23-4-13

Circuit 23-4-13 was ranked fifth in the Eastern Division per the 2023 Circuit Priority Rating system. The circuit originates from the Stony Point Substation in Stony Point, NY and serves a total 1,301 customers over 68.4 circuit miles.

In 2023, there were 37 interruptions affecting 3,270 customers and resulting in 4,954 customer-hours of interruption. The table below identifies the one-year outage data associated with circuit 23-4-13, grouped by cause.

One-Year Summary (1/1/2023 - 12/31/2023) 23-4-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Squirrel	1	2.7	7	0.2	14.5	0.3
Equipment Failure	14	37.8	1,348	41.2	2,405.1	48.6
Lightning - Present	1	2.7	14	0.4	37.8	0.8
No Cause Found	2	5.4	8	0.2	66.0	1.3
Non-Company Accident - MVC	1	2.7	388	11.9	271.6	5.5
Non-Company Accident - Other	1	2.7	12	0.4	66.4	1.3
Non-Company Accident - UG	1	2.7	10	0.3	15.0	0.3
Overload - Company	1	2.7	8	0.2	23.6	0.5
Prearranged - Company	2	5.4	8	0.2	2.9	0.1
Tree Contact (In Trim Zone)	12	32.4	1,463	44.7	2,035.2	41.1
Tree Contact (Out of Trim Zone)	1	2.7	4	0.1	16.3	0.3
Total	**37**		**3,270**		**4,954.4**	

Circuit 23-4-13 is the longest circuit in Eastern Division and the fourth longest in the O&R service territory with 68.4 miles of circuit. Much of the area it serves is adjacent to Harriman State Park which is heavily forested and has a relatively low customer density. The portion of the circuit along Call Hollow Road is subject to numerous tree contact outages throughout the year.

In 2023, four incidents accounted for 53% of all customers affected and 56% of all customer-hours of interruption. The four incidents were the result of two equipment failures and two tree contacts which accounted for 2,776 (56%) of the 4,954 total customer-hours of interruption for the year.
The largest event occurred on July 9, 2023, on Route 210, Stony Point, NY. the outage was the result of equipment failure due to primary down and burning. The event accounted for 932 (19%) of the total 4,954 customer-hours of interruption.

The second largest event occurred on September 8, 2023, at Cedar Flats Rd, Stony Point, NY. The outage was the result of tree contact snapping a pole with wires down and burning. The event accounted for 744 (15%) of the total 4,954 customer-hours of interruption.

The third largest event occurred on July 14, 2023, at Seven Lakes Drive, Tuxedo, NY. The outage was the result of a tree contact damaging a step transformer. The event accounted for 714 (14%) of the total 4,954 customer-hours of interruption.

The fourth largest event occurred on March 4, 2023, at Route 106, Bear Mountain Park, NY. The outage was the result of an equipment failure due to taps burning into a cross arm. The event accounted for 385 (8%) of the total 4,954 customer-hours of interruption.

The remaining thirty-three interruptions were the result of one animal contact – squirrel, twelve equipment failures, one lightning – present, two no cause found, one non-Company accident – MVC, one non-Company accident – other, one non-Company accident – underground. One overload Company, two prearranged – Company, ten tree contact (in trim zone) and one tree contact (out of trim zone). These thirty-three events accounted for 2,178 (44%) of the 4,954 total customer-hours of interruption.

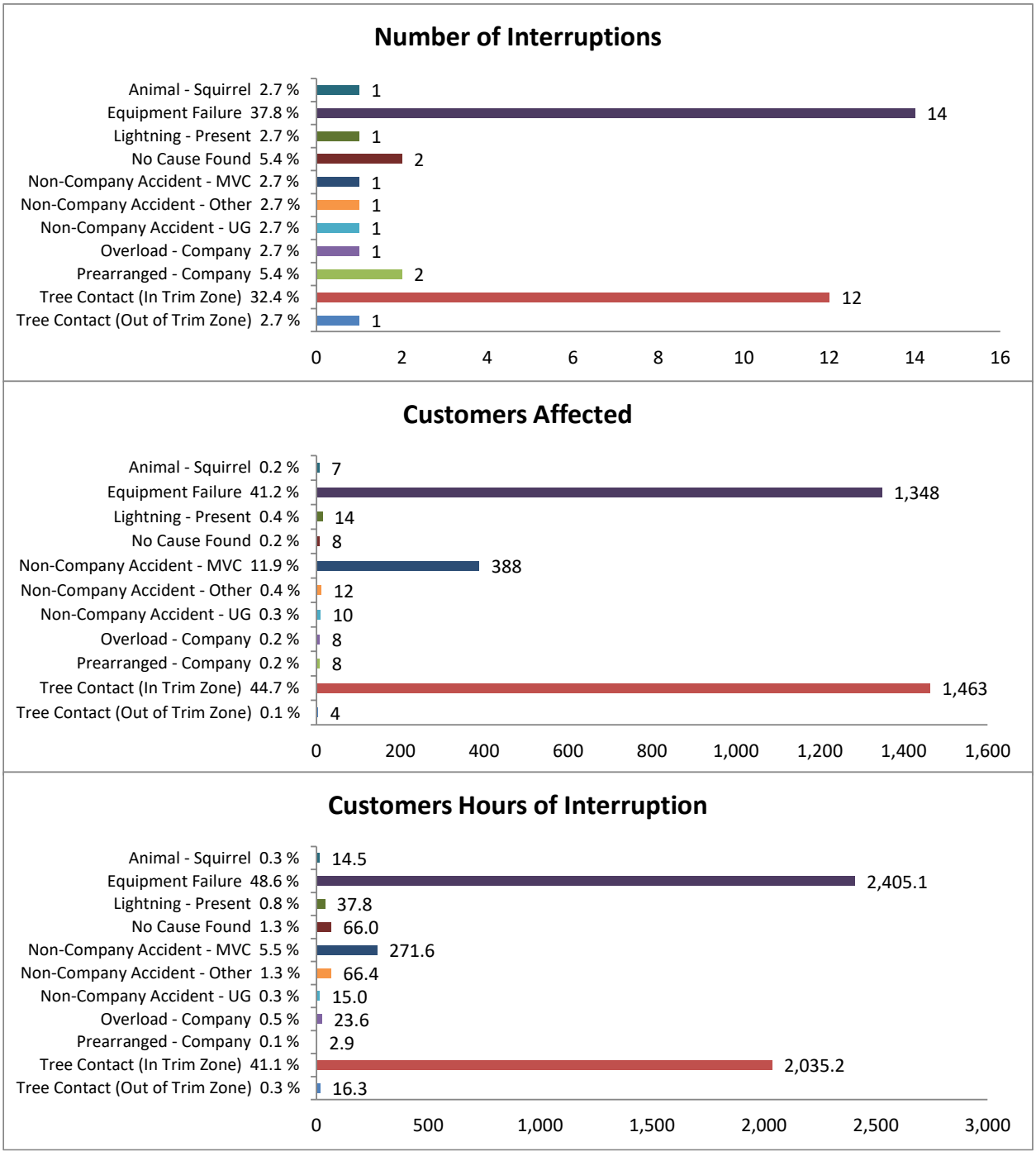
The Company installed ten MOABs (four are Tie MOABs), a mid-point recloser, a sectionalizing and tie recloser on the circuit. The MOABs and reclosers will enhance the circuit by assisting with faster fault isolation and customer restoration, as well as providing enhanced reliability in cases of major storm events.

In 2024, the Company has scheduled a detailed circuit patrol along with Distribution Infrared scan. This circuit will be thoroughly patrolled for defective components, animal guards, lightning protection, and overgrown vegetation. The Company intends to correct identified defects from the inspections.

23-4-13 At A Glance

Circuit Stats			
	Count	**Rank Division**	**Rank Company**
Customers	1,301	56	96
Critical Customers	13	15	20
Circuit Miles	68.4	1	6
Customers/Mile	19	172	275
Connected kVA	20,188	53	97
Automation			
	Y/N	**Sister Circuit**	
Auto-Loop	Y	27-6-13	

Graph 3.5 - Circuit 23-4-13 One-Year Performance



4. CENTRAL DIVISION

4.1. 2023 Divisional Performance

In 2023, the year-end SAIFI for the Central Division was 1.13 customers affected per customer served, below the divisional standard of 1.15. The 68,867 customers affected in 2023 was 12% higher than the 2022 levels, 4% above the previous five-year average, which put the numbers closer in line with the Central Division past performance. The year-end CAIDI for the Central Division was 1.82 customer hours of interruption per customer affected, and improvement over 2022, but above the divisional standard of 1.75 hours and below the five-year average of 1.45 hours.

Figures 4-1, 4-2, and 4-3, show performance trends on a rolling 12-month basis, from 2018 through 2023. In 2023, the rolling number of interruptions continued increasing from 2022 and previous six years, as it ended at its highest levels in six years. The rolling customers affected increased over the 2022 lower level and the rolling customer-hours of interruption also continues to increase to higher levels than 2022.

Figure 4-4 shows a summary by cause of the interruptions experienced in 2023. Tree contact was the leading cause in number of interruptions, customers affected and customer hours of interruption, followed by equipment failure in number of interruptions and customer hours of interruptions with non-Company accident being the second leading cause in customers affected.

A summary of the Central Division equipment failures for 2023 is shown in Table 4-2. Overall, the number of failures improved from 2022 along with the five-year average. With a slight decrease in the number of interruptions, the Company's performance continues within historical norms and the number of customers affected along with the customer hours of interruption reached a six-year low. All overhead, substations and underground equipment failures showing improvements.

While number of interruptions and customer minutes of interruptions for tree contact both increased 23% from 2022, equipment failures improved in number of interruptions, customers affected and customer minutes of interruption by 8%, 18% and 30%, respectively. Of the 419 interruptions in the tree contact category, 99 (24%) were attributable to partial power/single service customer conditions.

Table 4-3 shows the Central Division interruption history from 2018 through 2023, the outages affecting more than 5,000 customers, and the impact on the Division's performance statistics if these events were removed. For the fourth year in a row, there were no events impacting more than 5,000 customers in this Division in 2023.

A graphic representation, by cause, is depicted in Figures 4-5, 4-6, and 4-7, which shows the annual contribution of each cause to the number of interruptions, customers affected, and customer hours of interruption, respectively, from 2018 through 2023.

There were 54 circuits serving the Central Division in 2023. Appendix A details the circuit priority ratings for these and all of O&R's distribution circuits. Only circuits that serve at least 40% of the Company's New York customers, with respect to its total number of customers served, were considered for evaluation in the worst performing circuit analysis for this Report.

All of the circuits that serve Central Division customers are also listed in Appendix D, first in the order of decreasing frequency and then by decreasing restoration. Out of the total 54 circuits, 18 circuits were not considered for this evaluation because the number of customers served did not exceed 100 or the number of interruptions did not exceed three. Of the 54 circuits, 36 (66%) met the frequency standard, and 24 (44%) met the restoration standard. The result of the SAIFI performance remained the same at 66% from the 2022 frequency standard, while the CAIDI performance decreased from 2022 when 55% met the restoration standard.

The 2023 Company and Central Division storm statistics and analysis table is shown in Appendix E. There were five major storm events that resulted in interruptions that met criteria for exclusion from reliability reporting in the Central Division.

For the Central Division, $MAIFI_e$ was 9.47, based on 61,378 Central Division New York customers served, and a total of 580,980 momentary interruptions experienced by customers. This represents a 17% increase from the 2022 performance of 8.09 and higher than the previous three-year average of 8.44, due to an increase to tree contact brought on by an increase of high wind days. Currently the Company calculates $MAIFI_e$ based on operations from the substation breaker that supply the circuit.

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TABLE 4.1 - 5-YEAR COMPARISON – FREQUENCY AND RESTORATION BY MONTH

CENTRAL DIVISION - NYS - ALL OUTAGES - WITHOUT STORMS
calculations for calendar year reliability goals

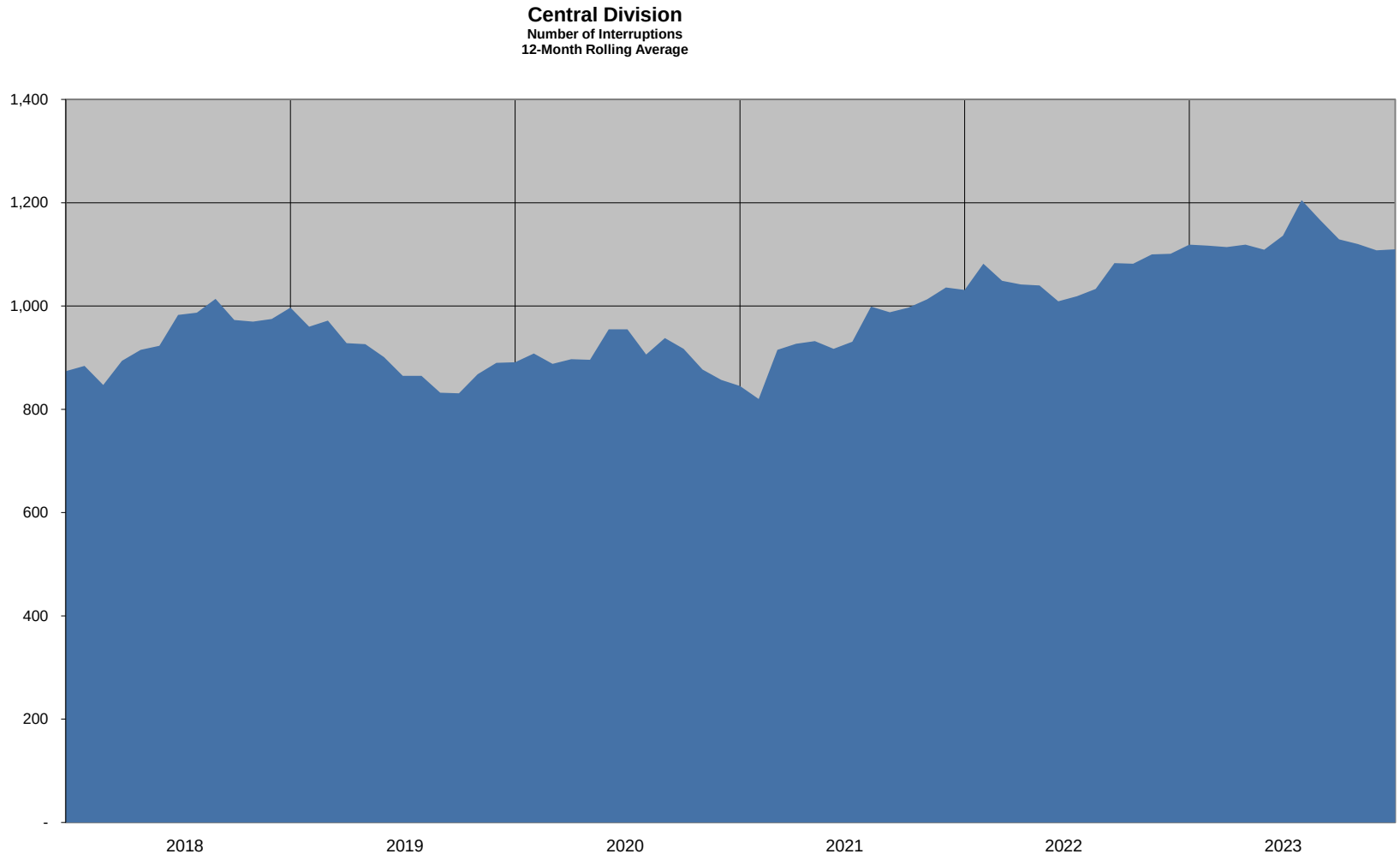
FREQUENCY - CUSTOMERS AFFECTED / CUSTOMERS SERVED

MONTH	2018	2019	2020	2021	2022	5 YR AVG	2023 ACTUAL Monthly	2023 ACTUAL Y-T-D
JAN	0.07	0.06	0.09	0.14	0.03	0.08	0.06	0.06
FEB	0.02	0.05	0.06	0.06	0.11	0.06	0.06	0.12
MAR	0.02	0.11	0.02	0.12	0.05	0.06	0.06	0.19
APR	0.07	0.06	0.06	0.05	0.10	0.07	0.11	0.30
MAY	0.09	0.15	0.03	0.11	0.05	0.09	0.05	0.35
JUN	0.26	0.09	0.09	0.17	0.09	0.14	0.12	0.47
JLY	0.18	0.07	0.11	0.09	0.11	0.11	0.21	0.68
AUG	0.14	0.16	0.02	0.15	0.12	0.12	0.08	0.76
SEP	0.14	0.05	0.07	0.08	0.15	0.10	0.13	0.89
OCT	0.11	0.14	0.10	0.09	0.06	0.10	0.09	0.98
NOV	0.11	0.20	0.03	0.15	0.10	0.12	0.09	1.07
DEC	0.07	0.10	0.03	0.11	0.04	0.07	0.06	1.13
YR END	1.29	1.24	0.71	1.32	1.02	1.12		1.13

RESTORATION - MINUTES OF INTERR / CUST AFFECTED

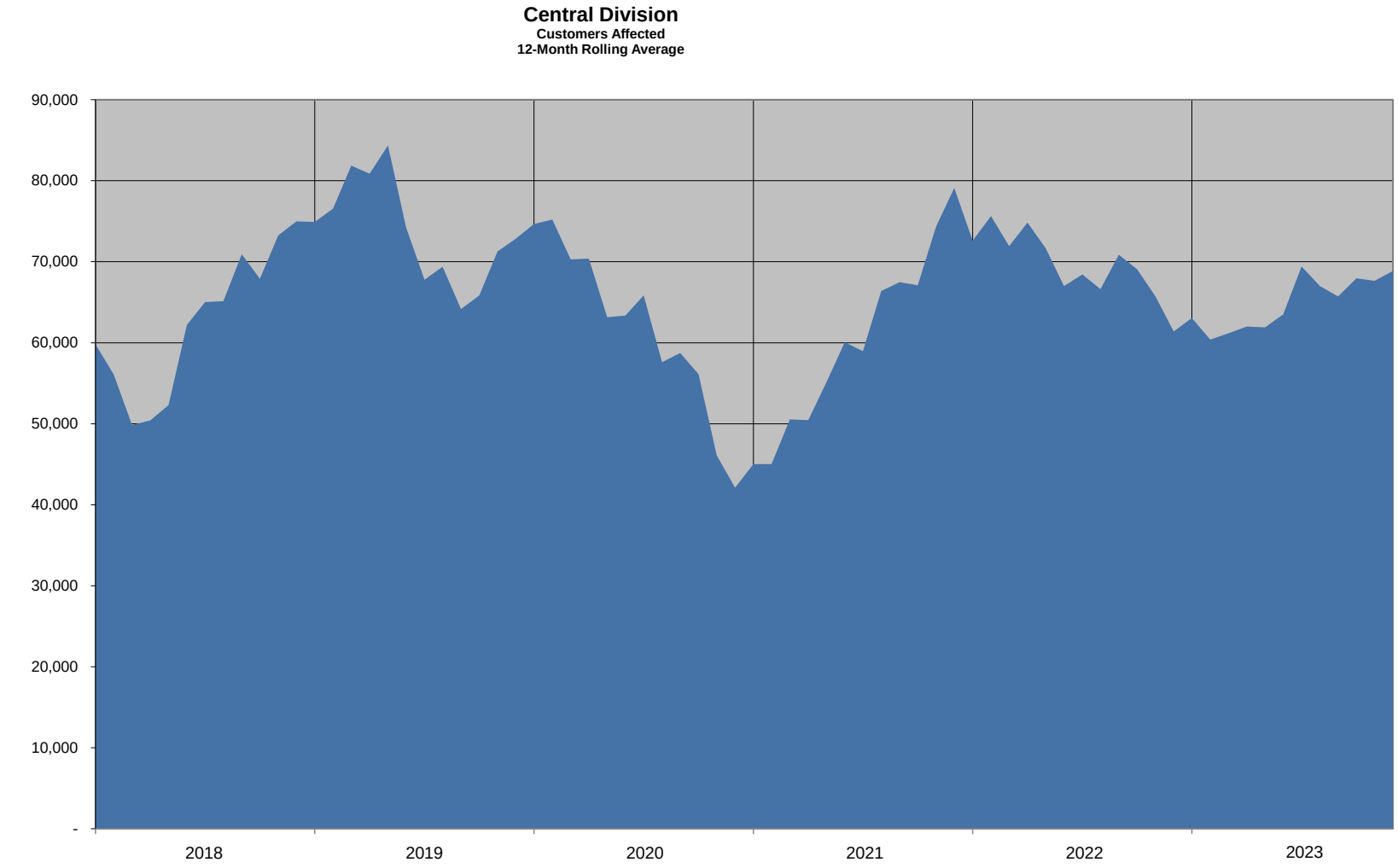
MONTH	2018	2019	2020	2021	2022	5 YR AVG	2023 ACTUAL Monthly	2023 ACTUAL Y-T-D
JAN	91.8	109.5	107.9	75.2	154.9	89.5	121.8	121.8
FEB	160.1	191.4	124.2	116.8	120.5	110.6	148.1	135.3
MAR	185.0	44.0	89.6	109.1	130.9	74.7	110.9	126.9
APR	138.3	165.8	107.2	85.1	55.8	82.8	85.9	111.3
MAY	121.7	170.1	114.5	126.5	171.7	116.5	127.2	113.6
JUN	63.5	82.6	137.0	48.7	106.5	75.0	117.1	114.5
JLY	105.7	150.6	173.8	111.1	160.4	119.2	130.8	119.5
AUG	116.0	71.9	80.2	98.5	117.6	73.6	118.1	119.4
SEP	103.8	72.7	153.2	151.8	89.1	93.4	86.4	114.5
OCT	106.3	84.4	75.7	85.7	112.9	71.7	75.6	110.8
NOV	87.4	113.8	161.7	63.7	106.1	89.1	106.1	110.4
DEC	150.1	83.1	54.7	82.4	124.3	68.9	80.1	108.9
YR END(Min)	103.3	106.8	121.9	91.0	114.8	86.9		108.9
YR END(Hr)	1.72	1.78	2.03	1.52	1.91	1.45		1.82

FIGURE 4.1 - 12 MONTH ROLLING AVERAGE – NUMBER OF INTERRUPTIONS



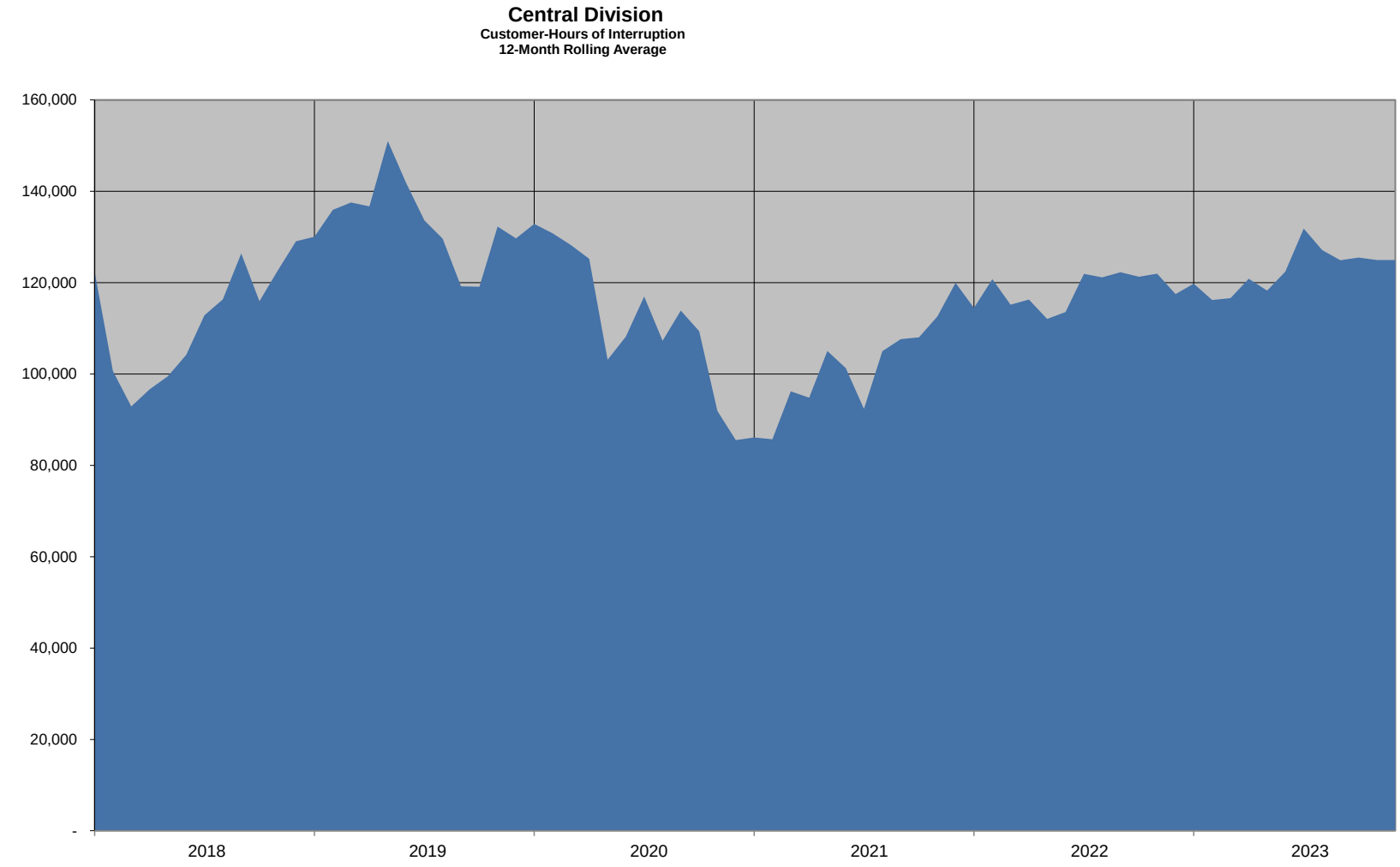
Includes Partial Powers, Single No Lights
Excludes Storm Activity

FIGURE 4.2 - 12 MONTH ROLLING AVERAGE – CUSTOMERS AFFECTED



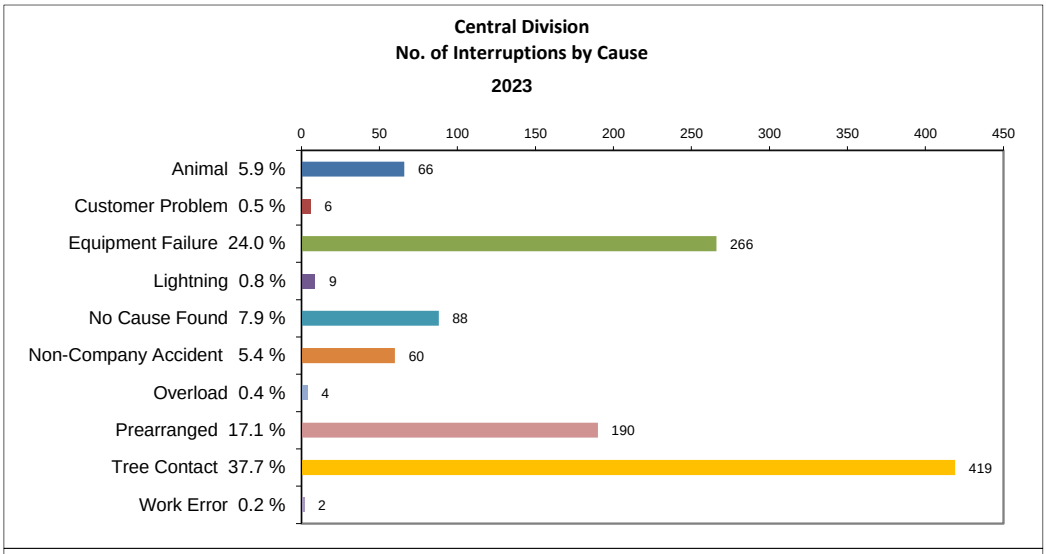
Includes Partial Powers, Single No Lights
Excludes Storm Activity

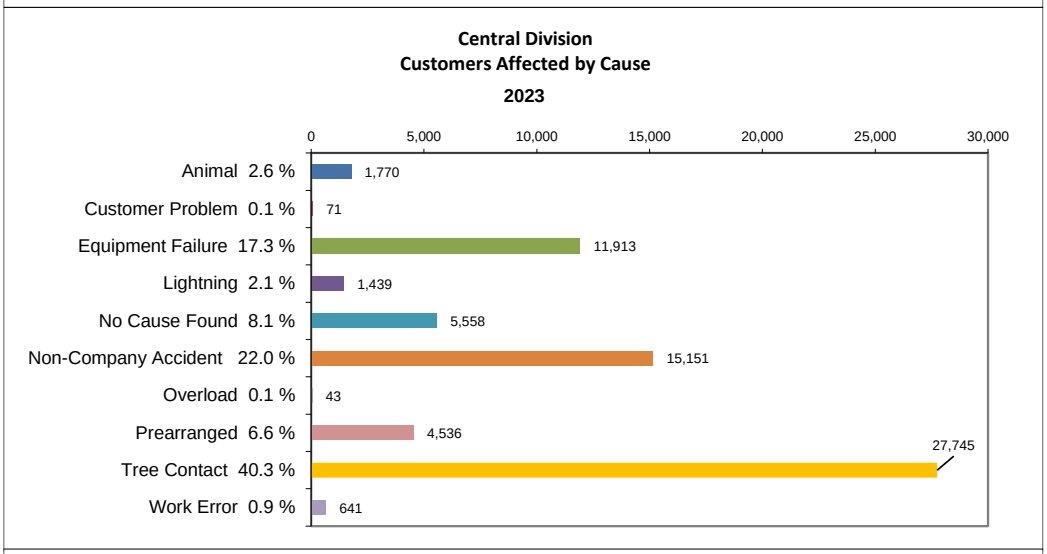
FIGURE 4.3 - 12 MONTH ROLLING AVERAGE – CUSTOMER-HOURS OF INTERRUPTIONS



Includes Partial Powers, Single No Lights
Excludes Storm Activity

FIGURE 4.4 - OUTAGE STATISTICS BY CAUSE





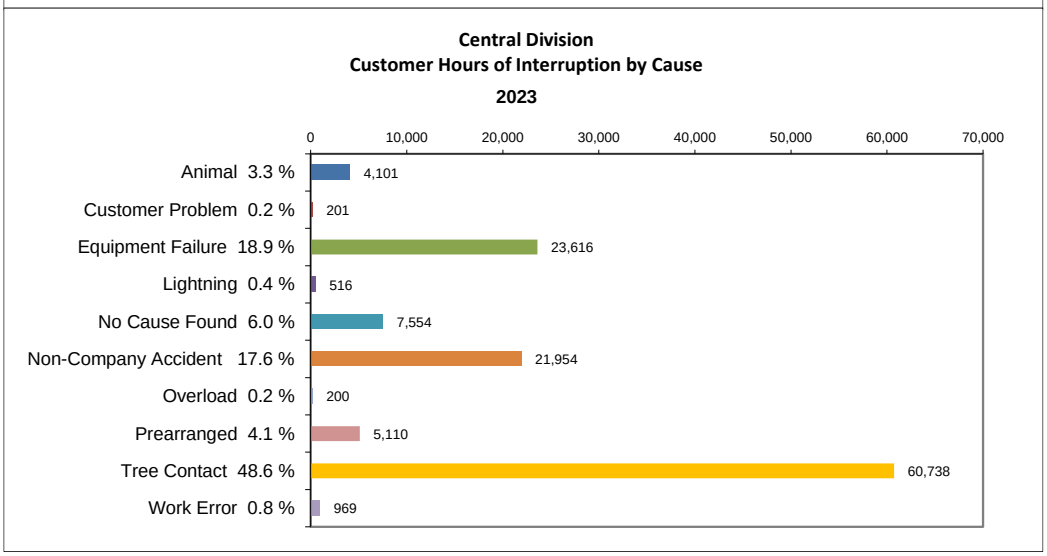


TABLE 4.2 - EQUIPMENT FAILURES – BY TYPE AND EQUIPMENT FAILURE CODE

		Number of Interruptions By Year						
		2018	2019	2020	2021	2022	5 Yr Avg.	2023
Outage Type	**Equipment**							
Overhead	Arrester	4	2	4	4	4	4	3
	Connecter/Splice - Pri	8	9	8	8	9	8	13
	Connecter/Splice - Sec	72	39	42	37	40	46	44
	Disconnect	2	0	0	1	0	1	0
	Electric Meter	0	1	4	0	4	2	9
	Fuse/Cutout/Eld	14	17	8	6	15	12	29
	GOAB	0	1	0	0	0	0	0
	Hardware/Pole	21	16	14	22	20	19	16
	Insulator	1	2	1	0	1	1	2
	Not Coded	1	0	0	0	0	0	0
	O/H Step Transf	4	1	1	4	2	2	2
	O/H Transformer	42	42	41	47	48	44	46
	Recloser	3	0	0	0	0	1	1
	Riser Pole Cutout	9	1	6	5	7	6	0
	Wire/Cable - Pri	12	17	36	44	20	26	12
	Wire/Cable - Sec	37	31	34	39	20	32	25
	Total - OH	230	179	199	217	190	203	202
Trans/Substa	Brkr/Kyle/Switch	1	3	6	0	2	2	0
	Buss	5	0	0	0	0	1	0
	Cable	0	0	0	1	0	0	0
	Hardware/Pole/Tower	0	0	0	0	1	0	0
	Insulator	0	4	0	0	0	1	0
	Not Coded	1	0	0	0	0	0	0
	Regulator	0	0	1	0	0	0	0
	Transformer	0	0	1	3	0	1	0
	Total - Trans/Substa	7	7	8	4	3	6	0
Underground	Arrester	0	1	0	0	0	0	1
	Boxpad/Silo/Vault	3	0	0	2	0	1	3
	Bushing	0	0	1	0	1	0	0
	Connecter/Splice - Sec	3	0	0	0	0	1	0
	Elbow	3	2	2	1	3	2	3
	Hardware/Pole	0	0	1	1	0	0	2
	Not Coded	1	0	0	0	0	0	0
	O/H Transformer	2	0	0	0	0	0	0
	Padmount Transf	33	22	23	28	46	30	25
	Splice/Junction - Pri	1	1	1	2	1	1	0
	Splice/Junction - Sec	7	3	5	11	3	6	5
	Stress Cone	1	2	3	0	1	1	3
	Switch	1	0	0	0	0	0	11
	Wire/Cable - Pri	14	16	14	22	26	18	9
	Wire/Cable - Sec	18	12	4	8	14	11	2
	Total - UG	87	59	54	75	95	74	64
	Total - Year	324	245	261	296	288	283	266

Note: Figures in red denote that the value exceeds the five-year average

TABLE 4.2 - EQUIPMENT FAILURES – BY TYPE AND EQUIPMENT FAILURE CODE (CONT.)

		Customers Affected by Year						
		2018	2019	2020	2021	2022	5 Yr Avg.	2023
Outage Type	**Equipment**							
Overhead	Arrester	208	318	39	115	1,051	346	142
	Connecter/Splice - Pri	462	4,684	347	54	830	1,275	1,494
	Connecter/Splice - Sec	95	58	68	65	232	104	146
	Disconnect	2,207	0	0	1,930	0	827	0
	Electric Meter	0	1	4	0	4	2	21
	Fuse/Cutout/Eld	81	1,954	541	126	588	658	864
	GOAB	0	1,369	0	0	0	274	0
	Hardware/Pole	4,565	5,705	2,340	3,396	1,621	3,525	1,700
	Insulator	21	970	1	0	197	238	138
	Not Coded	95	0	0	0	0	19	0
	O/H Step Transf	315	182	6	136	111	150	371
	O/H Transformer	186	402	367	582	1,751	658	656
	Recloser	4,763	0	0	0	0	953	946
	Riser Pole Cutout	650	21	21	22	99	163	0
	Wire/Cable - Pri	3,839	4,117	7,979	10,495	5,122	6,310	2,432
	Wire/Cable - Sec	76	246	193	123	44	136	1,559
	Total - OH	17,563	20,027	11,906	17,044	11,650	15,638	10,469
Trans/Substa	Brkr/Kyle/Switch	1,462	4,073	3,548	0	468	1,910	0
	Buss	6,778	0	0	0	0	1,356	0
	Cable	0	0	0	326	0	65	0
	Hardware/Pole/Tower	0	0	0	0	1	0	0
	Insulator	0	1,931	0	0	0	386	0
	Not Coded	1,263	0	0	0	0	253	0
	Regulator	0	0	301	0	0	60	0
	Transformer	0	0	699	419	0	224	0
	Total - Trans/Substa	9,503	6,004	4,548	745	469	4,254	0
Underground	Arrester	0	1	0	0	0	0	1
	Boxpad/Silo/Vault	4	0	0	81	0	17	14
	Bushing	0	0	19	0	6	5	0
	Connecter/Splice - Sec	3	0	0	0	0	1	0
	Elbow	1,390	307	304	10	150	432	126
	Hardware/Pole	0	0	148	161	0	62	14
	Not Coded	2	0	0	0	0	0	0
	O/H Transformer	15	0	0	0	0	3	0
	Padmount Transf	421	797	310	1,249	486	653	344
	Splice/Junction - Pri	50	22	109	40	43	53	0
	Splice/Junction - Sec	23	51	12	98	3	37	11
	Stress Cone	37	2	20	0	6	13	42
	Switch	14	0	0	0	0	3	641
	Wire/Cable - Pri	552	635	545	1,200	1,936	974	697
	Wire/Cable - Sec	89	87	50	22	23	54	94
	Total - UG	2,600	1,902	1,517	2,861	2,653	2,307	1,984
	Total - Year	29,666	27,933	17,971	20,650	14,772	22,199	12,453

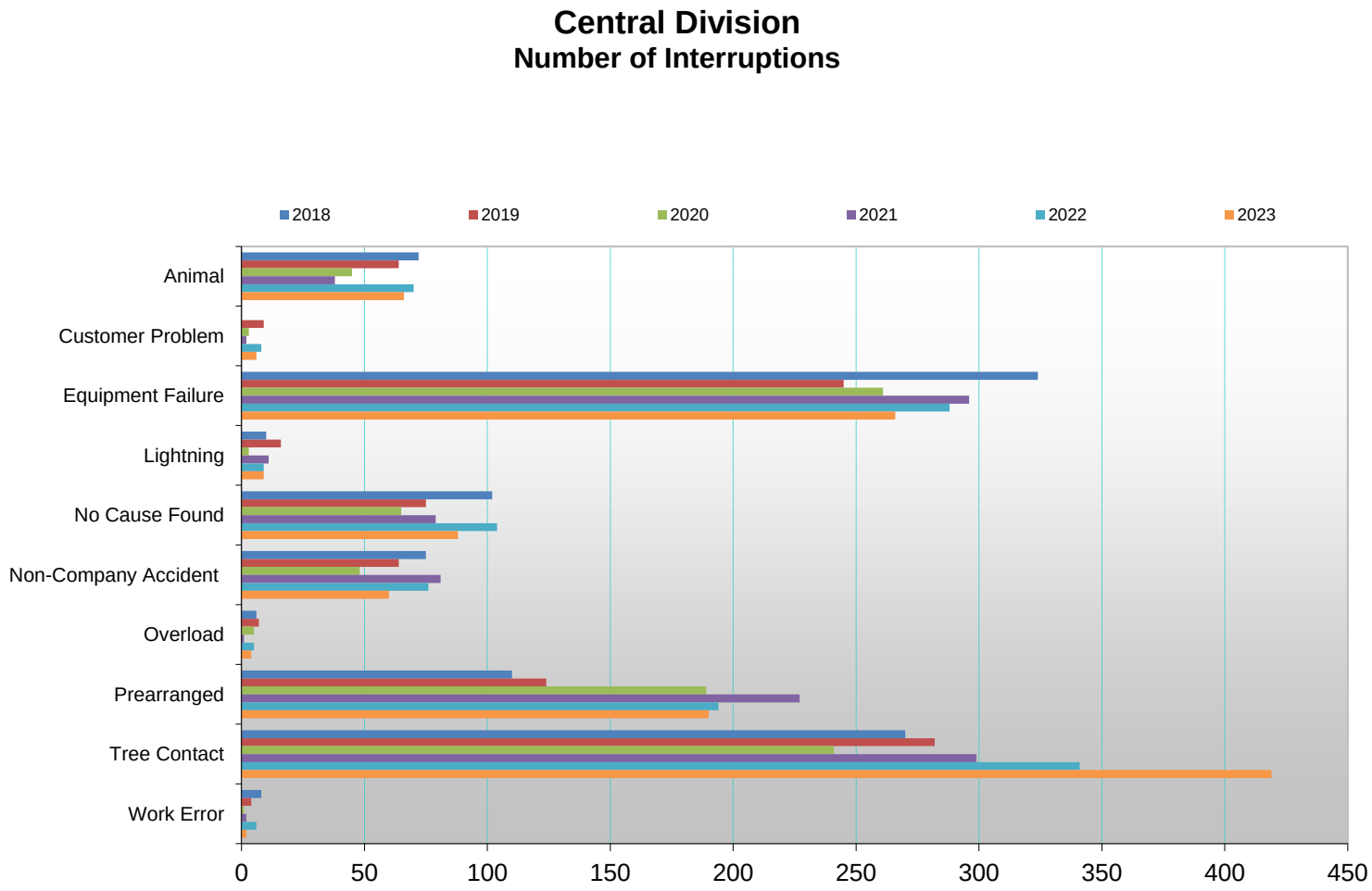
Note: Figures in red denote that the value exceeds the five-year average

TABLE 4.2 - EQUIPMENT FAILURES – BY TYPE AND EQUIPMENT FAILURE CODE (CONT.)

		Total Minutes of Interruption by Year						
		2018	2019	2020	2021	2022	5 Yr Avg.	2023
Outage Type	Equipment							
Overhead	Arrester	24,764	26,557	6,473	8,566	46,725	22,617	35,628
	Connecter/Splice - Pri	44,546	304,925	17,414	8,417	83,186	91,698	83,234
	Connecter/Splice - Sec	15,691	8,139	14,591	9,684	32,338	16,089	16,081
	Disconnect	49,575	0	0	12,219	0	12,359	0
	Electric Meter	0	143	1,276	0	1,322	548	5,357
	Fuse/Cutout/Eld	11,215	74,734	41,696	11,616	37,154	35,283	121,279
	GOAB	0	138,983	0	0	0	27,797	0
	Hardware/Pole	473,980	192,361	266,970	181,196	138,312	250,564	118,865
	Insulator	4,074	45,178	133	0	13,568	12,591	46,572
	O/H Step Transf	33,908	98,462	2,952	58,564	42,750	47,327	57,875
	O/H Transformer	60,536	103,691	67,965	71,932	87,036	78,232	64,467
	Recloser	248,695	0	0	0	0	49,739	41,764
	Riser Pole Cutout	166,826	13,398	3,672	1,680	14,619	40,039	0
	Wire/Cable - Pri	285,329	771,452	994,169	729,214	833,865	722,806	186,942
	Wire/Cable - Sec	11,228	42,003	14,818	22,657	7,631	19,667	143,126
	Total - OH	1,430,367	1,820,026	1,432,129	1,115,745	1,338,506	1,427,355	921,190
Trans/Substa	Brkr/Kyle/Switch	83,334	689,535	110,999	0	20,967	180,967	0
	Cable	0	0	0	20,375	0	4,075	0
	Hardware/Pole/Tower	0	0	0	0	1,097	219	0
	Insulator	0	145,637	0	0	0	29,127	0
	Regulator	0	0	38,227	0	0	7,645	0
	Transformer	0	0	67,977	19,705	0	17,536	0
	Total - Trans/Substa	83,334	835,172	217,203	40,080	22,064	239,571	0
Underground	Arrester	0	298	0	0	0	60	344
	Boxpad/Silo/Vault	433	0	0	19,567	0	4,000	3,238
	Bushing	0	0	4,719	0	2,688	1,481	0
	Elbow	299,516	81,803	134,779	4,750	24,273	109,024	31,738
	Hardware/Pole	0	0	60,088	31,073	0	18,232	2,900
	Padmount Transf	83,068	138,706	91,847	115,035	107,440	107,219	43,334
	Splice/Junction - Pri	13,100	1,254	59,393	19,020	17,243	22,002	0
	Splice/Junction - Sec	9,152	9,186	2,059	23,935	1,202	9,107	2,660
	Stress Cone	1,665	782	5,869	0	2,634	2,190	12,054
	Switch	2,016	0	0	0	0	403	169,619
	Wire/Cable - Pri	148,669	195,829	153,548	365,876	498,625	272,509	181,462
	Wire/Cable - Sec	33,311	41,301	6,390	9,048	8,513	19,713	48,443
	Total - UG	590,930	469,159	518,692	588,304	662,618	565,941	495,792
	Total - Year	2,104,631	3,124,357	2,168,024	1,744,129	2,023,188	2,232,866	1,416,982

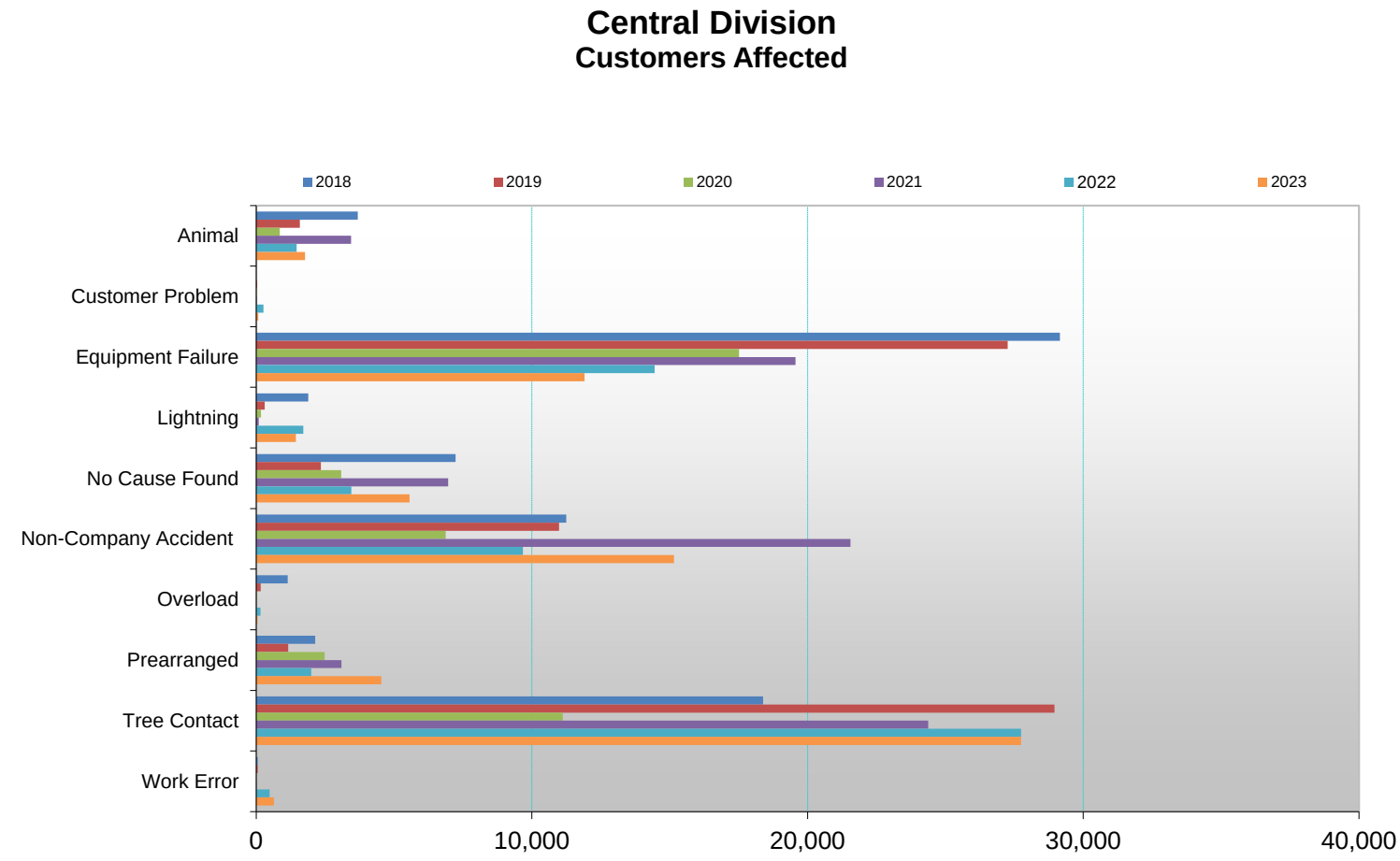
Note: Figures in red denote that the value exceeds the five-year average

FIGURE 4.5 - 5-YEAR COMPARISON – NUMBER OF INTERRUPTIONS BY MAJOR CAUSE



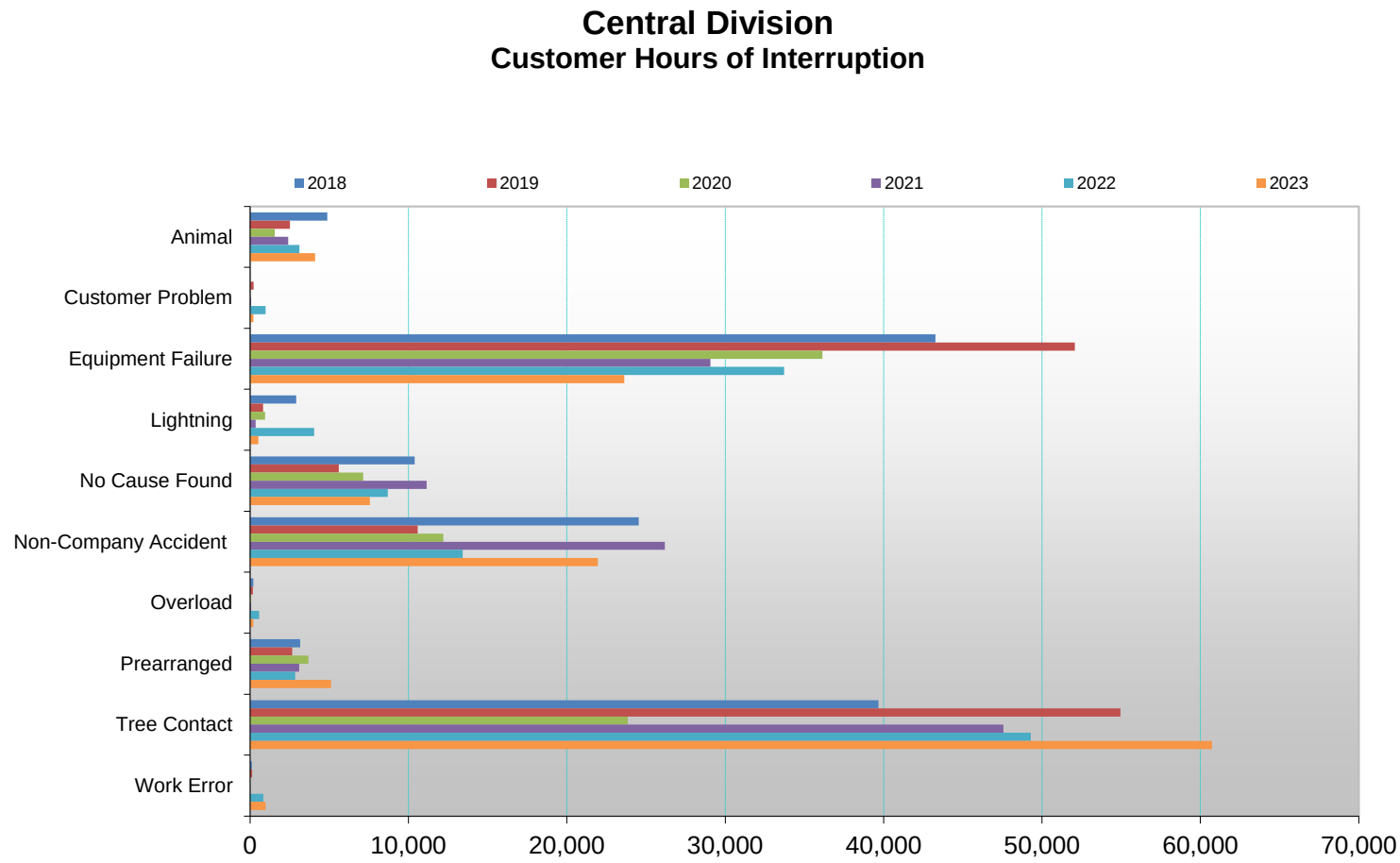
Includes Partial Powers, Single No Lights
Excludes Storm Activity

FIGURE 4.6 - 5-YEAR COMPARISON – CUSTOMERS AFFECTYED BY MAJOR CAUSE



Includes Partial Powers, Single No Lights
Excludes Storm Activity

FIGURE 4.7 - 5-YEAR COMPARISON – CUSTOMER-HOURS OF INTERRUPTIONS BY MAJOR CAUSE



Includes Partial Powers, Single No Lights
Excludes Storm Activity

TABLE 4.3 - 5-YR COMPARISON – LARGE OUTAGE (>5,000 CUSTOMERS) IMPACT ON SAIFI, CAIDI & SAIDI

Central Division Without Storms

Effect of Interruptions Affecting 5,000 or more Customers

YEAR	CUSTOMERS SERVED (CS)	# OF INTERRUPTIONS	CUSTOMERS AFFECTED (CA)	CUSTOMER MINUTES OF INTERRUPTION (CM)	FREQUENCY (CA/CS)	RESTORATION (CM/CA)	DURATION (CM/CS)
WITHOUT STORMS							
2018	57,976	975	74,992	7,744,345	1.29	1.72	2.23
2019	58,533	890	72,847	7,782,250	1.24	1.78	2.22
2020	59,171	857	42,097	5,130,629	0.71	2.03	1.45
2021	59,839	1,036	79,104	7,197,548	1.32	1.52	2.00
2022	60,476	1,101	61,392	7,050,043	1.02	1.91	1.94
5-Yr Average	**59,199**	**972**	**66,086**	**6,980,963**	**1.12**	**1.76**	**1.97**
2023	61,074	1,110	68,867	7,497,610	1.13	1.81	2.05

WITHOUT STORMS - OUTAGES AFFECTING > 5000 CUSTOMERS

YEAR	SERVED	INTERR's	CUST AFF	CUST MIN
2018	57,976	-	-	-
2019	58,533	1	5,753	3,884
2020	59,171	-	-	-
2021	59,839	-	-	-
2022	60,476	-	-	-
5-Yr Average	**59,199**	**0**	**1,151**	**777**
2023	61,074	-	-	-

WITHOUT STORMS AND WITHOUT THOSE OUTAGES AFFECTING > 5000 CUSTOMERS

2018	57,976	975	74,992	7,744,345	1.29	1.72	2.23
2019	58,533	889	67,094	7,778,366	1.15	1.93	2.21
2020	59,171	857	42,097	5,130,629	0.71	2.03	1.45
2021	59,839	1,036	79,104	7,197,548	1.32	1.52	2.00
2022	60,476	1,101	61,392	7,050,043	1.02	1.91	1.94
5-Yr Average	**58,880**	**939**	**65,822**	**6,962,722**	**1.12**	**1.76**	**1.97**
2023	61,074	1,110	68,867	7,497,610	1.13	1.81	2.05

4.3. **Central Division Worst Performing Circuits**

4.3.1. CIRCUIT 84-3-13

Circuit 84-3-13 is ranked first in the Central Division per 2023 Circuit Priority Rating system. The circuit originates from the Hunt Substation and runs south along the eastern shore of Greenwood Lake ending just north of the state line with New Jersey. This circuit serves 1,884 customers over 40 circuit miles.

In 2023, there were 39 interruptions, which affected 3,153 customers and resulted in 7,097 customer-hours of interruption. The table below identifies the one-year outage data associated with circuit 84-3-13, grouped by cause.

One-Year Summary (1/1/2023 - 12/31/2023) 84-3-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Squirrel	5	12.8	187	5.9	414.2	5.8
Branch Contact (In Trim Zone)	2	5.1	4	0.1	3.8	0.1
Equipment Failure	8	20.5	1,562	49.5	2,455.8	34.6
Lightning - Present	1	2.6	53	1.7	48.6	0.7
No Cause Found	4	10.3	161	5.1	363.0	5.1
Non-Company Accident - MVC	1	2.6	90	2.9	30.0	0.4
Prearranged - Company	2	5.1	6	0.2	15.0	0.2
Tree Contact (In Trim Zone)	14	35.9	1,077	34.2	3,762.8	53.0
Tree Contact (Out of Trim Zone)	2	5.1	13	0.4	4.4	0.1
Total	**39**		**3,153**		**7,097.4**	

In 2023, three incidents accounted for 1,781 (56%) of all customers affected and 4,684 (66%) of all customer-hours of interruption for the year. The largest incident was due to equipment failure, while second and third largest incidents were due to tree contact in trim zone.

The largest event occurred on May 12, 2023, on Maple Street, in Greenwood Lake, NY. The outage was caused by pole fire which in term caused center phase to melt and fall on the ground. This incident was labeled as equipment failure. The event accounted for 2,123 (30%) of the total 7,097 customer-hours of interruption.

The second largest event occurred on July 5, 2023, on Cascade Road, Warwick, NY. The outage was the result of large tree contact with primary conductors. The circuit was deenergized for safety in order to remove tree and repair damage. The event accounted for 1,321 (19%) of the total 7,097 customer-hours of interruption.

The third largest event occurred on March 11, 2023, on Cascade Road, Warwick, NY. The outage was the result of a large tree contact with primary conductors. The circuit was deenergized for safety to remove tree and repair the damage. The event accounted for 1,240 (17%) of the total 7,097 customer-hours of interruption.

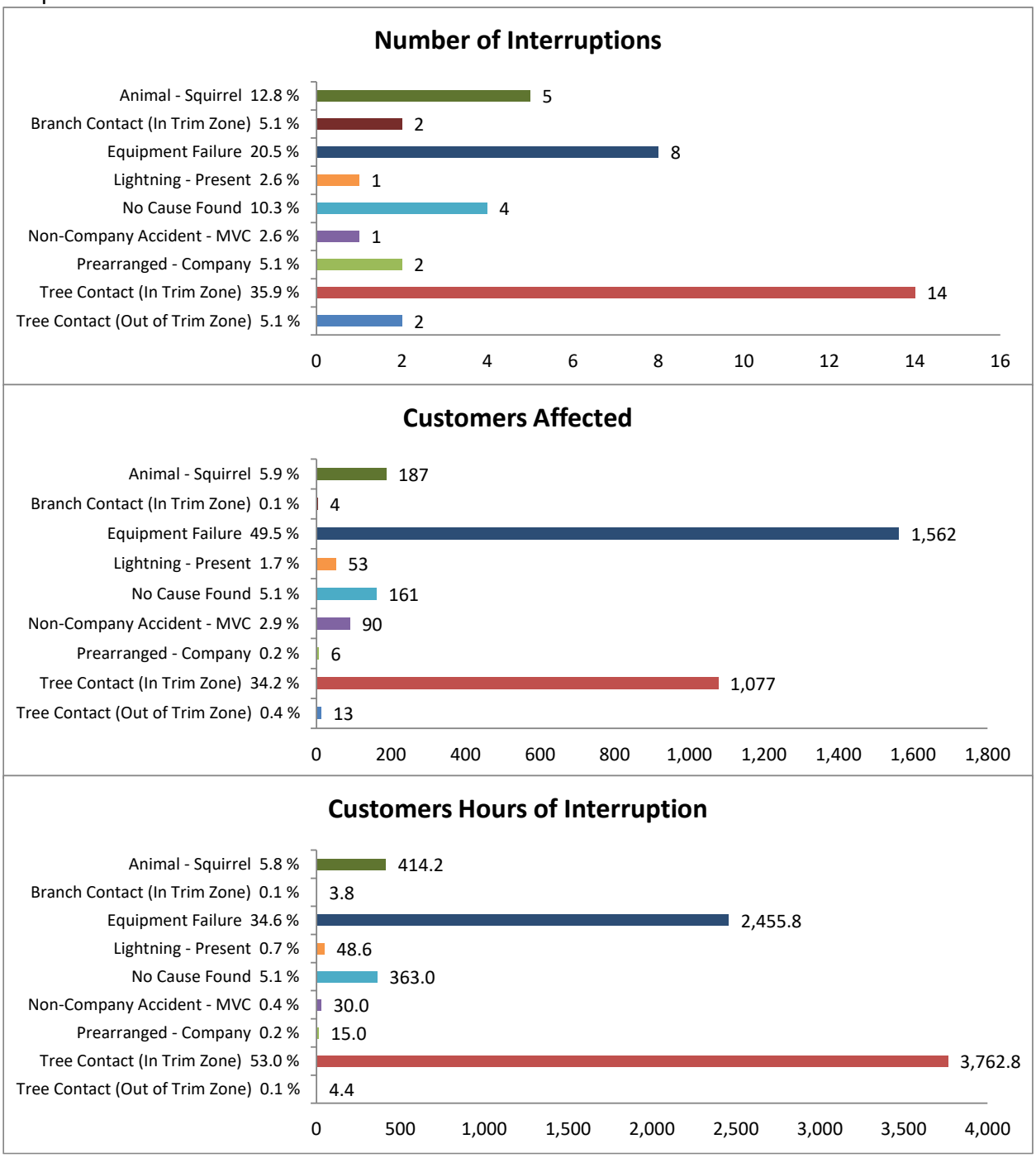
The remaining thirty-six interruptions were the result of five animal contact – squirrel, two branch contact (in trim zone), seven equipment failures, one lightning present, four no cause found, one non-Company accident – MVC, two pre-arranged - Company, twelve tree contact (in trim zone) and two tree contact (out of trim zone). These thirty-six events accounted for 2,413 (34%) of the 7,097 total customer-hours of interruption.

In 2024, the Company has scheduled a detailed circuit patrol along with Distribution Infrared Scan. This circuit will be thoroughly patrolled for defective components, animal guards, lightning protection, and overgrown vegetation. The Company intends to correct identified defects from the inspections.

84-3-13 At A Glance

Circuit Stats			
	Count	Rank Division	Rank Company
Customers	1,884	12	33
Critical Customers	2	47	209
Circuit Miles	39.6	15	38
Customers/Mile	48	30	174
Connected kVA	15,186	32	172
Automation			
	Y/N	**Sister Circuit**	
Auto-Loop	Y	79-8-13	

Graph 4.1 - Circuit 84-3-13 – One-Year Performance



4.3.2. CIRCUIT 80-3-13

Circuit 80-3-13 was ranked second in the Central Division per 2023 Circuit Priority Rating system. The circuit originates from the Wisner Substation in Warwick, New York, and serves 3,025 customers over 75 circuit miles.

In 2023, there were 51 interruptions, which affected 1,666 customers and resulted in 4,017 customer-hours of interruption. The table below identifies the one-year outage data associated with circuit 80-3-13, grouped by cause.

One-Year Summary (1/1/2023 - 12/31/2023) 80-3-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Squirrel	3	5.9	24	1.4	77.7	1.9
Equipment Failure	14	27.5	721	43.3	1,972.1	49.1
No Cause Found	8	15.7	62	3.7	148.2	3.7
Non-Company Accident - MVC	3	5.9	295	17.7	528.8	13.2
Prearranged - Company	9	17.7	150	9.0	77.5	1.9
Tree Contact (In Trim Zone)	12	23.5	346	20.8	1,057.8	26.3
Vine Contact	2	3.9	68	4.1	154.7	3.9
Total	**51**		**1,666**		**4,016.8**	

In 2023, three incidents accounted for 659 (40%) of all customers affected and 1,626 (40%) of all customer-hours of interruption for the year. The largest incident was caused by equipment failure, the second largest was caused by non-Company accident – MVC and the third largest was caused by equipment failure.

The largest incident occurred on August 2, 2023, on Oakland Avenue, Warwick, NY. The incident involved equipment failure, a step transformer needing emergency replacement due to an oil leak. Replacement of the step transformer took less than three hours. The event accounted for 960 (24%) of the total 4,017 customer-hours of interruption.

The second largest event occurred on January 1, 2023, on Ridgefield Road, Warwick, NY. The outage was the result of non-company accident – MVC, because of a vehicle striking and shearing off the pole which caused the wires to sag. The circuit had to be deenergized for safety. The event accounted for 390 (10%) of the total 4,017 customer-hours of interruption.

The third largest event occurred on September 15,2023, on Kenilworth Lane, Warwick, NY. The outage was the result of equipment failure of the tap and hot line clamp in a windy condition. The event accounted for 771 (13%) of the total 6,157 customer-hours of interruption.

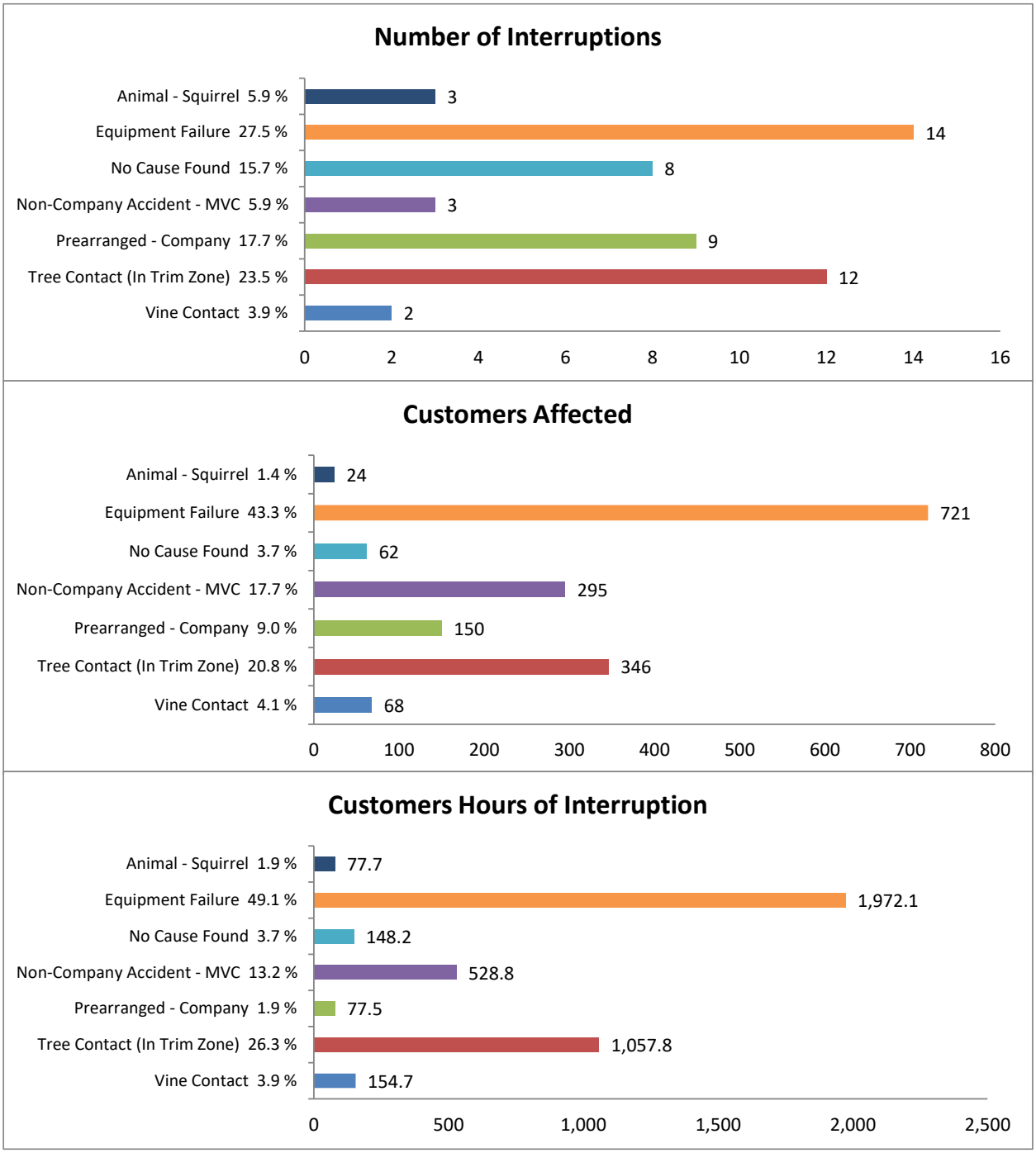
The remaining forty-eight interruptions were the result of three animal contact – squirrel, twelve equipment failures, eight no cause found, two non-Company accident – MVC, nine prearranged-Company, twelve tree contact (in trim zone) and two vine contact. These seventeen events accounted for 275 (7%) of the 4,017 total customer-hours of interruption.

In 2024, the Company has scheduled a detailed circuit patrol along with Distribution Infrared scan. This circuit will be thoroughly patrolled for defective components, animal guards, lightning protection, and overgrown vegetation. The Company intends to correct identified defects from the inspections.

80-3-13 At A Glance

Circuit Stats			
	Count	**Rank Division**	**Rank Company**
Customers	3,025	1	2
Critical Customers	12	8	27
Circuit Miles	75.1	1	3
Customers/Mile	40	39	218
Connected kVA	40,896	1	4
Automation			
	Y/N	**Sister Circuit**	
Auto-Loop	N	NA	

Graph 4.2 - Circuit 80-3-13 – One-Year Performance



4.3.3. CIRCUIT 76-3-13

Circuit 76-3-13 is ranked third in the Central Division per 2023 Circuit Priority Rating system. The circuit originates from the Blooming Grove Substation, in Blooming Grove, NY and serves a total of 2,192 customers over 49 circuit miles.

In 2023, there were 29 interruptions, which affected 2,239 customers and resulted in 5,538 customer-hours of interruption. The table below identifies the one-year outage data associated with circuit 76-3-13, grouped by cause.

One-Year Summary (1/1/2023 - 12/31/2023) 76-3-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Other	1	3.5	38	1.7	131.1	2.4
Animal - Squirrel	5	17.2	77	3.4	198.4	3.6
Equipment Failure	5	17.2	663	29.6	911.0	16.5
No Cause Found	1	3.5	22	1.0	48.4	0.9
Prearranged - Company	12	41.4	165	7.4	452.3	8.2
Tree Contact (In Trim Zone)	4	13.8	1,271	56.8	3,789.4	68.4
Tree Contact (Out of Trim Zone)	1	3.5	3	0.1	7.9	0.1
Total	**29**		**2,239**		**5,538.4**	

In 2023, three incidents accounted for 915 (41%) of all customers affected and 2,969 (54%) of all customer-hours of interruption for the year. The largest incident was due to tree contact (In trim zone), the second largest was due to equipment failure and the third largest was prearranged - Company.

The largest event occurred on July 29, 2023, on Whistle-Post Court, Washingtonville, NY. The outage was the result of tree contact with primary conductor, causing conductor to put tension on the poles causing the poles to snap. The event accounted for 2,199 (40%) of the total 5,538 customer-hours of interruption.

The second largest event occurred on August 21, 2023, on State Route 94, Salisbury Mills, NY. The outage was the result of equipment failure causing the phases to touch each other. The event accounted for 91 (4%) of the total 470 (8%) customer-hours of interruption.

The third largest event occurred on November 7, 2023, on Hallock Drive, Washingtonville, NY. The outage was prearranged - Company to perform cable injection in an underground development. The event accounted for 300 (5%) of the total 5,538 customer-hours of interruption.

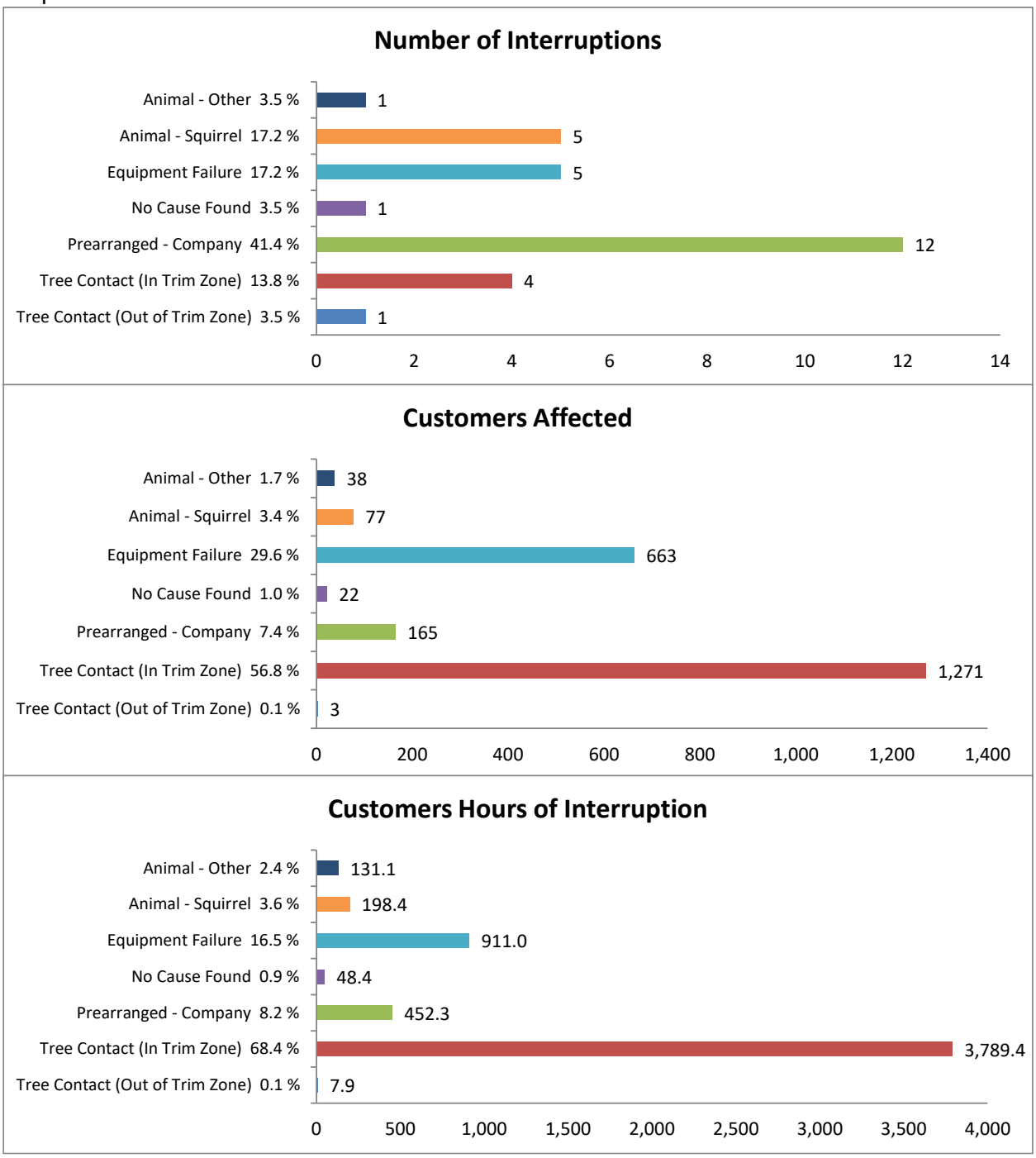
The remaining twenty-six interruptions were the result of one animal contact – other, five animal contact – squirrel, four equipment failures, one no cause found, eleven pre-arranged – Company, and three tree contact (in trim zone), and one tree contact (out of trim zone). These twenty-six events accounted for 2,569 (46%) of the 5,538 total customer-hours of interruption.

In 2024, the Company has scheduled a detailed circuit patrol along with Distribution Infrared scan. This circuit will be thoroughly patrolled for defective components, animal guards, lightning protection, and overgrown vegetation. The Company intends to correct identified defects from the inspections.

76-3-13 At A Glance

Circuit Stats			
	Count	Rank Division	Rank Company
Customers	2,192	5	17
Critical Customers	10	14	47
Circuit Miles	49.3	8	19
Customers/Mile	44	34	187
Connected kVA	25,483	11	46
Automation			
	Y/N	**Sister Circuit**	
Auto-Loop	N	NA	

Graph 4.3 - Circuit 76-3-13 – One-Year Performance



4.3.4. CIRCUIT 89-2-13

Circuit 89-2-13 is ranked fourth in the Central Division per 2023 Circuit Priority Rating system. The circuit originates from the South Goshen Substation and serves a total of 1,123 customers over 49.2 circuit miles.

In 2023, there were 18 interruptions, which affected 3,193 customers and resulted in 4,077 customer-hours of interruption. The table below identifies the one-year outage data associated with circuit 89-2-13, grouped by cause.

One-Year Summary (1/1/2023 - 12/31/2023) 89-2-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Bird	1	5.6	13	0.4	25.8	0.6
Equipment Failure	3	16.7	966	30.3	786.9	19.3
No Cause Found	2	11.1	16	0.5	71.8	1.8
Non-Company Accident - MVC	5	27.8	2,045	64.1	2,384.7	58.5
Non-Company Accident - UG	1	5.6	3	0.1	7.3	0.2
Prearranged - Company	1	5.6	4	0.1	6.5	0.2
Tree Contact (In Trim Zone)	5	27.8	146	4.6	794.3	19.5
Total	**18**		**3,193**		**4,077.3**	

In 2023, two incidents accounted for 1,890 (59%) of all customers affected and 1,998 (49%) of all customer-hours of interruption. These two incidents were result of non-Company accident – MVC.

The largest event occurred on July 6, 2023, on Meadow Road, Florida, NY. The outage was the result of a motor vehicle accident involving a pole, breaking a pole and taking primary wire down. The event accounted for 1,065 (26%) of the total 4,077 customer-hours of interruption.

The second largest event occurred on July 22, 2023, on Maple Avenue, Goshen, NY. The outage was the result of a motor vehicle accident involving a pole, breaking a pole and causing a circuit lockout. The event accounted for 933 (23%) of the total 4,077 customer-hours of interruption.

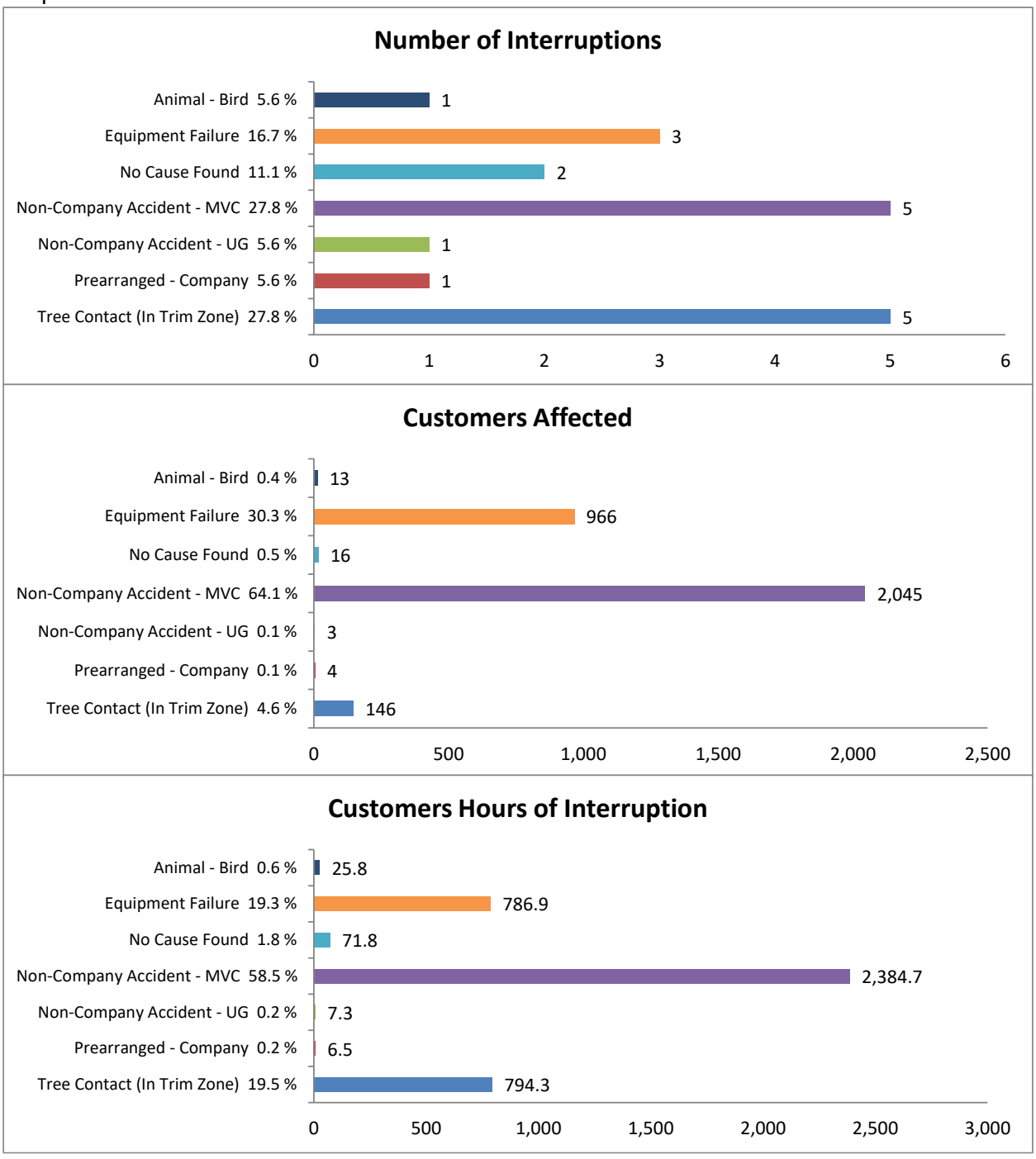
The remaining sixteen interruptions were the result of one animal contact – bird, three equipment failures, two no cause found, three non-Company accident – MVC, one non-Company accident - UG, one prearranged - Company and five tree contact (in trim zone). These sixteen events accounted for 2,079 (51%) of the 4,077 total customer-hours of interruption.

In 2024, the Company has scheduled a detailed circuit patrol along with Distribution Infrared scan. This circuit will be thoroughly patrolled for defective components, animal guards, lightning protection, and overgrown vegetation. The Company intends to correct identified defects from the inspections.

89-2-13 At A Glance

Circuit Stats			
	Count	**Rank Division**	**Rank Company**
Customers	1,123	33	127
Critical Customers	14	2	10
Circuit Miles	49.2	9	20
Customers/Mile	23	58	260
Connected kVA	34,740	3	9
Automation			
	Y/N	**Sister Circuit**	
Auto-Loop	Y	89-3-13	

Graph 4.4 - Circuit 89-2-13 – One-Year Performance



4.3.5. CIRCUIT 71-3-13

Circuit 71-3-13 is ranked fifth in the Central Division per 2023 Circuit Priority Rating system. The circuit originates from the Harriman Substation in Central Valley, NY and serves a total of 2,422 customers over 54.1 circuit miles.

In 2023, there were 32 interruptions, which affected 4,875 customers and resulted in 3,673 customer-hours of interruption. The table below identifies the one-year outage data associated with circuit 71-3-13, grouped by cause.

One-Year Summary (1/1/2023 - 12/31/2023) 71-3-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Other	2	6.3	20	0.4	40.3	1.1
Animal - Squirrel	3	9.4	86	1.8	233.9	6.4
Branch Contact (In Trim Zone)	2	6.3	26	0.5	26.4	0.7
Equipment Failure	5	15.6	88	1.8	224.3	6.1
Lightning - Previous	1	3.1	51	1.1	79.1	2.2
No Cause Found	2	6.3	25	0.5	35.3	1.0
Non-Company Accident - MVC	2	6.25	1,571	32.23	1,088.1	29.62
Overload - Customer	1	3.13	27	0.55	62.1	1.69
Prearranged - Company	5	15.6	2,260	46.4	499.2	13.6
Tree Contact (In Trim Zone)	9	28.1	721	14.8	1,384.7	37.7
Total	**32**		**4,875**		**3,673.4**	

In 2023, three incidents accounted for 2,886 (59%) of all customers affected and 2,222 (60%) of all customer-hours of interruption for the year. These three incidents were pre-arranged - Company, non-Company accident – MVC, and tree contact (in trim zone).

The largest event occurred on October 10, 2023, on Heather Ridge, Highland Mills, NY. The outage was classified as prearranged - Company due to a transformer fire, for the safety of everyone at the site, the Company had to de-energize the circuit which impacted 2,236 customers for total of 862 (23%) customer-hours of interruptions.

The second largest event occurred on September 21, 2023, on Birchwood Drive, Highland Mills, NY. The outage was the caused by non-Company accident – MVC. The event accounted for 504 (14%) of the total 3,673 customer-hours of interruption.

The third largest event occurred on September 12, 2023, on Smith-Clove Road, Central Valley, NY. The outage was due to tree contact which took primary conductor to the ground. The event accounted for 506 (14%) of the total 3,673 customer-hours of interruption.

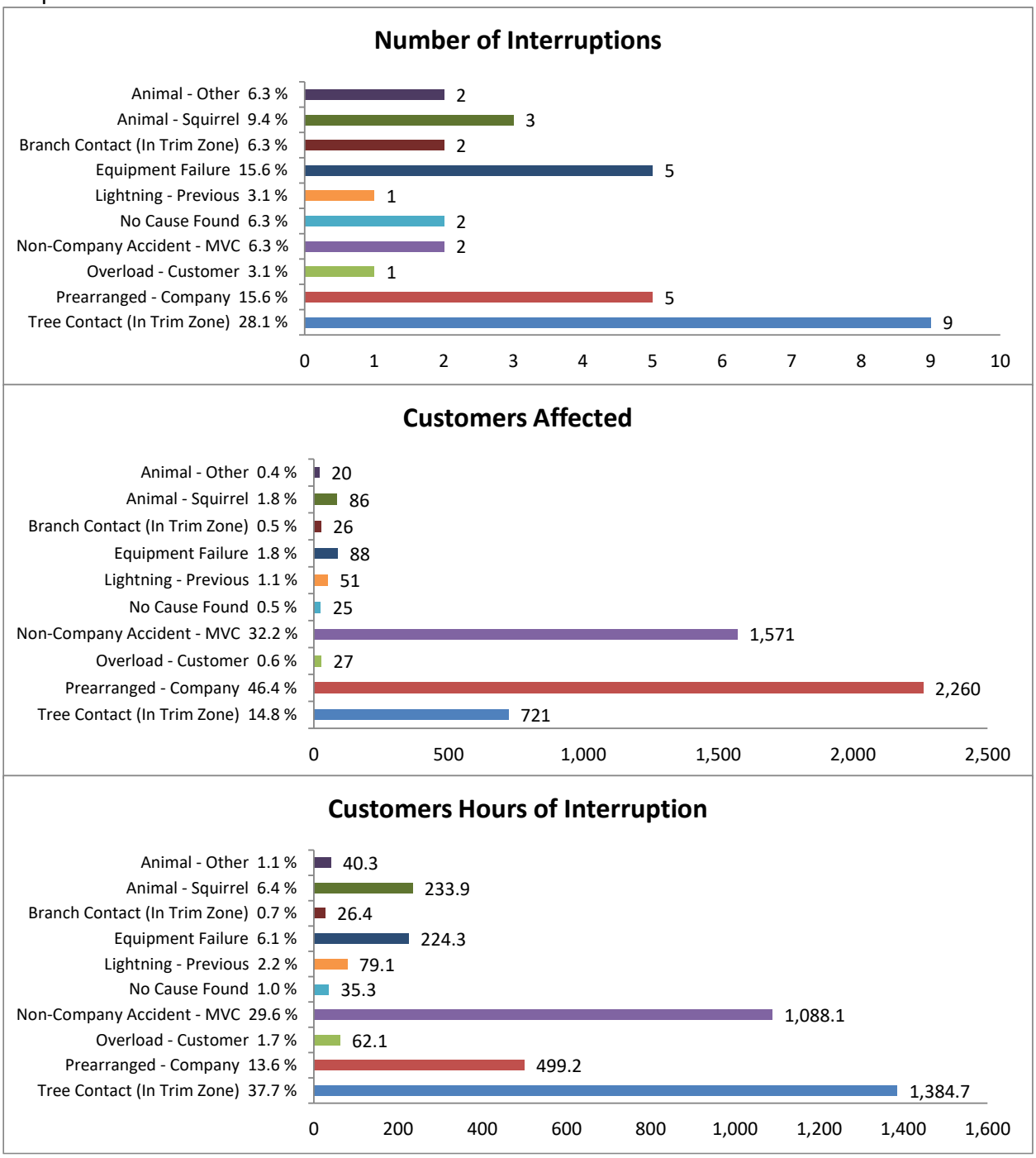
The remaining twenty-nine interruptions were the result of two animal contact – other, three animal contact – squirrel, two branch contact (in trim zone), five equipment failures, one lightning present, two no cause found, one non-Company accident – MVC, one overload-customer, four pre-arranged Company and eight tree contact (in trim zone). These twenty-nine events accounted for 1,451 (40%) of the 3,673 total customer-hours of interruption.

In 2024, the Company has scheduled a detailed circuit patrol along with Distribution Infrared Scan. This circuit will be thoroughly patrolled for defective components, animal guards, lightning protection, and overgrown vegetation. The Company intends to correct identified defects from the inspections.

71-3-13 At A Glance

Circuit Stats			
	Count	Rank Division	Rank Company
Customers	2,422	3	12
Critical Customers	15	1	7
Circuit Miles	54.1	3	13
Customers/Mile	45	33	185
Connected kVA	30,105	6	21
Automation			
	Y/N	**Sister Circuit**	
Auto-Loop	N	NA	

Graph 4.5 - Circuit 71-3-13 – One-Year Performance



5. WESTERN DIVISION

5.1. 2023 Divisional Performance

In 2023, the year-end frequency for the Western Division was 1.43 customers affected per customer served, which was a regression from the 2022 performance of 1.35, equal to the five-year average of 1.45 and a better performance than the divisional standard of 1.73.

The year-end restoration for the Western Division was 2.03 customer hours of interruption per customer affected, the worst performance in the past six years, and above the trailing five-year average of 1.35 and the divisional standard of 2.00.

Figures 5-1, 5-2, and 5-3, show performance trends on a rolling 12-month basis from 2018 through 2023. The rolling 12-month average number of interruptions continued to increase since the upward climb that begun in 2021. The graph of the 12-month rolling number of customers affected started a downward trend in mid-2021 and it currently has a leveled performance. The 12-month rolling customer-hours of interruption started lower than 2022 but ended the same level of 2022 with a slight upward trend and above historical performance.

The outage statistics by cause for Western Division interruptions experienced in 2023 is shown in Figure 5-4. With tree contact being the major cause for outages followed by equipment failure and both increasing from 2022 in number of customers interruptions and customers affected while equipment failure improved 9% in customers minutes of interruption. Customer-hours of interruption continued an increase of 11% for tree contact. The number of interruptions in this category remained above historical levels for the sixth year in a row. All other causes were well below tree contact and equipment failures and were consistent with historical norms.

Of the 496 interruptions in the tree contact category, 80 (16%) were attributable to partial power or single service conditions. Of the 281 interruptions in the equipment failure category, 115 (41%), were attributable to partial power/single service customer conditions.

A graphical representation, by cause, is depicted in Figures 5-5, 5-6, and 5-7, which shows the annual contribution to the number of interruptions, customers affected, and customer hours of interruption, respectively, from 2018 through 2023.

Table 5-3 shows the Western Division history from 2018 through 2023, with and without major events. There was one event in the division during the year that impacted greater than 5,000 customers. The event added 6,149 customers affected with 159,059 customer minutes of interruption. The event was caused by equipment failure at our Shoemaker substation which deenergized all distribution circuits.

There are 58 circuits serving the Western Division. Appendix A details the circuit priority ratings for all of O&R's distribution circuits. Only circuits that serve at least 40% of the Company's New York

customers, with respect to its total number of customers served, were considered for evaluation in the worst performing circuit analysis for this report.

Western Division circuits are also listed in Appendix D, first in order of decreasing frequency and then in order of decreasing restoration. 23 of the 58 circuits were not considered for this evaluation because the number of customers served did not exceed 100, or the number of interruptions did not exceed three. Of the remaining circuits, 39 (67%) made the minimum acceptable level for frequency, and 50 (86%) circuits made the minimum acceptable level for restoration. Both measures showed an increase from 2022 levels when 36 circuits met the SAIFI minimum and 36circuits met the CAIDI minimum.

The 2023 Company storm statistics and analysis table is shown in Appendix E. During 2023, there were five qualifying storms in the Western Division that resulted in interruptions that met criteria for exclusion from reliability reporting.

For the Western Division, $MAIFI_e$ was 8.53 based upon 56,281 Western Division New York customers served, and a total of 480,309 momentary interruptions experienced by these customers. This represents a regression of 12% from the 2022 $MAIFI_e$ performance of 7.64. Currently, the Company calculates $MAIFI_e$ based on operations from the substation breaker that supply the circuit.

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TABLE 5.1 – 5 YEAR COMPARISON – FREQUENCY AND RESTORATION BY MONTH

WESTERN DIVISION - NYS - ALL OUTAGES - WITHOUT STORMS
calculations for calendar year reliability goals

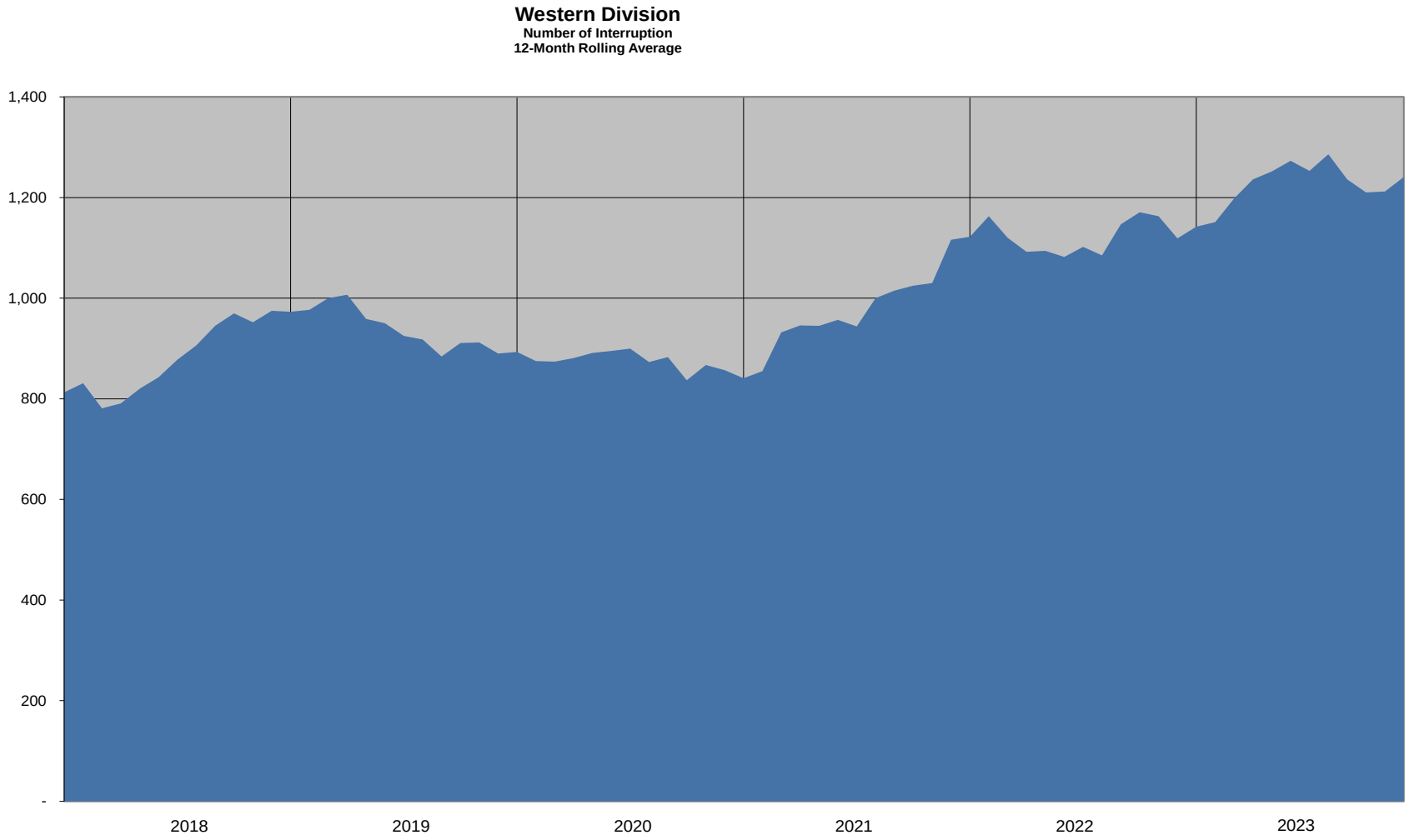
FREQUENCY - CUSTOMERS AFFECTED / CUSTOMERS SERVED

MONTH	2018	2019	2020	2021	2022	5 YR AVG	2023 ACTUAL Monthly	2023 ACTUAL Y-T-D
JAN	0.18	0.09	0.04	0.04	0.04	0.08	0.06	0.06
FEB	0.14	0.04	0.04	0.14	0.15	0.10	0.08	0.14
MAR	0.04	0.05	0.11	0.12	0.14	0.09	0.21	0.35
APR	0.15	0.11	0.11	0.29	0.19	0.17	0.17	0.52
MAY	0.18	0.06	0.05	0.08	0.07	0.09	0.14	0.66
JUN	0.10	0.12	0.09	0.21	0.13	0.13	0.09	0.76
JLY	0.17	0.11	0.11	0.16	0.16	0.14	0.07	0.82
AUG	0.19	0.14	0.08	0.14	0.13	0.14	0.18	1.00
SEP	0.16	0.21	0.06	0.24	0.10	0.15	0.07	1.08
OCT	0.19	0.16	0.10	0.07	0.05	0.12	0.05	1.13
NOV	0.09	0.11	0.40	0.13	0.13	0.17	0.24	1.37
DEC	0.08	0.08	0.02	0.10	0.06	0.07	0.08	1.43
YR END	1.67	1.28	1.22	1.73	1.35	1.45		1.43

RESTORATION - MINUTES OF INTERR / CUST AFFECTED

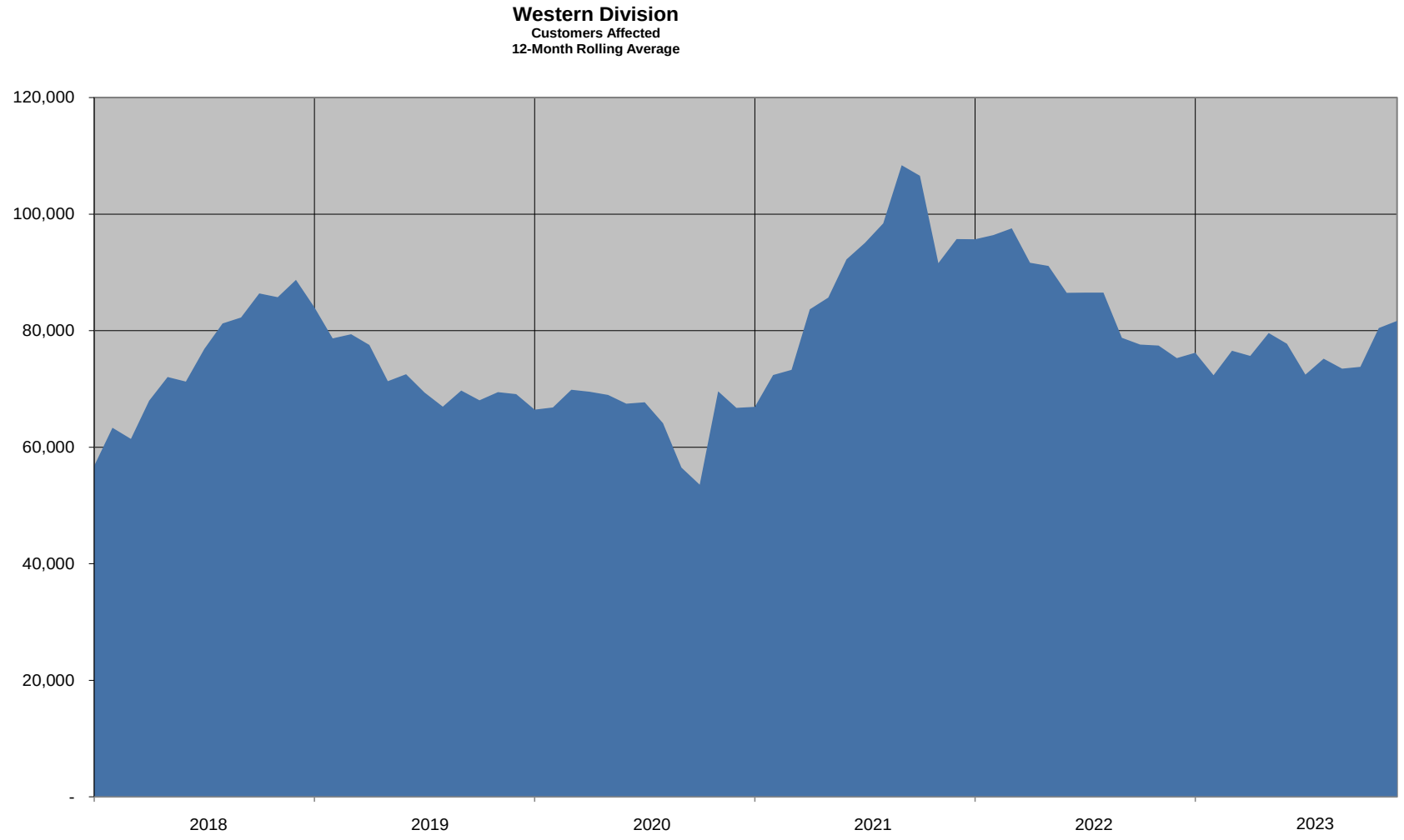
MONTH	2018	2019	2020	2021	2022	5 YR AVG	2023 ACTUAL Monthly	2023 ACTUAL Y-T-D
JAN	86.2	96.8	124.1	80.0	90.9	77.4	115.2	115.2
FEB	70.5	222.8	142.1	50.2	99.8	97.1	127.7	122.5
MAR	86.5	112.3	71.5	168.7	95.6	87.8	133.3	129.1
APR	126.8	101.3	110.0	54.1	74.4	78.4	141.6	133.1
MAY	77.3	125.2	146.7	87.7	109.6	87.4	103.0	126.6
JUN	112.1	85.2	106.9	109.0	150.7	82.6	125.2	126.5
JLY	143.3	116.3	154.4	94.1	133.0	101.6	137.2	127.3
AUG	100.0	93.2	107.2	113.7	98.8	82.8	143.7	130.3
SEP	112.4	55.3	153.5	58.1	165.2	75.9	147.3	131.4
OCT	88.5	147.2	76.7	111.1	173.0	84.7	109.6	130.4
NOV	109.7	77.3	64.5	155.0	116.5	81.3	63.3	118.4
DEC	106.3	153.3	145.2	244.0	123.2	129.8	168.5	121.2
YR END(Min)	101.7	104.0	98.3	100.4	115.0	80.9		121.2
YR END(Hr)	1.69	1.73	1.64	1.67	1.92	1.35		2.03

FIGURE 5.1 – 12-MONTH ROLLING AVERAGE – NUMBER OF INTERRUPTIONS



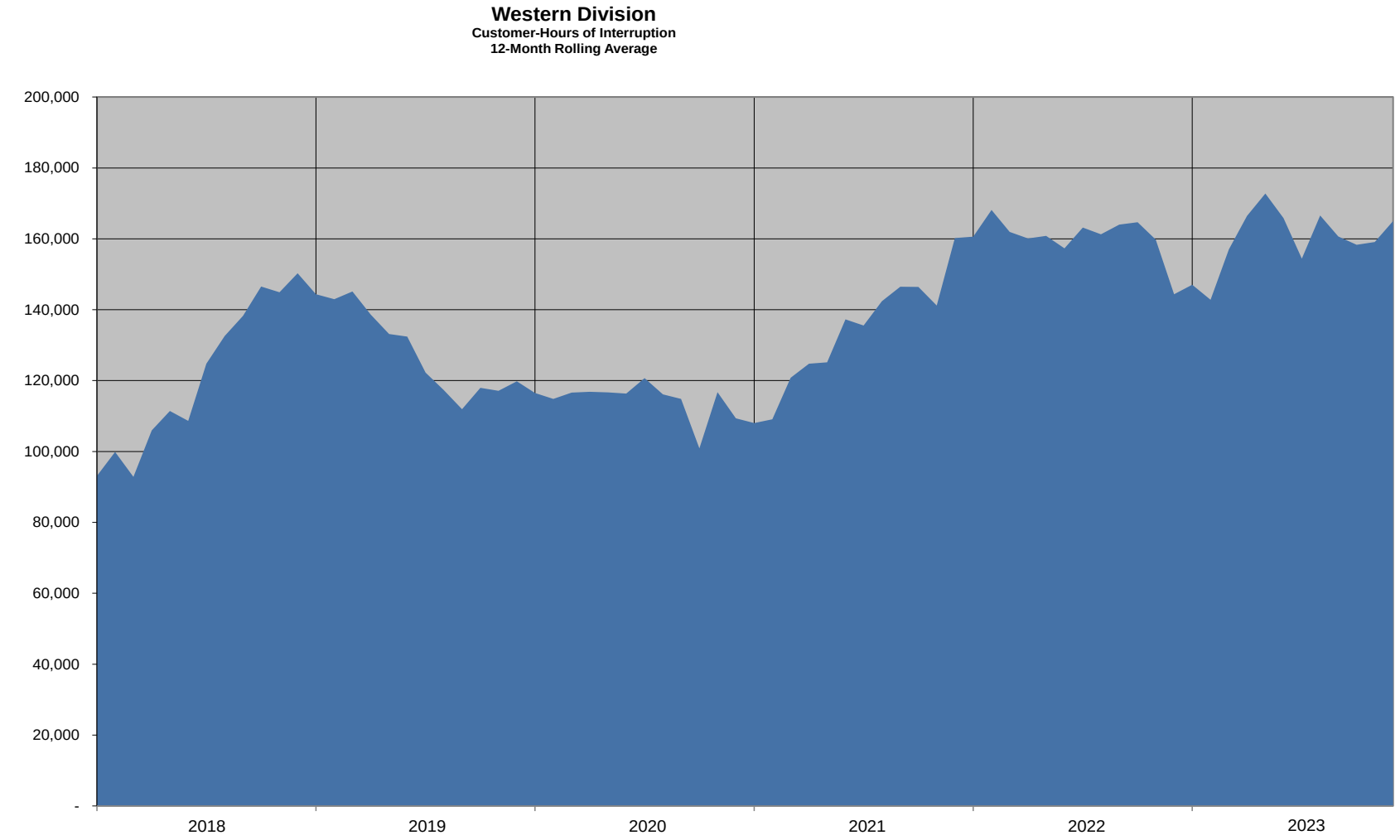
Includes Partial Powers, Single No Lights
Excludes Storm Activity

FIGURE 5.2 – 12-MONTH ROLLING AVERAGE – CUSTOMERS AFFECTED



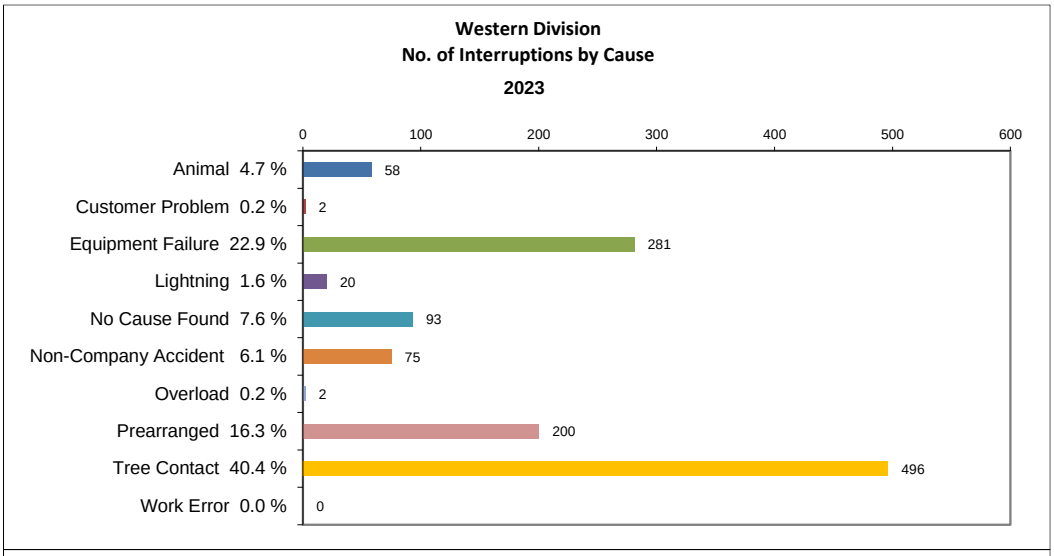
Includes Partial Powers, Single No Lights
Excludes Storm Activity

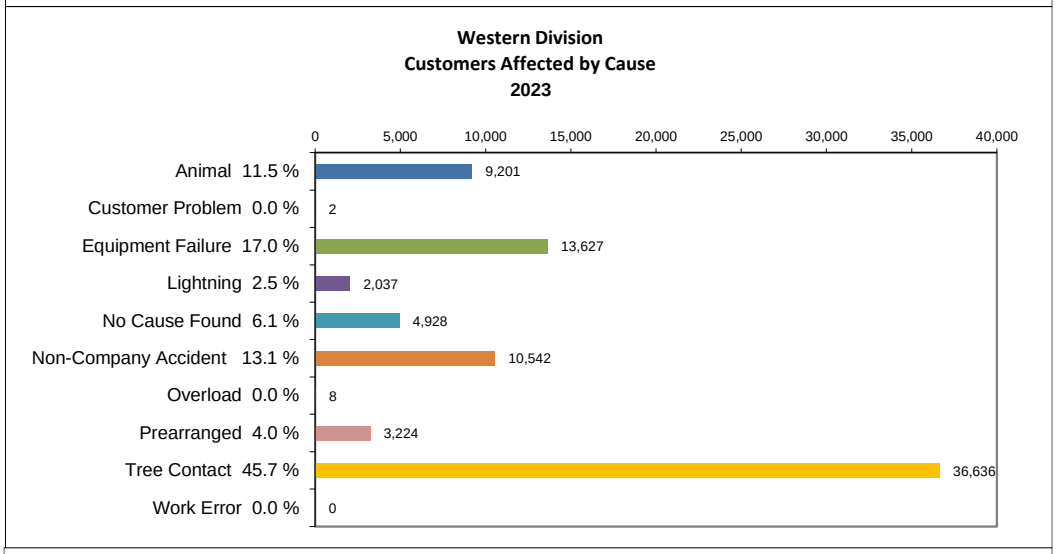
FIGURE 5.3 – 12-MONTH ROLLING AVERAGE – CUSTOMER-HOURS OF INTERRUPTIONS



Includes Partial Powers, Single No Lights
Excludes Storm Activity

FIGURE 5.4 – OUTAGE STATISTICS BY CAUSE





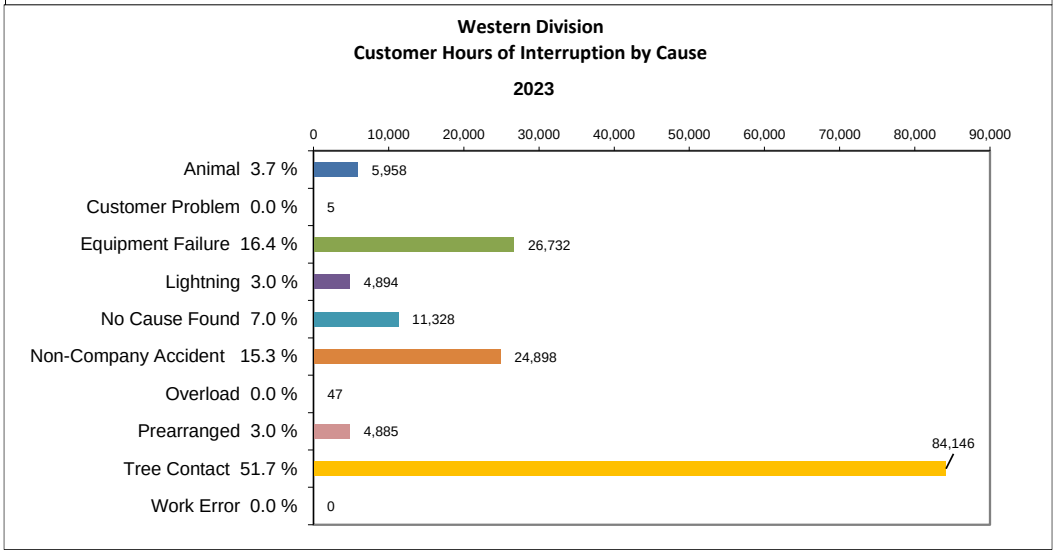


TABLE 5.2 – EQUIPMENT FAILURES – BY TYPE AND EQUIPMENT FAILURE CODE

		Number of Interruptions by Year						
		2018	2019	2020	2021	2022	5 Yr Avg.	2023
Outage Type	**Equipment**							
Overhead	Arrester	7	2	5	4	2	4	1
	Capacitor	1	0	0	0	0	0	0
	Connecter/Splice - Pri	5	12	10	14	15	11	16
	Connecter/Splice - Sec	69	45	21	44	41	44	37
	Disconnect	0	0	0	1	0	0	0
	Elbow	0	0	1	0	0	0	0
	Electric Meter	1	1	0	2	2	1	4
	Fuse/Cutout/Eld	21	23	9	9	13	15	36
	GOAB	2	0	2	0	0	1	1
	Hardware/Pole	19	9	13	24	23	18	26
	Insulator	1	2	1	0	0	1	2
	O/H Step Transf	4	3	2	5	2	3	5
	O/H Transformer	56	43	35	47	67	50	45
	Recloser	1	0	1	0	0	0	0
	Regulator	0	1	0	0	1	0	0
	Riser Pole Cutout	1	2	8	15	4	6	5
	Splice/Junction - Sec	0	0	0	1	0	0	2
	Wire/Cable - Pri	19	26	42	43	19	30	0
	Wire/Cable - Sec	17	8	34	16	15	18	23
	Total - OH	224	177	184	225	204	203	18
Trans/Substa	Brkr/Kyle/Switch	2	2	0	0	1	1	1
	Hardware/Pole/Tower	0	0	0	0	1	0	0
	Insulator	0	0	0	8	0	2	0
	Not Coded	0	0	0	1	0	0	1
	Transformer	0	0	0	0	2	0	0
	Total - Trans/Substa	2	2	0	9	4	3	2
Underground	Boxpad/Silo/Vault	0	0	0	0	1	0	0
	Bushing	0	0	0	0	0	0	1
	Connecter/Splice - Sec	3	0	0	0	0	1	0
	Elbow	1	1	0	2	1	1	0
	O/H Transformer	0	1	0	0	0	0	0
	Padmount Transf	7	13	13	34	14	16	22
	Splice/Junction - Pri	0	1	0	0	0	0	2
	Splice/Junction - Sec	4	4	5	5	3	4	13
	Stress Cone	0	1	2	1	0	1	0
	Switch	0	0	0	1	0	0	10
	Wire/Cable - Pri	6	7	9	14	14	10	3
	Wire/Cable - Sec	21	7	6	9	13	11	7
	Total - UG	42	35	35	66	46	45	58
	Total - Year	268	214	219	300	254	250	78

Note: Figures in red denote that the value exceeds the five-year average

TABLE 5.2 – EQUIPMENT FAILURES – BY TYPE AND EQUIPMENT FAILURE CODE (CONT.)

		Customers Affected by Year						
		2018	2019	2020	2021	2022	5 Yr Avg.	2023
Outage Type	**Equipment**							
Overhead	Arrester	80	47	1,042	205	215	318	1
	Capacitor	35	0	0	0	0	7	0
	Connecter/Splice - Pri	177	4,227	433	2,849	509	1,639	1,630
	Connecter/Splice - Sec	82	54	34	68	70	62	72
	Disconnect	0	0	0	206	0	41	0
	Elbow	0	0	4	0	0	1	0
	Electric Meter	1	1	0	2	2	1	4
	Fuse/Cutout/Eld	584	478	2,118	343	250	755	1,171
	GOAB	2,747	0	453	0	0	640	501
	Hardware/Pole	2,684	1,748	3,456	2,303	3,142	2,667	2,100
	Insulator	9	917	38	0	0	193	65
	O/H Step Transf	503	617	711	271	124	445	820
	O/H Transformer	1,864	356	358	2,086	643	1,061	855
	Recloser	137	0	1	0	0	28	0
	Regulator	0	45	0	0	146	38	0
	Riser Pole Cutout	1	2	131	596	9	148	16
	Sectionalizer	0	0	0	0	0	0	4
	Splice/Junction - Sec	0	0	0	1	0	0	0
	Wire/Cable - Pri	2,289	9,067	12,258	10,827	2,367	7,362	2,900
	Wire/Cable - Sec	77	8	118	71	31	61	33
	Total - OH	11,270	17,567	21,155	19,828	7,508	15,466	10,172
Trans/Substa	Brkr/Kyle/Switch	1,698	2,938	0	0	916	1,110	3,642
	Hardware/Pole/Tower	0	0	0	0	303	61	0
	Insulator	0	0	0	8,492	0	1,698	0
	Not Coded	0	0	0	305	0	61	2
	Transformer	0	0	0	0	1,354	271	0
	Total - Trans/Substa	1,698	2,938	0	8,797	2,573	3,201	3,644
Underground	Boxpad/Silo/Vault	0	0	0	0	22	4	0
	Bushing	0	0	0	0	0	0	92
	Connecter/Splice - Sec	30	0	0	0	0	6	0
	Elbow	37	1	0	46	11	19	0
	O/H Transformer	0	9	0	0	0	2	0
	Padmount Transf	55	63	163	199	77	111	212
	Splice/Junction - Pri	0	16	0	0	0	3	1,728
	Splice/Junction - Sec	4	15	5	15	3	8	22
	Stress Cone	0	59	33	1	0	19	0
	Switch	0	0	0	9	0	2	123
	Wire/Cable - Pri	240	124	260	287	2,519	686	36
	Wire/Cable - Sec	46	10	23	85	14	36	23
	Total - UG	412	297	484	642	2,646	896	2,236
	Total - Year	13,380	20,802	21,639	29,267	12,727	19,563	16,052

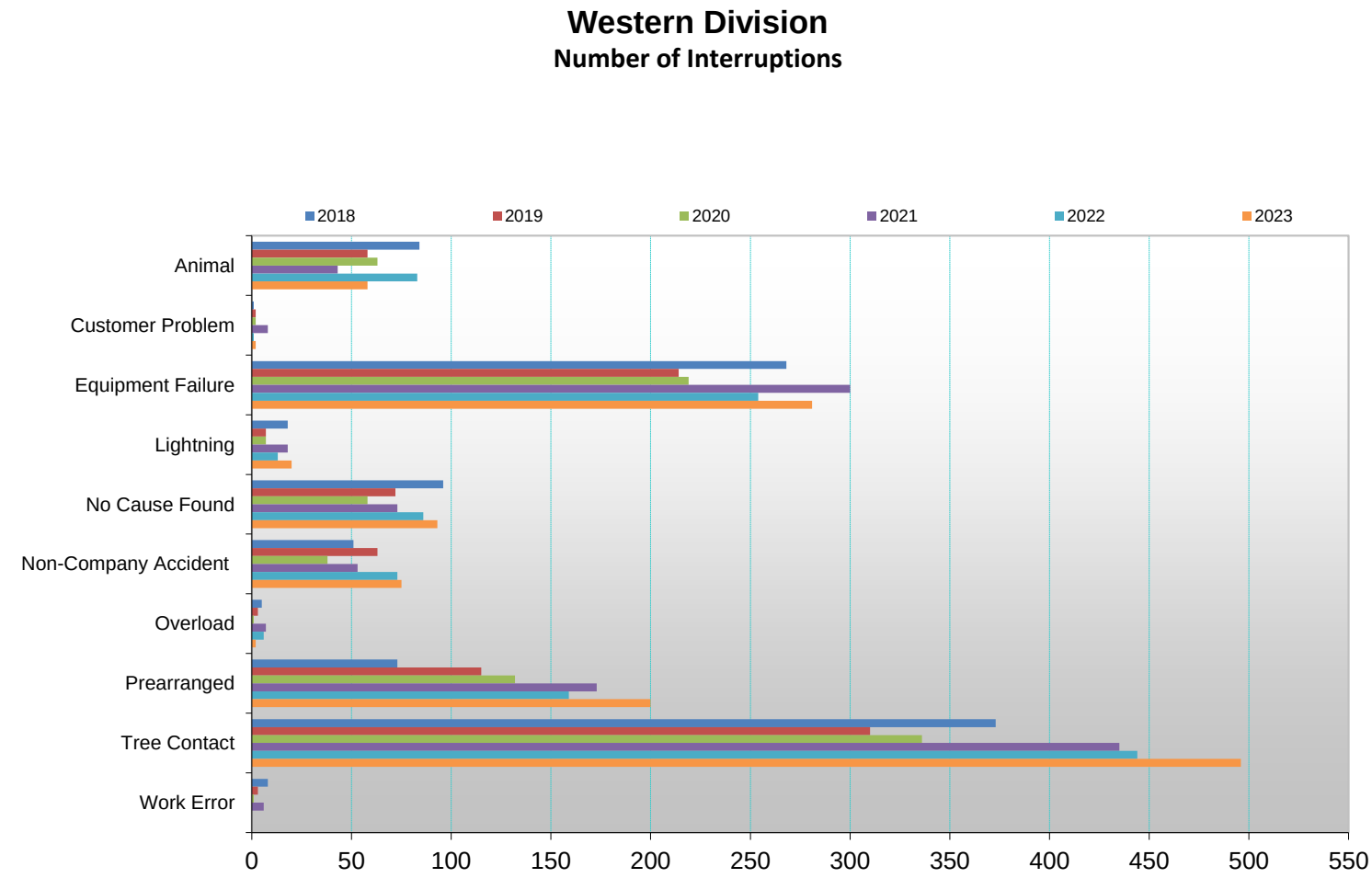
Note: Figures in red denote that the value exceeds the five-year average

TABLE 5.2 – EQUIPMENT FAILURES – BY TYPE AND EQUIPMENT FAILURE CODE (CONT.)

		Total Minutes of Interruption by Year						
		2018	2019	2020	2021	2022	5 Yr Avg.	2023
Outage Type	**Equipment**							
Overhead	Arrester	7,718	2,697	138,464	55,779	21,759	45,283	272
	Capacitor	1,400	0	0	0	0	280	0
	Connecter/Splice - Pri	21,940	320,830	26,898	118,806	61,492	109,993	81,460
	Connecter/Splice - Sec	16,466	7,838	4,426	9,173	10,283	9,637	11,416
	Disconnect	0	0	0	10,094	0	2,019	0
	Elbow	0	0	1,684	0	0	337	0
	Electric Meter	293	511	0	379	354	307	674
	Fuse/Cutout/Eld	80,198	37,732	39,007	83,747	14,945	51,126	172,170
	GOAB	95,683	0	18,574	0	0	22,851	8,016
	Hardware/Pole	669,749	134,211	251,299	255,905	229,531	308,139	406,759
	Insulator	1,089	155,807	1,482	0	0	31,676	12,565
	O/H Step Transf	158,189	138,648	58,605	62,066	39,396	91,381	139,530
	O/H Transformer	282,718	96,989	61,049	363,566	124,129	185,690	128,051
	Recloser	11,423	0	61	0	0	2,297	0
	Regulator	0	7,200	0	0	1,314	1,703	0
	Riser Pole Cutout	60	212	12,479	27,651	1,184	8,317	2,920
	Sectionalizer	0	0	0	0	0	0	990
	Splice/Junction - Sec	0	0	0	239	0	48	0
	Wire/Cable - Pri	141,929	778,307	674,837	588,127	243,565	485,353	246,872
	Wire/Cable - Sec	40,073	2,095	15,037	12,546	5,534	15,057	6,098
	Total - OH	1,528,928	1,683,077	1,303,902	1,588,078	753,486	1,371,494	1,217,793
Trans/Substa	Brkr/Kyle/Switch	285,264	256,958	0	0	90,684	126,581	40,197
	Hardware/Pole/Tower	0	0	0	0	2,424	485	0
	Insulator	0	0	0	154,422	0	30,884	0
	Not Coded	0	0	0	49,410	0	9,882	254
	Transformer	0	0	0	0	512,849	102,570	0
	Total - Trans/Substa	285,264	256,958	0	203,832	605,957	270,402	40,451
Underground	Boxpad/Silo/Vault	0	0	0	0	2,618	524	0
	Bushing	0	0	0	0	0	0	39,652
	Connecter/Splice - Sec	18,839	0	0	0	0	3,768	0
	Elbow	16,391	648	0	12,197	4,664	6,780	0
	O/H Transformer	0	891	0	0	0	178	0
	Padmount Transf	9,750	15,080	74,453	32,356	39,391	34,206	85,697
	Splice/Junction - Pri	0	3,376	0	0	0	675	158,723
	Splice/Junction - Sec	1,195	3,130	869	3,144	1,436	1,955	6,871
	Stress Cone	0	21,948	5,118	1,222	0	5,658	0
	Switch	0	0	0	1,224	0	245	37,087
	Wire/Cable - Pri	91,733	37,493	76,052	76,196	359,263	128,147	7,280
	Wire/Cable - Sec	28,214	3,289	4,254	30,548	5,414	14,344	10,392
	Total - UG	166,122	85,855	160,746	156,887	412,786	196,479	345,702
	Total - Year	1,980,314	2,025,890	1,464,648	1,948,797	1,772,229	1,838,376	1,603,946

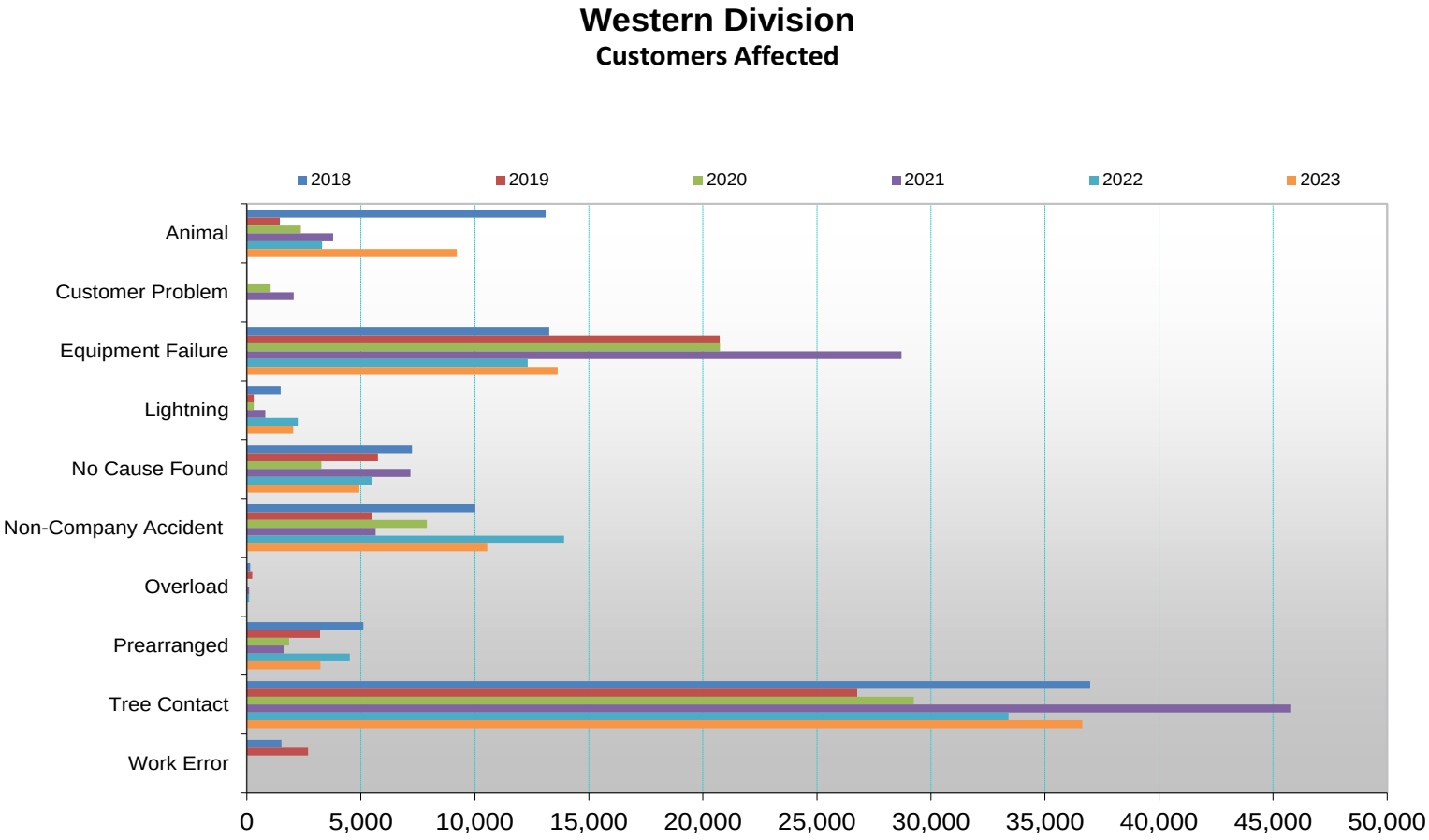
Note: Figures in red denote that the value exceeds the five-year average

FIGURE 5.5 – 5-YEAR COMPARISON – NUMBER OF INTERRUPTIONS BY MAJOR CAUSE



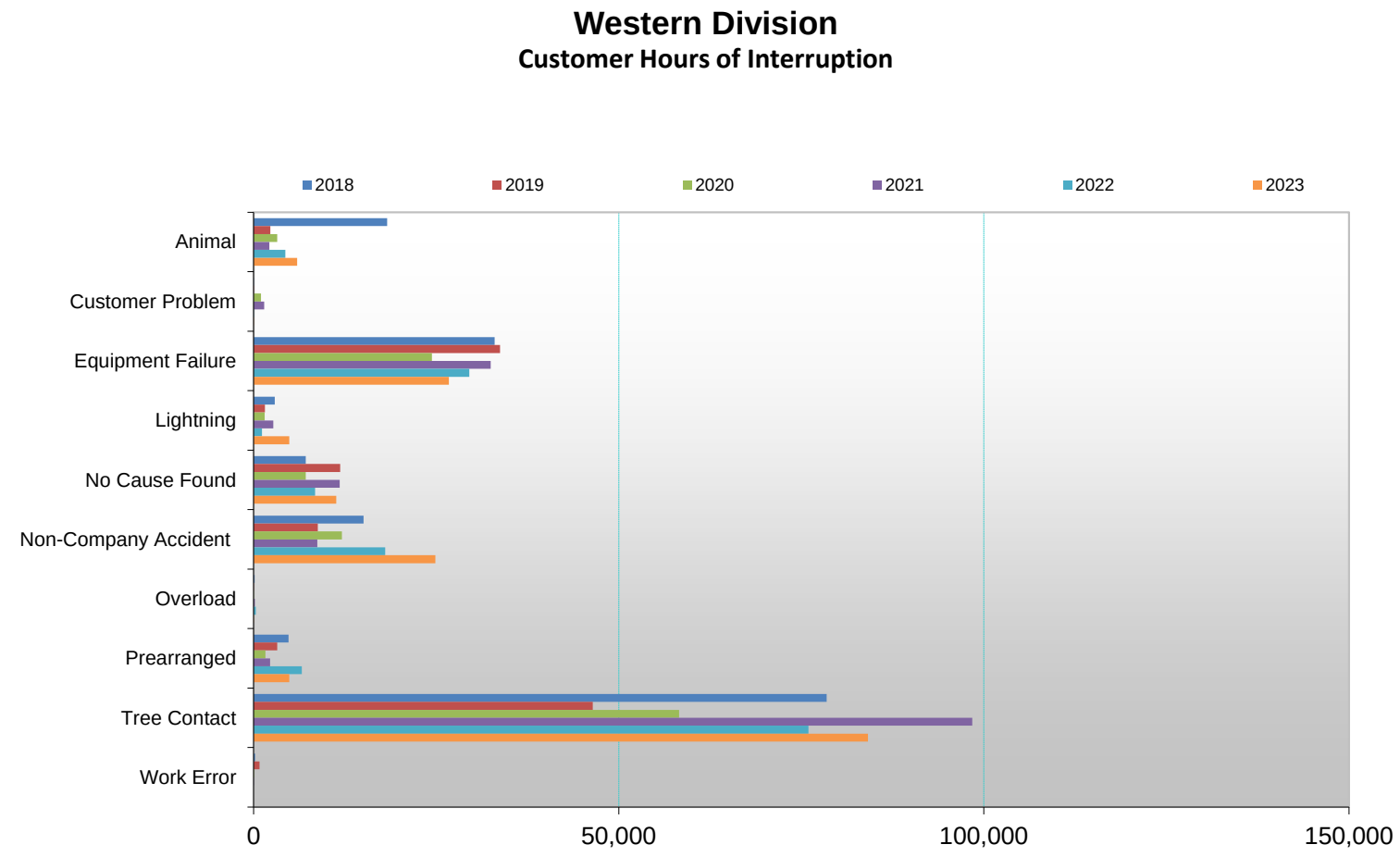
Includes Partial Powers, Single No Lights
Excludes Storm Activity

FIGURE 5.6 – 5-YEAR COMPARISON – CUSTOMERS AFFECTED BY MAJOR CAUSE



Includes Partial Powers, Single No Lights
Excludes Storm Activity

FIGURE 5.7 – 5-YEAR COMPARISON – CUSTOMER-HOURS OF INTERRUPTIONS BY MAJOR CAUSE



Includes Partial Powers, Single No Lights
Excludes Storm Activity

TABLE 5.3 – 5-YR COMPARISON – LARGE OUTAGE (>5,000 CUSTOMERS) IMPACT ON SAIFI, CAIDI & SAIDI

Western Division Without Storms

Effect of Interruptions Affecting 5,000 or more Customers

YEAR	CUSTOMERS SERVED (CS)	# OF INTERRUPTIONS	CUSTOMERS AFFECTED (CA)	CUSTOMER MINUTES OF INTERRUPTION (CM)	FREQUENCY (CA/CS)	RESTORATION (CM/CA)	DURATION (CM/CS)
WITHOUT STORMS							
2018	53,241	975	88,712	9,018,221	1.67	1.69	2.82
2019	53,851	890	69,102	7,186,949	1.28	1.73	2.22
2020	54,575	857	66,764	6,562,819	1.22	1.64	2.00
2021	55,342	1,116	95,728	9,612,096	1.73	1.67	2.89
2022	55,587	1,119	75,295	8,661,135	1.35	1.92	2.60
5-Yr Average	**54,519**	**991**	**79,120**	**8,208,244**	**1.45**	**1.73**	**2.51**
2023	56,169	1,241	81,679	9,900,116	1.45	2.02	2.94

WITHOUT STORMS - OUTAGES AFFECTING > 5000 CUSTOMERS

YEAR	SERVED	INTERR's	CUST AFF	CUST MIN
2018	53,241	1	6,403	357,472
2019	53,851	-	-	-
2020	54,575	-	-	-
2021	55,342	1	8,492	154,422
2022	55,587	-	-	-
5-Yr Average	**54,519**	**0**	**2,979**	**102,379**
2023	56,169	1	6,149	159,059

WITHOUT STORMS AND WITHOUT THOSE OUTAGES AFFECTING > 5000 CUSTOMERS

2018	53,241	974	82,309	8,660,749	1.55	1.75	2.71
2019	53,851	890	69,102	7,186,949	1.28	1.73	2.22
2020	54,575	857	66,764	6,562,819	1.22	1.64	2.00
2021	55,342	1,115	87,236	9,457,674	1.58	1.81	2.85
2022	55,587	1,119	75,295	8,661,135	1.35	1.92	2.60
5-Yr Average	**54,519**	**991**	**76,141**	**8,105,865**	**1.40**	**1.77**	**2.48**
2023	56,169	994	75,530	9,741,057	1.34	2.15	2.89

5.3 Western Division Worst Performing Circuit

5.3.1 CIRCUIT 9-1-48

Circuit 9-1-48 ranked first in the Western Division per 2023 Circuit Priority Rating system. The circuit originates from the Wurtsboro Substation in Wurtsboro, NY and serves 1,819 customers on 40.4 circuit miles.

In 2023, there were 52 interruptions, which affected 7,012 customers and resulted in 33,039 customer-hours of interruption. The table below identifies the one-year outage data associated with circuit 9-1-48, grouped by cause.

One-Year Summary (1/1/2023 - 12/31/2023) 9-1-48						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Branch Contact (In Trim Zone)	6	11.5	2,235	31.9	7,719.8	23.4
Equipment Failure	10	19.2	1,315	18.8	11,371.4	34.4
Lightning - Previous	1	1.9	2	0.0	0.5	0.0
No Cause Found	3	5.8	65	0.9	259.1	0.8
Non-Company Accident - MVC	2	3.9	1,814	25.9	9,565.0	29.0
Non-Company Accident - Tree	1	1.9	26	0.4	43.8	0.1
Prearranged - Company	11	21.15	137	1.95	90.7	0.27
Tree Contact (In Trim Zone)	15	28.85	1,364	19.45	3,874.9	11.73
Tree Contact (Out of Trim Zone)	2	3.85	14	0.2	22.1	0.07
Vine Contact	1	1.92	40	0.57	91.3	0.28
Total	**52**		**7,012**		**33,038.7**	

In 2023, four incidents accounted for 4,808 (69%) of all customers affected and 23,397 (71%) of all customer-hours of interruption. These four incidents were non-Company accident – MVC, branch contact (in trim zone), equipment failure and tree contact (in trim zone).

The largest event occurred on April 11,2023, on Cedar Road, Wurtsboro, NY. The outage was the result of a motor vehicle collision, a tractor trailer collided with junction pole, breaking the pole and taking the primary conductor down. The circuit needed to be deenergized for safety due to occupant being trapped in the vehicle with lives wires on around it. The event accounted for 9,507 (29%) of the total 33,039 customer-hours of interruption for the year.

The second largest event occurred on August 13, 2023, on Wurtsboro Mountain Road, Wurtsboro, NY. The outage was the result of branch contact (in trim zone), tree branch was on all three phases causing a circuit lockout. The event accounted for 6,558 (20%) of the total 33,039 customer-hours of interruption for the year.

The third largest event occurred on March 7, 2023, on Anns Rd, Yankee Lake, NY. The outage was the result equipment failure. In windy conditions, the center phase pin broke off causing the phase to fall off the pin and short, causing an outage. The event accounted for 5,333 (13%) of the total 33,039 customer-hours of interruption for the year.

The fourth largest event occurred on March 11, 2023, on Anns Road, Yankee Lake, NY. The outage was the result of tree contact (in trim zone). A tree came across the road and landed on all three phases, causing an outage. The event accounted for 1,999 (6%) of the total 33,039 customer-hours of interruption for the year.

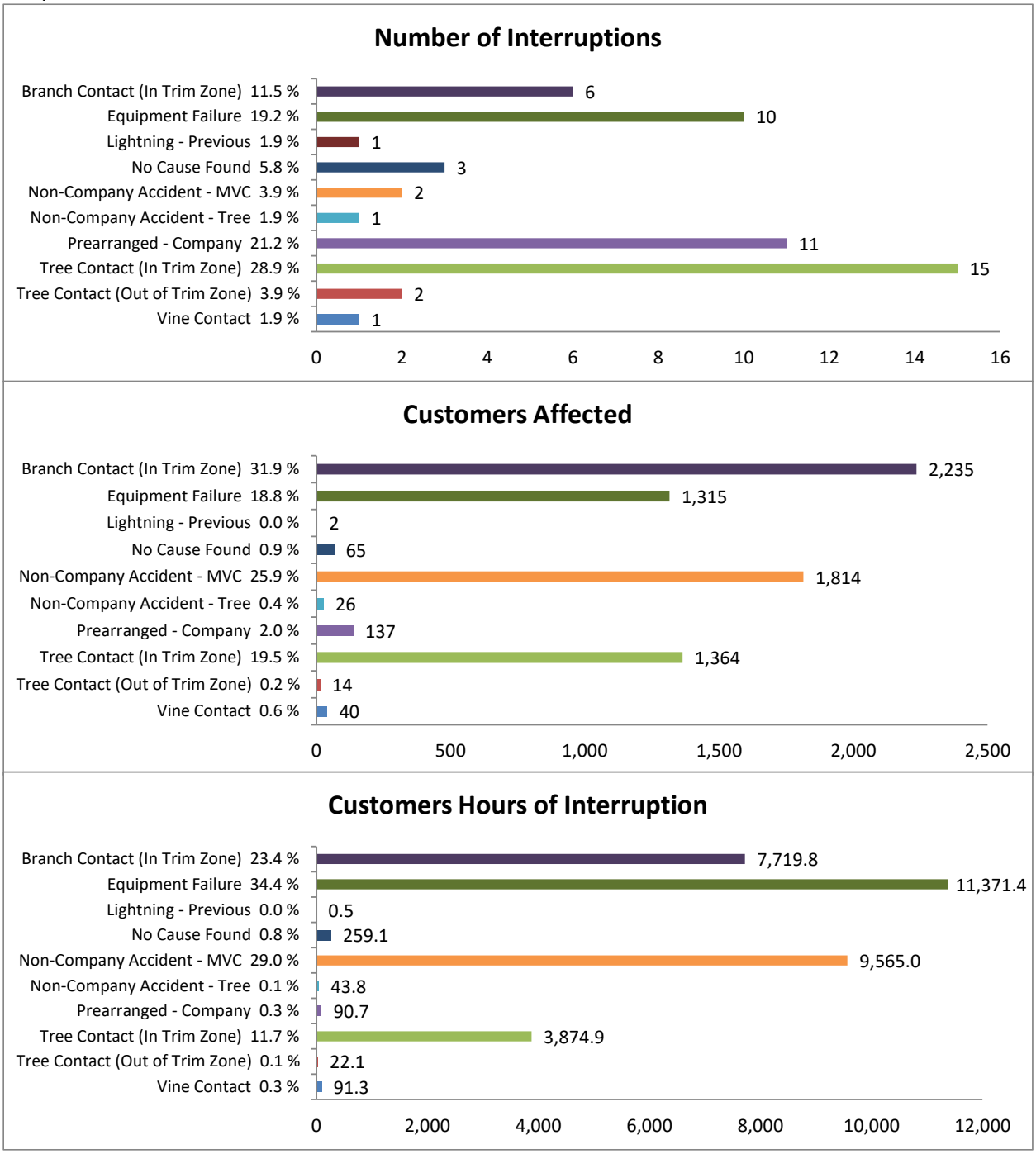
The remaining forty-eight interruptions were the result of five branch contact (in trim zone), nine equipment failures, one lightning previous, three no cause found, one non-Company accident - MVC, one non-Company accident – tree, eleven pre-arranged Company, fourteen tree contact (in trim zone), two tree contact (out trim zone), and one vine contact. These forty-eight events accounted for 9,642 (31%) of the 33,039 total customer-hours of interruption for the year.

In 2024, the Company has scheduled a detailed circuit patrol along with Distribution Infrared scan. This circuit will be thoroughly patrolled for defective components, animal guards, lightning protection, and overgrown vegetation. The Company intends to correct identified defects from the inspections.

9-1-48 At A Glance

Circuit Stats			
	Count	Rank Division	Rank Company
Customers	1,819	7	38
Critical Customers	7	12	78
Circuit Miles	40.4	18	34
Customers/Mile	45	20	184
Connected kVA	16,569	32	154
Automation			
	Y/N	**Sister Circuit**	
Auto-Loop	N	NA	

Graph 5.1 - Circuit 9-1-48 – One-Year Performance



5.3.2 CIRCUIT 103-4-13

Circuit 103-4-13 ranked second in the Western Division per 2023 Circuit Priority Rating system. The circuit originates from the Westtown Substation in Orange County, NY and serves 1,757 customers on 84 circuit miles.

In 2023, there were 41 interruptions, which affected 3,104 customers and resulted in 7,327 customer-hours of interruption. The table below identifies the one-year outage data associated with circuit 103-4-13, grouped by cause.

One-Year Summary (1/1/2023 - 12/31/2023) 103-4-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Bird	1	2.4	4	0.1	6.5	0.1
Animal - Other	1	2.4	20	0.6	28.0	0.4
Branch Contact (In Trim Zone)	2	4.9	63	2.0	264.3	3.6
Equipment Failure	10	24.4	2,063	66.5	3,520.6	48.1
Lightning - Previous	1	2.4	24	0.8	432.4	5.9
No Cause Found	7	17.1	93	3.0	204.1	2.8
Non-Company Accident - MVC	2	4.9	6	0.2	9.0	0.1
Prearranged - Company	2	4.9	4	0.1	7.1	0.1
Tree Contact (In Trim Zone)	15	36.6	827	26.6	2,854.8	39.0
Total	**41**		**3,104**		**7,326.9**	

In 2023, three incidents accounted for 1,917 (62%) of all customers affected and 4,244 (58%) of all customer-hours of interruption. These three incidents were result of one equipment failure and two tree contact in trim zone.

The largest event occurred on November 13, 2023, on Country Route 1, Westtown, NY. The outage was the result of an equipment failure, which was due to failure of an underground conductor at two different points. The event accounted for 2,634 (53%) of the total 7,327 customer-hours of interruption for the year.

The second largest event occurred on March 11, 2023, on Greenville Tpke, Middletown, NY. The outage was the result of tree contact with a primary conductor, causing the primary conductor to contact the ground. The event accounted for 964 (13%) of the total 7,327 customer-hours of interruption for the year.

The third largest event occurred on September 12, 2023, on Greenbriar Drive, Port Jervis, NY. The outage was the result of tree contact that caused damage to a transformer, two sections of primary conductor and various hardware associated with the conductors. The event accounted for 647 (9%) of the total 7,327 customer-hours of interruption for the year.

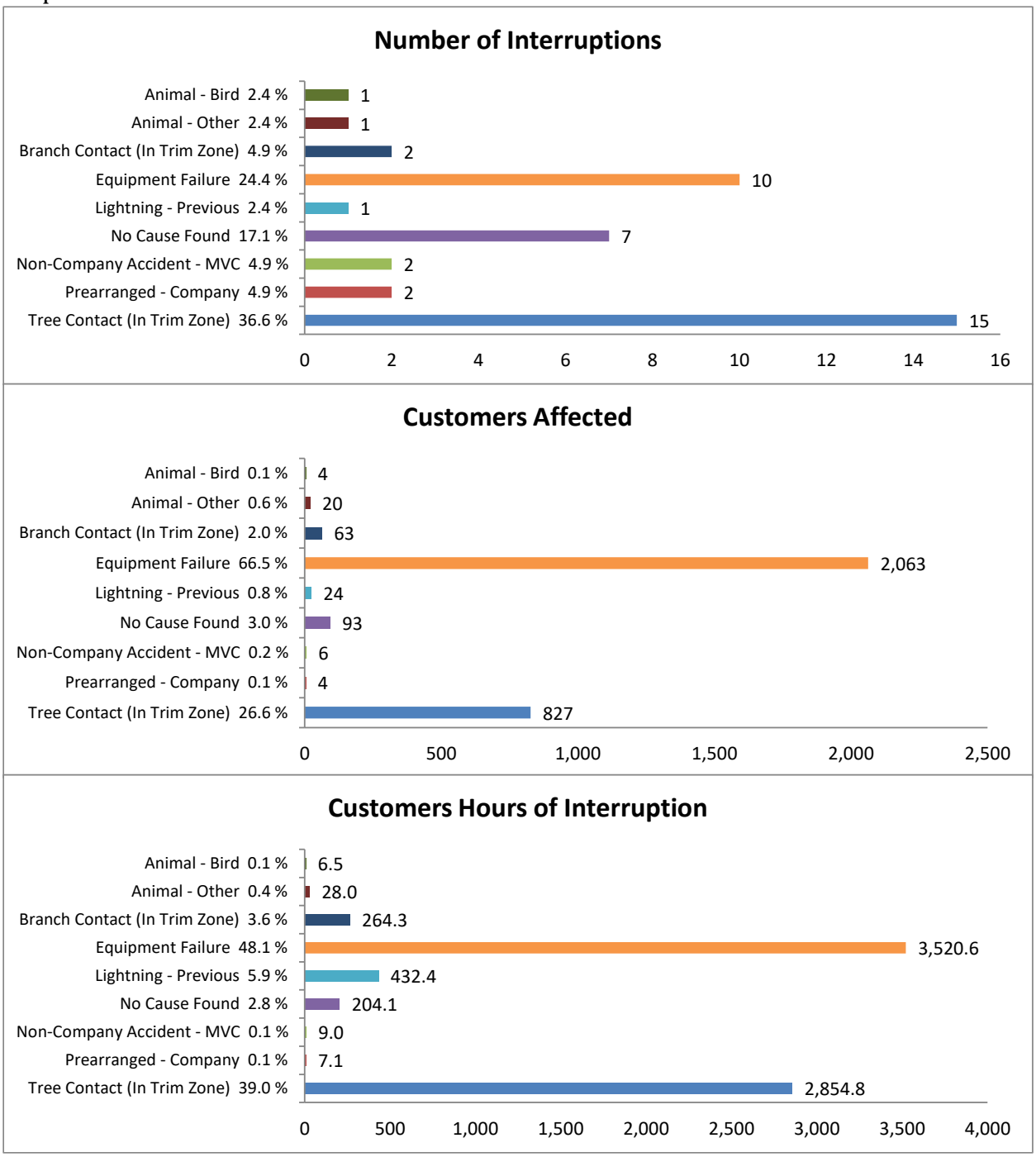
The remaining thirty-eight interruptions were the result of one animal contact – bird, one animal contact – other, two branch contact (in trim zone), nine equipment failures, one lightning present, seven no cause found, two non-Company accident - motor vehicle, and thirteen tree contact (in trim zone). These thirty-eight events accounted for 3,083 (42%) of the 7,327 total customer-hours of interruption for the year.

In 2024, the Company has scheduled a detailed circuit patrol along with Distribution Infrared Scan. This circuit will be thoroughly patrolled for defective components, animal guards, lightning protection, and overgrown vegetation. The Company intends to correct identified defects from the inspections.

103-4-13 At A Glance

Circuit Stats			
	Count	**Rank Division**	**Rank Company**
Customers	1,757	9	45
Critical Customers	11	6	36
Circuit Miles	84	2	2
Customers/Mile	21	40	271
Connected kVA	32,610	4	12
Automation			
	Y/N	**Sister Circuit**	
Auto-Loop	N	NA	

Graph 5.2 - Circuit 103-4-13 – One-Year Performance



5.3.3 CIRCUIT 5-3-34

Circuit 5-3-34 is ranked third in the Western Division per 2023 Circuit Priority Rating system. The circuit originates from the Cuddebackville Substation, in Cuddebackville, New York and it serves 1,547 customers 69.1 circuit miles.

In 2023, there were 71 interruptions, which affected 6,764 customers and resulted in 13,234 customer-hours of interruption. The table below identifies the one-year outage data associated with circuit 5-3-34, grouped by cause.

One-Year Summary (1/1/2023 - 12/31/2023) 5-3-34						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Branch Contact (In Trim Zone)	2	2.8	178	2.6	402.0	3.0
Branch Contact (Out of Trim Zone)	1	1.4	6	0.1	54.1	0.4
Equipment Failure	6	8.5	1,764	26.1	3,001.2	22.7
No Cause Found	2	2.8	659	9.7	1,127.7	8.5
Non-Company Accident - MVC	7	9.9	2,180	32.2	3,077.7	23.3
Non-Company Accident - Tree	1	1.4	6	0.1	64.7	0.5
Prearranged - Company	4	5.6	187	2.8	326.5	2.5
Tree Contact (In Trim Zone)	46	64.8	1,762	26.1	5,120.0	38.7
Tree Contact (Out of Trim Zone)	1	1.4	16	0.2	36.0	0.3
Vine Contact	1	1.4	6	0.1	24.1	0.2
Total	**71**		**6,764**		**13,233.9**	

In 2023, three incidents accounted for 1,628 (24%) of all customers affected and 3,239 (24%) of all customer-hours of interruption. These three incidents were equipment failure, non-Company accident – MVC and no cause found.

The largest event occurred on August 4, 2023, 0n Perron Drive, Wurtsboro, NY. The outage was the result of equipment failure, a primary conductor failed and fell on the ground causing a recloser to lock out. The event accounted for 1,272 (10%) of the total 13,234 customer-hours of interruption for the year.

The second largest event occurred on April 11, 2023, on Marc Lane, Wurtsboro, NY. The outage was the result of a motor vehicle collision, a tractor trailer collided with a junction pole, breaking the pole, and taking the primary conductor down. The circuit needed to be deenergized for safety due to occupant being trapped in the vehicle. The event accounted for 1,045 (8%) of the total 13,234 customer-hours of interruption for the year.

The third largest event occurred on August 4, 2023, on State Route 209, Westbrookville, NY. The cause of the recloser tripping open was not found and the outage was labeled as no cause found. The event accounted for 922 (7%) of the total 13,234 customer-hours of interruption for the year.

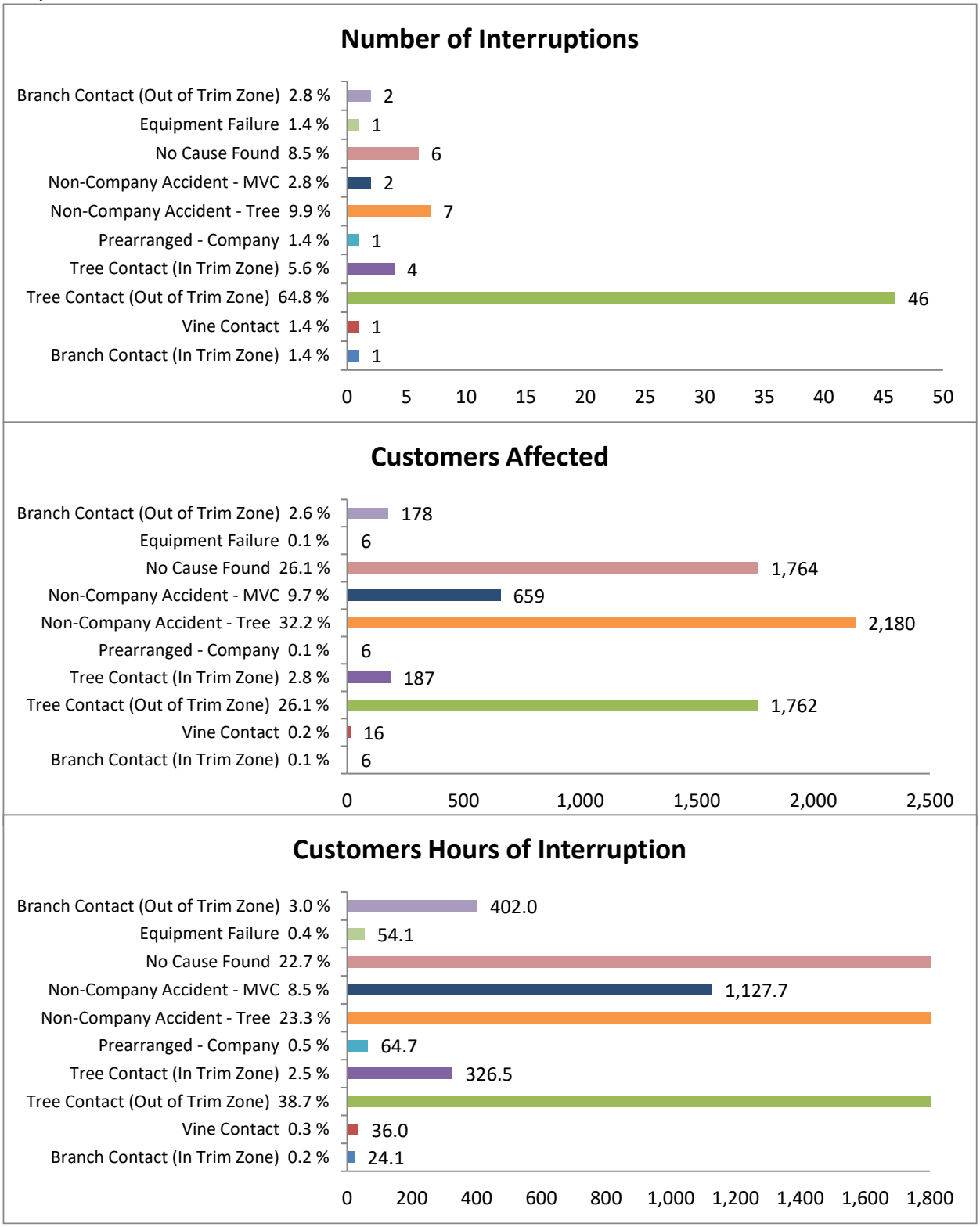
The remaining sixty-eight interruptions were the result of two branch contact (In trim zone), one branch contact (out of trim zone), five equipment failures, one no cause found, six non-Company accident – MVC, one non-Company accident – tree, four prearranged Company, forty-six tree contact (in trim zone), one tree contact (out trim zone) and one vine contact. These sixty-eight events accounted for 9,995 (76%) of the 13,234 total customer-hours of interruption for the year.

In 2024, the Company has scheduled a detailed circuit patrol along with Distribution Infrared Scan. This circuit will be thoroughly patrolled for defective components, animal guards, lightning protection, and overgrown vegetation. The Company intends to correct identified defects from the inspections.

5-3-34 At A Glance

Circuit Stats			
	Count	Rank Division	Rank Company
Customers	1,547	12	63
Critical Customers	11	6	36
Circuit Miles	69.1	4	5
Customers/Mile	22	35	262
Connected kVA	23,410	18	62
Automation			
	Y/N	**Sister Circuit**	
Auto-Loop	Y	109-4-34	

Graph 5.3 - Circuit 5-3-34 – One-Year Performance



5.3.4 CIRCUIT 109-4-34

Circuit 109-3-34 ranked fourth in the Western Division per 2023 Circuit Priority Rating system. The circuit originates from the Washington Heights Substation, in Middletown, NY and serves 2,024 customers on 73.5 circuit miles.

In 2023, there were 46 interruptions, which affected 4,033 customers and resulted in 8,821 customer-hours of interruption. The table below identifies the one-year outage data associated with circuit 109-3-34, grouped by cause.

One-Year Summary (1/1/2023 - 12/31/2023) 109-4-34						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Branch Contact (In Trim Zone)	2	4.4	1,095	27.2	2,251.3	25.5
Equipment Failure	9	19.6	299	7.4	1,278.4	14.5
Lightning - Previous	1	2.2	4	0.1	19.6	0.2
No Cause Found	1	2.2	41	1.0	82.0	0.9
Non-Company Accident - MVC	5	10.9	507	12.6	885.4	10.0
Overload - Customer	1	2.2	7	0.2	43.6	0.5
Prearranged - Company	6	13.0	66	1.6	110.7	1.3
Prearranged - Customer	1	2.2	3	0.1	9.9	0.1
Tree Contact (In Trim Zone)	18	39.1	1,768	43.8	3,165.7	35.9
Tree Contact (Out of Trim Zone)	1	2.2	118	2.9	397.3	4.5
Vine Contact	1	2.2	125	3.1	577.1	6.5
Total	**46**		**4,033**		**8,821.0**	

In 2023, three incidents accounted for 2,091(52%) of all customers affected and 3,600 (41%) of all customer-hours of interruption. These three incidents were caused by branch contact (in trim zone) and two tree contacts (in trim zone).

The largest event occurred on May 17, 2023, on Bloomingburg Road, Bloomingburg, NY. The outage was the result of a branch contact (in trim zone). A large limb came down on to the primary conductor, taking down the conductor and damaging a transformer. The event accounted for 1,074 (12%) of the total 8,821 customer-hours of interruption for the year.

The second largest event occurred on August 14, 2023, on Route 17K, Bloomingburg, NY. The outage was the result of tree contact (in trim zone). A tree came down across all three primary phases, the autoloop operated and deenergized the affected section of the circuit as one of the reclosers recognized the fault. The event accounted for 666 (8%) of the total 8,821 customer-hours of interruption for the year.

The third largest event occurred on October 30, 2023, on Mamakating Road, Wurtsboro, NY. The outage was the result of tree contact (in trim zone). A tree took down two sections of primary conductor causing a recloser to operate and deenergize customers downstream of the device. The event accounted for 351 (4%) of the total 8,821 customer-hours of interruption for the year.

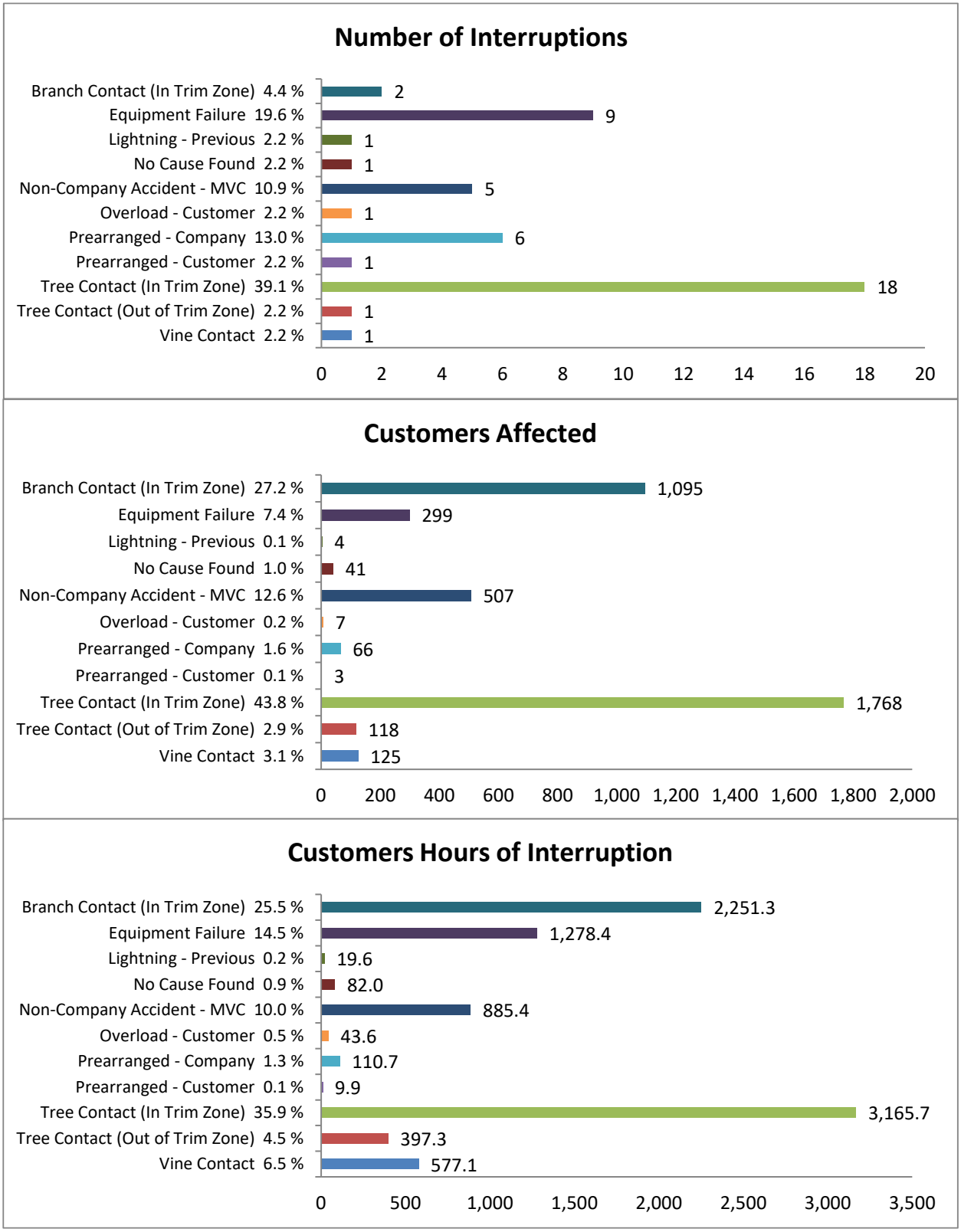
The remaining forty-three interruptions were the result of one branch contact (In trim zone), nine equipment failures, one lightning – previous, one no cause found, five non-Company accident – MVC, one overload - customer, six prearranged - Company, one prearranged - customer, sixteen tree contact (in trim zone), one tree contact (out trim zone) and one vine contact. These forty-three events accounted for 5,221 (59%) of the 8,821 total customer-hours of interruption for the year.

In 2024, the Company has scheduled a detailed circuit patrol along with Distribution Infrared. This circuit will be thoroughly patrolled for defective components, animal guards, lightning protection, and overgrown vegetation. The Company intends to correct identified defects from the inspections.

109-4-34 At A Glance

Circuit Stats			
	Count	**Rank Division**	**Rank Company**
Customers	2,024	5	25
Critical Customers	13	2	20
Circuit Miles	73.5	3	4
Customers/Mile	28	26	244
Connected kVA	29,608	8	26
Automation			
	Y/N	**Sister Circuit**	
Auto-Loop	Y	5-3-34 & Line 6	

Graph 5.4 - Circuit 109-4-34 – One-Year Performance



5.3.5 CIRCUIT 10-2-13

Circuit 10-2-13 is ranked fifth in the Western Division per 2023 Circuit Priority Rating system. The circuit originates from the Bloomingburg Substation in Summitville, NY and serves a total of 670 customers on 47.3 circuit miles.

In 2023, there were 53 interruptions, which affected 5,255 customers and resulted in 8,759 customer-hours of interruption. The table below identifies the one-year outage data associated with circuit 10-2-13, grouped by cause.

One-Year Summary (1/1/2023 - 12/31/2023) 10-2-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Branch Contact (In Trim Zone)	1	1.9	4	0.1	14.1	0.2
Equipment Failure	4	7.6	725	13.8	577.3	6.6
Lightning - Present	2	3.8	1,352	25.7	1,847.7	21.1
No Cause Found	3	5.7	721	13.7	1,213.2	13.9
Non-Company Accident - MVC	1	1.9	660	12.6	1,177.0	13.4
Prearranged - Company	8	15.1	37	0.7	24.8	0.3
Tree Contact (In Trim Zone)	31	58.5	1,367	26.0	3,568.9	40.7
Tree Contact (Out of Trim Zone)	3	5.7	389	7.4	336.1	3.8
Total	**53**		**5,255**		**8,759.1**	

In 2023, three incidents accounted for 2,002 (38%) of all customers affected and 3,707 (42%) of all customer-hours of interruption. These three incidents were non-company accident – MVC, no cause found and lightning – present.

The largest event occurred on April 11, 2023, on Minister-Flats Road, Phillipsport, NY. The outage was the result of a motor vehicle collision, a tractor trailer collided with a junction pole, breaking the pole, and taking the primary conductor down. The circuit needed to be deenergized for safety due to occupant being trapped in the vehicle. The event accounted for 1,716 (20%) of the total 8,759 customer-hours of interruption for the year.

The second largest event occurred on August 4, 2023, on Fayer Court, Wurtsboro, NY. The outage was the result of tree contact (in trim zone). Tree contacted primary conductor causing recloser to open and isolate that section of circuit. The event accounted for 1,074 (12%) of the total 8,759 customer-hours of interruption for the year.

The third largest event occurred on August 4, 2023, on Phillipsport Road, Spring Glen, NY. The outage was the result of a lightning strike causing recloser to trip open. The event accounted for 917 (10%) of the total 8,759 customer-hours of interruption for the year.

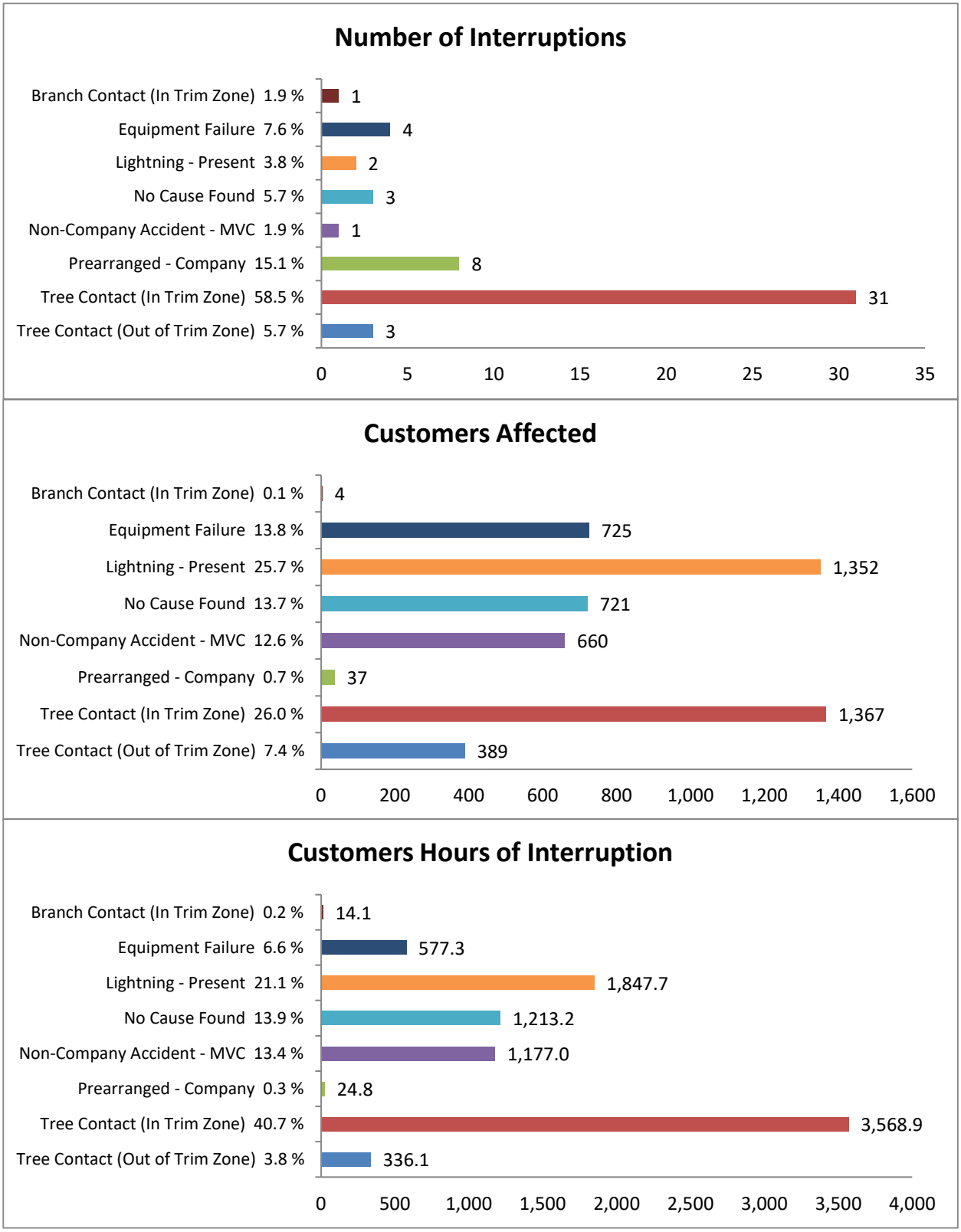
The remaining fifty interruptions were the result of one branch contact (in trim zone), four equipment failures, one lightning present, two no cause found, eight prearranged Company, thirty-one tree contact (in trim zone) and three tree contact (out of trim zone). These fifty events accounted for 5,052 (58%) of the 8,759 total customer-hours of interruption for the year.

In 2024, the Company has scheduled a detailed circuit patrol along with Distribution Infrared Scan. This circuit will be thoroughly patrolled for defective components, animal guards, lightning protection, and overgrown vegetation. The Company intends to correct identified defects from the inspections.

10-2-13 At A Glance

Circuit Stats			
	Count	Rank Division	Rank Company
Customers	670	37	202
Critical Customers	2	35	209
Circuit Miles	47.3	11	21
Customers/Mile	14	48	290
Connected kVA	12,450	37	208
Automation			
	Y/N	**Sister Circuit**	
Auto-Loop	N	NA	

Graph 5.5 - Circuit 10-2-13 – One-Year Performance



6. 2022 WPC Analysis

5.4 Overview

The following section of this Report reviews and discusses the 2023 performance of circuits identified in 2022 as being the worst performers in each of the Company's three operating divisions.

Of the 15 circuits under consideration, 10 saw enough improvement to drop from the list of worst performers. Four circuits were in the Eastern Division, two circuits were in the Central Division and four circuits were in the Western Division. Of the worst performers in the Eastern Division from 2022, only one remained as the worst performer in 2023, while positions in the Central and Western Divisions, three, and one position from 2022, respectively, remained in 2023 (see tables below).

Rank	Eastern		Central		Western	
	2022	2023	2022	2023	2022	2023
1	17-2-13	45-8-13	84-1-13	84-3-13	12-1-13	9-1-48
2	54-7-13	19-14-13	80-3-13	80-3-13	10-2-13	103-4-13
3	44-1-13	19-10-13	89-2-13	76-3-13	5-10-13	5-3-34
4	45-3-13	27-3-13	71-3-13	89-2-13	116-8-13	109-4-34
5	19-10-13	23-4-13	89-1-13	71-3-13	7-2-13	10-2-13

Note: Red indicates repeat circuit from previous year

Circuit	Division	2022 Rank	2023 Rank	Performance Change
17-2-13	East	1	43	▲ 42
54-7-13	East	2	41	▲ 39
44-1-13	East	3	56	▲ 53
45-3-13	East	4	13	▲ 9
19-10-13	East	5	3	▼ -2
84-1-13	Central	1	11	▲ 10
80-3-13	Central	2	2	▲ 0
89-2-13	Central	3	4	▲ 1
71-3-13	Central	4	5	▲ 1
89-1-13	Central	5	8	▲ 3
12-1-13	West	1	6	▲ 5
10-2-13	West	2	5	▲ 3
5-10-34	West	3	8	▲ 5
116-8-13	West	4	43	▲ 39
7-2-13	West	5	22	▲ 17

5.5 Eastern Division

5.5.1 CIRCUIT 17-2-13

Circuit 17-2-13 ranked first in the Eastern Division, in accordance with the Company's 2022 Circuit Priority Rating System. The performance of the circuit improved in 2023 and is now ranked forty-second in the Eastern Division priority circuit rating system. Circuit 17-2-13 originates from the Burns Substation, Spring Valley, New York and serves 2,924 customers over 22 circuit miles.

In 2022, there were 14 interruptions, which affected 5,519 customers and resulted in 3,608 customer-hours of interruption. In 2023, there were 13 interruptions, which affected 495 customers that resulted in 691 customer-hours of interruption.

A review of 2022 versus 2023 data, identified an improvement in all three categories, number of interruptions, number of customers affected and total customer-hours of interruption by 7%, 91% and 81% respectively. The tables below identify the outage data associated with circuit 17-2-13 for each of the respective years, grouped by cause.

One-Year Summary (1/1/2022 - 12/31/2022) 17-2-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Squirrel	0	0.0	0	0.0	0.0	0.0
Branch Contact (In Trim Zone)	0	0.0	0	0.0	0.0	0.0
Equipment Failure	5	35.7	3,952	71.6	1,889.8	52.4
Lightning - Present	1	7.14	66	1.2	178.2	4.94
No Cause Found	4	28.57	1,403	25.42	1,232.4	34.15
Non-Company Accident - Other	1	7.1	14	0.3	17.0	0.5
Prearranged - Company	0	0.0	0	0.0	0.0	0.0
Tree Contact (In Trim Zone)	2	14.3	19	0.3	52.7	1.5
Vine Contact	1	7.14	65	1.18	238.3	6.6
Total	**14**		**5,519**		**3,608.5**	

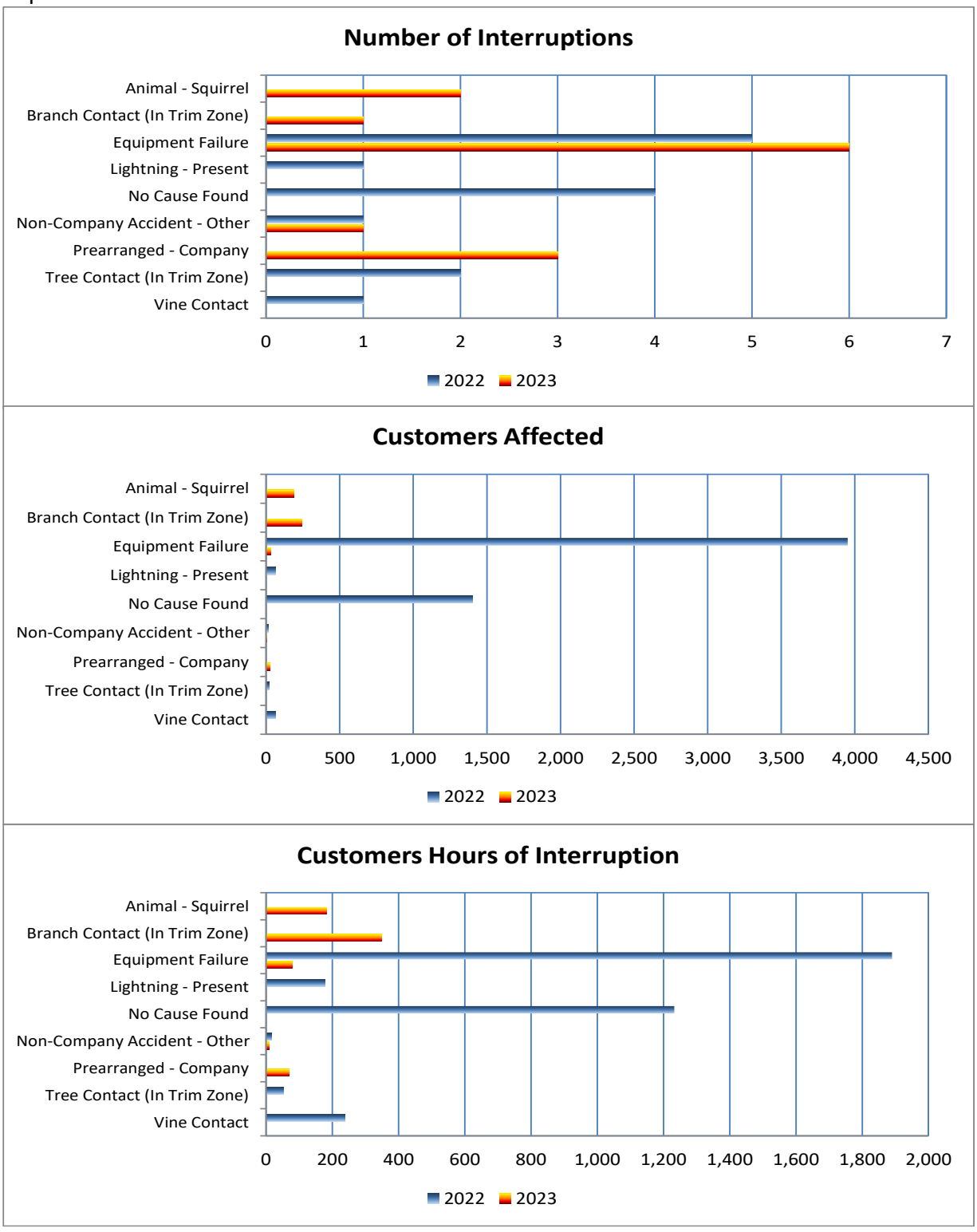
One-Year Summary (1/1/2023 - 12/31/2023) 17-2-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Squirrel	2	15.38	189	38.18	182.9	26.45
Branch Contact (In Trim Zone)	1	7.69	244	49.29	350.1	50.64
Equipment Failure	6	46.15	33	6.67	79.7	11.53
Lightning - Present	0	0	0	0	0.0	0
No Cause Found	0	0	0	0	0.0	0
Non-Company Accident - Other	1	7.69	3	0.61	8.7	1.26
Prearranged - Company	3	23.1	26	5.3	69.9	10.1
Tree Contact (In Trim Zone)	0	0	0	0	0.0	0
Vine Contact	0	0	0	0	0.0	0
Total	**13**		**495**		**691.4**	

In 2022, a small number of outages on mainline sections of the circuit that had affected a large number of customers had a significant impact on the overall performance of the circuit.

Two of the 14 incidents accounted for 2,750 (76%) of the 3,608 total customer-hours of interruption for the year. The two incidents were the result of equipment failure, and no cause found. Removing these two events would drop this circuit off the worst performing circuit list. Given that these two events had such a significant impact to the circuit's reliability performance, 2022 should be considered a deviation from the circuit's general performance.

In 2023, the Company completed a Distribution Infrared Scan on the circuit and did not identify any deficiencies on the circuit.

Graph 5.1 - Circuit 17-2-13 Year-Over-Year Performance 2022 – 2023



5.5.2 CIRCUIT 54-7-13

Circuit 54-7-13 ranked second in the Eastern Division, in accordance with the Company's 2022 Circuit Priority Rating system. The circuit's performance improved and is now ranked thirty-ninth in the Eastern Division per 2023 Circuit Priority Rating system. The circuit originates from the Orangeburg Substation in Rockland County, New York and serves a total of 1,404 customers over 17.8 circuit miles.

In 2022, there were 16 interruptions, which affected 3,227 customers and resulted in 4,219 customer-hours of interruption. In 2023, there were 11 interruptions, which affected 262 customers that resulted in 1,026 customer-hours of interruption.

The review of 2022 versus 2023 data, identified an improvement in all three categories: number of interruptions, number of customers affected and total customer-hours of interruption by 31%, 93% and 76%, respectively. The tables below identify the outage data associated with circuit 54-7-13 for each of the respective years, grouped by cause.

One-Year Summary (1/1/2022 - 12/31/2022) 54-7-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Bird	1	6.3	3	0.1	6.3	0.2
Animal - Squirrel	0	0.0	0	0.0	0.0	0.0
Equipment Failure	6	37.5	1,424	44.1	1,423.7	33.7
Lightning - Present	1	6.3	41	1.3	87.5	2.1
Non-Company Accident - MVC	2	12.5	750	23.2	480.5	11.4
Non-Company Accident - Other	1	6.3	16	0.5	16.0	0.4
Prearranged - Company	2	12.5	15	0.5	15.5	0.4
Tree Contact (In Trim Zone)	1	6.3	71	2.2	133.7	3.2
Tree Contact (Out of Trim Zone)	2	12.5	907	28.1	2,055.9	48.7
Total	**16**		**3,227**		**4,219.1**	

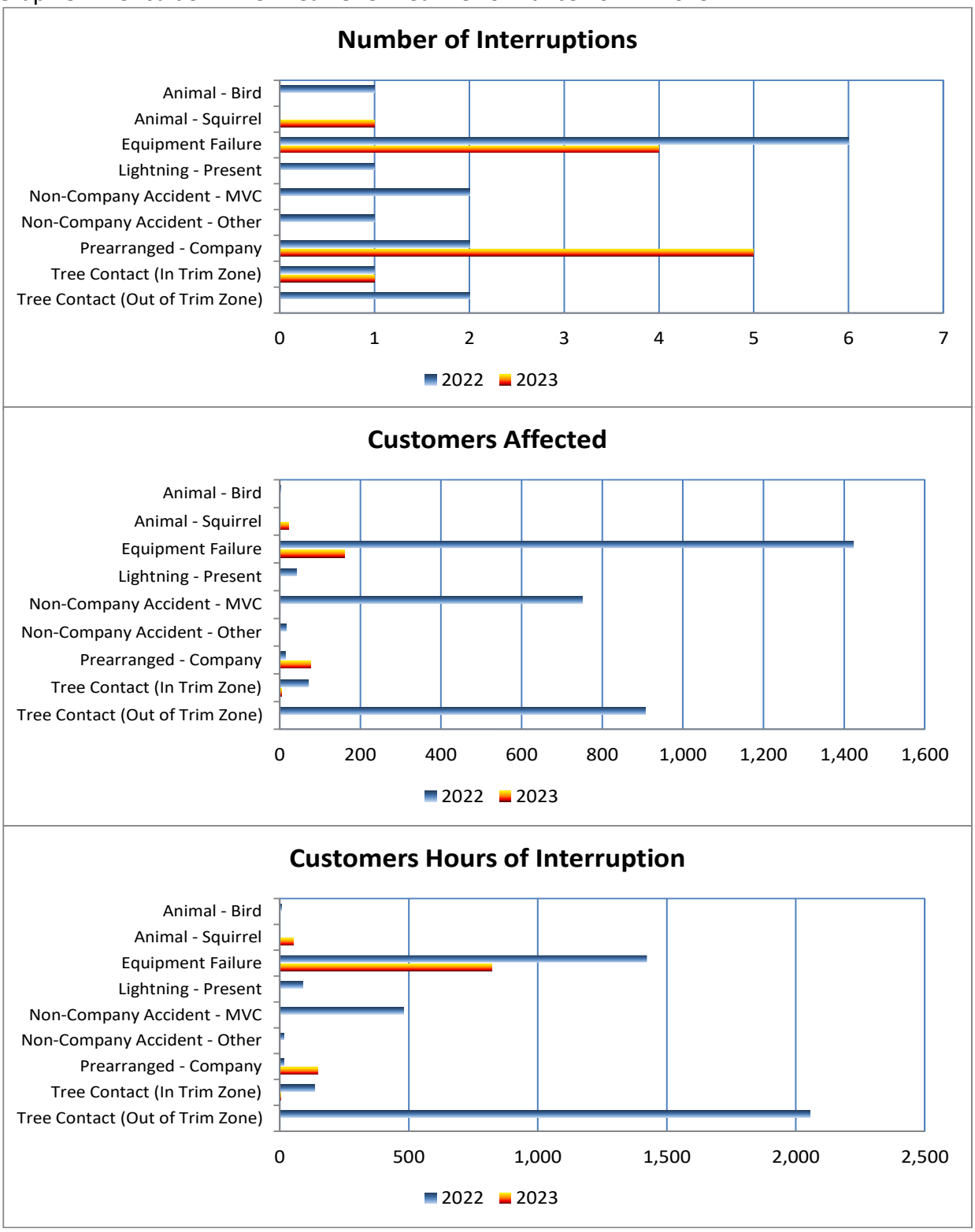
One-Year Summary (1/1/2023 – 12/31/2023) 54-7-13						
Cause	**No. of Interruptions**	**Pct. Of Interruptions**	**Customers Affected**	**Pct. Of Customers Affected**	**Customer Hours**	**Pct. Of Customer-Hours**
Animal – Bird	0	0.0	0	0.0	0.0	0.0
Animal – Squirrel	1	9.1	22	8.4	53.5	5.2
Equipment Failure	4	36.4	160	61.1	822.0	80.1
Lightning – Present	0	0.0	0	0.0	0.0	0.0
Non-Company Accident – MVC	0	0.0	0	0.0	0.0	0.0
Non-Company Accident – Other	0	0.0	0	0.0	0.0	0.0
Prearranged – Company	5	45.5	76	29.0	148.2	14.4
Tree Contact (In Trim Zone)	1	9.1	4	1.5	2.9	0.3
Tree Contact (Out of Trim Zone)	0	0.0	0	0.0	0.0	0.0
Total	**11**		**262**		**1,026.6**	

A small number of outages on mainline sections of the circuit that have affected a large number of customers have had a significant impact on the overall performance of the circuit.

In 2022, three of the 16 incidents accounted for 3,438 (93%) of the 4,219 total customer-hours of interruption for the year. These three incidents were due to tree contact, equipment failure and non-Company accident – motor vehicle, which accounted for 6,114 (63%) of the 9,651 total customer-hours of interruption for the year. Removing these three events would drop this circuit off the worst performing circuit list. Given that these three events had such a significant impact to the circuit's reliability performance, 2022 should be considered a deviation from the circuit's general performance.

In 2023, the Company completed a Distribution Infrared Scan on the circuit and did not identify any deficiencies on the circuit.

Graph 5.2 - Circuit 54-7-13 Year-Over-Year Performance 2022 – 2023



5.5.3 CIRCUIT 44-1-13

Circuit 44-1-13 ranked third in the Eastern Division, in accordance with the Company's 2022 circuit priority rating system. The circuit's performance improved and is now ranked fifty-sixth in the Eastern Division per 2023 Circuit Priority Rating system. The circuit originates from the Monsey Substation in Rockland County, New York and serves a total of 1,088 customers over 4.8 circuit miles.

In 2022, there were seven interruptions, which affected 1,315 customers and resulted in 3,479 customer-hours of interruption. In 2023, there were 4 interruptions, which affected 308 customers that resulted in 1,887 customer-hours of interruption.

A review of 2022 versus 2023 data, identified an improvement in all three categories: number of interruptions, number of customers affected and total customer-hours of interruption by 42%, 77% and 46% respectively. The tables below identify the outage data associated with circuit 44-1-13 for each of the respective years, grouped by cause.

One-Year Summary (1/1/2022 - 12/31/2022) 44-1-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Other	0	0.0	0	0.0	0.0	0.0
Animal - Squirrel	2	28.6	813	61.8	2,645.3	76.0
Equipment Failure	4	57.1	496	37.7	826.2	23.8
No Cause Found	0	0.0	0	0.0	0.0	0.0
Prearranged - Company	1	14.3	6	0.5	7.5	0.2
Total	**7**		**1,315**		**3,479.0**	

One-Year Summary (1/1/2023 - 12/31/2023) 44-1-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Other	1	25.0	20	6.5	21.0	1.1
Animal - Squirrel	0	0.0	0	0.0	0.0	0.0
Equipment Failure	1	25.0	105	34.1	327.3	17.3
No Cause Found	1	25.0	178	57.8	1,536.7	81.4
Prearranged - Company	1	25.0	5	1.6	2.5	0.1
Total	**4**		**308**		**1,887.5**	

In 2022, one incident accounted for 76% of all customers affected and 62% of all customer-hours of interruption. This one incident was the result of animal contact with the primary conductor which accounted for 2,637 (63%) of the 3,479 total customer-hours of interruption for the year.

Removing this single event would drop this circuit off the worst performing circuit list. Given that this single event had such a significant impact to the circuit's reliability performance, 2022 should be considered a deviation from the circuit's general performance.

In 2023, the Company completed a Distribution Infrared Scan on the circuit and did not identify any deficiencies on the circuit.

Graph 5.3 - Circuit 44-1-13 Year-Over-Year Performance 2022 - 2023

5.5.4 CIRCUIT 45-3-13

Circuit 45-3-13 ranked fourth in the Eastern Division, in accordance with the Company's 2022 Circuit Priority Rating system. The circuit's performance of improved and is now ranked thirteenth in the Eastern Division per 2023 Circuit Priority Rating system. The circuit originates from the New Hempstead Substation in Rockland County, New York and serves a total of 1,362 customers over 14.9 circuit miles.

In 2022, there were 20 interruptions, which affected 2,454 customers and resulted in 2,880 customer-hours of interruption. In 2023, there were thirteen interruptions, which affected 1,705 customers that resulted in 1,975 customer-hours of interruption.

A review of 2022 versus 2023 data, identified an improvement in all three categories: number of interruptions, number of customers affected and total customer-hours of interruption by 54%, 31% and 31%, respectively. The tables below identify the outage data associated with circuit 45-3-13 for each of the respective years, grouped by cause.

One-Year Summary (1/1/2022 - 12/31/2022) 45-3-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Squirrel	6	30.0	372	15.2	901.8	31.3
Equipment Failure	7	35.0	221	9.0	336.6	11.7
Lightning - Present	0	0.0	0	0.0	0.0	0.0
No Cause Found	1	5.0	95	3.9	180.5	6.3
Non-Company Accident - MVC	3	15.0	1,387	56.5	1,251.7	43.5
Prearranged - Company	2	10.0	350	14.3	78.3	2.7
Tree Contact (In Trim Zone)	1	5.0	29	1.2	131.5	4.6
Total	**20**		**2,454**		**2,880.3**	

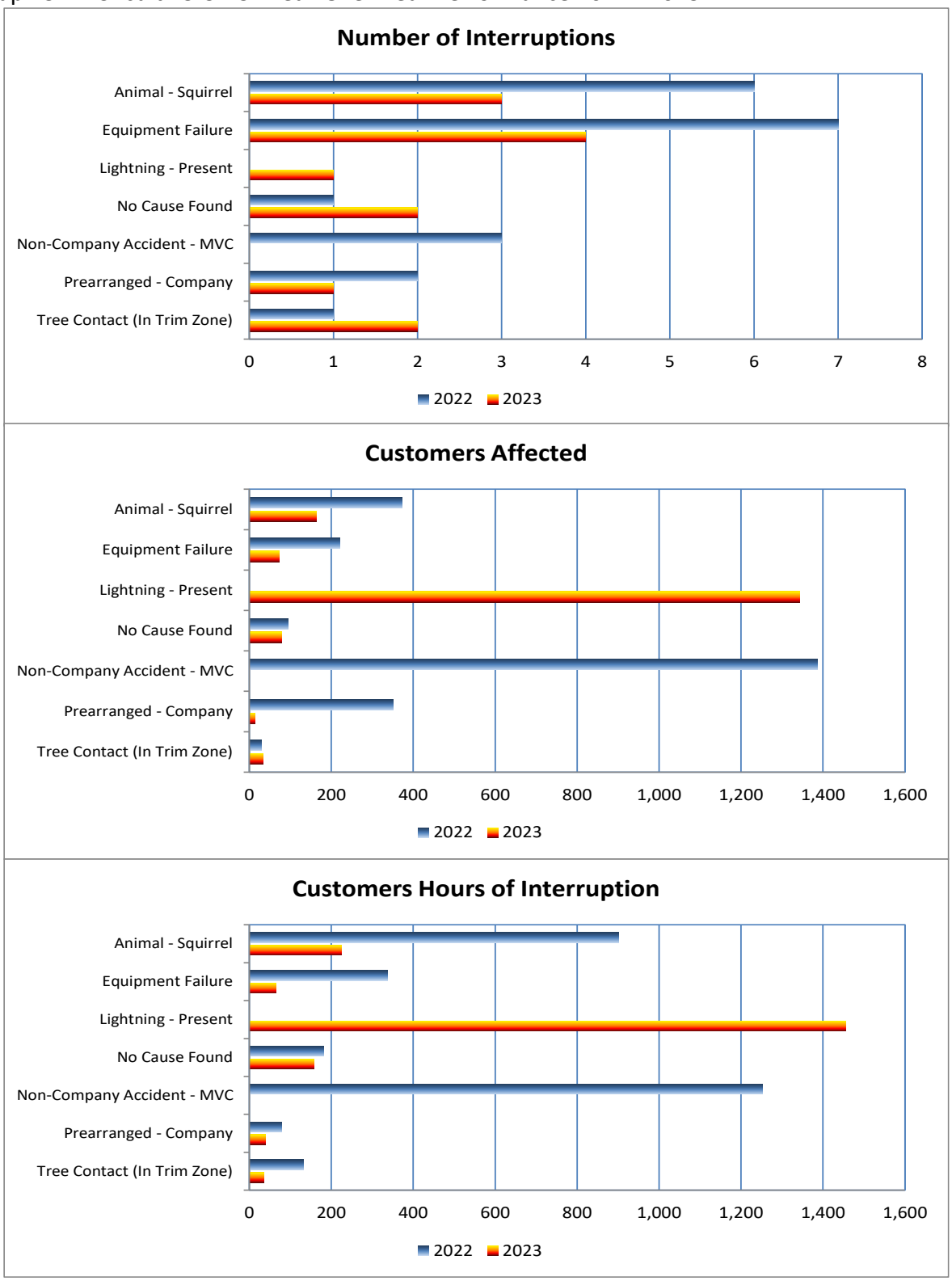
One-Year Summary (1/1/2023 - 12/31/2023) 45-3-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Squirrel	3	23.1	164	9.6	223.7	11.3
Equipment Failure	4	30.8	72	4.2	65.8	3.3
Lightning - Present	1	7.7	1,343	78.8	1,454.9	73.6
No Cause Found	2	15.4	79	4.6	156.8	7.9
Non-Company Accident - MVC	0	0.0	0	0.0	0.0	0.0
Prearranged - Company	1	7.7	13	0.8	39.0	2.0
Tree Contact (In Trim Zone)	2	15.4	34	2.0	35.7	1.8
Total	**13**		**1,705**		**1,975.8**	

In 2022, three incidents accounted for 71% of all customers affected and 65% of all customer-hours of interruption. These three incidents were non-company accident – Motor Vehicle, and two animal contacts which accounted for 2,050 (71%) of the 2,880 total customer-hours of interruption for the year.

The circuit improved significantly in 2023 with reductions in equipment failure hours and non-company accident – motor vehicle. In 2023, the circuit had one incident which account for 1,454 (74%) of the 1,975 total customer-hours of interruption. This was incident was the result of a lightning strike onto a double circuit pole where the top circuit primary wire went into the bottom circuit.

In 2023, the Company completed a Distribution Infrared Scan on the circuit and did not identify any deficiencies on the circuit.

Graph 5.4 - Circuit 45-3-13 Year-Over-Year Performance 2022 - 2023



5.5.5 CIRCUIT 19-10-13

Circuit 19-10-13 is ranked fifth in the Eastern Division per 2022 Priority Circuit Rating system. The circuit's performance declined and is now ranked third in the Eastern Division per in 2023 Circuit Priority Rating system. The circuit originates from the Burns Substation in Rockland County, New York and serves a total of 3,471 customers over 17.1 circuit miles.

In 2022, there were twenty-seven interruptions, which affected 1,657 customers and resulted in 2,111 customer-hours of interruption. In 2023, there were thirty-one interruptions, which affected 2,947 customers that resulted in 7,923 customer-hours of interruption.

A review of 2022 versus 2023 data, identified an increase in all three categories: number of interruptions, number of customers affected and total customer-hours of interruption by 15%, 78% and 275%, respectively. The tables below identify the outage data associated with circuit 19-10-13 for each of the respective years, grouped by cause.

One Year Summary (1/1/2022 - 12/31/2022) 19-10-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Bird	1	3.7	23	1.4	44.1	2.1
Animal - Other	0	0.0	0	0.0	0.0	0.0
Animal - Squirrel	1	3.7	74	4.5	208.4	9.9
Equipment Failure	9	33.3	1,295	78.2	1,158.0	54.9
Lightning - Present	0	0.0	0	0.0	0.0	0.0
No Cause Found	1	3.7	86	5.2	256.6	12.2
Non-Company Accident - MVC	1	3.7	15	0.9	86.3	4.1
Non-Company Accident - Other	1	3.7	10	0.6	27.7	1.3
Overload - Customer	0	0.0	0	0.0	0.0	0.0
Prearranged - Company	10	37.0	63	3.8	33.3	1.6
Tree Contact (In Trim Zone)	3	11.1	91	5.5	297.0	14.1
Vine Contact	0	0.0	0	0.0	0.0	0.0
Total	**27**		**1,657**		**2,111.3**	

One-Year Summary (1/1/2023 - 12/31/2023) 19-10-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Bird	2	6.5	74	2.5	116.6	1.5
Animal - Other	1	3.2	35	1.2	88.7	1.1
Animal - Squirrel	3	9.7	247	8.4	550.2	6.9
Equipment Failure	5	16.1	40	1.4	136.3	1.7
Lightning - Present	1	3.2	2,258	76.6	6090.0	76.9
No Cause Found	3	9.7	91	3.1	243.0	3.1
Non-Company Accident - MVC	1	3.2	13	0.4	152.8	1.9
Non-Company Accident - Other	0	0.0	0	0.0	0.0	0.0
Overload - Customer	1	3.2	10	0.3	185.7	2.3
Prearranged - Company	13	41.9	101	3.4	104.2	1.3
Tree Contact (In Trim Zone)	0	0.0	0	0.0	0.0	0.0
Vine Contact	1	3.2	78	2.7	256.1	3.2
Total	**31**		**2,947**		**7,923.5**	

In 2022, four incidents accounted for 57% of all customers affected and 81% of all customer-hours of interruption. These four incidents were two equipment failures, one no cause found and one animal contact, which accounted for 1,196 (57%) of the 2,111 total customer-hours of interruption for the year.

In 2023, one incident accounted for 77% of both customers affected and customer-hours of interruption. This one incident was the result of lightning-present which accounted for 6,090 of the 7,923 total customer-hours of interruption for the year. Given that this single event had such a significant impact to the circuit's reliability performance, 2023 should be considered a deviation from the circuit's general performance.

In 2023, the Company completed a Distribution Infrared Scan on the circuit and did not identify any deficiencies on the circuit.

The Company installed nine MOABs (three are Tie MOABs), a sectionalizing and tie recloser on the circuit. The MOABs and reclosers will enhance the circuit by assisting with faster fault isolation and customer restoration, as well as providing enhanced reliability in cases of major storm events.

Graph 5.5 - Circuit 19-10-13 Year-Over-Year Performance 2022 - 2023

5.6 Central Division

5.6.1 CIRCUIT 84-1-13

Circuit 84-1-13 was ranked first in the Central Division, in accordance with the Company's 2022 Circuit Priority Rating system. The circuit's performance improved and now is ranked eleventh in the Central Division per 2023 Circuit Priority Rating system. The circuit originates from the Hunt Substation and serves a total of 2,209 customers over 51 circuit miles.

In 2022, there were 35 interruptions, which affected 3,983 customers and resulted in 6,629 customer-hours of interruption. In 2023, there were 37 interruptions, which affected 4,019 customers that resulted in 4,895 customer-hours of interruption.

A review of 2022 versus 2023 data, identified an improvement in total customer-hours of interruption by 26%. The tables below identify the outage data associated with circuit 84-1-13 for each of the respective years, grouped by cause.

One-Year Summary (1/1/2022 - 12/31/2022) 84-1-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Squirrel	2	5.7	68	1.7	77.3	1.2
Branch Contact (In Trim Zone)	1	2.9	157	3.9	397.7	6.0
Equipment Failure	10	28.6	1,684	42.3	2,221.5	33.5
No Cause Found	4	11.4	169	4.2	346.3	5.2
Non-Company Accident - MVC	0	0.0	0	0.0	0.0	0.0
Non-Company Accident - Other	1	2.9	3	0.1	13.9	0.2
Overload - Company	2	5.7	16	0.4	76.0	1.2
Prearranged - Company	1	2.9	3	0.1	2.3	0.0
Tree Contact (In Trim Zone)	11	31.4	1,714	43.0	2,828.4	42.7
Tree Contact (Out of Trim Zone)	3	8.6	169	4.2	665.3	10.0
Vine Contact	0	0.0	0	0.0	0.0	0.0
Total	**35**		**3,983**		**6,628.7**	

One-Year Summary (1/1/2023 - 12/31/2023) 84-1-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Squirrel	0	0.0	0	0.0	0.0	0.0
Branch Contact (In Trim Zone)	3	8.1	439	10.9	850.3	17.4
Equipment Failure	5	13.5	916	22.8	513.9	10.5
No Cause Found	1	2.7	17	0.4	26.1	0.5
Non-Company Accident - MVC	1	2.7	811	20.2	590.0	12.1
Non-Company Accident - Other	0	0.0	0	0.0	0.0	0.0
Overload - Company	0	0.0	0	0.0	0.0	0.0
Prearranged - Company	7	18.9	42	1.1	42.9	0.9
Tree Contact (In Trim Zone)	17	46.0	1,775	44.2	2,828.6	57.8
Tree Contact (Out of Trim Zone)	2	5.4	16	0.4	36.4	0.7
Vine Contact	1	2.7	3	0.07	7.2	0.15
Total	**37**		**4,019**		**4,895.4**	

In 2022, four of the 35 incidents accounted for 3,413 (51%) of the 6,629 total customer-hours of interruption for the year. The four incidents were the result of tree contacts and equipment failures. Given that these few events had such a significant impact to the circuit's reliability performance, 2022 should be considered a deviation from the benchmarked circuit performance.

The largest event occurred on November 7, 2022, on Lakeview Drive in Monroe, NY. The outage was the result of tree contact. The event accounted for 1,117 (17%) of the total 6,629 customer-hours of interruption.

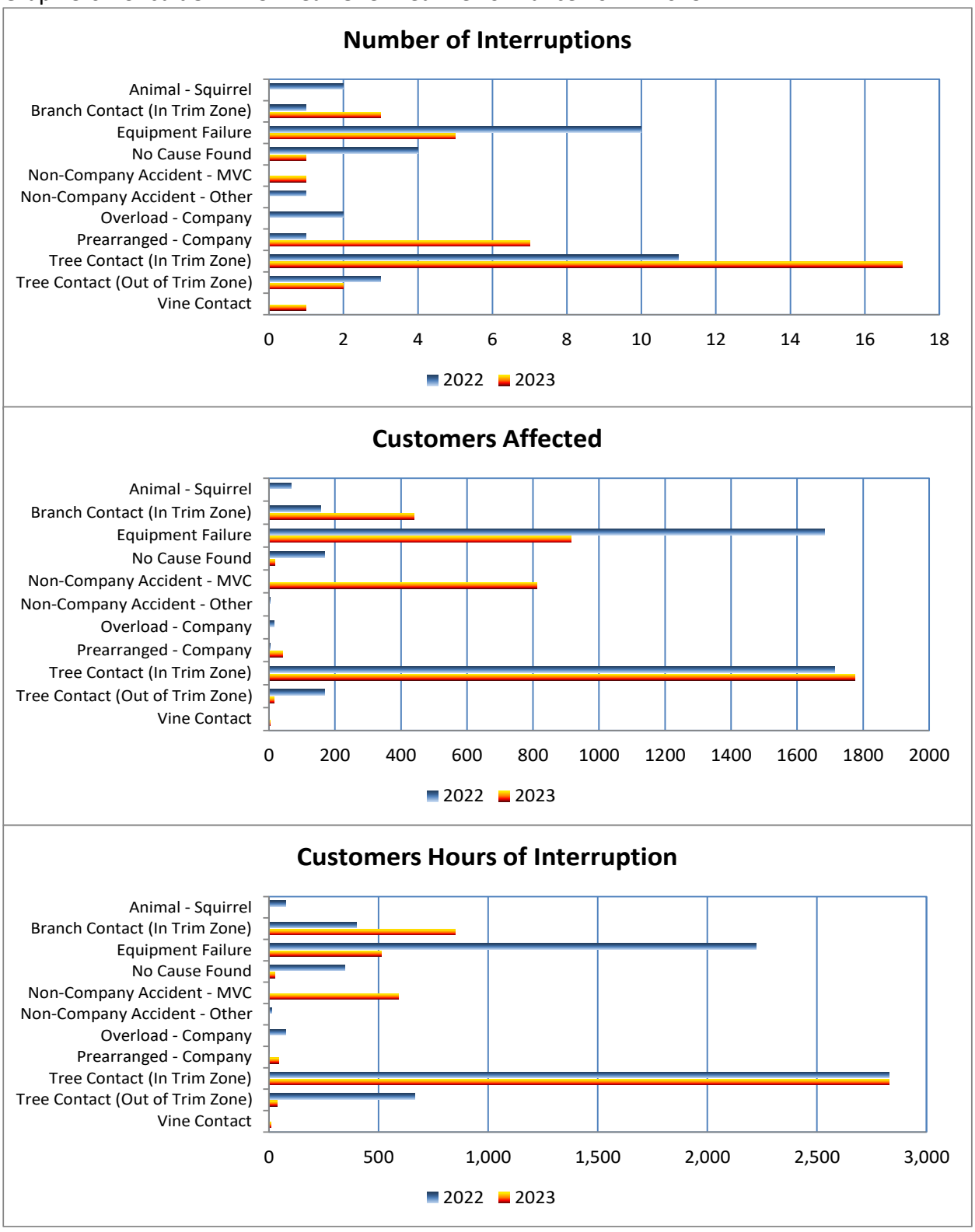
The second largest event occurred on August 7, 2022, on Eagleton Drive, Monroe, NY. The outage was the result of an underground pad mounted transformer failure which was caused by extreme heat temperatures we were experiencing during that period. The event accounted for 810 (12%) of the total 6,629 customer-hours of interruption.

The third largest event occurred on December 15, 2022, on Lakeview Drive, Monroe, NY. The outage occurred due to a fallen tree, which caused all three sections of primary lines to be pinned down, leading to the cutout blowing. The event accounted for 757 (11%) of the total 6,629 customer-hours of interruption.

In 2023, the Company completed a Distribution Infrared Scan and detailed circuit patrol on the circuit and corrected any deficiencies identified on the circuit. The Distribution Infrared Scan will be repeated in 2024.

In 2024 the Company is planning to install additional MOABs to improve ability to switch out and minimize outages, which should help with circuit reliability.

Graph 5.6 - Circuit 84-1-13 Year-Over-Year Performance 2022 - 2023



5.6.2 CIRCUIT 80-3-13

Circuit 80-3-13 was ranked second in the Central Division, in accordance with the Company's 2022 Circuit Priority Rating system. The circuit's performance remained the same and continued to rank second in the Central Division per 2023 Circuit Priority Rating system. The circuit originates from the Wisner Substation in Warwick, New York and serves 3,025 customers over 75.1 circuit miles.

In 2022, there were 36 interruptions, which affected 8,662 customers and resulted in 9,237.0 customer-hours of interruption. In 2023, there were fifty-one interruptions, which affected 1,666 customers that resulted in 4,016 customer-hours of interruption.

A review of 2022 versus 2023 data, identified an improvement of customers affected and total customer-hours of interruption by 81% and 57%, respectively. The tables below identify the outage data associated with circuit 80-3-13 for each of the respective years, grouped by cause.

One-Year Summary (1/1/2022 - 12/31/2022) 80-3-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Squirrel	2	6.7	42	1.2	98.5	2.3
Equipment Failure	7	23.3	277	8.0	997.7	23.6
No Cause Found	3	10.0	194	5.6	484.3	11.4
Non-Company Accident - MVC	2	6.7	148	4.3	272.2	6.4
Overload - Company	1	3.3	2	0.1	0.7	0.0
Prearranged - Company	4	13.3	137	4.0	233.5	5.5
Tree Contact (In Trim Zone)	9	30.0	2,606	75.5	2,066.5	48.8
Vine Contact	1	3.3	41	1.2	79.3	1.9
Work Error - Company	1	3.3	3	0.1	1.5	0.0
Total	**36**		**8,662**		**9,237.0**	

One-Year Summary (1/1/2023 - 12/31/2023) 80-3-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Squirrel	3	5.9	24	1.4	77.7	1.9
Equipment Failure	14	27.5	721	43.3	1,972.1	49.1
No Cause Found	8	15.7	62	3.7	148.2	3.7
Non-Company Accident - MVC	3	5.9	295	17.7	528.8	13.2
Overload - Company	0	0.0	0	0.0	0.0	0.0
Prearranged - Company	9	17.7	150	9.0	77.5	1.9
Tree Contact (In Trim Zone)	12	23.5	346	20.8	1,057.8	26.3
Vine Contact	2	3.9	68	4.1	154.7	3.9
Work Error - Company	0	0.0	0	0.0	0.0	0.0
Total	**51**		**1,666**		**4,016.8**	

In 2022, one of the 30 incidents accounted for 1,321 (31%) of the 4,234 total customer-hours of interruption for the year. The incident occurred as a result of a tree falling on a section of the primary infrastructure and compromising it. Removing this single event would drop this circuit off the worst performing circuit list.

In the first quarter of 2023 the company completed our vegetation maintenance on the circuit and improvements can be noticed in 2023 circuit's performance.

In 2023, the Company completed a Distribution Infrared Scan and detailed circuit patrol on the circuit, and corrected any deficiencies identified on the circuit.

In 2024 the Company is planning to add two MOABs to improve the ability to switch out and minimize outages, which should help with circuit reliability. The Company has scheduled a detailed circuit patrol along with a Distribution Infrared Scan for 2024 as well.

Graph 5.7 - Circuit 80-3-13 Year-Over-Year Performance 2022 - 2023

5.6.3 CIRCUIT 89-2-13

Circuit 89-2-13 was ranked third in the Central Division, in accordance with the Company's 2022 Circuit Priority Rating system. The circuit's performance improved and is now ranked fourth in the Central Division per 2023 Circuit Priority Rating system. The circuit originates from the South Goshen Substation and serves a total of 1,123 customers over 49.2 circuit miles.

In 2022, there were 26 interruptions, which affected 2,099 customers and resulted in 8,317 customer-hours of interruption. In 2023, there were 18 interruptions, which affected 3,193 customers and resulted in 4,077 customer-hours of interruption.

Review of 2022 versus 2023 data, identified an improvement in number of interruptions and total customer-hours of interruptions by 30% and 51%, respectively. The tables below identify the outage data associated with circuit 89-2-13 for each of the respective years, grouped by cause.

One-Year Summary (1/1/2022 - 12/31/2022) 89-2-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Bird	1	3.9	4	0.2	6.9	0.1
Equipment Failure	8	30.8	1,410	67.2	6,676.3	80.3
No Cause Found	4	15.4	164	7.8	428.9	5.2
Non-Company Accident - MVC	6	23.1	489	23.3	1,114.4	13.4
Non-Company Accident - Other	1	3.9	4	0.2	0.8	0.0
Non-Company Accident - UG	0	0.0	0	0.0	0.0	0.0
Prearranged - Company	3	11.5	9	0.4	11.5	0.1
Tree Contact (In Trim Zone)	2	7.7	15	0.7	68.6	0.8
Vine Contact	1	3.9	4	0.2	9.4	0.1
Total	**26**		**2,099**		**8,316.8**	

One-Year Summary (1/1/2023 - 12/31/2023) 89-2-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Bird	1	5.6	13	0.4	25.8	0.6
Equipment Failure	3	16.7	966	30.3	786.9	19.3
No Cause Found	2	11.1	16	0.5	71.8	1.8
Non-Company Accident - MVC	5	27.8	2,045	64.1	2,384.7	58.5
Non-Company Accident - Other	0	0.0	0	0.0	0.0	0.0
Non-Company Accident - UG	1	5.6	3	0.1	7.3	0.2
Prearranged - Company	1	5.6	4	0.1	6.5	0.2
Tree Contact (In Trim Zone)	5	27.8	146	4.6	794.3	19.5
Vine Contact	0	0.0	0	0.0	0.0	0.0
Total	**18**		**3,193**		**4,077.3**	

In 2022, two of the 26 incidents accounted for 6,494 (78%) of the 8,317 total customer-hours of interruption for the year. The incidents were both the result of equipment failure.

The largest event was due to equipment failure related to a primary conductor that came apart, which affected 1,102 (53%) customers of the total number of customers impacted. Additionally, the total customer hours impacted were 5,451 (66%) of the total customer hours.

The second largest incident was also related to equipment failure, specifically a pole top failure, which impacted 198 (9%) customers of the total number of customers impacted. This incident resulted in a total of 1,043 (13%) customer hours.

In 2023, the Company completed a Distribution Infrared Scan and detailed circuit patrol on the circuit and corrected any deficiencies identified on the circuit and will be doing the same in 2024.

Graph 5.8 - Circuit 89-2-13 Year-Over-Year Performance 2022 - 2023

5.6.4 CIRCUIT 71-3-13

Circuit 71-3-13 was ranked fourth in the Central Division, in accordance with the Company's 2022 Circuit Priority Rating system. The circuit's performance improved and is now ranked fifth in the Central Division per 2023 Circuit Priority Rating system. The circuit originates from the Harriman Substation and serves a total of 2,422 customers over 54.1 circuit miles.

In 2022, there were 39 interruptions, which affected 3,539 customers and resulted in 5,420 customer-hours of interruption. In 2023, there were 32 interruptions, which affected 4,875 customers that resulted in 3,673 customer-hours of interruption.

A review of 2022 versus 2023 data, identified an improvement in the number of interruptions and total customer-hours of interruptions by 18% and 32%, respectively. of the 5,420 total customer-hours of interruption. The tables below identify the outage data associated with circuit 71-3-13 for each of the respective years, grouped by cause.

One-Year Summary (1/1/2022 - 12/31/2022) 71-3-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Other	0	0.0	0	0.0	0.0	0.0
Animal - Squirrel	1	2.6	25	0.7	50.4	0.9
Branch Contact (In Trim Zone)	1	2.6	4	0.1	5.8	0.1
Customer Problem	1	2.6	16	0.5	62.9	1.2
Equipment Failure	7	18.0	691	19.5	1,332.3	24.6
Lightning - Previous	0	0.0	0	0.0	0.0	0.0
No Cause Found	1	2.6	8	0.2	83.1	1.5
Non-Company Accident - MVC	1	2.6	3	0.1	3.3	0.1
Non-Company Accident - Tree	1	2.6	52	1.5	72.8	1.3
Overload - Customer	0	0.0	0	0.0	0.0	0.0
Prearranged - Company	18	46.2	167	4.7	193.5	3.6
Tree Contact (In Trim Zone)	8	20.5	2,573	72.7	3,615.9	66.7
Total	**39**		**3,539**		**5,419.9**	

One-Year Summary (1/1/2023 - 12/31/2023) 71-3-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Other	2	6.3	20	0.4	40.3	1.1
Animal - Squirrel	3	9.4	86	1.8	233.9	6.4
Branch Contact (In Trim Zone)	2	6.3	26	0.5	26.4	0.7
Customer Problem	0	0.0	0	0.0	0.0	0.0
Equipment Failure	5	15.6	88	1.8	224.3	6.1
Lightning - Previous	1	3.1	51	1.1	79.1	2.2
No Cause Found	2	6.3	25	0.5	35.3	1.0
Non-Company Accident - MVC	2	6.3	1,571	32.2	1,088.1	29.6
Non-Company Accident - Tree	0	0.0	0	0.0	0.0	0.0
Overload - Customer	1	3.1	27	0.6	62.1	1.7
Prearranged - Company	5	15.6	2260	46.4	499.2	13.6
Tree Contact (In Trim Zone)	9	28.1	721	14.8	1384.7	37.7
Total	**32**		**4,875**		**3,673.4**	

In 2022, two of the 39 incidents accounted for 3,150 (58%) of the 5,420 total customer-hours of interruption for the year. The two incidents were the result of tree contact. Given that these two events had such a significant impact to the circuit's reliability performance, 2022 should be considered a deviation from the circuit's general performance.

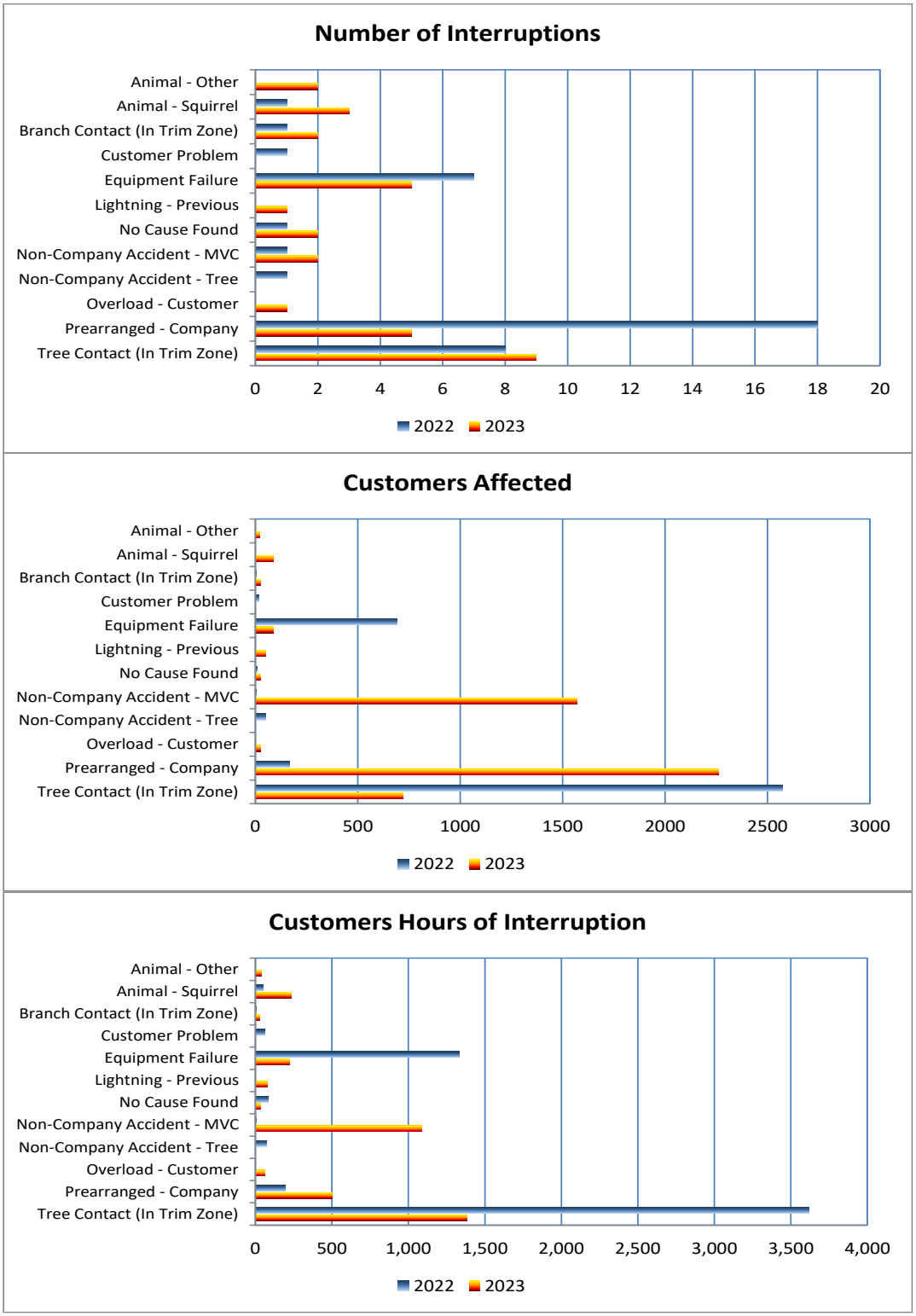
The largest event occurred on December 12, 2022. The outage was the result of tree contact with primary conductor. A tree caused damage to the conductor and subsequently broke a pole outside of business hours, necessitating the call in of O&R crews. The event accounted for 1,608 (30%) of the total 5,420 customer-hours of interruption.

The second largest event occurred on September 6, 2022. The outage occurred due to a tree making contact with the primary conductor, which caused it to go down. The event took place at the beginning of the circuit and triggered a circuit lockout. Thanks to automation, the event was quickly switched out to prevent customers on the circuit from experiencing the outage. The event accounted for 1,542 (28%) of the total 5,420 customer-hours of interruption.

In 2023, the Company completed a Distribution Infrared Scan and detailed circuit patrol on the circuit and corrected any deficiencies identified on the circuit.

In 2024, the Company has scheduled a detailed circuit patrol along with a Distribution Infrared scan. This circuit will be thoroughly patrolled for broken and defective components, vegetation contact, missing animal guards and lightning protection. The Company intends to correct identified defects from both of those inspections.

Graph 5.9 - Circuit 71-3-13 Year-Over-Year Performance 2022 – 2023



5.6.5 CIRCUIT 89-1-13

Circuit 89-1-13 was ranked fourth in the Central Division per 2022 Priority Circuit Rating system. The circuit's performance improved and is now ranked fifth in the Central Division per 2023 Priority Circuit Rating system. The circuit originates from the South Goshen Substation and serves a total of 1,692 customers over 31.8circuit miles.

In 2022, there were 17 interruptions, which affected 2,083 customers and resulted in 4,429 customer-hours of interruption. In 2023, there were 21 interruptions, which affected 1,724 customers that resulted in 2,206 customer-hours of interruption.

A review of 2022 versus 2023 data, identified an improvement in number of customers affected and total customer-hours of interruptions by 17% and 50%, respectively. The tables below identify the outage data associated with circuit 89-1-13 for each of the respective years, grouped by cause.

One-Year Summary (1/1/2022 - 12/31/2022) 89-1-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Bird	0	0.0	0	0.0	0.0	0.0
Animal - Squirrel	3	17.7	59	2.8	106.5	2.4
Branch Contact (In Trim Zone)	2	11.8	604	29.0	119.0	2.7
Branch Contact (Out of Trim Zone)	0	0.0	0	0.0	0.0	0.0
Equipment Failure	1	5.9	2	0.1	4.4	0.1
Lightning - Previous	1	5.9	1,143	54.9	3,567.5	80.5
No Cause Found	5	29.4	169	8.1	268.2	6.1
Non-Company Accident - MVC	0	0.0	0	0.0	0.0	0.0
Prearranged - Company	3	17.7	16	0.8	7.7	0.2
Tree Contact (In Trim Zone)	2	11.8	90	4.3	356.0	8.0
Vine Contact	0	0.0	0	0.0	0.0	0.0
Total	**17**		**2,083**		**4,429.2**	

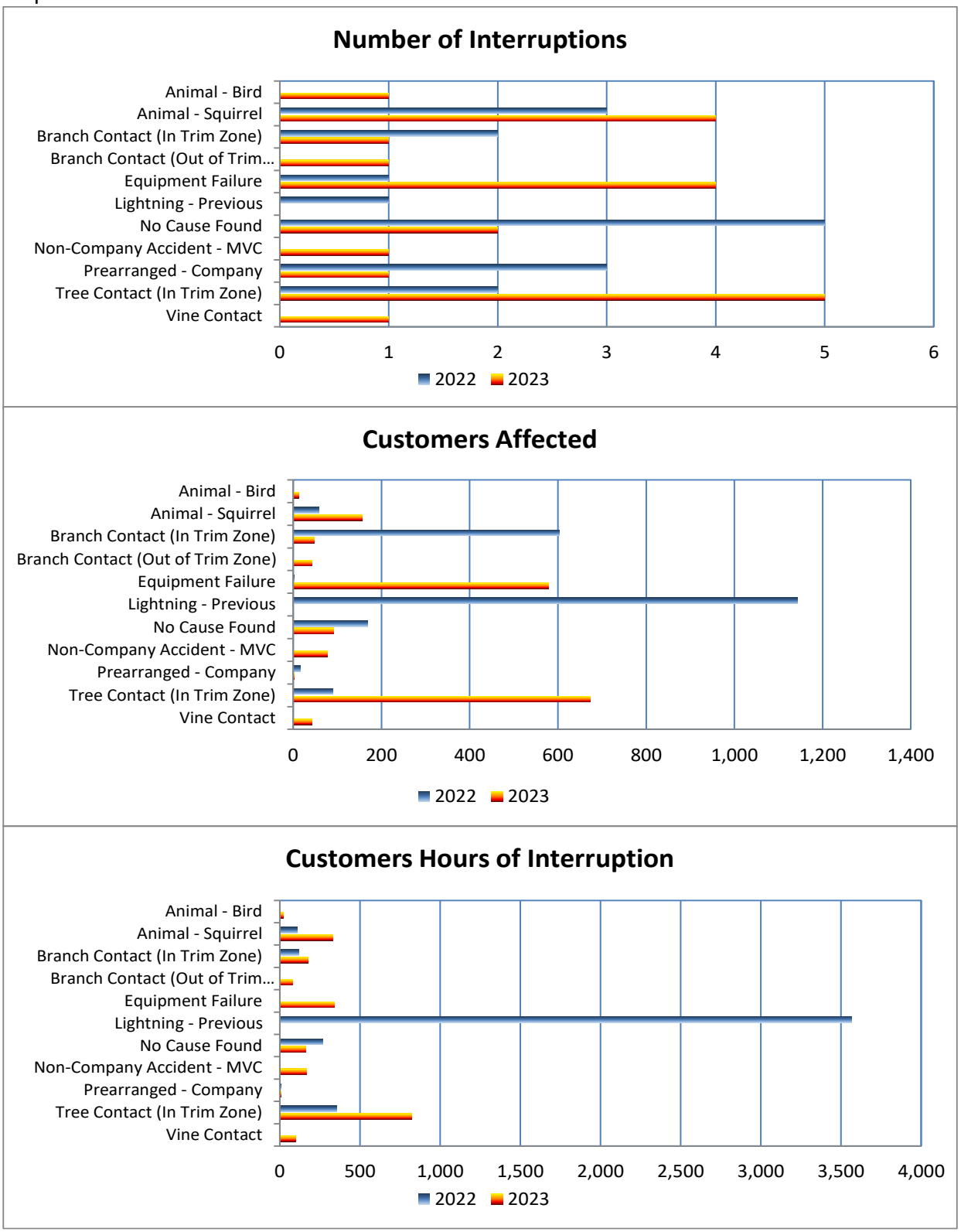
One-Year Summary (1/1/2023 - 12/31/2023) 89-1-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Bird	1	4.8	13	0.8	21.7	1.0
Animal - Squirrel	4	19.1	156	9.1	330.5	15.0
Branch Contact (In Trim Zone)	1	4.8	48	2.8	176.0	8.0
Branch Contact (Out of Trim Zone)	1	4.8	43	2.5	82.4	3.7
Equipment Failure	4	19.1	578	33.5	339.2	15.4
Lightning - Previous	0	0.0	0	0.0	0.0	0.0
No Cause Found	2	9.5	91	5.3	160.9	7.3
Non-Company Accident - MVC	1	4.8	77	4.5	165.9	7.5
Prearranged - Company	1	4.8	2	0.1	9.2	0.4
Tree Contact (In Trim Zone)	5	23.8	674	39.1	820.4	37.2
Vine Contact	1	4.8	42	2.4	100.1	4.5
Total	**21**		**1,724**		**2,206.1**	

In 2022, one of the 17 incidents accounted for 3,567 (81%) of the 4,429 total customer-hours of interruption for the year. The outage was caused by a lightning event that took place outside of normal business hours. Unfortunately, the incident was also accompanied by heavy rainfall, which considerably impeded restoration efforts. Given that this event had such a significant impact to the circuit's reliability performance, 2022 should be considered a deviation from the circuit's general performance.

In 2023, the Company completed a Distribution Infrared Scan and detailed circuit patrol on the circuit and corrected any deficiencies identified on the circuit.

In 2024, the Company has scheduled circuit 89-1-13 for vegetation management cycle, which should help with circuit reliability directly reduce tree related outages. The Company has scheduled a detailed circuit patrol along with a Distribution Infrared scan are scheduled for 2024 as well.

Graph 5.10 - Circuit 89-1-13 Year-Over-Year Performance 2022 - 2023



5.7 Western Division

5.7.1 CIRCUIT 12-1-13

Circuit 12-1-13 was ranked first in the Western Division per 2022 Priority Circuit Rating system. The circuit's performance improved and is now ranked sixth in the Western Division per 2023 Priority Circuit Rating system. The circuit originates from the Bloomingburg Substation and serves a total of 2,095 customers over 67 circuit miles.

In 2022, there were fifty-one interruptions, which affected 4,552 customers and resulted in 7,962 customer-hours of interruption. In 2023, there were 52 interruptions, which affected 3,946 customers that resulted in 12,145 customer-hours of interruption.

A review of 2022 versus 2023 data, identified an increase of 4,183 (53%) of the 7,962 total customer-hours of interruption while improving the customers affected by 606 (13%). The tables below identify the outage data associated with circuit 12-1-13 for each of the respective years, grouped by cause.

One-Year Summary (1/1/2022 - 12/31/2022) 12-1-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Squirrel	3	5.9	108	2.4	167.4	2.1
Branch Contact (In Trim Zone)	2	3.9	61	1.3	223.5	2.8
Equipment Failure	6	11.8	2,012	44.2	2,831.5	35.6
No Cause Found	5	9.8	215	4.7	607.0	7.6
Non-Company Accident - MVC	6	11.8	410	9.0	306.8	3.9
Non-Company Accident - UG	1	2.0	33	0.7	62.2	0.8
Prearranged - Company	4	7.8	240	5.3	195.0	2.5
Tree Contact (In Trim Zone)	20	39.2	1,298	28.5	2,811.7	35.3
Tree Contact (Out of Trim Zone)	4	7.8	175	3.8	756.5	9.5
Total	**51**		**4,552**		**7,961.6**	

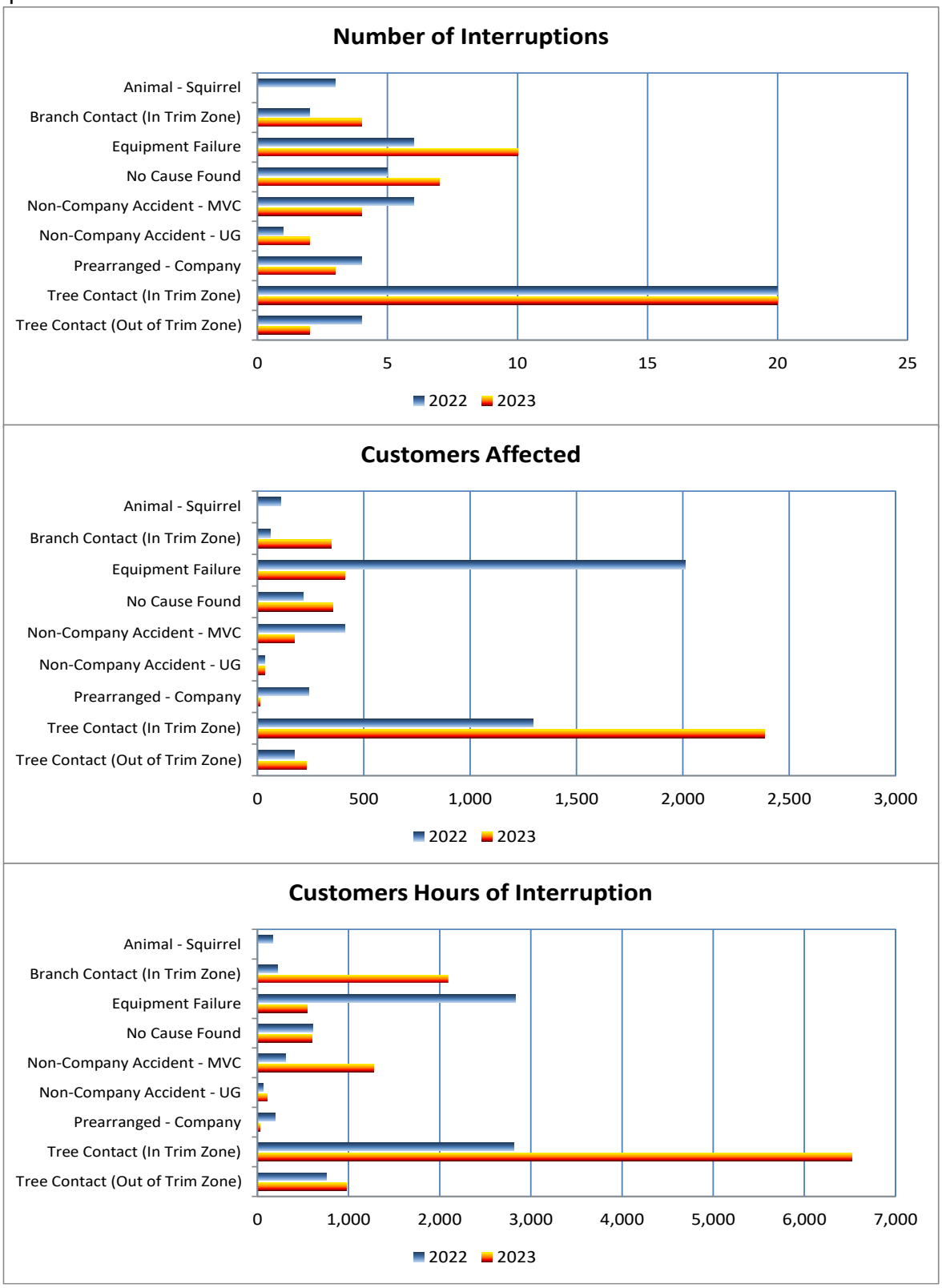
One-Year Summary (1/1/2023 - 12/31/2023) 12-1-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Squirrel	0	0.0	0	0.0	0.0	0.0
Branch Contact (In Trim Zone)	4	7.7	345	8.7	2,093.6	17.2
Equipment Failure	10	19.2	413	10.5	543.0	4.5
No Cause Found	7	13.5	354	9.0	598.7	4.9
Non-Company Accident - MVC	4	7.7	172	4.4	1,270.5	10.5
Non-Company Accident - UG	2	3.9	33	0.8	108.3	0.9
Prearranged - Company	3	5.8	13	0.3	27.9	0.2
Tree Contact (In Trim Zone)	20	38.5	2,384	60.4	6,526.1	53.7
Tree Contact (Out of Trim Zone)	2	3.9	232	5.9	976.9	8.0
Total	**52**		**3,946**		**12,144.9**	

In 2022, one of the fifty-one incidents accounted for 2,533 (32%) of the 7,962 total customer-hours of interruption for the year. This incident was due to equipment failure, which was caused by failed primary conductor, which caused an interim circuit lockout. This incident aside, the majority of the issues on the circuit were caused by trees.

In 2023, three of the fifty-two interruptions accounted for 4,407 (36%) of the 12,145 customer-hours of interruption for the year. The first and second largest incidents were due to tree contact which impacted 394 customers for a total of 3,172 (26%) customer hours, while the third largest incident was caused by a non-Company motor vehicle accident which accounted for 1,235 (10%) customer hours impacting 155 customers.

The Company has continuously been taking steps to improve the performance of circuit 12-1-13. In 2023, a Distribution Infrared Scan was completed along with a detailed circuit patrol. This circuit was thoroughly patrolled for broken and defective components, vegetation contact, missing animal guards and lightning protection. All deficiencies discovered were corrected in a timely manner.

Graph 5.11 - Circuit 12-1-13 Year-Over-Year Performance 2022 – 2023



5.7.2 CIRCUIT 10-2-13

Circuit 10-2-13 was ranked second in the Western Division per 2022 Circuit Priority Rating system. The circuit performance has improved and its now ranked fifth in the Western Division per 2023 Circuit Priority Rating system. The circuit originates from the Bloomingburg Substation and serves a total of 670 customers over 74 circuit miles.

In 2022, there were fifty-one interruptions, which affected 5,380 customers and resulted in 15,702 customer-hours of interruption. In 2023, there were fifty-three interruptions, which affected 5,255 customers that resulted in 8,759 customer-hours of interruption.

A review of 2022 versus 2023 data, identified an improvement in customers affected and customer-hours of interruptions by 2% and 44%, respectively. The tables below identify the outage data associated with circuit 10-2-13 for each of the respective years, grouped by cause.

One-Year Summary (1/1/2022 - 12/31/2022) 10-2-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Branch Contact (In Trim Zone)	2	3.9	380	7.1	1,361.6	8.7
Equipment Failure	11	21.6	441	8.2	2,269.4	14.5
Lightning - Present	0	0.0	0	0.0	0.0	0.0
No Cause Found	1	2.0	31	0.6	144.2	0.9
Non-Company Accident - MVC	2	3.9	675	12.6	1,686.7	10.7
Prearranged - Company	1	2.0	2	0.0	2.0	0.0
Tree Contact (In Trim Zone)	32	62.8	3,836	71.3	10,168.1	64.8
Tree Contact (Out of Trim Zone)	2	3.9	15	0.3	70.2	0.5
Total	**51**		**5,380**		**15,702.1**	

One-Year Summary (1/1/2023 - 12/31/2023) 10-2-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Branch Contact (In Trim Zone)	1	1.9	4	0.1	14.1	0.2
Equipment Failure	4	7.6	725	13.8	577.3	6.6
Lightning - Present	2	3.8	1352	25.7	1847.7	21.1
No Cause Found	3	5.7	721	13.7	1,213.2	13.9
Non-Company Accident - MVC	1	1.9	660	12.6	1177.0	13.4
Prearranged - Company	8	15.1	37	0.7	24.8	0.3
Tree Contact (In Trim Zone)	31	58.5	1,367	26.0	3,568.9	40.7
Tree Contact (Out of Trim Zone)	3	5.7	389	7.4	336.1	3.8
Total	**53**		**5,255**		**8,759.1**	

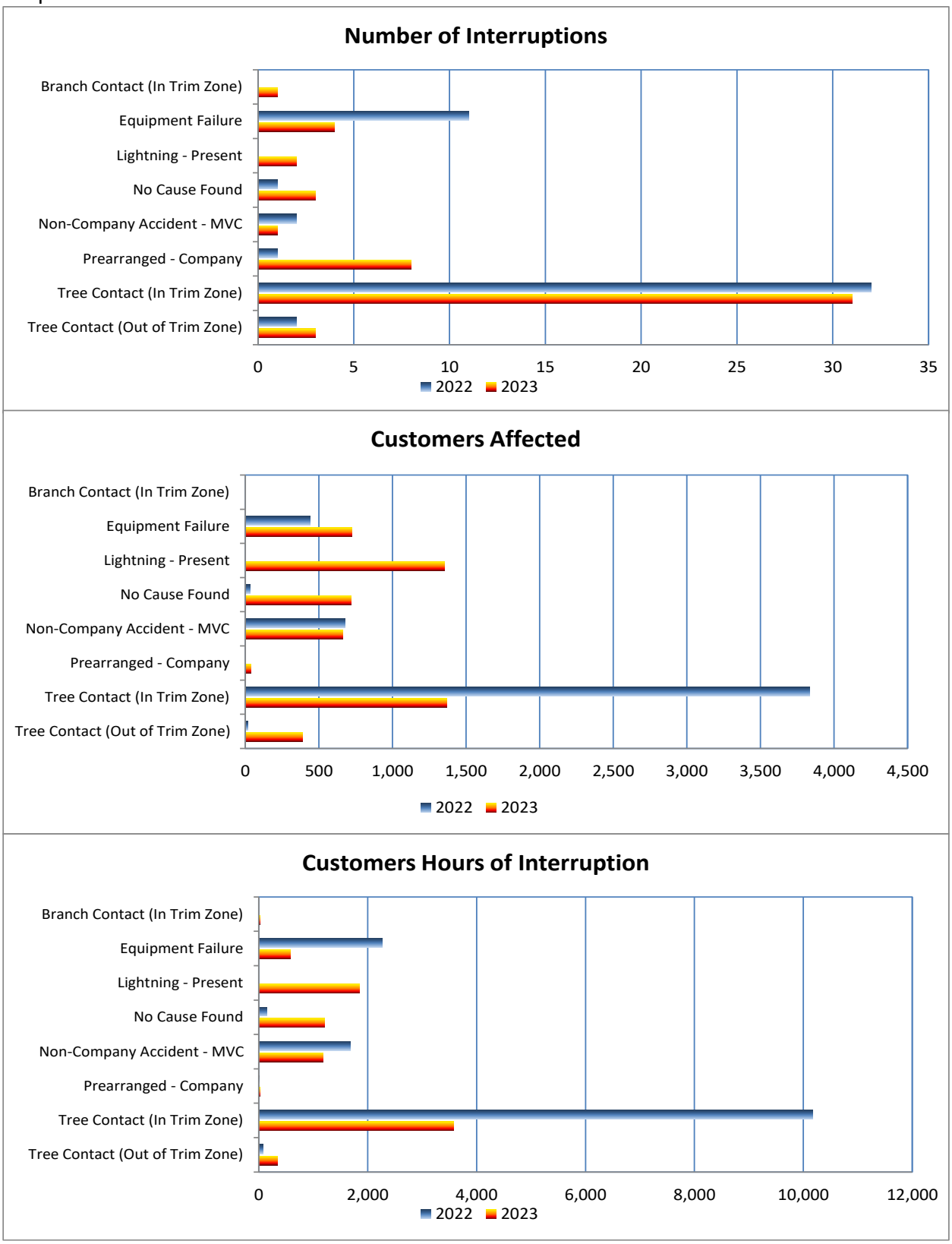
In 2022, five of the fifty-one incidents accounted for 7,847 (50%) of the 15,702 total customer-hours of interruption for the year. Four of the five incidents were caused by contact with trees, while the remaining incident involved a non-Company motor vehicle.

In 2023, three out of fifty-three interruptions accounted for 3,707 (42%) customer hours. The largest interruption was due to non-Company accident - motor vehicle which impacted 660 (12%) customers for total of 1,716 (20%) customer hours. The second largest interruption impacted 671 (12%) customers for total of 1,074 (12%) customer hours, which was classified as no cause found. Third largest interruption was due to lightning which impacted 671 (12%) customers for total of 917 (10%) customer hours.

In 2023, the Company conducted detailed circuit patrols and addressed any deficiencies that were found on the circuit. In the second quarter of the 2023, the Company also started vegetation management cycle before its scheduled maintenance to address persistent tree outages on the circuit. In 2022, tree related outages accounted for 11,560 customer hours, while in 2023 tree related outages accounted for 3,919 customer hours, which equates to 7,641 (66%) less customers affected in 2023.

In 2024, the Company plans to complete vegetation management cycle in the first quarter along with detailed circuit patrols along with Distribution Infrared Scans. The circuit patrols involve finding broken and defective components, vegetation contact, missing animal guards and lightning protection. The Company intends to correct identified defects from both of those inspections.

Graph 5.12 - Circuit 10-2-13 Year-Over-Year Performance 2022 - 2023



5.7.3 CIRCUIT 5-10-34

Circuit 5-10-34 was ranked third in the Western Division per the 2022 Circuit Priority Rating system. The circuit's performance improved and is now ranked eighth in the Western Division per 2023 Circuit Priority Rating system. The circuit originates from the Cuddebackville Substation and serves a total of 927 customers over 45 circuit miles.

In 2022, there were 32 interruptions, which affected 2,527 customers and resulted in 6,319 customer-hours of interruption. In 2023, there were 26 interruptions, which affected 3,631 customers that resulted in 8,909 customer-hours of interruption.

A review of 2022 versus 2023 data, identified an improvement of 18% for number of interruptions, an increase of customers affected and total customer-hours of interruption by 44% and 41%, respectively. The tables below identify the outage data associated with circuit 5-10-34 for each of the respective years, grouped by cause.

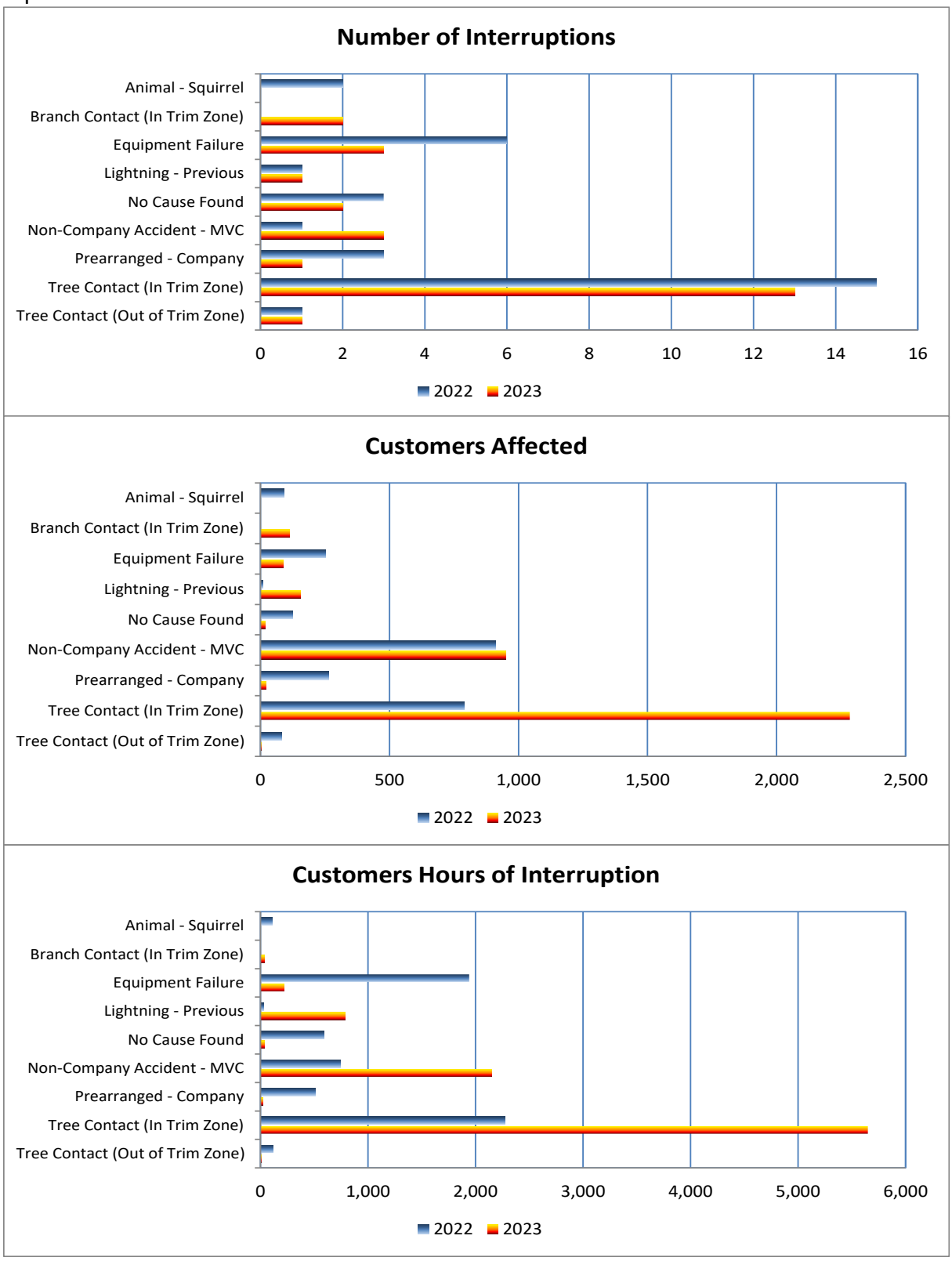
One-Year Summary (1/1/2022 - 12/31/2022) 5-10-34						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Squirrel	2	6.3	92	3.6	106.2	1.7
Branch Contact (In Trim Zone)	0	0.0	0	0.0	0.0	0.0
Equipment Failure	6	18.8	251	9.9	1,941.3	30.7
Lightning - Previous	1	3.1	8	0.3	30.0	0.5
No Cause Found	3	9.4	126	5.0	588.1	9.3
Non-Company Accident - MVC	1	3.1	912	36.1	744.8	11.8
Prearranged - Company	3	9.4	264	10.5	514.2	8.1
Tree Contact (In Trim Zone)	15	46.9	791	31.3	2,276.9	36.0
Tree Contact (Out of Trim Zone)	1	3.1	83	3.3	117.6	1.9
Total	**32**		**2,527**		**6,319.0**	

One-Year Summary (1/1/2023 - 12/31/2023) 5-10-34						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Squirrel	0	0.0	0	0.0	0.0	0.0
Branch Contact (In Trim Zone)	2	7.7	112	3.1	34.3	0.4
Equipment Failure	3	11.5	89	2.5	217.3	2.4
Lightning - Previous	1	3.9	154	4.2	788.0	8.9
No Cause Found	2	7.7	17	0.5	38.1	0.4
Non-Company Accident - MVC	3	11.5	951	26.2	2,149.4	24.1
Prearranged - Company	1	3.9	22	0.6	22.7	0.3
Tree Contact (In Trim Zone)	13	50.0	2,284	62.9	5,649.9	63.5
Tree Contact (Out of Trim Zone)	1	3.9	2	0.1	5.1	0.1
Total	**26**		**3,631**		**8,904.8**	

In 2022, three of the thirty-two incidents accounted for 2,975 (47%) of the 6,319 total customer-hours of interruption for the year. Two out of the three incidents were due to equipment failure, while the remaining one was caused by a non-Company motor vehicle accident.

In 2023, the Company completed a detailed circuit patrol along with Distribution Infrared Scan and corrected any broken, defective components, overgrown vegetation and missing animal guards identified on the circuit. The above-mentioned program will be repeated in 2024.

Graph 5.13 - Circuit 5-10-34 Year-Over-Year Performance 2022 - 2023



5.7.4 CIRCUIT 116-8-13

Circuit 116-8-13 was ranked fourth in the Western Division per 2022 Circuit Priority Rating system. The circuit's performance improved and its now ranked forty-third in the Western Division per 2023 Circuit Priority Rating system. The circuit originates from the Deerpark Substation and serves a total of 1,255 customers over 13 circuit miles.

In 2022, there were seventeen interruptions, which affected 3,052 customers and resulted in 1,898 customer-hours of interruption. In 2023, there were seven interruptions, which affected 91 customers that resulted in 135 customer-hours of interruption.

A review of 2022 versus 2023 data, identified an improvement in all three categories: number of interruptions, customers affected and customer-hours of interruptions by 59%, 97% and 93%, respectively. The tables below identify the outage data associated with circuit 116-8-13 for each of the respective years, grouped by cause.

One-Year Summary (1/1/2022 - 12/31/2022) 116-8-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Squirrel	1	5.9	13	0.4	13.0	0.7
Branch Contact (In Trim Zone)	1	5.9	8	0.3	10.8	0.6
Equipment Failure	3	17.7	2,895	94.9	1,645.3	86.7
No Cause Found	1	5.9	3	0.1	8.1	0.4
Non-Company Accident - MVC	1	5.9	54	1.8	126.0	6.6
Non-Company Accident - Other	1	5.9	5	0.2	1.5	0.1
Prearranged - Company	7	41.2	67	2.2	66.6	3.5
Tree Contact (In Trim Zone)	2	11.8	7	0.2	26.4	1.4
Total	**17**		**3,052**		**1,897.7**	

One-Year Summary (1/1/2023 - 12/31/2023) 116-8-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Squirrel	1	14.3	42	46.2	44.1	32.6
Branch Contact (In Trim Zone)	0	0.0	0	0.0	0.0	0.0
Equipment Failure	1	14.3	3	3.3	11.8	8.7
No Cause Found	0	0.0	0	0.0	0.0	0.0
Non-Company Accident - MVC	0	0.0	0	0.0	0.0	0.0
Non-Company Accident - Other	0	0.0	0	0.0	0.0	0.0
Prearranged - Company	4	57.1	38	41.8	42.6	31.5
Tree Contact (In Trim Zone)	1	14.3	8	8.8	36.7	27.1
Total	**7**		**91**		**135.2**	

In 2022, one incident accounted for 1,061 (56%) of the 1,898 total customer-hours of interruption for the year. That incident alone put circuit 116-8-13 in the top 5 worst performers in 2022. Removing this event would drop this circuit off the worst performing circuit list. Given that this one event had such a significant impact to the circuit's reliability performance, 2022 should be considered a deviation from the circuit's general performance.

In 2024, the Company has scheduled a detailed circuit patrol along with Distribution Infrared Scan. This circuit will be thoroughly patrolled for broken and defective components, vegetation contact, missing animal guards and lightning protection. The Company intends to correct identified defects from both of those inspections.

Graph 5.14 - Circuit 116-8-13 Year-Over-Year Performance 2022 - 2023

5.7.5 CIRCUIT 7-2-13

Circuit 7-2-13 was ranked fifth in the Western Division per 2022 Circuit Priority Rating system. The circuit's performance improved and its now ranked twenty-second in the Western Division in 2023 per Circuit Priority Rating system. The circuit originates from the Otisville Substation and serves a total of 1,186 customers over 45 circuit miles.

In 2022, there were 17 interruptions, which affected 1,961 customers and resulted in 1,944 customer-hours of interruption. In 2023, there were 20 interruptions, which affected 1,220 customers that resulted in 1,348 customer-hours of interruption.

A review of 2022 versus 2023 data, identified an improvement in customers affected and customer-hours of interruptions by 38% and 31%, respectively. The tables below identify the outage data associated with circuit 7-2-13 for each of the respective years, grouped by cause.

One-Year Summary (1/1/2022 - 12/31/2022) 7-2-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Squirrel	0	0.0	0	0.0	0.0	0.0
Branch Contact (In Trim Zone)	0	0.0	0	0.0	0.0	0.0
Equipment Failure	5	29.4	619	31.6	1,082.4	55.7
Lightning - Previous	1	5.9	1,162	59.3	445.4	22.9
No Cause Found	1	5.9	2	0.1	6.7	0.3
Non-Company Accident - MVC	3	17.7	42	2.1	77.2	4.0
Non-Company Accident - Tree	1	5.9	2	0.1	2.4	0.1
Non-Company Accident - UG	0	0.0	0	0.0	0.0	0.0
Prearranged - Company	2	11.8	28	1.4	18.6	1.0
Tree Contact (In Trim Zone)	4	23.5	106	5.4	311.1	16.0
Total	**17**		**1,961**		**1,943.7**	

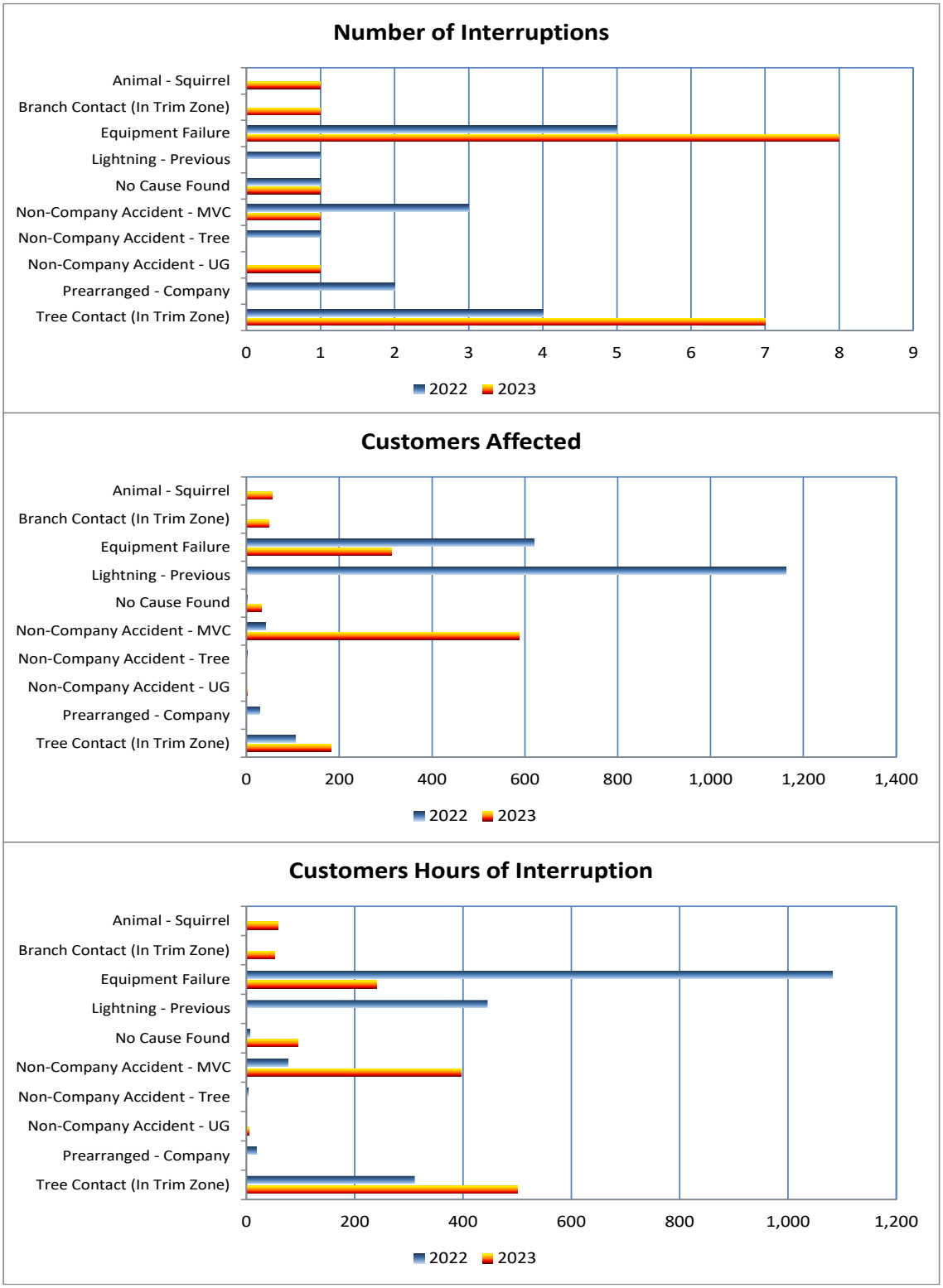
One-Year Summary (1/1/2023 - 12/31/2023) 7-2-13						
Cause	**No. of Interruptions**	**Pct. of Interruptions**	**Customers Affected**	**Pct. of Customers Affected**	**Customer Hours**	**Pct. of Customer-Hours**
Animal - Squirrel	1	5.0	55	4.5	58.7	4.4
Branch Contact (In Trim Zone)	1	5.0	48	3.9	52.0	3.9
Equipment Failure	8	40.0	313	25.7	240.4	17.8
Lightning - Previous	0	0.0	0	0.0	0.0	0.0
No Cause Found	1	5.0	32	2.6	94.9	7.0
Non-Company Accident - MVC	1	5.0	587	48.1	396.0	29.4
Non-Company Accident - Tree	0	0.0	0	0.0	0.0	0.0
Non-Company Accident - UG	1	5.0	2	0.2	5.7	0.4
Prearranged - Company	0	0.0	0	0.0	0.0	0.0
Tree Contact (In Trim Zone)	7	35.0	183	15.0	499.9	37.1
Total	**20**		**1,220**		**1,347.7**	

In 2022, two of the seventeen incidents accounted for 1,480 (76%) of the 1,944 total customer-hours of interruption for the year. The two incidents were the result of equipment failure and lightning damage.

In 2023, two of the twenty interruptions accounted for 868 (64%) of total customer hours for the year. The largest interruption resulted in a total of 472(35%) customer hours which was caused by tree contact. The second largest interruption was due to non-Company motor vehicle accident which impacted total of 396 (29%) customer hours.

In 2023, the Company completed a Distribution Infrared Scan and a detailed circuit patrol on the circuit and corrected any deficiencies identified on the circuit. The above-mentioned program will be repeated in 2024 along with installing new MOABs to improve ability to switch out and minimize outages, which will help further improve circuit reliability.

Graph 5.15 - Circuit 7-2-13 Year-Over-Year Performance 2022 – 2023



APPENDICES

APPENDIX A

O&R Priority Methodology and Circuit Ratings

Orange and Rockland Circuit Priority Rating System

DATA SELECTED:

Overhead and underground incidents affecting the distribution system occurring in calendar year 2023.

DATA EXCLUDED:

Partial power outages and single no light outages,
Outages affecting only secondary/services,
Outages associated with regulatory storms, and
Transmission and substation caused distribution outages.

O&R's priority rating system is designed to quantify individual circuit performance and to provide a means for identifying circuits that performing at a level below the Company's and its customers' expectations. The information included in the analysis consists of seven categories of data to calculate the priority rating for each circuit. These include both outage statistics and circuit characteristics. These categories are as follows:

OUTAGE DATA

Breaker trip and reclose activity [18%],
Number of interruptions [14%],
Customers affected [14%],
Customer hours of interruption [7%],
Number of customers served by the circuit [7%],
SAIFI for the given circuit [7%], and
Customer outage hours attributed to lightning, animal contact, tree contact and equipment failures ("LATE") [33%].

For each circuit, a score and ranking is generated for each of the seven categories in the above list. Individual circuit priority ratings are then calculated using a weighted ranking of each category (the weightings are as listed in parenthesis next to each category). The priority rating is then used to rank each circuit in an overall priority list. This list is maintained by the Performance and Operations Engineering group.

An analysis of the performance of each circuit identified in the top five highest priorities in each operating division was conducted for 2023. A plan is then developed and implemented to improve the circuit's performance over the upcoming calendar year. The following pages of this appendix detail the priority ratings by circuit for all of O&R's distribution circuits.

New York – Eastern Division – 2023 Circuit Priority Rating List

Circuit	No. Trip/Reclose	Rank No. Trip/Reclose	No. of Interruptions	Rank No.of Interruptions	Customers Affected	Rank Customers Affected	Customers Served	Rank Customers Served	Customer Hours	Rank Customer Hours	LATE	Rank LATE	SAIFI	Rank SAIFI	Priority Rating	Rank Priority Rating
45-8-13	22	6	18	26	7,954	1	1,915	27	6,158	15	1,256	30	4.2	5	18.1	5
19-14-13	13	33	32	2	2,470	32	2,189	16	6,618	13	6,025	3	1.1	74	18.9	6
19-10-13	10	55	30	3	2,948	24	3,569	1	7,925	9	6,982	2	0.8	101	22.1	10
27-3-13	20	12	11	73	3,035	22	2,667	6	4,348	26	3,598	8	1.1	73	25.5	11
23-4-13	5	116	24	10	3,291	14	1,315	77	5,086	20	4,949	4	2.5	16	33.5	14
44-5B-13	18	16	25	9	2,014	47	1,374	70	4,236	29	966	41	1.5	51	34.8	16
50-2-13	9	61	17	33	3,283	16	2,090	19	3,501	43	1,370	28	1.6	48	34.8	17
53-1-13	15	24	20	19	2,099	41	2,004	24	2,368	61	1,116	34	1.0	78	35.4	19
22-4-13	10	55	14	49	5,888	4	1,290	82	8,380	8	1,059	37	4.6	2	36.0	20
22-2-13	9	61	18	26	1,944	48	1,293	80	3,634	41	2,168	17	1.5	50	38.9	21
29-1-13	5	116	18	26	2,312	34	1,766	38	2,523	55	3,806	7	1.3	60	42.3	23
45-10-13	21	9	20	19	2,418	33	1,092	108	2,885	47	581	71	2.2	25	44.9	25
45-3-13	12	41	11	73	1,706	54	1,358	72	1,977	73	1,745	20	1.3	66	46.5	29
24-11-13	6	101	15	40	3,284	15	1,802	37	1,509	87	1,018	38	1.8	36	49.6	31
24-12-13	11	47	15	40	2,730	27	1,156	98	2,763	50	685	62	2.4	19	50.0	32
23-1-13	11	47	12	65	2,275	36	1,337	75	5,727	18	768	54	1.7	44	50.0	33
27-7-13	6	101	15	40	1,775	51	1,899	28	2,136	68	1,681	22	0.9	88	51.1	34
22-1-13	15	24	8	106	2,246	37	988	122	2,946	46	955	43	2.3	22	51.8	35
29-3-13	11	47	18	26	568	109	2,051	21	1,086	105	1,562	25	0.3	150	54.9	38
50-3-13	16	19	9	94	1,299	64	730	145	1,863	77	1,089	35	1.8	40	55.4	39
27-2-13	22	6	14	49	607	105	2,462	10	1,108	103	893	48	0.2	155	57.2	40
45-9-13	13	33	14	49	2,026	46	1,689	47	1,842	79	557	76	1.2	70	58.0	41
44-6-13	14	30	17	33	1,160	69	899	132	1,036	111	816	52	1.3	62	58.2	42
19-8-13	10	55	15	40	1,530	59	2,929	4	1,478	88	618	68	0.5	120	61.0	48
45-2-13	5	116	14	49	716	98	1,607	51	2,781	49	2,623	12	0.4	126	61.2	49
72-3-13	11	47	15	40	641	103	1,232	88	1,006	116	1,072	36	0.5	121	63.1	51
50-1-13	5	116	9	94	1,887	49	508	166	2,324	62	2,019	18	3.7	8	63.4	52
22-7-13	7	86	21	16	1,499	60	2,476	9	1,432	91	555	78	0.6	110	66.6	54
19-9-13	13	33	13	57	428	126	1,692	46	1,342	94	944	45	0.3	153	66.9	55
21-13-13	14	30	11	73	702	100	2,337	13	1,212	97	665	65	0.3	144	68.9	58
19-11-13	5	116	19	23	2,294	35	1,611	50	1,083	106	530	81	1.4	53	70.4	59
16M3-11-13	9	61	18	26	1,615	57	1,343	73	1,796	80	570	74	0.0	201	71.8	63
45-7-13	2	170	16	38	1,404	62	993	121	1,679	82	1,147	33	1.4	54	73.5	66
23-6-13	14	30	10	83	2,490	31	1,815	35	3,461	44	159	134	1.4	56	75.0	68

Circuit	No. Trip/Reclose	Rank No. Trip/Reclose	No. of Interruptions	Rank No.of Interruptions	Customers Affected	Rank Customers Affected	Customers Served	Rank Customers Served	Customer Hours	Rank Customer Hours	LATE	Rank LATE	SAIFI	Rank SAIFI	Priority Rating	Rank Priority Rating
45-5-13	15	24	22	15	635	104	1,558	54	1,965	75	247	111	0.4	129	75.7	70
45-1-13	7	86	26	7	1,294	65	1,134	100	1,028	112	412	92	1.1	72	75.8	71
44-5A-13	15	24	7	117	324	138	1,448	64	1,175	101	979	40	0.2	159	75.9	72
21-11-13	8	72	14	49	785	91	890	133	1,081	107	610	69	0.9	91	78.5	77
27-6-13	16	19	9	94	938	81	1,101	105	807	124	488	85	0.9	94	78.6	78
72-4-13	7	86	13	57	402	130	1,210	92	1,074	108	948	44	0.3	140	80.0	79
51-2-13	12	41	13	57	1,453	61	959	125	2,443	60	209	121	1.5	49	80.2	80
54-7-13	6	101	10	83	262	146	1,395	68	1,027	114	1,751	19	0.2	166	80.9	81
27-8-13	13	33	13	57	505	117	1,565	53	640	135	470	87	0.3	141	82.0	83
17-2-13	11	47	12	65	495	118	2,479	8	691	129	525	82	0.2	163	82.1	84
51-1-13	12	41	11	73	972	78	1,144	99	2,162	67	258	110	0.8	96	83.2	85
50-4-13	5	116	7	117	2,036	44	881	134	2,556	54	522	83	2.3	20	85.4	92
54-6-13	5	116	6	128	2,993	23	1,341	74	916	121	339	102	2.2	24	91.0	96
45-4-13	7	86	20	19	582	107	1,721	42	3,627	42	185	129	0.3	138	91.2	97
19-12-13	19	14	8	106	298	141	1,523	58	505	143	369	98	0.2	164	95.0	100
53-3-13	8	72	8	106	397	131	467	171	791	125	579	72	0.9	95	97.3	101
53-6-13	6	101	8	106	477	121	1,755	41	1,119	102	472	86	0.3	151	98.9	102
58-5-13	3	154	9	94	424	128	1,074	111	667	133	801	53	0.4	131	102.5	108
27-1-13	6	101	8	106	708	99	845	138	782	126	378	95	0.8	98	103.6	109
27-5-13	6	101	5	142	287	144	1,157	97	665	134	634	67	0.2	154	107.3	111
24-2-13	4	135	10	83	547	113	1,363	71	4,201	30	205	123	0.4	130	108.5	113
44-1-13	9	61	4	155	308	139	1,086	110	1,887	76	348	100	0.3	149	108.6	114
24-1-13	2	170	10	83	325	137	1,092	108	917	120	671	64	0.3	146	108.7	115
51-6-13	3	154	9	94	743	94	1,311	78	2,499	57	234	115	0.6	113	109.4	116
51-3-13	7	86	12	65	1,152	70	486	170	1,463	90	33	173	2.4	18	110.9	119
22-3-13	5	116	6	128	293	143	487	168	864	122	557	77	0.6	111	112.3	121
23-2-13	9	61	10	83	425	127	987	123	1,103	104	117	143	0.4	128	112.4	122
22-5-13	6	101	11	73	184	153	1,510	60	411	151	269	109	0.1	171	112.5	123
53-7-13	7	86	4	155	351	135	1,117	102	449	146	389	93	0.3	142	114.1	124
44-4-13	10	55	6	128	946	80	863	136	1,185	99	52	165	1.1	77	115.3	127
45-6-13	3	154	11	73	863	86	713	148	513	141	196	126	1.2	69	116.6	131
44-3A-13	6	101	8	106	133	161	1,445	65	335	157	210	119	0.1	182	123.1	135
27-4-13	4	135	5	142	287	144	2,369	12	677	132	213	118	0.1	172	125.4	138
21-12-13	18	16	4	155	103	167	1,504	61	264	161	70	157	0.1	189	128.5	141
54-4-13	3	154	6	128	755	93	342	180	430	149	72	156	2.2	26	135.0	145

Circuit	No. Trip/Reclose	Rank No. Trip/Reclose	No. of Interruptions	Rank No.of Interruptions	Customers Affected	Rank Customers Affected	Customers Served	Rank Customers Served	Customer Hours	Rank Customer Hours	LATE	Rank LATE	SAIFI	Rank SAIFI	Priority Rating	Rank Priority Rating
19-15-13	2	170	5	142	367	134	1,094	107	507	142	209	120	0.3	139	136.0	147
44-3B-13	8	72	7	117	193	151	2,106	17	535	140	7	188	0.1	183	136.3	148
19-13-13	5	116	5	142	85	176	1,607	51	216	164	182	130	0.1	192	136.8	150
54-1-13	12	41	6	128	91	171	826	139	354	155	25	178	0.1	175	140.8	157
42-2-13	4	135	6	128	112	165	1,045	114	199	167	150	136	0.1	179	142.4	158
17-1-13	7	86	3	168	561	110	704	150	921	119	0	192	0.8	103	143.8	160
44-2-13	3	154	9	94	62	178	916	131	234	163	156	135	0.1	190	144.2	161
24-4-13	1	186	6	128	132	162	1,303	79	401	152	189	127	0.1	181	144.8	162
22-6-13	7	86	6	128	87	174	283	181	90	182	64	159	0.3	143	145.7	164
26-2-13	3	154	4	155	151	158	874	135	239	162	170	132	0.2	169	147.7	166
51-4-13	6	101	2	179	149	159	1,380	69	1,028	113	33	174	0.1	178	148.1	167
53-8-13	4	135	6	128	94	170	439	174	147	172	83	151	0.2	161	151.3	169
51-5-13	5	116	8	106	43	181	987	123	67	183	30	175	0.0	193	153.7	171
54-2-13	4	135	2	179	98	168	363	177	149	170	96	145	0.3	152	155.7	172
54-3-13	2	170	2	179	161	156	77	197	299	158	53	163	2.1	28	158.1	174
91-4-13	2	170	3	168	248	148	487	168	447	147	63	161	0.5	122	158.6	175
30-5-13	5	116	3	168	48	180	443	173	48	190	45	170	0.1	177	163.5	179
21-9-13	1	186	3	168	131	163	457	172	106	180	79	152	0.3	148	165.0	180
51-8-13	4	135	0	199	174	154	596	155	590	138	0	192	0.3	147	167.9	182
24-3-13	3	154	3	168	40	183	223	187	59	186	30	176	0.2	168	172.8	185
42-1-13	5	116	1	190	43	181	207	188	119	177	0	192	0.2	162	173.1	186
22-8-13	4	135	3	168	31	186	575	158	59	187	0	192	0.1	191	174.7	188
54-8-13	1	186	2	179	62	178	812	141	49	189	0	192	0.1	186	182.9	194
21-16-13	1	186	2	179	17	191	503	167	40	191	18	181	0.0	195	183.7	195
21-15-13	1	186	1	190	29	187	159	189	20	193	20	180	0.2	167	184.1	196
26-5-13	0	202	2	179	4	197	118	192	5	200	5	189	0.0	194	192.4	204
23-3-13	0	202	0	199	0	202	1,034	119	0	202	0	192	0.0	201	192.4	205
54-5-13	2	170	0	199	0	202	18	206	0	202	0	192	0.0	201	192.7	206
24-10-13	1	186	0	199	0	202	136	191	0	202	0	192	0.0	201	194.6	208
26-1-13	1	186	0	199	0	202	19	205	0	202	0	192	0.0	201	195.5	209
26-6-13	0	202	0	199	0	202	520	165	0	202	0	192	0.0	201	195.6	210
24-8-13	1	186	0	199	0	202	0	223	0	202	0	192	0.0	201	196.8	212
21-14-13	0	202	0	199	0	202	112	193	0	202	0	192	0.0	201	197.6	213
53-4-13	0	202	0	199	0	202	12	211	0	202	0	192	0.0	201	198.8	216
26-10-13	0	202	0	199	0	202	6	213	0	202	0	192	0.0	201	199.0	218
23-5-13	0	202	0	199	0	202	4	217	0	202	0	192	0.0	201	199.3	222
98-1-13	0	202	0	199	0	202	2	220	0	202	0	192	0.0	201	199.5	223
96-1-13	0	202	0	199	0	202	1	223	0	202	0	192	0.0	201	199.7	224

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Circuit	No. Trip/Reclose	Rank No. Trip/Reclose	No. of Interruptions	Rank No.of Interruptions	Customers Affected	Rank Customers Affected	Customers Served	Rank Customers Served	Customer Hours	Rank Customer Hours	LATE	Rank LATE	SAIFI	Rank SAIFI	Priority Rating	Rank Priority Rating
84-3-13	18	16	21	16	3,154	18	1,885	30	7,098	12	2,919	10	1.7	45	17.0	4
80-3-13	21	9	37	1	1,666	56	3,016	2	4,017	33	4,100	5	0.6	115	21.8	9
76-3-13	16	19	24	10	2,242	39	2,192	15	5,547	19	1,241	31	1.0	82	28.6	12
89-2-13	11	47	13	57	3,194	17	1,123	101	4,077	32	2,438	14	2.8	12	33.6	15
71-3-13	20	12	21	16	4,876	6	2,421	11	3,673	39	578	73	2.0	31	35.0	18
80-2-13	21	9	17	33	3,096	20	1,861	31	5,802	17	450	89	1.7	46	45.0	26
61-1-13	8	72	9	94	3,525	12	1,541	56	2,828	48	1,391	27	2.3	21	45.5	27
89-1-13	28	1	13	57	1,725	52	1,715	43	2,207	66	691	61	1.0	84	49.1	30
71-2-13	8	72	14	49	1,808	50	1,434	67	3,937	35	965	42	1.3	64	52.3	36
61-9-13	9	61	10	83	597	106	1,991	25	2,705	52	2,326	16	0.3	145	58.3	43
84-1-13	6	101	14	49	4,024	8	2,209	14	4,895	21	514	84	1.8	37	58.9	44
71-5-13	2	170	12	65	2,884	25	2,015	23	4,717	23	1,190	32	1.4	52	60.6	46
61-2-13	4	135	11	73	2,036	44	1,976	26	2,490	58	1,559	26	1.0	79	60.7	47
63-8-13	8	72	23	14	883	85	1,044	115	2,241	64	933	47	0.8	97	61.7	50
80-5-13	6	101	15	40	3,639	10	1,888	29	4,298	28	235	113	1.9	33	68.8	57
67-1-13	19	14	16	38	890	84	1,040	117	3,663	40	304	105	0.9	93	71.8	62
13-9-13	13	33	12	65	439	124	1,804	36	1,270	95	700	59	0.2	157	72.0	64
76-1-13	13	33	15	40	794	90	1,834	33	1,584	84	321	104	0.4	127	75.5	69
61-3-13	13	33	12	65	438	125	1,250	87	746	127	566	75	0.4	136	81.8	82
61-6-13	7	86	7	117	2,048	43	815	140	8,709	7	337	103	2.5	15	83.2	86
76-4-13	6	101	10	83	3,504	13	1,229	89	4,430	24	169	133	2.9	11	84.2	90
61-10-13	4	135	11	73	825	87	1,200	93	1,566	86	768	55	0.7	108	84.9	91
61-8-13	10	55	11	73	2,663	29	1,219	91	4,085	31	51	166	2.2	27	89.4	94
76-2-13	2	170	8	106	817	88	603	154	3,408	45	758	56	1.4	58	94.2	99
80-4-13	8	72	4	155	762	92	590	156	1,972	74	377	96	1.3	61	99.6	103
89-3-13	5	116	5	142	404	129	401	176	1,014	115	860	50	1.0	83	101.5	105
73-1-13	5	116	3	168	972	78	1,188	94	2,255	63	463	88	0.8	102	102.5	107
63-4-13	5	116	7	117	1,121	71	994	120	2,711	51	150	138	1.1	75	110.0	117
61-4-13	1	186	15	40	2,071	42	1,644	49	4,338	27	38	172	1.3	65	111.6	120
84-2-13	10	55	6	128	299	140	1,331	76	594	137	203	124	0.2	158	114.3	125
61-7-13	4	135	5	142	2,528	30	2,081	20	6,476	14	15	183	1.2	68	115.9	129
73-6-13	7	86	5	142	489	119	587	157	860	123	234	114	0.8	99	116.2	130
71-7-13	8	72	7	117	733	95	927	129	2,119	69	49	167	0.8	104	118.9	132
63-7-13	6	101	4	155	196	150	1,498	62	611	136	299	107	0.1	170	122.0	134

Circuit	No. Trip/Reclose	Rank No. Trip/Reclose	No. of Interruptions	Rank No.of Interruptions	Customers Affected	Rank Customers Affected	Customers Served	Rank Customers Served	Customer Hours	Rank Customer Hours	LATE	Rank LATE	SAIFI	Rank SAIFI	Priority Rating	Rank Priority Rating
42-3-13	3	154	6	128	533	115	1,116	103	429	150	304	106	0.5	124	123.1	135
71-4-13	2	170	4	155	187	152	354	178	1,181	100	594	70	0.5	117	124.3	137
89-10-34	9	61	4	155	129	164	93	195	478	145	186	128	1.4	55	125.5	139
80-1-13	4	135	9	94	1,036	73	1,252	85	1,655	83	0	192	0.8	100	129.8	143
71-1-13	1	186	3	168	138	160	261	185	537	139	532	80	0.5	116	136.6	149
71-8-13	3	154	7	117	373	133	1,516	59	357	154	86	149	0.2	156	137.7	152
63-1-13	1	186	8	106	529	116	720	147	976	117	94	146	0.7	105	138.6	153
63-2-13	7	86	5	142	341	136	932	126	382	153	46	169	0.4	133	139.0	155
63-3-13	3	154	19	23	203	149	1,715	43	147	171	10	186	0.1	173	140.3	156
68-4-13	5	116	3	168	295	142	559	160	682	131	75	154	0.5	118	143.7	159
91-3-13	4	135	7	117	174	154	803	142	121	176	78	153	0.2	160	146.2	165
63-6-13	3	154	2	179	29	187	279	183	205	166	205	122	0.1	180	156.3	173
61-5-13	0	202	4	155	459	123	411	175	209	165	4	190	1.1	76	167.1	181
68-2-13	1	186	2	179	29	187	17	208	64	184	52	164	1.7	42	169.2	183
63-9-34	4	135	0	199	0	202	110	194	0	202	0	192	0.0	201	185.6	197
13-3-13	3	154	0	199	0	202	51	200	0	202	0	192	0.0	201	189.4	200
67-2-13	2	170	0	199	4	197	45	201	2	201	0	192	0.1	184	190.4	203
82-4-13	0	200	0	198	0	200	6	210	0	200	0	192	0.0	199	197.7	212
91-2-13	0	202	0	199	0	202	18	206	0	202	0	192	0.0	201	198.5	214
71-6-13	0	202	0	199	0	202	5	215	0	202	0	192	0.0	201	199.1	220

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Circuit	No. Trip/Reclose	Rank No. Trip/Reclose	No. of Interruptions	Rank No.of Interruptions	Customers Affected	Rank Customers Affected	Customers Served	Rank Customers Served	Customer Hours	Rank Customer Hours	LATE	Rank LATE	SAIFI	Rank SAIFI	Priority Rating	Rank Priority Rating
9-1-48	15	24	28	4	7,013	2	1,817	34	33,039	1	11,372	1	3.9	7	8.4	1
103-4-13	25	3	24	10	3,105	19	1,756	40	7,327	10	3,988	6	1.8	41	13.0	2
5-3-34	15	24	20	19	6,765	3	1,544	55	13,234	2	3,001	9	4.4	3	14.6	3
109-4-34	16	19	24	10	4,043	7	2,020	22	8,834	5	1,298	29	2.0	32	19.5	7
10-2-13	27	2	18	26	5,255	5	669	152	8,759	6	2,425	15	7.9	1	20.8	8
12-1-13	24	4	26	7	3,947	9	2,098	18	12,145	3	543	79	1.9	35	33.0	13
11-4-13	8	72	18	26	2,164	40	1,708	45	3,770	38	1,631	23	1.3	62	39.9	22
5-10-34	11	47	10	83	3,632	11	929	128	8,905	4	1,005	39	3.9	6	44.2	24
6-2-13	6	100	13	57	2,686	28	923	130	3,836	36	2,736	11	2.9	10	45.9	28
2-1-13	7	85	6	128	3,092	21	711	149	7,159	11	1,741	21	4.3	4	54.6	37
6-4-13	23	5	4	155	2,877	26	1,047	113	3968	34	636	66	2.7	15	59.4	45
103-3-13	9	61	13	57	1,004	74	1,044	115	2,459	59	748	57	1.0	85	66.3	53
7-3-13	8	72	19	23	578	108	237	186	1,463	89	869	49	2.4	17	67.9	56
109-2-13	7	85	14	49	976	77	1,538	57	2,095	71	679	63	0.6	108	70.3	60
6-7-13	1	185	17	33	2,244	38	1,101	105	4,848	22	844	51	2.0	30	71.1	61
11-3-13	12	41	5	142	929	82	1,763	39	1,043	110	943	46	0.5	117	72.5	65
12-3-13	8	72	15	40	1,692	55	931	127	2,691	53	359	99	1.8	38	74.2	67
102-2-13	7	85	9	94	984	75	1,049	112	2,103	70	746	58	0.9	86	76.9	73
103-2-13	6	100	27	5	485	120	1,272	84	1,187	98	693	60	0.4	130	77.1	74
15-6-13	13	33	27	5	1,208	67	1,665	48	2,080	72	136	140	0.7	105	78.0	75
113-8-13	4	134	9	94	689	101	1,225	90	2,221	65	1,583	24	0.6	112	78.0	76
11-2-13	11	47	11	73	560	111	2,974	3	1,230	96	387	94	0.2	163	83.6	87
7-2-13	9	61	12	65	1,221	66	1,186	95	1,348	93	299	108	1.0	79	83.7	88
7-1-13	22	6	10	83	1,717	53	1,038	118	1,842	78	122	142	1.7	47	84.0	89
102-1-13	9	61	17	33	1,196	68	668	153	2,522	56	171	131	1.8	39	85.7	93
3-1S-34	0	200	4	155	910	83	534	162	4,393	25	2,499	13	1.7	43	89.7	95
103-1-13	9	61	5	142	984	75	724	146	1,047	109	446	90	1.4	57	92.9	98
9-2-48	16	19	4	155	728	97	269	184	3,821	37	144	139	2.7	14	101.0	104
11-1-13	4	134	7	117	1,040	72	1,441	66	697	128	413	91	0.7	106	101.6	106
15-1-13	5	115	5	142	797	89	352	179	1,411	92	347	101	2.3	23	107.0	110
3-1N-34	0	200	9	94	1,375	63	1,181	96	5,892	16	237	112	1.2	70	107.7	112
116-1-34	0	200	7	117	1,551	58	759	144	1,763	81	374	97	2.0	29	110.3	118
102-3-13	7	85	8	106	730	96	852	137	1,582	85	86	148	0.9	91	114.3	126
113-2-13	12	41	10	83	157	157	1,840	32	281	159	90	147	0.1	183	115.7	129

Circuit	No. Trip/Reclose	Rank No. Trip/Reclose	No. of Interruptions	Rank No.of Interruptions	Customers Affected	Rank Customers Affected	Customers Served	Rank Customers Served	Customer Hours	Rank Customer Hours	LATE	Rank LATE	SAIFI	Rank SAIFI	Priority Rating	Rank Priority Rating
15-3-13	8	72	8	106	107	166	1,483	63	271	160	200	125	0.1	186	120.9	133
13-7-13	3	153	4	155	652	102	701	151	951	118	230	116	0.9	88	126.8	140
13-8-13	5	115	5	142	251	147	545	161	687	130	227	117	0.5	123	128.8	142
109-1-13	8	72	6	128	90	173	2,854	5	115	178	86	150	0.0	194	131.0	144
113-5-13	5	115	5	142	460	122	1,276	83	483	144	69	158	0.4	132	134.9	146
6-1-13	2	169	9	94	376	132	1,110	104	342	156	106	144	0.3	135	137.2	151
113-6-13	4	134	3	168	549	112	563	159	153	169	134	141	1.0	84	138.7	154
13-2-13	3	153	7	117	537	114	522	164	194	168	41	171	1.0	80	145.2	163
116-8-13	4	134	6	128	91	171	1,252	85	135	173	56	162	0.1	185	150.5	168
109-3-13	1	185	10	83	72	177	2,627	7	115	179	49	168	0.0	195	151.8	170
15-4-13	3	153	1	190	95	169	77	197	131	174	72	155	1.2	66	159.5	177
113-7-13	1	185	12	65	87	174	798	143	129	175	28	177	0.1	174	159.6	178
6-5-13	2	169	2	179	25	190	71	199	63	185	63	160	0.4	133	171.1	184
116-2-34	2	169	2	179	38	184	20	203	440	148	150	137	1.9	34	159.0	185
113-4-13	4	134	2	179	7	194	1,291	81	6	197	1	191	0.0	198	172.7	186
15-5-13	3	153	3	168	7	194	14	208	58	188	14	184	0.5	121	175.1	189
13-4-13	4	134	1	190	17	191	144	190	10	195	20	179	0.1	172	175.5	190
15-2-13	2	169	1	190	35	185	38	202	17	193	17	182	0.9	89	176.9	191
1-1-13	0	200	1	190	12	193	4	213	96	181	0	192	3.0	9	181.2	192
113-1-13	2	169	1	190	2	198	91	196	12	194	12	185	0.0	196	186.8	197
6-8-13	2	169	0	198	0	200	524	163	0	200	0	192	0.0	199	188.8	199
113-3-13	0	200	1	190	2	198	280	182	9	196	9	187	0.0	197	192.3	204
11-5-13	1	185	0	198	0	200	1	217	0	200	0	192	0.0	199	195.5	208
3-1-34	0	200	0	198	0	200	2	215	0	200	0	192	0.0	199	198.1	216

APPENDIX B

2023 Service Reliability Program Descriptions

Service Reliability Programs

The Company's service reliability programs are designed to reduce both interruption frequency and outage duration through the prudent inspection and maintenance of critical components installed on the electric transmission and distribution system. These programs define an optimum set of activities that will cost effectively meet customer reliability needs within the framework of the company financial objectives. Reliability programs establish inspection intervals; minimum component testing and performance requirements; and maintenance procedures to be performed during each inspection.

The major programs in effect during the year are listed below, and reference the appropriate O&M or capital budgets and expenditures as contained in Appendix F:

Operations and Maintenance (click on the links below to jump to the program page in this document)

- Transmission ROW and line maintenance
- Transmission relay maintenance
- Substation maintenance
- Distribution vegetation management
- Distribution line maintenance
    - *Capacitor Maintenance Program*
    - *Regulator Maintenance Program*
    - *Recloser/Sectionalizer Maintenance Program*
    - *Circuit Ownership Program*
    - *Pole Remaining Strength Inspection*
- Infrared Thermal Inspection Program
- Visual inspection programs
- Stray Voltage Testing
- Power Quality

Capital Programs

- Underground Cable Rehab and Rebuild Program

Title: **TRANSMISSION RIGHT-OF-WAY AND LINE MAINTENANCE**
Subject: NYPSC Delivery System Program Review
Transmission Right-Of-Way and Line Maintenance

Item Description:

Examination of the transmission right-of-way (ROW) and line maintenance programs and spot check ROW and lines to validate that maintenance is adequate.

O&R Program:

A. TRANSMISSION LINE MAINTENANCE: The program is based on standards and specifications for Ground and Helicopter Patrols. Periodic inspections of overhead transmission lines are performed on the lines that are owned and/or operated by the Company. It includes the following types of inspections performed on all overhead transmission lines in the three O&R's Divisions.

The following is a summary of the type and frequency of these inspections:

- Ground patrol
  - Annual
    - Includes annual stray voltage/visual inspection
    - Every 5-years stray voltage testing is conducted during this inspection
    - As required for emergency patrols
- Helicopter patrol
  - Bi-monthly (monthly for 500 kV and 345 kV lines, and NERC IROL lines)
  - As required for emergency patrols
- Climbing inspections
  - Below 345 kV
    - As required
  - 345 kV and above
    - Every five-years
- Emergency patrol
- As required
- Ground resistance measurements
  - Below 345kV
    - As required
  - 345 kV and above

        - Five-years, until structure passes two consecutive tests, then every ten years.
    - Infrared inspection
        - Twice a year, spring and summer
        - Each abnormality is photographed
    - Wood pole inspection
        - Annual
            - Identify transmission facilities requiring maintenance or replacement.
            - Includes visual and mechanical sound and bore (as needed).

B. Transmission line ROW maintenance:

The transmission ROWs are maintained based on O&R's "Long Range Transmission Right of Way Vegetation Management Plan" that is filed with the NYPSC. The document is updated whenever modifications or changes are made to the program and was recently updated on January 1, 2023. Annually, a summary of the previous year's maintenance and a summary of the next year's schedule is prepared and submitted to the NYPSC under the provisions of Case 27605.

References:

The helicopter patrol records, foot patrol records, infrared thermal vision records and all other pertinent maintenance records related to transmission line maintenance are kept on file for a minimum period of three years, at O&R's T&D Maintenance offices in Blooming Grove, New York.

For scheduled preventive transmission vegetation ROW maintenance, the O&R schedules for each year, listed by corridor number and treatment technique, are kept on file in our T&D Maintenance offices in Blooming Grove, as well as being sent to the NYPSC in accordance with the provisions of Case 27605.

Title: **TRANSMISSION RELAY MAINTENANCE**
Subject: NYPSC Delivery System Program Review
Transmission Relay Maintenance

Item Description:

Examine individual utility transmission relay maintenance programs so that proper and timely maintenance is being performed.

O&R Program:

All protection systems for the bulk power system are maintained periodically, at a four- to twelve-year interval, in accordance with regulatory guidance under frequency relay settings are verified on an annual basis and the automatic under-frequency load shedding protection system is maintained on a four to twelve-year interval, in accordance with regulatory guidance requirements. Maintenance of protection system includes performing bench test of protective relays, per manufacture requirements, to verify the operation of protective elements is within specification. In addition, the protective functions of the relays operate as per the specified logic.

Breaker trip coil and DC continuity test for bulk power system are performed periodically, at four to six year interval, in accordance with regulatory guidance requirements.

The substation battery banks and charger testing for bulk power system are maintained in accordance with regulatory guidance requirements.

O&R utilizes automated relay testing with the Doble Engineering program. Our experience has proven it to be substantially more accurate than previous test sets and is giving us more repeatable and thus reliable results.

References:

Settings and performance records of the relays are stored on laptop computers, with backup files on both the O&R network and the computer hard drives. Relay maintenance reports, as well as the reports for the past two years are kept on file at the Spring Valley Operations Center.

The System Operations and Transmission and Substation Engineering Departments generate a report for all mis-operations on the bulk power system and equipment. These reports are kept on file by Transmission and Substation Engineering, as well as are being forwarded to the NYISO.

Title: **SUBSTATION MAINTENANCE**
Subject: NYPSC Delivery System Program Review
Substation Maintenance

Item Description:

Examine individual utility substation maintenance programs to validate proper maintenance procedures and verify that maintenance is being performed. Review recent operating data to verify that no adverse trends exist.

O&R Program:

The following details the different class inspections and maintenance programs performed by the Substation Operations Department, and their associated time cycles. Intervals vary depending on equipment type, style and maintenance history.

CLASS #1 INSPECTION - Monthly

- Visual inspection of transformers and oil breakers for oil leaks, oil levels, nitrogen pressure, connections, condition of bushings and Oil Circuit Breaker (OCB) operating mechanism.
- Visual inspection of battery banks, chargers, control board indicating lights, control house lights, yard lights.
- Visual inspection of minor equipment including potential transformers (PTs), current transformers (CTs), capacitive coupled potential devices (CCPDs), disconnect switches and bus connections.
- Visual inspection of all structures, fences/gates and yard surfaces.
- Counter readings taken of OCBs, gas circuit breakers (GCBs), reclosers and tap changers.

STATION BATTERY TESTS – Annually/Monthly visual inspections and verifications

Measure specific gravity and cell voltage. Test with battery impedance testing equipment. Clean batteries.

FANS, PUMPS, HEATERS AND COMPRESSORS - Annually

Check for proper operation prior to winter for heaters and compressors and prior to summer for fans and pumps.

TRANSFORMER GAS-IN-OIL ANALYSIS – Quarterly, semi-annually or annually

Take oil sample from each power transformer compartment and analyze for combustible gas content.

DOBLE POWER FACTOR TEST - Every two to five years

Use Doble instrument to measure the integrity of the insulating medium of certain device.

CIRCUIT BREAKER TIMING - Every three to ten years

Check the time it takes for each operation of certain breakers.

RELAY MAINTENANCE - Every four to twelve years based on relay type and maintenance task

Clean, test and calibrate as required all relays involved in protective relay schemes - Every four years for non-microprocessor relays and every twelve years for microprocessor based relays, with self-check.

Perform a trip test to verify proper operation - Every four years for non-microprocessor relays and every 6 years for microprocessor relays.

CLASS #3 INSPECTIONS - Every four to ten years

The Class #3 inspection on transformers is to include, but is not limited to the following items:

1. Test oil;
2. TTR – Test, Megger test;
3. Inspect all connectors, bushings;
4. Inspect for leaks (oil – nitrogen);
5. Check CT connections, alarm systems on banks; and
6. Doble Power Factor Test.

<u>Transformers with Load Tap Changers</u>

7. Test Oil in LTC cabinet; and
8. Test LTC control for proper operation.

The Class #3 inspection on OCB's is to include, but is not limited to the following items:

1. Test Oil;
2. DLRO (Ductor Test) before and after;
3. Inspect and clean control cabinet;
4. Inspect and clean pneumatic-hydraulic or spring charged operating system; and
5. Operational test.

The Class #3 inspection on reclosers is to include, but is not limited to the following items:

1. Test oil;
2. DLRO (Ductor Test) before and after;
3. Control cabinet clean, checkout and operational test; and

Reclosers with Vacuum Bottles

4. Hi-pot test.

The Class #3 inspection on ACB's is to include, but is not limited to the following items:

1. DLRO (Ductor Test) before and after;
2. Inspect all contacts (action to be taken, if needed);
3. Inspect and test all micro and aux. contacts (close and trip circuit); and
4. Operational testing

CLASS #4 INSPECTIONS – Every ten years or as necessitated by Class #3 Inspection results or as dictated by Gas in Oil analysis

The Class #4 inspection consists of a thorough inspection and testing of the apparatus listed below.

The Class #4 also includes all inspections included in a Class #3.

Transformers with Load Tap Changer

1. Drain oil from LTC cabinet, inspect all contacts;
2. Inspect and tighten all connections;
3. Clean complete LTC cabinet;
4. Filter or replace oil; and
5. Test LTC control for proper operation.

The Class #4 inspection on OCB's is to include, but is not limited to the following items:

1. DLRO (Ductor test) before and after;
2. Drop tanks - inspect and tighten all connections; clean all parts and tanks;
3. Test and filter or replace oil;
4. Inspect and clean control cabinet;
5. Inspect and clean pneumatic-hydraulic or spring charged operating systems; and
6. Operational Test.

The Class #4 inspection on reclosers is to include, but is not limited to the following items:

1. Drop tank (filter or replace oil);
2. Inspect all contacts - repair or replace (depending on the condition);
3. Check and tighten all connections;
4. Control cabinet, clean and checkout;
5. DLRO (Ductor Test) before and after; and
6. Operational Test.

Recloser with Vacuum Bottles

Hi-Pot test.

The Class #4 inspection on ACB's is to include, but is not limited to the following items:

1. DLRO (Ductor Test) before and after;
2. Inspect all contacts - clean and put protective grease coating on;
3. Inspect and clean all arc chutes;
4. Inspect and test all micro and auxiliary contacts (close and trip circuit);
5. Check and tighten all connections; and
6. Operational Test.

References:

All inspection and maintenance records are retained as a hard copy for one year at O&R's main Operating Division headquarters. These records are also retained electronically on a work management system. Repeated callouts and equipment failures that show an abnormal trend are flagged by the work management system.

The Doble power factor testing, transformer gas in oil analysis and infrared inspection records are stored electronically on the Substation Information System (SIS). OCB timing maintenance records are presently kept on a separate electronic storage system that is provided with the test equipment.

Title: **DISTRIBUTION VEGETATION MANAGEMENT**
Subject: NYPSC Delivery System Program Review
Distribution Tree Trimming

Item Description:

Examination of the distribution vegetation management (VM) programs and spot check of distribution lines to validate that maintenance is adequate.

O&R Program:

The distribution VM program is a vegetation clearance and control methodology based upon a 4-year cycle. The circuits to be maintained each year are selected using the normal scheduled maintenance cycle. A tree-related outage spreadsheet, derived from OMS and Performance and Operational Engineering, is used to monitor circuits based on vegetation-related outage performance. Patrols are completed as VM supervisors and other company personnel move throughout the service territory. Any identified vegetation issues requiring attention to prevent service interruptions are reported for further investigation and remediation by the VM Department. Beginning in April 2020, Nelson Tree Service has been retained by the Company to complete the scheduled distribution VM programs.

References:

The Company maintains VM records for each substation worked, with completion dates and mileage maintained. Audits are performed by the Company VM Supervisor or Company contractor representative on the circuits as the vegetation work proceeds, so as to maintain the quality of work and the clearance specifications. Additionally, Contractor Field Observation Reports are completed monthly. These observations, completed by Company VM Supervisors and Company contractor representatives, are also performed on the contractors performing the work and focus on work quality as well as several safety-related items.

Title: DISTRIBUTION LINE MAINTENANCE

Item Description:

Examination of the distribution line maintenance programs (excluding tree trimming) and spot check lines to validate that maintenance is adequate.

O&R Program:

The following details the distribution line maintenance programs performed by O&R's Overhead and Underground Electric Operations Departments.

CAPACITOR MAINTENANCE PROGRAM

All capacitor banks are inspected in accordance with the Capacitor Maintenance Procedure. Maintenance schedules have been set by the divisions and are tailored to best meet the divisions' needs.

REGULATOR MAINTENANCE PROGRAM

Regulator inspections and functional tests are performed annually in accordance with the Regulator Maintenance Procedure. As system conditions allow, deficiencies are corrected prior to the system peak period.

RECLOSER SECTIONALIZER MAINTENANCE PROGRAM

Recloser, Sectionalizer inspections and functional tests are performed in accordance with the Recloser, Sectionalizer Maintenance Procedure. A visual inspection of all line units is performed annually, and functional tests are performed every three years. In 2023 the following maintenance was performed:

Reclosers:

Eastern – Out of 149: 4 Visuals and 20 functionals were completed for a total of 16%
Central - Out of 80: 27 Visuals and 24 functionals were completed for a total of 64%
Western - Out of 106: 27 Visuals and 21 functionals were completed for a total of 45%

Regulators:

Eastern NY/NJ - Out of 21 locations: 21 were functionally tested a total of 100%
Central NY/NJ – Out of 48 locations: 48 were functionally tested for a total of 100%
Western – Out of 52 locations: 52 were functionally tested for a total of 100%

Smart Caps:

Eastern - Out of 53 locations: 52 were functionally tested for a total of 100%
Central - Out of 22 locations: 22 were functionally tested for a total of 100%
Western - Out of 22 locations: 22 were functionally tested for a total of 100%

Devices	Region (Total)	Maintenance Performed	
		Visual	Functional
Reclosers	Eastern (149)	4	20
	Central (80)	27	24
	Western (106)	27	21
Regulators	Eastern (21)	NA	21
	Central (48)	NA	48
	Western (52)	NA	52
Smart Caps	Eastern (53)	NA	52
	Central (23)	NA	22
	Western (22)	NA	22

CIRCUIT OWNERSHIP PROGRAM

This program was modified in 2013 to target our worst performing circuits that have a relatively poor performance based on their impact on Customers Affected and Customer Hours of interruption. The circuits are patrolled routinely to look for any immediate issues that may adversely affect its reliability.

POLE REMAINING STRENGTH INSPECTION

O&R Rockland is on a 12-year inspection cycle as required by the National Electric Safety Code. The program began in 2007 and a new 12-year inspection cycle started in 2020. To date 34,934 (26.1%) of the 133,805 poles have been inspected. In 2023, 17,781 poles were inspected and of these 847 (4.8%) failed. Of the failures, 465 (54.9%) required replacement and 382 (45.1%) required trussing.

Title: INFRARED THERMAL INSPECTION PROGRAM

This program is normally administered annually on all three-phase overhead facilities, and on a three-year cycle for all single-phase overhead facilities. Necessary repairs are prioritized by temperature rise and completed as follows:

- Priority 1 - 101^0 C - or More - Repair Immediately as system conditions permit;
- Priority 2 - 51^0 - 100^0 C - Repair in 14 Days as system conditions permit; and
- Priority 3 - 1^0 - 50^0 C (all others) - Repair as resources allow and/or monitor in next IR cycle.

This program is also administered on the transmission system. Two cycles of inspection are conducted. One in the spring as part of summer preparations plan to ensure system readiness, then another in the summer under full load conditions. These are conducted and maintained as identified in the above Transmission Right-Of-Way and Line Maintenance Program description.

The distribution program consisted of a survey/scan of all three phase mainline in NY and single-phase in alternating divisions on an annual basis.

Title: VISUAL INSPECTION PROGRAM

By Order issued on January 5, 2005, with subsequent revisions issued on July 21, 2005, December 15, 2008, March 22, 2013 and January 13, 2015 in Case 04-M-0159, the Commission required that O&R initiate a Visual Inspection Program encompassing 20% of all O&R facilities annually, such that within five-years all facilities have been visually inspected. Consistent with the Order, O&R initiated the visual inspection program in 2005 and continues to do so annually.

O&R conducts separate visual inspections of its T&D systems. A non-company contractor labor force performs the majority of the work. Electric Operations located in West Nyack, New York, administers the Distribution Visual Inspection Program. Distribution visual inspection records are stored with the inspection vendor and O&R's Electric Information Management System (EIMS). Transmission inspections are conducted on and maintained as identified in the above Transmission Right-Of-Way and Line Maintenance Program description.

In 2023, approximately 20% of the T&D system was visually inspected. 31 Level 1 deficiencies were identified on the distribution system and no Level 1 deficiencies were identified on the transmission system. All Level 1 deficiencies have been permanently repaired.

Title: STRAY VOLTAGE TESTING PROGRAM

By order issued on January 5, 2005, with subsequent revisions issued on July 21, 2005, December 15, 2008, March 22, 2013 and January 13, 2015 in Case 04-M-0159, the Commission required that O&R initiate a stray voltage testing program encompassing annual inspection of 20% of O&R facilities capable of conducting electricity, third-party facilities bonded electrically to the O&R system, and all municipal street and traffic light systems. Consistent with the Order, O&R has conducted stray voltage testing in 2022.

O&R conducts separate stray voltage testing of its T&D systems. A non-company contractor labor force performs the majority of the work. Electric Operations located in West Nyack, New York, administers the Distribution Visual Inspection Program. Inspections records are stored with the vendor and O&R's Electric Information Management System (EIMS). Transmission stray voltage testing are conducted and maintained as identified in the above Transmission Right-Of-Way and Line Maintenance Program description. Stray voltage testing was performed on all transmission structures and substation fences in 2021. As per the Safety Standards, is required to be performed again in 2026. Transmission structures are tested on a five-year cycle.

During the 2023 testing cycle, no stray voltage conditions >= 1.0 volt were identified.

Title: UNDERGROUND CABLE REHAB AND REBUILD PROGRAM

All underground system outage statistics are analyzed on an individual subdivision basis and a priority listing developed. From this listing it is determined if the cable is to be rehabilitated or rebuilt. Where multiple cable failures have occurred on the same cable section, cables are replaced with Ethylene-Propylene Rubber (EPR) insulated cable.

On older cable subdivisions, that have not had multiple cable failure, a less expensive rehabilitation process is considered. Rehabilitation is accomplished by injecting a patented silicone-based fluid into the interstices of the cable, which impregnates the insulation and fills the voids. This process restores the dielectric properties of the deteriorated cable.

Developments that are serviced by underground facilities are selected for cable rehabilitation based upon the following criteria:

1. Is not a three-phase system with three-phase dependent loads;
2. The U/G facilities incorporates a loop-feed scheme;
3. The cable is rated 15 kV; and
4. The cable is either 175 mil. or 220 mil., HMWPE or XLPE insulated.

The Rehabilitation Program is more of a proactive measure to increase customer reliability and therefore focuses on older underground developments that fit the rehabilitation criteria and have experienced a small number of outages due to cable failure. If there have been multiple outages within a cable section due to cable failures, it is usually more cost effective to rebuild the faulted sections.

Developments that are serviced by underground facilities are selected for cable replacement based upon their frequency of cable failures and either do not fit the criteria for rehabilitation or have been unsuccessfully rehabilitated. Outage statistics are used as an initial guide in identifying underground developments that experience frequent outages. From this selection process, further outage analysis is required to isolate outages that occur only as a result of cable failure. A priority list is then constructed, which ranks URD developments according to outage frequency, customers affected, and load.

References:

The scope of work summaries for all of the service reliability maintenance projects are maintained on O&R's work management system. The individual Operating Divisions maintain the overall records including the circuits that have been addressed and the project timing. These Departments, along with Distribution Engineering, review the circuit statistics and performance to prioritize the circuits which need to be addressed or revisited as part of this program.

The scope of work and completion records for all of the underground cable rehabilitation and rebuild projects is maintained on the work management system. The Underground Operating Department also maintains hard copy records of this program.

Title: **POWER QUALITY**
Subject: NYPSC Delivery System Program Review

In 2023, O&R continued its Power Quality (PQ) Initiative to help commercial and industrial (C&I) customers experiencing power quality issues affecting their electric service or electric usage. Several services were available to customers, including:

- Investigating root cause of power quality events experienced by customer,
- Communication of root cause of power quality events to customer,
- Reviewing and testing new power quality meters to best monitor customer data,
- Review of new software to enable quick analysis of customer power quality events.

Power Quality Complaint Resolution

O&R's systems track power quality issues in three categories: Flickering Lights, High Voltage, and Low Voltage. Each of the complaints in the following table was investigated, and the origin of each problem is identified in table below.

Summary of Power Quality Problems – 2023

Description		Divisions			Grand Total
Problem	**Cause**	**Eastern**	**Central**	**Western**	
Flickering Lights	Company	146	88	112	
	Customer	31	22	9	
	No Problem Found	40	33	38	
	Total	**217**	**143**	**159**	**519**
High Voltage	Company	15	14	20	
	Customer	7	0	6	
	No Problem Found	10	8	9	
	Total	**32**	**22**	**35**	**89**
Low Voltage	Company	34	20	26	
	Customer	12	6	3	
	No Problem Found	8	8	12	
	Total	**54**	**34**	**41**	**129**
Grand Total		**303**	**199**	**235**	**737**

APPENDIX C

2023 Major Outages

Orange and Rockland
New York State Only
Major Incidents
2023

Non-excludable incidents affecting 5,000 or more customers.

Division	Date	Customers Affected	Cust Min of Interruption	Cause
Eastern	9/23/2023	5,098	258,525	Tropical Storm Ophelia - High winds and precipitation
Central	No outages over 5,000 customer			
Western	11/12/2023	6,149	159,059	Equipment Failure - 69kv/13 kv transformer tripped

APPENDIX D

2023 Circuit Performance Frequency and Restoration

Eastern Division 2023 Reliability Data – Excludes storms – Sorted by Frequency

Circuit	No. of Interruptions	Customers Affected	Customers Served	Customer Hours	SAIFI	CAIDI	SAIDI
22-4-13	14	5,888	1,290	8,380	4.56	1.42	6.50
45-8-13	18	7,954	1,915	6,158	4.15	0.77	3.22
50-1-13	9	1,887	508	2,324	3.71	1.23	4.57
23-4-13	24	3,291	1,315	5,086	2.50	1.55	3.87
51-3-13	12	1,152	486	1,463	2.37	1.27	3.01
24-12-13	15	2,730	1,156	2,763	2.36	1.01	2.39
50-4-13	7	2,036	881	2,556	2.31	1.26	2.90
22-1-13	8	2,246	988	2,946	2.27	1.31	2.98
54-6-13	6	2,993	1,341	916	2.23	0.31	0.68
45-10-13	20	2,418	1,092	2,885	2.21	1.19	2.64
54-4-13	6	755	342	430	2.21	0.57	1.26
54-3-13	2	161	77	299	2.09	1.86	3.89
24-11-13	15	3,284	1,802	1,509	1.82	0.46	0.84
50-3-13	9	1,299	730	1,863	1.78	1.43	2.55
23-1-13	12	2,275	1,337	5,727	1.70	2.52	4.28
50-2-13	17	3,283	2,090	3,501	1.57	1.07	1.67
51-2-13	13	1,453	959	2,443	1.52	1.68	2.55
22-2-13	18	1,944	1,293	3,634	1.50	1.87	2.81
44-5B-13	25	2,014	1,374	4,236	1.47	2.10	3.08
19-11-13	19	2,294	1,611	1,083	1.42	0.47	0.67
45-7-13	16	1,404	993	1,679	1.41	1.20	1.69
23-6-13	10	2,490	1,815	3,461	1.37	1.39	1.91
29-1-13	18	2,312	1,766	2,523	1.31	1.09	1.43
44-6-13	17	1,160	899	1,036	1.29	0.89	1.15
45-3-13	11	1,706	1,358	1,977	1.26	1.16	1.46
45-6-13	11	863	713	513	1.21	0.59	0.72
16M3-11-13	18	1,615	1,343	1,796	1.20	1.11	1.34
45-9-13	14	2,026	1,689	1,842	1.20	0.91	1.09
45-1-13	26	1,294	1,134	1,028	1.14	0.79	0.91
27-3-13	11	3,035	2,667	4,348	1.14	1.43	1.63
19-14-13	32	2,470	2,189	6,618	1.13	2.68	3.02
44-4-13	6	946	863	1,185	1.10	1.25	1.37
53-1-13	20	2,099	2,004	2,368	1.05	1.13	1.18
27-7-13	15	1,775	1,899	2,136	0.93	1.20	1.12
21-11-13	14	785	890	1,081	0.88	1.38	1.21
27-6-13	9	938	1,101	807	0.85	0.86	0.73
53-3-13	8	397	467	791	0.85	1.99	1.69
51-1-13	11	972	1,144	2,162	0.85	2.22	1.89
27-1-13	8	708	845	782	0.84	1.10	0.93
19-10-13	30	2,948	3,569	7,925	0.83	2.69	2.22

Circuit	No. of Interruptions	Customers Affected	Customers Served	Customer Hours	SAIFI	CAIDI	SAIDI
17-1-13	3	561	704	921	0.80	1.64	1.31
22-7-13	21	1,499	2,476	1,432	0.61	0.96	0.58
22-3-13	6	293	487	864	0.60	2.95	1.77
51-6-13	9	743	1,311	2,499	0.57	3.36	1.91
19-8-13	15	1,530	2,929	1,478	0.52	0.97	0.50
72-3-13	15	641	1,232	1,006	0.52	1.57	0.82
91-4-13	3	248	487	447	0.51	1.80	0.92
45-2-13	14	716	1,607	2,781	0.45	3.88	1.73
23-2-13	10	425	987	1,103	0.43	2.60	1.12
45-5-13	22	635	1,558	1,965	0.41	3.09	1.26
24-2-13	10	547	1,363	4,201	0.40	7.68	3.08
58-5-13	9	424	1,074	667	0.39	1.57	0.62
45-4-13	20	582	1,721	3,627	0.34	6.23	2.11
19-15-13	5	367	1,094	507	0.34	1.38	0.46
72-4-13	13	402	1,210	1,074	0.33	2.67	0.89
27-8-13	13	505	1,565	640	0.32	1.27	0.41
53-7-13	4	351	1,117	449	0.31	1.28	0.40
22-6-13	6	87	283	90	0.31	1.03	0.32
21-13-13	11	702	2,337	1,212	0.30	1.73	0.52
24-1-13	10	325	1,092	917	0.30	2.82	0.84
51-8-13	0	174	596	590	0.29	3.39	0.99
21-9-13	3	131	457	106	0.29	0.81	0.23
44-1-13	4	308	1,086	1,887	0.28	6.13	1.74
29-3-13	18	568	2,051	1,086	0.28	1.91	0.53
53-6-13	8	477	1,755	1,119	0.27	2.34	0.64
54-2-13	2	98	363	149	0.27	1.52	0.41
19-9-13	13	428	1,692	1,342	0.25	3.14	0.79
27-5-13	5	287	1,157	665	0.25	2.32	0.57
27-2-13	14	607	2,462	1,108	0.25	1.82	0.45
44-5A-13	7	324	1,448	1,175	0.22	3.63	0.81
53-8-13	6	94	439	147	0.21	1.56	0.33
42-1-13	1	43	207	119	0.21	2.77	0.57
17-2-13	12	495	2,479	691	0.20	1.40	0.28
19-12-13	8	298	1,523	505	0.20	1.69	0.33
54-7-13	10	262	1,395	1,027	0.19	3.92	0.74
21-15-13	1	29	159	20	0.18	0.68	0.12
24-3-13	3	40	223	59	0.18	1.48	0.27
26-2-13	4	151	874	239	0.17	1.58	0.27
22-5-13	11	184	1,510	411	0.12	2.23	0.27
27-4-13	5	287	2,369	677	0.12	2.36	0.29

Circuit	No. of Interruptions	Customers Affected	Customers Served	Customer Hours	SAIFI	CAIDI	SAIDI
54-1-13	6	91	826	354	0.11	3.89	0.43
30-5-13	3	48	443	48	0.11	0.99	0.11
51-4-13	2	149	1,380	1,028	0.11	6.90	0.74
42-2-13	6	112	1,045	199	0.11	1.78	0.19
24-4-13	6	132	1,303	401	0.10	3.04	0.31
44-3A-13	8	133	1,445	335	0.09	2.52	0.23
44-3B-13	7	193	2,106	535	0.09	2.77	0.25
54-8-13	2	62	812	49	0.08	0.79	0.06
21-12-13	4	103	1,504	264	0.07	2.56	0.18
44-2-13	9	62	916	234	0.07	3.77	0.26
22-8-13	3	31	575	59	0.05	1.89	0.10
19-13-13	5	85	1,607	216	0.05	2.55	0.13
51-5-13	8	43	987	67	0.04	1.55	0.07
26-5-13	2	4	118	5	0.03	1.35	0.05
21-16-13	2	17	503	40	0.03	2.34	0.08
23-3-13	0	0	1,034	0	0.00	0.00	0.00
54-5-13	0	0	18	0	0.00	0.00	0.00
24-10-13	0	0	136	0	0.00	0.00	0.00
26-1-13	0	0	19	0	0.00	0.00	0.00
26-6-13	0	0	520	0	0.00	0.00	0.00
21-14-13	0	0	112	0	0.00	0.00	0.00
53-4-13	0	0	12	0	0.00	0.00	0.00
26-10-13	0	0	6	0	0.00	0.00	0.00
23-5-13	0	0	4	0	0.00	0.00	0.00
98-1-13	0	0	2	0	0.00	0.00	0.00
96-1-13	0	0	1	0	0.00	0.00	0.00

Eastern Division 2023 Reliability Data – Excludes storms – Sorted by Restoration

Circuit	No. of Interruptions	Customers Affected	Customers Served	Customer Hours	SAIFI	CAIDI	SAIDI
24-2-13	10	547	1,363	4,201	0.40	7.68	3.08
51-4-13	2	149	1,380	1,028	0.11	6.90	0.74
45-4-13	20	582	1,721	3,627	0.34	6.23	2.11
44-1-13	4	308	1,086	1,887	0.28	6.13	1.74
54-7-13	10	262	1,395	1,027	0.19	3.92	0.74
54-1-13	6	91	826	354	0.11	3.89	0.43
45-2-13	14	716	1,607	2,781	0.45	3.88	1.73
44-2-13	9	62	916	234	0.07	3.77	0.26
44-5A-13	7	324	1,448	1,175	0.22	3.63	0.81
51-8-13	0	174	596	590	0.29	3.39	0.99
51-6-13	9	743	1,311	2,499	0.57	3.36	1.91
19-9-13	13	428	1,692	1,342	0.25	3.14	0.79
45-5-13	22	635	1,558	1,965	0.41	3.09	1.26
24-4-13	6	132	1,303	401	0.10	3.04	0.31
22-3-13	6	293	487	864	0.60	2.95	1.77
24-1-13	10	325	1,092	917	0.30	2.82	0.84
44-3B-13	7	193	2,106	535	0.09	2.77	0.25
42-1-13	1	43	207	119	0.21	2.77	0.57
19-10-13	30	2,948	3,569	7,925	0.83	2.69	2.22
19-14-13	32	2,470	2,189	6,618	1.13	2.68	3.02
72-4-13	13	402	1,210	1,074	0.33	2.67	0.89
23-2-13	10	425	987	1,103	0.43	2.60	1.12
21-12-13	4	103	1,504	264	0.07	2.56	0.18
19-13-13	5	85	1,607	216	0.05	2.55	0.13
23-1-13	12	2,275	1,337	5,727	1.70	2.52	4.28
44-3A-13	8	133	1,445	335	0.09	2.52	0.23
27-4-13	5	287	2,369	677	0.12	2.36	0.29
53-6-13	8	477	1,755	1,119	0.27	2.34	0.64
21-16-13	2	17	503	40	0.03	2.34	0.08
27-5-13	5	287	1,157	665	0.25	2.32	0.57
22-5-13	11	184	1,510	411	0.12	2.23	0.27
51-1-13	11	972	1,144	2,162	0.85	2.22	1.89
44-5B-13	25	2,014	1,374	4,236	1.47	2.10	3.08
53-3-13	8	397	467	791	0.85	1.99	1.69
29-3-13	18	568	2,051	1,086	0.28	1.91	0.53
22-8-13	3	31	575	59	0.05	1.89	0.10
22-2-13	18	1,944	1,293	3,634	1.50	1.87	2.81
54-3-13	2	161	77	299	2.09	1.86	3.89
27-2-13	14	607	2,462	1,108	0.25	1.82	0.45

Circuit	No. of Interruptions	Customers Affected	Customers Served	Customer Hours	SAIFI	CAIDI	SAIDI
91-4-13	3	248	487	447	0.51	1.80	0.92
42-2-13	6	112	1,045	199	0.11	1.78	0.19
21-13-13	11	702	2,337	1,212	0.30	1.73	0.52
19-12-13	8	298	1,523	505	0.20	1.69	0.33
51-2-13	13	1,453	959	2,443	1.52	1.68	2.55
17-1-13	3	561	704	921	0.80	1.64	1.31
26-2-13	4	151	874	239	0.17	1.58	0.27
58-5-13	9	424	1,074	667	0.39	1.57	0.62
72-3-13	15	641	1,232	1,006	0.52	1.57	0.82
53-8-13	6	94	439	147	0.21	1.56	0.33
51-5-13	8	43	987	67	0.04	1.55	0.07
23-4-13	24	3,291	1,315	5,086	2.50	1.55	3.87
54-2-13	2	98	363	149	0.27	1.52	0.41
24-3-13	3	40	223	59	0.18	1.48	0.27
50-3-13	9	1,299	730	1,863	1.78	1.43	2.55
27-3-13	11	3,035	2,667	4,348	1.14	1.43	1.63
22-4-13	14	5,888	1,290	8,380	4.56	1.42	6.50
17-2-13	12	495	2,479	691	0.20	1.40	0.28
23-6-13	10	2,490	1,815	3,461	1.37	1.39	1.91
19-15-13	5	367	1,094	507	0.34	1.38	0.46
21-11-13	14	785	890	1,081	0.88	1.38	1.21
26-5-13	2	4	118	5	0.03	1.35	0.05
22-1-13	8	2,246	988	2,946	2.27	1.31	2.98
53-7-13	4	351	1,117	449	0.31	1.28	0.40
51-3-13	12	1,152	486	1,463	2.37	1.27	3.01
27-8-13	13	505	1,565	640	0.32	1.27	0.41
50-4-13	7	2,036	881	2,556	2.31	1.26	2.90
44-4-13	6	946	863	1,185	1.10	1.25	1.37
50-1-13	9	1,887	508	2,324	3.71	1.23	4.57
27-7-13	15	1,775	1,899	2,136	0.93	1.20	1.12
45-7-13	16	1,404	993	1,679	1.41	1.20	1.69
45-10-13	20	2,418	1,092	2,885	2.21	1.19	2.64
45-3-13	11	1,706	1,358	1,977	1.26	1.16	1.46
53-1-13	20	2,099	2,004	2,368	1.05	1.13	1.18
16M3-11-13	18	1,615	1,343	1,796	1.20	1.11	1.34
27-1-13	8	708	845	782	0.84	1.10	0.93
29-1-13	18	2,312	1,766	2,523	1.31	1.09	1.43
50-2-13	17	3,283	2,090	3,501	1.57	1.07	1.67
22-6-13	6	87	283	90	0.31	1.03	0.32
24-12-13	15	2,730	1,156	2,763	2.36	1.01	2.39

Circuit	No. of Interruptions	Customers Affected	Customers Served	Customer Hours	SAIFI	CAIDI	SAIDI
30-5-13	3	48	443	48	0.11	0.99	0.11
19-8-13	15	1,530	2,929	1,478	0.52	0.97	0.50
22-7-13	21	1,499	2,476	1,432	0.61	0.96	0.58
45-9-13	14	2,026	1,689	1,842	1.20	0.91	1.09
44-6-13	17	1,160	899	1,036	1.29	0.89	1.15
27-6-13	9	938	1,101	807	0.85	0.86	0.73
21-9-13	3	131	457	106	0.29	0.81	0.23
45-1-13	26	1,294	1,134	1,028	1.14	0.79	0.91
54-8-13	2	62	812	49	0.08	0.79	0.06
45-8-13	18	7,954	1,915	6,158	4.15	0.77	3.22
21-15-13	1	29	159	20	0.18	0.68	0.12
45-6-13	11	863	713	513	1.21	0.59	0.72
54-4-13	6	755	342	430	2.21	0.57	1.26
19-11-13	19	2,294	1,611	1,083	1.42	0.47	0.67
24-11-13	15	3,284	1,802	1,509	1.82	0.46	0.84
54-6-13	6	2,993	1,341	916	2.23	0.31	0.68
23-3-13	0	0	1,034	0	0.00	0.00	0.00
54-5-13	0	0	18	0	0.00	0.00	0.00
24-10-13	0	0	136	0	0.00	0.00	0.00
26-1-13	0	0	19	0	0.00	0.00	0.00
26-6-13	0	0	520	0	0.00	0.00	0.00
21-14-13	0	0	112	0	0.00	0.00	0.00
53-4-13	0	0	12	0	0.00	0.00	0.00
26-10-13	0	0	6	0	0.00	0.00	0.00
23-5-13	0	0	4	0	0.00	0.00	0.00
98-1-13	0	0	2	0	0.00	0.00	0.00
96-1-13	0	0	1	0	0.00	0.00	0.00

Eastern Division Circuit Analysis

Total Circuits	106	
SAIFI Goal	0.99	
Meets SAIFI Goal	73	69%
CAIDI Goal (Hrs.)	1.5	
Meets CAIDI Goal	54	51%

Eastern Division circuits with less than 100 customers or less than 3 interruptions in 2023

Circuit	No. of Interruptions	Customers Served
96-1-13	0	1
98-1-13	0	2
23-5-13	0	4
26-10-13	0	6
53-4-13	0	12
54-5-13	0	18
26-1-13	0	19
54-3-13	2	77
96-1-13	0	1
98-1-13	0	2
23-5-13	0	4
26-10-13	0	6
53-4-13	0	12
54-5-13	0	18
26-1-13	0	19
21-14-13	0	112
24-10-13	0	136
26-6-13	0	520
51-8-13	0	596
23-3-13	0	1,034
21-15-13	1	159
42-1-13	1	207
54-3-13	2	77
26-5-13	2	118
54-2-13	2	363
21-16-13	2	503
54-8-13	2	812
51-4-13	2	1,380
24-3-13	3	223
30-5-13	3	443
21-9-13	3	457
91-4-13	3	487
22-8-13	3	575
17-1-13	3	704

Central Division 2023 Reliability Data – Excludes storms – Sorted by Frequency

Circuit	No. of Interruptions	Customers Affected	Customers Served	Customer Hours	SAIFI	CAIDI	SAIDI
76-4-13	10	3,504	1,229	4,430	2.85	1.26	3.60
89-2-13	13	3,194	1,123	4,077	2.84	1.28	3.63
61-6-13	7	2,048	815	8,709	2.51	4.25	10.69
61-1-13	9	3,525	1,541	2,828	2.29	0.80	1.84
61-8-13	11	2,663	1,219	4,085	2.18	1.53	3.35
71-3-13	21	4,876	2,421	3,673	2.01	0.75	1.52
80-5-13	15	3,639	1,888	4,298	1.93	1.18	2.28
84-1-13	14	4,024	2,209	4,895	1.82	1.22	2.22
68-2-13	2	29	17	64	1.71	2.21	3.78
84-3-13	21	3,154	1,885	7,098	1.67	2.25	3.77
80-2-13	17	3,096	1,861	5,802	1.66	1.87	3.12
71-5-13	12	2,884	2,015	4,717	1.43	1.64	2.34
89-10-34	4	129	93	478	1.39	3.70	5.14
76-2-13	8	817	603	3,408	1.35	4.17	5.65
80-4-13	4	762	590	1,972	1.29	2.59	3.34
71-2-13	14	1,808	1,434	3,937	1.26	2.18	2.75
61-4-13	15	2,071	1,644	4,338	1.26	2.09	2.64
61-7-13	5	2,528	2,081	6,476	1.21	2.56	3.11
63-4-13	7	1,121	994	2,711	1.13	2.42	2.73
61-5-13	4	459	411	209	1.12	0.46	0.51
61-2-13	11	2,036	1,976	2,490	1.03	1.22	1.26
76-3-13	24	2,242	2,192	5,547	1.02	2.47	2.53
89-3-13	5	404	401	1,014	1.01	2.51	2.53
89-1-13	13	1,725	1,715	2,207	1.01	1.28	1.29
67-1-13	16	890	1,040	3,663	0.86	4.12	3.52
63-8-13	23	883	1,044	2,241	0.85	2.54	2.15
73-6-13	5	489	587	860	0.83	1.76	1.46
80-1-13	9	1,036	1,252	1,655	0.83	1.60	1.32
73-1-13	3	972	1,188	2,255	0.82	2.32	1.90
71-7-13	7	733	927	2,119	0.79	2.89	2.29
63-1-13	8	529	720	976	0.73	1.84	1.35
61-10-13	11	825	1,200	1,566	0.69	1.90	1.31
80-3-13	37	1,666	3,016	4,017	0.55	2.41	1.33
71-1-13	3	138	261	537	0.53	3.89	2.06
71-4-13	4	187	354	1,181	0.53	6.31	3.34
68-4-13	3	295	559	682	0.53	2.31	1.22
42-3-13	6	533	1,116	429	0.48	0.80	0.38
76-1-13	15	794	1,834	1,584	0.43	2.00	0.86

Circuit	No. of Interruptions	Customers Affected	Customers Served	Customer Hours	SAIFI	CAIDI	SAIDI
63-2-13	5	341	932	382	0.37	1.12	0.41
61-3-13	12	438	1,250	746	0.35	1.70	0.60
61-9-13	10	597	1,991	2,705	0.30	4.53	1.36
71-8-13	7	373	1,516	357	0.25	0.96	0.24
13-9-13	12	439	1,804	1,270	0.24	2.89	0.70
84-2-13	6	299	1,331	594	0.22	1.99	0.45
91-3-13	7	174	803	121	0.22	0.69	0.15
63-7-13	4	196	1,498	611	0.13	3.12	0.41
63-3-13	19	203	1,715	147	0.12	0.72	0.09
63-6-13	2	29	279	205	0.10	7.08	0.74
67-2-13	0	4	45	2	0.09	0.61	0.05
63-9-34	0	0	110	0	0.00	0.0	0.0
13-3-13	0	0	51	0	0.00	0.0	0.0
91-2-13	0	0	18	0	0.00	0.0	0.0
71-6-13	0	0	5	0	0.00	0.0	0.0
82-4-13	0	0	6	0	0.00	0.0	0.0

Central Division 2023 Reliability Data – Excludes storms – Sorted by Restoration

Circuit	No. of Interruptions	Customers Affected	Customers Served	Customer Hours	SAIFI	CAIDI	SAIDI
63-6-13	2	29	279	205	0.10	7.08	0.74
71-4-13	4	187	354	1,181	0.53	6.31	3.34
61-9-13	10	597	1,991	2,705	0.30	4.53	1.36
61-6-13	7	2,048	815	8,709	2.51	4.25	10.69
76-2-13	8	817	603	3,408	1.35	4.17	5.65
67-1-13	16	890	1,040	3,663	0.86	4.12	3.52
71-1-13	3	138	261	537	0.53	3.89	2.06
89-10-34	4	129	93	478	1.39	3.70	5.14
63-7-13	4	196	1,498	611	0.13	3.12	0.41
13-9-13	12	439	1,804	1,270	0.24	2.89	0.70
71-7-13	7	733	927	2,119	0.79	2.89	2.29
80-4-13	4	762	590	1,972	1.29	2.59	3.34
61-7-13	5	2,528	2,081	6,476	1.21	2.56	3.11
63-8-13	23	883	1,044	2,241	0.85	2.54	2.15
89-3-13	5	404	401	1,014	1.01	2.51	2.53
76-3-13	24	2,242	2,192	5,547	1.02	2.47	2.53
63-4-13	7	1,121	994	2,711	1.13	2.42	2.73
80-3-13	37	1,666	3,016	4,017	0.55	2.41	1.33
73-1-13	3	972	1,188	2,255	0.82	2.32	1.90
68-4-13	3	295	559	682	0.53	2.31	1.22
84-3-13	21	3,154	1,885	7,098	1.67	2.25	3.77
68-2-13	2	29	17	64	1.71	2.21	3.78
71-2-13	14	1,808	1,434	3,937	1.26	2.18	2.75
61-4-13	15	2,071	1,644	4,338	1.26	2.09	2.64
76-1-13	15	794	1,834	1,584	0.43	2.00	0.86
84-2-13	6	299	1,331	594	0.22	1.99	0.45
61-10-13	11	825	1,200	1,566	0.69	1.90	1.31
80-2-13	17	3,096	1,861	5,802	1.66	1.87	3.12
63-1-13	8	529	720	976	0.73	1.84	1.35
73-6-13	5	489	587	860	0.83	1.76	1.46
61-3-13	12	438	1,250	746	0.35	1.70	0.60
71-5-13	12	2,884	2,015	4,717	1.43	1.64	2.34
80-1-13	9	1,036	1,252	1,655	0.83	1.60	1.32
61-8-13	11	2,663	1,219	4,085	2.18	1.53	3.35
89-1-13	13	1,725	1,715	2,207	1.01	1.28	1.29
89-2-13	13	3,194	1,123	4,077	2.84	1.28	3.63
76-4-13	10	3,504	1,229	4,430	2.85	1.26	3.60
61-2-13	11	2,036	1,976	2,490	1.03	1.22	1.26

Circuit	No. of Interruptions	Customers Affected	Customers Served	Customer Hours	SAIFI	CAIDI	SAIDI
84-1-13	14	4,024	2,209	4,895	1.82	1.22	2.22
80-5-13	15	3,639	1,888	4,298	1.93	1.18	2.28
63-2-13	5	341	932	382	0.37	1.12	0.41
71-8-13	7	373	1,516	357	0.25	0.96	0.24
42-3-13	6	533	1,116	429	0.48	0.80	0.38
61-1-13	9	3,525	1,541	2,828	2.29	0.80	1.84
71-3-13	21	4,876	2,421	3,673	2.01	0.75	1.52
63-3-13	19	203	1,715	147	0.12	0.72	0.09
91-3-13	7	174	803	121	0.22	0.69	0.15
67-2-13	0	4	45	2	0.09	0.61	0.05
61-5-13	4	459	411	209	1.12	0.46	0.51
63-9-34	0	0	110	0	0.00	0.0	0.0
13-3-13	0	0	51	0	0.00	0.0	0.0
91-2-13	0	0	18	0	0.00	0.0	0.0
71-6-13	0	0	5	0	0.00	0.0	0.0
82-4-13	0	0	6	0	0.00	0.0	0.0

Central Division Circuit Analysis

Total Circuits	54	
SAIFI Goal	1.15	
Meets SAIFI Goal	36	66%
CAIDI Goal (Hrs.)	1.75	
Meets CAIDI Goal	24	44%

Central Division Circuits with less than 100 customers or less than 3 interruptions in 2023

Circuit	No. of Interruptions	Customers Served
71-6-13	0	5
82-4-13	0	6
68-2-13	2	17
91-2-13	0	18
67-2-13	0	45
13-3-13	0	51
89-10-34	4	93
71-6-13	0	5
82-4-13	0	6
91-2-13	0	18
67-2-13	0	45
13-3-13	0	51
63-9-34	0	110
68-2-13	2	17
63-6-13	2	279
71-1-13	3	261
68-4-13	3	559
73-1-13	3	1,188

Western Division 2023 Reliability Data – Excludes storms – Sorted by Frequency

Circuit	No. of Interruptions	Customers Affected	Customers Served	Customer Hours	SAIFI	CAIDI	SAIDI
10-2-13	18	5,255	669	8,759	7.86	1.67	13.09
5-3-34	20	6,765	1,544	13,234	4.38	1.96	8.57
2-1-13	6	3,092	711	7,159	4.35	2.32	10.07
5-10-34	10	3,632	929	8,905	3.91	2.45	9.59
9-1-48	28	7,013	1,817	33,039	3.86	4.71	18.18
1-1-13	1	12	4	96	3.00	8.03	24.09
6-2-13	13	2,686	923	3,836	2.91	1.43	4.16
6-4-13	4	2,877	1,047	3968	2.75	1.38	3.79
9-2-48	4	728	269	3,821	2.71	5.25	14.20
7-3-13	19	578	237	1,463	2.44	2.53	6.17
15-1-13	5	797	352	1,411	2.26	1.77	4.01
116-1-34	7	1,551	759	1,763	2.04	1.14	2.32
6-7-13	17	2,244	1,101	4,848	2.04	2.16	4.40
109-4-34	24	4,043	2,020	8,834	2.00	2.18	4.37
116-2-34	2	38	20	440.2	1.90	11.58	22.01
12-1-13	26	3,947	2,098	12,145	1.88	3.08	5.79
12-3-13	15	1,692	931	2,691	1.82	1.59	2.89
102-1-13	17	1,196	668	2,522	1.79	2.11	3.78
103-4-13	24	3,105	1,756	7,327	1.77	2.36	4.17
3-1S-34	4	910	534	4,393	1.70	4.83	8.23
7-1-13	10	1,717	1,038	1,842	1.65	1.07	1.77
103-1-13	5	984	724	1,047	1.36	1.06	1.45
11-4-13	18	2,164	1,708	3,770	1.27	1.74	2.21
15-4-13	1	95	77	131	1.23	1.38	1.70
3-1N-34	9	1,375	1,181	5,892	1.16	4.28	4.99
7-2-13	12	1,221	1,186	1,348	1.03	1.10	1.14
13-2-13	7	537	522	194	1.03	0.36	0.37
113-6-13	3	549	563	153	0.98	0.28	0.27
103-3-13	13	1,004	1,044	2,459	0.96	2.45	2.36
102-2-13	9	984	1,049	2,103	0.94	2.14	2.00
13-7-13	4	652	701	951	0.93	1.46	1.36
15-2-13	1	35	38	17	0.92	0.48	0.45
102-3-13	8	730	852	1,582	0.86	2.17	1.86
15-6-13	27	1,208	1,665	2,080	0.73	1.72	1.25
11-1-13	7	1,040	1,441	697	0.72	0.67	0.48
109-2-13	14	976	1,538	2,095	0.63	2.15	1.36
113-8-13	9	689	1,225	2,221	0.56	3.22	1.81
11-3-13	5	929	1,763	1,043	0.53	1.12	0.59
15-5-13	3	7	14	58	0.50	8.30	4.15
13-8-13	5	251	545	687	0.46	2.74	1.26

Circuit	No. of Interruptions	Customers Affected	Customers Served	Customer Hours	SAIFI	CAIDI	SAIDI
103-2-13	27	485	1,272	1,187	0.38	2.45	0.93
113-5-13	5	460	1,276	483	0.36	1.05	0.38
6-5-13	2	25	71	63	0.35	2.53	0.89
6-1-13	9	376	1,110	342	0.34	0.91	0.31
11-2-13	11	560	2,974	1,230	0.19	2.20	0.41
13-4-13	1	17	144	10	0.12	0.60	0.07
113-7-13	12	87	798	129	0.11	1.48	0.16
113-2-13	10	157	1,840	281	0.09	1.79	0.15
116-8-13	6	91	1,252	135	0.07	1.49	0.11
15-3-13	8	107	1,483	271	0.07	2.53	0.18
109-1-13	6	90	2,854	115	0.03	1.28	0.04
109-3-13	10	72	2,627	115	0.03	1.59	0.04
113-1-13	1	2	91	12	0.02	6.05	0.13
113-3-13	1	2	280	9	0.01	4.43	0.03
113-4-13	2	7	1,291	6	0.01	0.92	0.00
6-8-13	0	0	524	0	0.00	0.00	0.00
11-5-13	0	0	1	0	0.00	0.00	0.00
3-1-34	0	0	2	0	0.00	0.00	0.00

Western Division 2023 Reliability Data – Excludes storms – Sorted by Restoration

Circuit	No. of Interruptions	Customers Affected	Customers Served	Customer Hours	SAIFI	CAIDI	SAIDI
116-2-34	2	38	20	440.2	1.90	11.58	22.01
15-5-13	3	7	14	58	0.50	8.30	4.15
1-1-13	1	12	4	96	3.00	8.03	24.09
113-1-13	1	2	91	12	0.02	6.05	0.13
9-2-48	4	728	269	3,821	2.71	5.25	14.20
3-1S-34	4	910	534	4,393	1.70	4.83	8.23
9-1-48	28	7,013	1,817	33,039	3.86	4.71	18.18
113-3-13	1	2	280	9	0.01	4.43	0.03
3-1N-34	9	1,375	1,181	5,892	1.16	4.28	4.99
113-8-13	9	689	1,225	2,221	0.56	3.22	1.81
12-1-13	26	3,947	2,098	12,145	1.88	3.08	5.79
13-8-13	5	251	545	687	0.46	2.74	1.26
7-3-13	19	578	237	1,463	2.44	2.53	6.17
6-5-13	2	25	71	63	0.35	2.53	0.89
15-3-13	8	107	1,483	271	0.07	2.53	0.18
5-10-34	10	3,632	929	8,905	3.91	2.45	9.59
103-3-13	13	1,004	1,044	2,459	0.96	2.45	2.36
103-2-13	27	485	1,272	1,187	0.38	2.45	0.93
103-4-13	24	3,105	1,756	7,327	1.77	2.36	4.17
2-1-13	6	3,092	711	7,159	4.35	2.32	10.07
11-2-13	11	560	2,974	1,230	0.19	2.20	0.41
109-4-34	24	4,043	2,020	8834	2.00	2.18	4.37
102-3-13	8	730	852	1,582	0.86	2.17	1.86
6-7-13	17	2,244	1,101	4,848	2.04	2.16	4.40
109-2-13	14	976	1,538	2,095	0.63	2.15	1.36
102-2-13	9	984	1,049	2,103	0.94	2.14	2.00
102-1-13	17	1,196	668	2,522	1.79	2.11	3.78
5-3-34	20	6,765	1,544	13,234	4.38	1.96	8.57
113-2-13	10	157	1,840	281	0.09	1.79	0.15
15-1-13	5	797	352	1,411	2.26	1.77	4.01
11-4-13	18	2,164	1,708	3,770	1.27	1.74	2.21
15-6-13	27	1,208	1,665	2,080	0.73	1.72	1.25
10-2-13	18	5,255	669	8,759	7.86	1.67	13.09
109-3-13	10	72	2,627	115	0.03	1.59	0.04
12-3-13	15	1,692	931	2,691	1.82	1.59	2.89
116-8-13	6	91	1,252	135	0.07	1.49	0.11
113-7-13	12	87	798	129	0.11	1.48	0.16
13-7-13	4	652	701	951	0.93	1.46	1.36
6-2-13	13	2,686	923	3,836	2.91	1.43	4.16
6-4-13	4	2,877	1,047	3,968	2.75	1.38	3.79

Circuit	No. of Interruptions	Customers Affected	Customers Served	Customer Hours	SAIFI	CAIDI	SAIDI
15-4-13	1	95	77	131	1.23	1.38	1.70
109-1-13	6	90	2,854	115	0.03	1.28	0.04
116-1-34	7	1,551	759	1,763	2.04	1.14	2.32
11-3-13	5	929	1,763	1,043	0.53	1.12	0.59
7-2-13	12	1,221	1,186	1,348	1.03	1.10	1.14
7-1-13	10	1,717	1,038	1,842	1.65	1.07	1.77
103-1-13	5	984	724	1,047	1.36	1.06	1.45
113-5-13	5	460	1,276	483	0.36	1.05	0.38
113-4-13	2	7	1,291	6	0.01	0.92	0.00
6-1-13	9	376	1,110	342	0.34	0.91	0.31
11-1-13	7	1,040	1,441	697	0.72	0.67	0.48
13-4-13	1	17	144	10	0.12	0.60	0.07
15-2-13	1	35	38	17	0.92	0.48	0.45
13-2-13	7	537	522	194	1.03	0.36	0.37
113-6-13	3	549	563	153	0.98	0.28	0.27
6-8-13	0	0	524	0	0.00	0.00	0.00
3-1-34	0	0	2	0	0.00	0.00	0.00
11-5-13	0	0	1	0	0.00	0.00	0.00

Western Division Circuit Analysis

Total Circuits	58	
SAIFI Goal	1.73	
Meets SAIFI Goal	39	67%
CAIDI Goal (Hrs.)	2.00	
Meets CAIDI Goal	31	53%

Western Division Circuits with less than 100 customers or less than 3 interruptions in 2023

Circuit	No. of Interruptions	Customers Served
11-5-13	0	1
3-1-34	0	2
1-1-13	1	4
15-5-13	3	14
116-2-34	2	20
15-2-13	1	38
6-5-13	2	71
15-4-13	1	77
113-1-13	1	91
11-5-13	0	1
3-1-34	0	2
6-8-13	0	524
1-1-13	1	4
15-2-13	1	38
15-4-13	1	77
113-1-13	1	91
13-4-13	1	144
113-3-13	1	280
116-2-34	2	20
6-5-13	2	71
113-4-13	2	1,291
15-5-13	3	14
113-6-13	3	563

APPENDIX E

2023 Storm Analysis Table

2023 Storm Analysis
O&R – Company

Major Storm Exclusions – 2023									
Date	**Region**	**Storm Conditions**	**Interruptions**	**Customers Affected**	**Customer Minutes of Interruption**	**Storm Duration (HRS)**	**24-Hour Events**	**24-Hour Customers Interrupted**	**Qualification**
2/3 - 2/5	All divisions	Windy	112	8,351	1,576,240	45.0	18	246	24 hour
4/30 - 5/1	East	Windy	15	2,938	620,991	25.0	1	8	24 Hour
7/3 - 7/4	Central/West	Thunderstorm	39	11,691	1,224,816	31.0	1	19	24 Hour & 10% of operating division
7/9 - 7/10	Central/West	Thunderstorm	14	2,591	387,956	2.0	4	33	24 Hour
7/13 - 7/14	Western	Thunderstorm	65	29,000	12,662,949	33.0	7	19	24 Hour
7/15 - 7/16	Western	Thunderstorm	34	17,107	2,999,384	35.0	0	0	10% of Operating Division
9/7 - 9/9	East/Central	Thunderstorm	132	14,136	4,237,399	54.0	20	80	24 Hour & 10% of operating division
10/7 - 10/8	East	Windy	33	2,454	295,644	33.0	4	4	24 Hour
12/18 - 12/20	East/Central	Winter Storm	141	11,847	3,216,695	51.0	38	366	24 Hour

APPENDIX F

2023 Service Reliability Program Expenditures

O&R Electric Service Reliability Programs ($000's)						
		Budget				
		2019	2020	2021	2022	2023
Transmission Line Maintenance						
Aerial Patrol	O&M	122.3	122.1	122.1	122.1	122.1
Tower Inspection (TIMS)	O&M	-	-	-	-	-
Transmission Line R.O.W. (Vegetation)	O&M	2,400.0	2,400.0	2,400.0	2,400.0	2,400.0
Transmission Line Maintenance (TLM)	O&M	115.0	115.0	115.0	115.0	115.0
Distribution Maintenance						
Distribution Tree Trimming	O&M	7,021.2	7,000.2	7,000.2	8,500.0	9,650.0
Distribution Line Maintenance	O&M	-	-	-	-	-
Infrared Thermal Inspection Program	O&M	174.3	174.3	174.3	174.3	224.3
Stray Voltage Program	O&M	1,722.3	1,777.3	1,792.6	1,737.6	1,737.6
Total O&M		**11,555.1**	**11,588.9**	**11,604.2**	**13,049.0**	**14,249.0**
Midpoint Recloser/Sectionalizer Program	Capital	6,496.50	8,399.50	8,700.00	8,038.0	8,038.0
Jnderground Gasification/Rehab Program	Capital	284.7	175.0	-	-	647.6
Underground Rebuild Program	Capital	1,590.0	1,100.1	1,750.0	1,750.0	1,750.0
Total Capital		**8,371.2**	**9,674.6**	**10,450.0**	**9,788.0**	**10,435.6**

O&R Electric Service Reliability Programs ($000's)						
		Actuals				
		2019	2020	2021	2022	2023
Transmission Line Maintenance						
Aerial Patrol	O&M	75.1	80.3	76.5	95.5	191.4
Tower Inspection (TIMS)	O&M	-	-	-	-	-
Transmission Line R.O.W. (Vegetation)	O&M	2,080.5	2,322.1	1,745.7	1,721.4	2,346.7
Transmission Line Maintenance (TLM)	O&M	-	-	-	-	-
Distribution Maintenance						
Distribution Tree Trimming	O&M	6,226.4	7,143.8	5,856.9	6,346.4	8,492.4
Distribution Line Maintenance	O&M	-	-	-	-	-
Infrared Thermal Inspection Program	O&M	282.3	(11.0)	30.4	109.9	10.2
Stray Voltage Program	O&M	1,157.6	1,029.0	1,395.4	1,790.9	1,416.2
Total O&M		**9,821.9**	**10,564.2**	**9,104.9**	**10,064.1**	**12,456.9**
Capital Programs						
Midpoint Recloser/Sectionalizer Program	Capital	6,631.6	8,370.1	9,093.6	8,882.0	10,227.9
Jnderground Gasification/Rehab Program	Capital	1.6	(10.4)	-	-	465.5
Underground Rebuild Program	Capital	3,725.4	1,529.1	1,306.90	1,451.5	2,819.9
Total Capital		**10,358.6**	**9,888.8**	**10,400.5**	**10,333.5**	**13,513.3**

APPENDIX G

2023 Distribution Capital Investment

All Divisions

Project: 2023 Distribution Automation
Budget: $8,000,000
Actual: $10,550,000
Completion: Dec 2023

The NY Distribution Automation Program is a multi-year project focused on installing and upgrading field devices with command-and-control schemes, which will result in improved storm resiliency and system reliability. The installation philosophy uses a three-tiered approach:

- Circuit Optimization
  - Design an efficient system through the use of smart capacitors, phase balancing and power quality monitoring (sensors).
- Field Automation
  - Automatic fault isolation via recloser auto loop schemes which automatically reduce customer outages.
- Centralized Automation Control
  - Monitoring and control from the Distribution Control Center (DCC)
  - Motor Operated Air Breaks (MOABs) strategically placed to provide 250 customer segmentation.
  - Advanced control systems will allow automatic system healing (ADMS).

In 2023, the Company took advantage of an opportunity to accelerate the installation of field devices on the system. As a result, 30 more MOABs were installed in 2023 than originally budgeted.

2023 Statistics:

Auto-loops - 2
Reclosers installed – 12
MOABs installed – 132
Smart CAPs – 4

Eastern Division

No projects were completed in 2023. All projects started in 2023 will be completed in 2024.

Central Division

Project: Blooming Grove – Round Hill Road – Various Circuits
Cost: $525k (WMS#: 2204005245)
Completion: December 2023

Background:
The Blooming Grove Substation is currently a single bank substation with a 25MVA 69/13.2kV transformer. The substation serves an area at the border of Orange and Rockland service territory serving 5,804 customers. Electric growth in this area is 2.8%, and is a prime area that will be developed, due to availability of vacant land primarily in the Washingtonville area. The station only has three extremely long distribution ties to adjacent stations (Chester, Monroe and South Goshen). Therefore, in the event of a bank contingency, approximately 57% of the transformer would be out of service until a mobile transformer is installed resulting in 74,022 customer-hours of interruption, which forces the bank to fail the Distribution Planning Criteria. A new Blooming Grove Substation will provide 100% station backup in the event of a bank contingency for over 35 years. This is extremely important for this isolated area, which has limited paths to its load area from adjacent stations (Route 94 and Route 208). The station would pass the Distribution Planning Criteria for over 40 years. To form the new circuits and ties, there are projects necessary to build out main line.

Description:
The overhead project set new poles and ran 2900 feet of new 477 Hendrix conductor to create a distribution circuit tie on Round Hill Road to Clove Road in the Blooming Grove Washingtonville area. Blooming Grove substation circuits 76-3-13 and 76-4-13 currently share two tie points. One tie is located at the beginning of the 76-4-13 and one is located at the end. The 76-3-13 serves a total of 2,185 customers and the 76-4-13 serves 1,228 customers. The customers on Round Hill Road East of RT-208 are currently on a radial with no alternate source. The project created an alternate path. The construction set up the area to be fed from two circuits from future Blooming Grove substation. One circuit feeds Round Hill Road and Helms Hill Road and the other feeds Clove Road. Construction is Hendrix (477) with 052 AWA messenger spacer cable design.

The project will improve reliability, storm resiliency, and prepare for the future Blooming Grove station circuit layout.

Justification:
The project extends main line primary and created an additional circuit tie between existing circuits 76-3-13 and 76-4-13. It serves as the path of future circuits 76-7-13 from the planned Blooming Grove substation to Helms Hill Road and 76-3-13 to Clove Road. The area now meets distribution design standards and provides back up for customers on Round Hill Road.

Alternatives Considered:
With limited paths in this geographic area, the project was necessary for both reliability and contingency purposes.

Project: Central Valley – Dunderberg Road Storm Hardening
Cost: $700K (WMS#: 2103001325)
Completion: December 2023

Background:

The purpose of this project was to address poor system reliability of the local distribution system, address aging infrastructure, increase capacity and Storm Harden the distribution system. This project upgrade conductor cable on Crow's Nest Road from East Lake to the top of the hill and will end at the walking path (pole# 53239/43124). Circuit 71-3-13 out of the Harriman Substation serves about 2,400 customers in the Central Valley and Highland Mills area and typically runs at about 350 Amps (at peak). This circuit, which spans a length of over 7 miles, has experienced numerous outages throughout recent storms – and is consistently on the list of top five worst performing circuits list in the Central Division. Many of the outages on this circuit are attributed to tree contact and equipment failure (crossarm failure) located on the head-end of the circuit (approximately 1.5 miles from the station) which runs along Dunderberg Rd and Route 32. An Overhead Distribution project is already being constructed to address the known problems of heavy vegetation (Hendrix Conversion) on Route-32 – between Rose Lawn and Hunter Place. An additional Storm Hardening Project is needed to address similar problems on Dunderberg Rd.

This Storm Hardening project will address issues on the head end of 71-3-13 circuit (located on Dunderberg Rd.). Project converted approximately 4,500 feet of open wire primary on Dunderberg Road to Hendrix Spacer Cable System to reduce the vegetation exposure and improve reliability. The project also addressed aging poles and conductors along the way and allow for tree trimming in the area. The project required six poles to be relocated near the road, as some of the poles were located approximately 50 feet off road and were hard to reach during storm events.

The Storm Hardening project will help improve the circuit reliability as customers will experience less outages.

Description:

The Overhead distribution project was designed to improve reliability to the 71-3-13 circuit by the reconductoring of previous existing mainline to a Hendrix Spacer Cable system. The project started at pole 55435/48245 and continues along Dunderberg Road to junction pole 55809/48475. The scope of this project upgraded the circuit section by replacing the existing three-phase primary along Dunderberg Road with approximately 4,500 feet of three-phase, 13.2kV, (3) – 477 AAC Hendrix Spacer Cable along with (1) – 052 AWA messenger cable. A portion of the mainline was also relocated closer to the road to further reduce exposure.

Justification:

The reliability to circuit 71-3-13 that currently serves 2,400 customers will be improve. The project will be critical during storm conditions as multiple paths of overhead system can be damaged at a time. With the project completed (Dunderberg Road), most of the problems on the distribution circuit will be resolved. Over the years, we have made several improvements to the feeder such as distribution

automation, targeted vegetation management and danger tree removal, however, this capital project will have the greatest impact to the reliability of the circuit.

Alternatives Considered:

Armless construction versus Hendrix Spacer System was considered, but due to the vegetation exposure on this segment, Hendrix Spacer Cable was the preferred design. Underground construction was not considered as the area is predominantly overhead distribution.

Project: Chester – Galet Road - Pine Hill Road to RT-94
Cost: $425k (WMS#:2204005243)
Completion: December 2023

Background:

Chester circuit 63-3-13 is a lightly loaded circuit that supplies 115 residential and commercial customers on a radial feed on Elkay Drive, Black Meadow Road, and Pine Hill Road in Chester NY. The circuit also provides backup to Chester circuit 63-7-13. To better utilize this circuit and improve reliability in the area a series of overhead distribution projects will be constructed to create mainline ties to Wisner circuit 80-1-13, and to Chester circuits 63-2-13, 63-8-13. This will allow better balancing between Chester Banks 163 & 263 and prepare for future automation with Wisner circuit 80-1-13. This tie can also be used to help reduce the loading on Wisner Bank # 280 which is currently operating at 89% of its capacity due to a bus rating of 27.4MVA.

As a result of the Chester Greens development, this project is necessary to provide load relief for the 63-8-13. The project will create a new tie between the 63-8-13 and the 63-3-13 circuits at RT-94 and Galet Road.

DESCRIPTION:

This overhead project is intermediate to five parts overhead capital project that will create a new 13.2kV mainline distribution circuit between Black Meadow Road and New York State Route 17A that will serve the Warwick, Florida, and Chester area in New York. The first project was completed in 2019 and began at the intersection of Black Meadow Road and Elkay Drive at pole 51462/48976, continuing along Black Meadow Road up to the (1) – 80k fuse located at pole 50764/48516. The second project (Part 2) to be constructed is scheduled for 2022 and will begin at pole 50764/48516 48516 on Black Meadow Road and continue along Black Meadow Road to the intersection of Pine Hill Road and Black Meadow Road at pole 50609/48205. The second project continues from this intersection in both directions along Pine Hill Road to pole 50706/48152 and pole 50493/48314. The first and second projects required the area to be upgraded to 600 amp three-phase mainline distribution standards.

This capital project will begin on Pine Hill Road at pole 50135/48786 (where the third project called "Chester – Black Meadow Road to Glenmere Avenue" ends) and continue along Galet Road to the intersection of RT-94 & Galet Road at pole 50102/49051. This area along Pine Hill Road is served from Chester circuit 63-8-13 at voltages of 13.2kV. Extensive vegetation exists along parts of Pine Hill Road. As a result of this, Hendrix Spacer Cable is to be utilized. The scope of this project is to upgrade this circuit section by removing approximately 2,900 feet of (3) – 3/0 ACSR existing primary cable along Pine Hill Road/Galet Road and install approximately 2,900 feet of new three-phase, 477 AAC Hendrix spacer cable (from pole 50135/48786 to pole 50102/49051). Utilize the Hendrix messenger cable for the system neutral. All defective and non-standard poles will be replaced as part of this project and all open wire secondary will be replaced with triplex/quadplex.

JUSTIFICATION:

The purpose of this project is to construct a three-phase mainline distribution circuit to provide load relief to circuit 63-8-13 and circuit back up to Wisner circuit 80-1-13, and Chester circuits 63-2-13, 63-8-13 in

the case of a contingency. This can reduce the load on Wisner Bank # 280 which is operating at 89% of its maximum capacity, allow better balancing between Chester Banks 163 & 263, and convert the service area to 13.2kV. The project will address aging infrastructure and will require the replacement of substandard poles and existing open wire secondary will be upgraded with 4/0 triplex.

ALTERNATIVES CONSIDERED:

Armless wire construction versus a Hendrix Spacer Cable system was initially considered. However, due to the extensive tree coverage in the area, Hendrix Spacer Cable construction was the preferred design. Underground construction was not considered as the area is predominately overhead distribution.

Project: Chester – Pine Hill and Black Meadow Road to Kings Highway
Cost: $765k (WMS#:1706006725)
Completion: November 2023

BACKGROUND:
Chester circuit 63-2-13 is a lightly loaded circuit that serves 980 residential and commercial customers in Chester NY. This circuit currently has a minimal number of mainline ties to adjacent circuits. To better utilize this circuit and improve reliability for customers in the area of Chester and Florida, an overhead mainline distribution project will be constructed along Pine Hill Road to create a mainline distribution circuit tie (via normally open MOAB) between Chester circuits 63-2-13 & 63-3-13. This will reduce the load off of Wisner Bank # 280, provide further backup to these circuits, prepare for future automation with Wisner circuit 80-1-13, and allow better balancing between Chester Banks 163 & 263. The Wisner Bank # 280 has a limited Bus rating of 27.4MVA and is operating at 89% of its maximum capacity.

DESCRIPTION:
This overhead project is part two of a four part overhead capital project that will create a new 13.2kV mainline distribution circuit between Black Meadow Road and New York State Route 17A that will serve the Warwick, Florida, and Chester area in New York. The first capital project to be constructed will begin at the intersection of Black Meadow Road and Elkay Drive at pole 51462/48976 and continue along Black Meadow Road up to the (1) – 80k fuse located at pole 50764/48516. That project required the area to be upgraded to 600amp three-phase mainline distribution standards.

The second capital project will begin at pole 50764/48516 on Black Meadow Road and continue along Black Meadow Road to the intersection of Pine Hill Road at 50609/48205. The project continues from this intersection in both directions along Pine Hill Road to pole 50706/48152 and to pole 50493/48314. This area is currently being served by a single-phase 13.2kV to 4.8kV, 250 kVA step transformer that provides service to 52 residential customers on a radial feed. The scope of the second project is to upgrade this circuit section by replacing approximately 90 feet of (1) – 3/0 ACSR, 120 feet of (2) – 3/0 ACSR, and 3,290 feet of (2) – 4 C of existing primary along Black Meadow Road with approximately 3,500 feet of new three-phase, 477 AAC armless conductor cable along with a 4/0 AAC system neutral cable (from pole 50764/48516 to pole 50609/48205). This project also replaces approximately 2,900 feet of (2) – 4 C of existing primary along Pine Hill Road with approximately 2,900 feet of new three-phase, 477 AAC armless conductor cable along with a 4/0 AAC system neutral cable (from pole 50493/48314 to pole 50706/48152). The connected spur circuits along this section will be upgraded to 13.2kV distribution standards, and the area will be converted to 13.2kV.

For part two distribution cable will be upgraded to 600 amp three-phase mainline distribution standards which will improve reliability to the area and allow future three-phase distribution circuit ties to Wisner circuit 80-1-13, and Chester circuits 63-2-13, 63-8-13.

JUSTIFICATION:
The purpose of this project is to construct a three-phase mainline distribution circuit to provide circuit back up to Wisner circuit 80-1-13, and Chester circuits 63-2-13, 63-8-13 in the case of a contingency. This can reduce the load on Wisner Bank # 280 which is operating at 89% of its maximum capacity, allow better balancing between Chester Banks 163 & 261, and convert the service area to 13.2kV. The project will

address aging infrastructure and will require the replacement of substandard poles and existing open wire secondary will be upgraded with 4/0 triplex.

ALTERNATIVES CONSIDERED:
Armless wire construction versus a Hendrix Spacer Cable system was initially considered. However, due to the lack of tree coverage in the area, and extra expense of a Hendrix Spacer Cable system, the armless wire armless construction was the preferred design. Underground construction was not considered as the area is predominately overhead distribution.

The use of a temporary 13.2kV to 4.8kV single-phase step transformer at pole 50575/48222 on Pine Hill Road to feed the remaining downstream 4.8kV residential customers was also considered. However, after taking into consideration that this circuit section on Pine Hill Road is to be converted into 13.2kV mainline during the third project, as well as the minimal number of single-phase customers remaining on this circuit section, the preferred design is to convert the majority of the remaining circuit on Pine Hill Road to 13.2kV mainline. A permanent step transformer will be utilized to supply 4.8kV to the customers on the spur circuit along Black Rock Road. This eliminates extra work during the third project by not having to remove a temporary step transformer and the associated load and source side fuse links.

Project: Pine Island Substation – Pine Island Tpke
Cost: $120k (WMS#: 2103001326)
Completion: December 2023

BACKGROUND:
The Pine Island Station contains a single bank 3 MVA, 34.5kV transformer with (2) 4.8kV delta circuits. The station serves 511 customers and is supplied on a radial feed from Goshen circuit 89-10-34. Due to the length of the feed (Circuit: 89-10-34) from Goshen Substation, the station has experienced poor reliability (Line 90) in the past. Customer loading in Pine Island continues to increase due to increase in motor loads for crop cooling purposes. For a bank contingency (BK289) in Goshen, the only back up to serve Pine Island Sub would be from the Chester Substation (63-9-34) and maintaining adequate system voltage is difficult during peak periods. Over the past few years, several overhead projects were constructed to transfer load off Pine Island and to the Westtown Substation. Currently there is no SCADA communication with the Pine Island Substation for monitoring/control purposes and has minimum approach distance (MAD) issues that exist at the station. The two closet distribution circuit ties (Wisner and Westtown) which are 7 miles from the Pine Island Substation.

To improve reliability in the area and allow the future retirement of the Pine Island Substation/Line 90 (89-10-34) a series of overhead distribution projects were completed in the past, those projects created new circuit tie with Westtown Substation (Circuit: 103-2-13) along County Rt 1 and Pine Island Turnpike and ended near the Pine Island Substation.

This capital project will remove various step-down banks located in front of the station, remove all overhead conductor feeding into and exiting the station and create a new distribution tie between Westtown circuit (103-2-13) and Wisner circuit (80-5-13) along Pine Island Turnpike. At the completion of this project, the Pine Island Substation will be permanently de-commissioned and retire from service.

DESCRIPTION:
Project designed to de-energize the Pine Island Substation station, complete a 34.5kv/13.2kV conversion (circuit: 89-10-34) along a portion of Pine Island Turnpike feeding towards Wiser circuit 80-5-13) and create a new distribution tie between Westtown circuit (103-2-13) and Wisner circuit (80-5-13). Project begins with offloading the 89-10-34 (Line 90), verify that 65-1-4.8 and 65-2-4.8 have been off loaded (Capital project WO# 1812001707), and primary taps have been lifted on pole# 46639/46873 on Pine Island Turnpike. Project requires the removal of (2) 500kva step banks (P# 46636/46862 and P# 46642/46822), eliminate the bottom circuit of a double circuit configuration, installation of a 4/0 neutral conductor, remove all conductors entering and exiting the Pine Island Substation, and installation of a new MOAB. Project may require the installation of a “transposition” on junction pole# 46642/46797, this will have to be confirmed in the field at time of installation of MOAB.

Western Division

PROJECT: Middletown – Foster & Inwood
COST: $821k (WMS#: 2103001321)
Completion: December 2023

Background:
Circuit 15-6-13 presently serves 2,400 customers with an additional 250 customers scheduled to be in service in 2021 associated with a new large condominium complex that is currently under construction on Inwood Road in Middletown NY. The purpose of this project will provide load relief for 15-6-13 (currently operating at 325 amps) which is expected to increase 40amps, reconfigure circuit 15-6-13 and 15-3-13 to reduce loading on 15-6-13, install a new auto-loop between the circuits after project is completed, provide enhance protection for Galleria Mall which will remain on the 15-3-13 to reduce exposure, reduce customer count beyond cut-outs on Inwood Road (which will serve 500 customers from a set of cutouts that would be located on Inwood if the project is not completed), and complete conversion of a portion of Foster Road from 4.8kV to 13.2kV near Scotchtown road on the tail end of Foster Road in Middletown .
Upon completion of the Inwood and Foster project, and the reconfiguration of the circuits (15-6-13, 15-3-13), circuit 15-6-13 will operate at 290 amps and serve 1,600 customers and circuit 15-3-13 currently operating at 180amps will increase to 230amps and serve 1,233 customers. A new auto-loop will be installed between the circuits, which will provide additional protection for the Galleria Mall.

Description:
The existing three-phase and single distribution on Inwood and Foster Road will be upgraded to mainline Hendrix construction (approximately 8,800 ft), with three-phase 477aac Hendrix with 052 AWA spacer cable messenger on Inwood and Foster between Goshen Tpke and Scotchtown Road. Project will require the installation of (3) MOABS on Foster and Inwood. Project will address aging infrastructure, improve overall system reliability, increase capacity, and provide a new distribution path to allow reconfiguration of the circuits and provide relief for circuit 15-3-13.

Alternatives Considered:
Undergrounding this project was not considered as the area is predominately an overhead distribution system. Open wire armless construction was not considered as the area has vegetation near the existing pole-line.

Justification
Project will address aging infrastructure, improve overall system reliability, increase capacity, provide a new distribution path to allow reconfiguration of 15-3-13 and 15-6-13, provide relief to circuit 15-6-13, and will allow the installation of a new auto-loop.