PACIFIC GAS AND ELECTRIC COMPANY

2022 ANNUAL ELECTRIC RELIABILITY REPORT
(Per Decision 16-01-008)

July 15, 2023

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Executive Summary

PG&E's electric service reliability performance in 2022 was challenged by several weather events, including severe winter storms, and extreme summer heat waves. Given the continued and growing threat of extreme weather and wildfires, PG&E utilized its Community Wildfire Safety Program to further reduce wildfire risks and help keep our customers and the communities we serve safe. This includes our Public Safety Power Shutoff (PSPS) program during the 2022 wildfire season for all electric lines located in or that pass through High Fire-Threat Districts (HFTDs). In addition, the reliability metrics were negatively affected as PG&E implemented Enhanced Powerline Safety Settings (EPSS) that include recloser disabling to further help reduce wildfire risk. Late in 2022, PG&E decided to implement yet another wildfire mitigation enhancement called the Downed Conductor Detection (DCD) strategy. These wildfire mitigation efforts have resulted in customers experiencing more and longer sustained outages. PG&E's electric system also experienced new and different stresses due to load shifts as many Californians continued to work remotely in 2022 as a lingering effect of the pandemic. As a result, PG&E's reliability performance declined compared to 2022.

Electric utilities measure reliability in many ways: duration of customer outages; frequency of customer outages; average restoration time; counting only unplanned outages; counting planned outages; excluding unusual events such as major storms (typically referred to as Major Event Days or "MEDs"); or including or excluding certain types of outages, among other distinctions. This report explains the different measures and includes the various metrics required by CPUC Decision 16-01-008. For purposes of this Executive Summary, PG&E is focusing on metrics that include planned outages but exclude Major Event Days. These metrics are found in Section 3. These are common benchmark metrics across the electric utility industry, and PG&E also believes these metrics best reflect the typical customer's experience.

Table 1 below displays the electric reliability metrics SAIDI, SAIFI, MAIFI and CAIDI from 2013 through 2022.

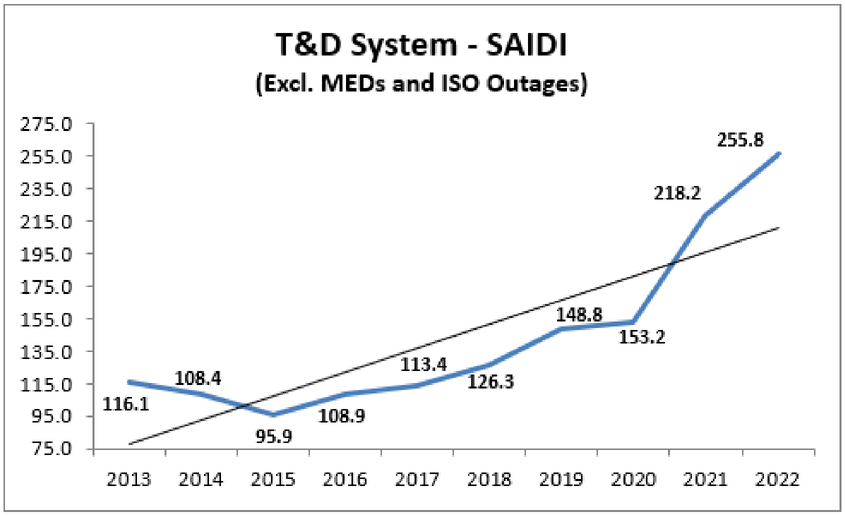
Table 1 – Combined Transmission and Distribution System Indices (2013-2022) (Excludes MED and Independent System Operator (ISO) outages, and includes planned outages)

Year	Major Events Excluded			
	SAIDI	SAIFI	MAIFI	CAIDI
2013	116.1	1.070	1.527	108.5
2014	108.4	0.966	1.396	112.2
2015	95.9	0.871	1.594	110.1
2016	108.9	1.021	1.494	106.7
2017	113.4	0.958	1.489	118.3
2018	126.3	1.080	1.361	117.0
2019	148.8	1.128	1.282	131.9
2020	153.2	1.179	1.316	130.0
2021	218.2	1.318	1.327	165.5
2022	255.8	1.630	1.320	156.9

Chart A below shows the amount of time the average PG&E customer experienced a sustained outage or outages each year in graphical form and includes a linear trend line:

2013-2022 Transmission & Distribution System SAIDI Performance Results

Chart A



(Excludes Major Event Days and ISO Outages)[1]

Not surprisingly, similar trends are mirrored at the division level.

1 See Table 115 as shown in Section 3.

How PG&E Measures Reliability

PG&E uses four metrics commonly used in the electric utility industry to measure reliability for both unplanned and planned outages: the System Average Interruption Duration Index (SAIDI), the System Average Interruption Frequency Index (SAIFI), the Momentary Average Interruption Frequency Index (MAIFI), and the Customer Average Interruption Duration Index (CAIDI).

- SAIDI is the amount of time the average PG&E customer experiences a sustained outage or outages (being without power for more than five minutes) in a given year. **In 2022, PG&E's SAIDI was 255.8 minutes per customer.**
- SAIFI is the number of times the average PG&E customer experiences a sustained outage in a given year. **In 2022, PG&E's SAIFI was 1.630.**
- MAIFI[2] is the number of times the average customer is interrupted by momentary outages each year. Momentary outages are outages lasting 5 minutes or less. **In 2022, PG&E's MAIFI was 1.320.**
- CAIDI is the average duration of sustained outages. It is determined by taking the total outage minutes for all customer outages[3] (SAIDI) and dividing it by the total number of customer outages (SAIFI). **In 2022, PG&E's CAIDI was 156.9 minutes.**

2 PG&E's outage reporting tools were originally designed to track momentary outages as defined in D96-09-045. Under D.16-01-008, this method of tracking momentary outages corresponds to the $MAIFI_E$ definition contained in the IEEE Guide for Electric Power Distribution Reliability Indices (IEEE 1366 standard), which counts multiple outage interruptions that occur close to each other in time as a single momentary outage event. This metric is equal to the total number of customer momentary interruption events divided by the total number of customers served and does not include the events immediately preceding a sustained interruption.

3 Measures sustained outage events and excludes momentary outage events.

SAIDI	=	Total minutes every customer was without power due to sustained outages	÷	Total number of customers
SAIFI	=	Number of sustained customer outages experienced by all PG&E customers	÷	Total number of customers
CAIDI	=	System Average Interruption Duration Index (SAIDI)	÷	System Average Interruption Frequency Index (SAIFI)
MAIFI	=	Number of customers who experience Momentary Outages	÷	Total number of customers

What follows is the 2022 Electric Reliability Report for Pacific Gas and Electric Company as required by Decision 16-01-008. This report includes system reliability data based on the Institute of Electrical and Electronic Engineers (IEEE) Standard 1366 methodology, as required by D.16-01-008. The report includes very specific details, including reliability numbers for each of PG&E's 19 divisions. It also includes a list of worst performing circuits in Section 5.

Introduction

This is the 2022 Electric Reliability Report for Pacific Gas and Electric Company as required by Decision 16-01-008. This report includes system reliability data based on the Institute of Electrical and Electronic Engineers (IEEE) Standard 1366 methodology. This report consists of the following:

Section	Description
1.	System Indices for the Last 10 Years (2013-2022)
2.	Division Reliability Indices (2013-2022) Including and Excluding Major Event Days (MED)
3.	System and Division Indices Based on IEEE 1366 (2013-2022) Including Planned Outages and Including and Excluding MED
4.	Service Territory Map including Divisions
5.	Top 1% of Worst Performing Circuits (WPC) excluding MED
6.	Top 10 Major Unplanned Power Outage Events in 2022
7.	Summary List of MED per IEEE 1366
8.	Historical Ten Largest Unplanned Outage Events (2013-2022)
9.	The Number of Customer Inquiries on Reliability Data and the Number of Days per Response
10.	Appendix A – Definitions, Acronyms and Abbreviations

As noted in previous reports, PG&E implemented a new outage reporting system in 2015 that included the data conversion of its legacy (DART/OUTAGE) database. This new system consists of two main components that are typically referred to as PG&E's Integrated Logging and Information System (ILIS) and its Operations Database (ODB), also called ILIS-ODB for short. ILIS models the actual electric switching operations reported during the circuit restoration process (which is useful for determining accurate customer outage minutes for calculating SAIDI and CAIDI). PG&E maintains account specific information for customers affected by outages that are recorded and stored in PG&E's ODB. This system tracks outages at various levels (generation, transmission, substation, primary distribution, and individual transformers) and the most current outage data was used to compile the information contained in this report.

Distribution operators log outage information in PG&E's ILIS tool, which uses minutes as the smallest time increment to record the outage start, switching operations, and outage end times. Smart Meters measure outage duration in seconds and are used to automatically report momentary outages beyond non-SCADA auto-reclosing devices. Momentary outages for SCADA related and other events are logged by distribution operators using the ILIS tool, which does not have the benefit of measuring the outage duration in seconds. Consequently, and although infrequent, it is possible that an outage duration is recorded as 5 minutes when the actual outage duration was up to 5 minutes and 59 seconds. In 2015, PG&E updated its reporting tools and process to help minimize this occurrence and allow the operator in these situations to log this event as a 6-minute sustained outage.

We have added a list of Definitions, Acronyms and Abbreviations at the end of Appendix A to help the reader who is not familiar with the jargon used in reliability reporting.

1. System Indices for the Last Ten Years

a. System Indices (2013-2022)

Table 2 lists the required SAIDI, SAIFI, MAIFI[4], and CAIDI with MED Included and Excluded as directed in Appendix B of D.16-01-008[5]:

Table 2 – Combined Transmission and Distribution System Indices (2013-2022) (Excludes planned and ISO outages)

Year	Major Events Included				Major Events Excluded			
	SAIDI	SAIFI	MAIFI	CAIDI	SAIDI	SAIFI	MAIFI	CAIDI
2013	117.0	1.070	1.633	109.3	95.8	0.969	1.523	98.9
2014	131.9	1.045	1.561	126.2	91.0	0.879	1.390	103.5
2015	131.8	0.967	1.812	136.3	80.7	0.787	1.585	102.5
2016	106.7	1.021	1.596	104.5	93.8	0.940	1.487	99.8
2017	357.8	1.466	2.295	244.1	97.3	0.878	1.487	110.8
2018	282.3	1.053	1.423	268.0	99.6	0.960	1.356	103.8
2019	1,363.3	1.872	1.780	728.2	117.7	1.009	1.270	116.6
2020	450.6	1.443	1.546	312.1	125.8	1.068	1.292	117.8
2021	588.4	1.689	1.897	348.4	182.8	1.178	1.317	155.2
2022	283.9	1.617	1.398	175.5	213.5	1.470	1.309	145.2

Note: Includes Generation, Transmission, Substation, and Distribution related outages

[4] Momentary outage events are either reported automatically or manually logged by control center operators typically based on outage information collected from Smart Meters, SCADA, or other devices.

[5] Per D.16-01-008, this report excludes the June 10th, 2022 load curtailment related outages initiated by CAISO due to the high demand on the Electric power grid.

i. Distribution System Indices

Table 3 – Distribution System Indices (2013-2022)
(Excludes planned outages, transmission, substation, and generation related outages)

Year	Major Events Included				Major Events Excluded			
	SAIDI	SAIFI	MAIFI	CAIDI	SAIDI	SAIFI	MAIFI	CAIDI
2013	100.1	0.869	1.366	115.2	84.8	0.804	1.266	105.5
2014	119.7	0.926	1.275	129.2	85.2	0.780	1.125	109.2
2015	99.4	0.804	1.606	123.6	72.5	0.689	1.391	105.3
2016	95.5	0.896	1.401	106.6	83.1	0.819	1.304	101.5
2017	302.8	1.274	1.996	237.7	90.0	0.792	1.275	113.6
2018	263.4	0.905	1.211	291.1	90.7	0.842	1.154	107.6
2019	1,322.9	1.673	1.550	790.9	103.1	0.877	1.101	117.5
2020	417.9	1.237	1.364	338.0	111.2	0.933	1.146	119.2
2021	529.0	1.495	1.646	353.9	160.0	1.033	1.172	154.9
2022	240.6	1.407	1.269	171.0	184.5	1.282	1.184	143.9

Note: PG&E defines its distribution system as line voltage less than 60 kilovolts (kV)

The MAIFI information is not included in Table 3 and Table 4 since non-SCADA automatic recording devices (Smart Meters) do not distinguish between transmission system outages or distribution system outages.

ii. Transmission System Indices

Table 4 – Transmission System Indices (2013-2022)
(Excludes planned outages, distribution, and generation related outages)
(Includes substation outages)

Year	Major Events Included				Major Events Excluded			
	SAIDI	SAIFI	MAIFI	CAIDI	SAIDI	SAIFI	MAIFI	CAIDI
2013	13.1	0.168	0.272	77.7	11.7	0.160	0.263	72.6
2014	14.1	0.116	0.289	121.0	7.5	0.097	0.268	77.8
2015	32.1	0.160	0.205	201.0	7.8	0.095	0.193	82.7
2016	11.2	0.125	0.195	89.5	10.7	0.121	0.184	88.3
2017	54.9	0.191	0.299	286.9	7.3	0.085	0.212	85.4
2018	17.9	0.146	0.211	122.1	7.9	0.115	0.201	68.7
2019	40.2	0.198	0.226	202.7	14.5	0.131	0.165	110.5
2020	32.6	0.206	0.181	158.4	14.5	0.134	0.145	108.3
2021	59.0	0.192	0.227	307.9	22.5	0.143	0.135	156.7
2022	43.2	0.208	0.130	207.4	28.9	0.186	0.125	155.5

Note: PG&E defines its transmission system as line voltage 60 kilovolts (kV) and above

b. Separate System Charts of SAIDI, SAIFI, MAIFI, and CAIDI for the past 10 years with linear trend line (MED Excluded)

i. SAIDI Performance Results (MED Excluded)

Chart 1: Transmission & Distribution System SAIDI Indices

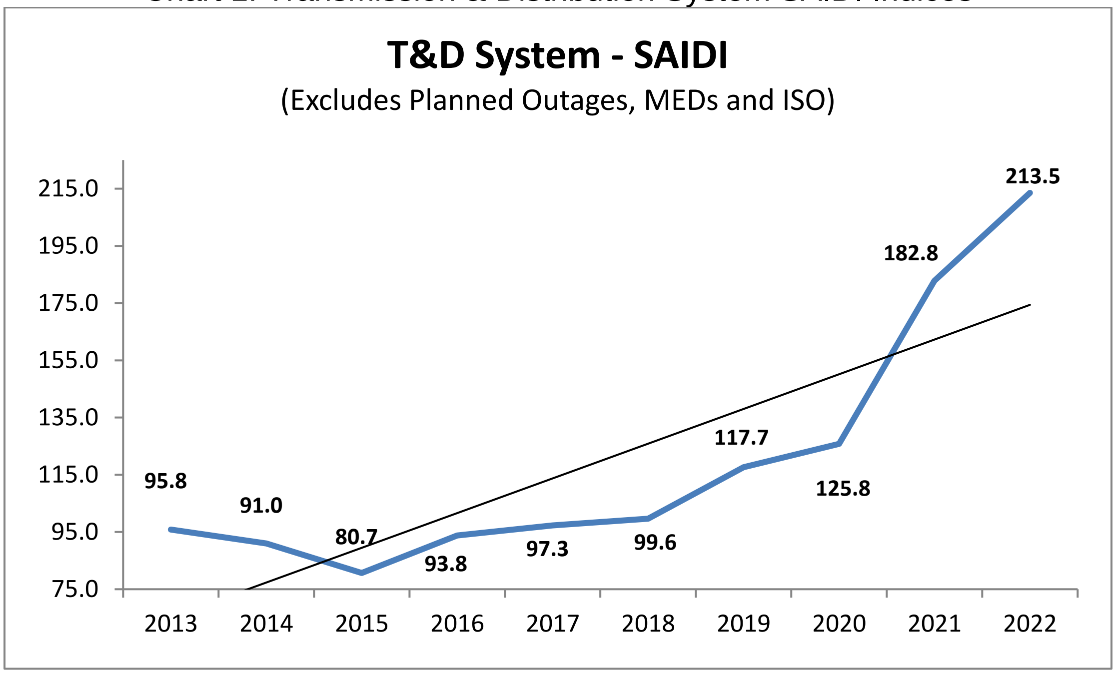


Chart 2: Distribution System SAIDI Indices

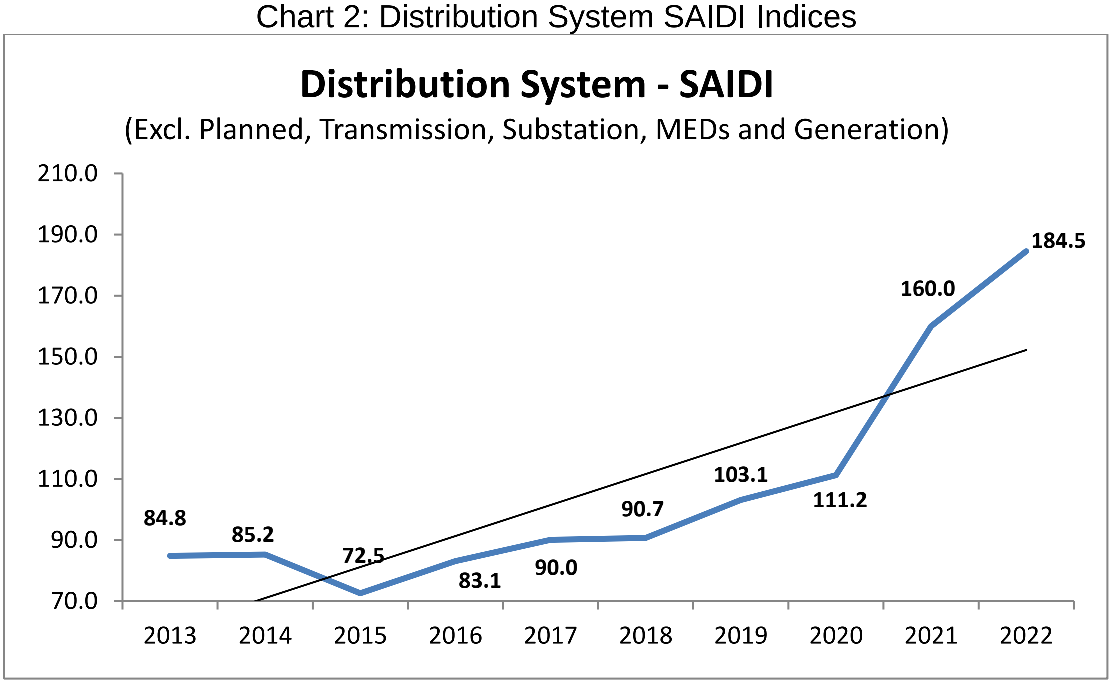
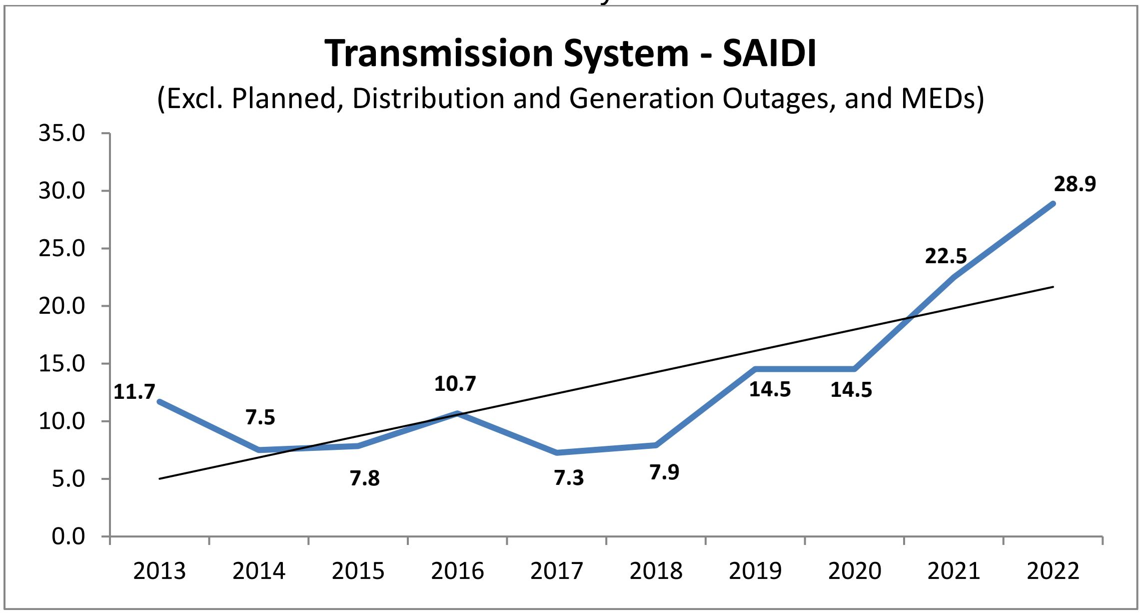


Chart 3: Transmission System SAIDI Indices



(Includes substation outages)

ii. SAIFI Performance Results (MED Excluded)

Chart 4: Transmission & Distribution System SAIFI Indices

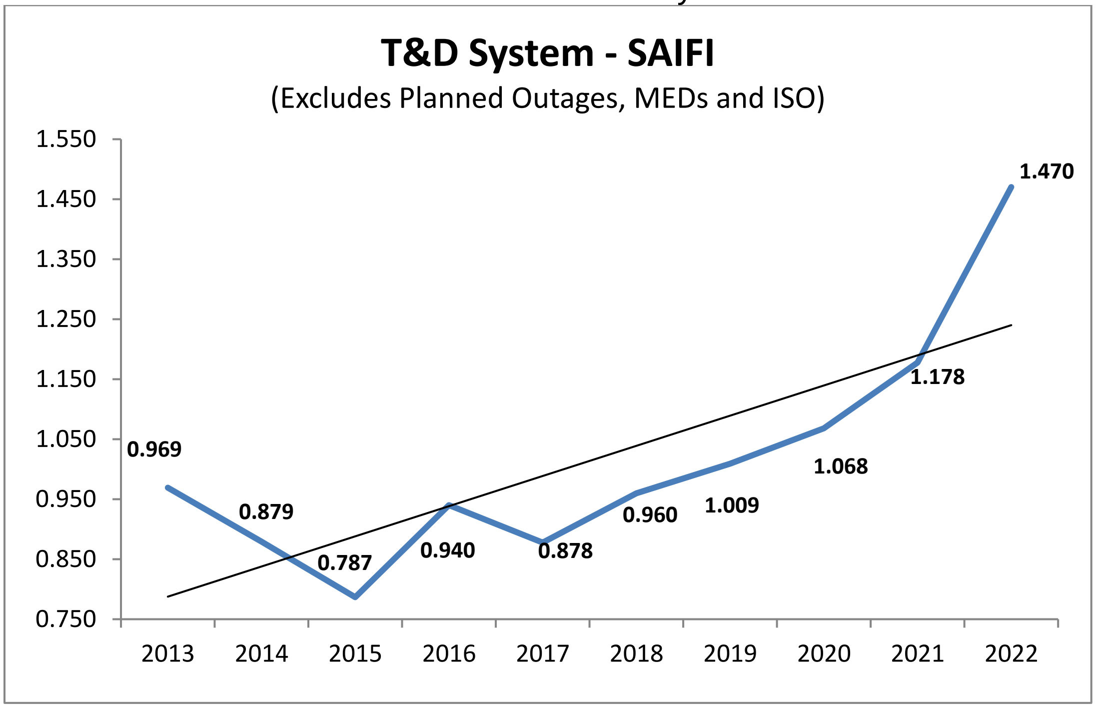


Chart 5: Distribution System SAIFI Indices

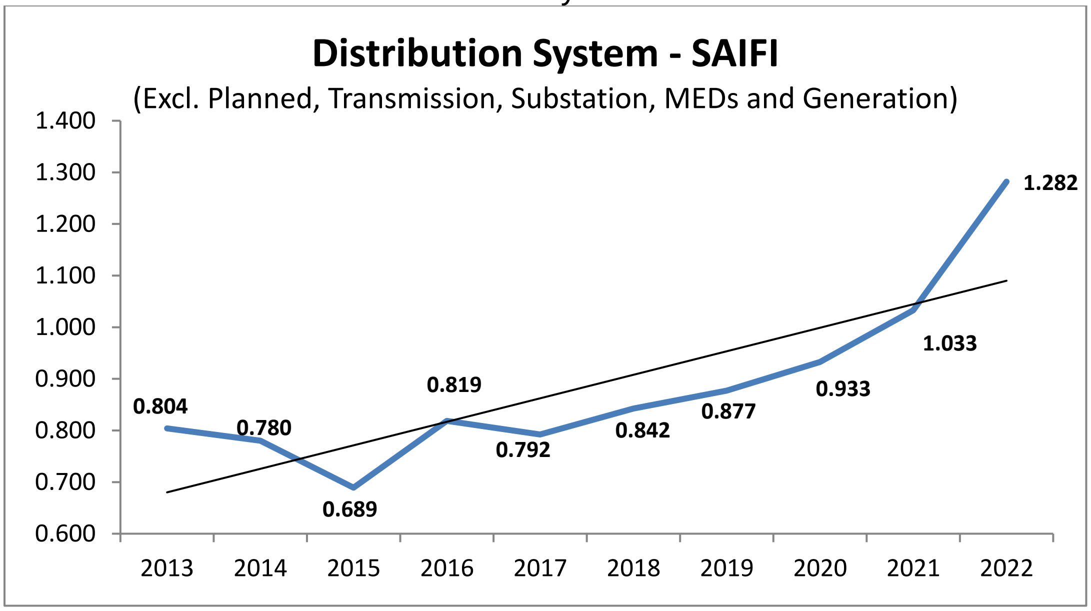
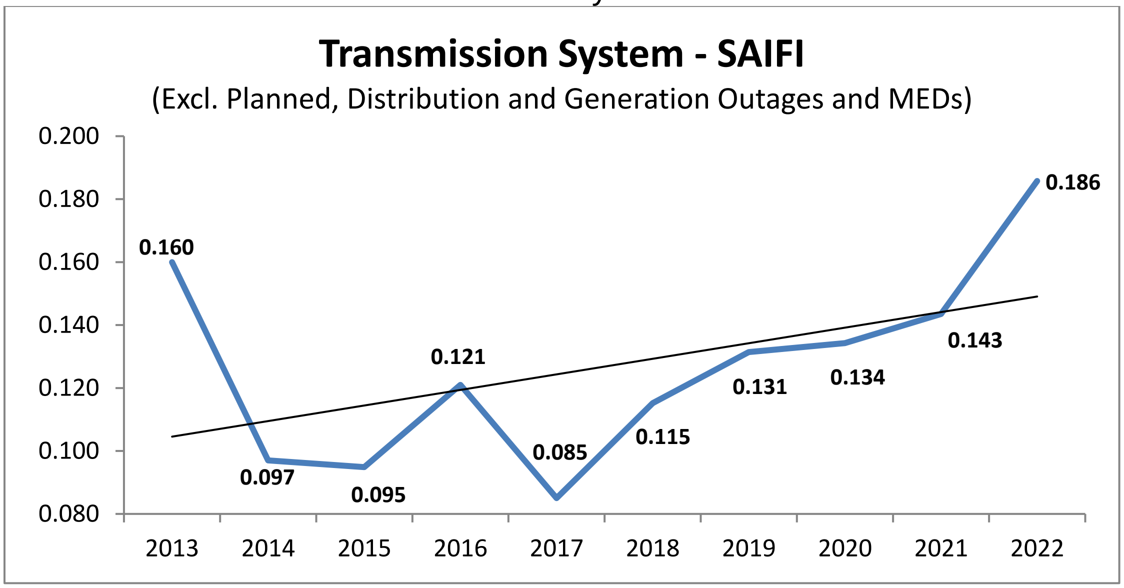


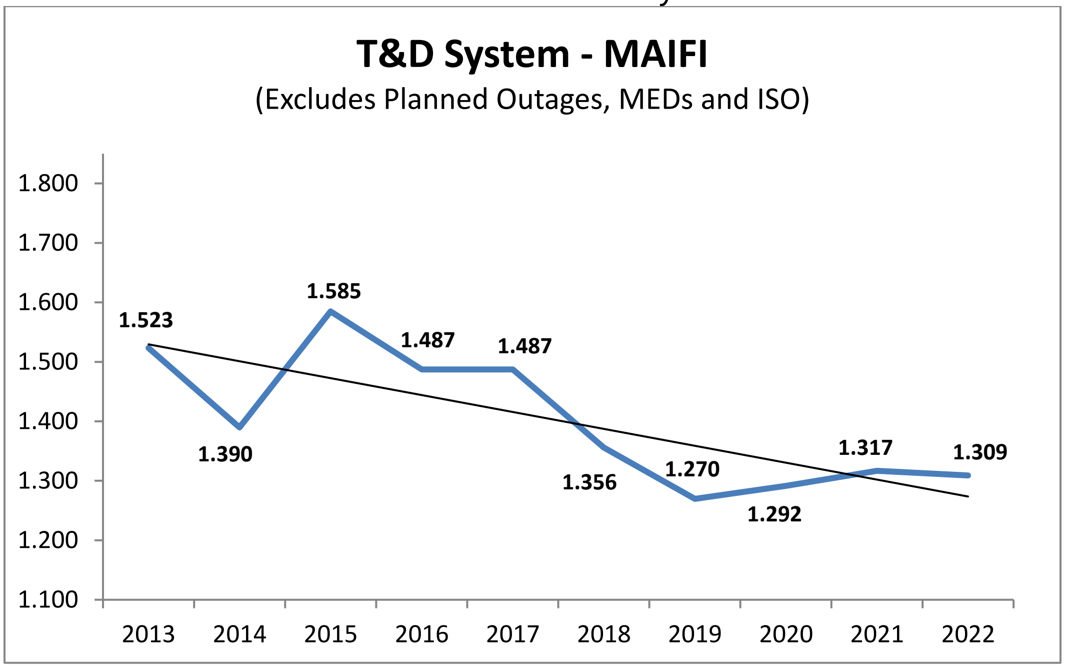
Chart 6: Transmission System SAIFI Indices



(Includes substation outages)

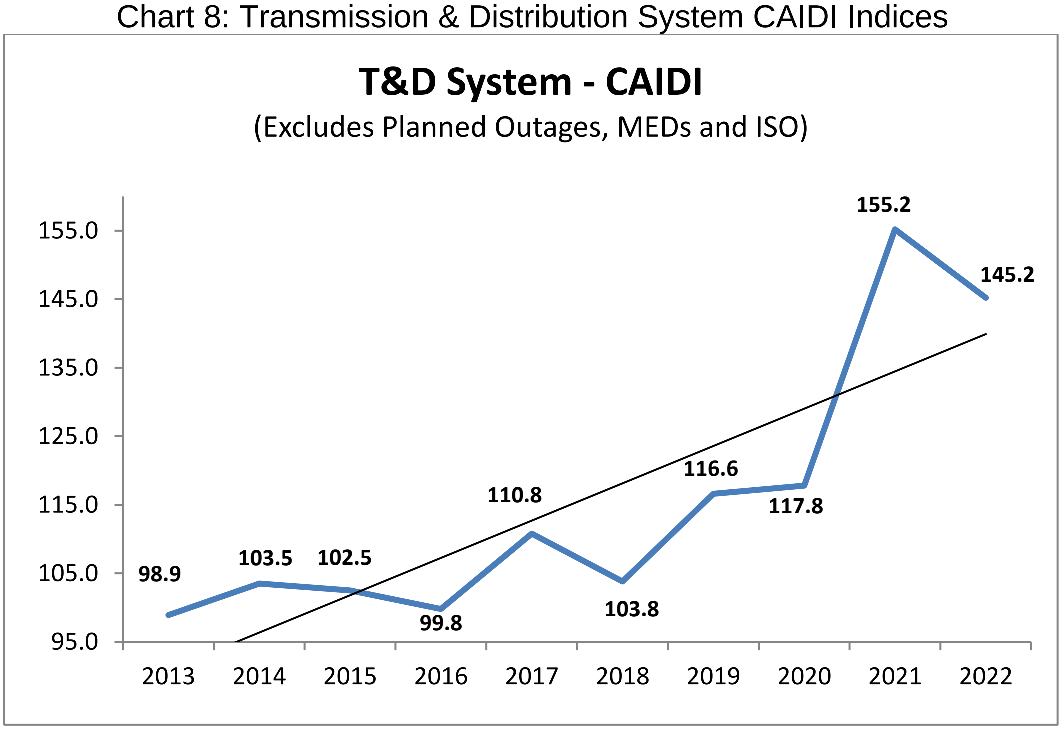
iii. MAIFI[6] Performance Results (MED Excluded)

Chart 7: Transmission & Distribution System MAIFI Indices



iv. AIDI Performance Results (MED Excluded)

Chart 8: Transmission & Distribution System CAIDI Indices



6 See footnote 4.

Chart 9: Distribution System CAIDI Indices

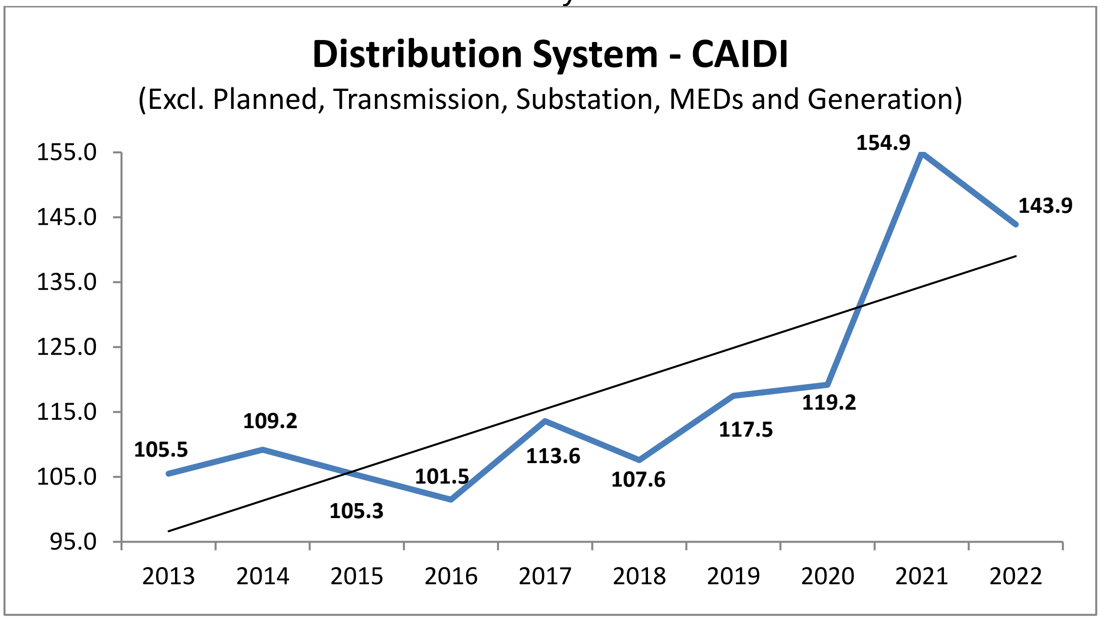
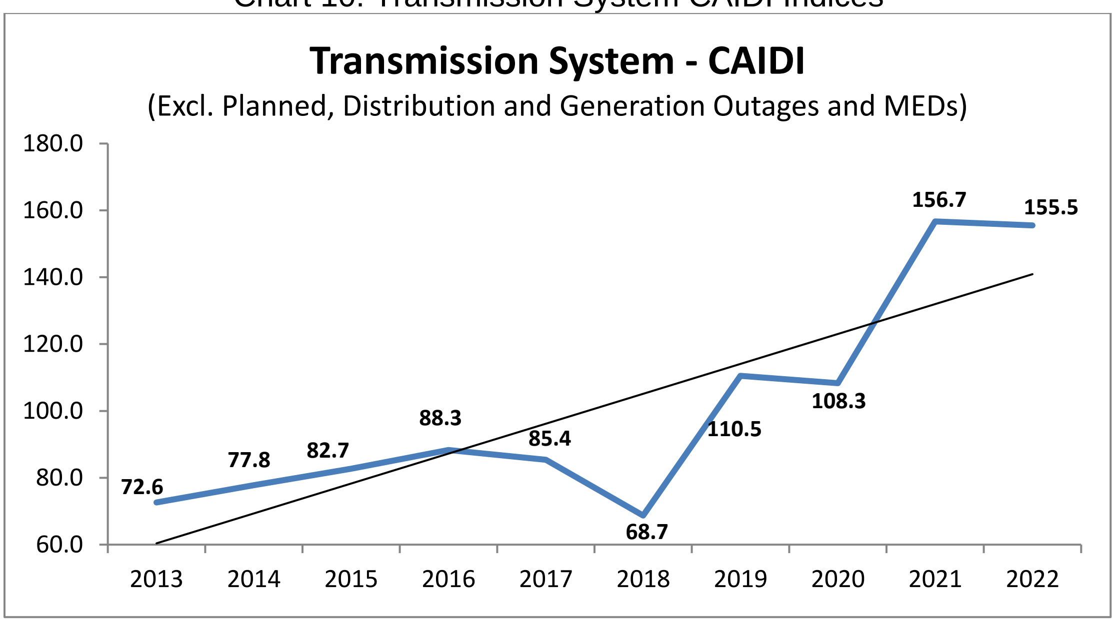


Chart 10: Transmission System CAIDI Indices



(Includes substation outages)

2. Division Reliability Indices for the past 10 years including and excluding MED

a. Division Reliability Indices for the past 10 years excluding ISO and planned outages and including Major Event Days

Table 5: Division Reliability Indices

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
CENTRAL COAST	2013	125.3	1.315	2.041	95.3
CENTRAL COAST	2014	199.3	1.351	2.133	147.5
CENTRAL COAST	2015	253.0	1.289	2.173	196.3
CENTRAL COAST	2016	188.6	1.637	2.730	115.2
CENTRAL COAST	2017	807.8	2.462	4.576	328.2
CENTRAL COAST	2018	186.8	1.598	2.502	117.0
CENTRAL COAST	2019	1,294.9	2.584	3.149	501.2
CENTRAL COAST	2020	395.9	2.129	1.888	185.9
CENTRAL COAST	2021	711.0	2.379	2.543	298.9
CENTRAL COAST	2022	484.1	2.981	2.997	162.4
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
DE ANZA	2013	78.8	0.831	1.173	94.8
DE ANZA	2014	112.9	1.017	1.318	111.1
DE ANZA	2015	63.4	0.594	1.281	106.7
DE ANZA	2016	109.6	0.924	1.414	118.6
DE ANZA	2017	315.4	1.503	1.792	209.8
DE ANZA	2018	86.8	0.836	1.426	103.8
DE ANZA	2019	402.2	1.385	2.008	290.4
DE ANZA	2020	226.3	0.958	1.597	236.2
DE ANZA	2021	294.6	1.189	1.784	247.8
DE ANZA	2022	179.2	1.214	1.114	147.6
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
DIABLO	2013	83.1	1.023	1.297	81.3
DIABLO	2014	82.2	0.979	1.374	84.0
DIABLO	2015	83.7	0.985	1.873	85.0
DIABLO	2016	79.0	1.008	1.729	78.4
DIABLO	2017	140.7	1.218	2.138	115.5
DIABLO	2018	89.5	1.112	1.540	80.4
DIABLO	2019	612.7	1.601	1.855	382.7
DIABLO	2020	249.6	1.433	1.823	174.1
DIABLO	2021	163.6	1.430	1.671	114.4
DIABLO	2022	208.3	1.697	1.382	122.7

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
EAST BAY	2013	117.3	1.010	1.266	116.2
EAST BAY	2014	81.1	0.847	1.515	95.8
EAST BAY	2015	59.6	0.723	1.179	82.5
EAST BAY	2016	128.2	1.205	1.242	106.4
EAST BAY	2017	147.3	1.217	1.983	121.1
EAST BAY	2018	87.6	0.990	1.131	88.4
EAST BAY	2019	459.7	1.346	1.216	341.6
EAST BAY	2020	222.4	1.116	1.647	199.3
EAST BAY	2021	238.5	1.679	1.683	142.0
EAST BAY	2022	159.7	1.244	1.681	128.3
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
FRESNO	2013	95.0	1.100	2.104	86.4
FRESNO	2014	81.6	1.002	1.781	81.5
FRESNO	2015	100.3	1.151	2.057	87.2
FRESNO	2016	85.1	1.127	1.975	75.5
FRESNO	2017	102.5	0.986	1.863	104.0
FRESNO	2018	113.9	1.046	1.415	108.9
FRESNO	2019	120.7	0.994	1.695	121.4
FRESNO	2020	116.9	1.136	1.452	102.9
FRESNO	2021	213.2	1.354	1.698	157.4
FRESNO	2022	182.3	1.295	1.794	140.8
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
HUMBOLDT	2013	304.3	1.416	2.627	214.9
HUMBOLDT	2014	288.4	1.368	1.940	210.9
HUMBOLDT	2015	695.2	2.234	2.736	311.2
HUMBOLDT	2016	219.4	1.637	2.055	134.0
HUMBOLDT	2017	919.8	2.362	3.510	389.5
HUMBOLDT	2018	402.6	2.144	1.570	187.8
HUMBOLDT	2019	6,899.5	4.365	2.423	1,580.7
HUMBOLDT	2020	968.7	2.161	1.304	448.3
HUMBOLDT	2021	1,602.5	2.815	2.079	569.4
HUMBOLDT	2022	1,011.1	3.056	1.407	330.9
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
KERN	2013	91.3	1.073	1.226	85.1
KERN	2014	108.8	1.109	1.848	98.2
KERN	2015	92.0	0.947	1.925	97.1
KERN	2016	89.8	0.932	2.072	96.3
KERN	2017	138.9	1.072	1.958	129.6
KERN	2018	72.4	0.789	1.747	91.8
KERN	2019	162.0	1.325	2.079	122.2
KERN	2020	129.7	1.157	1.955	112.1
KERN	2021	179.3	1.397	1.855	128.4
KERN	2022	272.5	1.494	1.287	182.4

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
LOS PADRES	2013	212.5	1.495	1.105	142.1
LOS PADRES	2014	186.6	1.238	1.354	150.7
LOS PADRES	2015	132.2	0.844	1.783	156.6
LOS PADRES	2016	114.1	1.172	1.672	97.4
LOS PADRES	2017	315.7	1.574	2.127	200.6
LOS PADRES	2018	141.8	1.277	1.153	111.1
LOS PADRES	2019	225.9	1.533	1.134	147.4
LOS PADRES	2020	198.1	1.296	0.915	152.9
LOS PADRES	2021	300.8	1.621	1.935	185.5
LOS PADRES	2022	319.7	2.029	1.000	157.6
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
MISSION	2013	73.5	0.805	0.837	91.3
MISSION	2014	73.7	0.751	0.820	98.1
MISSION	2015	62.6	0.596	1.150	105.1
MISSION	2016	82.7	0.763	0.961	108.4
MISSION	2017	137.9	1.012	1.470	136.4
MISSION	2018	67.1	0.672	0.839	99.9
MISSION	2019	296.5	0.948	0.939	312.6
MISSION	2020	219.2	1.201	1.387	182.5
MISSION	2021	156.3	1.215	1.216	128.6
MISSION	2022	127.5	0.839	0.917	152.1
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
NORTH BAY	2013	114.0	0.996	1.730	114.5
NORTH BAY	2014	235.1	1.250	2.721	188.1
NORTH BAY	2015	135.4	1.059	2.161	127.9
NORTH BAY	2016	110.3	0.920	1.434	119.8
NORTH BAY	2017	733.3	1.761	2.810	416.5
NORTH BAY	2018	164.6	0.982	1.837	167.6
NORTH BAY	2019	3,518.1	3.182	2.272	1,105.7
NORTH BAY	2020	509.3	1.718	2.521	296.4
NORTH BAY	2021	352.5	1.627	2.289	216.6
NORTH BAY	2022	217.1	1.496	1.153	145.1
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
NORTH VALLEY	2013	139.4	1.093	1.962	127.6
NORTH VALLEY	2014	173.2	1.177	1.778	147.2
NORTH VALLEY	2015	479.6	1.787	2.528	268.3
NORTH VALLEY	2016	175.1	1.265	2.173	138.4
NORTH VALLEY	2017	398.6	1.672	3.163	238.5
NORTH VALLEY	2018	4,287.0	1.629	1.393	2,631.8
NORTH VALLEY	2019	4,886.2	3.961	2.501	1,233.6
NORTH VALLEY	2020	1,979.0	2.563	1.654	772.2
NORTH VALLEY	2021	2,098.1	2.899	3.243	723.8
NORTH VALLEY	2022	353.8	2.252	1.311	157.1

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
PENINSULA	2013	94.3	0.885	1.322	106.5
PENINSULA	2014	98.4	1.061	1.363	92.8
PENINSULA	2015	76.2	0.866	1.798	87.9
PENINSULA	2016	87.1	0.986	1.381	88.3
PENINSULA	2017	167.0	1.328	2.382	125.7
PENINSULA	2018	66.4	0.856	1.255	77.5
PENINSULA	2019	734.2	1.551	1.642	473.2
PENINSULA	2020	169.5	1.199	1.383	141.4
PENINSULA	2021	391.0	1.625	1.927	240.6
PENINSULA	2022	161.4	1.132	1.414	142.5
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SACRAMENTO	2013	98.3	0.983	1.697	100.0
SACRAMENTO	2014	107.9	0.913	1.437	118.2
SACRAMENTO	2015	92.4	0.894	1.771	103.3
SACRAMENTO	2016	99.4	1.035	1.803	96.1
SACRAMENTO	2017	283.0	1.870	3.213	151.3
SACRAMENTO	2018	108.5	1.059	1.935	102.4
SACRAMENTO	2019	670.8	1.686	2.349	397.9
SACRAMENTO	2020	281.9	1.602	1.796	176.0
SACRAMENTO	2021	579.7	1.740	2.888	333.2
SACRAMENTO	2022	386.1	1.546	1.719	249.8
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SAN FRANCISCO	2013	58.1	0.657	0.332	88.4
SAN FRANCISCO	2014	131.0	0.780	0.353	167.9
SAN FRANCISCO	2015	36.1	0.521	0.537	69.3
SAN FRANCISCO	2016	40.7	0.537	0.397	75.8
SAN FRANCISCO	2017	116.4	0.860	0.513	135.4
SAN FRANCISCO	2018	38.0	0.417	0.298	91.0
SAN FRANCISCO	2019	71.7	0.718	0.363	99.8
SAN FRANCISCO	2020	48.5	0.642	0.427	75.5
SAN FRANCISCO	2021	68.4	0.674	0.595	101.5
SAN FRANCISCO	2022	53.3	0.528	0.474	101.0
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SAN JOSE	2013	99.7	0.962	1.037	103.7
SAN JOSE	2014	98.9	0.975	1.066	101.4
SAN JOSE	2015	75.6	0.763	1.151	99.1
SAN JOSE	2016	68.9	0.678	1.200	101.5
SAN JOSE	2017	179.8	1.241	1.807	144.8
SAN JOSE	2018	86.9	0.872	1.349	99.6
SAN JOSE	2019	275.7	1.083	1.422	254.6
SAN JOSE	2020	177.7	1.074	1.526	165.5
SAN JOSE	2021	171.7	1.004	1.252	170.9
SAN JOSE	2022	211.3	1.389	1.329	152.2

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SIERRA	2013	156.7	1.411	3.222	111.1
SIERRA	2014	194.8	1.411	2.349	138.1
SIERRA	2015	181.9	1.274	3.150	142.8
SIERRA	2016	174.3	1.252	1.864	139.2
SIERRA	2017	620.1	2.076	3.105	298.7
SIERRA	2018	399.2	1.450	1.431	275.3
SIERRA	2019	5,826.0	4.104	2.545	1,419.6
SIERRA	2020	2,345.1	2.626	1.917	892.9
SIERRA	2021	3,067.0	2.880	2.461	1,064.9
SIERRA	2022	703.8	3.314	1.182	212.4
Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SONOMA	2013	181.7	1.119	2.536	162.3
SONOMA	2014	214.9	1.270	2.049	169.3
SONOMA	2015	119.1	0.868	1.992	137.3
SONOMA	2016	95.4	0.834	1.605	114.3
SONOMA	2017	1,850.1	1.951	2.885	948.3
SONOMA	2018	107.4	0.974	1.240	110.3
SONOMA	2019	3,871.1	2.540	1.661	1,523.9
SONOMA	2020	601.0	1.645	1.597	365.3
SONOMA	2021	396.0	1.738	1.882	227.8
SONOMA	2022	243.0	1.565	1.453	155.3
Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
STOCKTON	2013	115.6	1.462	2.137	79.1
STOCKTON	2014	123.9	0.843	1.444	147.0
STOCKTON	2015	124.5	1.035	2.243	120.3
STOCKTON	2016	100.0	0.994	1.777	100.6
STOCKTON	2017	271.1	1.627	1.924	166.6
STOCKTON	2018	224.8	1.152	1.994	195.1
STOCKTON	2019	1,579.9	2.366	1.904	667.7
STOCKTON	2020	661.0	1.595	1.549	414.4
STOCKTON	2021	1,119.6	2.003	2.410	558.9
STOCKTON	2022	485.0	1.890	1.190	256.6
Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
YOSEMITE	2013	189.1	1.362	3.429	138.9
YOSEMITE	2014	135.6	1.290	2.669	105.2
YOSEMITE	2015	112.4	1.072	3.095	104.8
YOSEMITE	2016	129.9	1.234	2.156	105.2
YOSEMITE	2017	310.8	1.720	3.048	180.7
YOSEMITE	2018	177.4	1.465	1.834	121.1
YOSEMITE	2019	1,399.3	2.652	2.686	527.5
YOSEMITE	2020	783.7	1.944	1.588	403.2
YOSEMITE	2021	1,319.9	3.168	2.637	416.6
YOSEMITE	2022	354.4	2.232	1.848	158.8

b. Division Reliability Indices for the past 10 years excluding planned outages, ISO outages and Major Event Days

Table 6: Division Reliability Indices

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
CENTRAL COAST	2013	119.7	1.291	1.958	92.7
CENTRAL COAST	2014	122.1	1.088	1.835	112.3
CENTRAL COAST	2015	102.0	0.847	1.844	120.4
CENTRAL COAST	2016	166.1	1.471	2.476	112.9
CENTRAL COAST	2017	146.3	1.293	2.589	113.1
CENTRAL COAST	2018	162.4	1.447	2.242	112.2
CENTRAL COAST	2019	203.6	1.470	2.231	138.5
CENTRAL COAST	2020	159.1	1.724	1.600	92.3
CENTRAL COAST	2021	289.2	1.643	1.906	176.0
CENTRAL COAST	2022	377.6	2.657	2.868	142.1
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
DE ANZA	2013	77.0	0.821	1.138	93.8
DE ANZA	2014	89.3	0.890	1.213	100.3
DE ANZA	2015	51.2	0.476	1.171	107.6
DE ANZA	2016	87.3	0.753	1.336	116.0
DE ANZA	2017	97.9	0.985	1.150	99.4
DE ANZA	2018	84.0	0.789	1.402	106.4
DE ANZA	2019	91.3	0.873	1.657	104.6
DE ANZA	2020	83.1	0.711	1.213	117.0
DE ANZA	2021	121.0	0.787	0.987	153.8
DE ANZA	2022	120.6	1.001	1.065	120.4
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
DIABLO	2013	80.4	1.001	1.237	80.3
DIABLO	2014	66.1	0.892	1.220	74.1
DIABLO	2015	73.8	0.860	1.666	85.8
DIABLO	2016	76.5	0.995	1.694	76.9
DIABLO	2017	78.0	0.876	1.620	89.1
DIABLO	2018	78.3	1.004	1.496	78.0
DIABLO	2019	78.8	0.935	1.212	84.3
DIABLO	2020	110.8	1.206	1.621	91.9
DIABLO	2021	112.0	1.177	1.352	95.2
DIABLO	2022	179.2	1.566	1.295	114.4
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
EAST BAY	2013	63.0	0.832	1.155	75.6
EAST BAY	2014	64.8	0.726	1.299	89.2
EAST BAY	2015	45.0	0.586	1.085	76.9
EAST BAY	2016	101.4	1.050	1.079	96.6
EAST BAY	2017	73.8	0.903	1.528	81.7
EAST BAY	2018	78.8	0.901	1.080	87.5
EAST BAY	2019	84.5	0.854	0.956	99.0
EAST BAY	2020	95.5	0.838	1.453	114.0
EAST BAY	2021	154.2	1.250	1.368	123.4
EAST BAY	2022	147.4	1.158	1.661	127.3

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
FRESNO	2013	92.4	1.068	2.063	86.5
FRESNO	2014	79.4	0.983	1.709	80.7
FRESNO	2015	70.0	0.849	1.829	82.4
FRESNO	2016	83.4	1.105	1.951	75.4
FRESNO	2017	72.3	0.799	1.546	90.5
FRESNO	2018	73.5	0.861	1.368	85.4
FRESNO	2019	78.8	0.828	1.477	95.2
FRESNO	2020	86.5	0.865	1.352	100.0
FRESNO	2021	142.0	1.081	1.468	131.3
FRESNO	2022	175.3	1.244	1.731	140.9
Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
HUMBOLDT	2013	210.4	1.170	2.437	179.8
HUMBOLDT	2014	212.4	1.217	1.809	174.5
HUMBOLDT	2015	276.3	1.621	2.423	170.5
HUMBOLDT	2016	203.0	1.537	1.995	132.1
HUMBOLDT	2017	275.1	1.306	2.280	210.6
HUMBOLDT	2018	225.9	1.789	1.502	126.3
HUMBOLDT	2019	274.4	1.616	1.850	169.7
HUMBOLDT	2020	191.6	1.336	1.181	143.5
HUMBOLDT	2021	461.3	2.005	1.415	230.0
HUMBOLDT	2022	472.2	2.501	1.329	188.8
Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
KERN	2013	87.5	1.027	1.133	85.2
KERN	2014	81.0	0.936	1.635	86.5
KERN	2015	80.4	0.862	1.850	93.2
KERN	2016	89.2	0.916	2.066	97.4
KERN	2017	78.1	0.733	1.403	106.5
KERN	2018	71.6	0.783	1.720	91.4
KERN	2019	106.6	1.101	1.743	96.8
KERN	2020	114.6	1.060	1.831	108.1
KERN	2021	138.4	1.101	1.503	125.7
KERN	2022	269.4	1.461	1.209	184.4
Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
LOS PADRES	2013	86.7	0.726	0.960	119.5
LOS PADRES	2014	95.2	1.043	1.135	91.2
LOS PADRES	2015	72.2	0.687	1.408	105.1
LOS PADRES	2016	112.3	1.147	1.671	97.9
LOS PADRES	2017	106.7	0.944	1.442	113.0
LOS PADRES	2018	130.5	1.195	1.010	109.3
LOS PADRES	2019	150.7	1.188	0.798	126.8
LOS PADRES	2020	139.3	1.141	0.836	122.1
LOS PADRES	2021	195.0	1.125	1.314	173.4
LOS PADRES	2022	233.3	1.824	0.870	128.0

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
MISSION	2013	67.8	0.736	0.775	92.1
MISSION	2014	62.9	0.672	0.770	93.6
MISSION	2015	56.7	0.543	1.054	104.4
MISSION	2016	72.7	0.702	0.916	103.7
MISSION	2017	60.2	0.602	1.002	99.9
MISSION	2018	62.0	0.644	0.815	96.4
MISSION	2019	65.8	0.669	0.693	98.4
MISSION	2020	91.1	0.766	1.060	119.0
MISSION	2021	113.5	0.957	0.913	118.6
MISSION	2022	109.9	0.784	0.879	140.2
Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
NORTH BAY	2013	101.8	0.910	1.455	111.9
NORTH BAY	2014	114.6	0.875	2.505	131.0
NORTH BAY	2015	97.4	0.904	1.977	107.8
NORTH BAY	2016	83.9	0.767	1.209	109.4
NORTH BAY	2017	148.5	0.955	1.832	155.5
NORTH BAY	2018	116.3	0.921	1.771	126.3
NORTH BAY	2019	148.2	1.312	1.647	112.9
NORTH BAY	2020	143.3	1.235	2.093	116.0
NORTH BAY	2021	160.0	1.063	1.551	150.5
NORTH BAY	2022	212.6	1.459	1.100	145.7
Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
NORTH VALLEY	2013	118.9	1.035	1.904	114.9
NORTH VALLEY	2014	111.1	0.968	1.521	114.8
NORTH VALLEY	2015	132.8	1.062	1.930	125.0
NORTH VALLEY	2016	146.4	1.128	1.937	129.8
NORTH VALLEY	2017	112.3	0.863	2.007	130.2
NORTH VALLEY	2018	187.1	1.364	1.325	137.2
NORTH VALLEY	2019	205.0	1.506	1.458	136.1
NORTH VALLEY	2020	269.0	1.546	1.369	174.0
NORTH VALLEY	2021	427.7	1.752	2.192	244.1
NORTH VALLEY	2022	337.6	2.178	1.206	155.0
Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
PENINSULA	2013	70.1	0.785	1.114	89.4
PENINSULA	2014	77.1	0.898	1.164	85.9
PENINSULA	2015	60.5	0.752	1.601	80.4
PENINSULA	2016	78.8	0.905	1.195	87.2
PENINSULA	2017	61.5	0.640	1.176	96.0
PENINSULA	2018	60.5	0.806	1.204	75.0
PENINSULA	2019	88.5	0.816	0.983	108.4
PENINSULA	2020	85.5	0.855	1.042	100.0
PENINSULA	2021	161.2	1.068	0.944	150.9
PENINSULA	2022	129.9	1.005	1.351	129.2

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SACRAMENTO	2013	93.0	0.937	1.566	99.2
SACRAMENTO	2014	94.4	0.807	1.258	117.0
SACRAMENTO	2015	80.1	0.799	1.556	100.3
SACRAMENTO	2016	83.6	0.944	1.539	88.5
SACRAMENTO	2017	121.2	1.070	1.708	113.2
SACRAMENTO	2018	101.0	1.021	1.825	98.9
SACRAMENTO	2019	98.9	0.866	1.574	114.3
SACRAMENTO	2020	173.6	1.350	1.499	128.6
SACRAMENTO	2021	155.4	1.122	1.874	138.4
SACRAMENTO	2022	175.1	1.294	1.573	135.3
Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SAN FRANCISCO	2013	52.0	0.604	0.302	86.1
SAN FRANCISCO	2014	41.5	0.457	0.235	90.8
SAN FRANCISCO	2015	33.9	0.504	0.501	67.2
SAN FRANCISCO	2016	39.7	0.518	0.355	76.7
SAN FRANCISCO	2017	36.5	0.500	0.372	73.0
SAN FRANCISCO	2018	35.2	0.378	0.270	93.0
SAN FRANCISCO	2019	56.8	0.614	0.258	92.4
SAN FRANCISCO	2020	43.9	0.582	0.386	75.5
SAN FRANCISCO	2021	49.4	0.530	0.499	93.2
SAN FRANCISCO	2022	49.6	0.496	0.458	100.0
Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SAN JOSE	2013	96.7	0.914	0.977	105.7
SAN JOSE	2014	76.0	0.806	1.026	94.4
SAN JOSE	2015	65.9	0.678	1.008	97.2
SAN JOSE	2016	65.5	0.644	1.152	101.7
SAN JOSE	2017	72.3	0.739	1.171	97.8
SAN JOSE	2018	85.0	0.858	1.322	99.1
SAN JOSE	2019	81.5	0.747	1.253	109.1
SAN JOSE	2020	120.9	0.906	1.274	133.5
SAN JOSE	2021	95.4	0.763	0.909	125.1
SAN JOSE	2022	152.2	1.150	1.180	132.4
Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SIERRA	2013	109.9	1.279	3.085	85.9
SIERRA	2014	142.2	1.210	2.128	117.5
SIERRA	2015	123.2	1.115	2.816	110.5
SIERRA	2016	121.7	1.029	1.705	118.2
SIERRA	2017	155.0	1.191	1.856	130.2
SIERRA	2018	152.9	1.241	1.350	123.2
SIERRA	2019	167.5	1.151	1.482	145.6
SIERRA	2020	208.0	1.422	1.169	146.2
SIERRA	2021	342.2	1.672	1.022	204.7
SIERRA	2022	529.6	3.101	1.018	170.8

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SONOMA	2013	113.4	0.846	2.256	134.0
SONOMA	2014	113.7	0.899	1.587	126.6
SONOMA	2015	73.0	0.673	1.534	108.5
SONOMA	2016	88.6	0.792	1.508	111.8
SONOMA	2017	120.7	0.886	1.566	136.2
SONOMA	2018	105.5	0.956	1.201	110.3
SONOMA	2019	145.7	1.070	1.233	136.1
SONOMA	2020	124.5	1.062	1.327	117.2
SONOMA	2021	166.3	1.257	1.420	132.3
SONOMA	2022	232.9	1.526	1.390	152.6
Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
STOCKTON	2013	106.5	1.427	2.025	74.6
STOCKTON	2014	105.9	0.749	1.309	141.4
STOCKTON	2015	96.1	0.874	1.947	109.9
STOCKTON	2016	84.0	0.900	1.663	93.3
STOCKTON	2017	84.6	0.946	1.264	89.5
STOCKTON	2018	107.7	1.036	1.872	103.9
STOCKTON	2019	175.3	1.276	1.130	137.4
STOCKTON	2020	131.8	1.187	1.268	111.0
STOCKTON	2021	176.2	1.151	1.471	153.2
STOCKTON	2022	247.3	1.665	1.064	148.5
Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
YOSEMITE	2013	187.8	1.344	3.259	139.7
YOSEMITE	2014	117.6	1.226	2.446	96.0
YOSEMITE	2015	102.3	0.984	2.638	103.9
YOSEMITE	2016	123.2	1.178	2.025	104.5
YOSEMITE	2017	143.0	1.170	2.150	122.2
YOSEMITE	2018	158.3	1.355	1.773	116.8
YOSEMITE	2019	160.4	1.470	1.603	109.1
YOSEMITE	2020	197.4	1.411	1.299	139.9
YOSEMITE	2021	434.1	2.180	1.811	199.2
YOSEMITE	2022	328.9	2.047	1.631	160.7

c. Charts for Division Reliability Indices for the past 10 years

i. Charts for Division Reliability Indices for the past 10 years with linear trend line excluding ISO and planned outages and including MED

1. AIDI Performance Results (MED Included)

Chart 11: Division Reliability - AIDI Indices

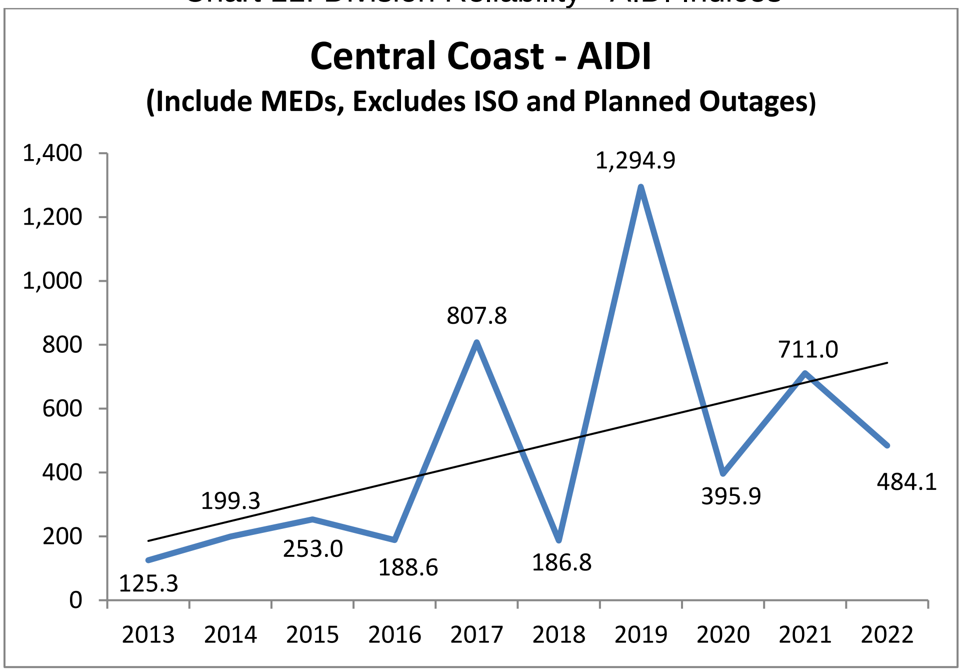


Chart 12: Division Reliability - AIDI Indices

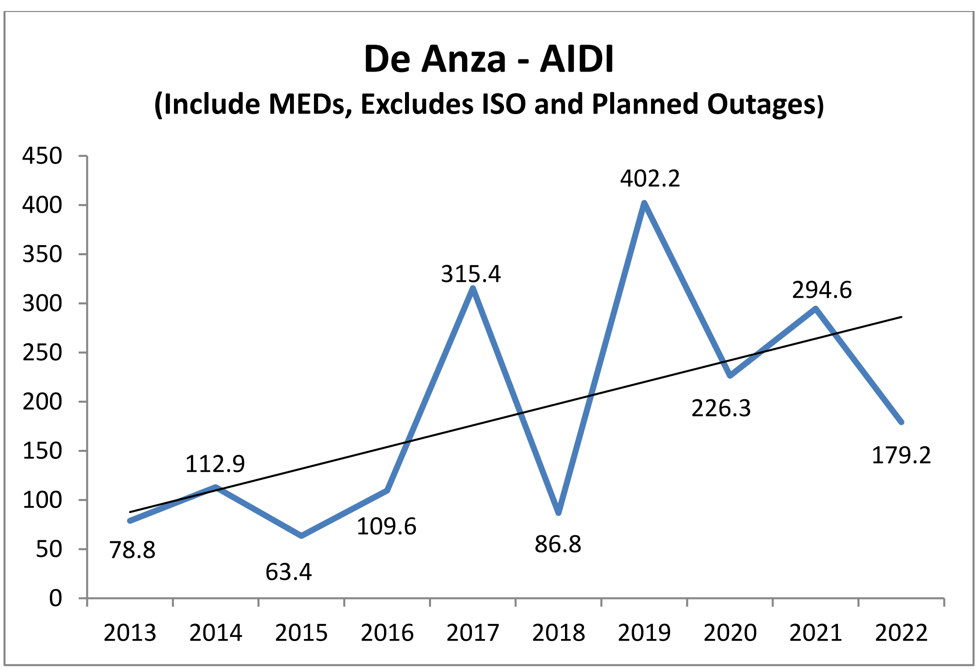


Chart 13: Division Reliability - AIDI Indices

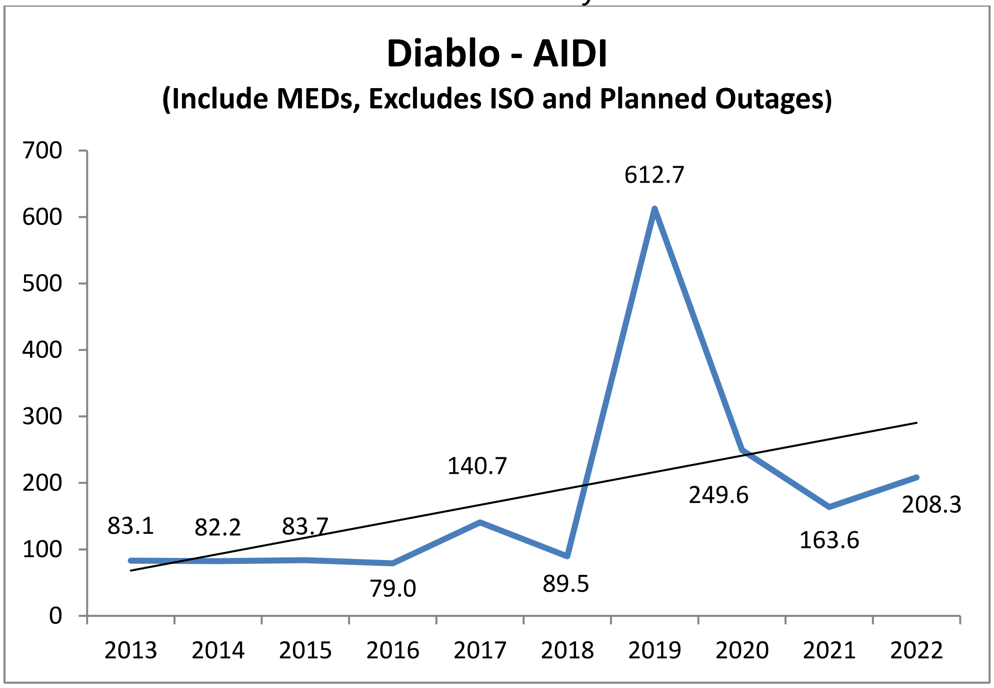


Chart 14: Division Reliability - AIDI Indices

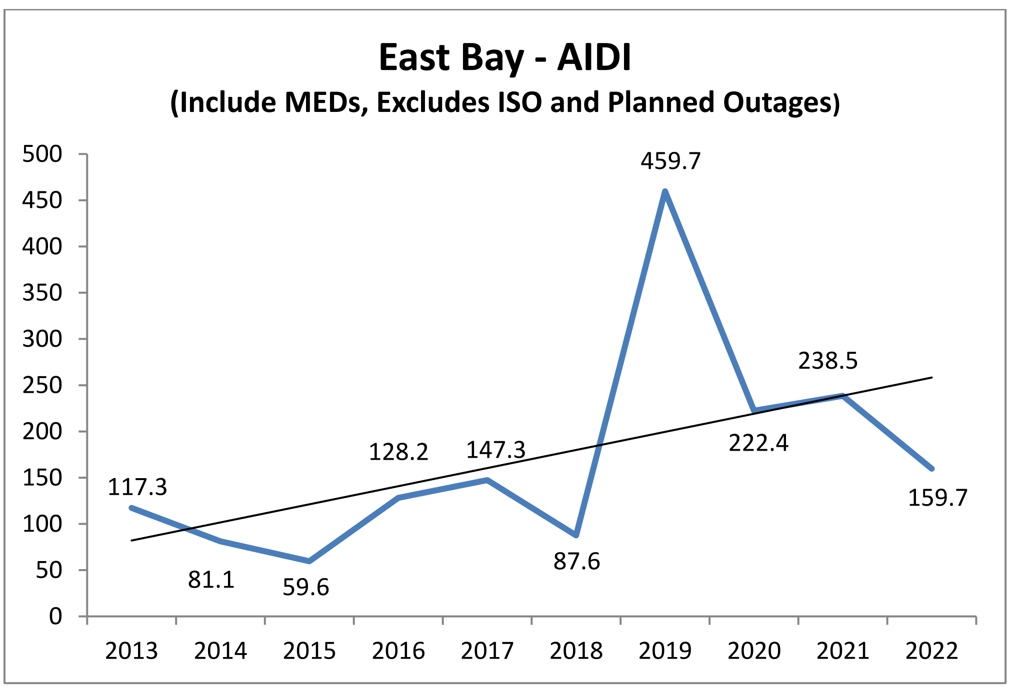


Chart 15: Division Reliability - AIDI Indices

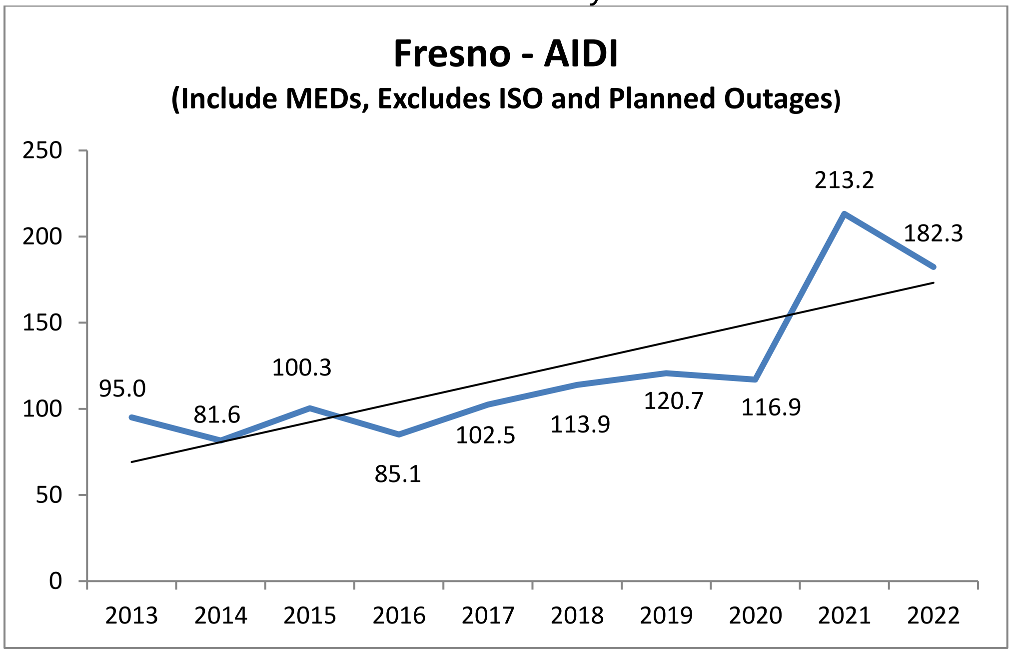


Chart 16: Division Reliability - AIDI Indices

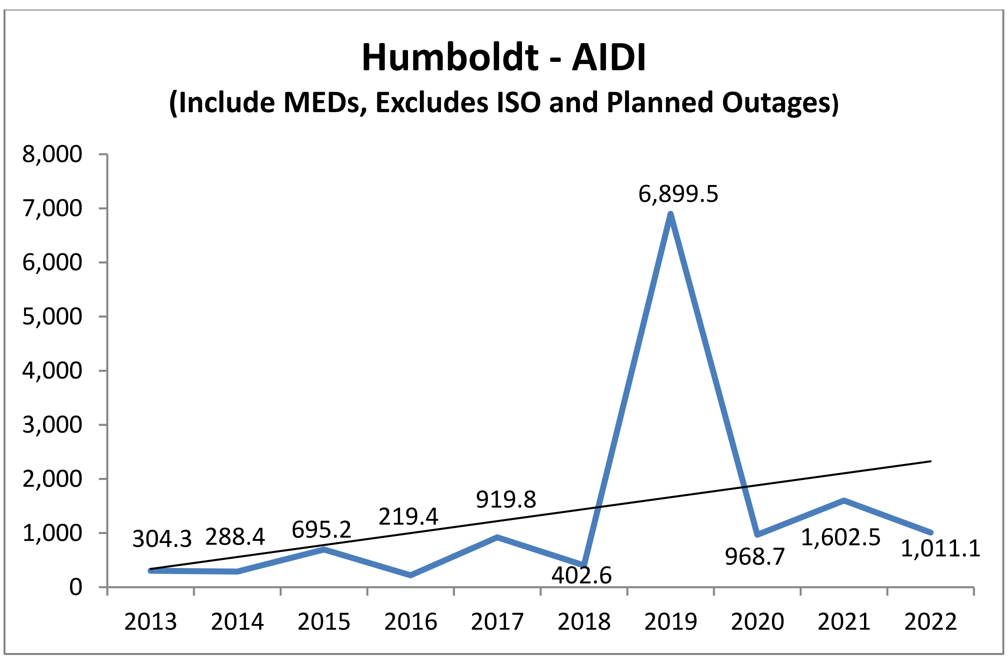


Chart 17: Division Reliability - AIDI Indices

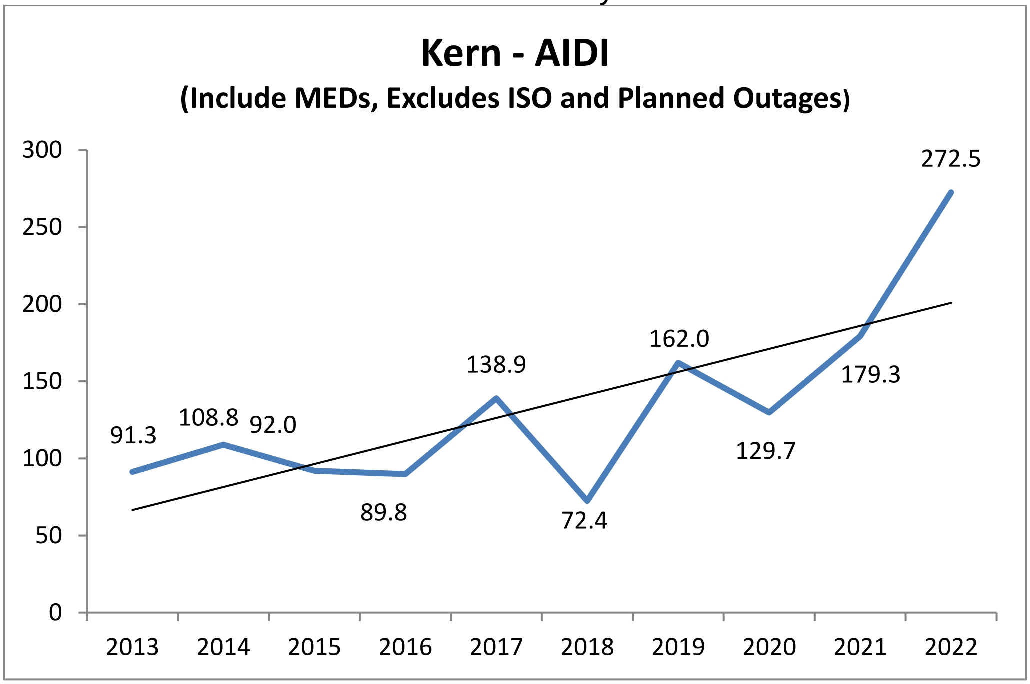


Chart 18: Division Reliability - AIDI Indices

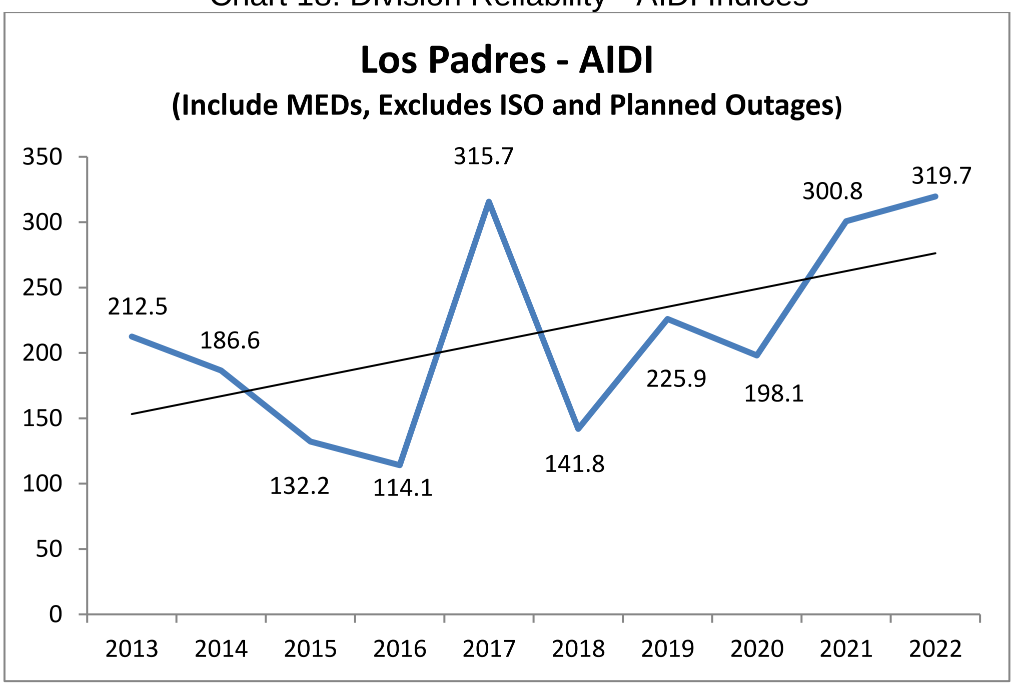


Chart 19: Division Reliability - AIDI Indices

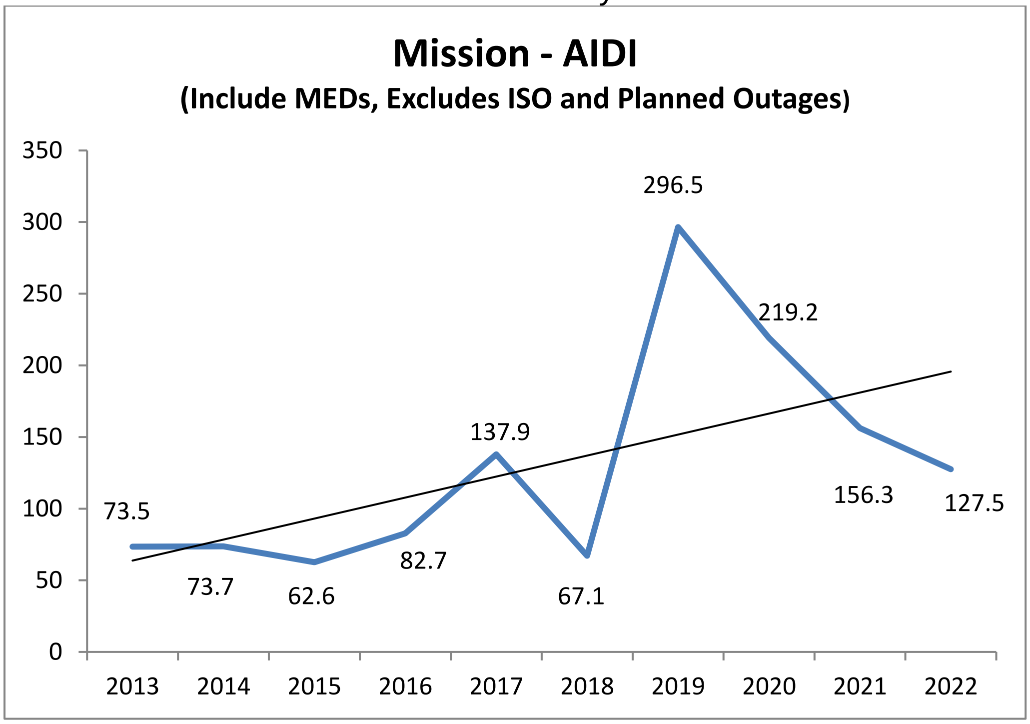


Chart 20: Division Reliability – AIDI Indices

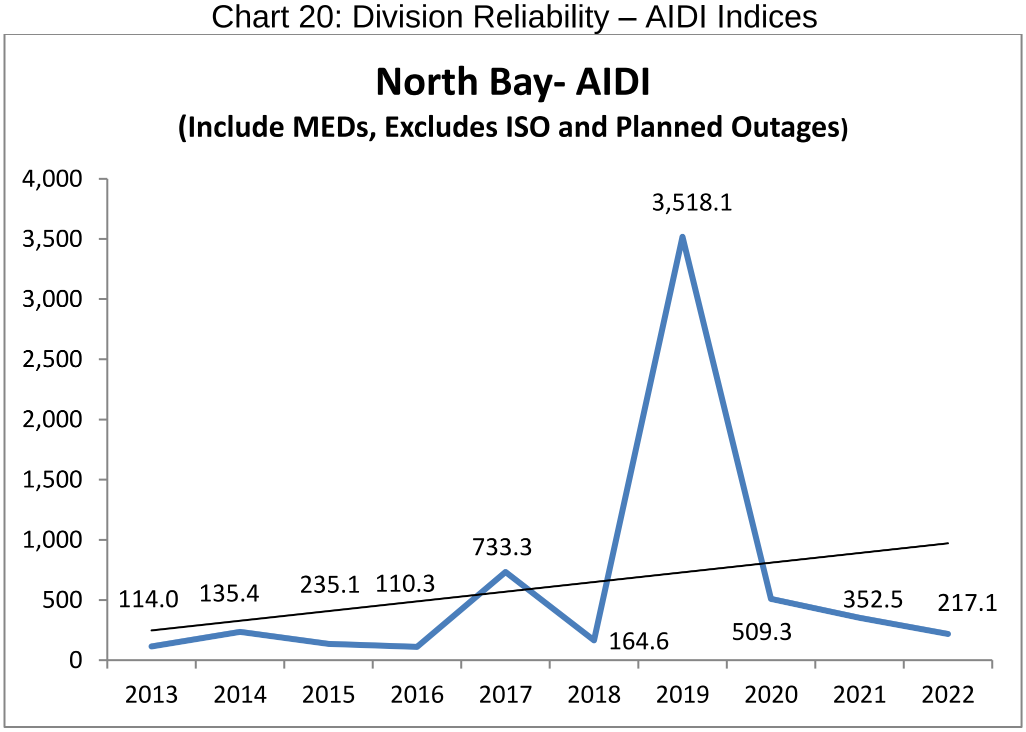


Chart 21: Division Reliability - AIDI Indices

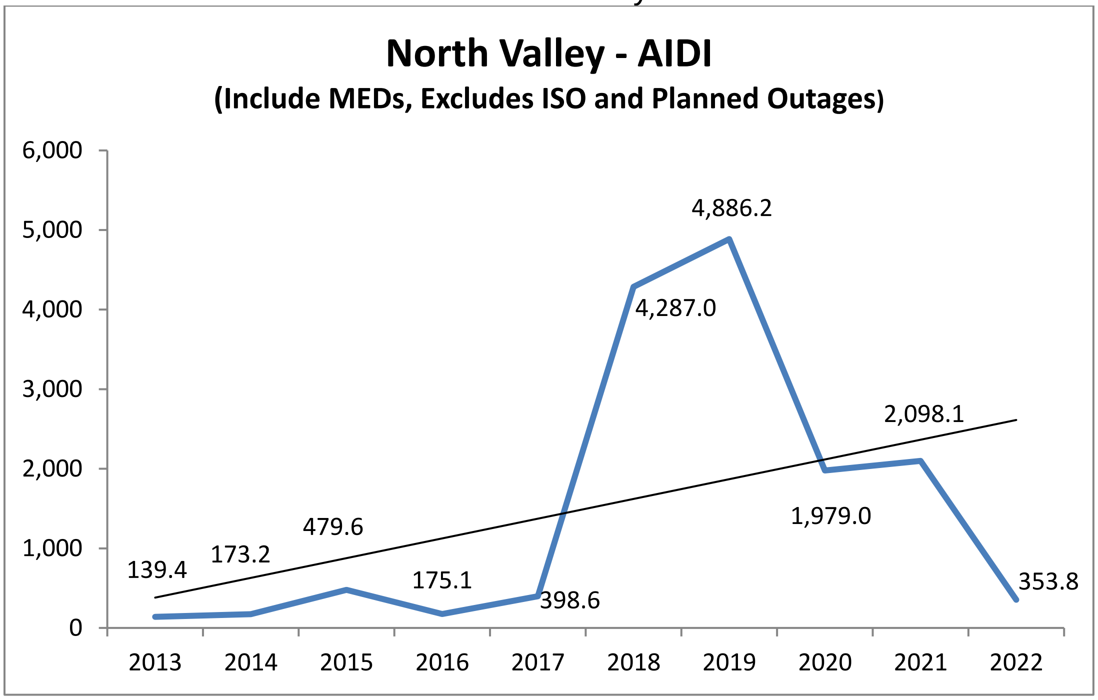


Chart 22: Division Reliability - AIDI Indices

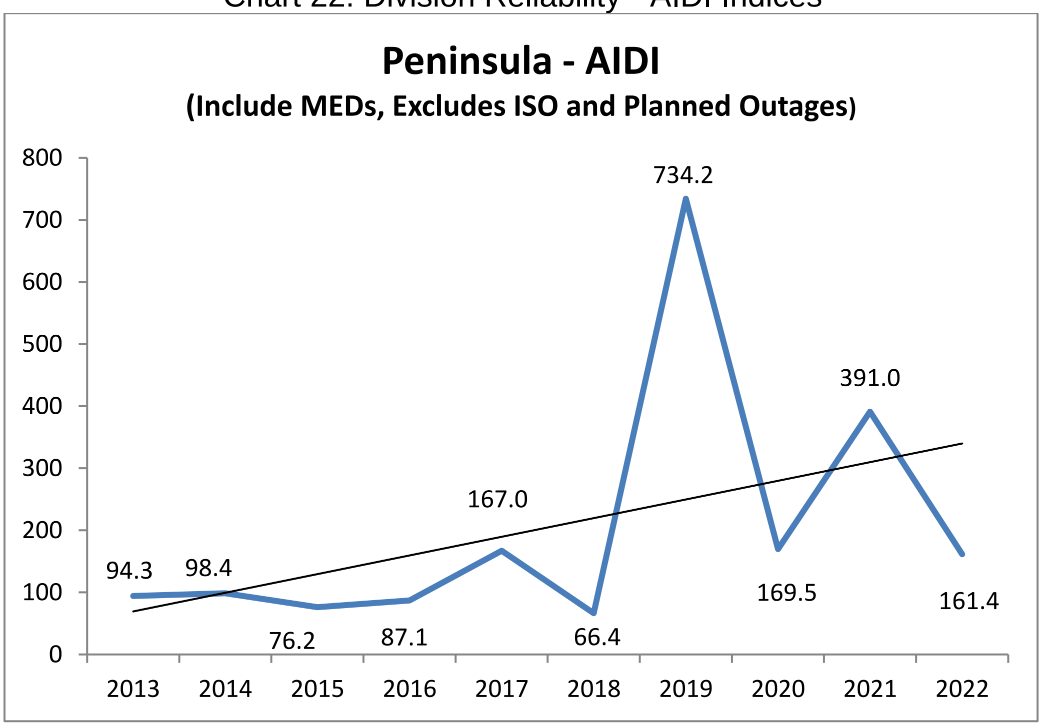


Chart 23: Division Reliability - AIDI Indices

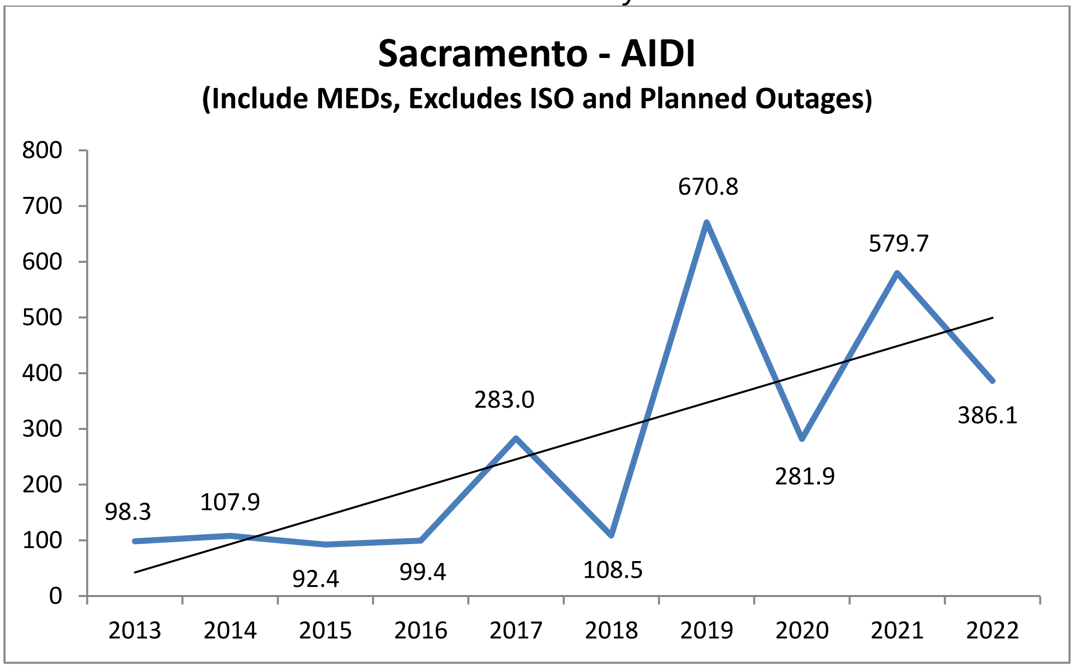


Chart 24: Division Reliability - AIDI Indices

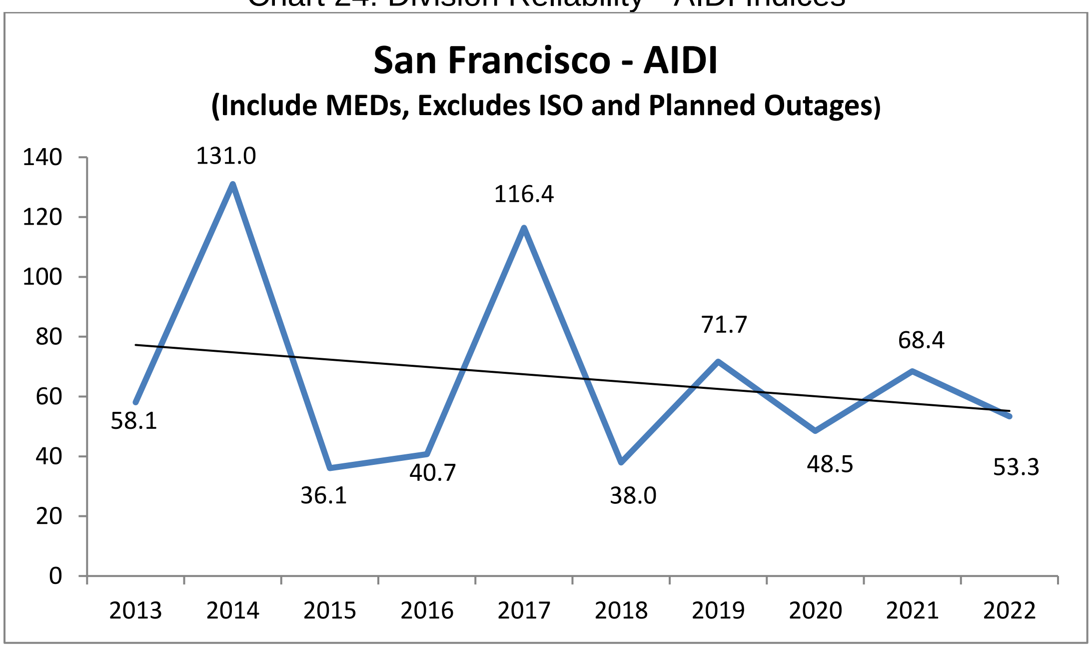


Chart 25: Division Reliability - AIDI Indices

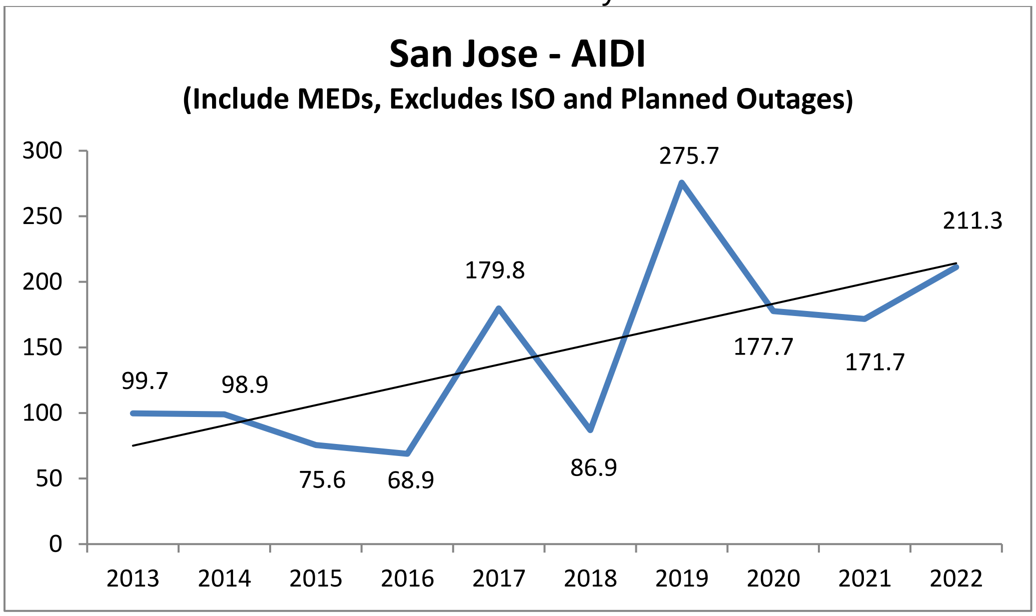


Chart 26: Division Reliability – AIDI Indices

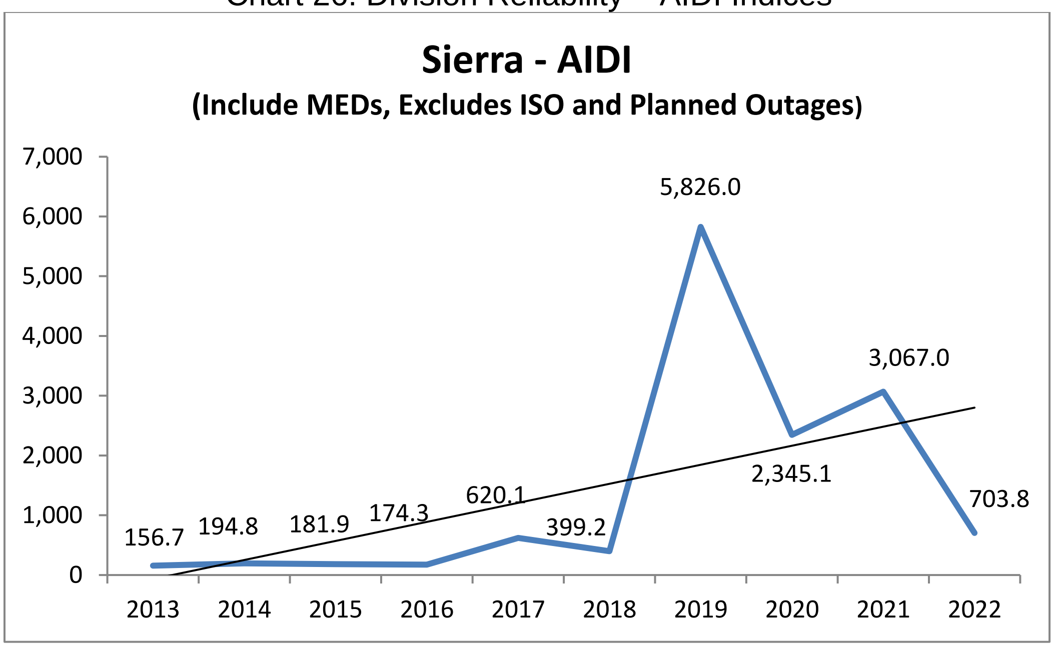


Chart 27: Division Reliability – AIDI Indices

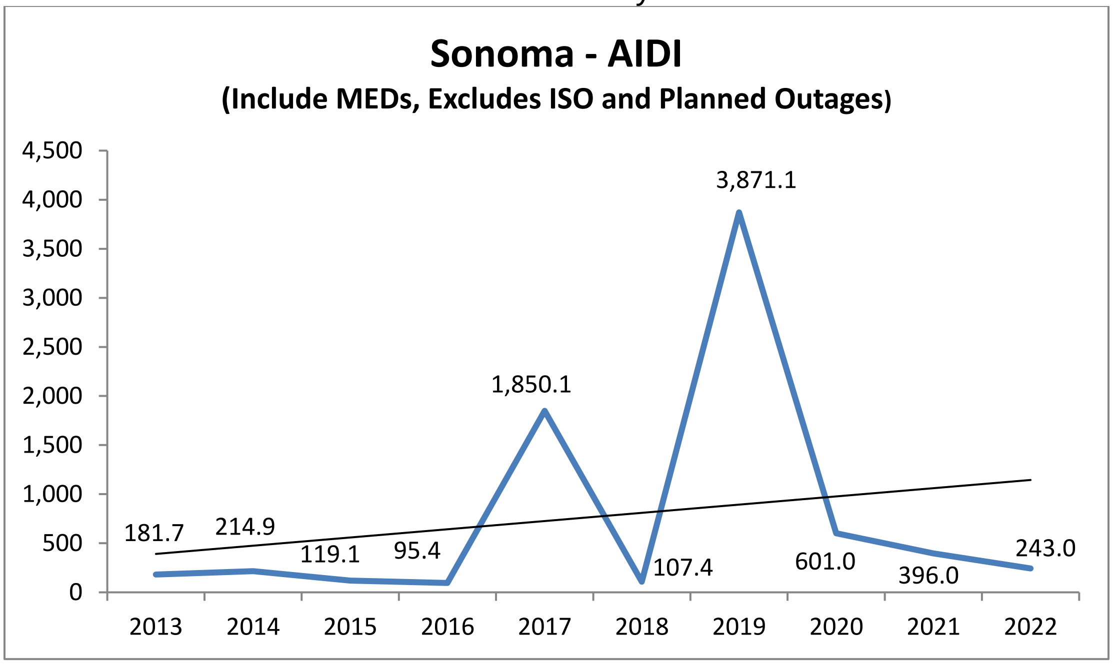


Chart 28: Division Reliability - AIDI Indices

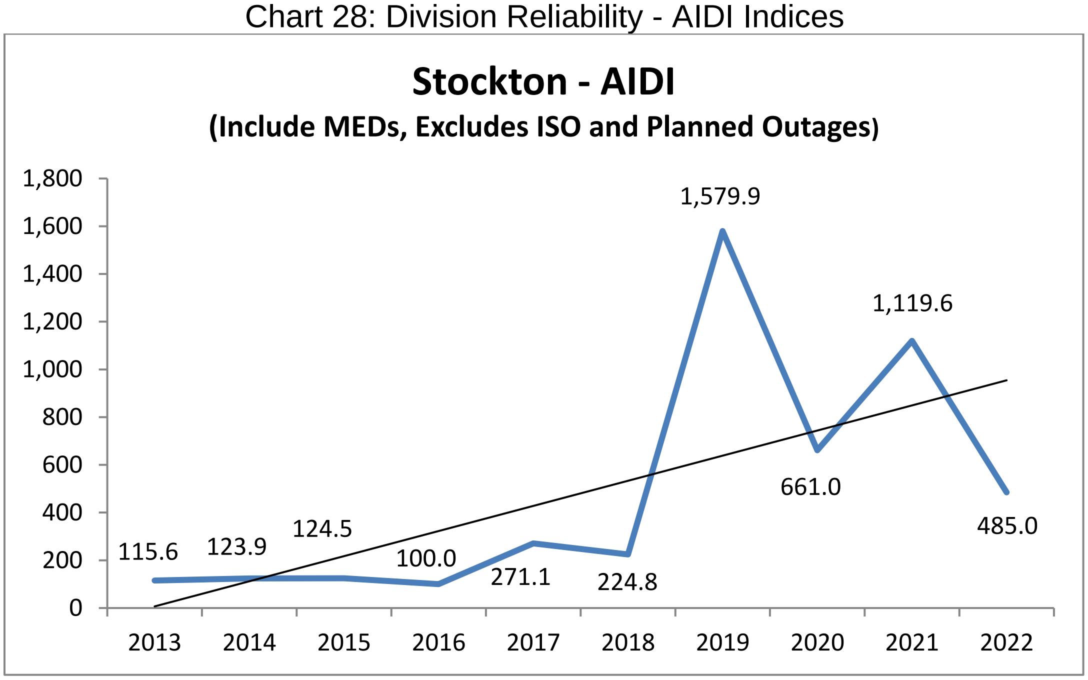
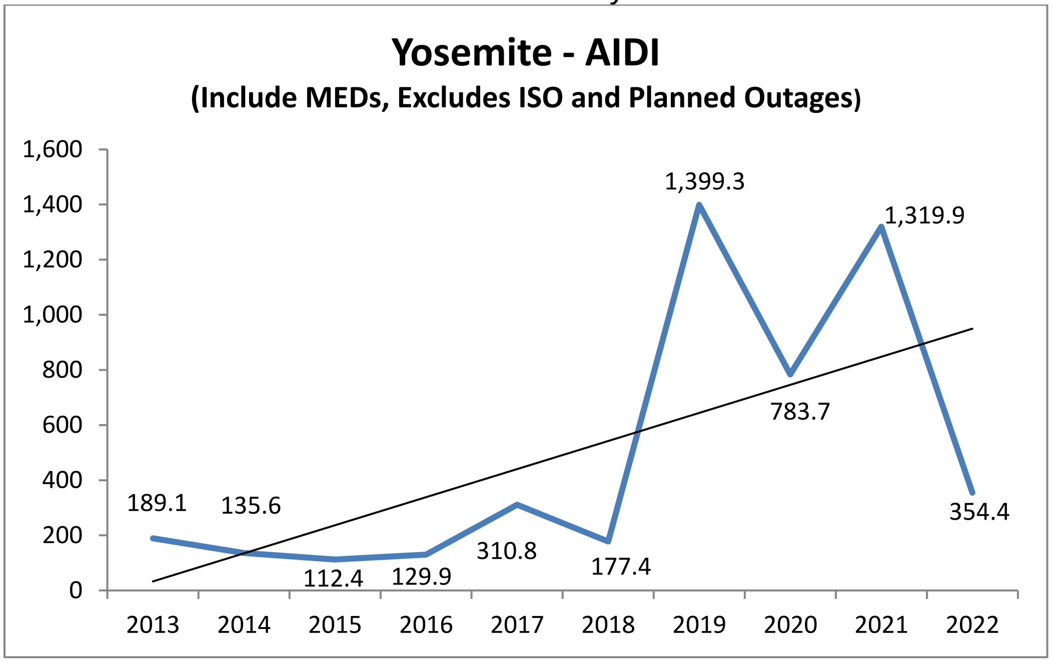


Chart 29: Division Reliability - AIDI Indices



2. AIFI Performance Results (MED Included)

Chart 30: Division Reliability - AIFI Indices

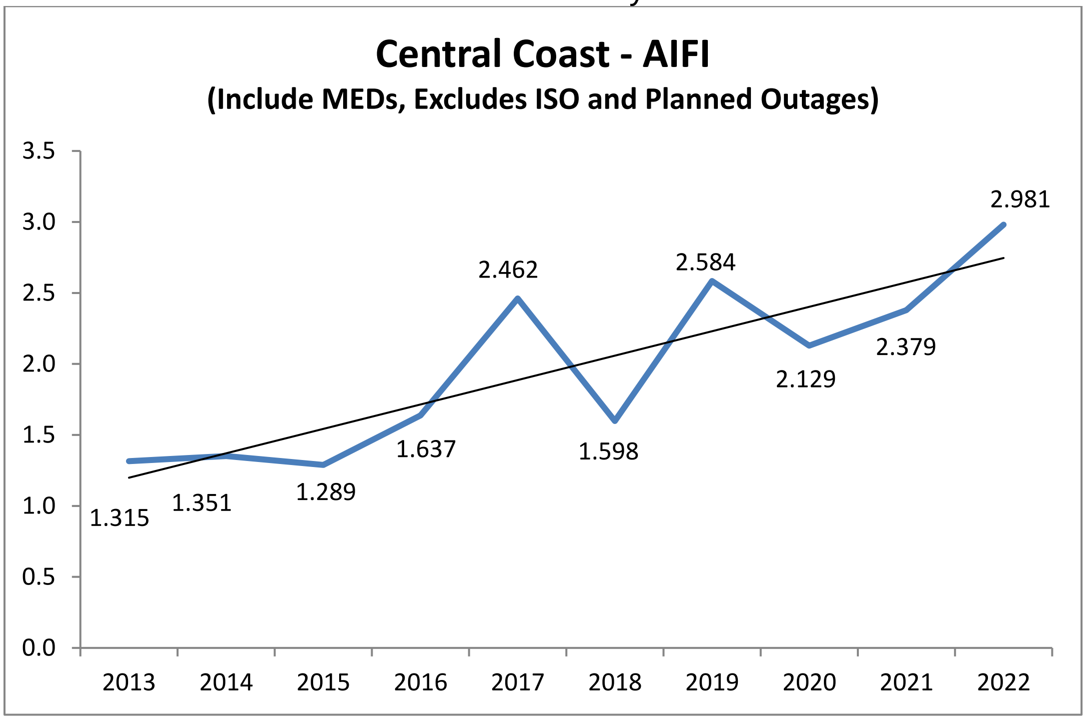


Chart 31: Division Reliability - AIFI Indices

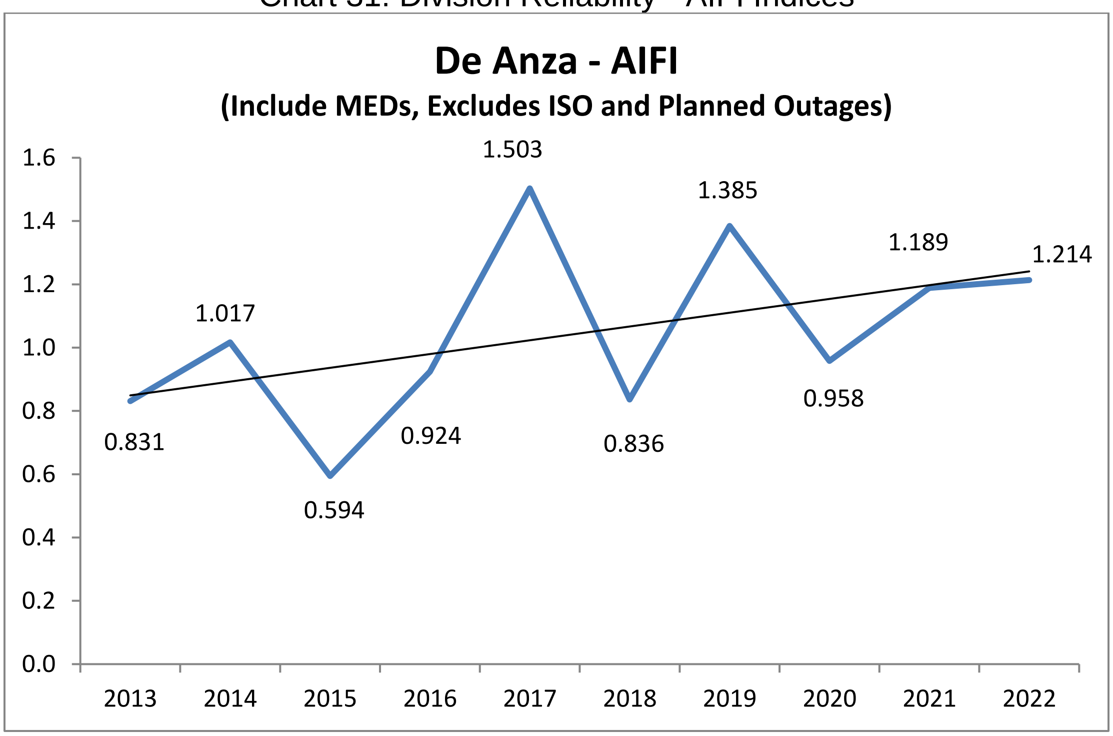


Chart 32: Division Reliability - AIFI Indices

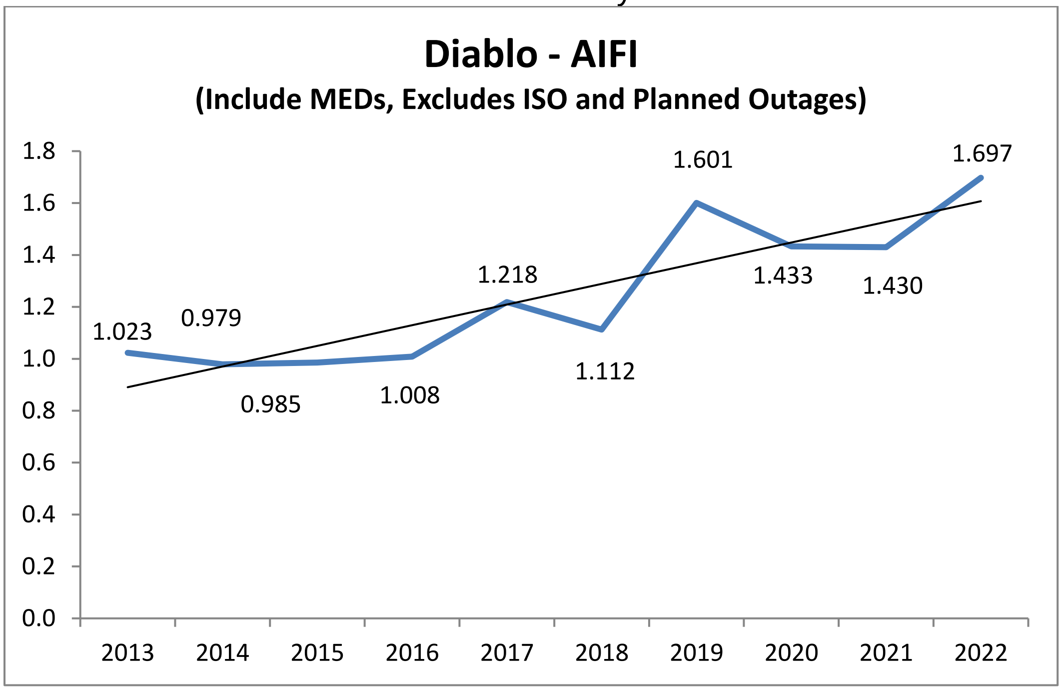


Chart 33: Division Reliability - AIFI Indices

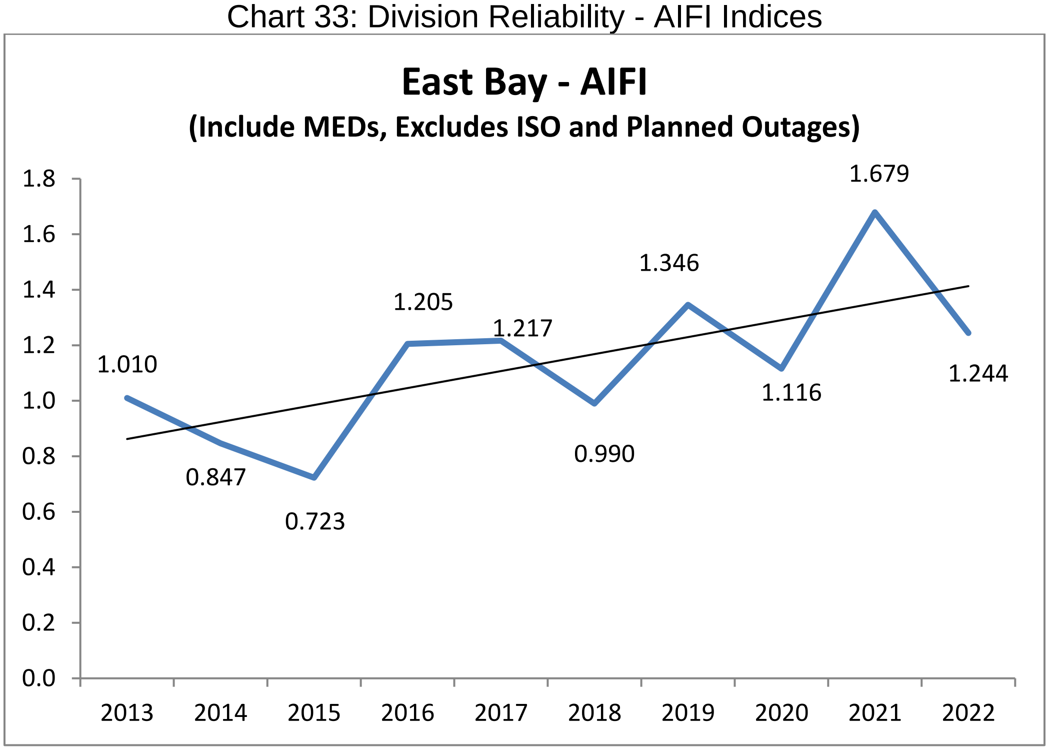


Chart 34: Division Reliability - AIFI Indices

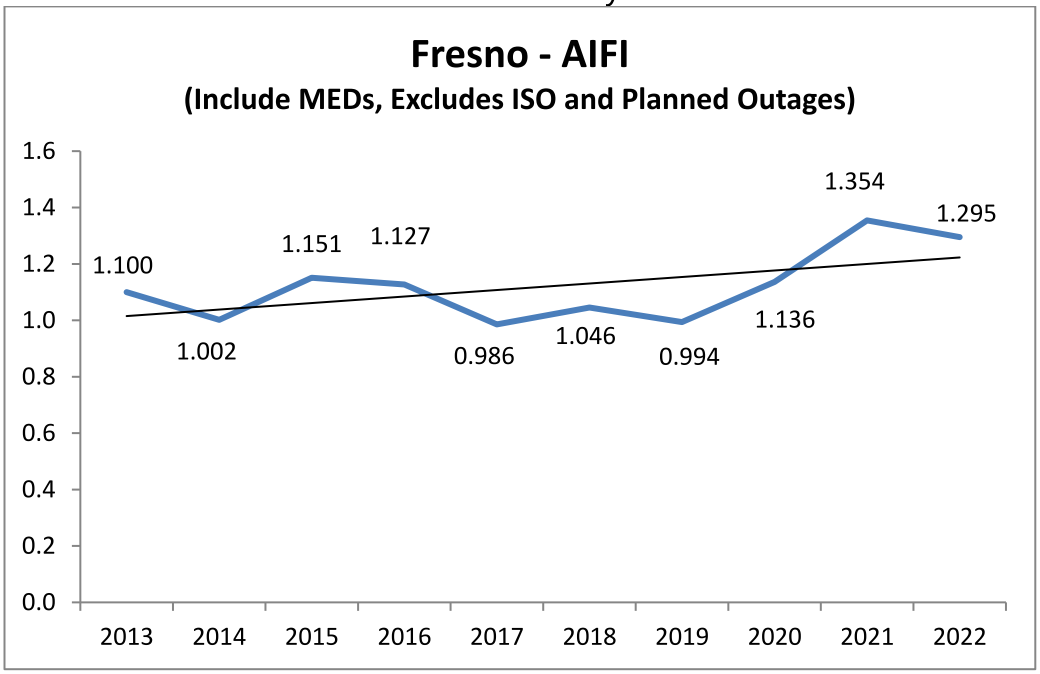


Chart 35: Division Reliability - AIFI Indices

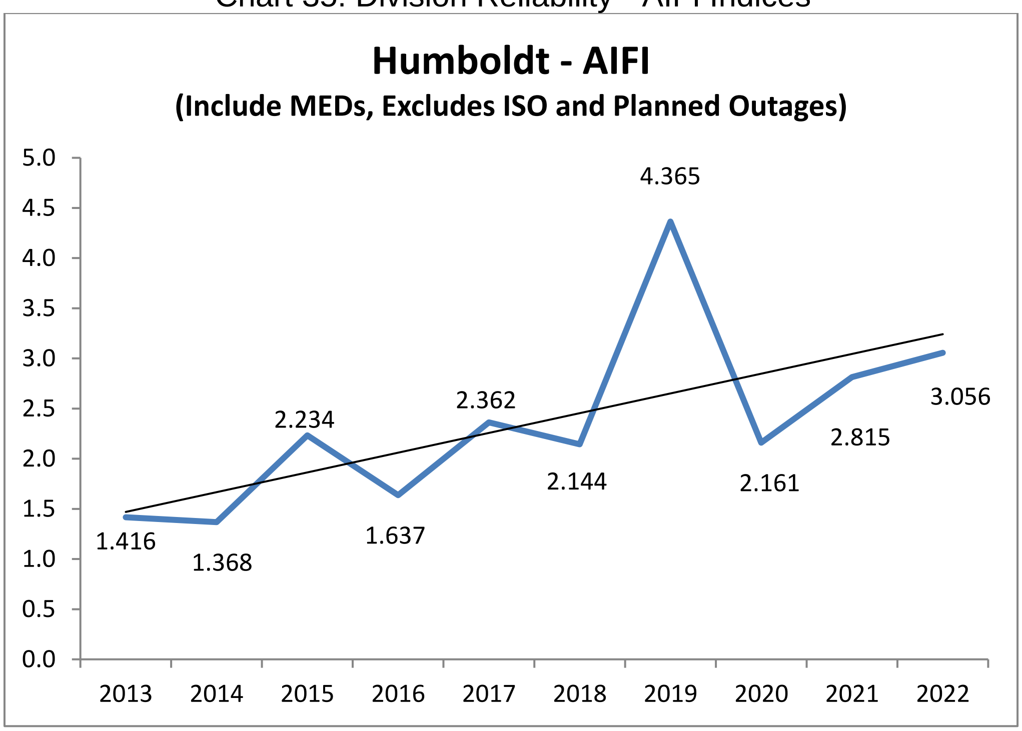


Chart 36: Division Reliability - AIFI Indices

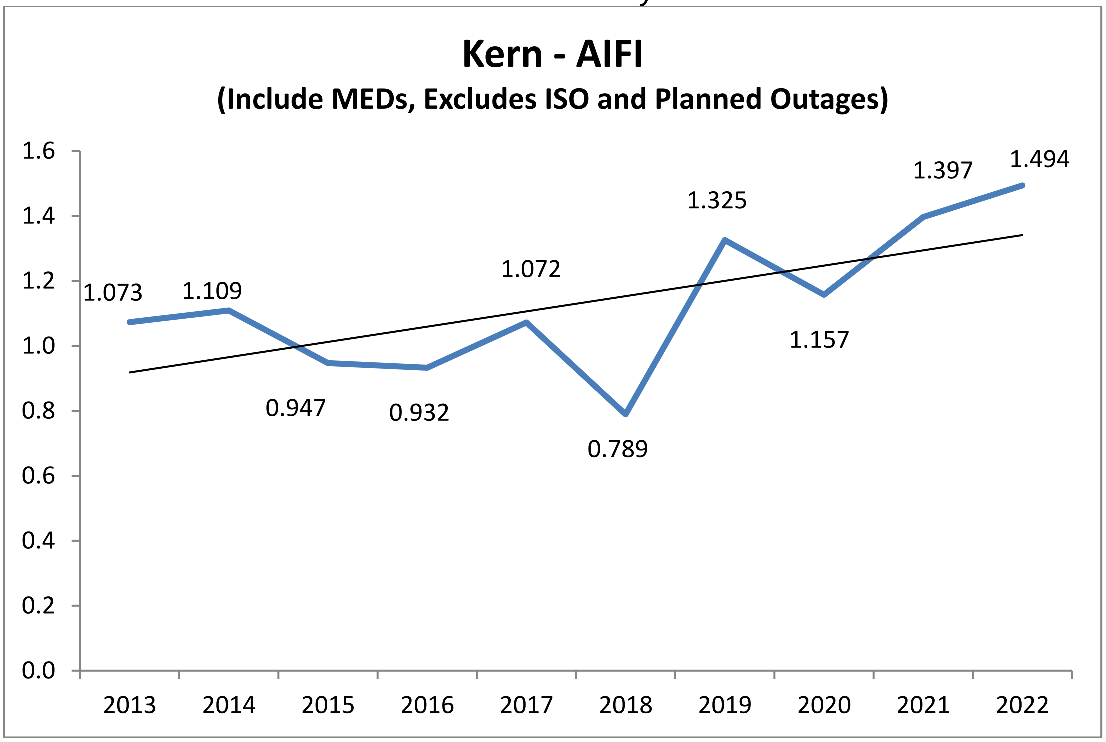


Chart 37: Division Reliability - AIFI Indices

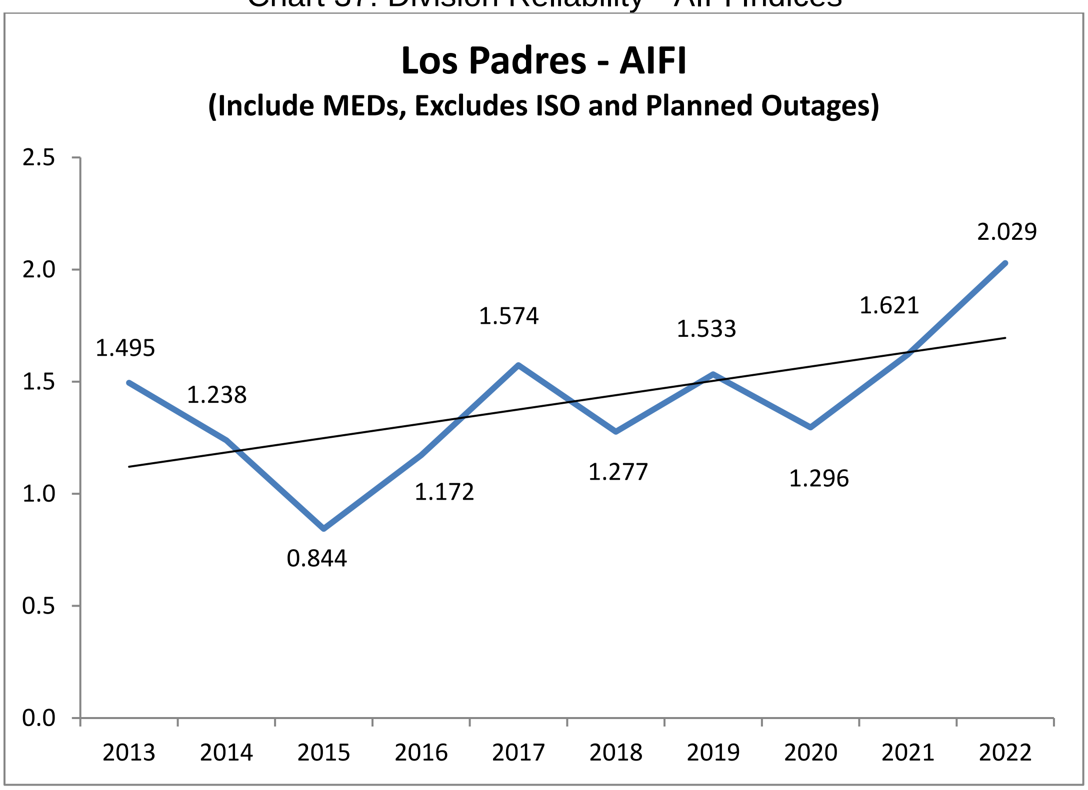


Chart 38: Division Reliability - AIFI Indices

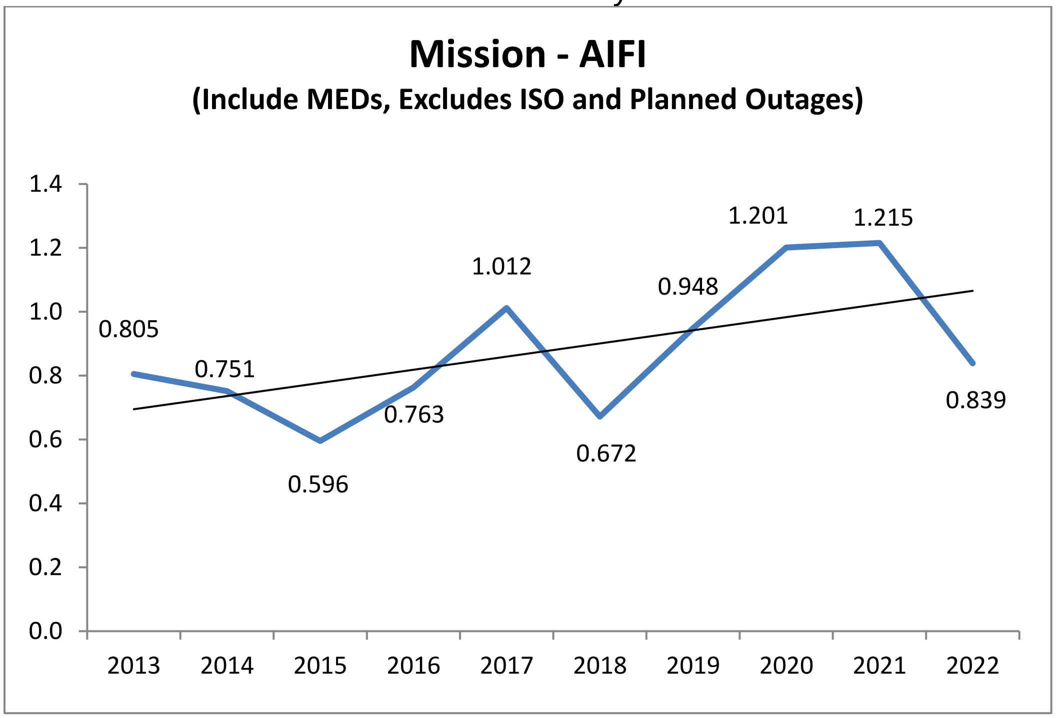


Chart 39: Division Reliability - AIFI Indices

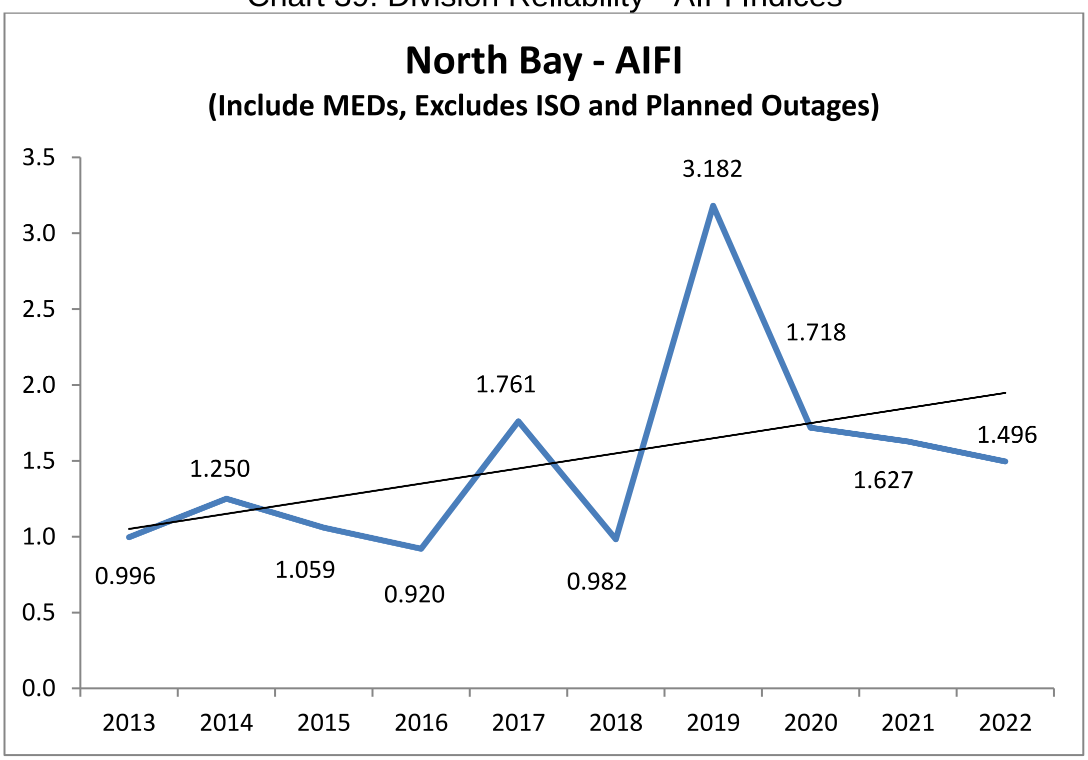


Chart 40: Division Reliability - AIFI Indices

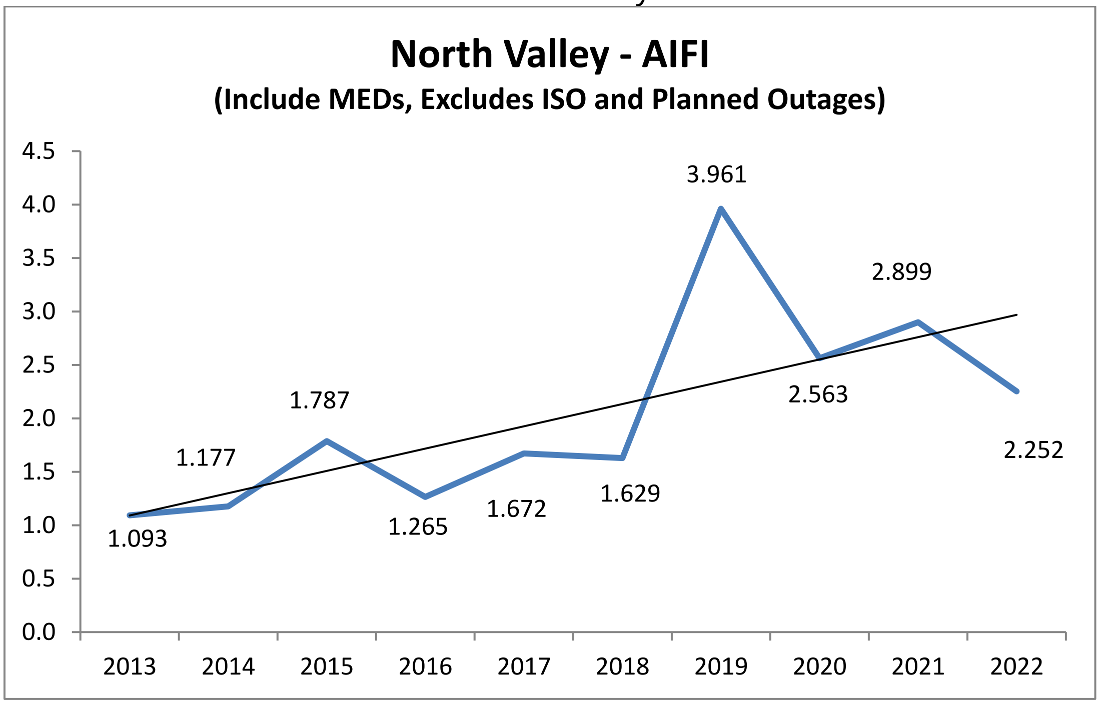


Chart 41: Division Reliability - AIFI Indices

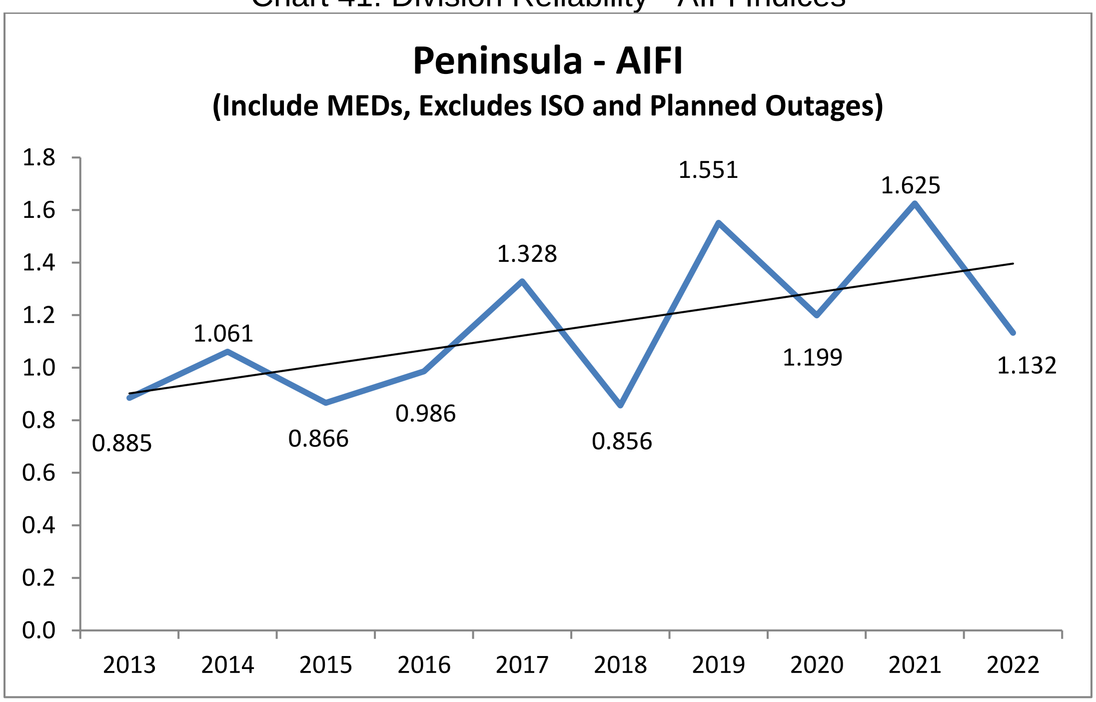


Chart 42: Division Reliability - AIFI Indices

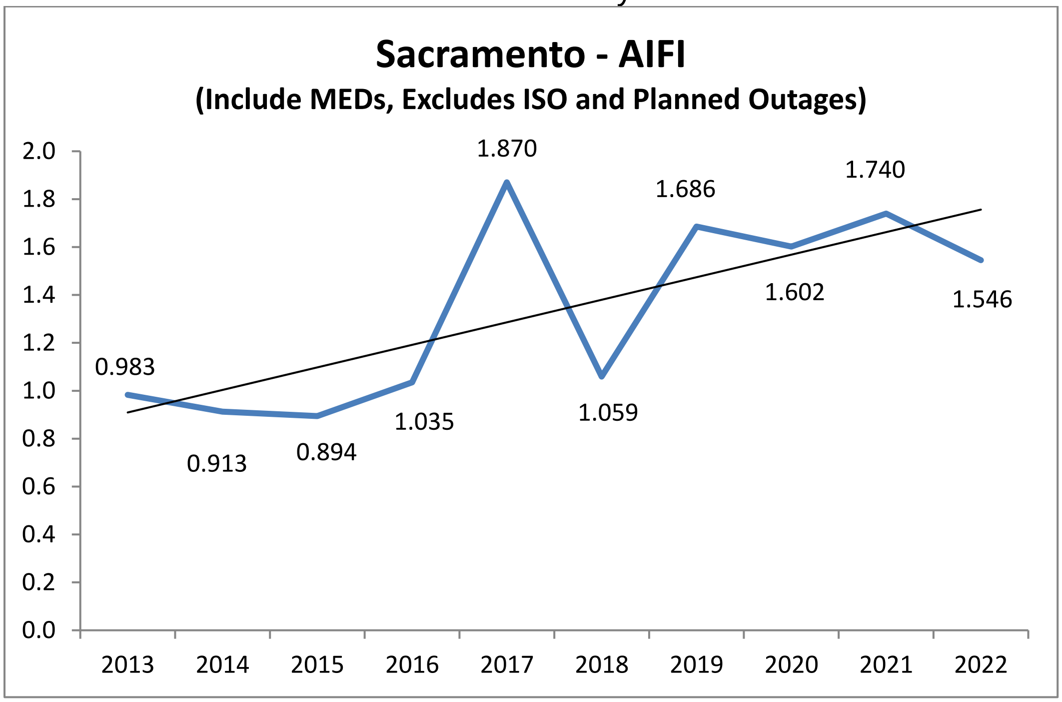


Chart 43: Division Reliability - AIFI Indices

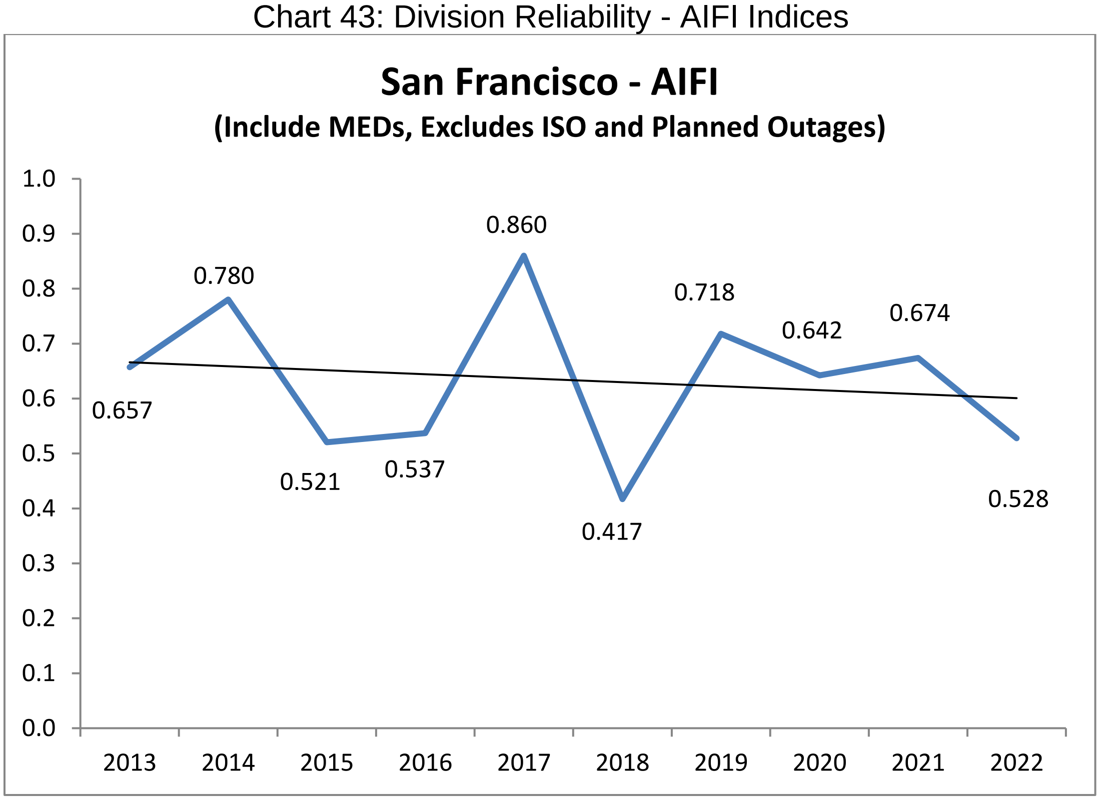


Chart 44: Division Reliability - AIFI Indices

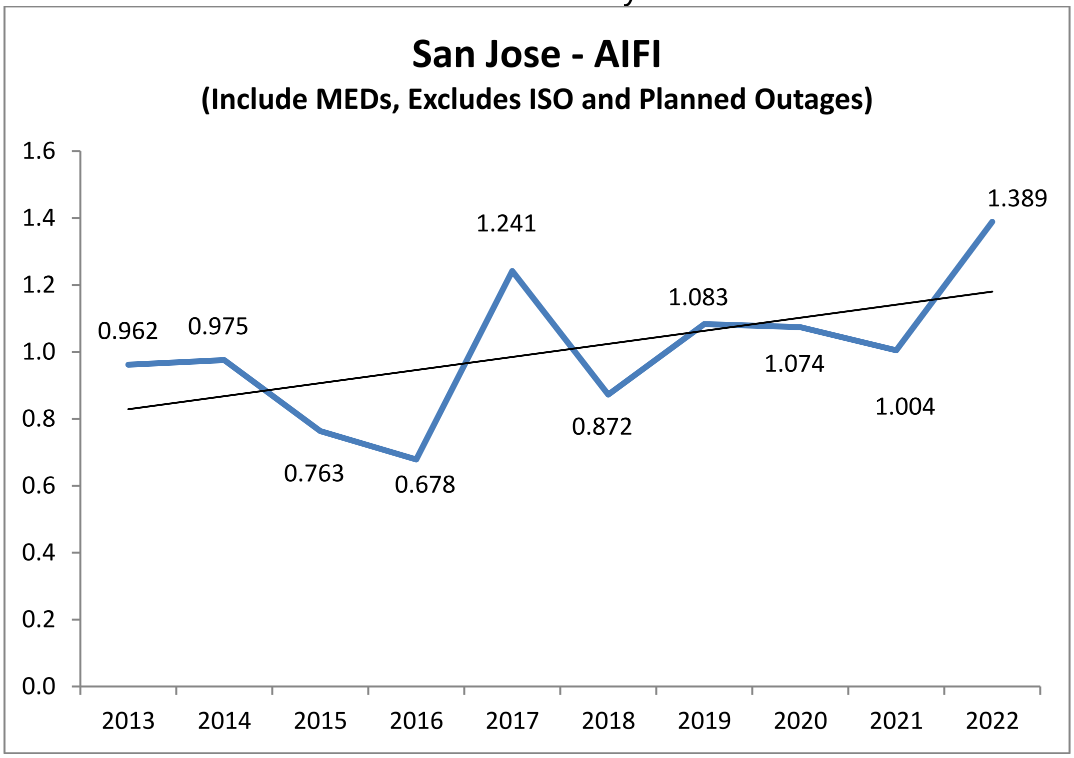


Chart 45: Division Reliability - AIFI Indices

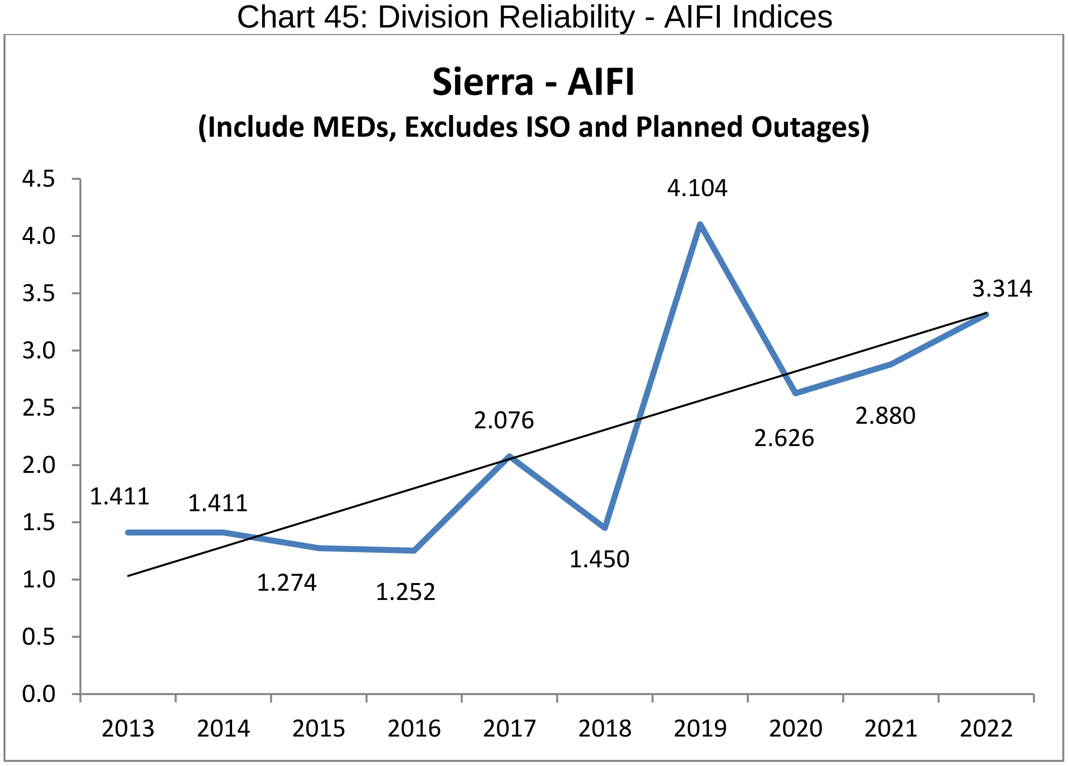


Chart 46: Division Reliability - AIFI Indices

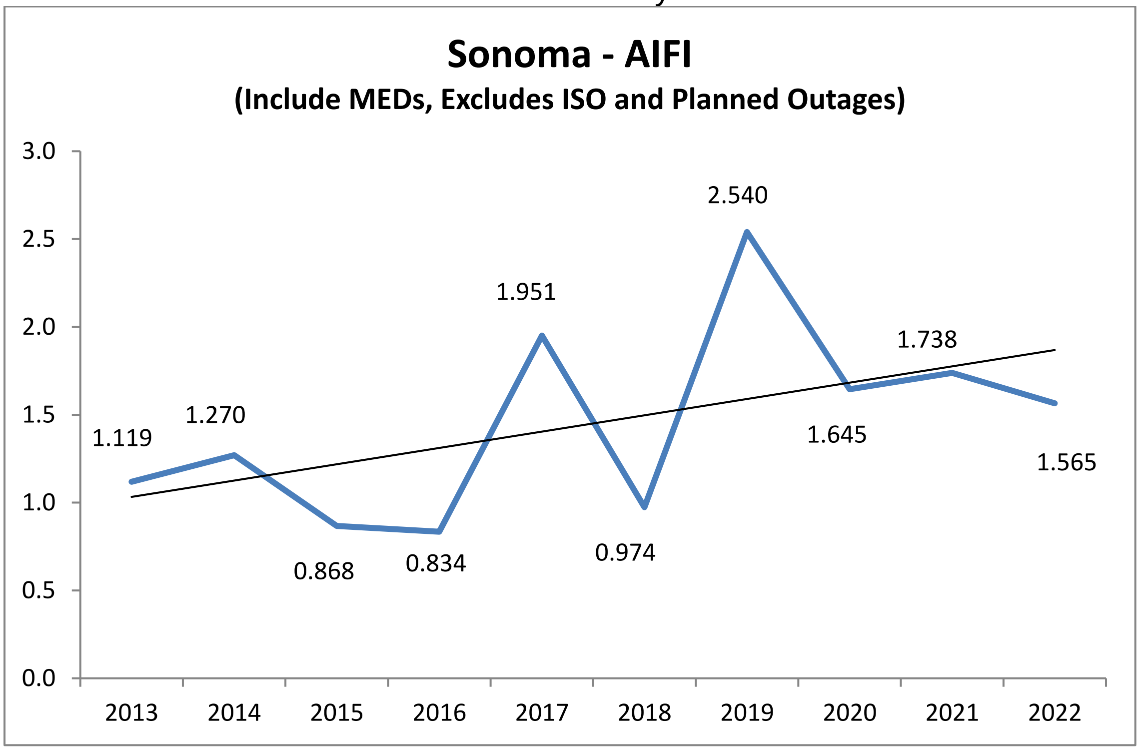


Chart 47: Division Reliability - AIFI Indices

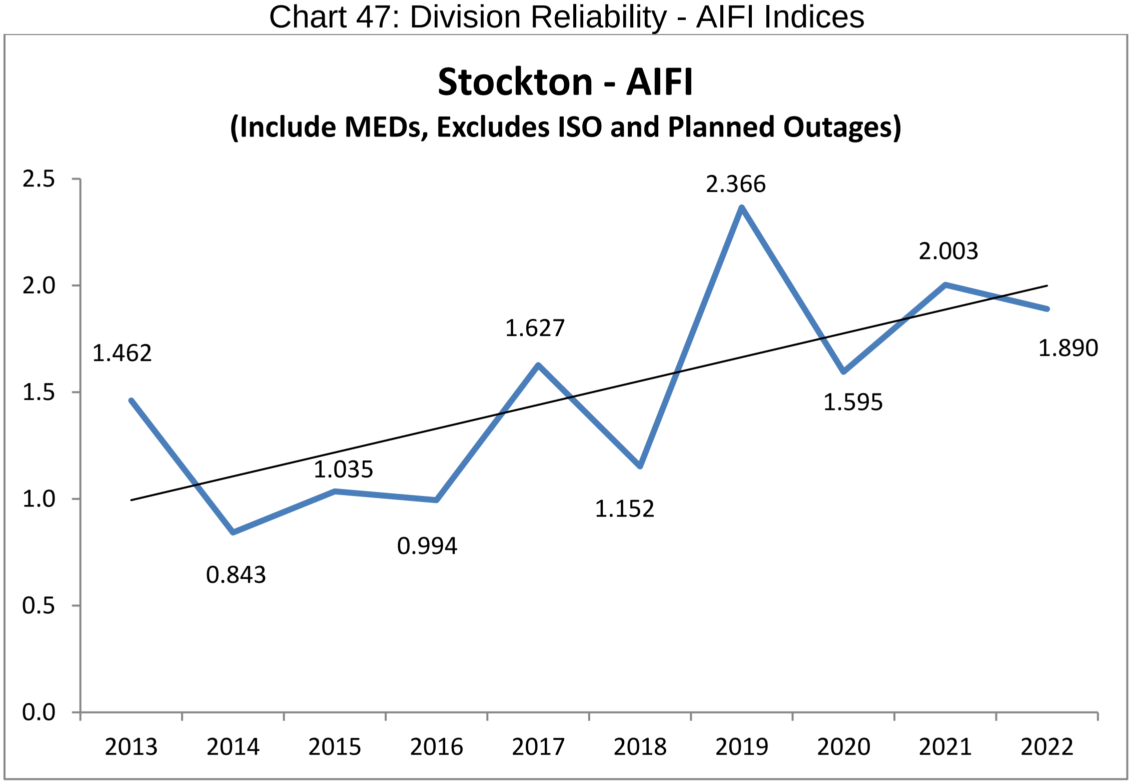
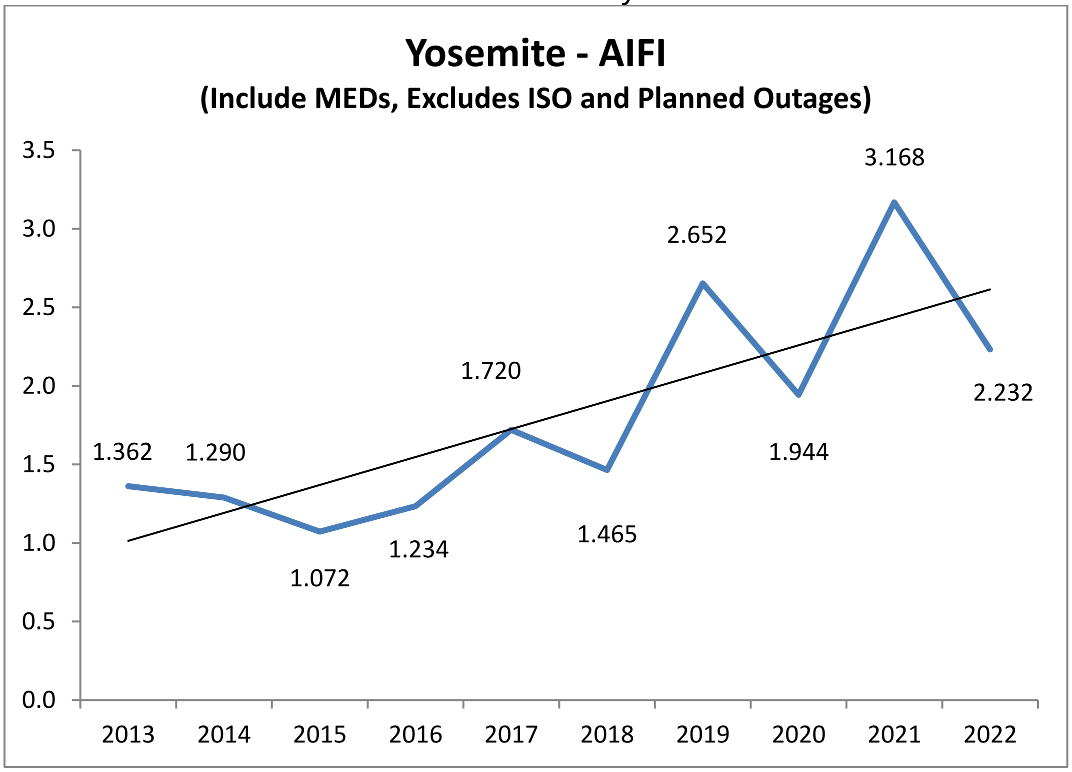


Chart 48: Division Reliability - AIFI Indices



3. MAIFI Performance Results (MED Included)

Chart 49: Division Reliability - MAIFI Indices

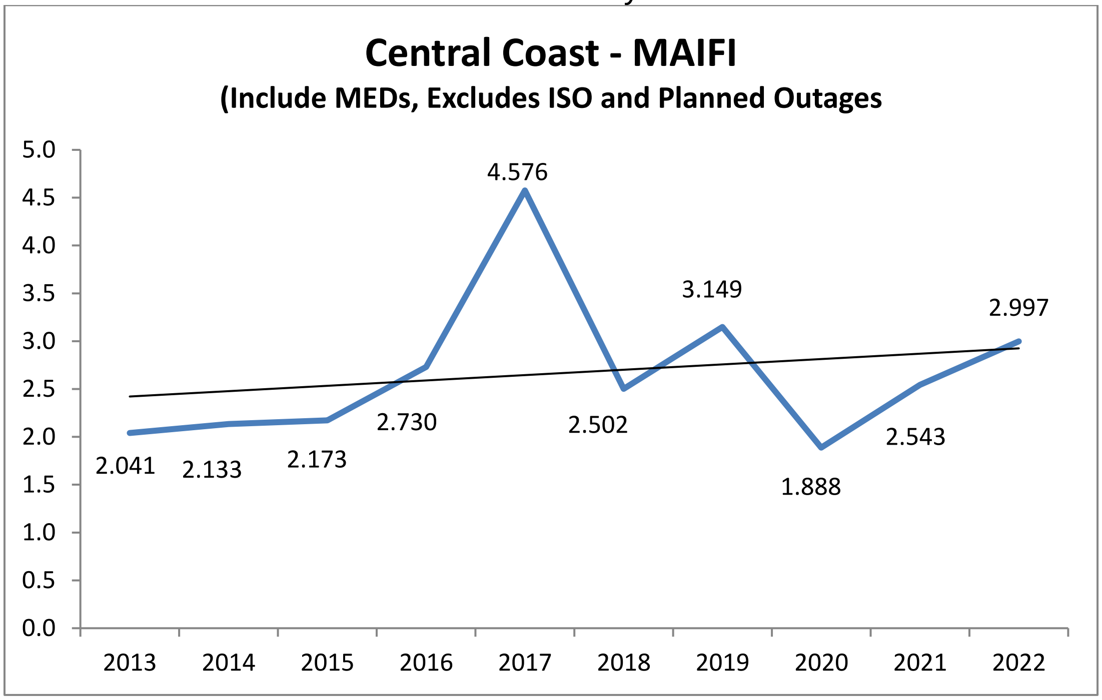


Chart 50: Division Reliability - MAIFI Indices

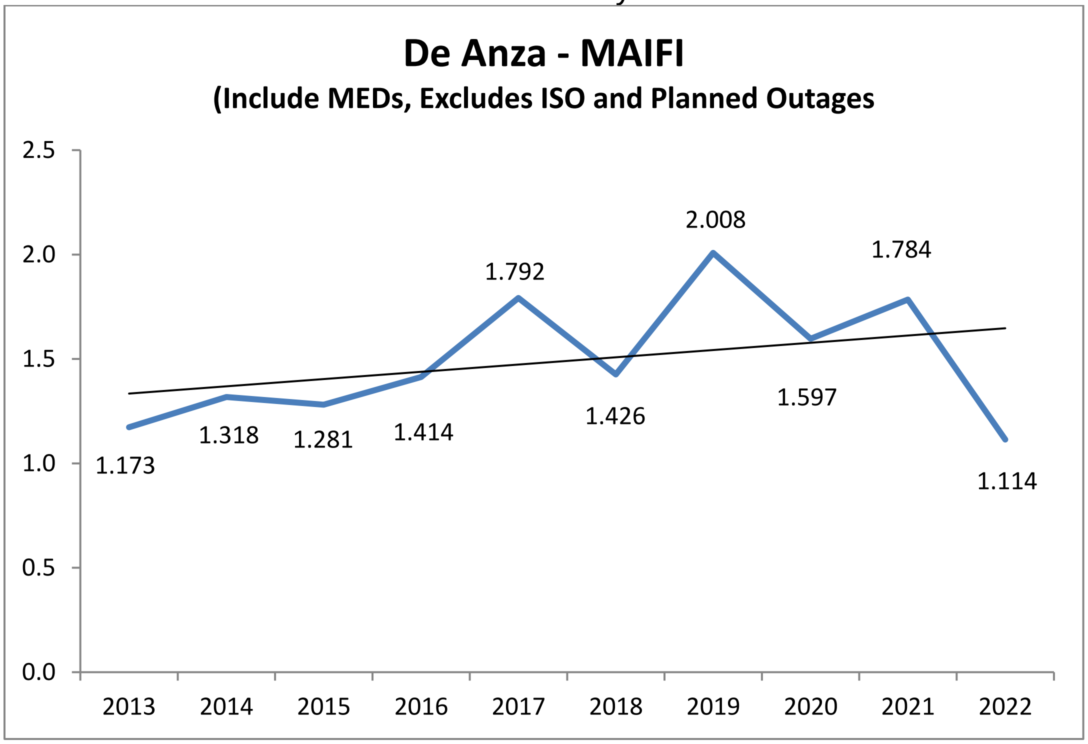


Chart 51: Division Reliability - MAIFI Indices

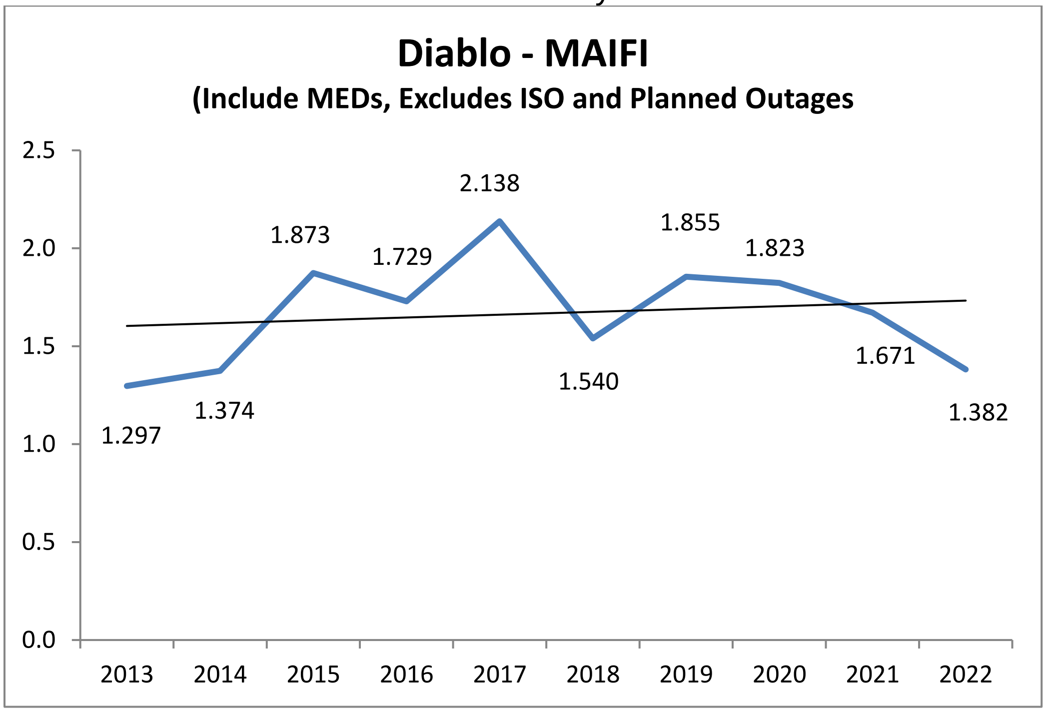


Chart 52: Division Reliability - MAIFI Indices

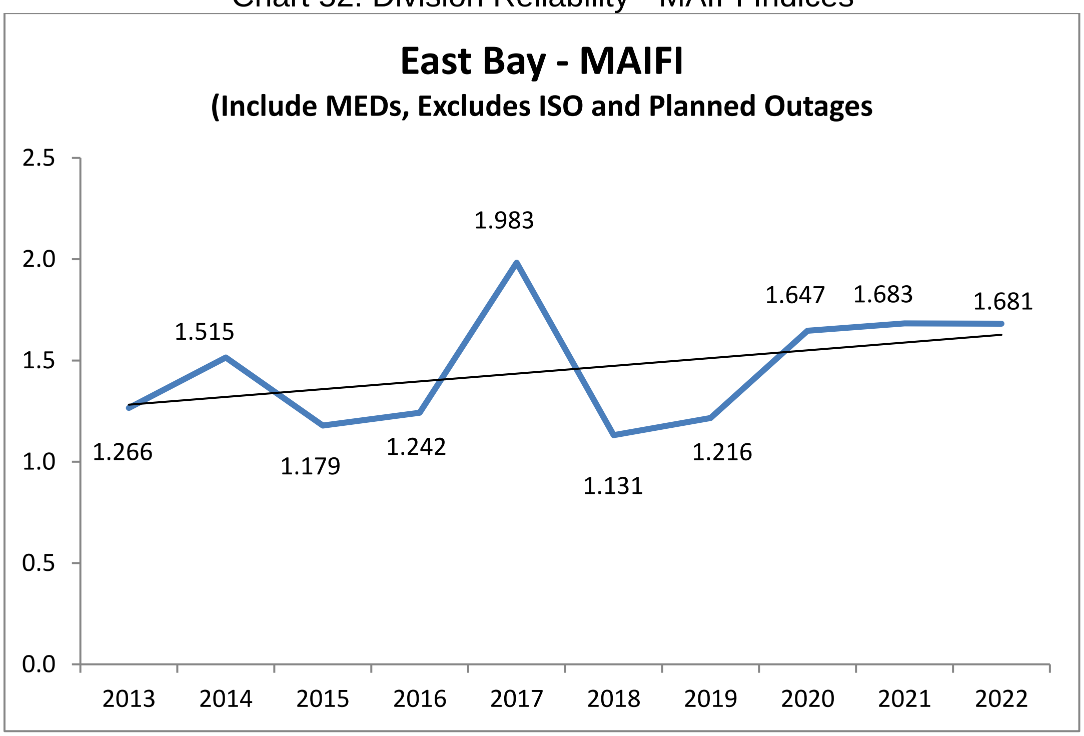


Chart 53: Division Reliability - MAIFI Indices

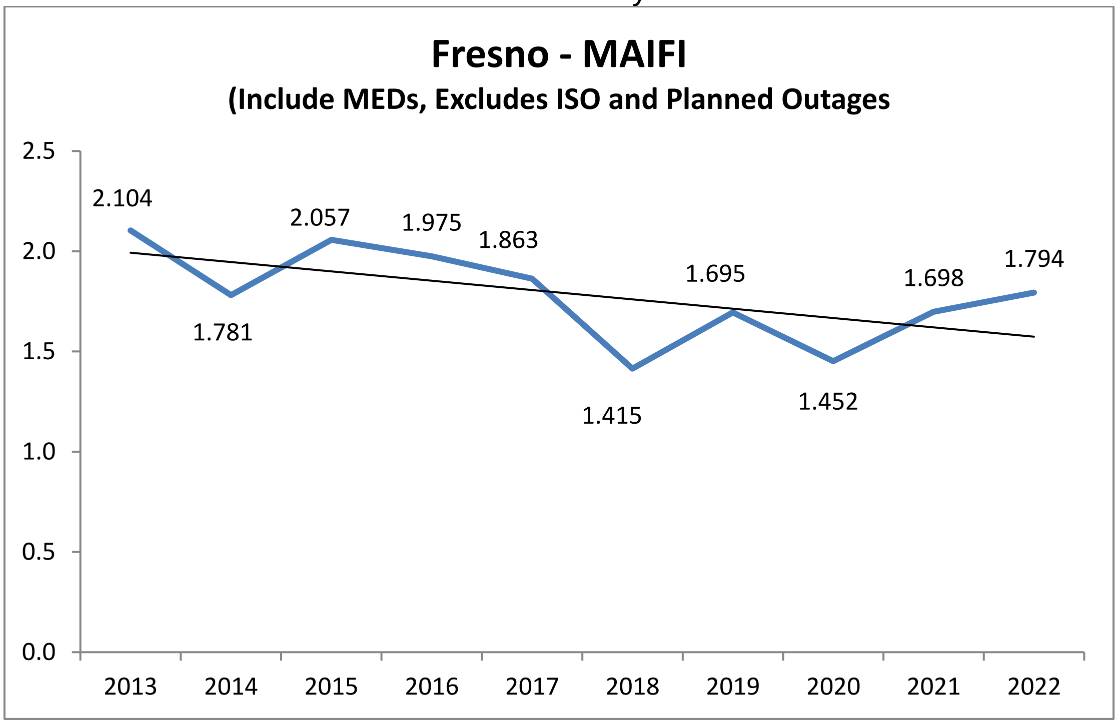


Chart 54: Division Reliability - MAIFI Indices

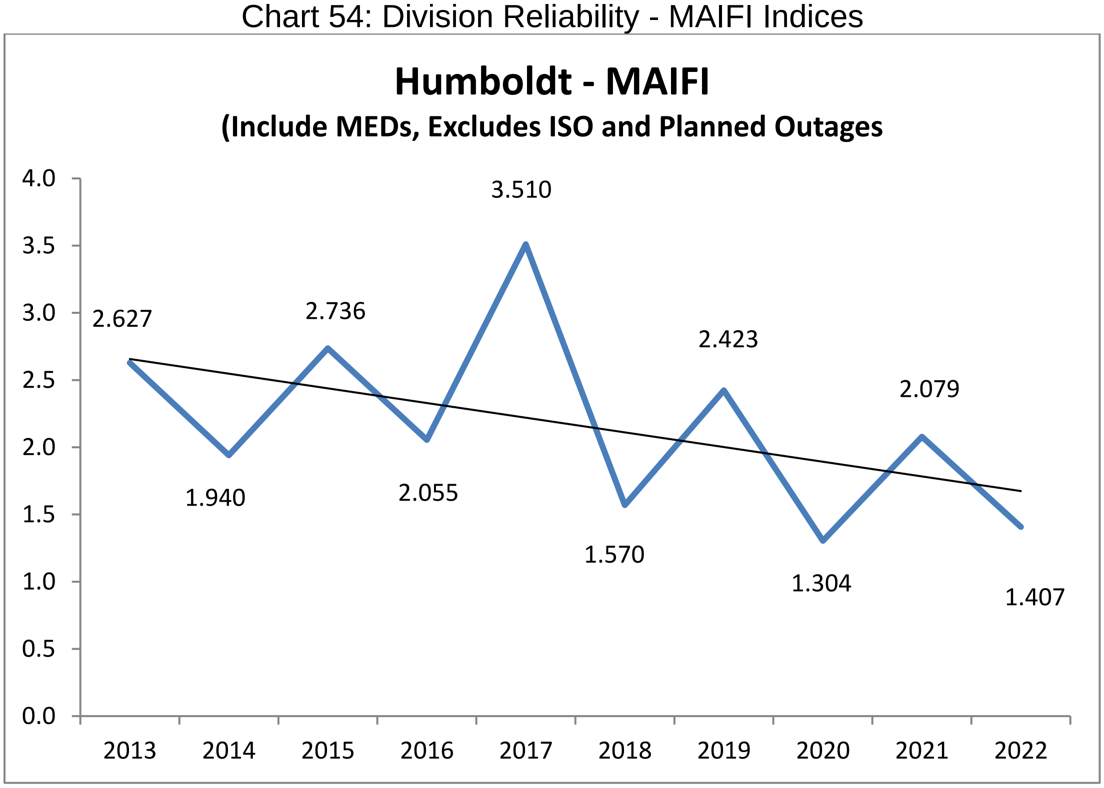


Chart 55: Division Reliability - MAIFI Indices

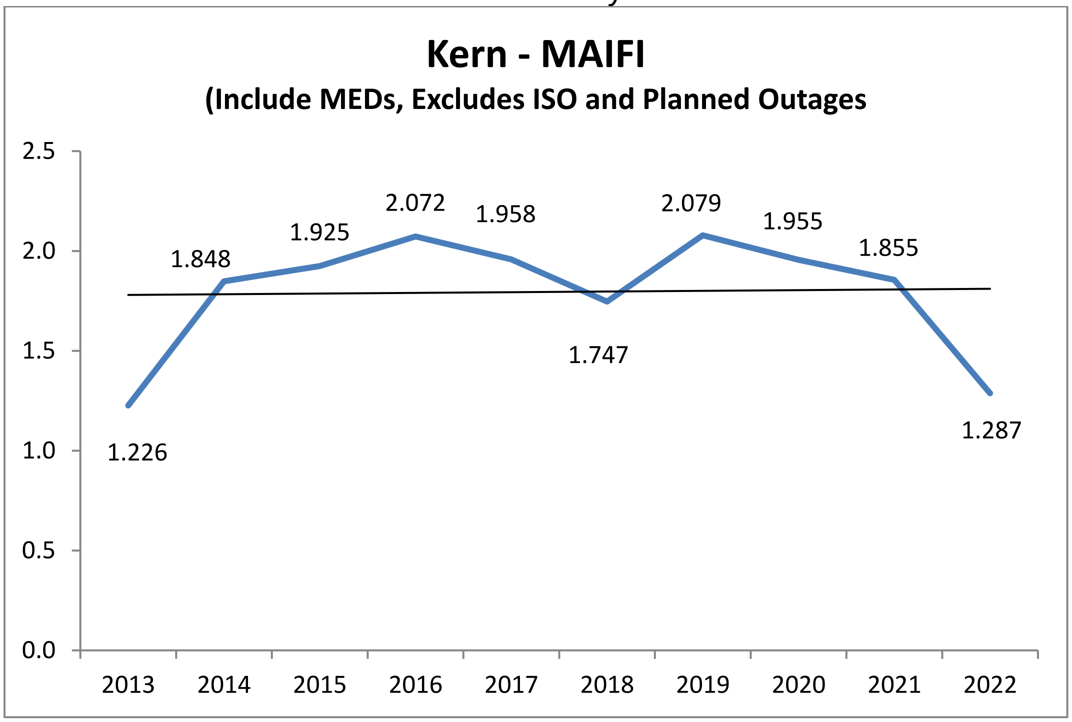


Chart 56: Division Reliability - MAIFI Indices

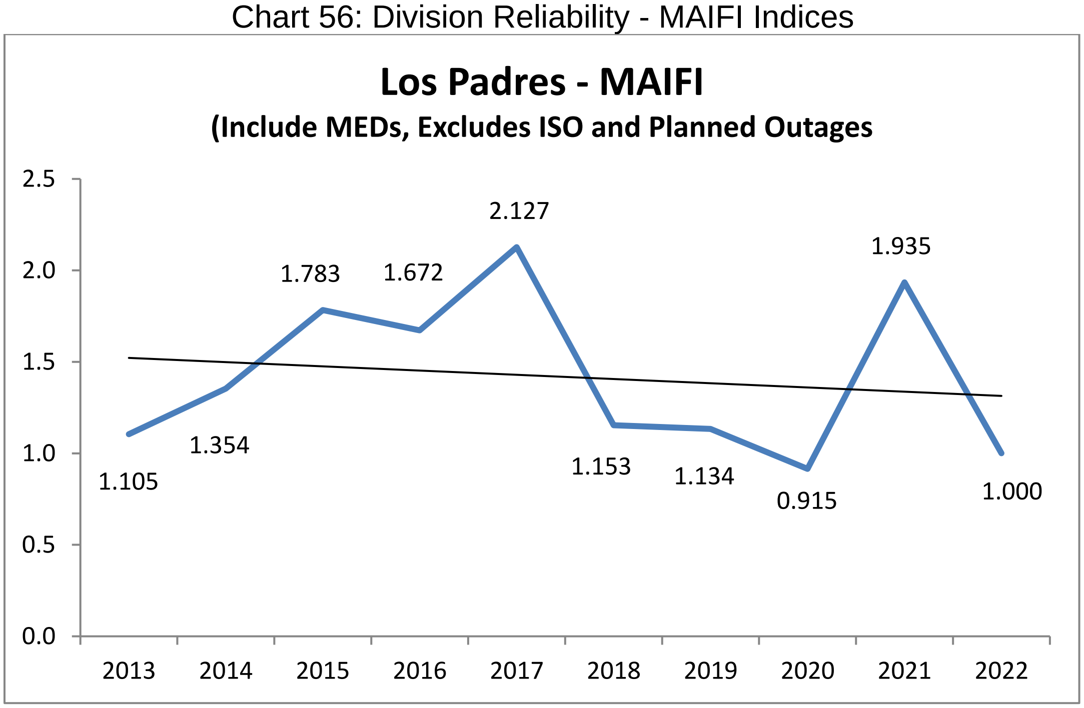


Chart 57: Division Reliability - MAIFI Indices

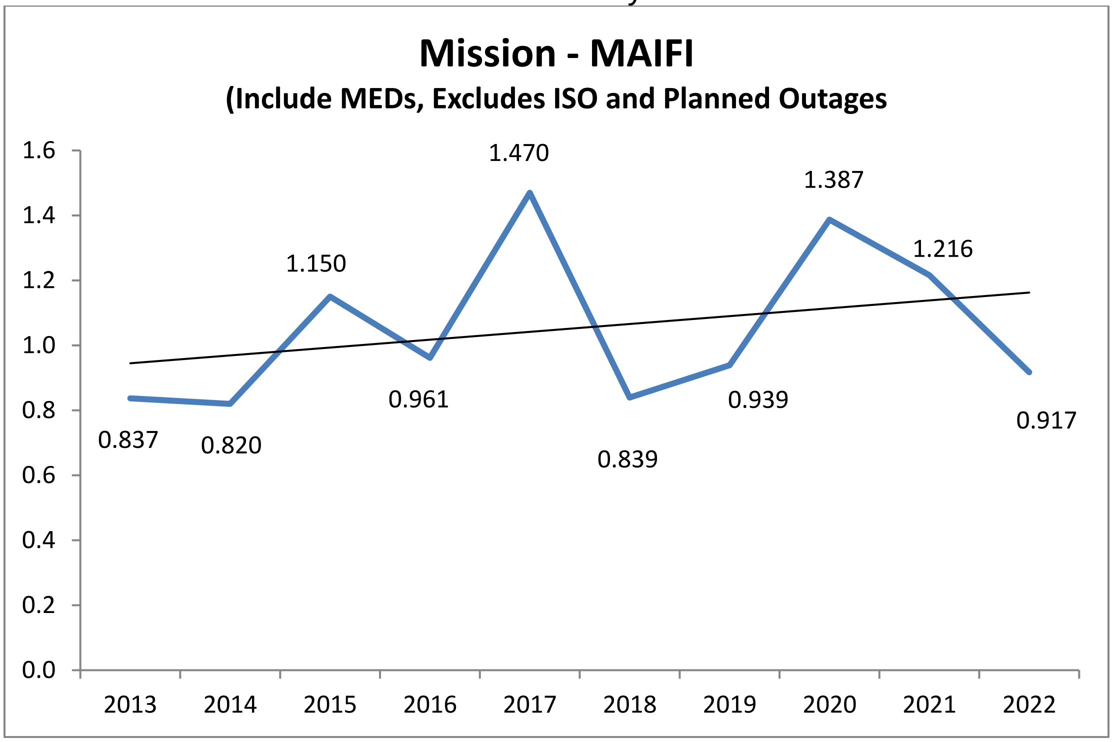


Chart 58: Division Reliability - MAIFI Indices

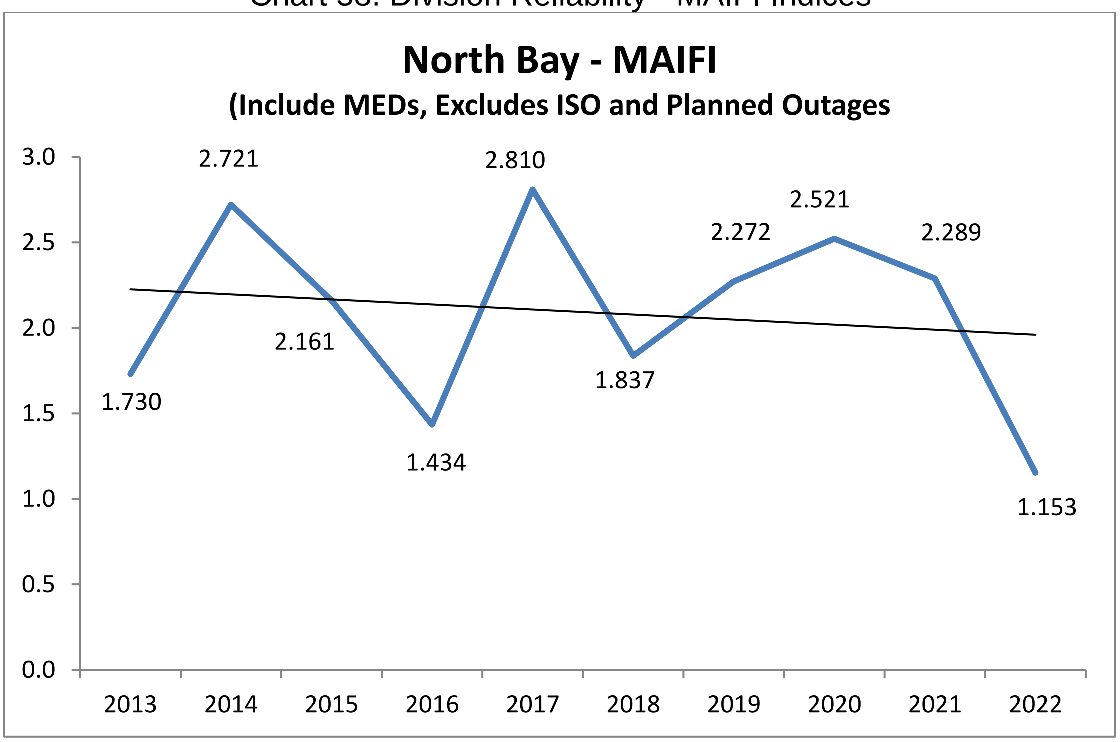


Chart 59: Division Reliability - MAIFI Indices

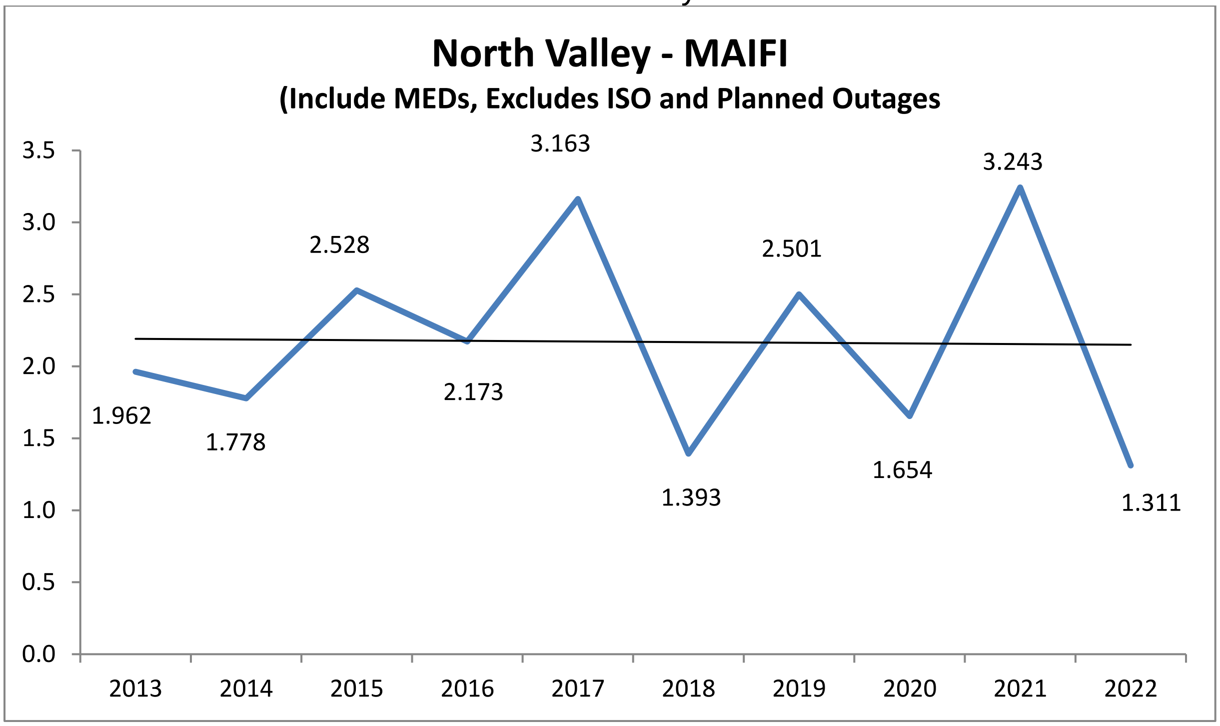


Chart 60: Division Reliability - MAIFI Indices

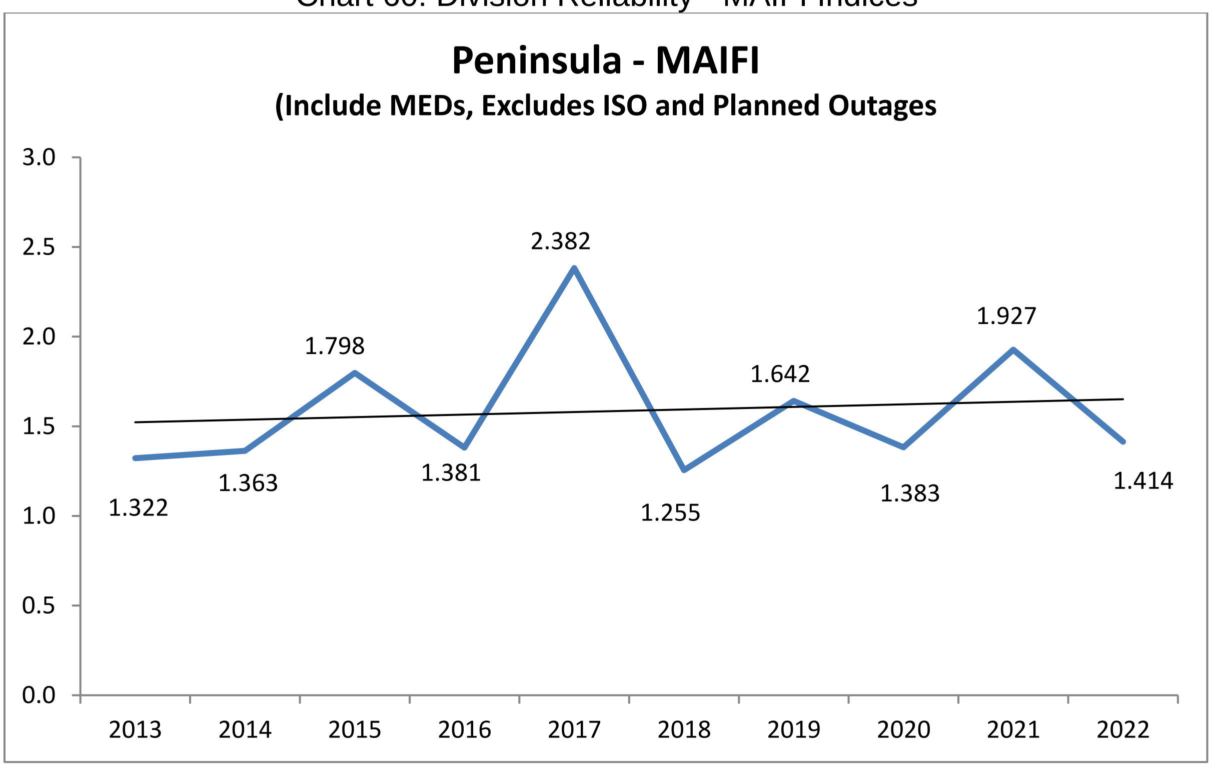


Chart 61: Division Reliability - MAIFI Indices

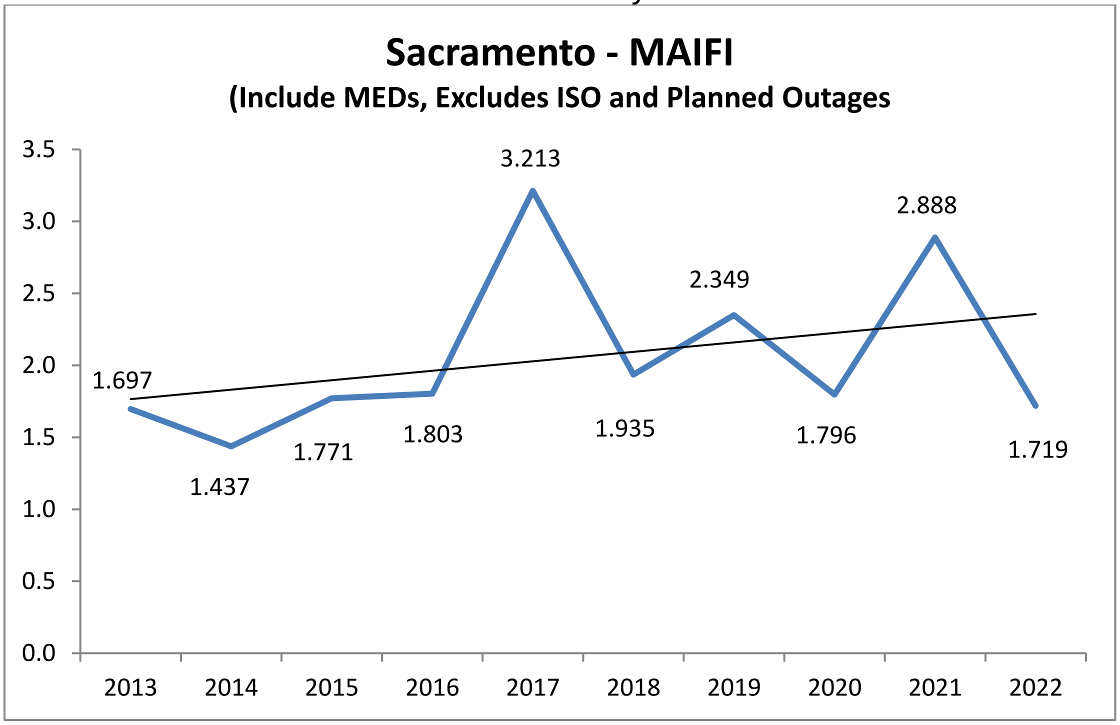


Chart 62: Division Reliability - MAIFI Indices

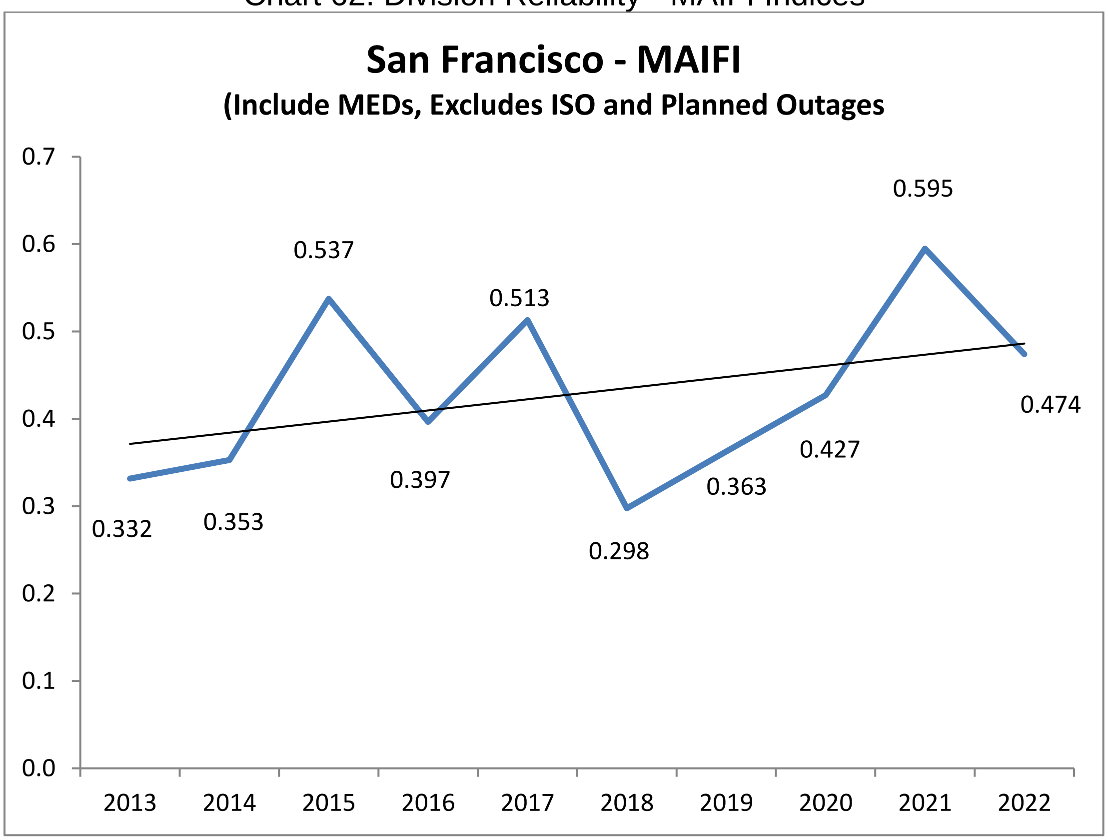


Chart 63: Division Reliability - MAIFI Indices

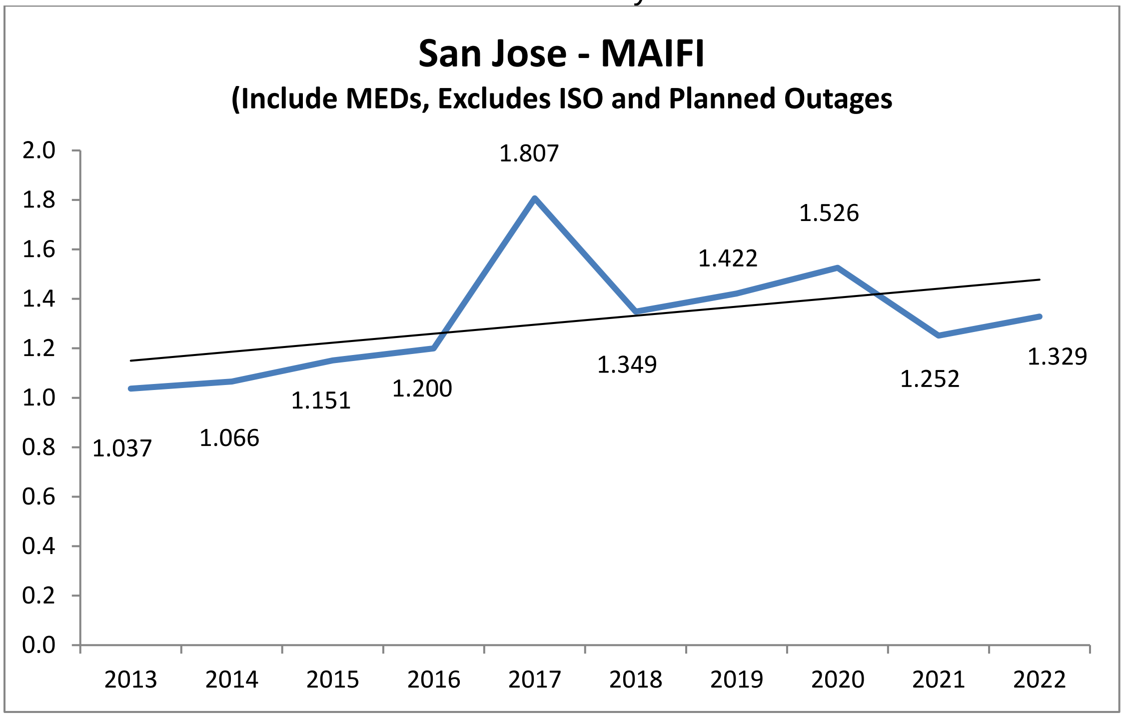


Chart 64: Division Reliability - MAIFI Indices

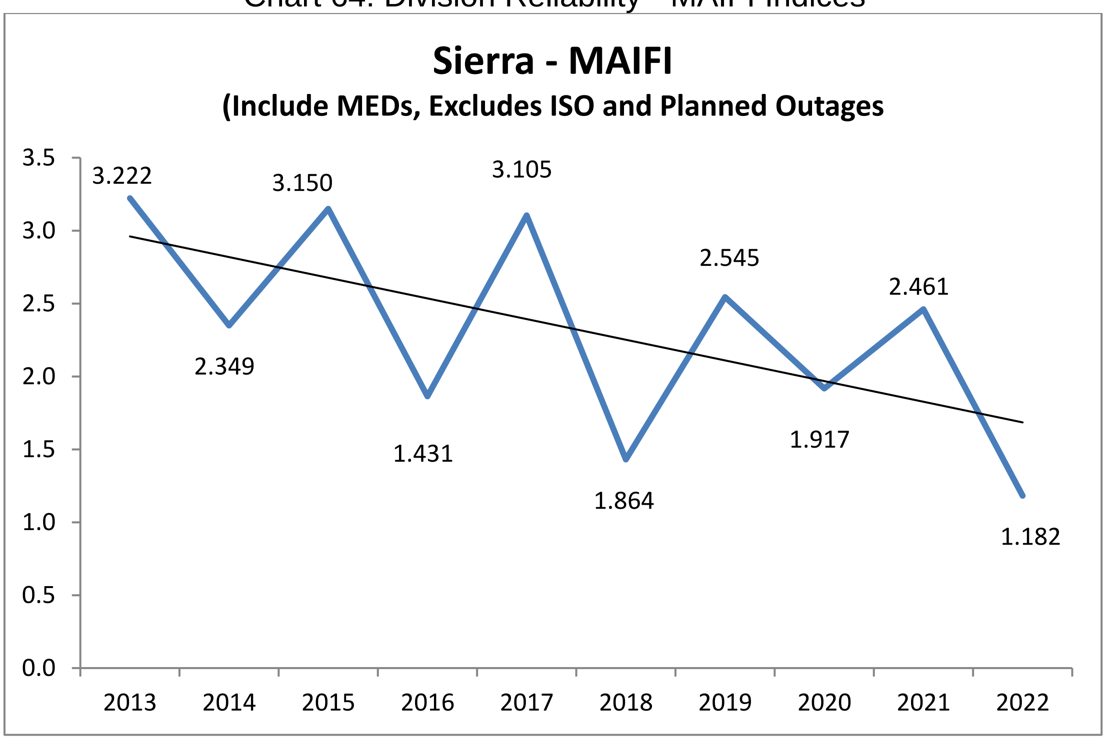


Chart 65: Division Reliability - MAIFI Indices

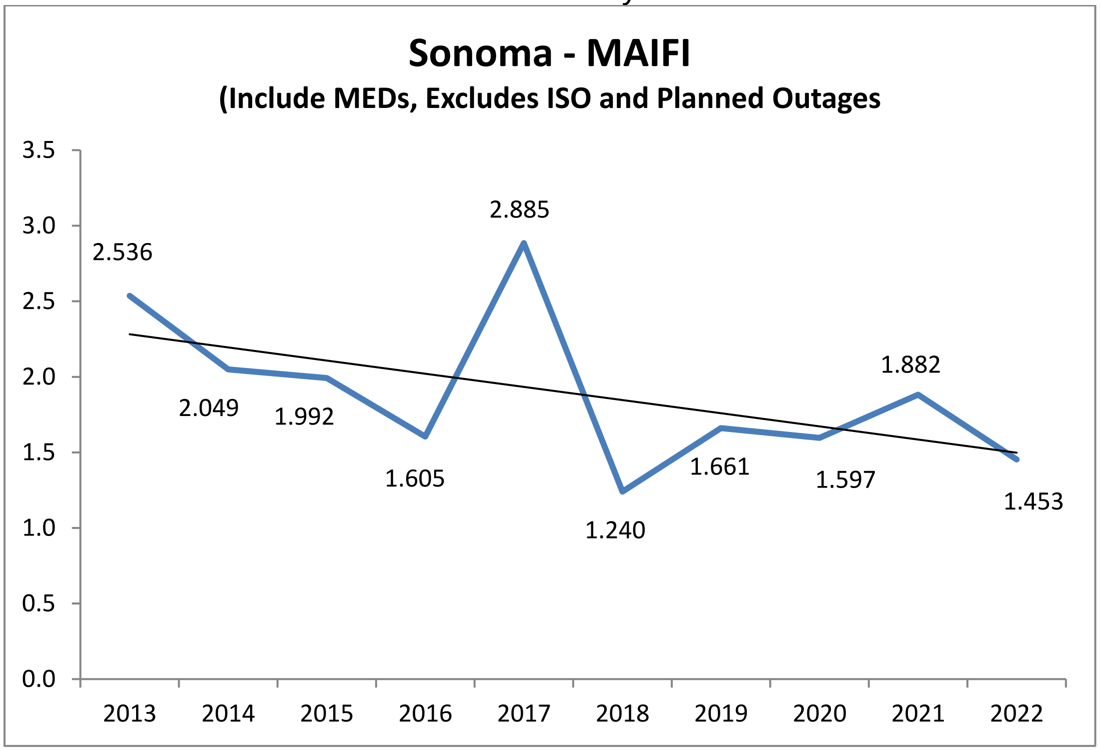


Chart 66: Division Reliability - MAIFI Indices

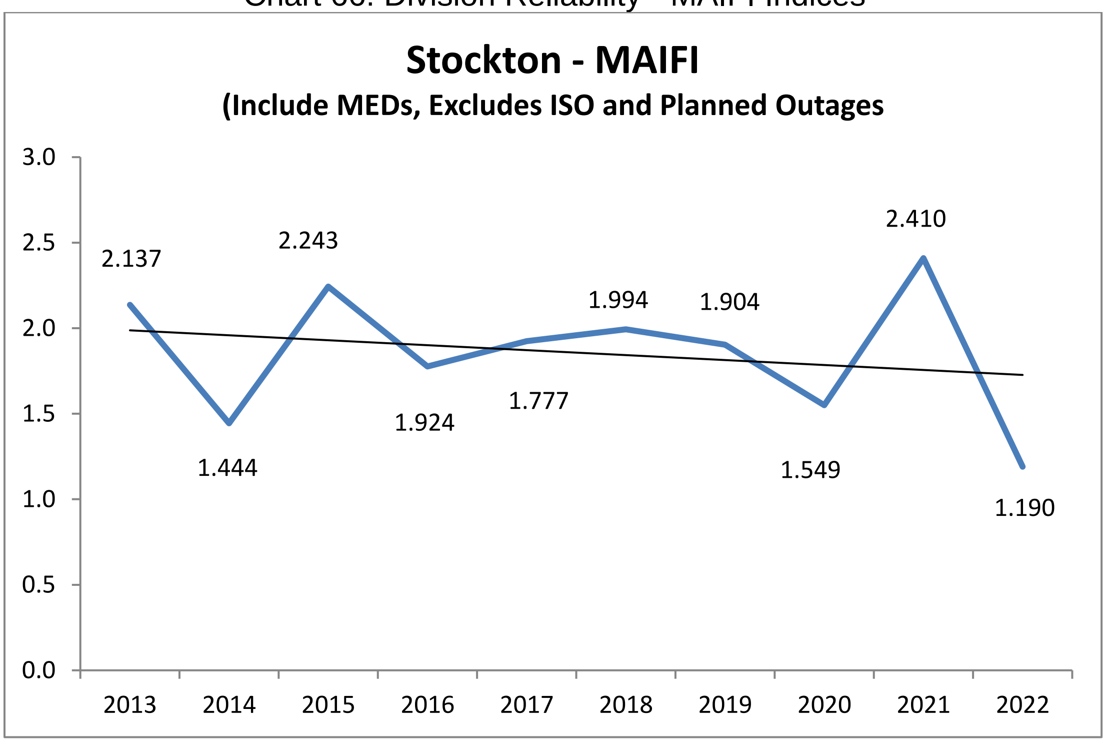
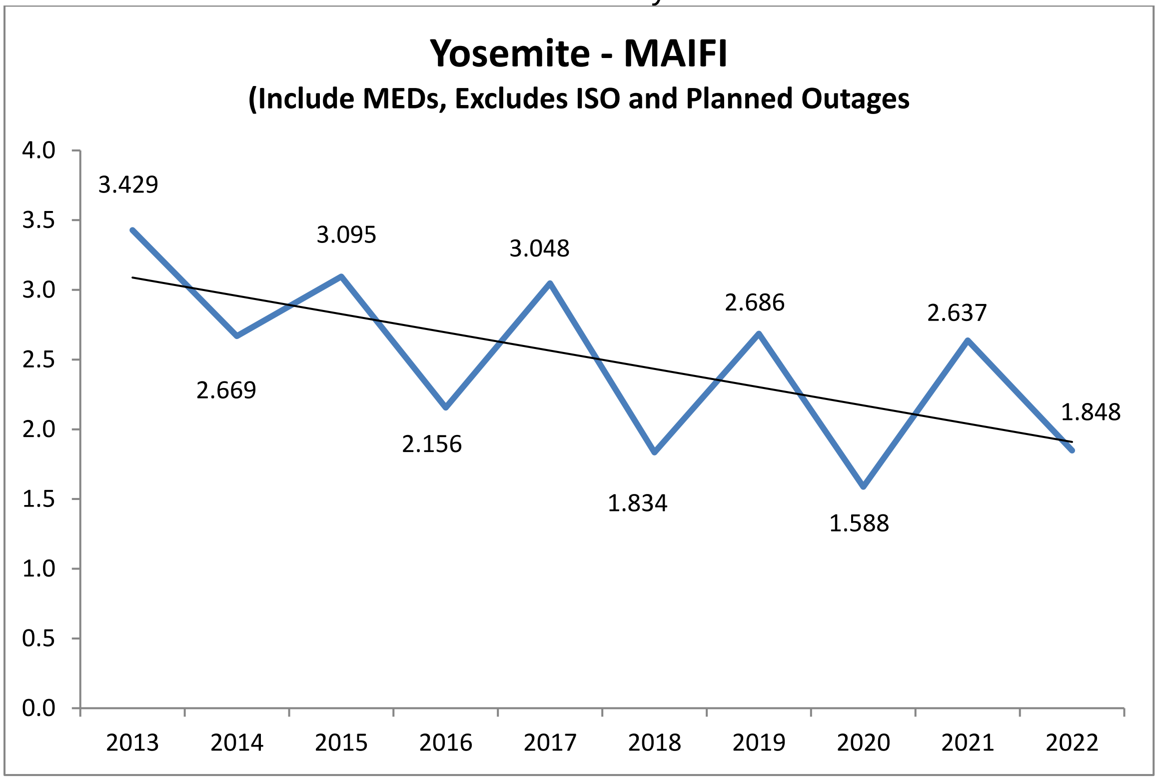


Chart 67: Division Reliability - MAIFI Indices



4. CAIDI Performance Results (MED Included)

Chart 68: Division Reliability - CAIDI Indices

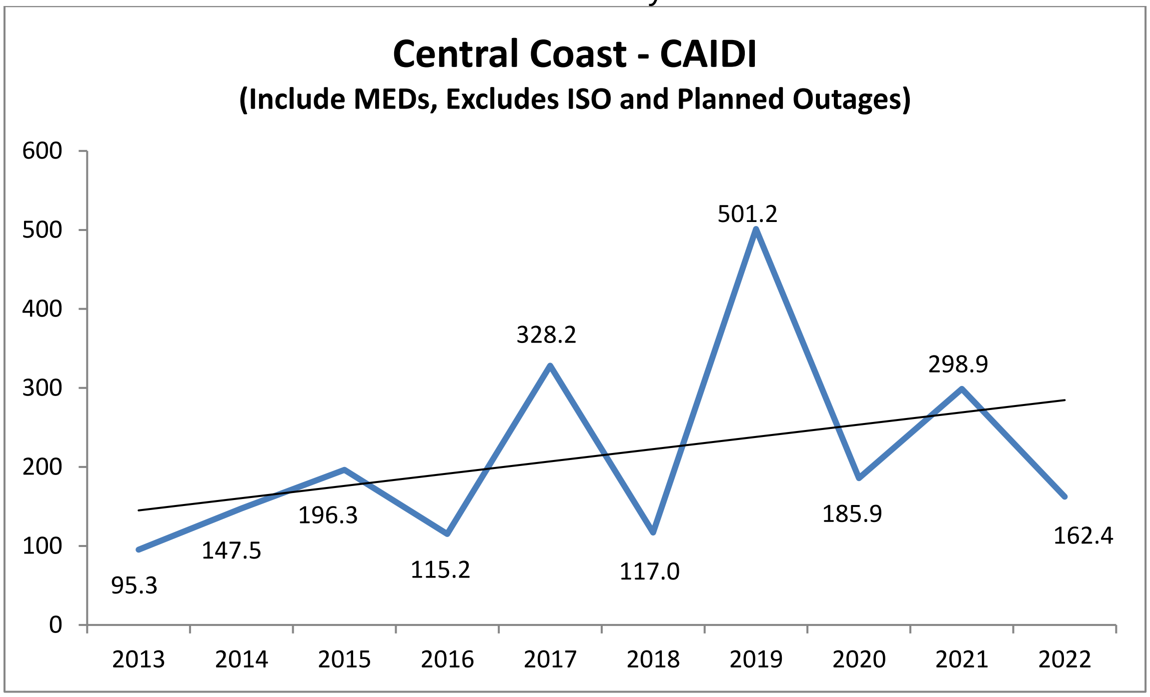


Chart 69: Division Reliability - CAIDI Indices

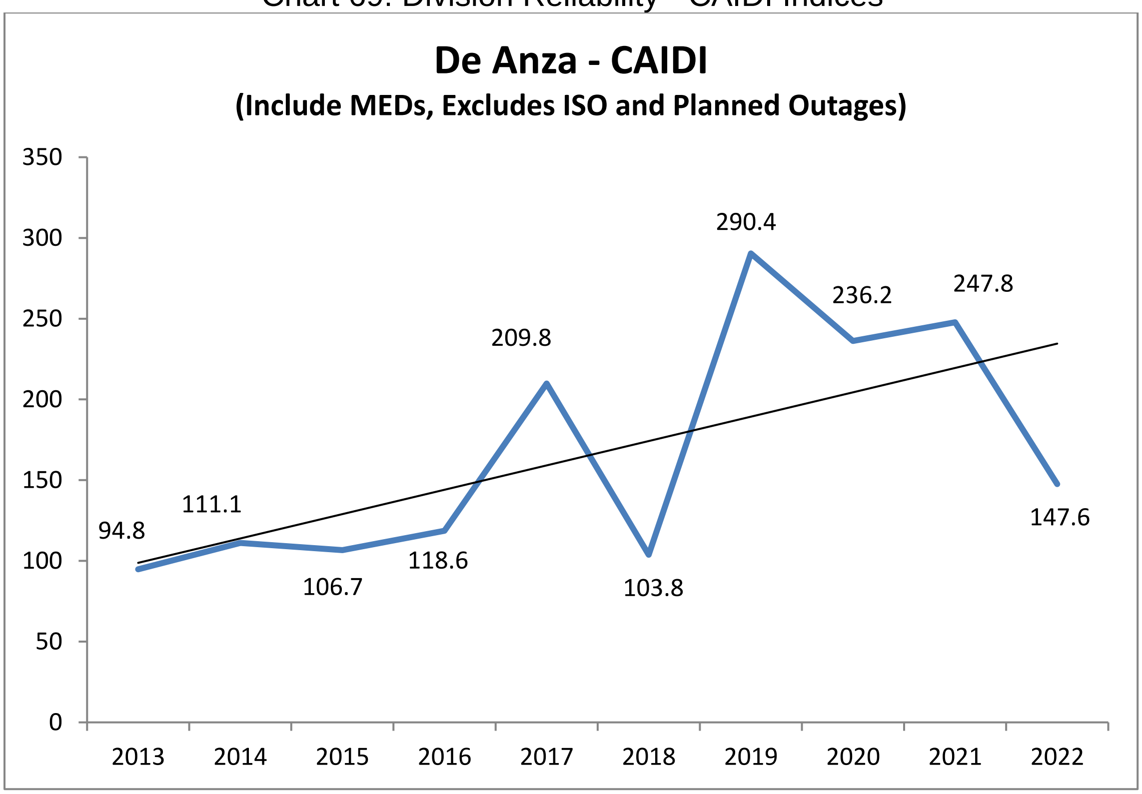


Chart 70: Division Reliability - CAIDI Indices

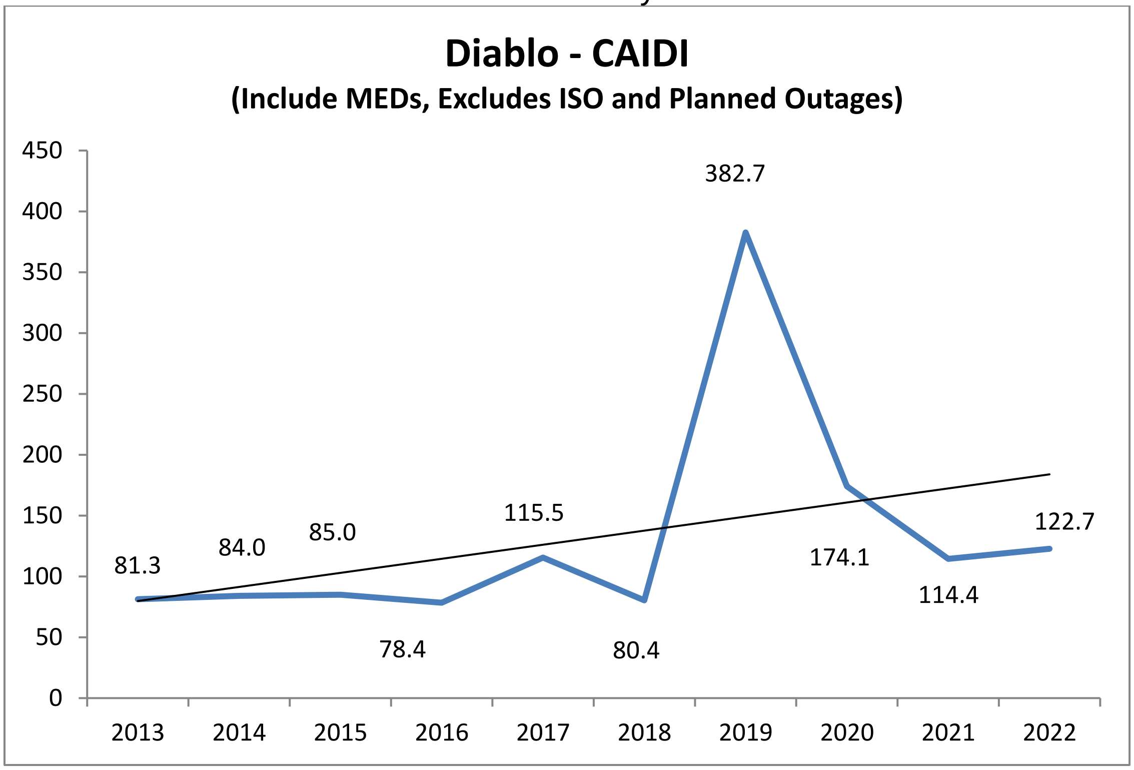


Chart 71: Division Reliability - CAIDI Indices

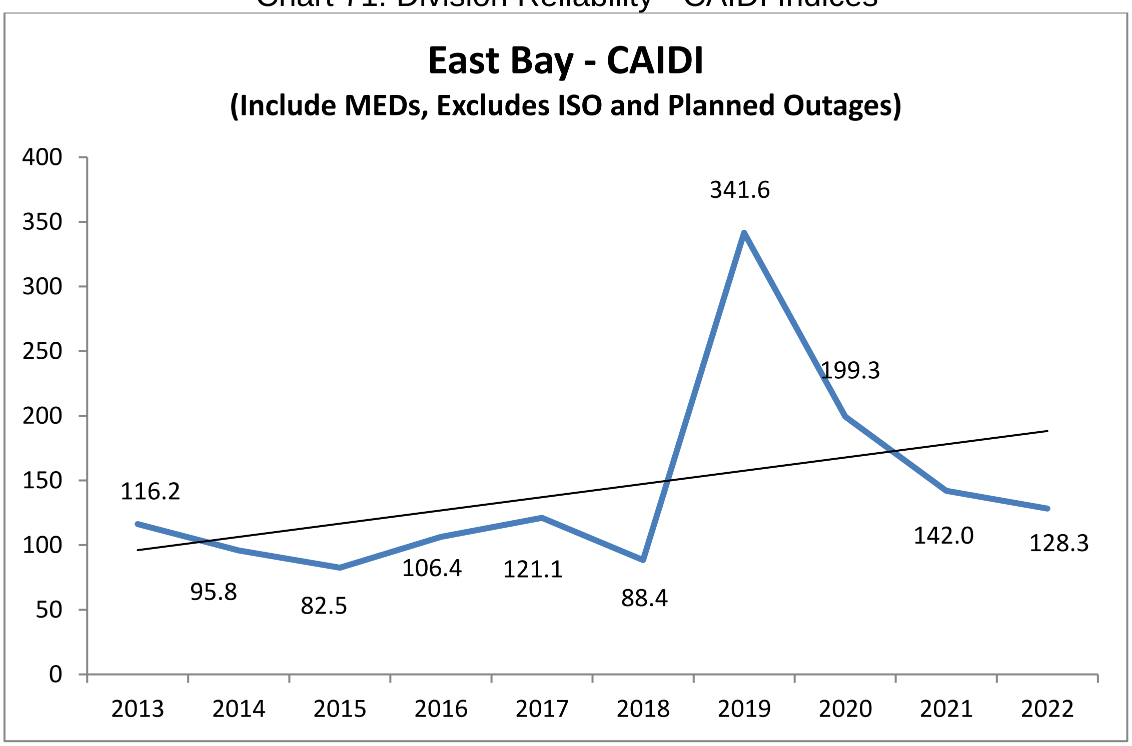


Chart 72: Division Reliability - CAIDI Indices

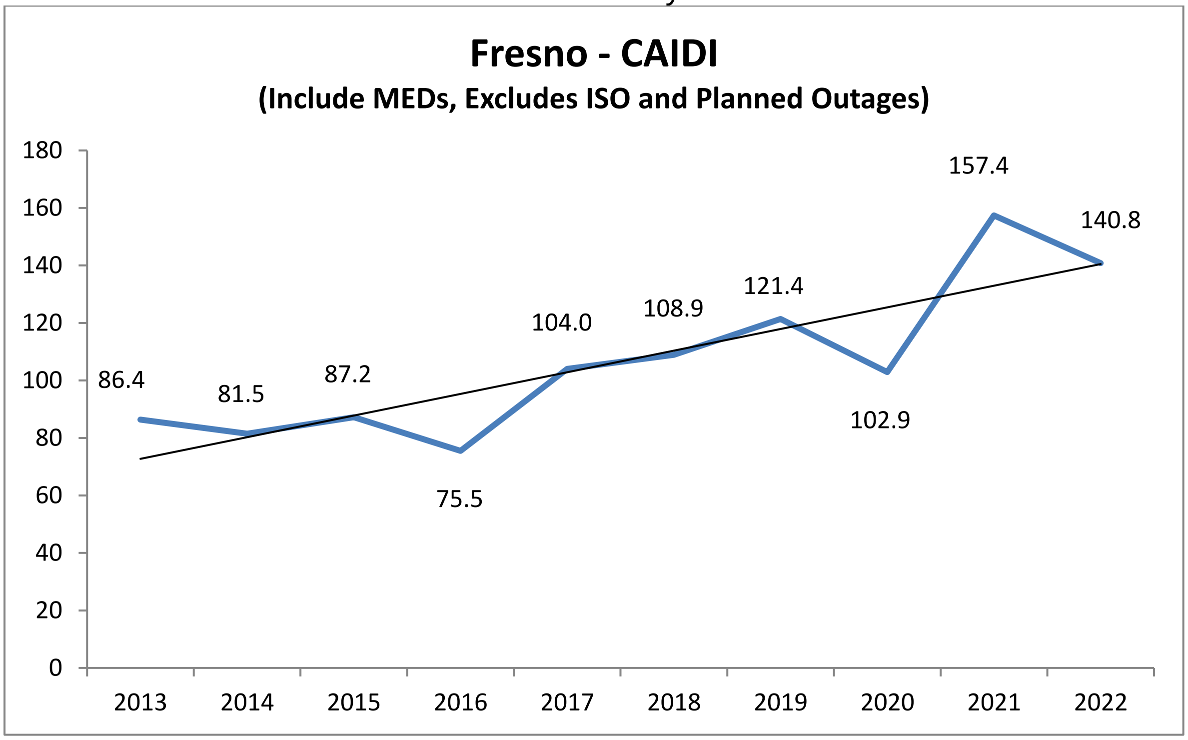


Chart 73: Division Reliability - CAIDI Indices

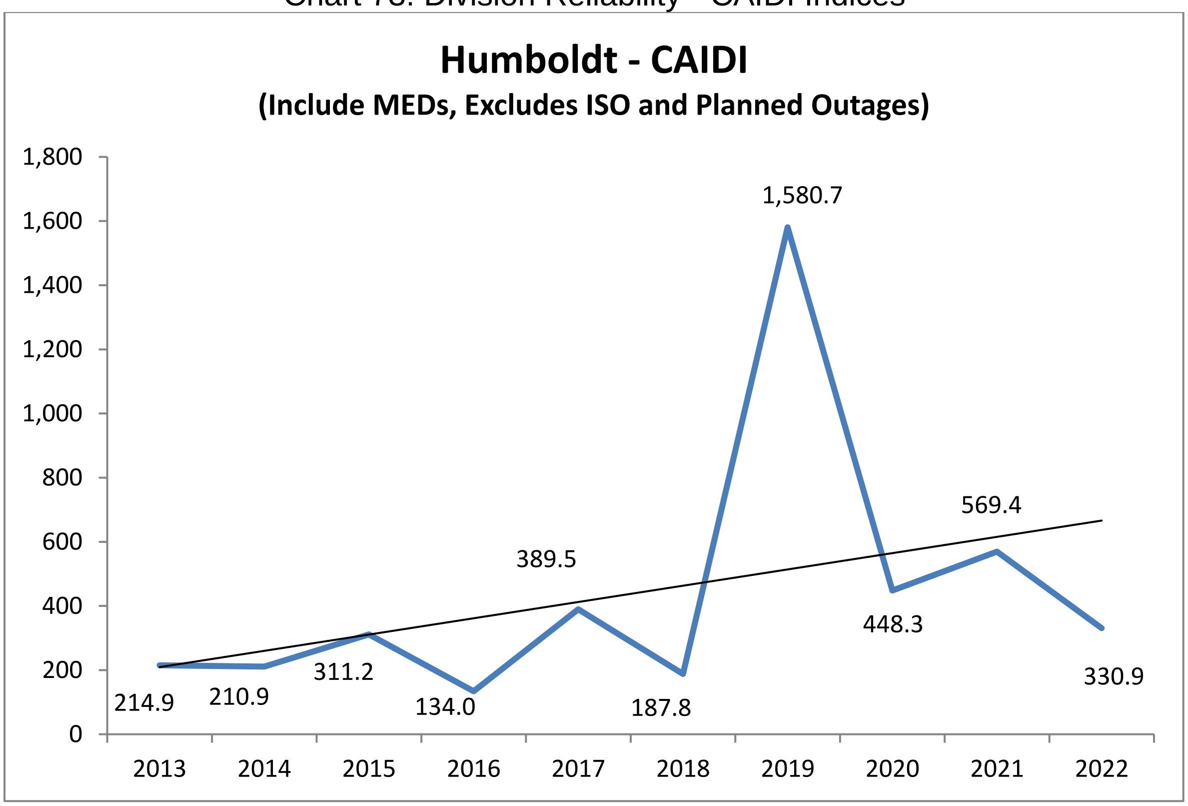


Chart 74: Division Reliability - CAIDI Indices

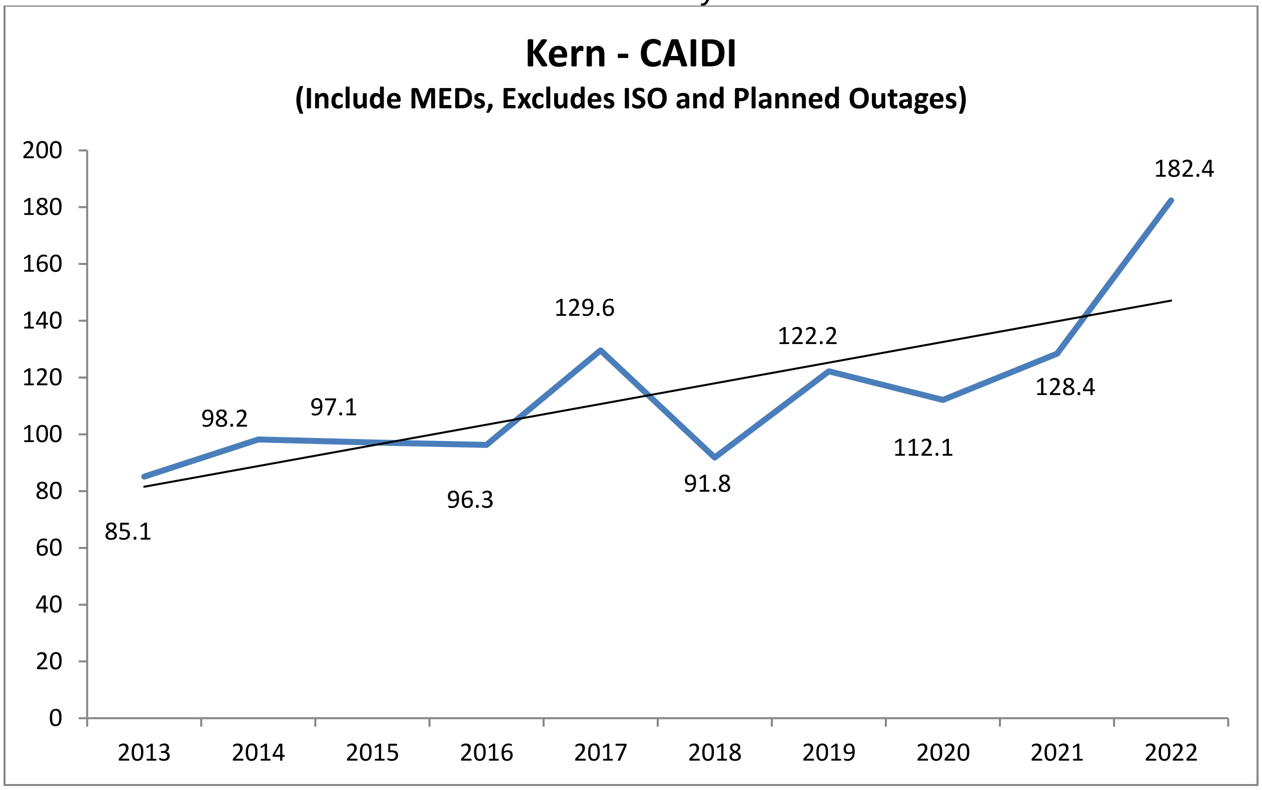


Chart 75: Division Reliability - CAIDI Indices

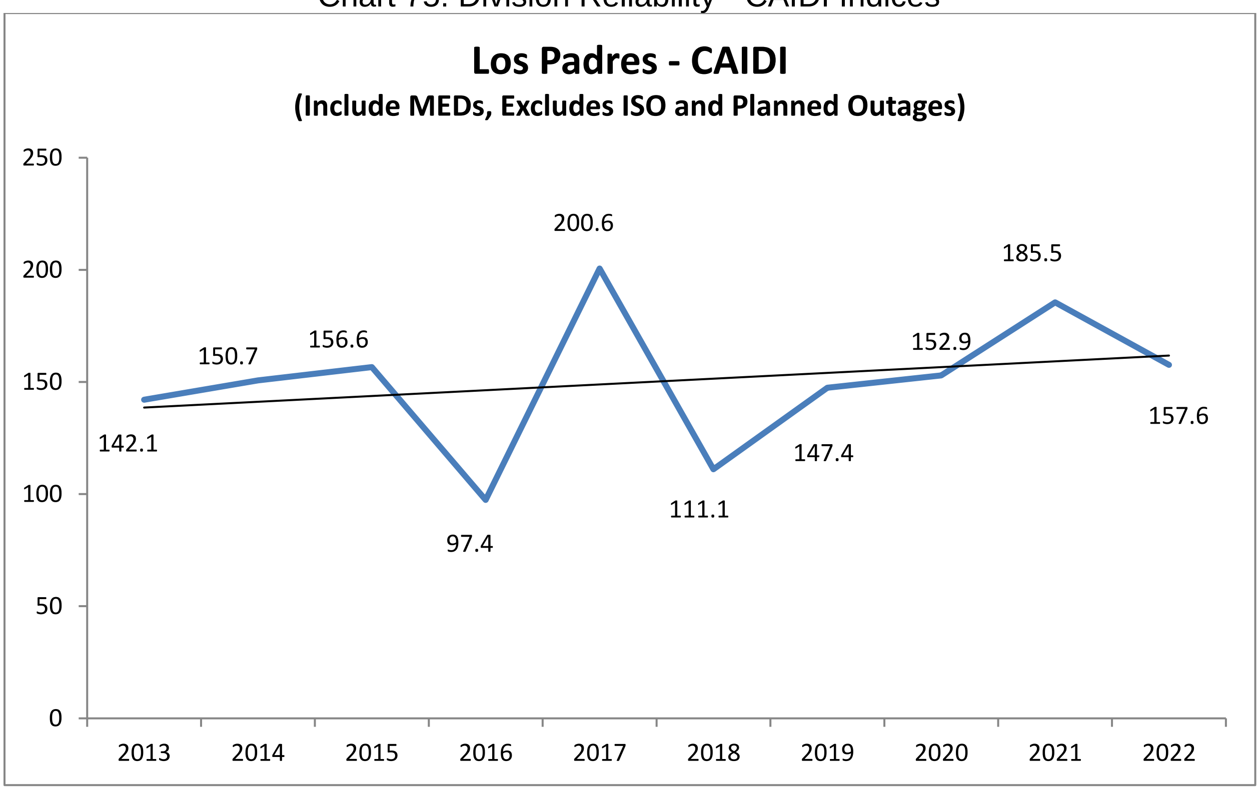


Chart 76: Division Reliability - CAIDI Indices

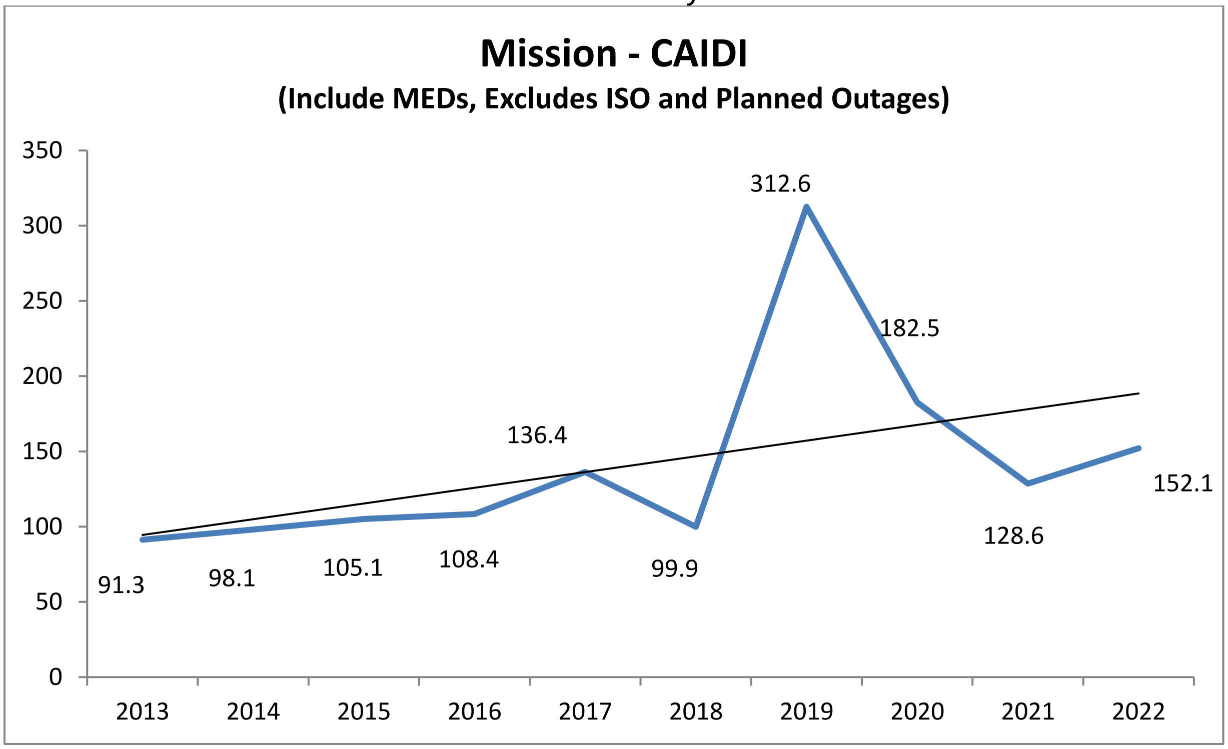


Chart 77: Division Reliability - CAIDI Indices

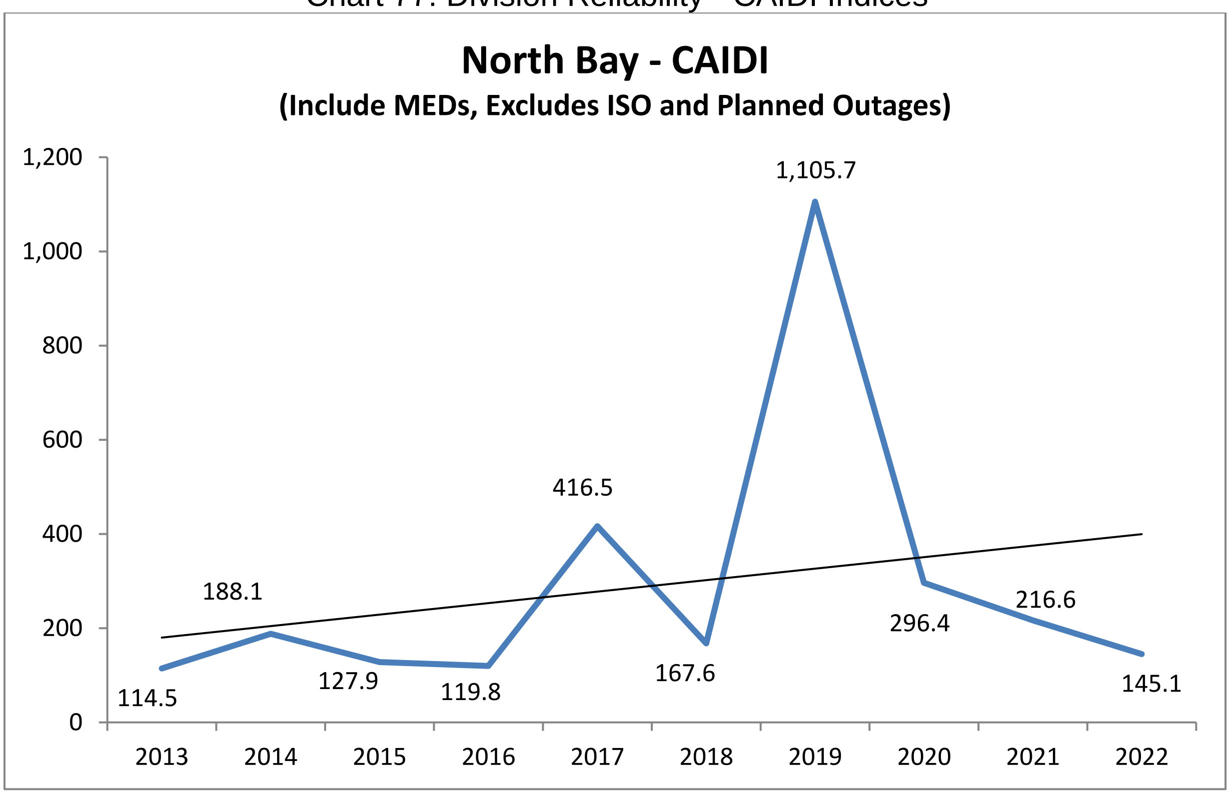


Chart 78: Division Reliability - CAIDI Indices

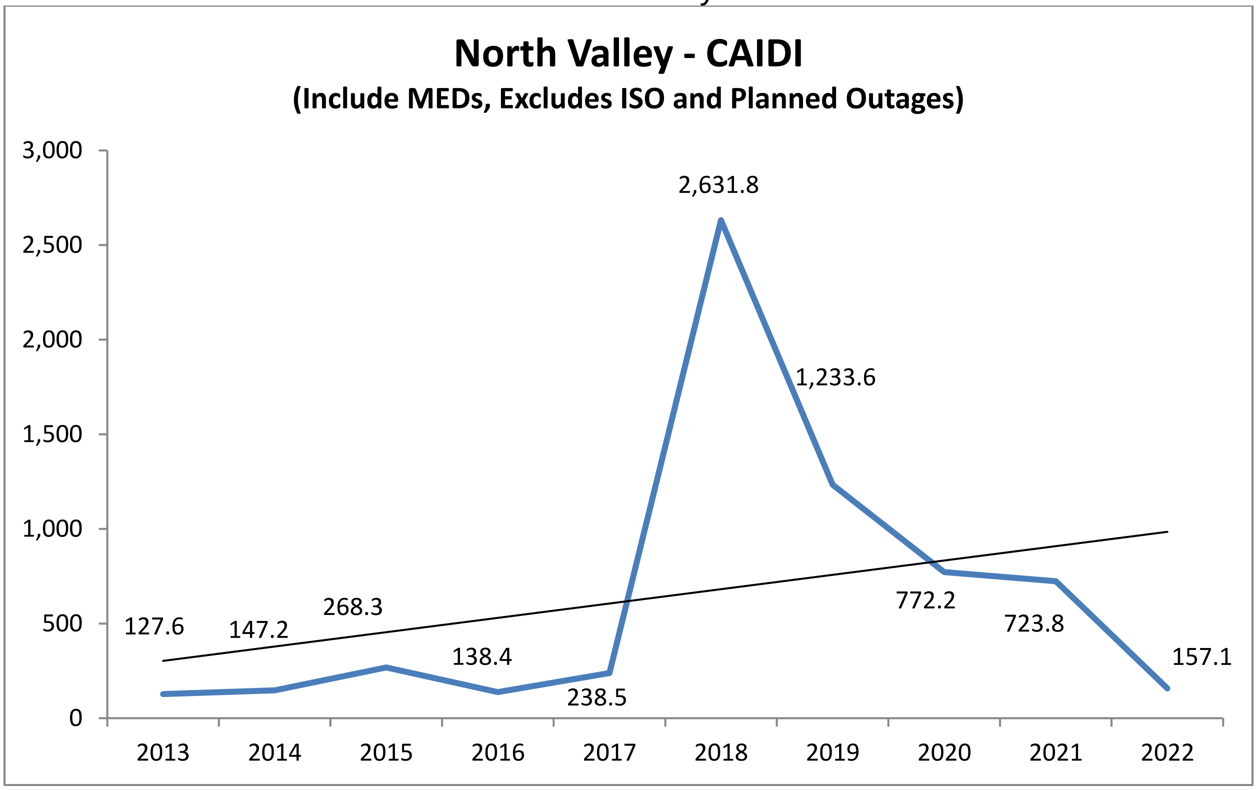


Chart 79: Division Reliability - CAIDI Indices

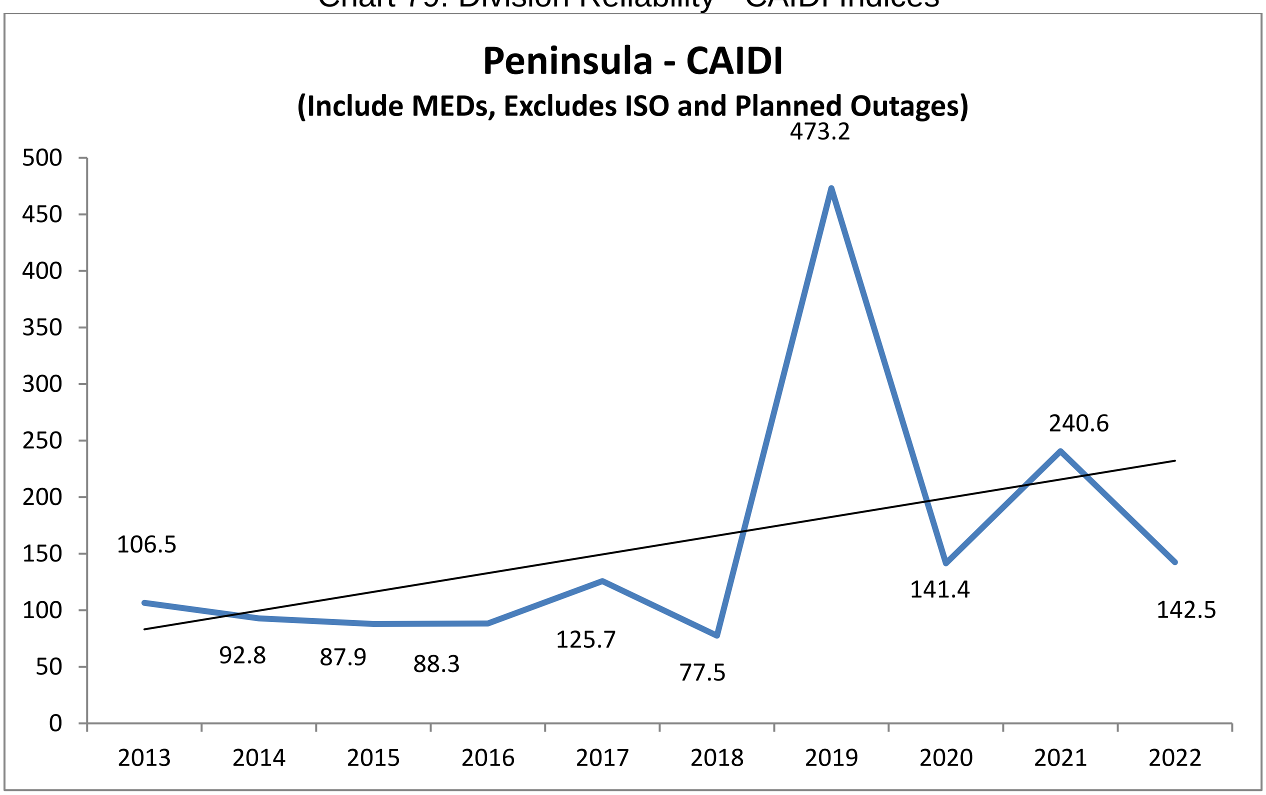


Chart 80: Division Reliability - CAIDI Indices

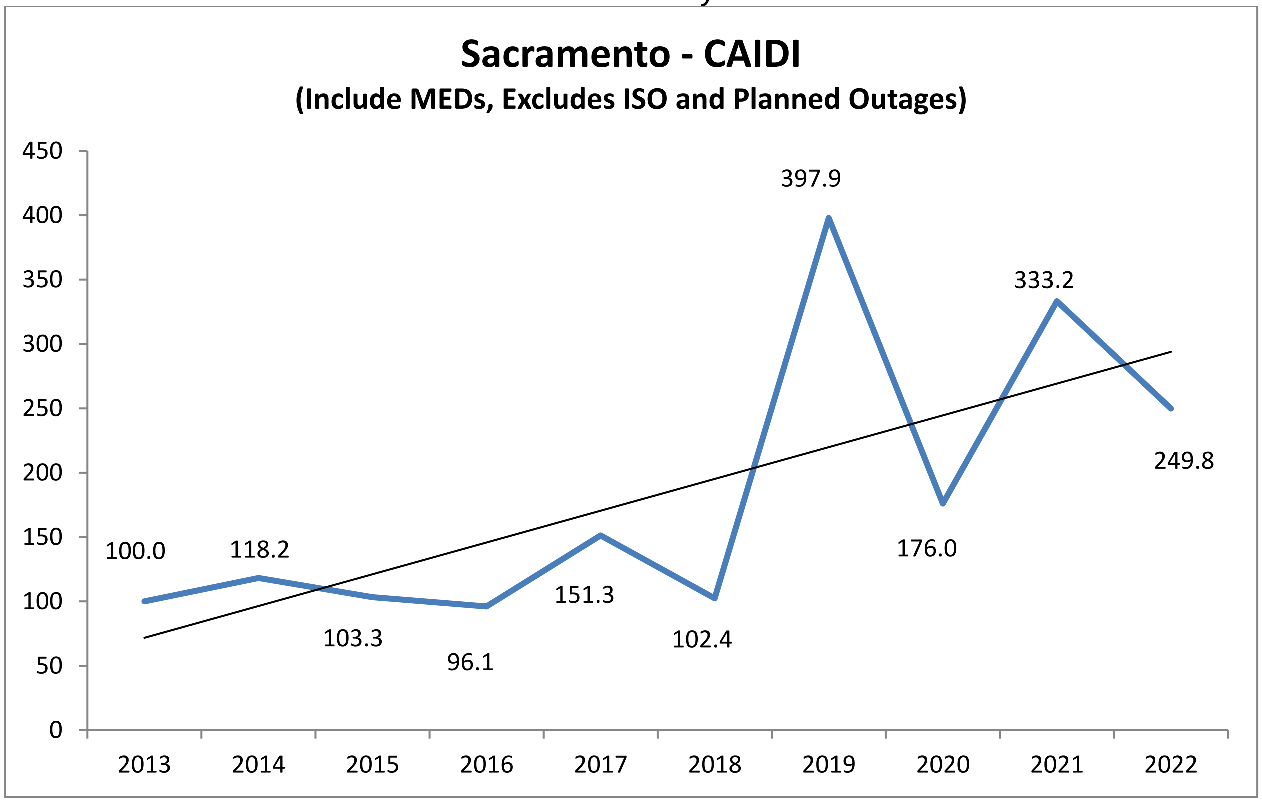


Chart 81: Division Reliability - CAIDI Indices

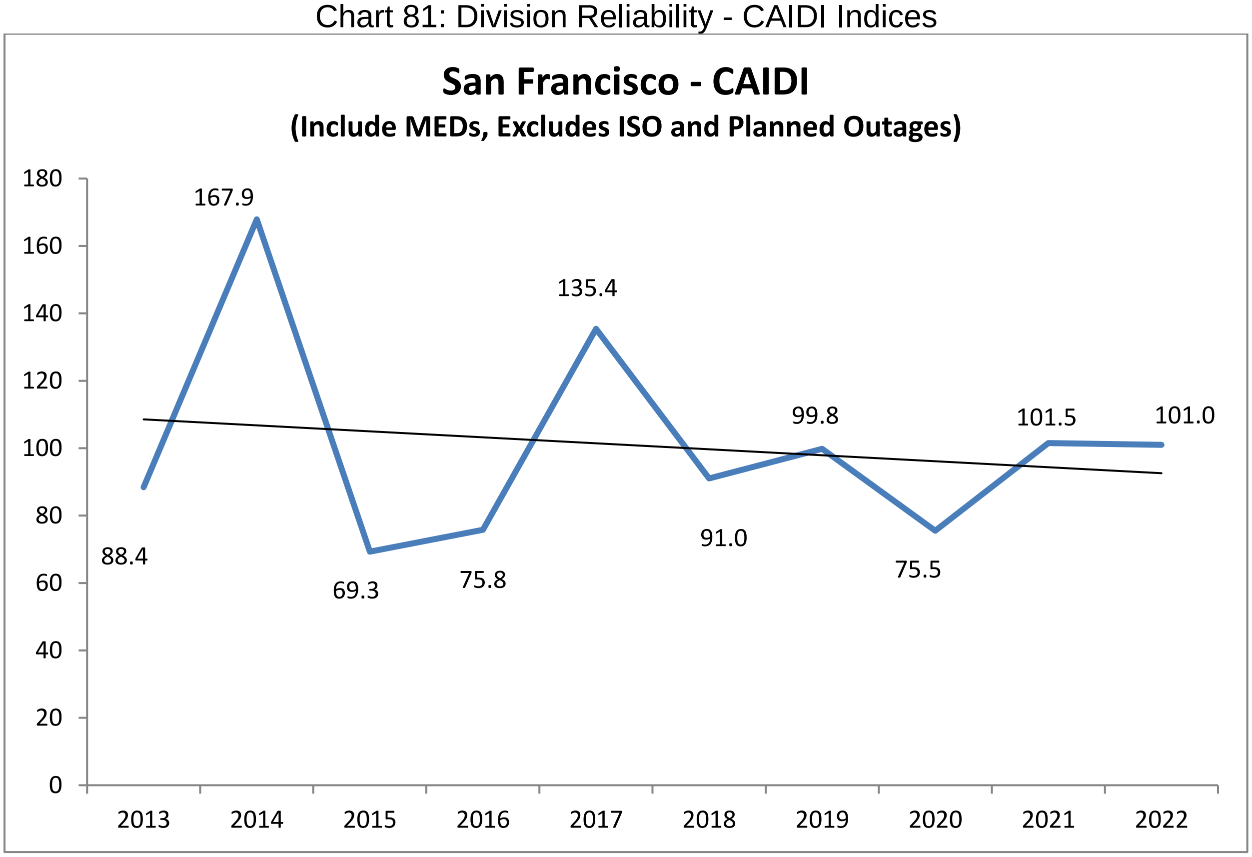


Chart 82: Division Reliability - CAIDI Indices

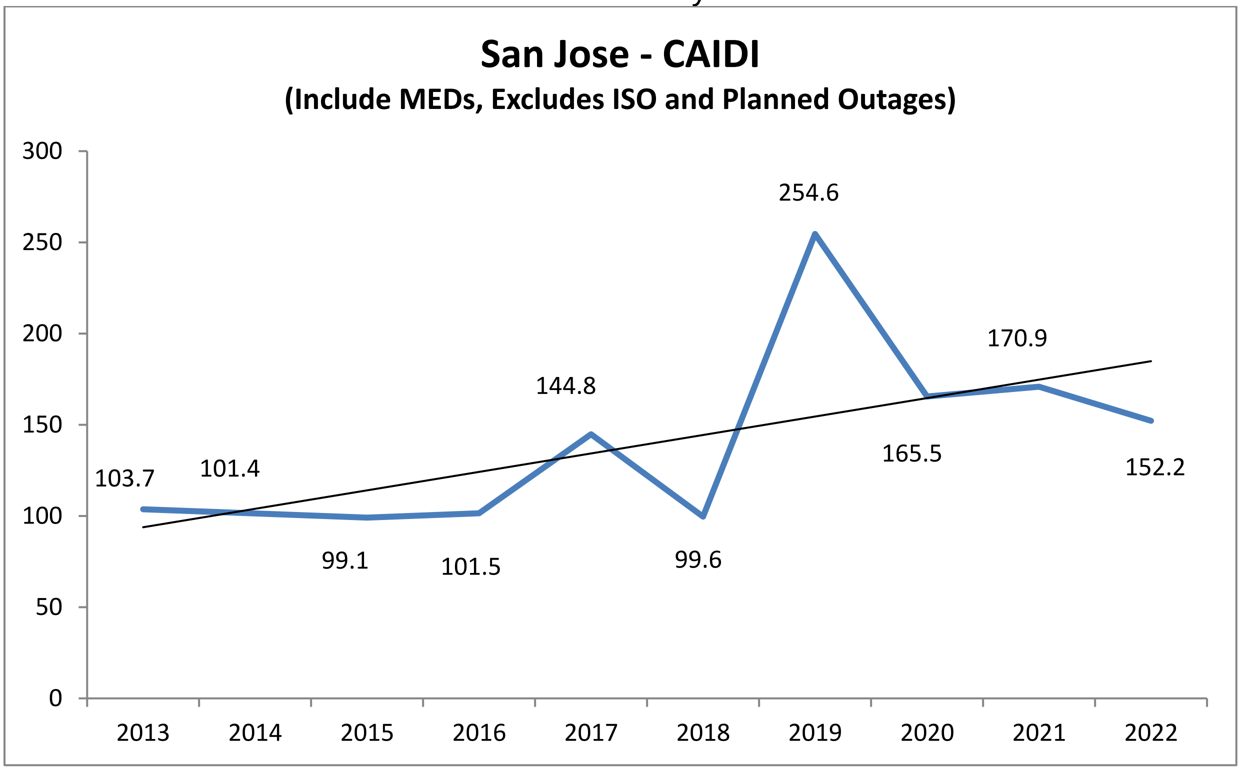


Chart 83: Division Reliability - CAIDI Indices

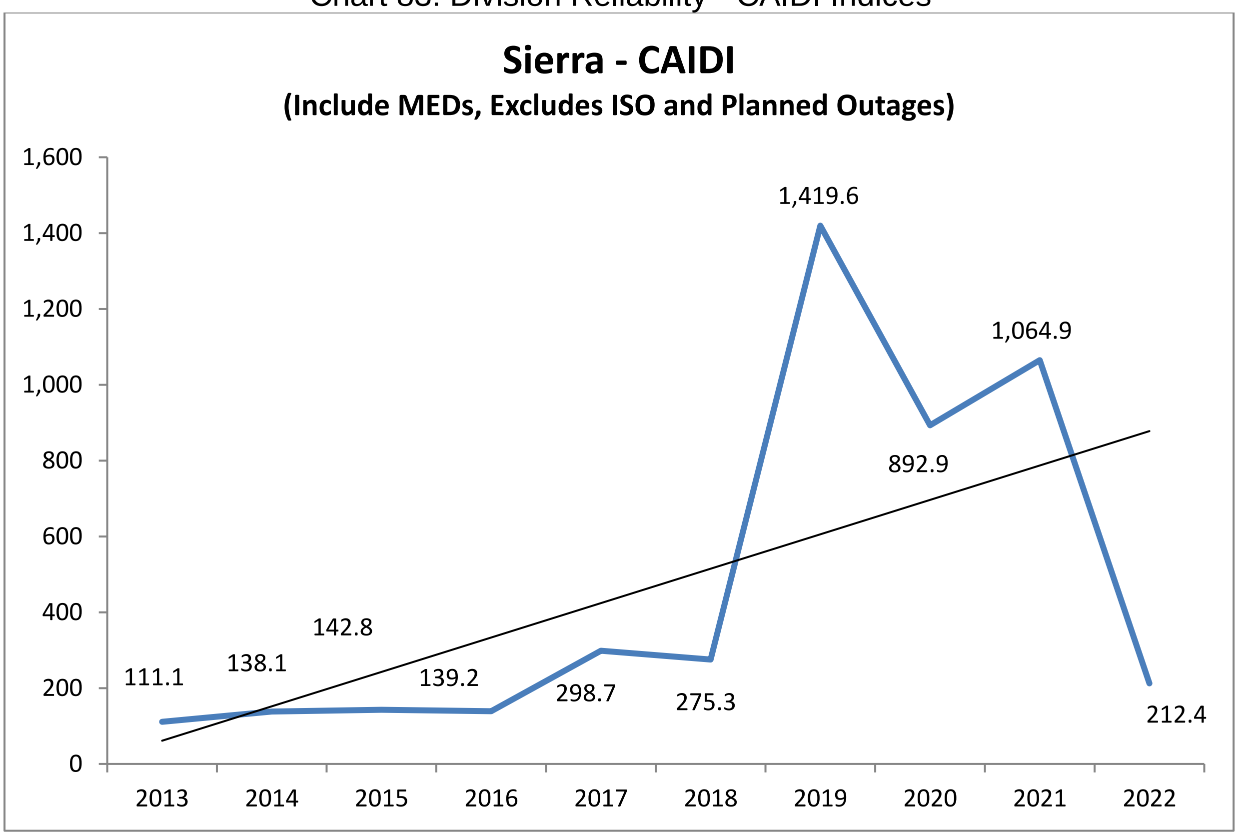


Chart 84: Division Reliability - CAIDI Indices

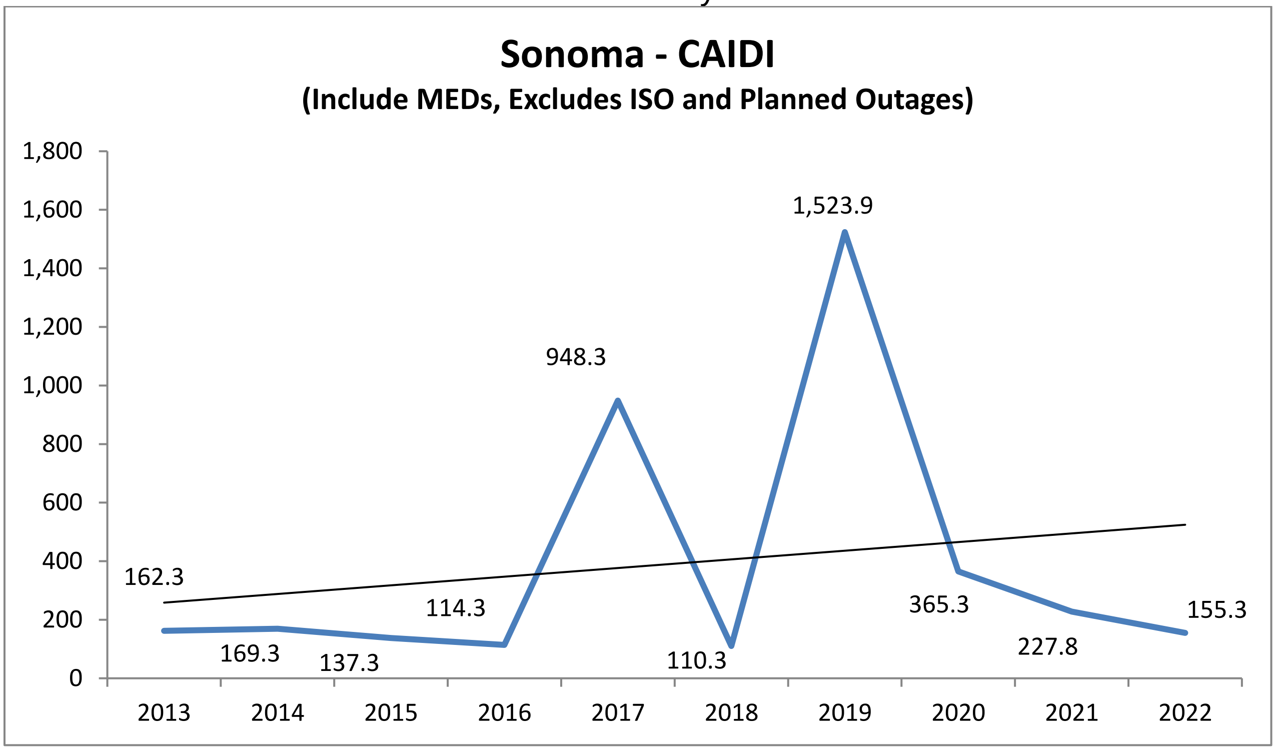


Chart 85: Division Reliability - CAIDI Indices

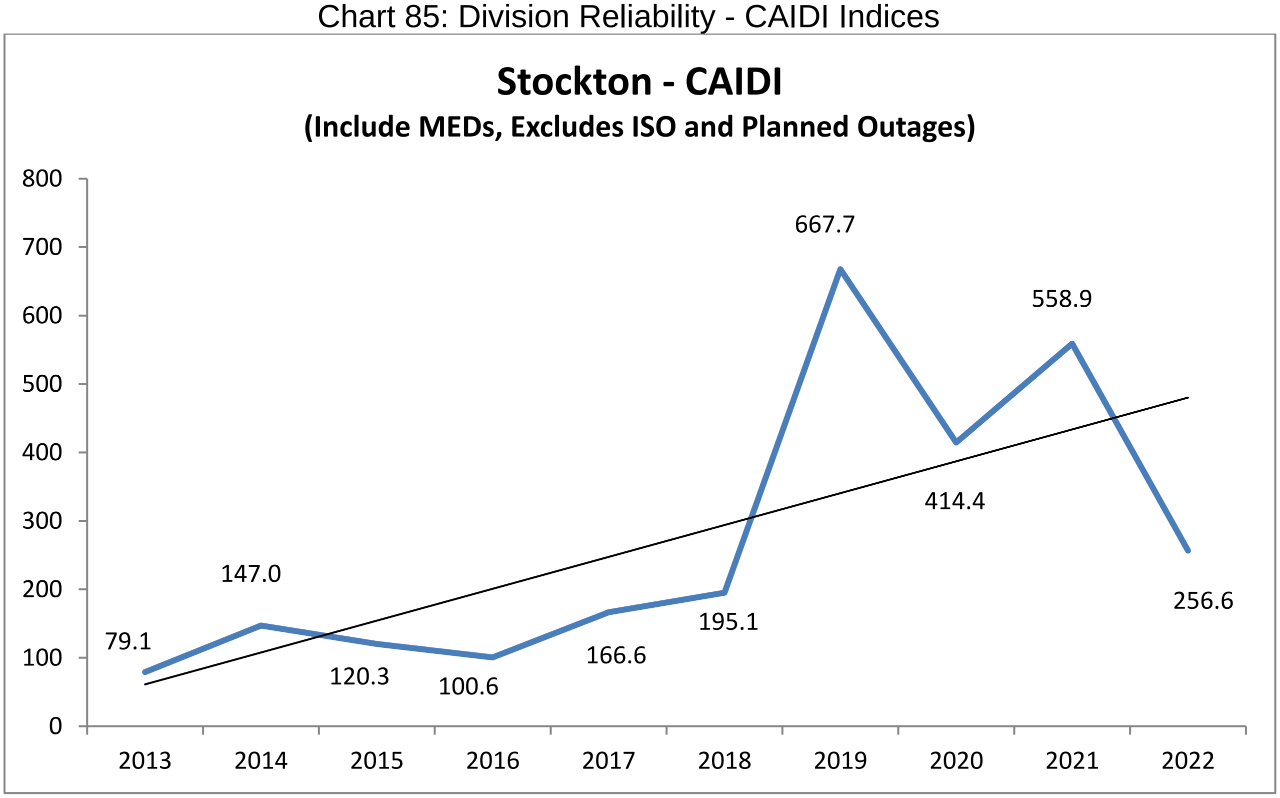
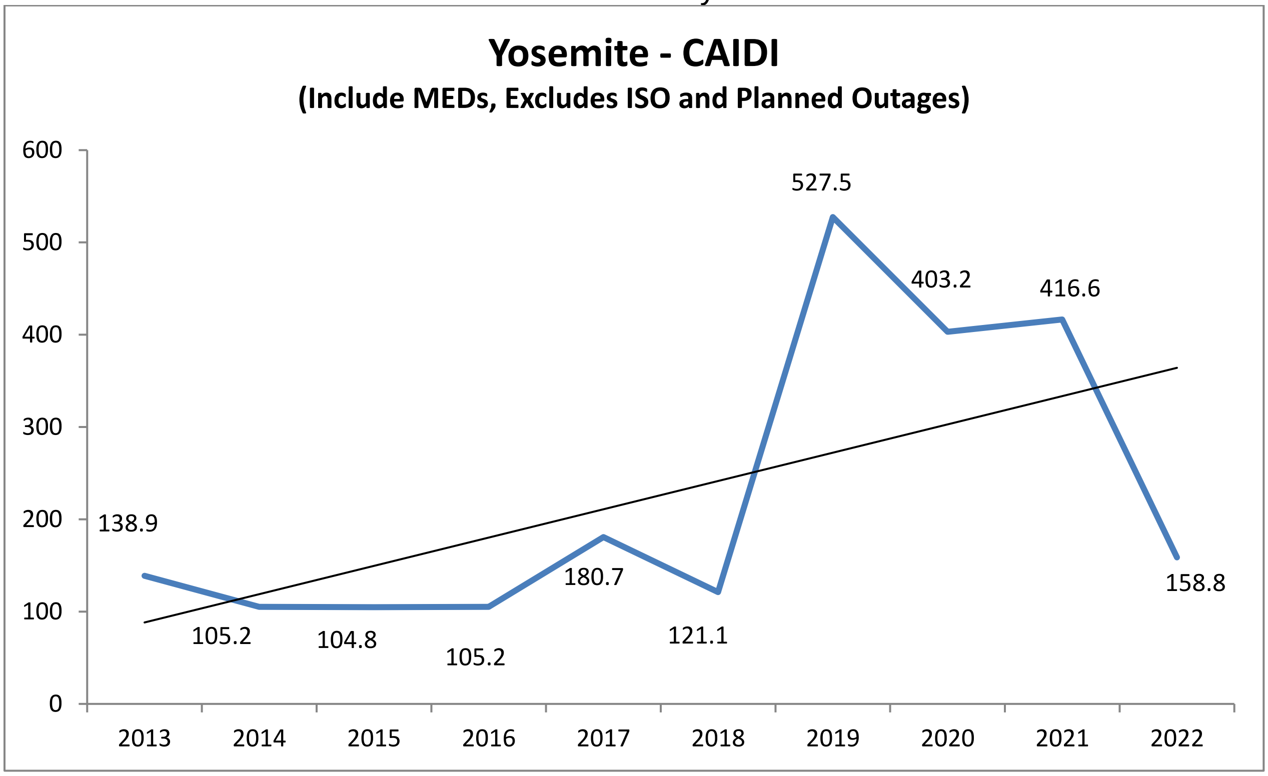


Chart 86: Division Reliability - CAIDI Indices



ii. Charts for Division Reliability Indices for the past 10 years with linear trend line excluding ISO, planned outages and MED

1. AIDI Performance Results (MED Excluded)

Chart 87: Division Reliability - AIDI Indices

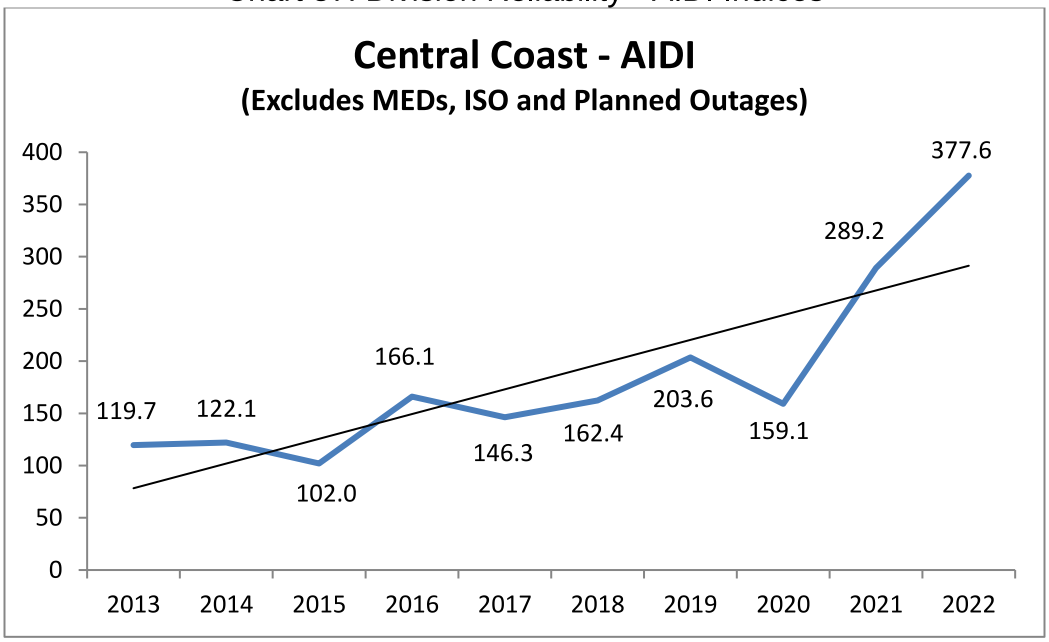


Chart 88: Division Reliability - AIDI Indices

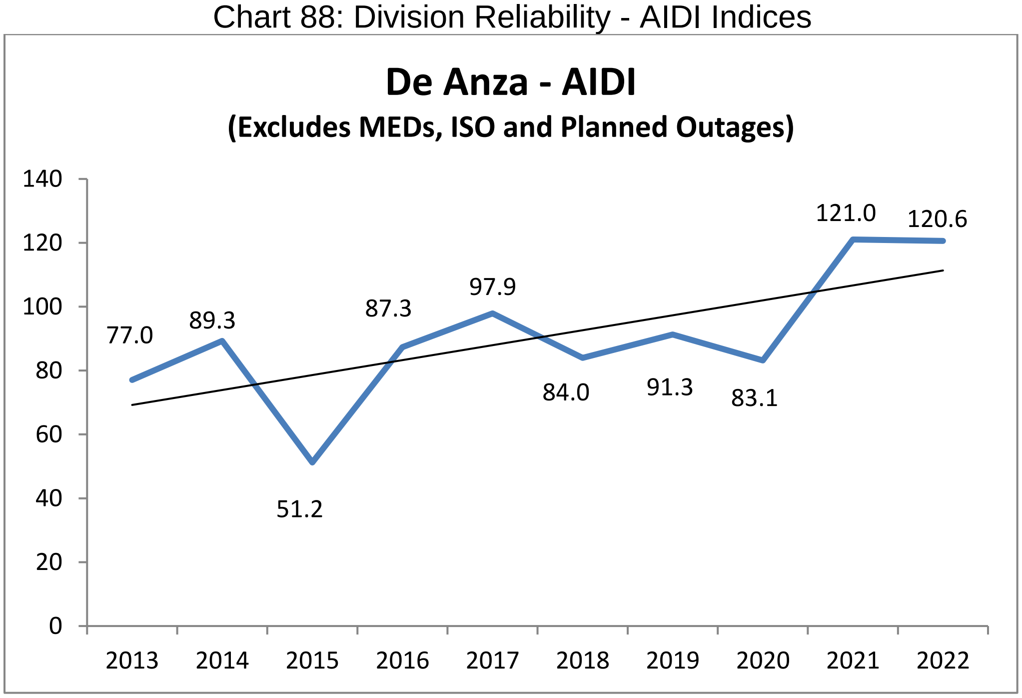


Chart 89: Division Reliability - AIDI Indices

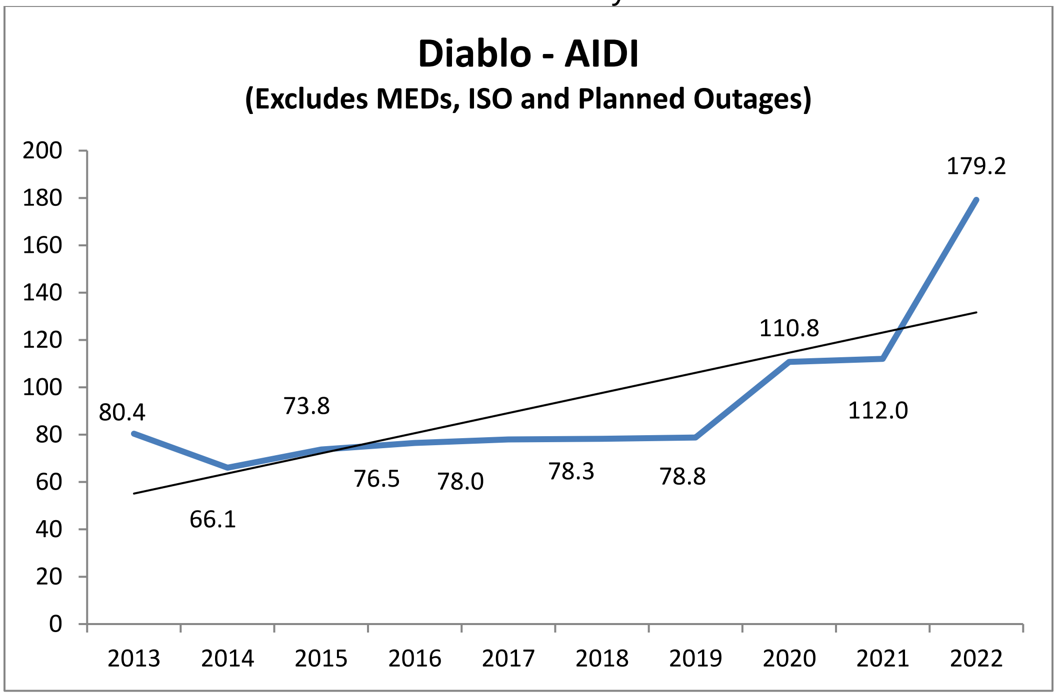


Chart 90: Division Reliability - AIDI Indices

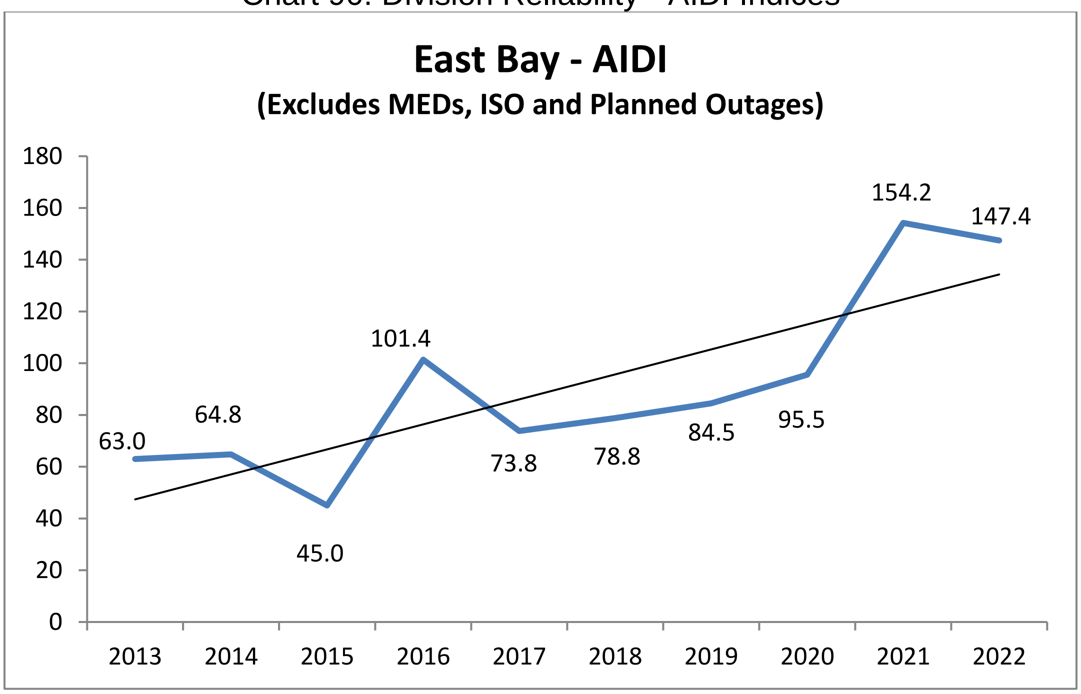


Chart 91: Division Reliability - AIDI Indices

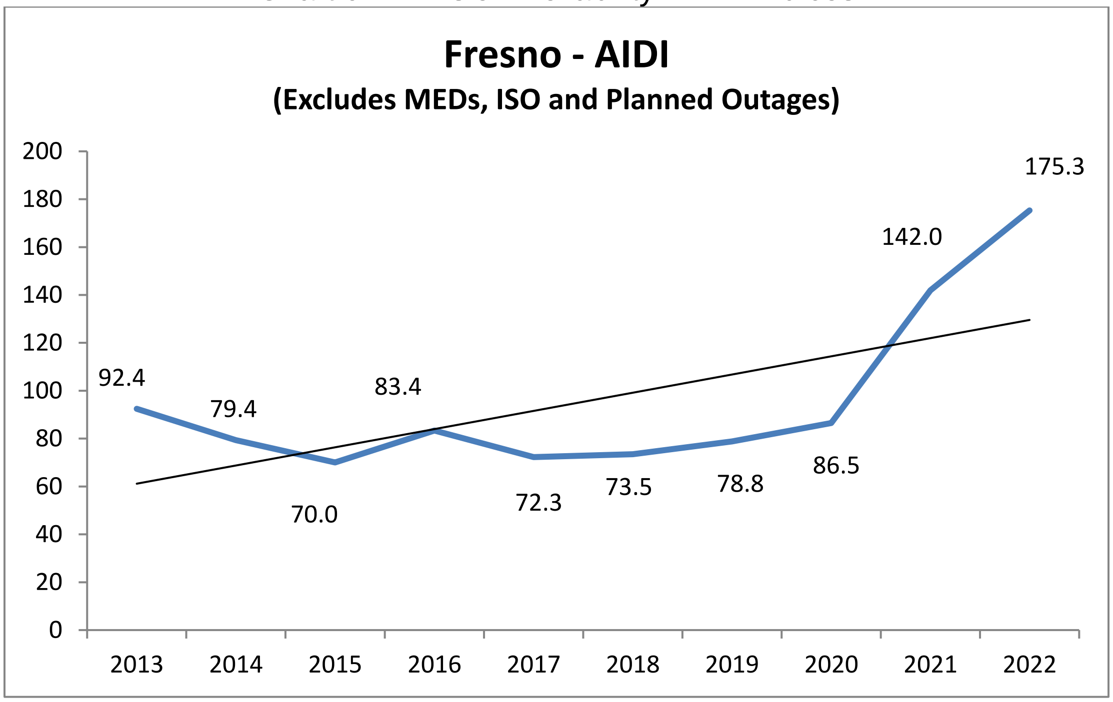


Chart 92: Division Reliability - AIDI Indices

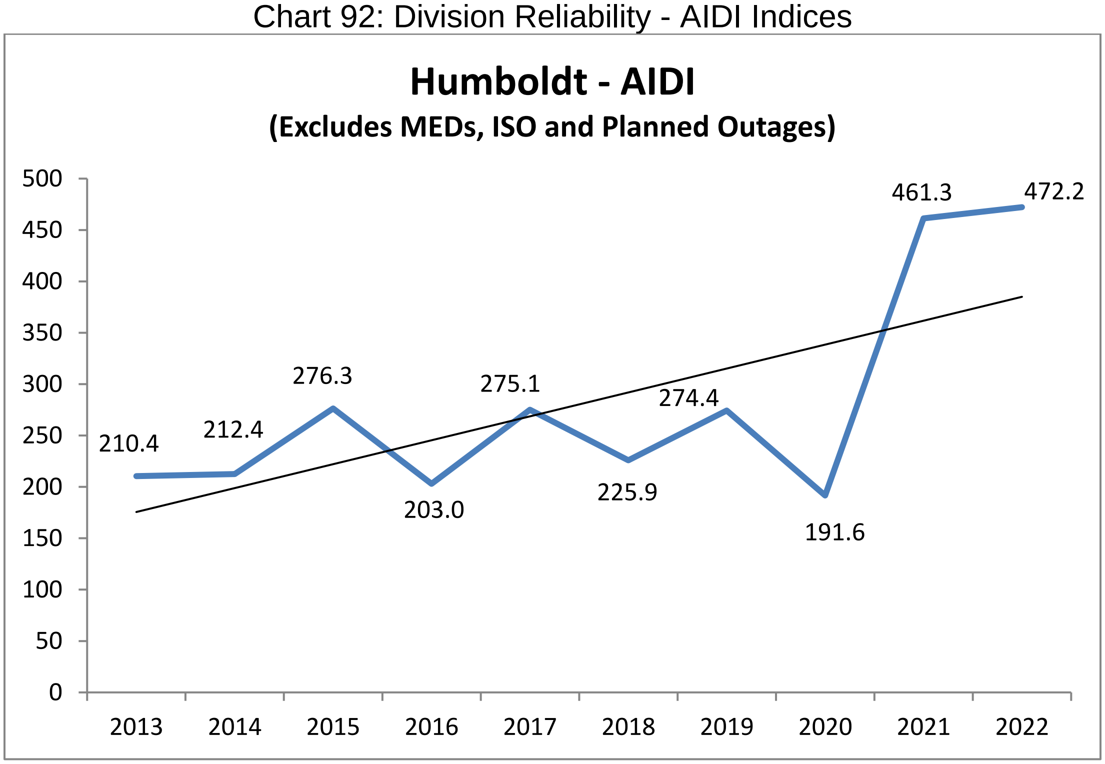


Chart 93: Division Reliability - AIDI Indices

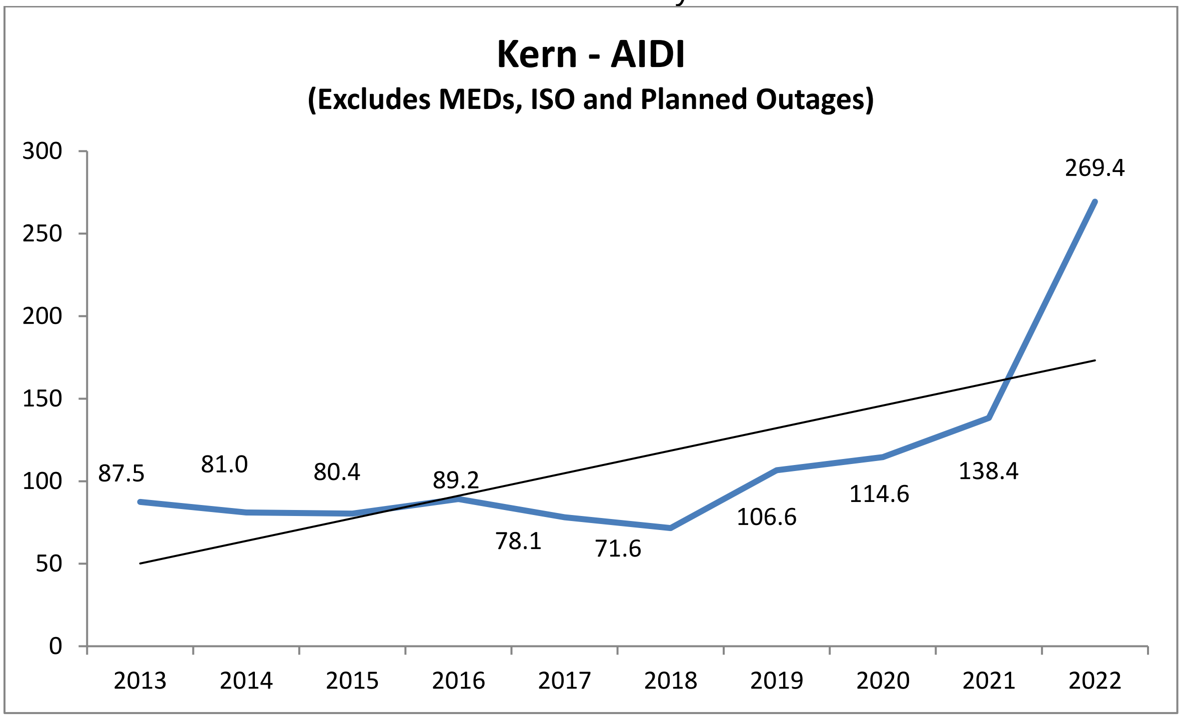


Chart 94: Division Reliability - AIDI Indices

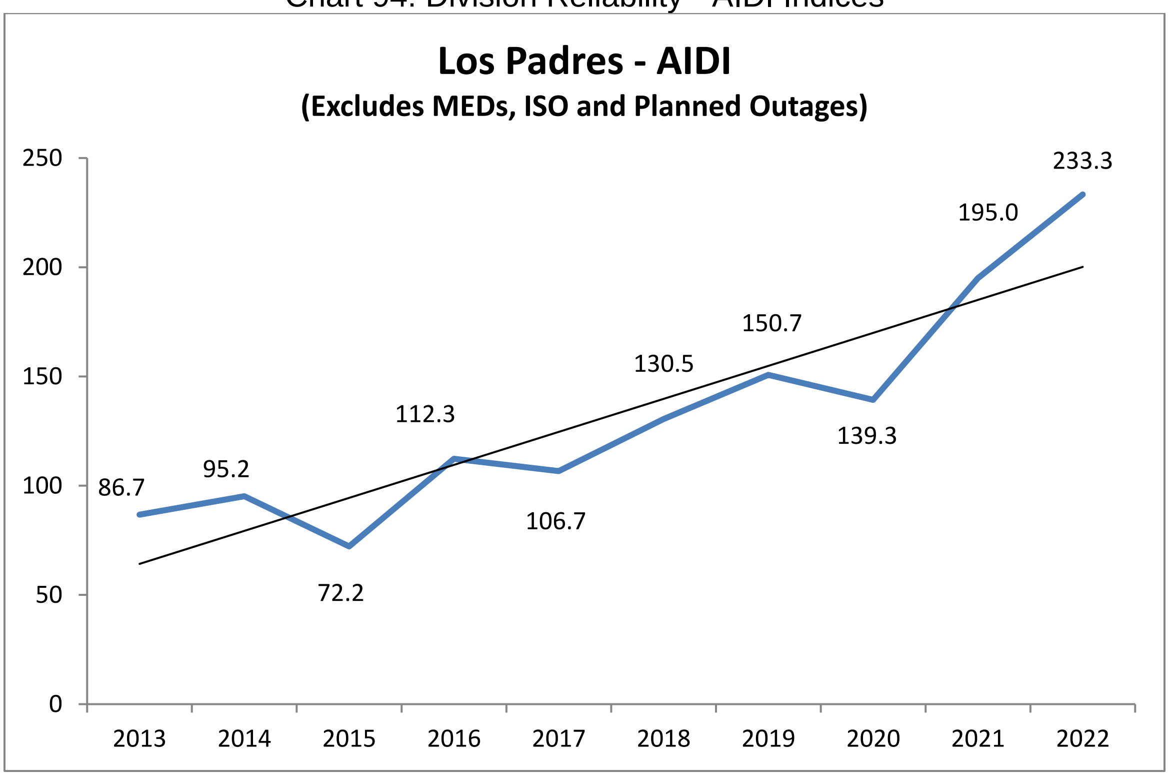


Chart 95: Division Reliability - AIDI Indices

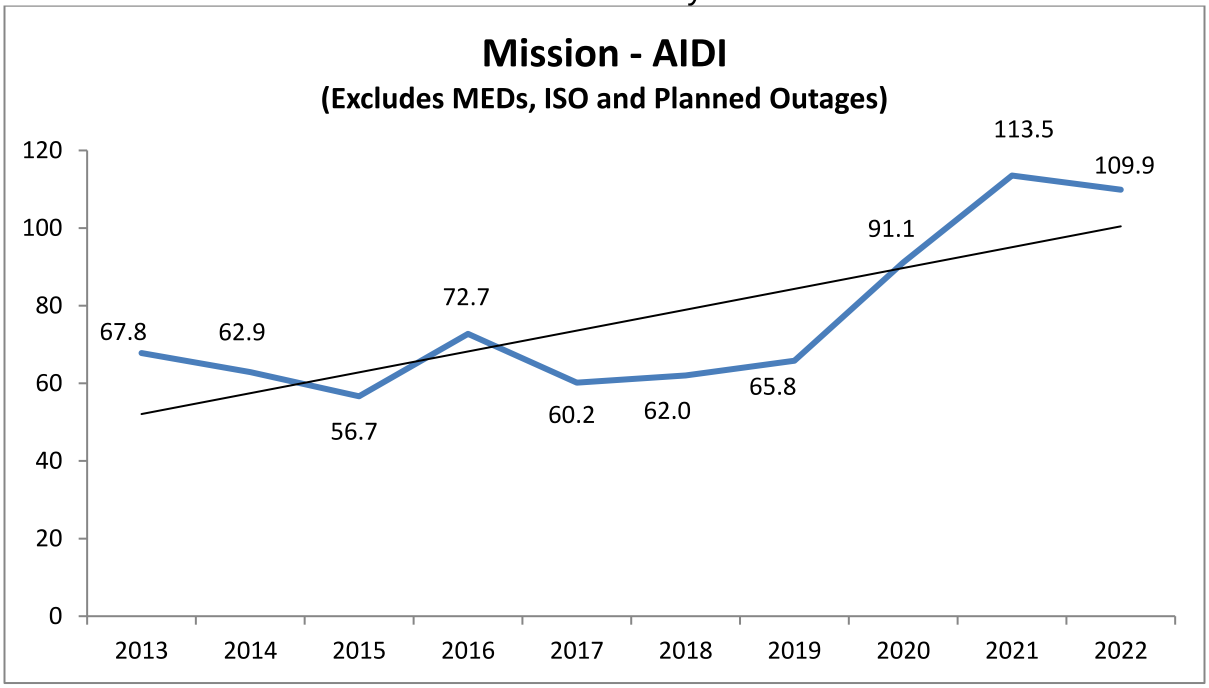


Chart 96: Division Reliability - AIDI Indices

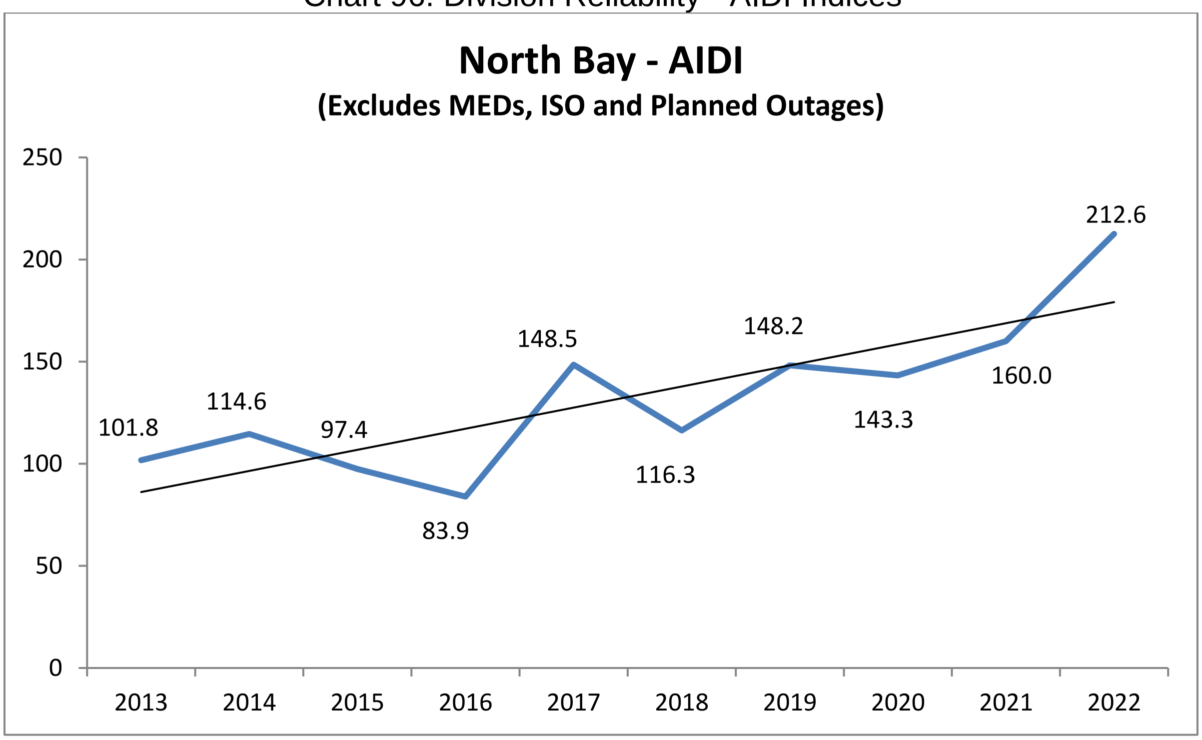


Chart 97: Division Reliability - AIDI Indices

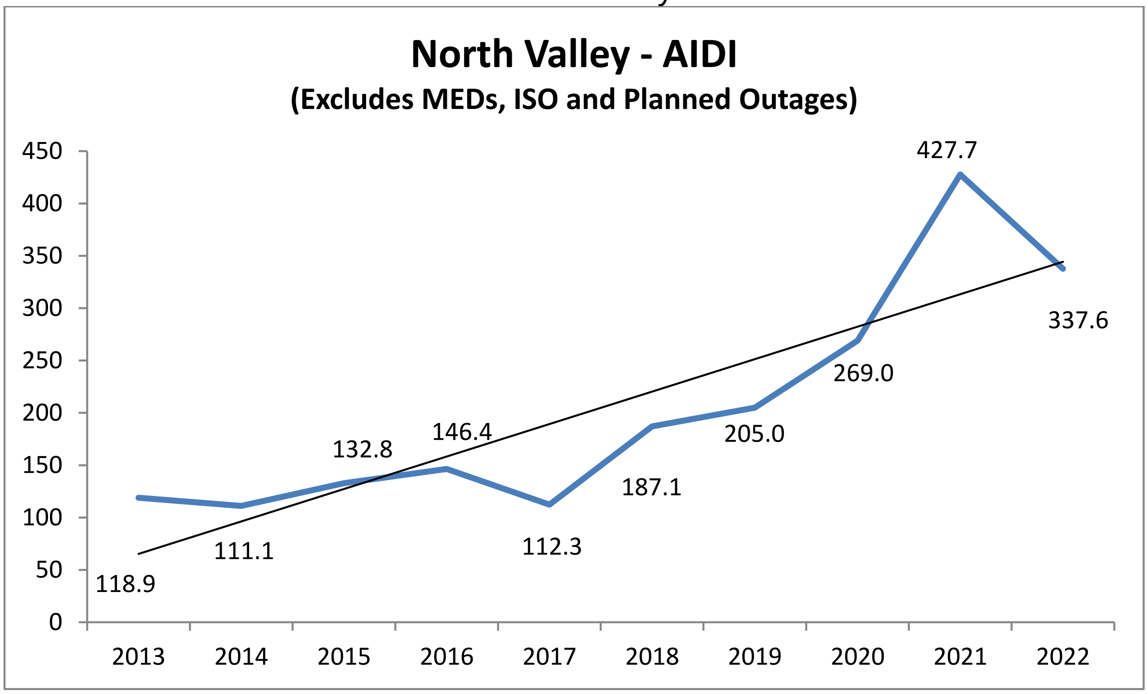


Chart 98: Division Reliability - AIDI Indices

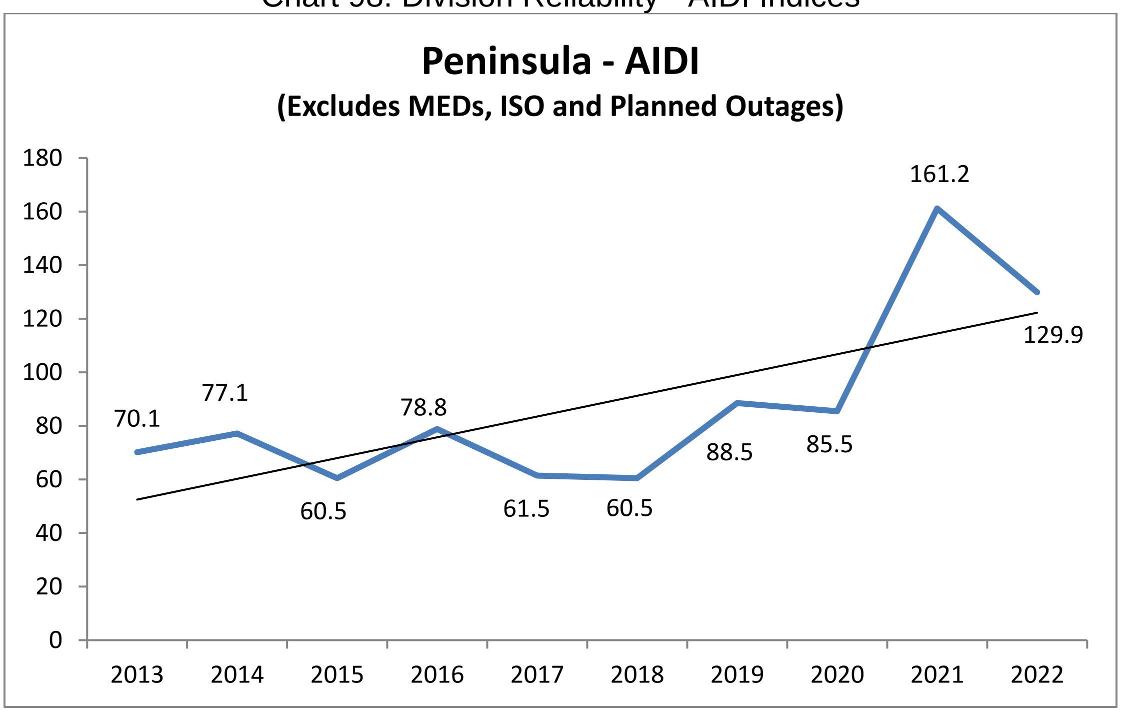


Chart 99: Division Reliability - AIDI Indices

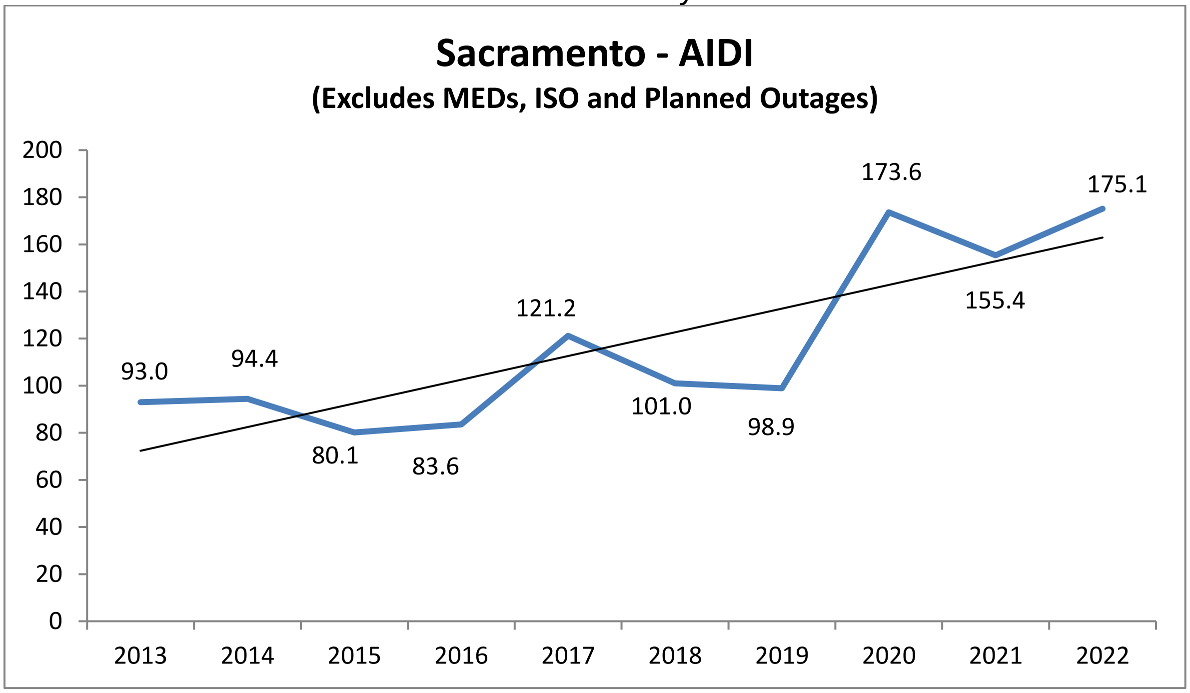


Chart 100: Division Reliability - AIDI Indices

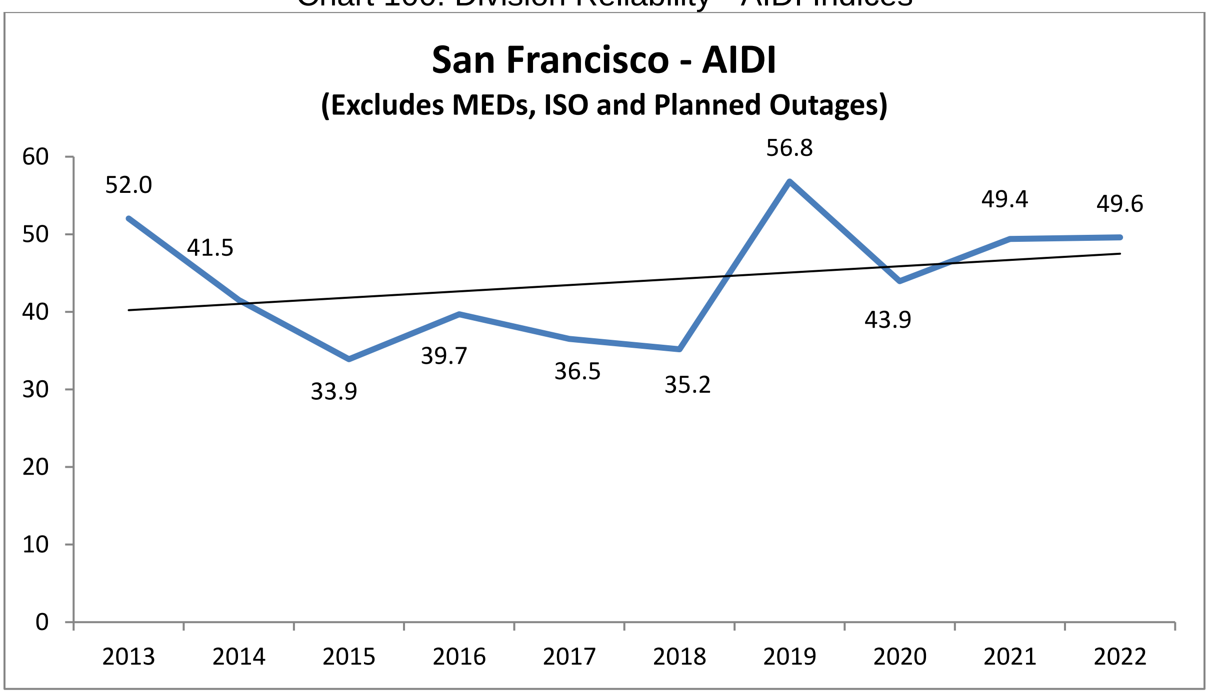


Chart 101: Division Reliability - AIDI Indices

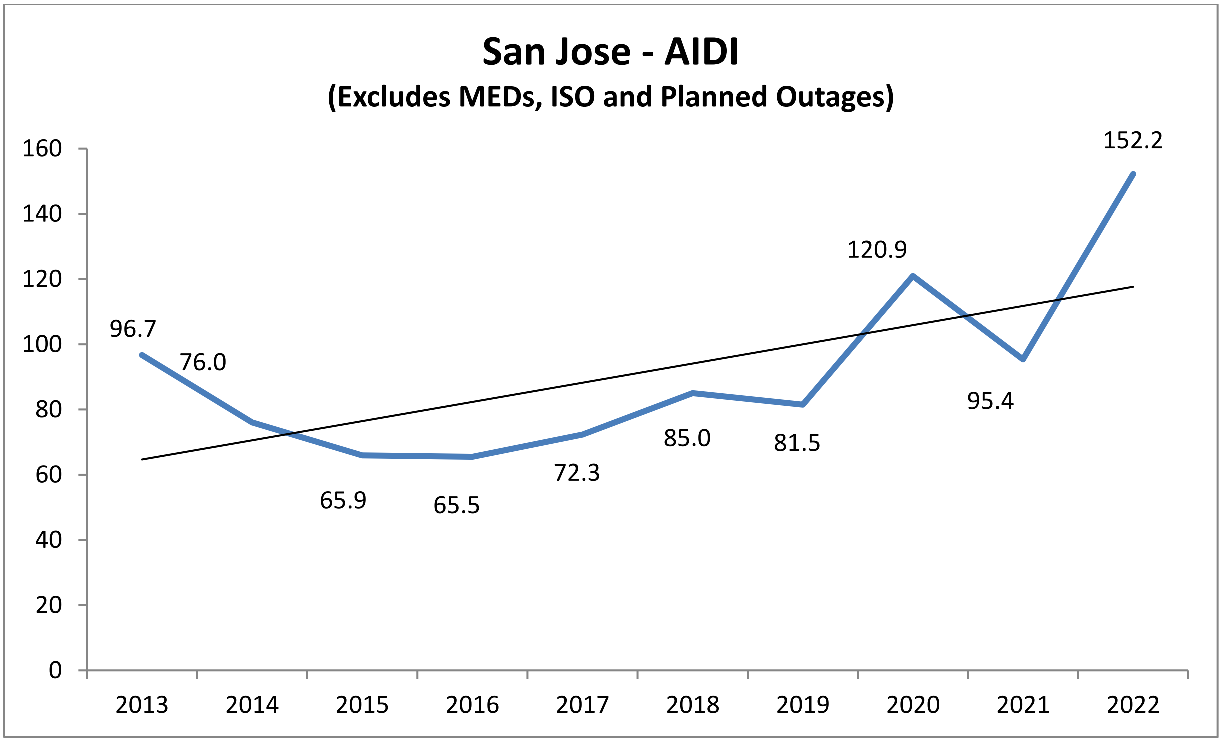


Chart 102: Division Reliability - AIDI Indices

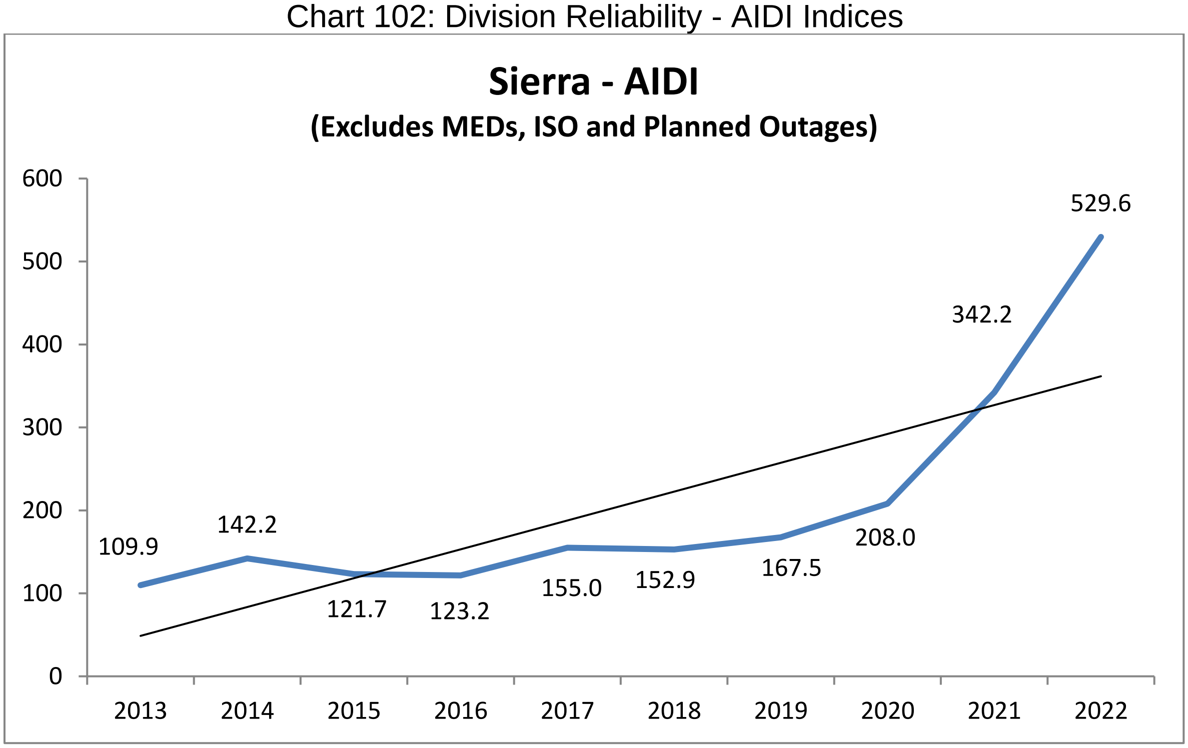


Chart 103: Division Reliability - AIDI Indices

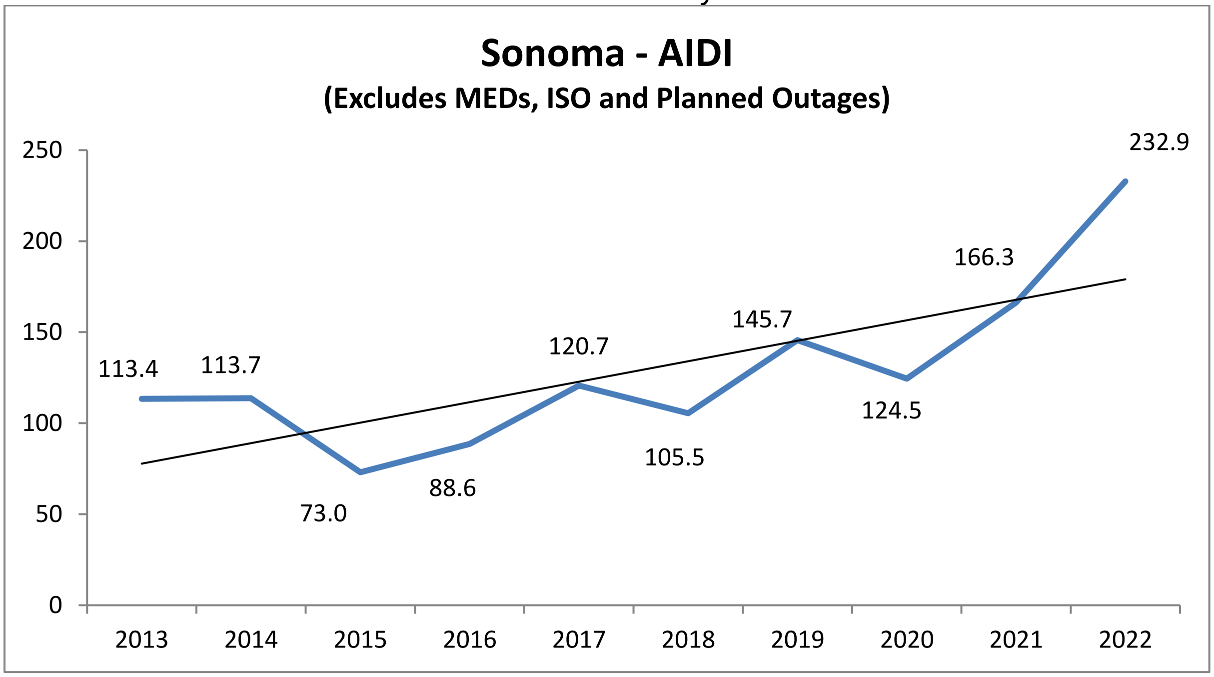


Chart 104: Division Reliability - AIDI Indices

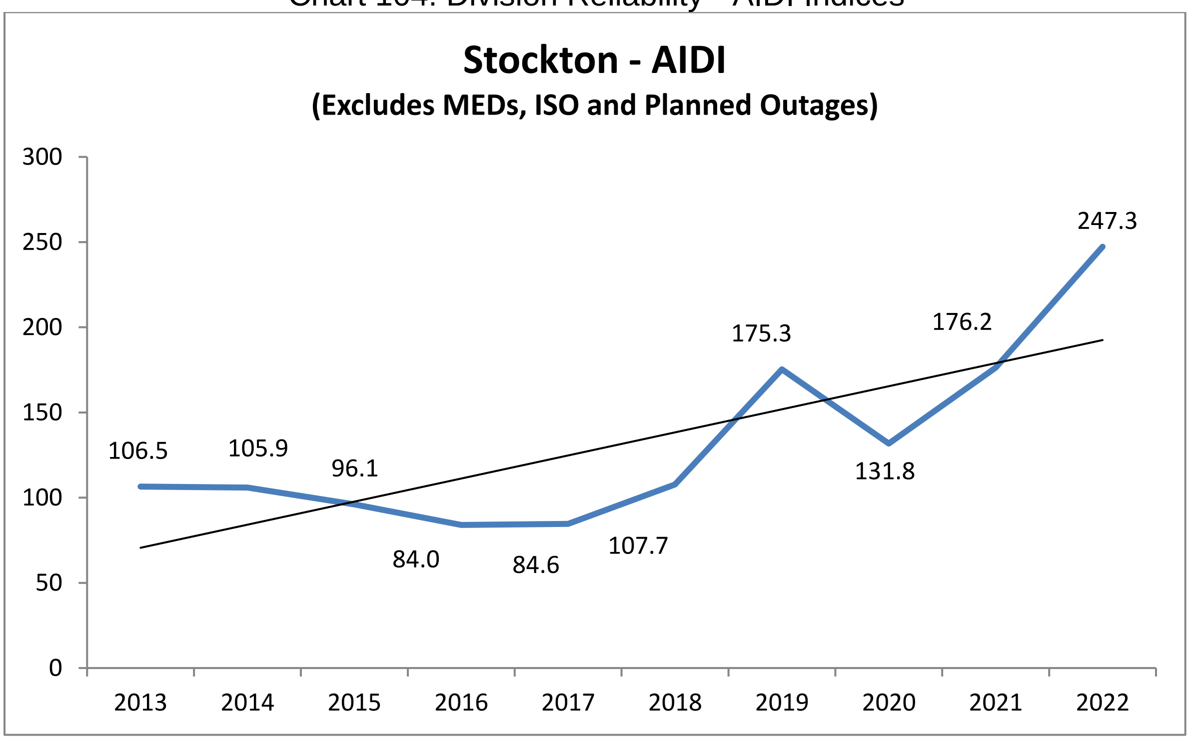
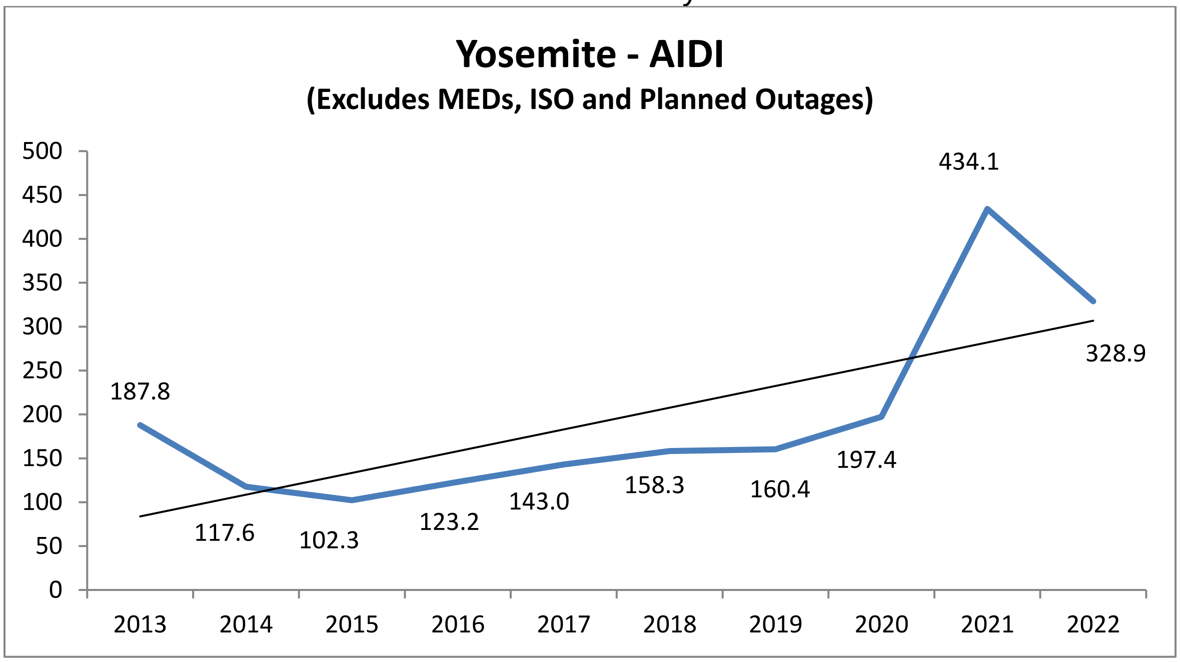


Chart 105: Division Reliability - AIDI Indices



2. AIFI Performance Results (MED Excluded)

Chart 106: Division Reliability - AIFI Indices

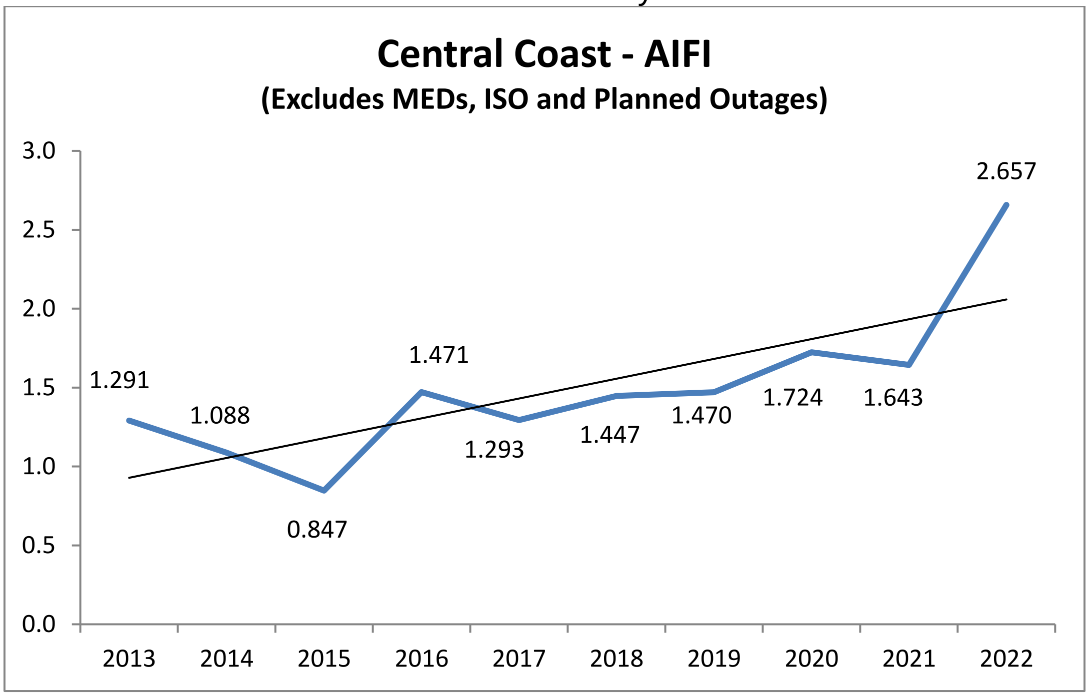


Chart 107: Division Reliability - AIFI Indices

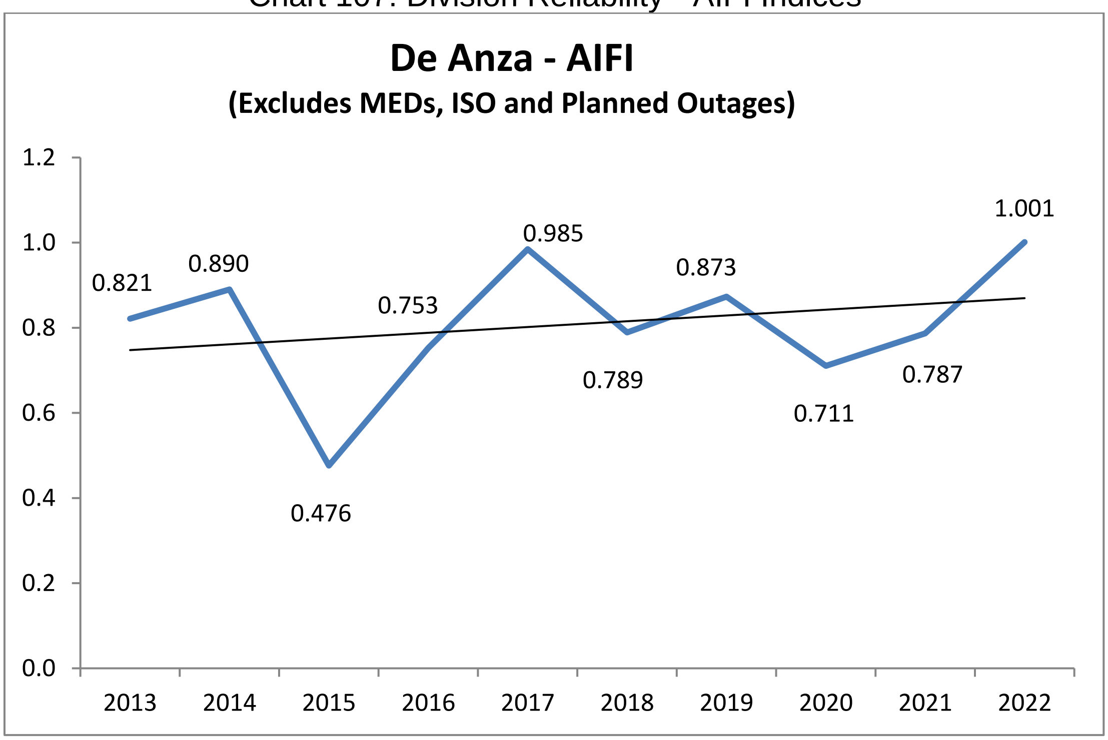


Chart 108: Division Reliability - AIFI Indices

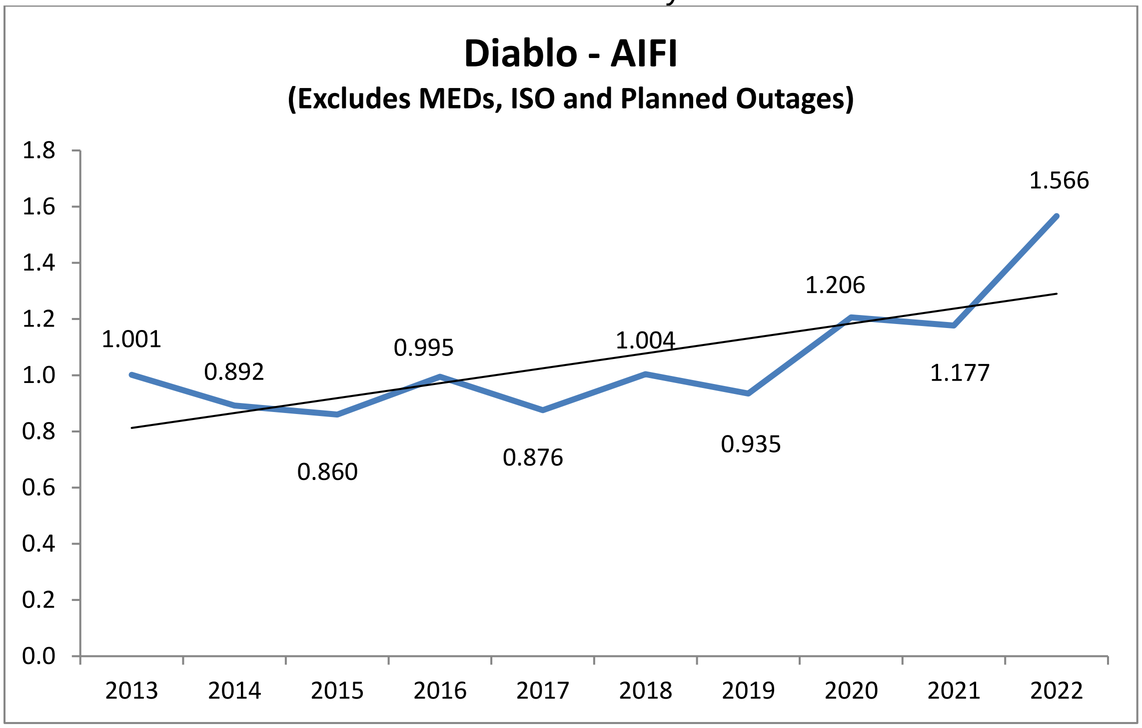


Chart 109: Division Reliability - AIFI Indices

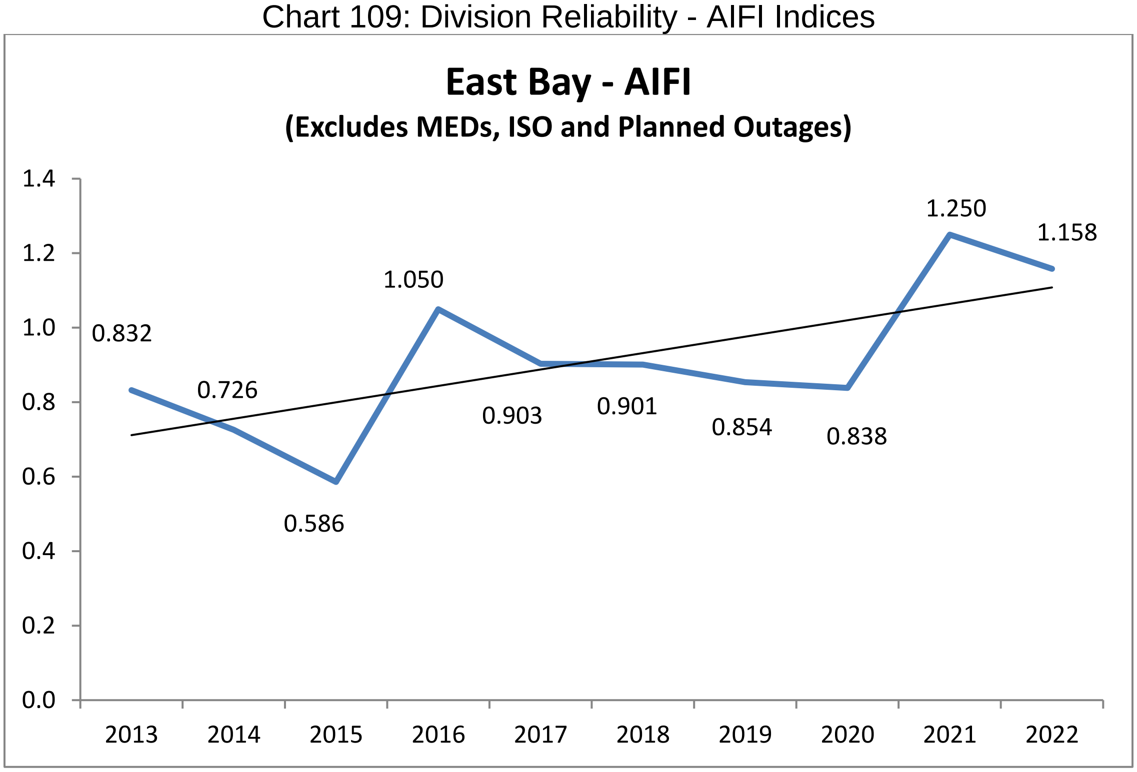


Chart 110: Division Reliability - AIFI Indices

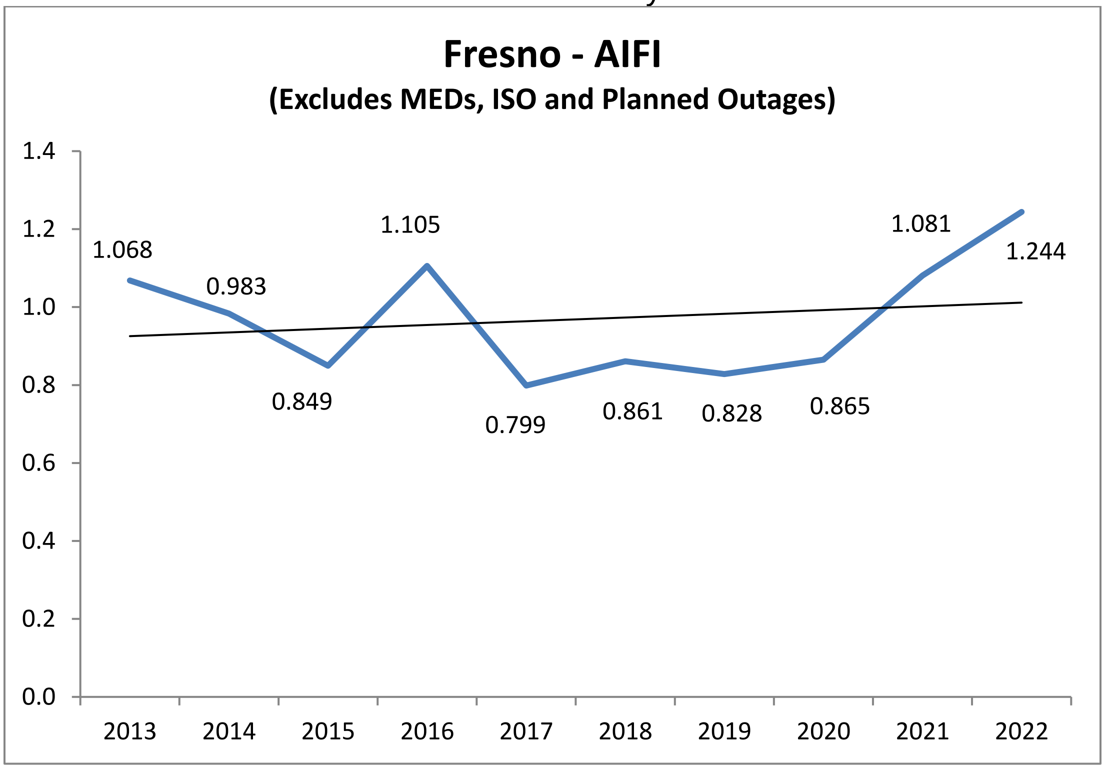


Chart 111: Division Reliability - AIFI Indices

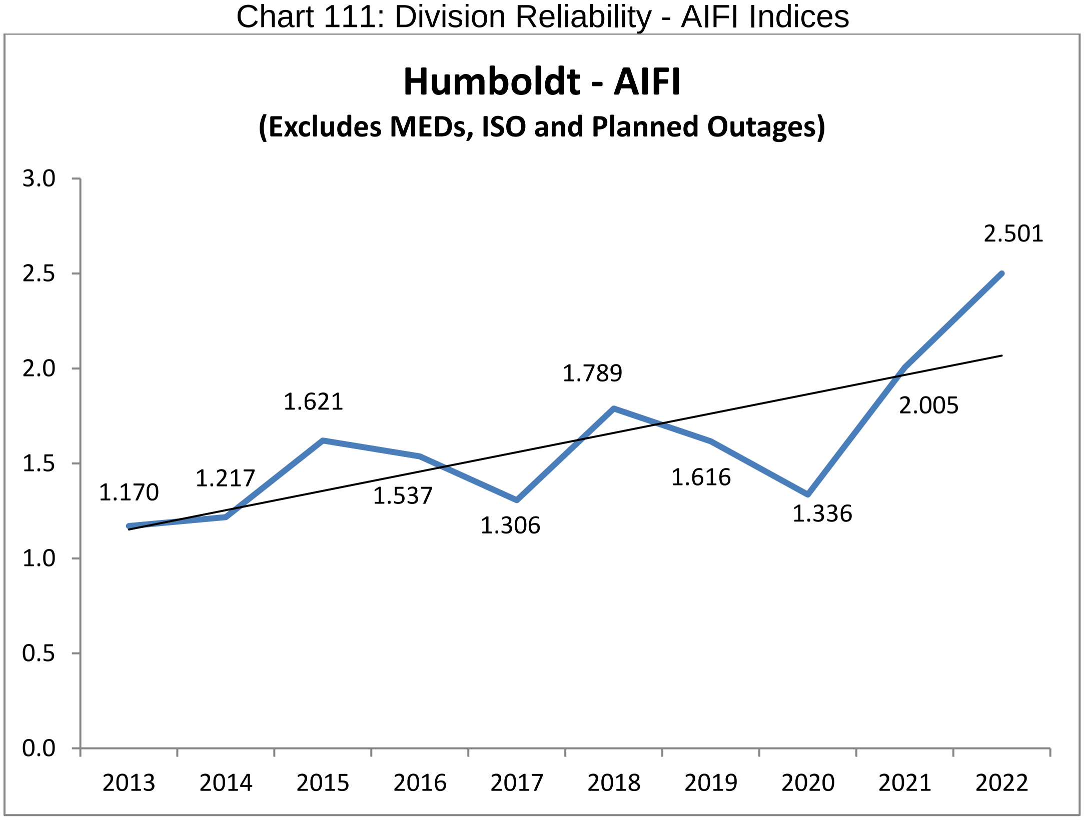


Chart 112: Division Reliability - AIFI Indices

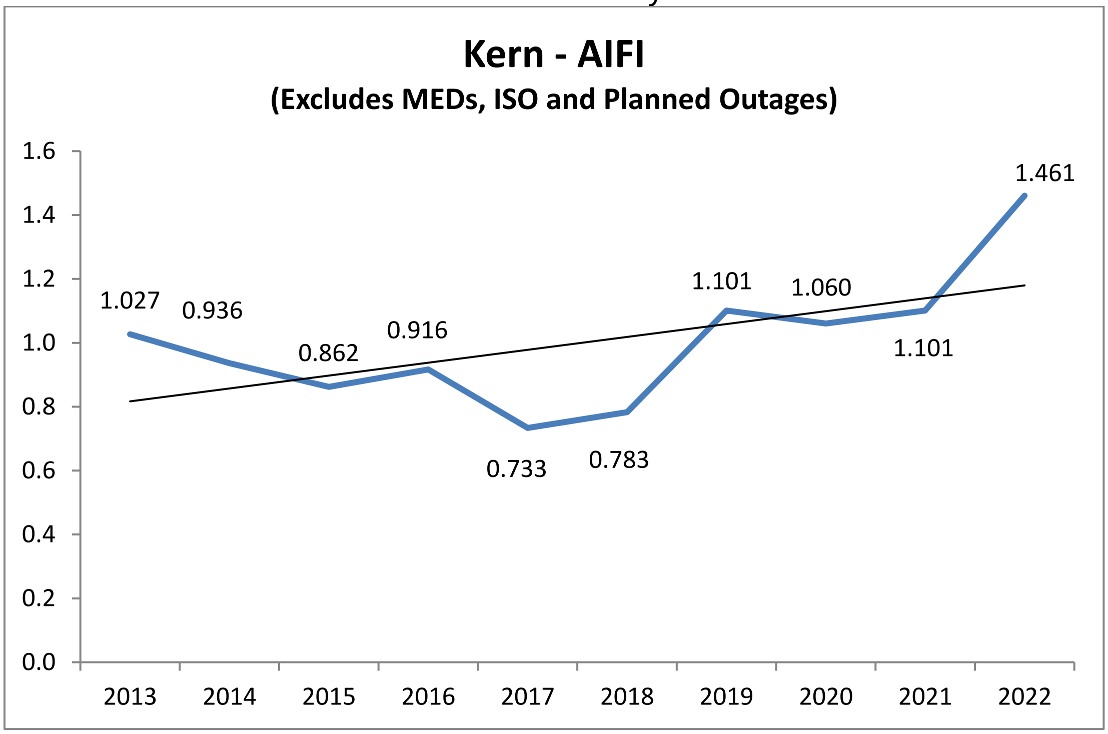


Chart 113: Division Reliability - AIFI Indices

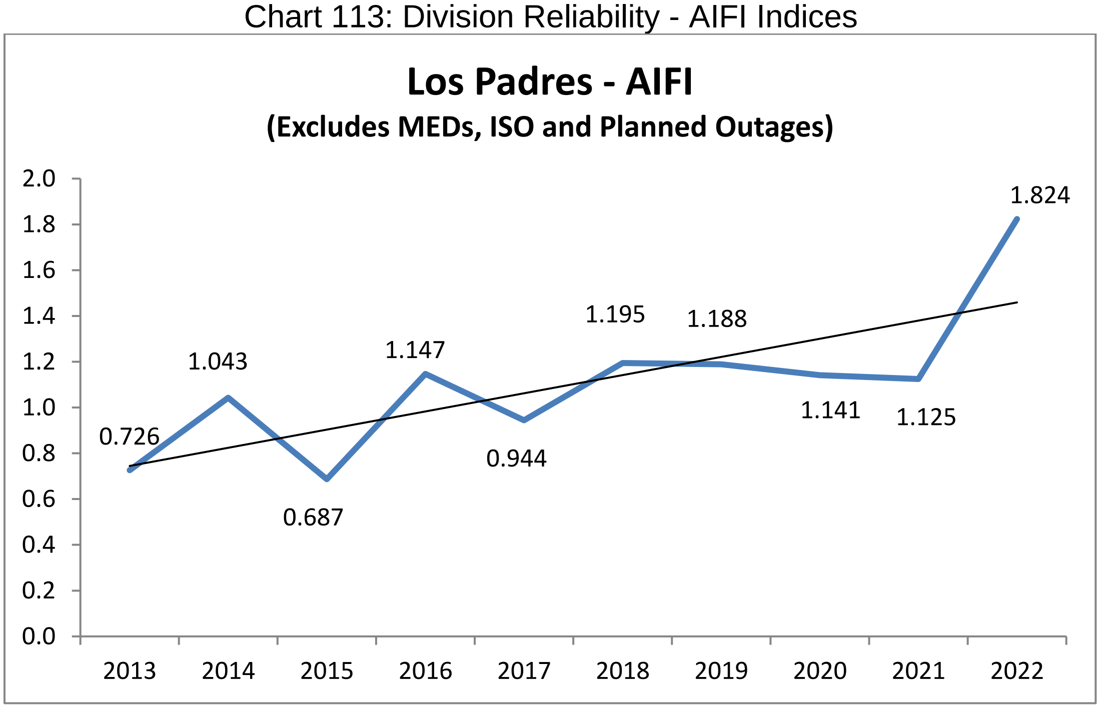


Chart 114: Division Reliability - AIFI Indices

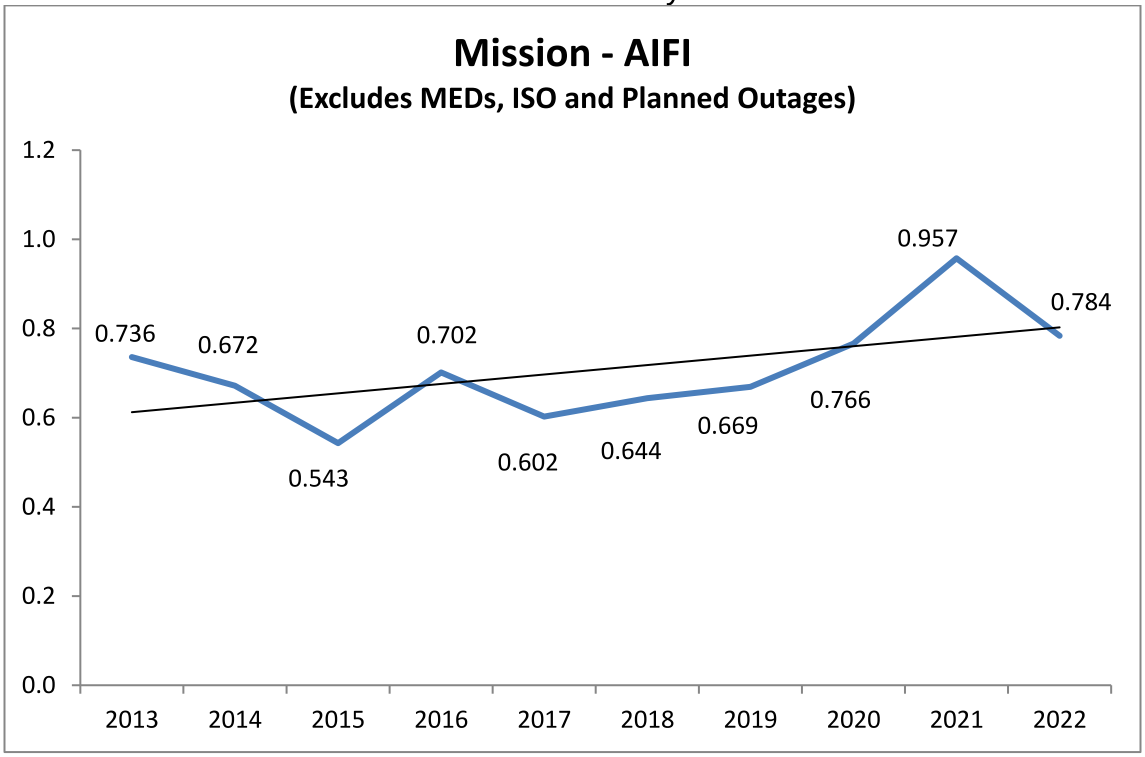


Chart 115: Division Reliability - AIFI Indices

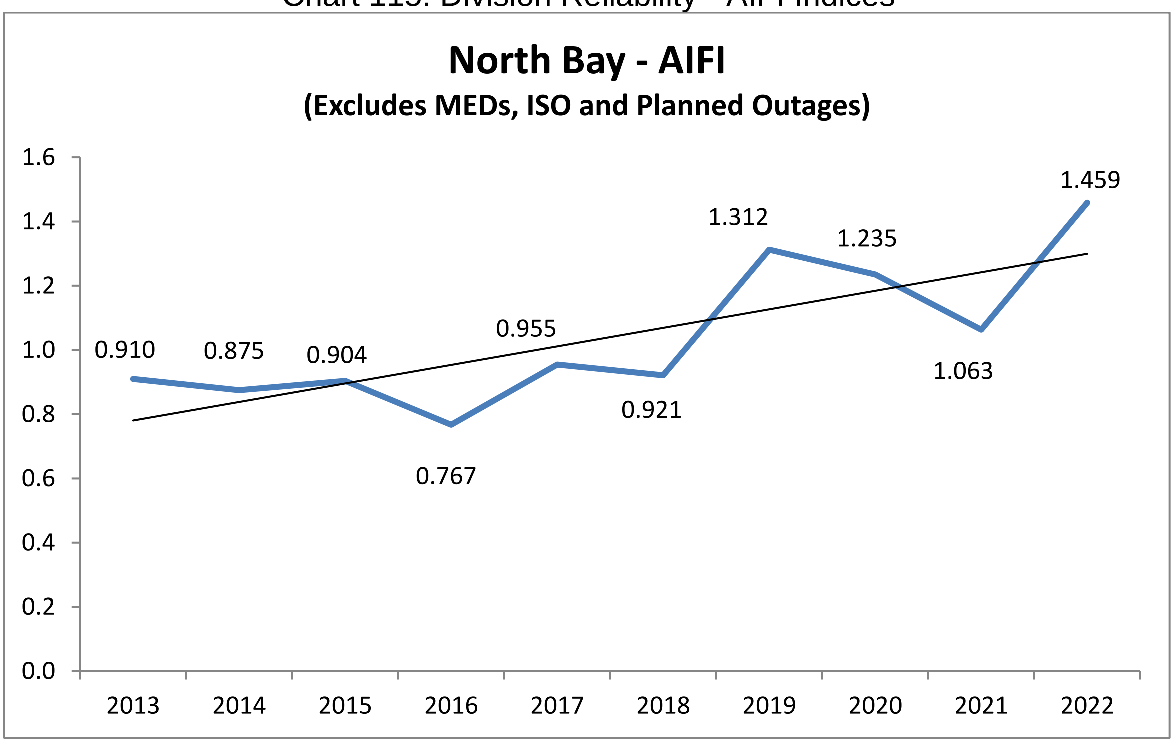


Chart 116: Division Reliability - AIFI Indices

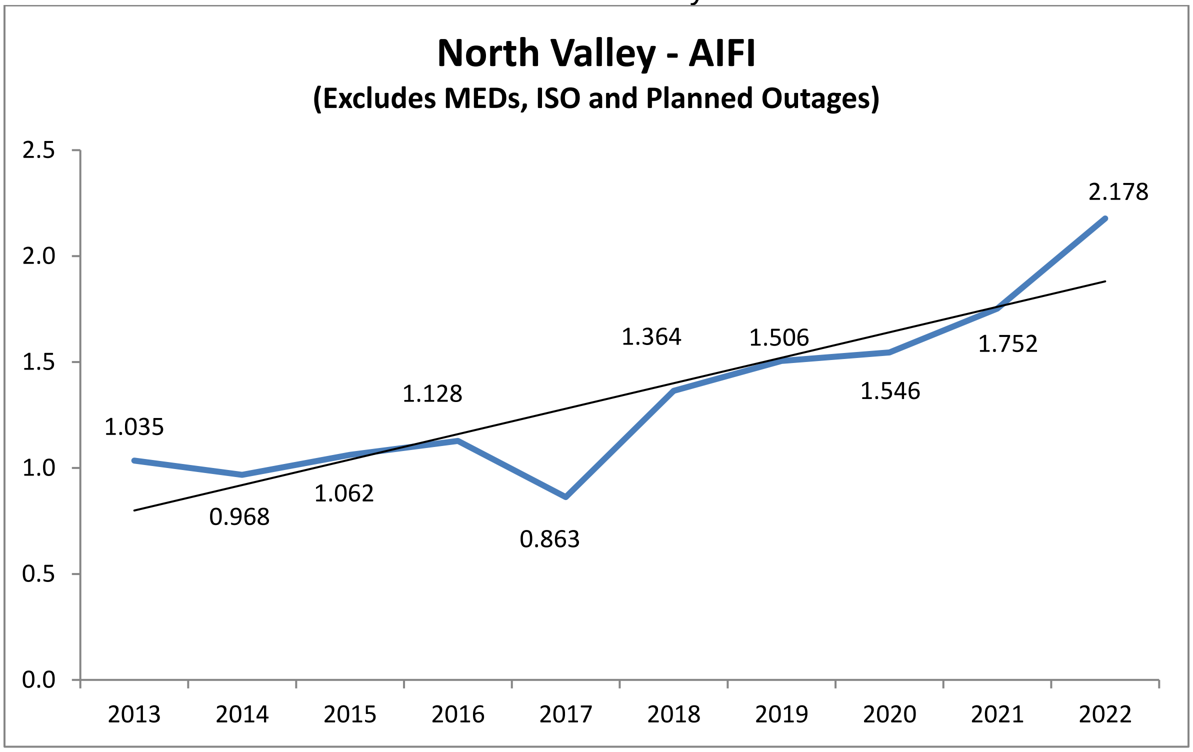


Chart 117: Division Reliability - AIFI Indices

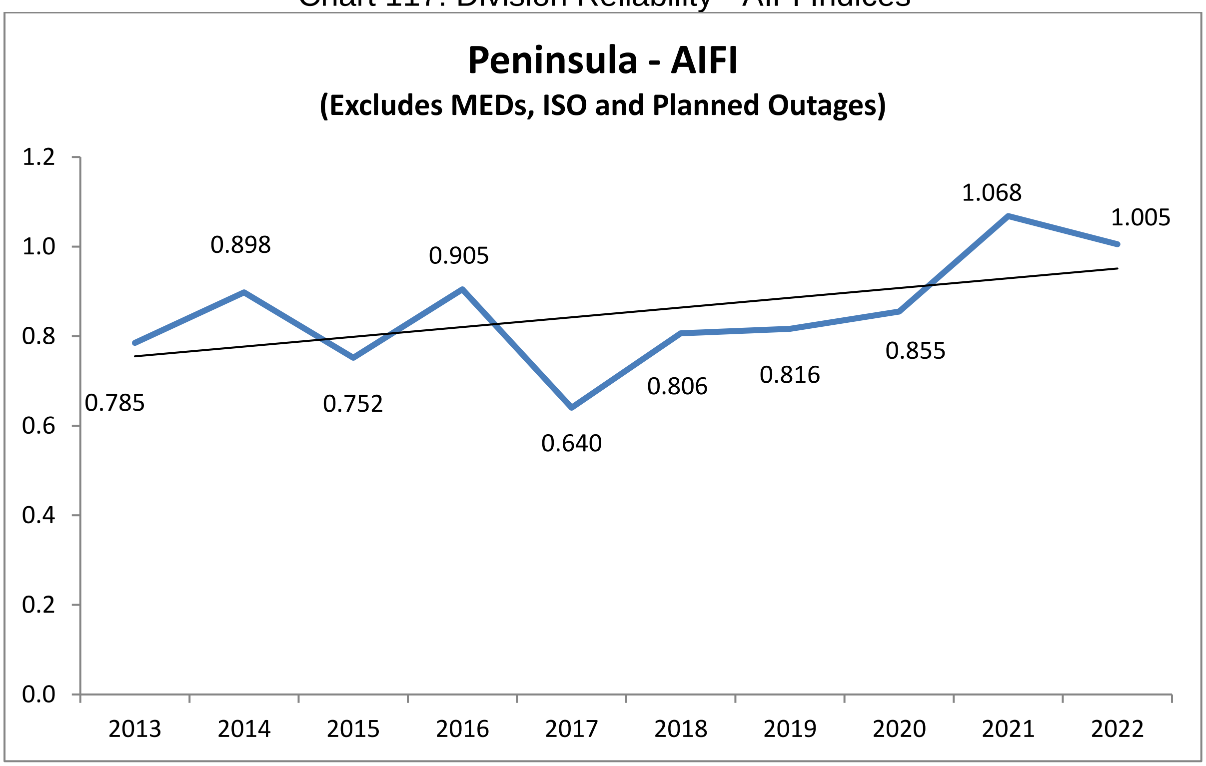


Chart 118: Division Reliability - AIFI Indices

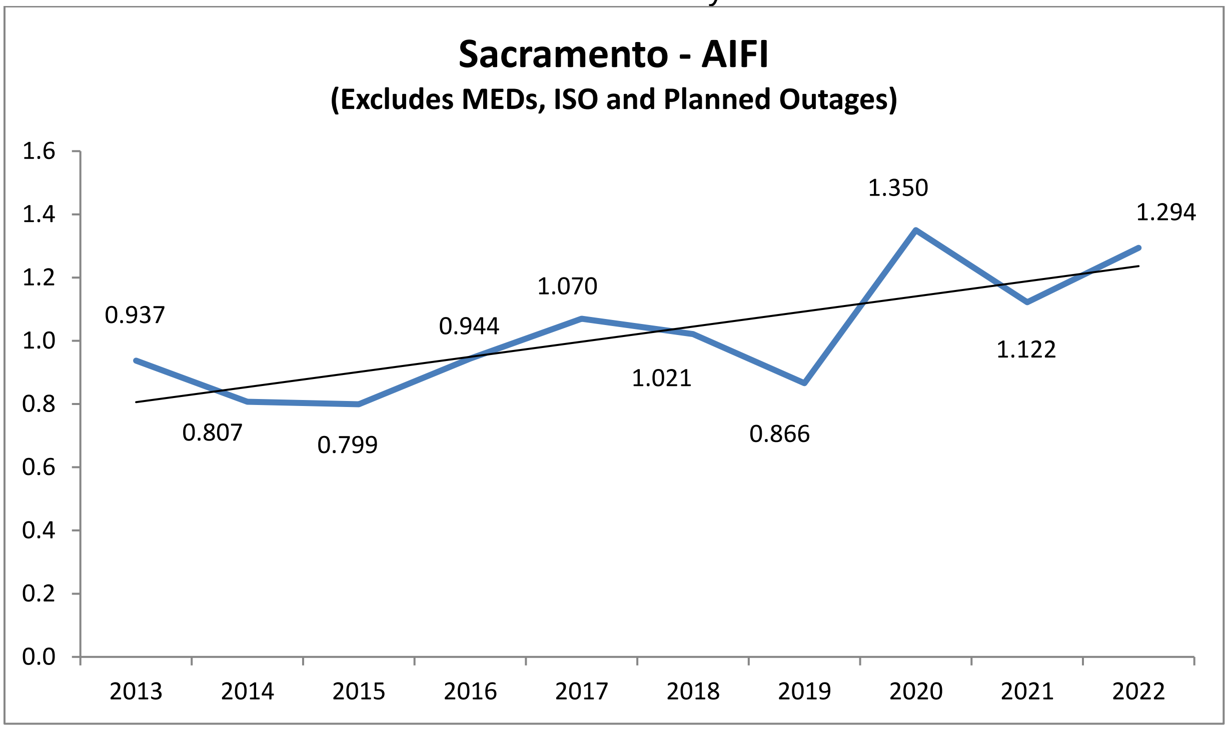


Chart 119: Division Reliability - AIFI Indices

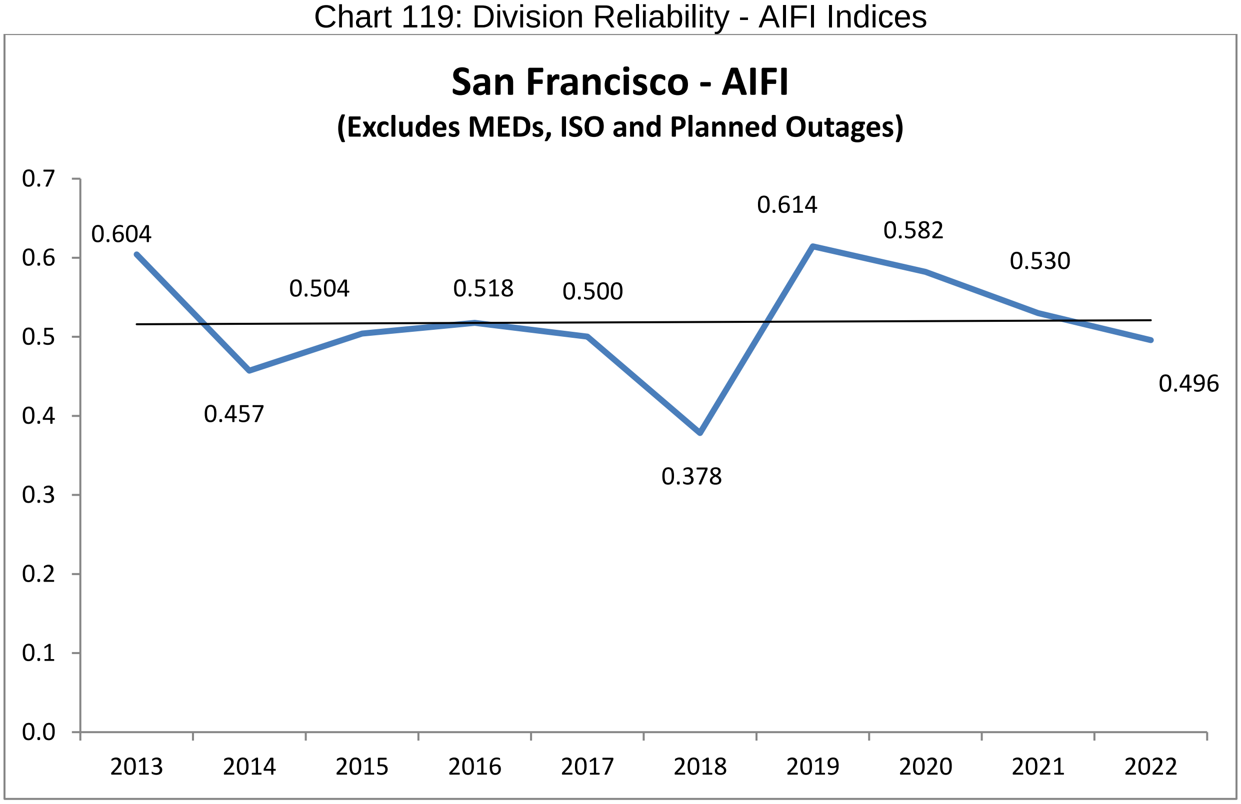


Chart 120: Division Reliability - AIFI Indices

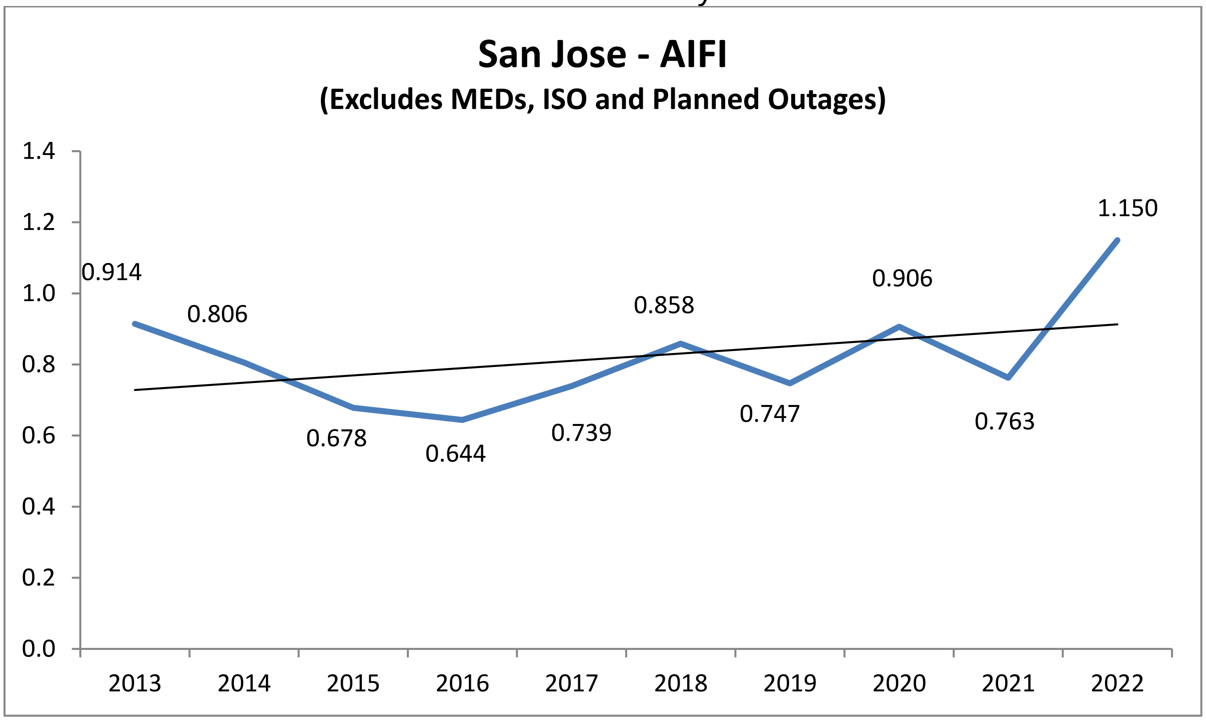


Chart 121: Division Reliability - AIFI Indices

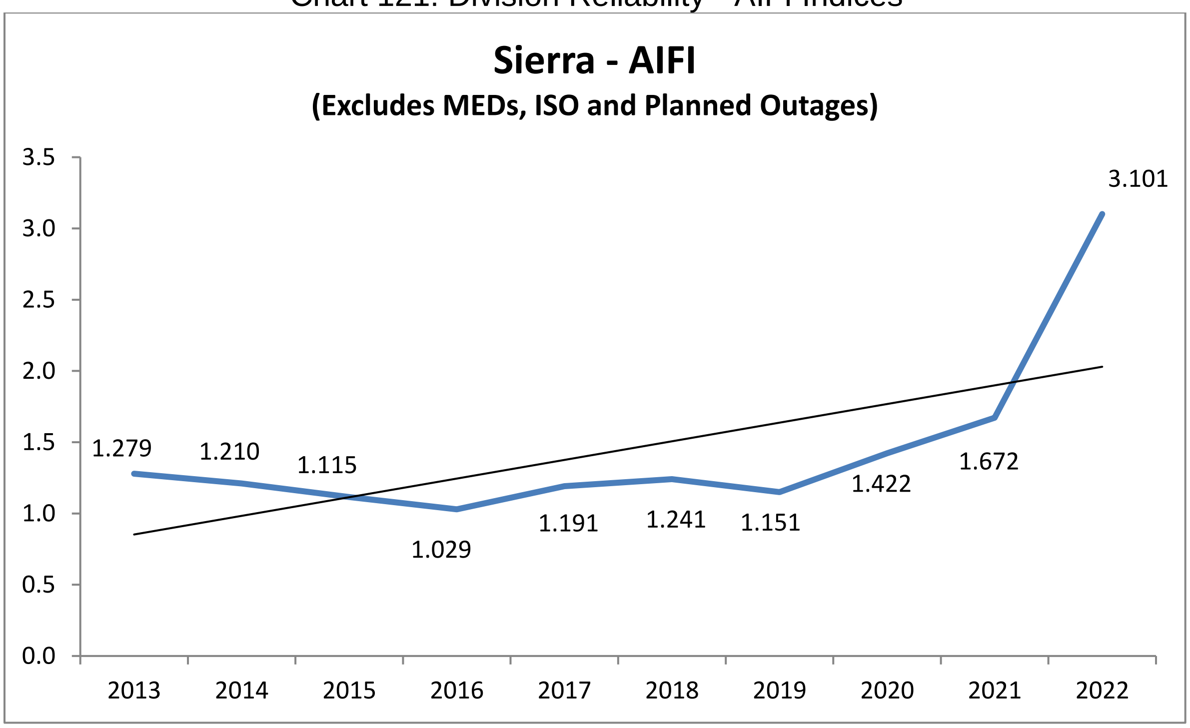


Chart 122: Division Reliability - AIFI Indices

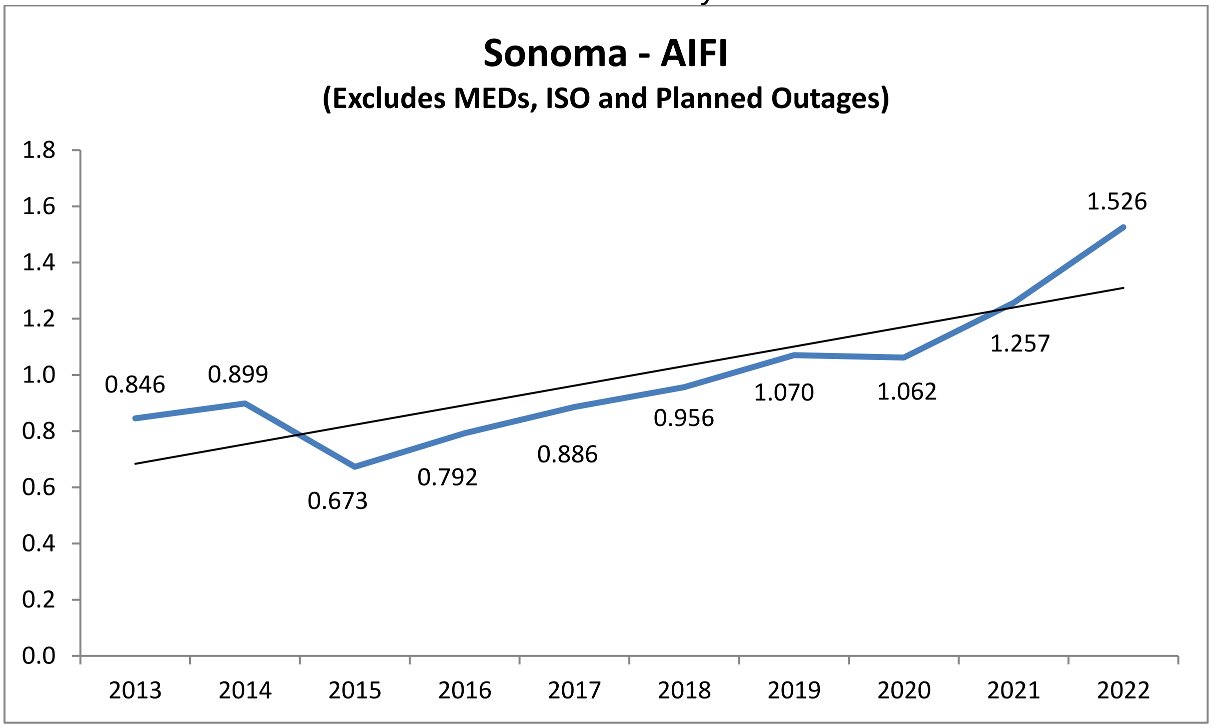


Chart 123: Division Reliability - AIFI Indices

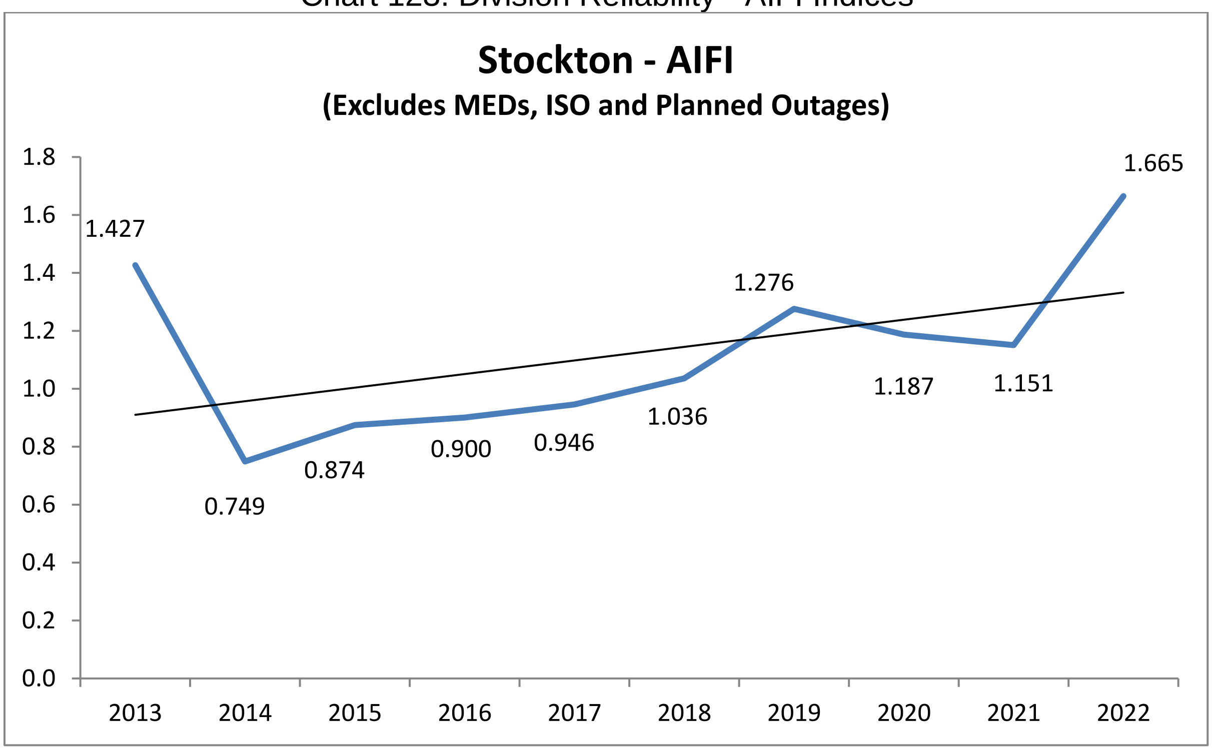
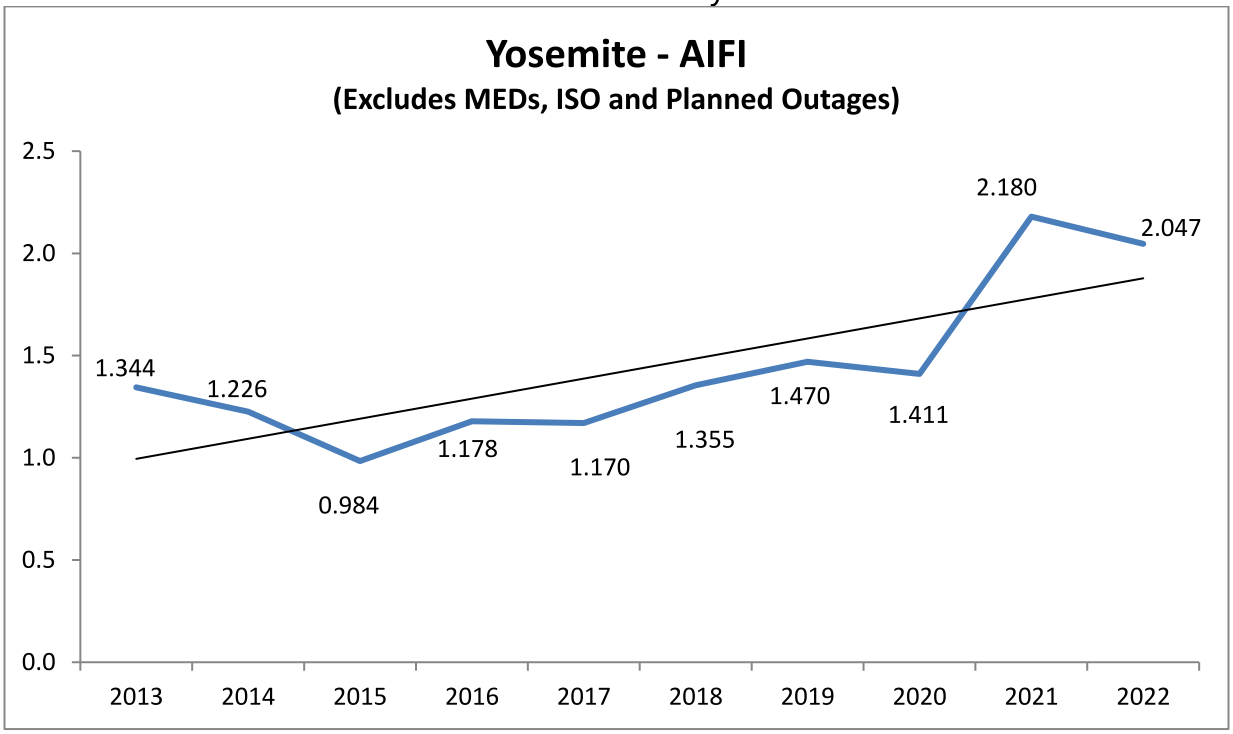


Chart 124: Division Reliability - AIFI Indices



3. MAIFI Performance Results (MED Excluded)

Chart 125: Division Reliability - MAIFI Indices

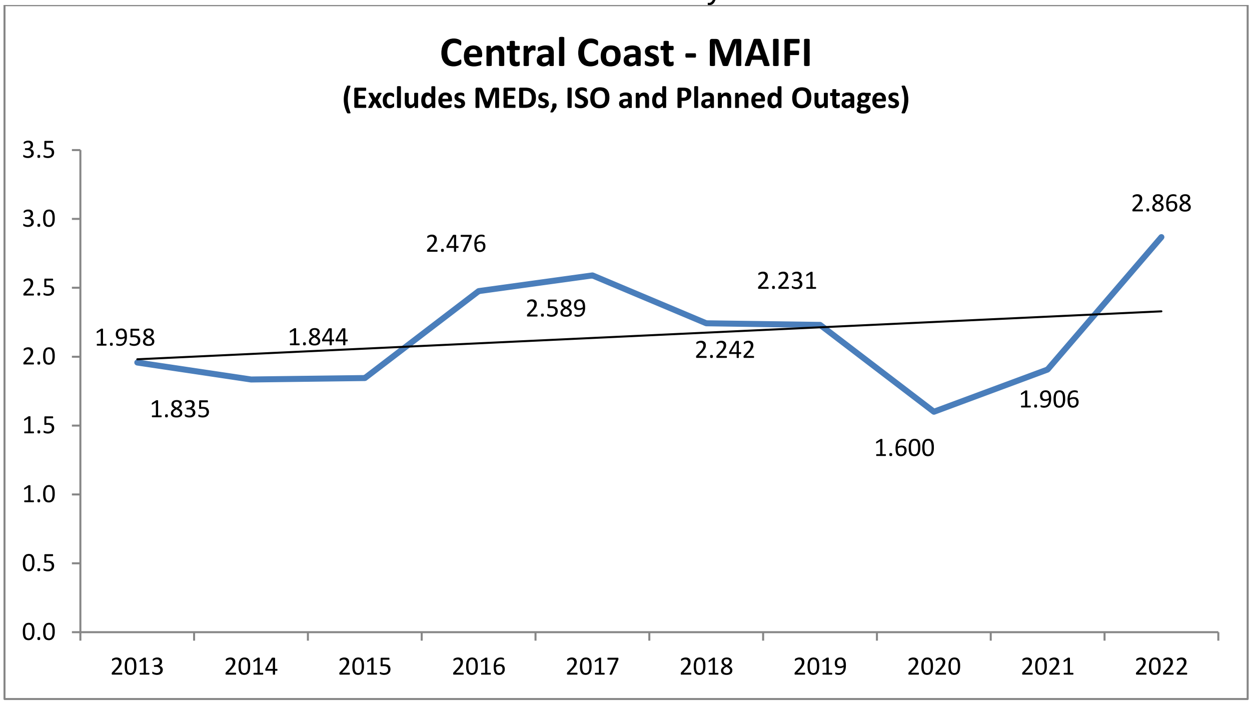


Chart 126: Division Reliability - MAIFI Indices

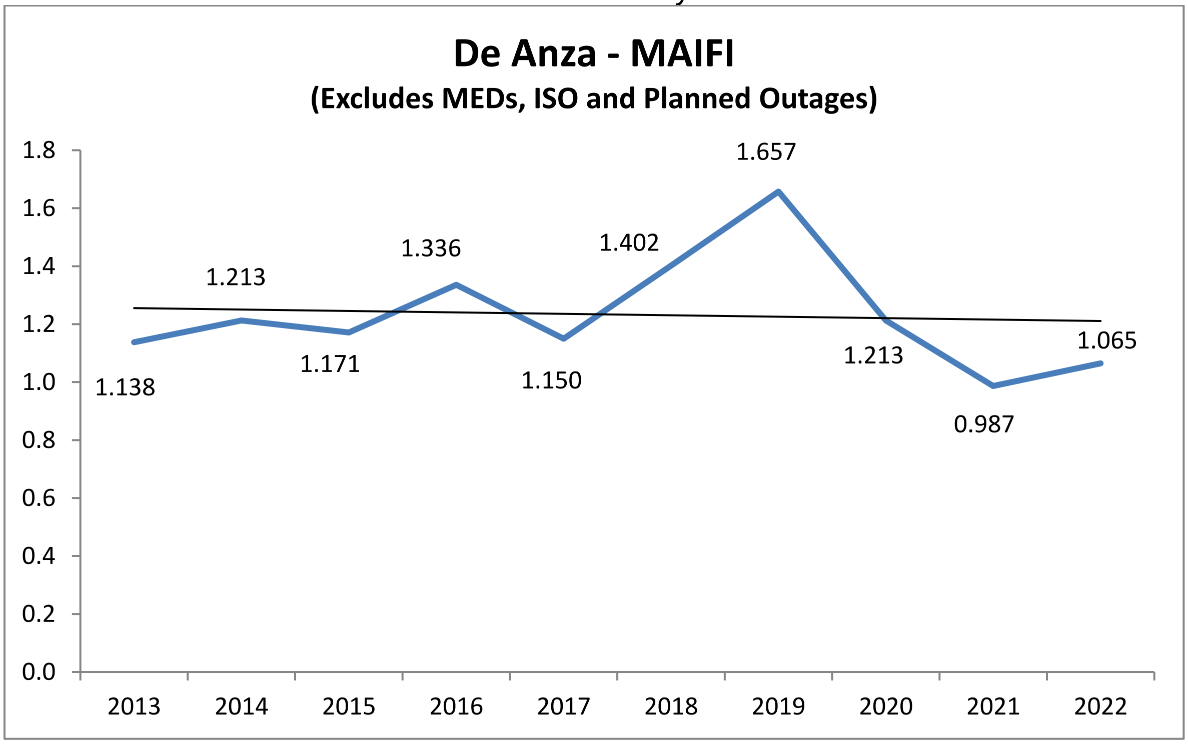


Chart 127: Division Reliability - MAIFI Indices

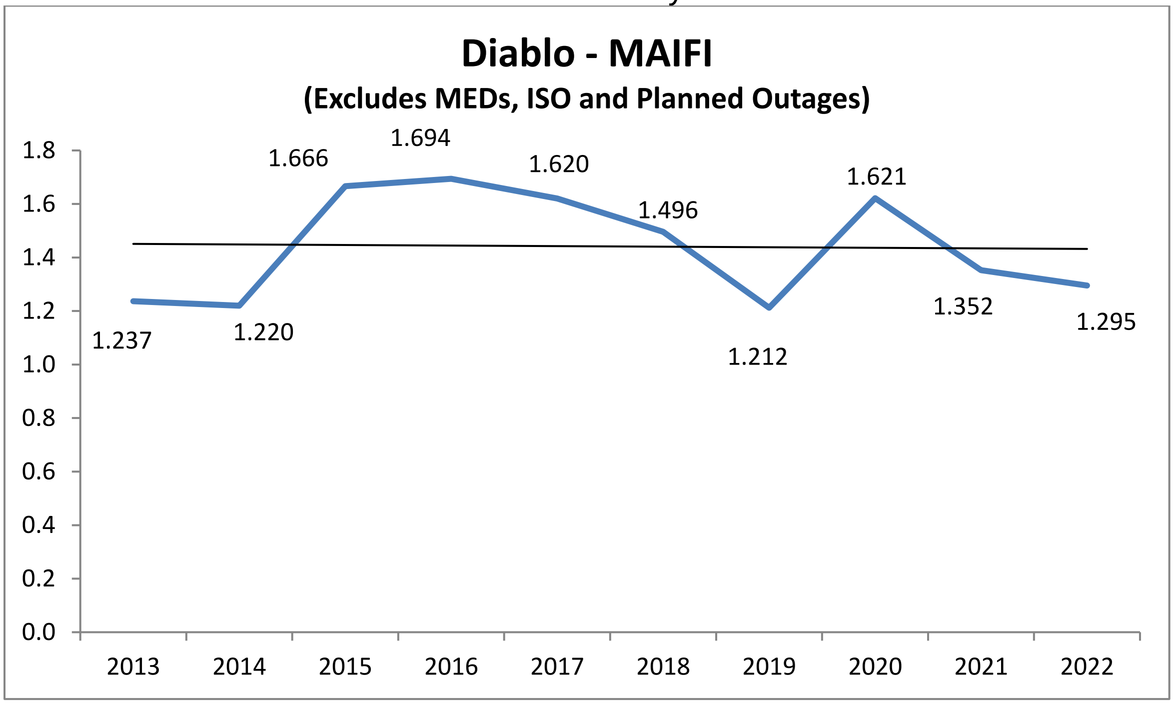


Chart 128: Division Reliability - MAIFI Indices

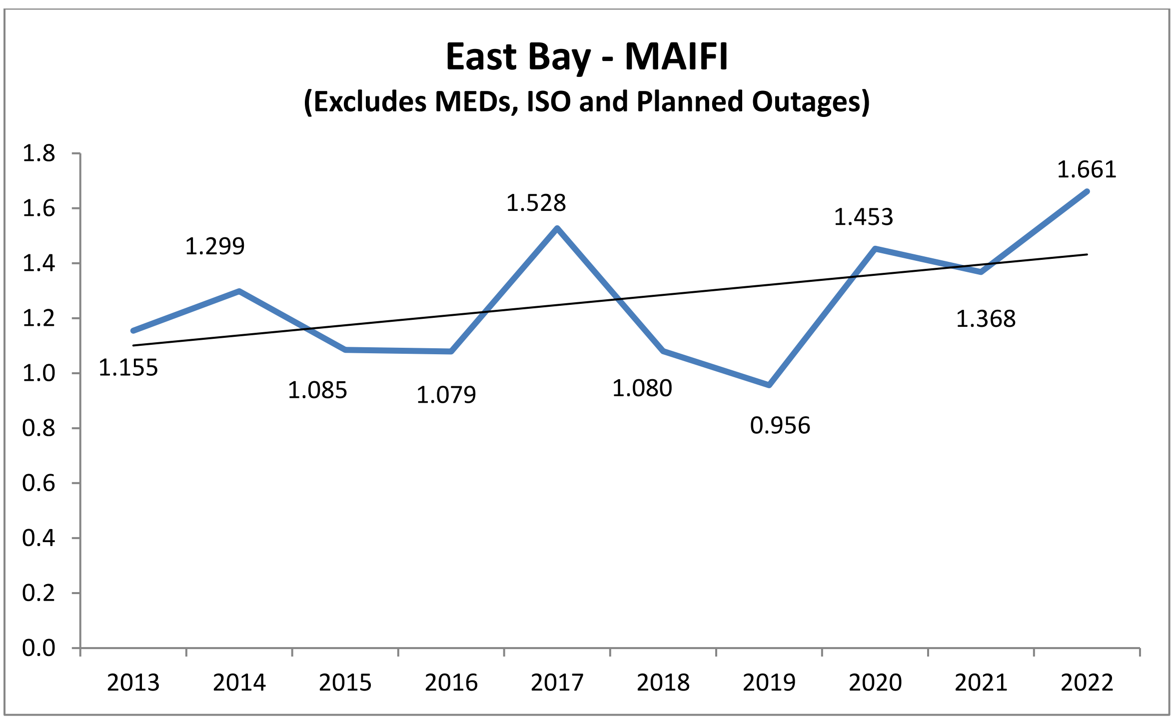


Chart 129: Division Reliability - MAIFI Indices

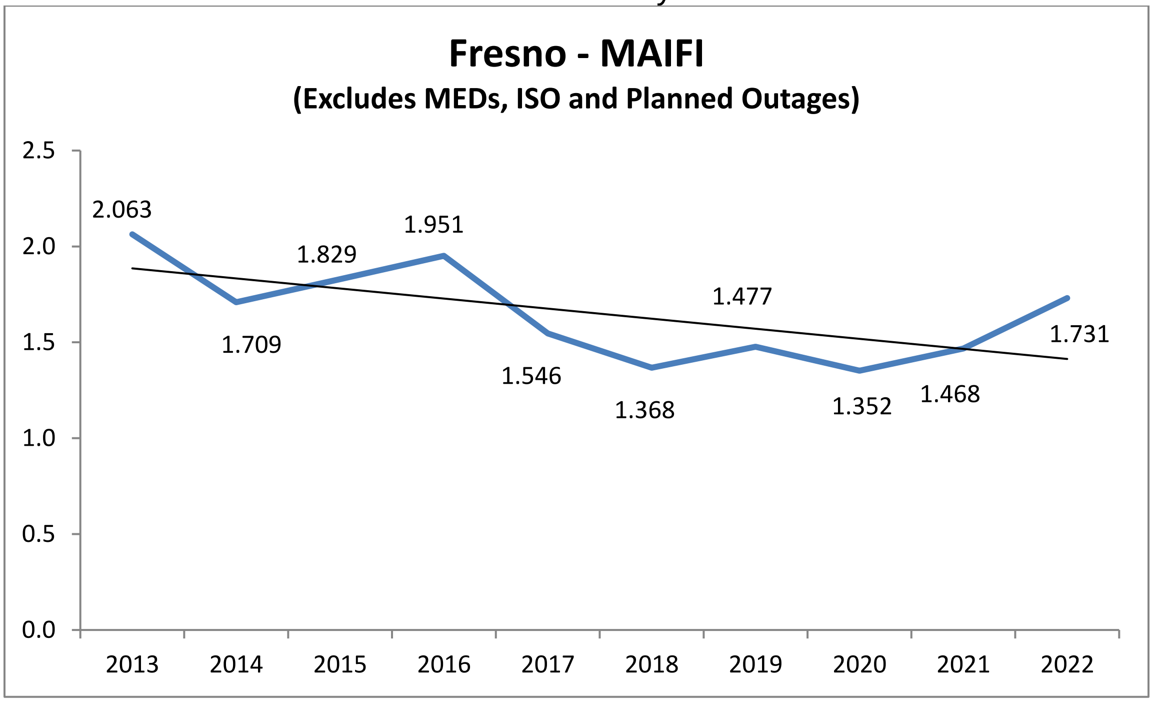


Chart 130: Division Reliability - MAIFI Indices

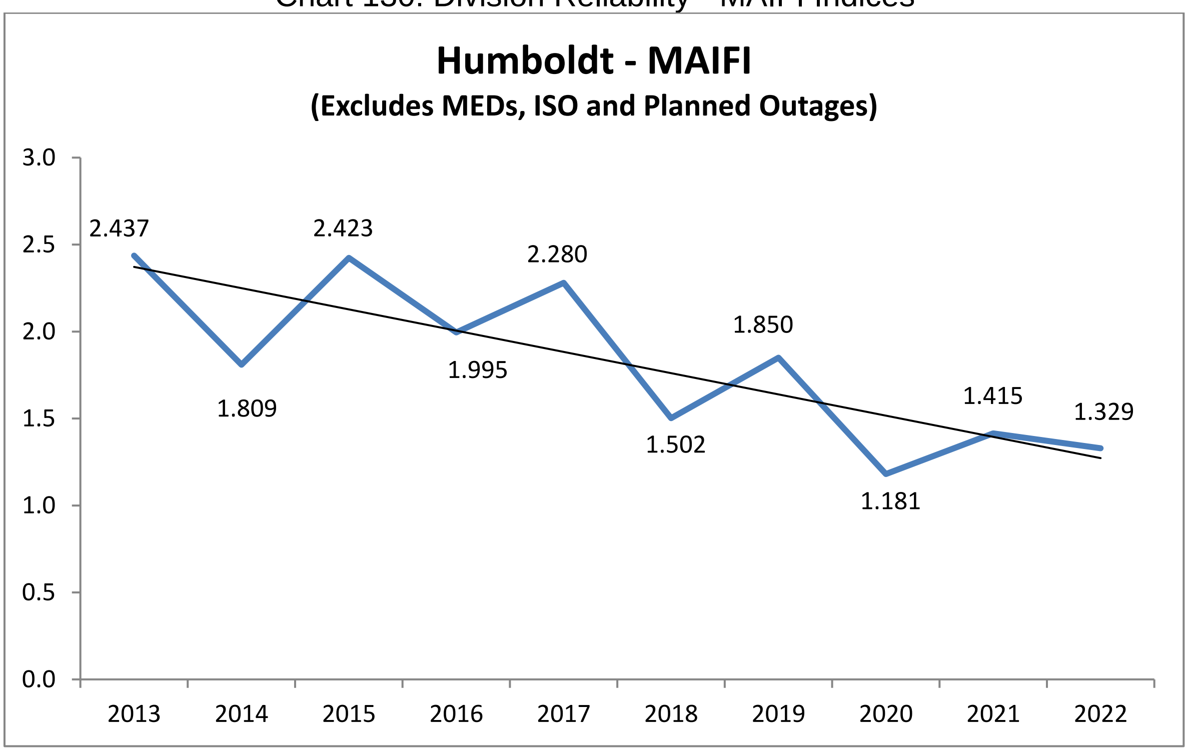


Chart 131: Division Reliability - MAIFI Indices

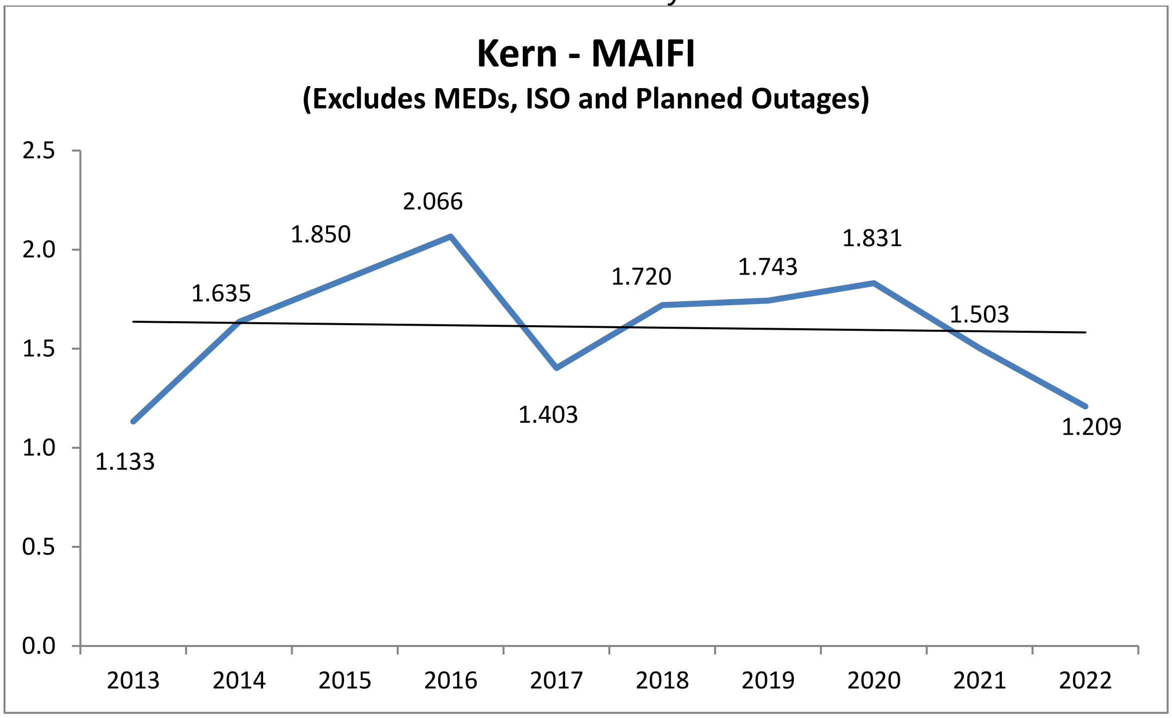


Chart 132: Division Reliability - MAIFI Indices

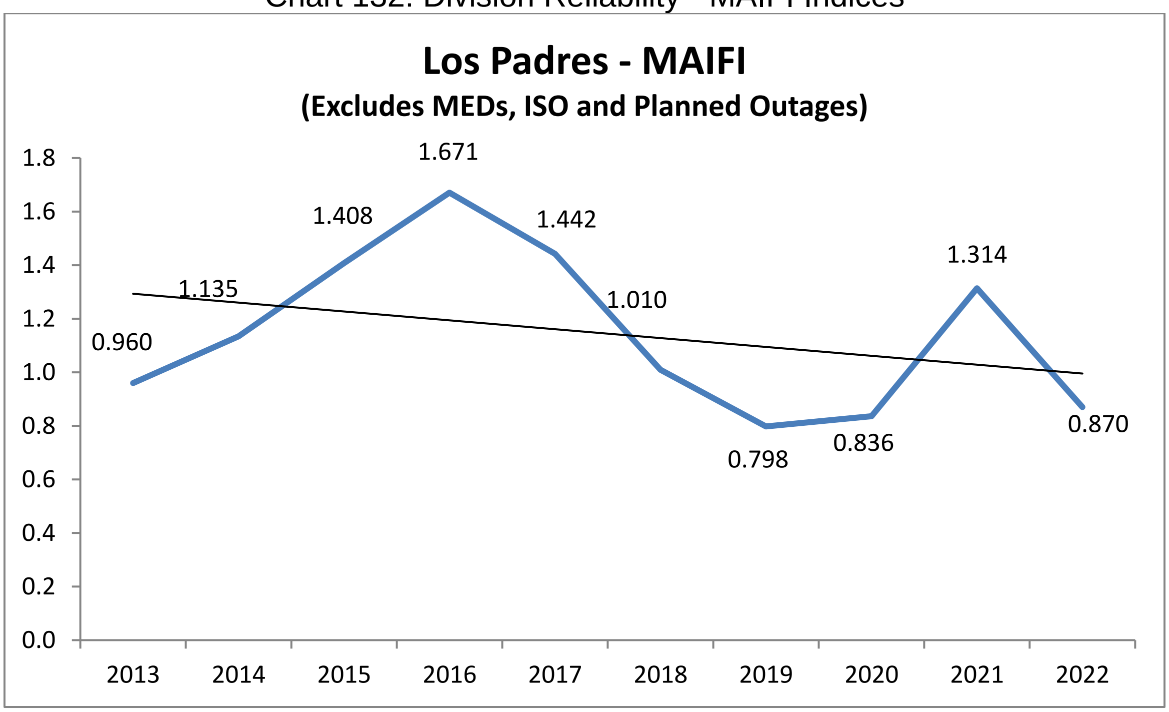


Chart 133: Division Reliability - MAIFI Indices

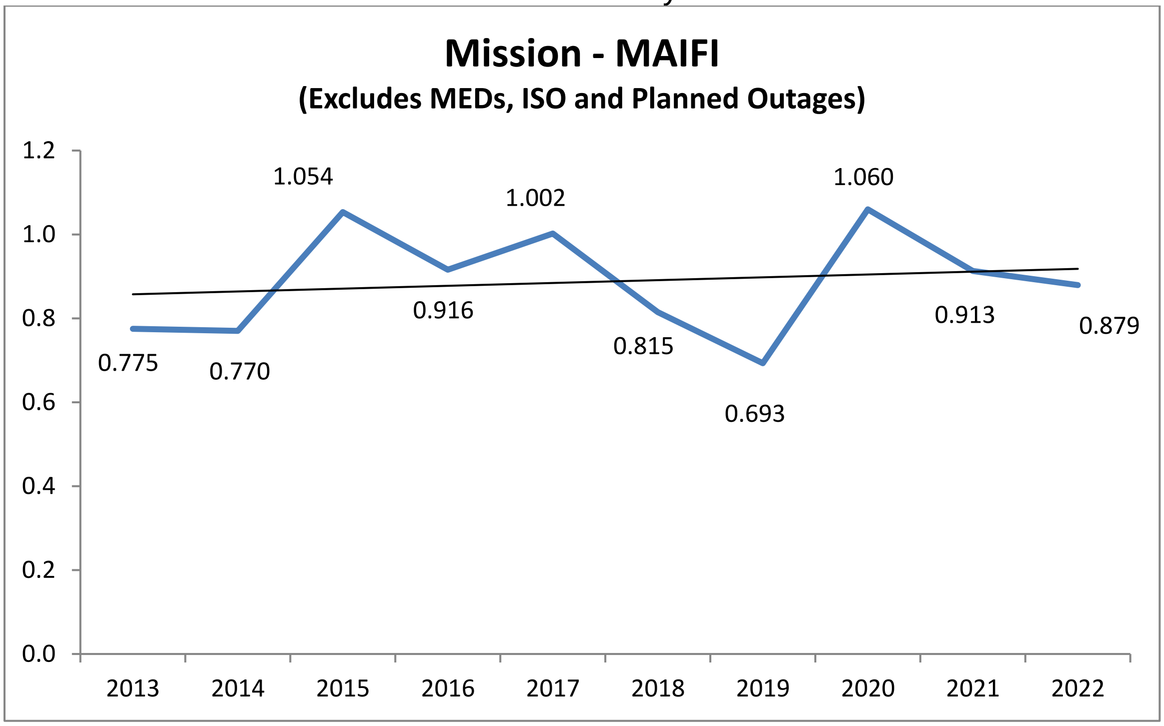


Chart 134: Division Reliability - MAIFI Indices

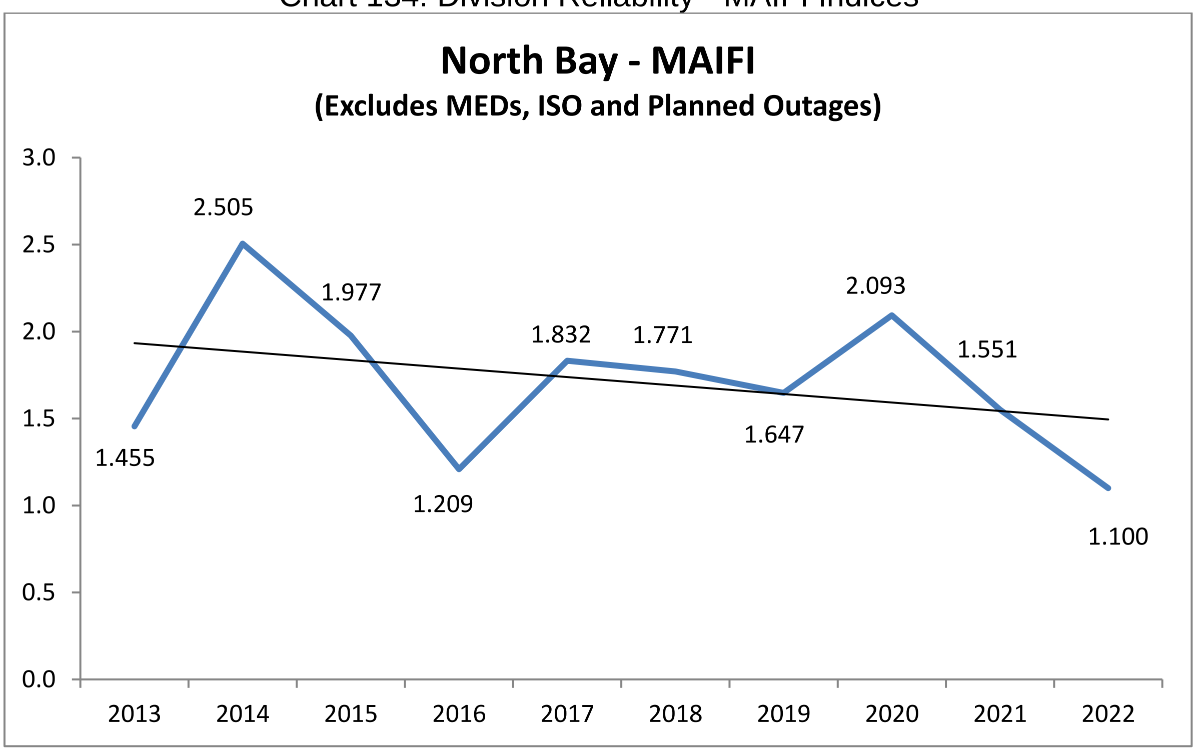


Chart 135: Division Reliability - MAIFI Indices

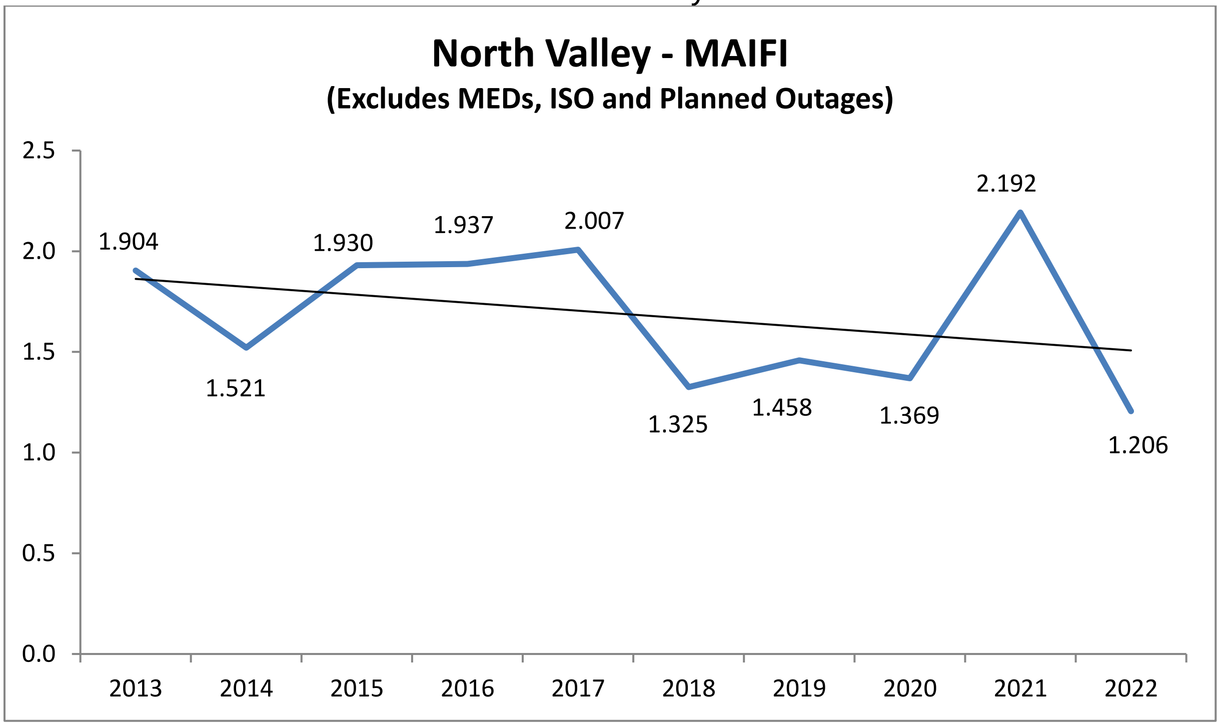


Chart 136: Division Reliability - MAIFI Indices

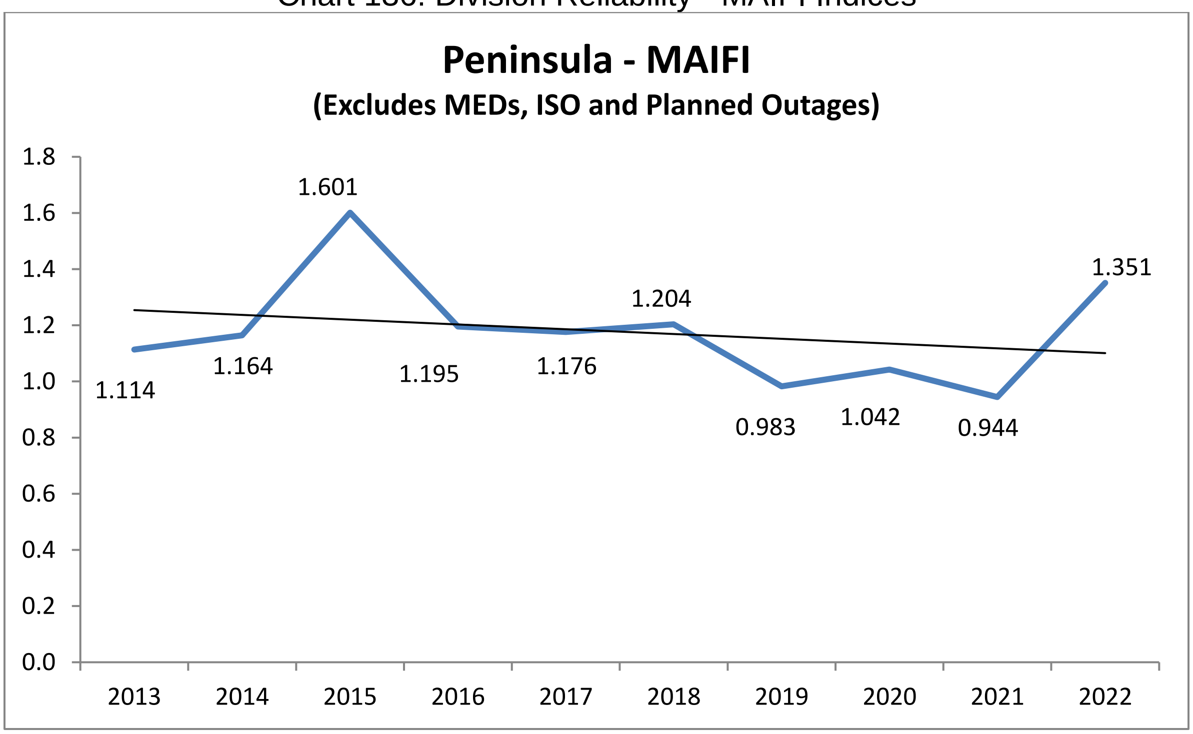


Chart 137: Division Reliability - MAIFI Indices

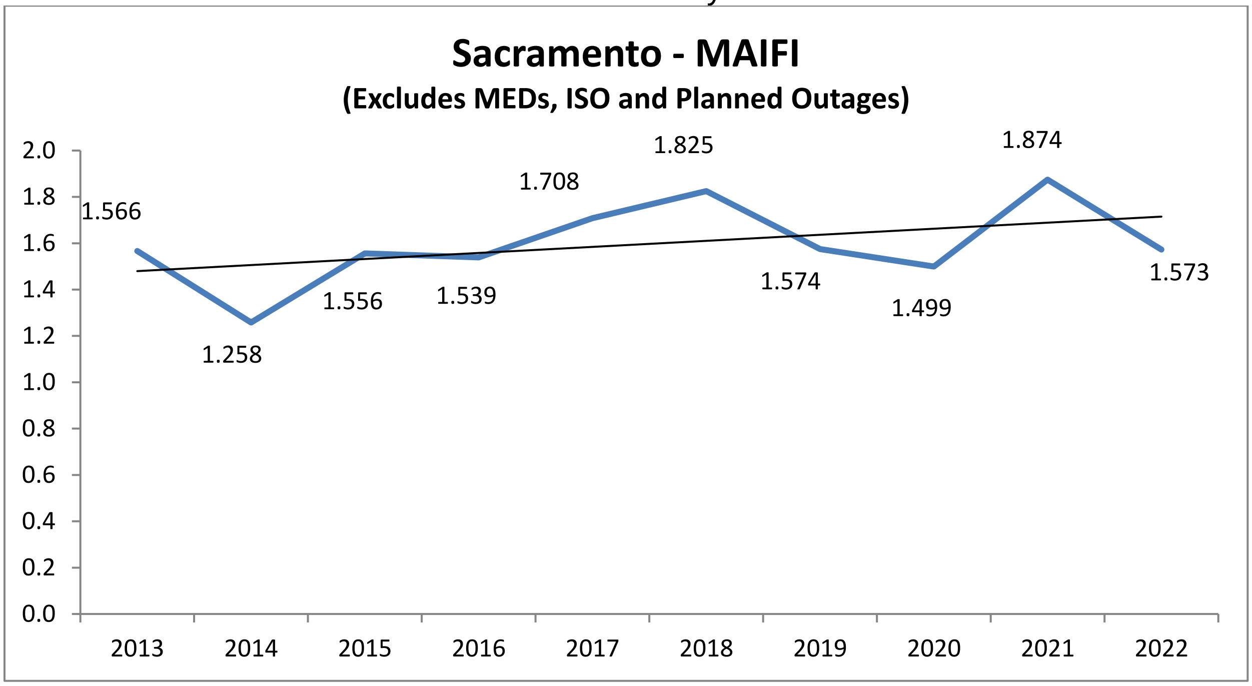


Chart 138: Division Reliability - MAIFI Indices

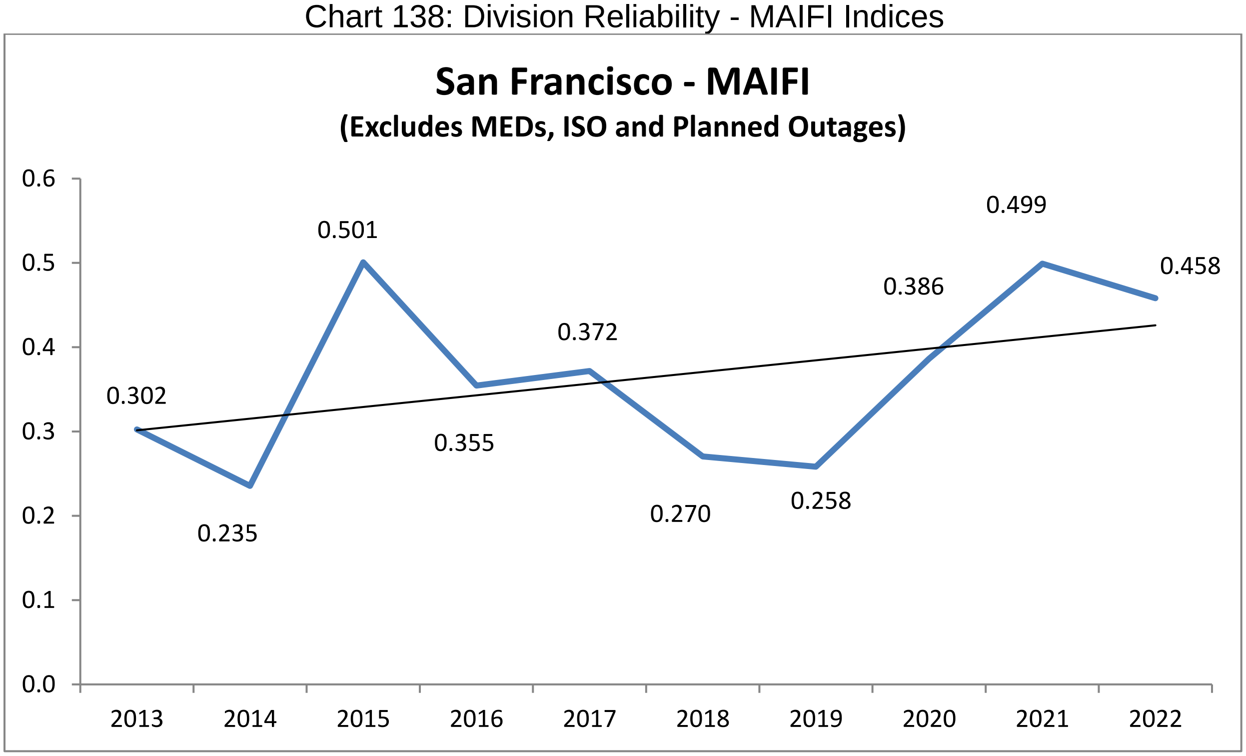


Chart 139: Division Reliability - MAIFI Indices

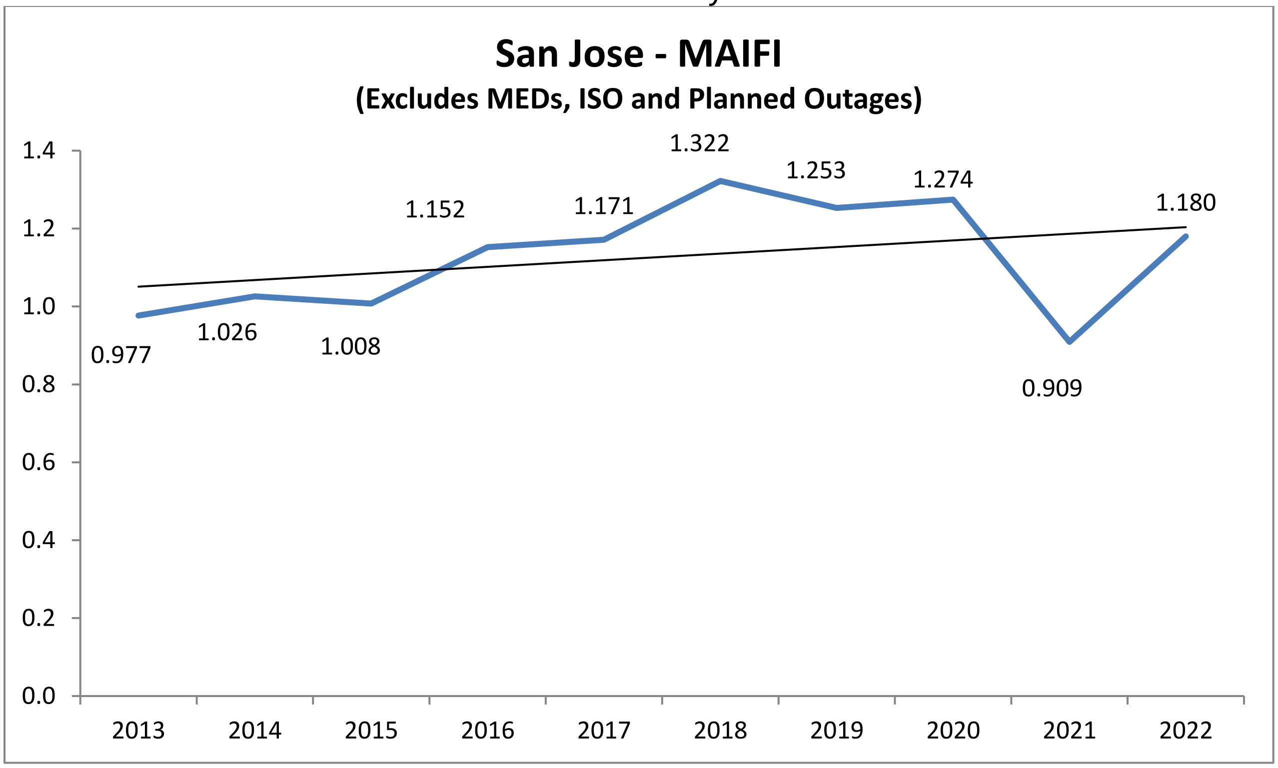


Chart 140: Division Reliability - MAIFI Indices

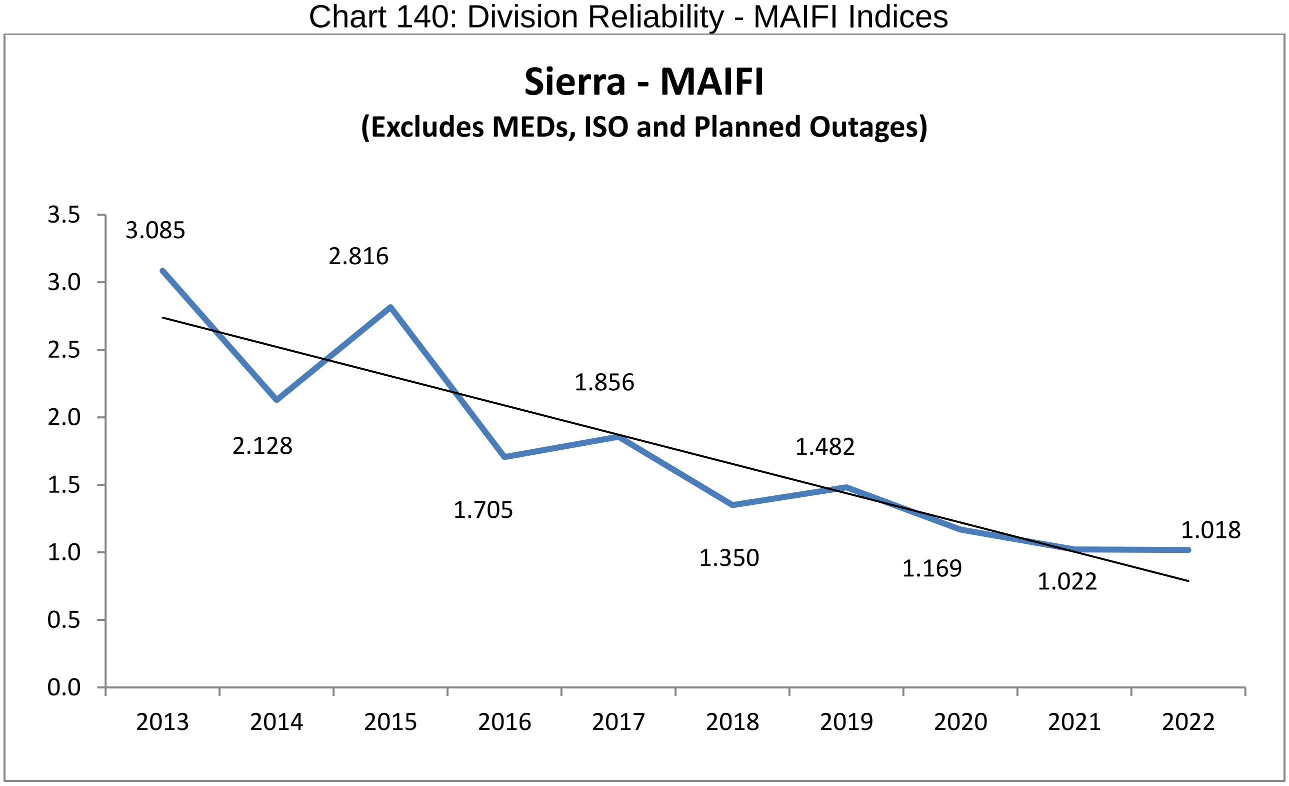


Chart 141: Division Reliability - MAIFI Indices

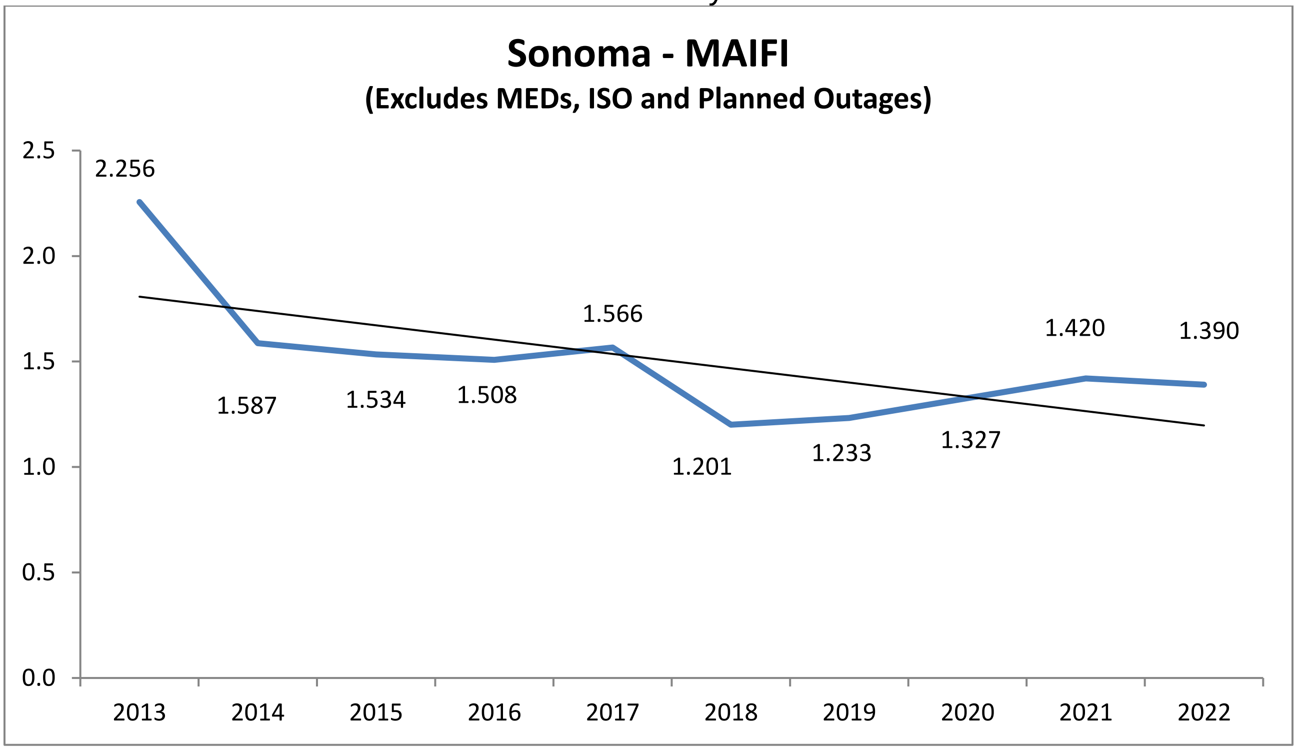


Chart 142: Division Reliability - MAIFI Indices

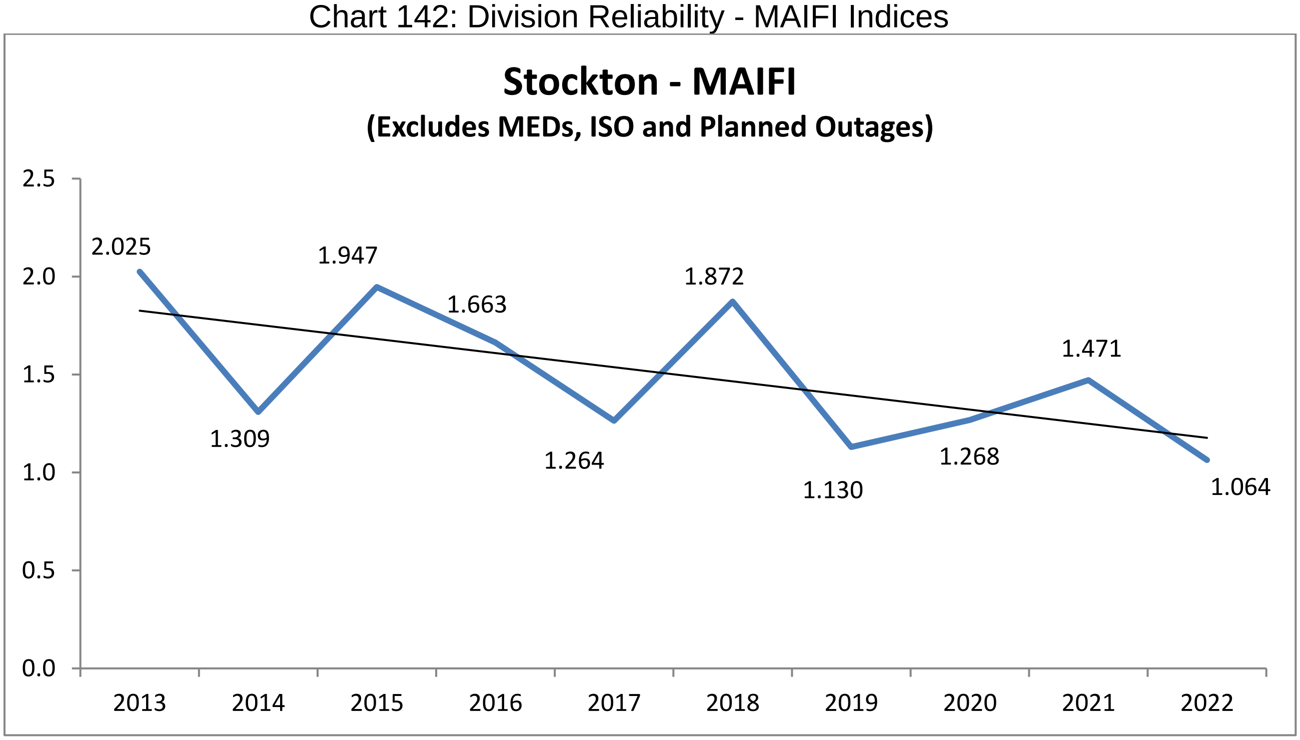
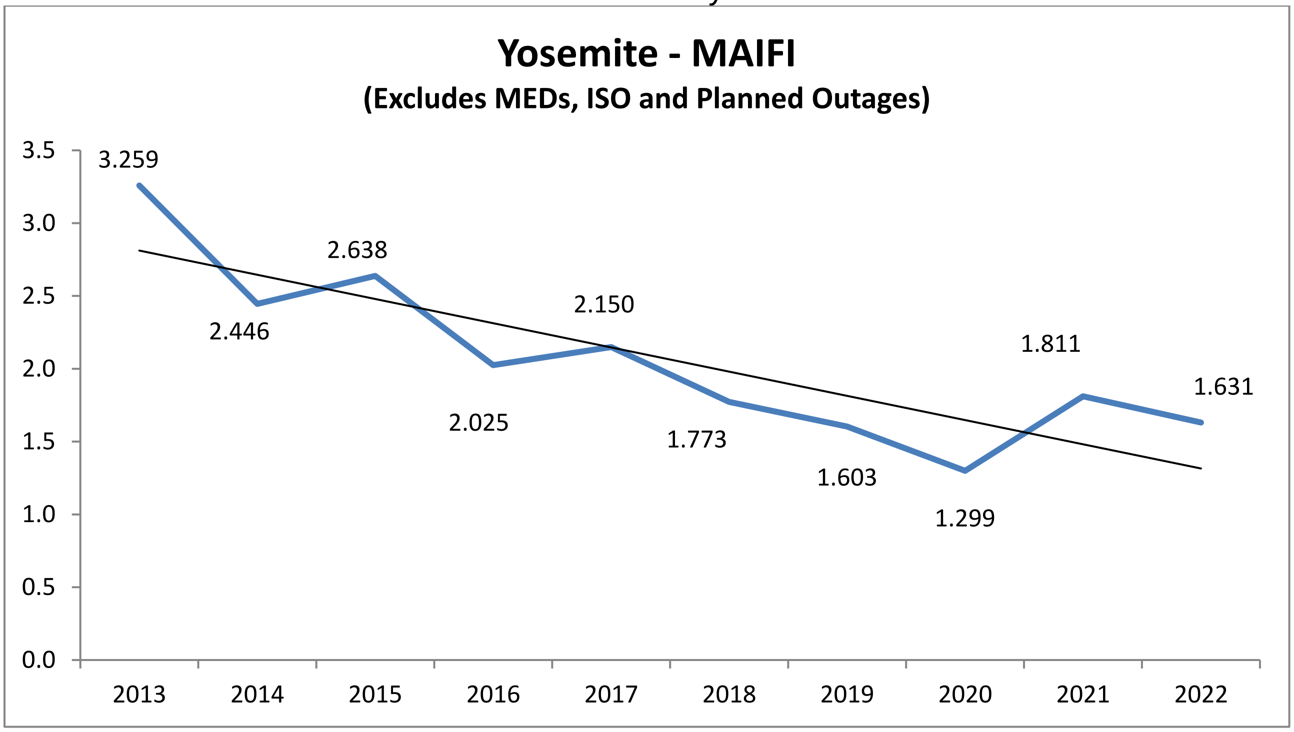


Chart 143: Division Reliability - MAIFI Indices



4. CAIDI Performance Results (MED Excluded)

Chart 144: Division Reliability - CAIDI Indices

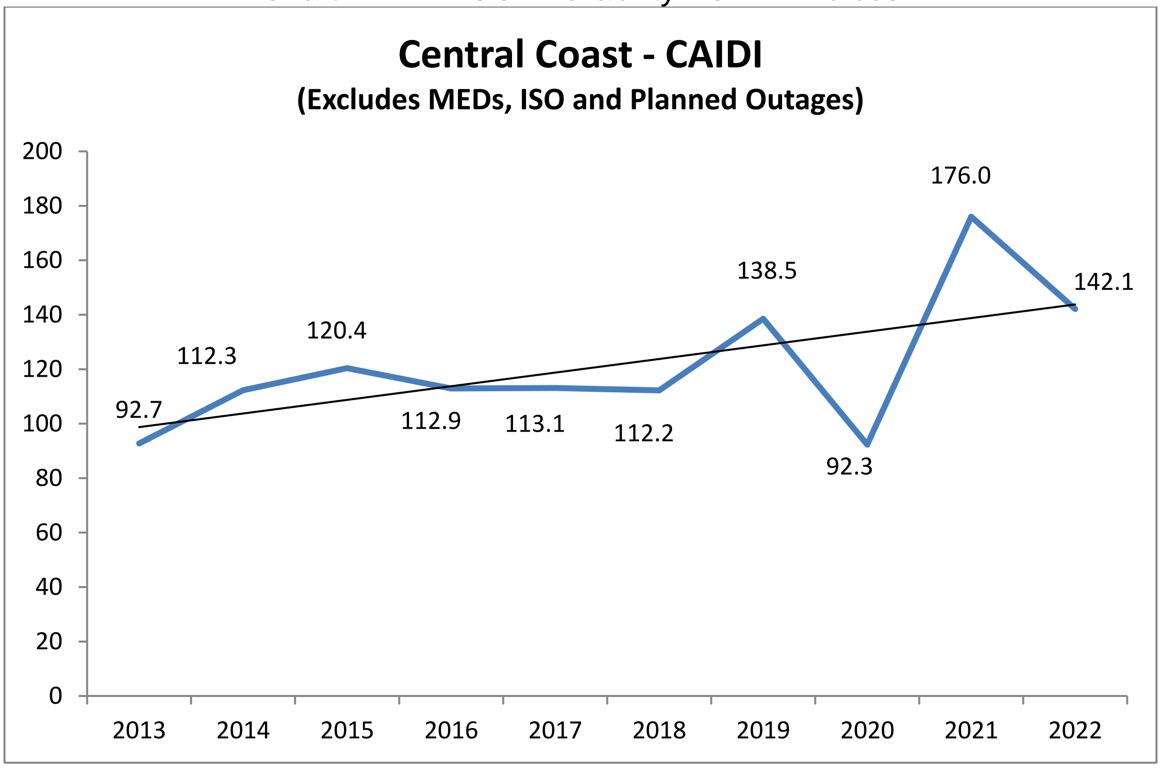


Chart 145: Division Reliability - CAIDI Indices

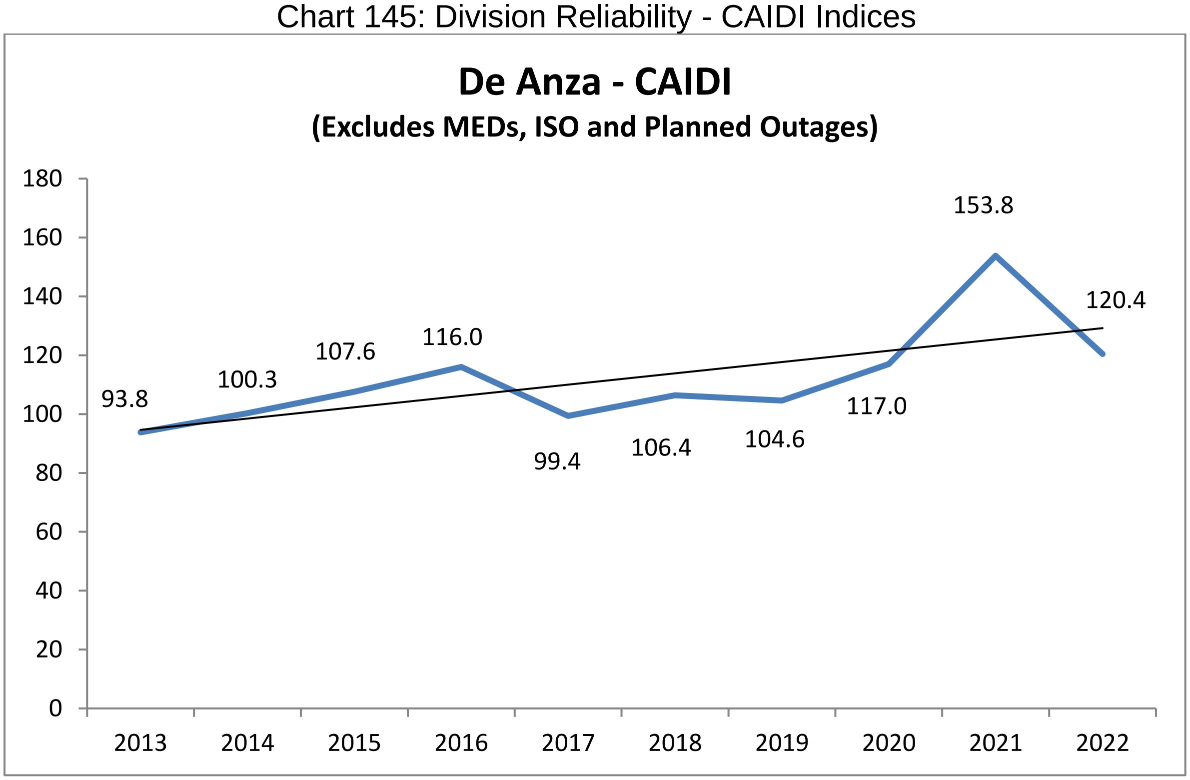


Chart 146: Division Reliability - CAIDI Indices

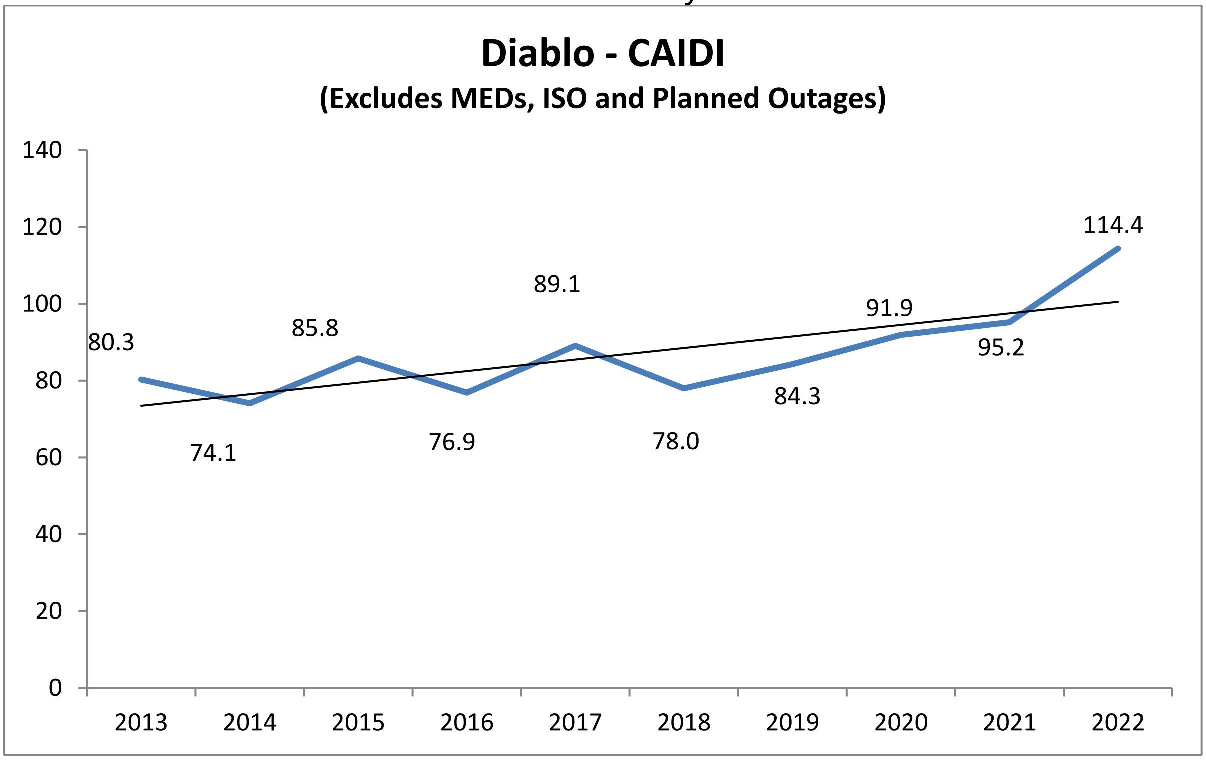


Chart 147: Division Reliability - CAIDI Indices

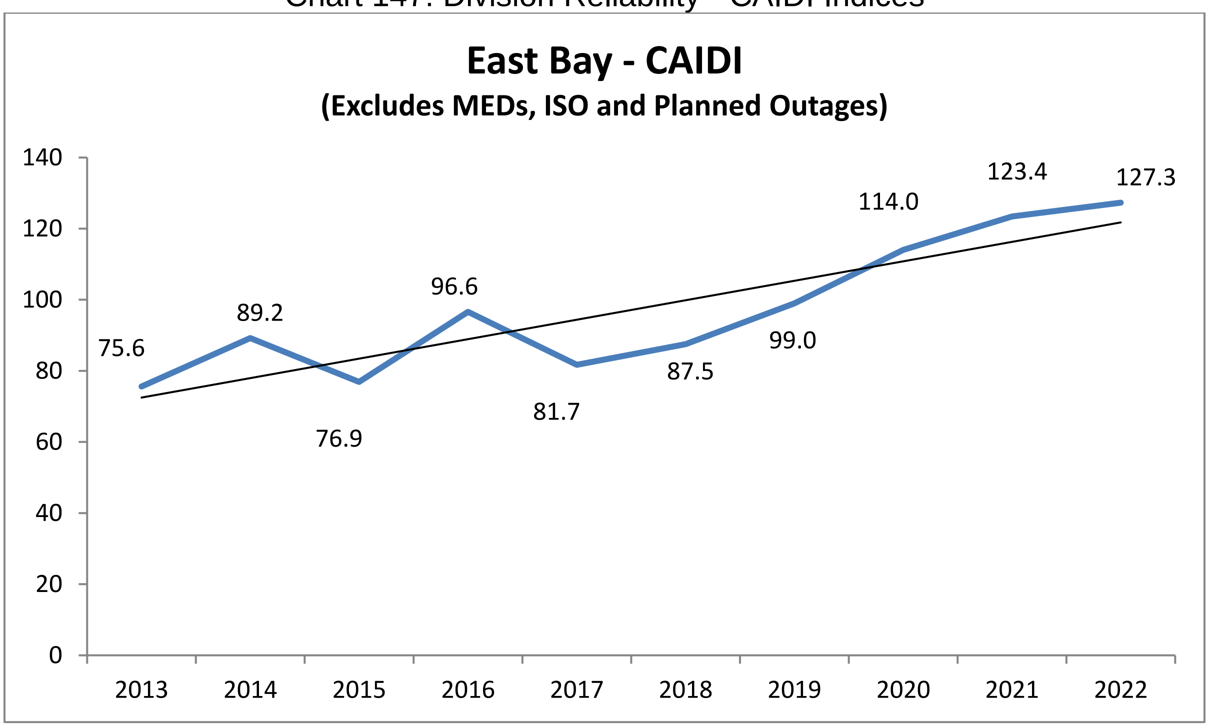


Chart 148: Division Reliability - CAIDI Indices

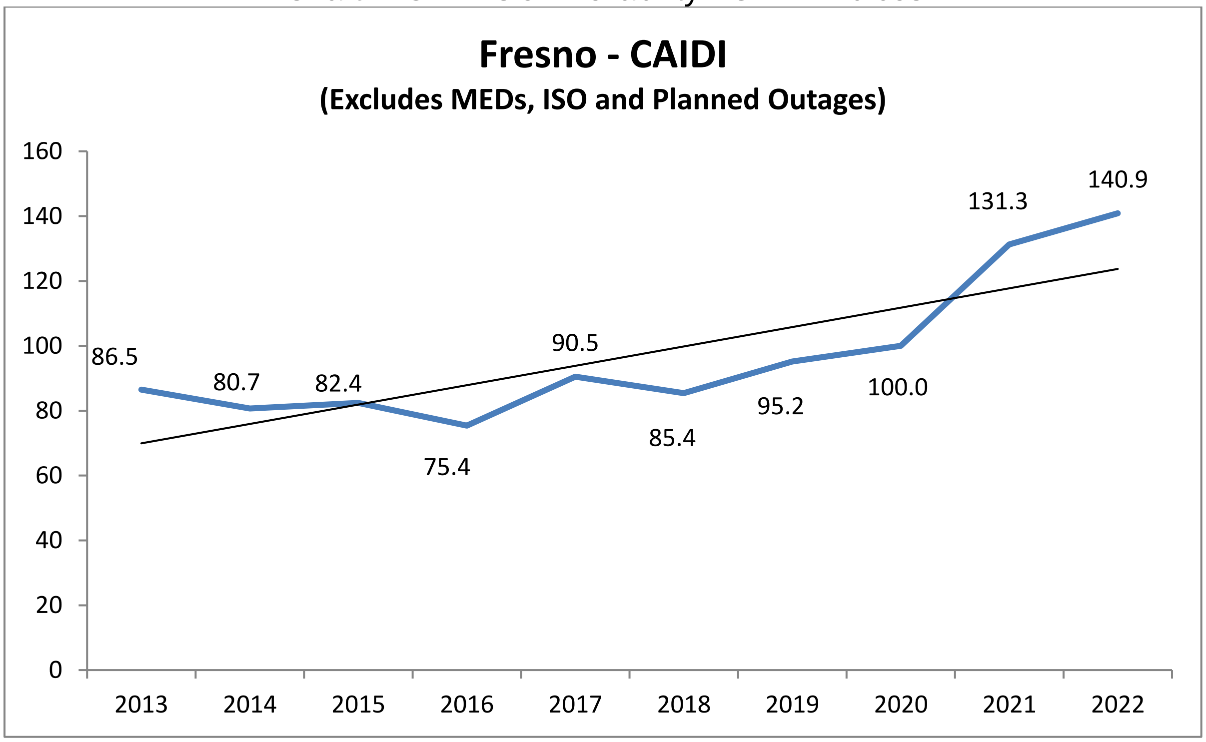


Chart 149: Division Reliability - CAIDI Indices

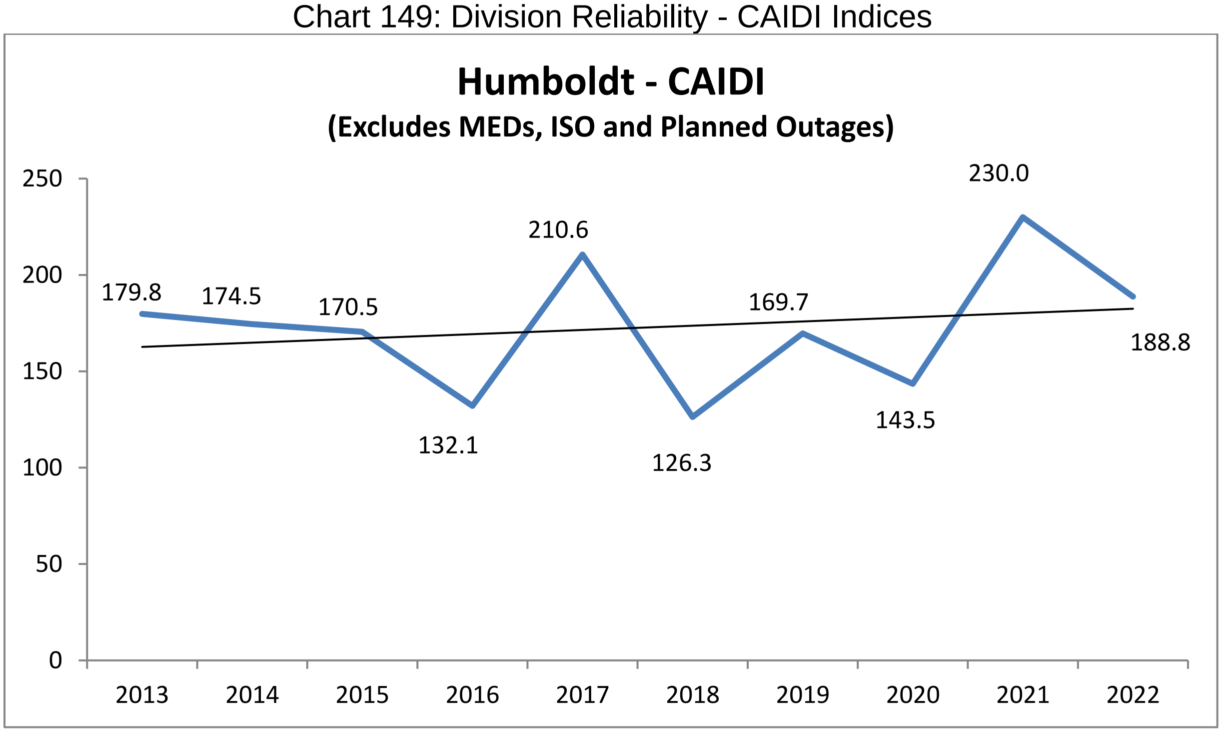


Chart 150: Division Reliability - CAIDI Indices

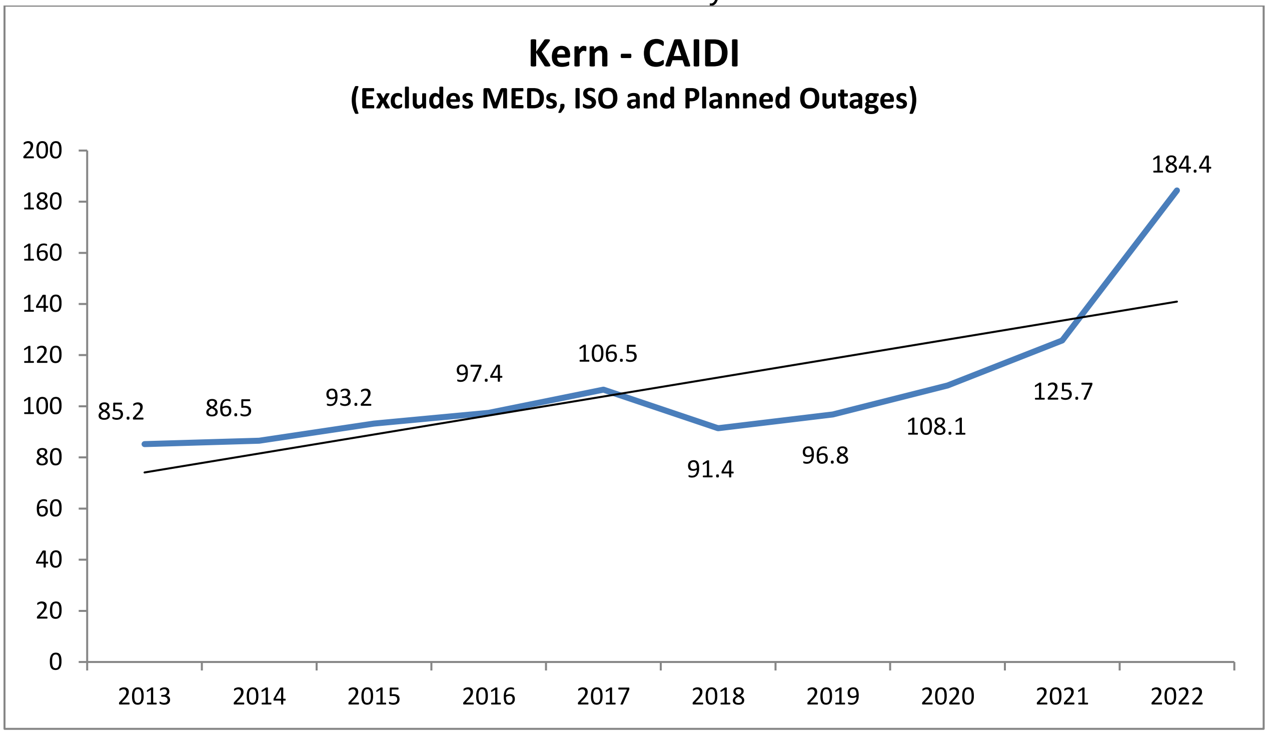


Chart 151: Division Reliability - CAIDI Indices

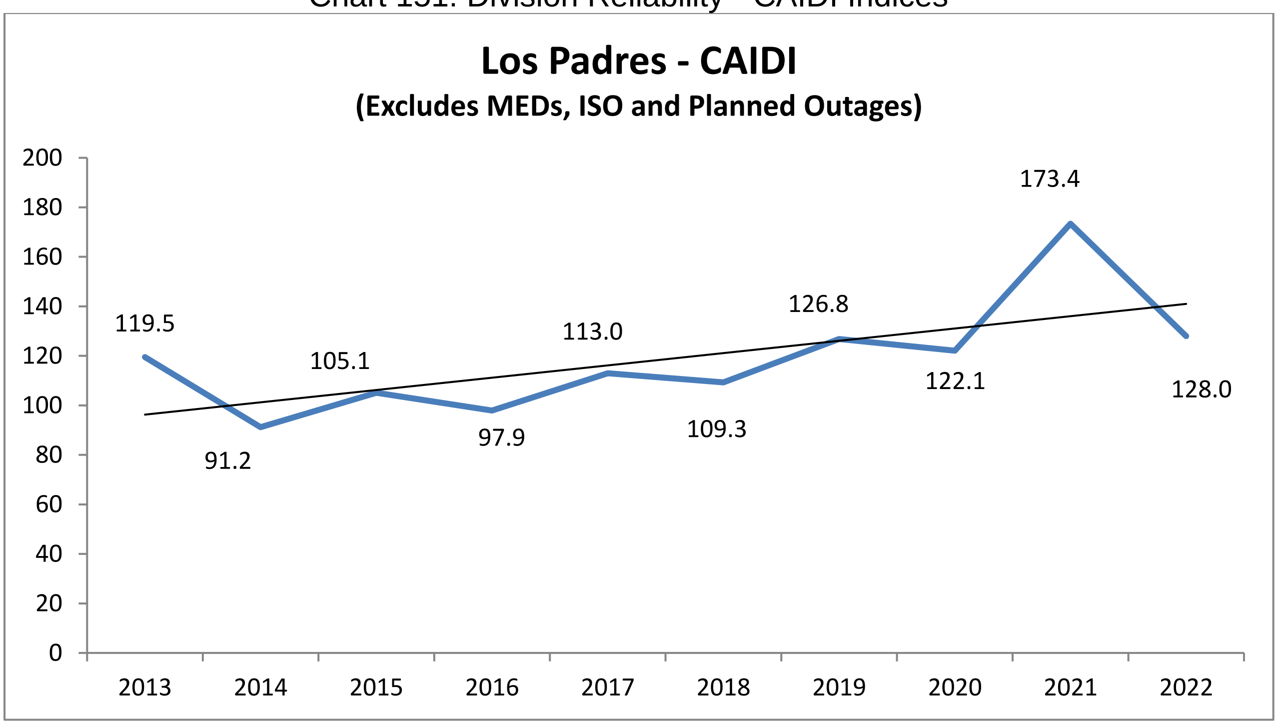


Chart 152: Division Reliability - CAIDI Indices

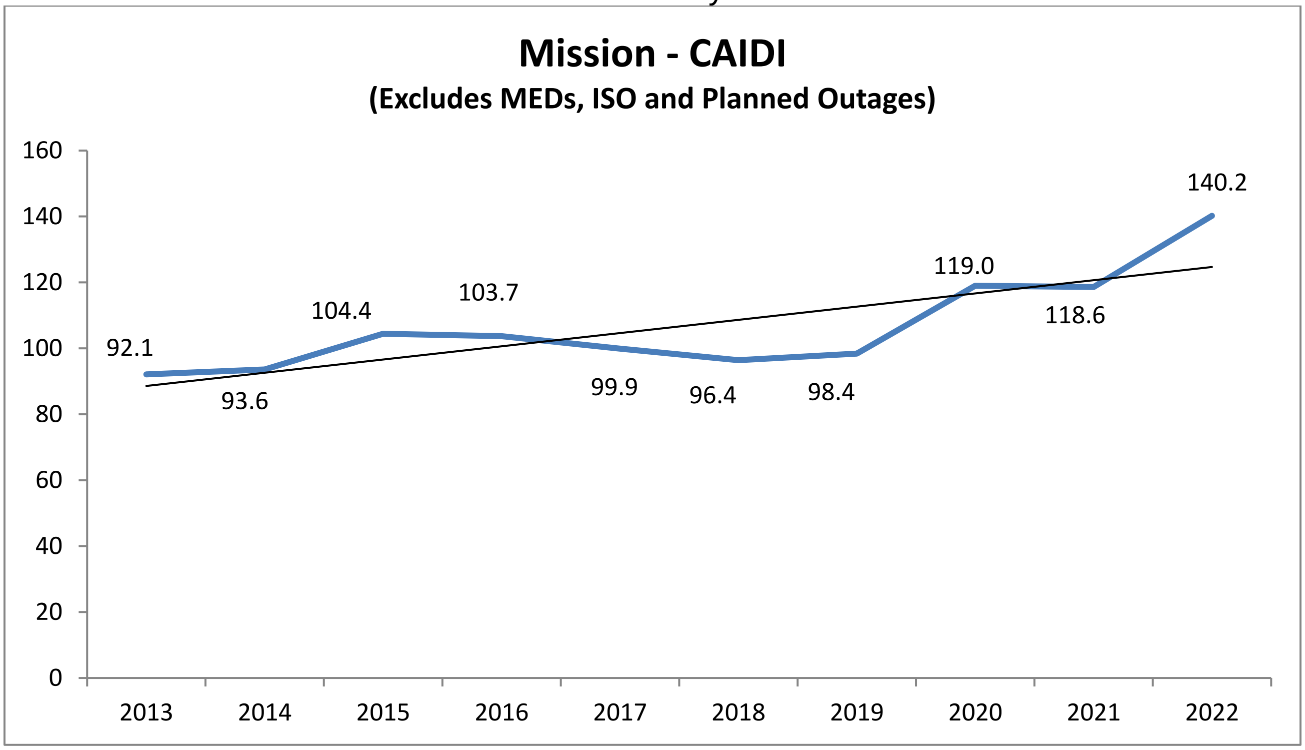


Chart 153: Division Reliability - CAIDI Indices

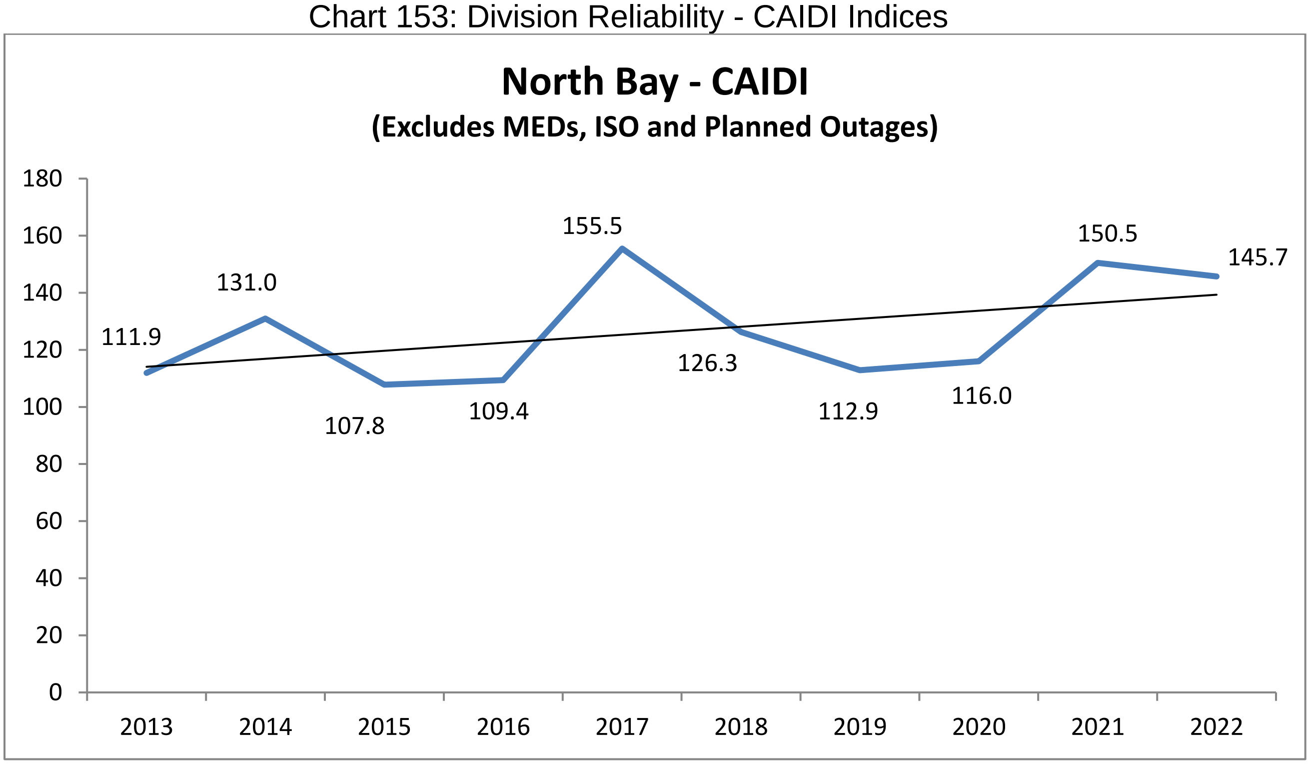


Chart 154: Division Reliability - CAIDI Indices

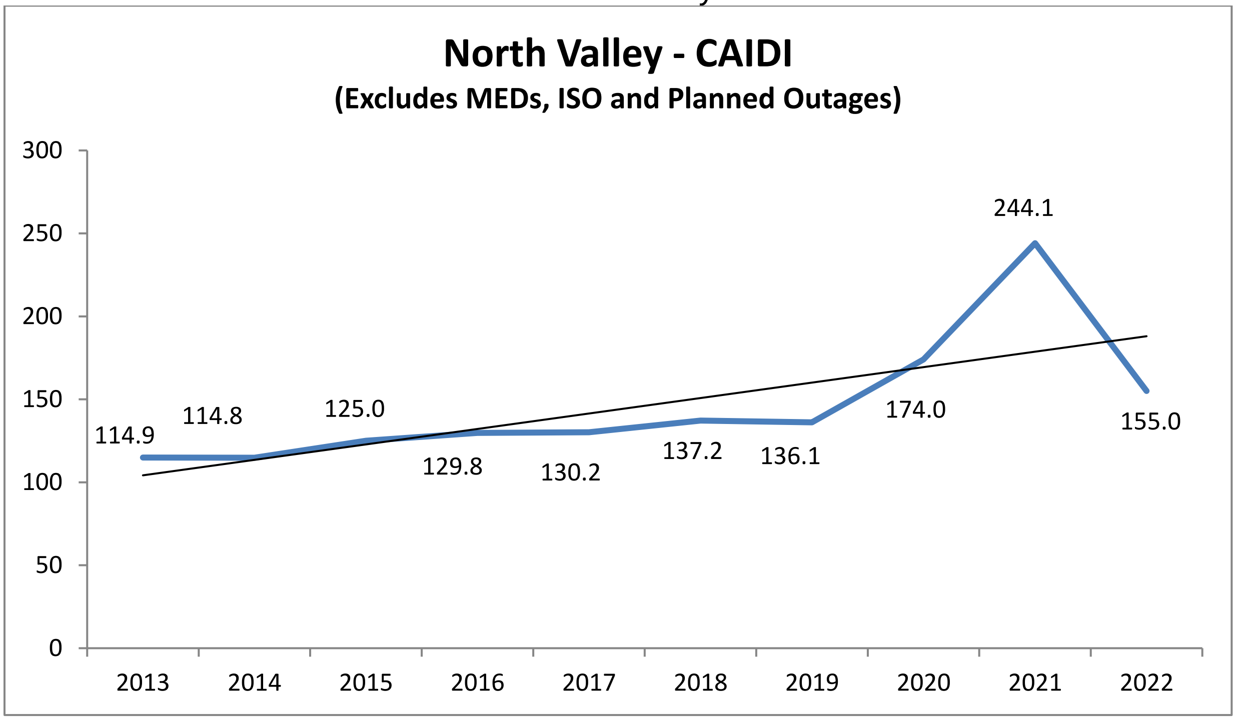


Chart 155: Division Reliability - CAIDI Indices

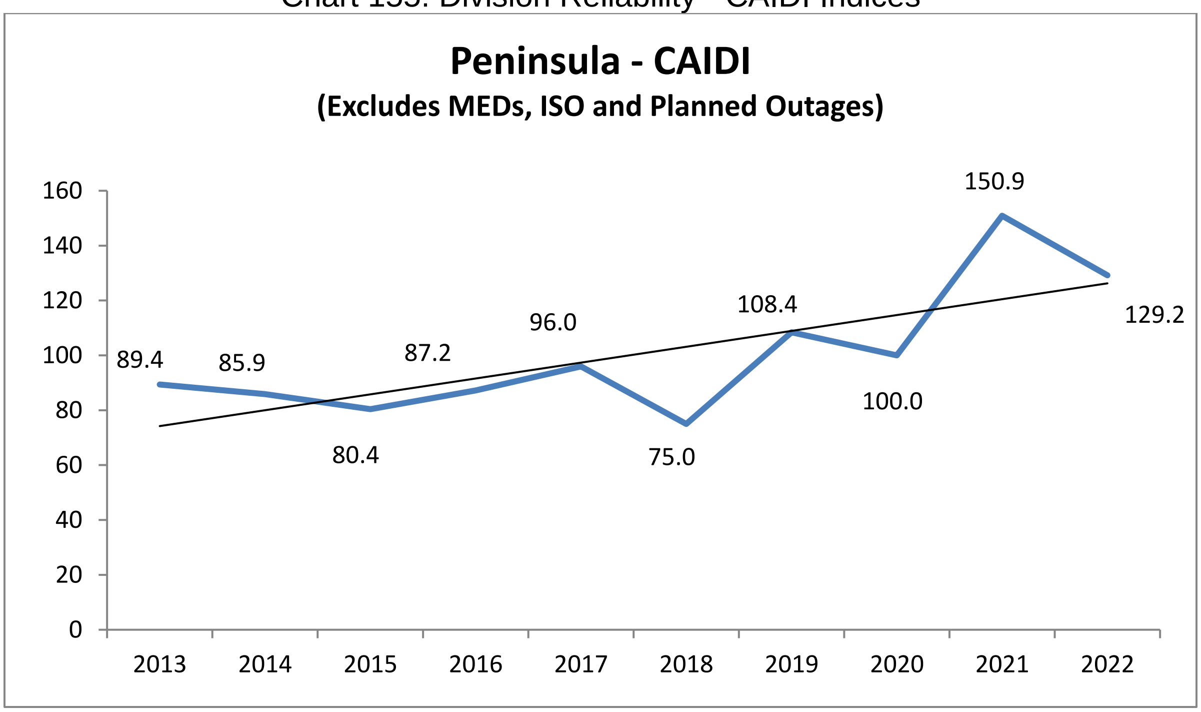


Chart 156: Division Reliability - CAIDI Indices

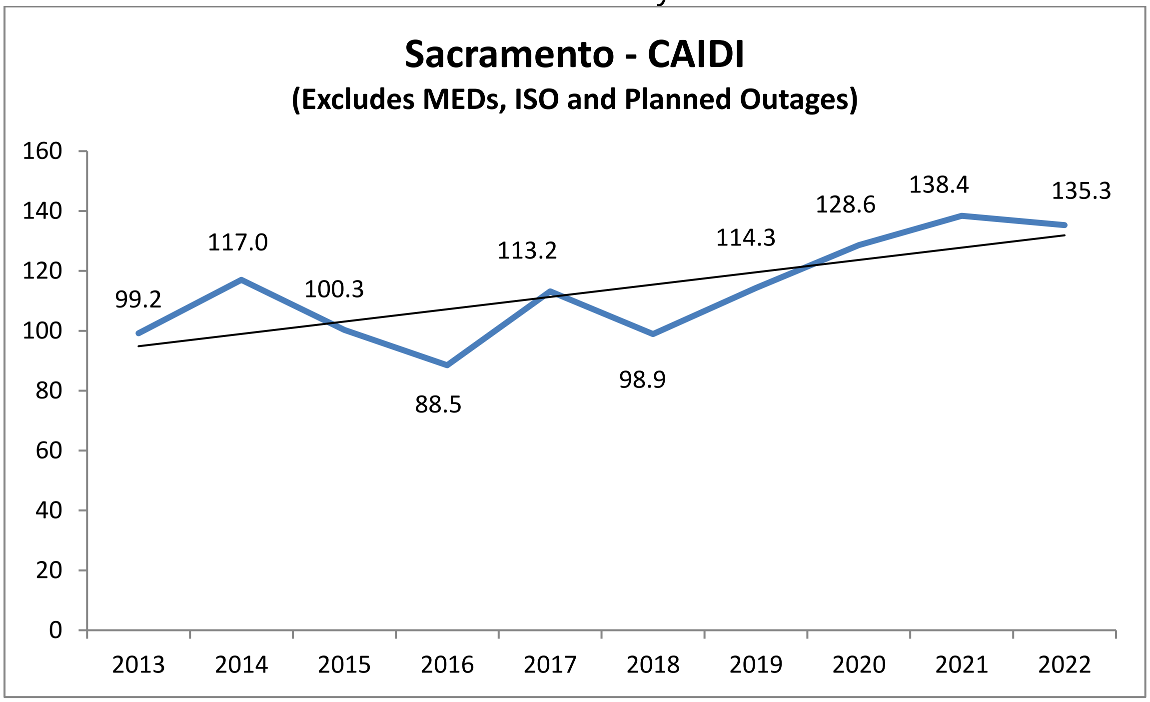


Chart 157: Division Reliability - CAIDI Indices

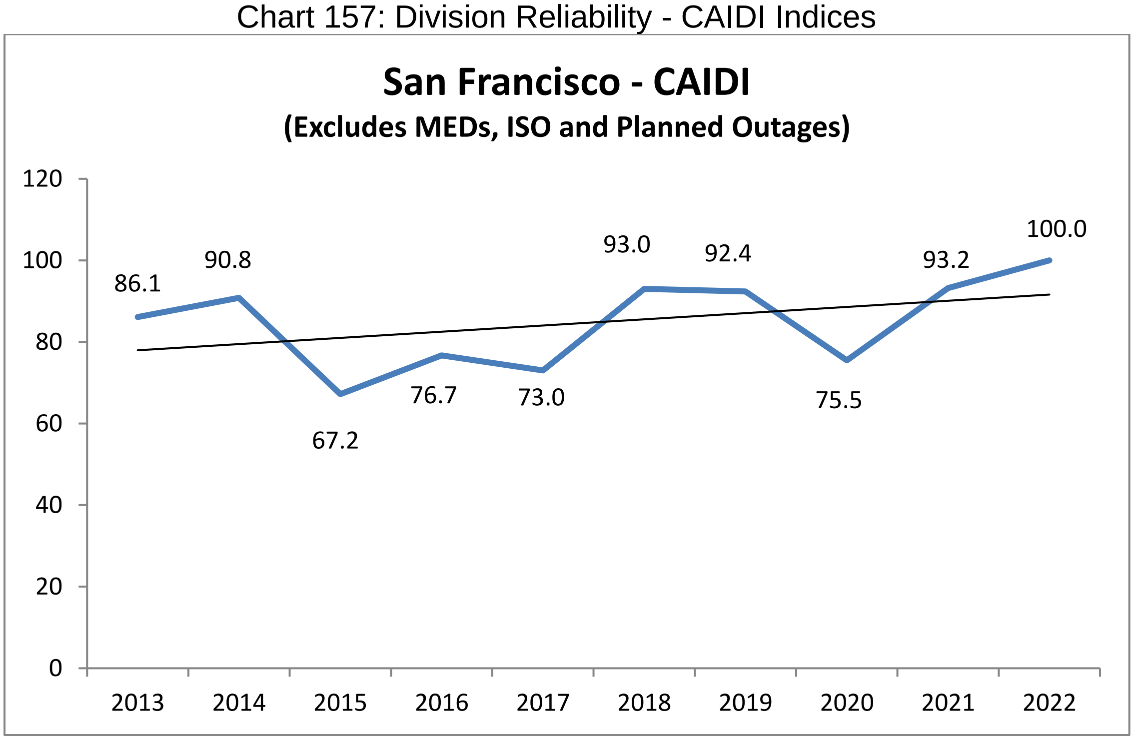


Chart 158: Division Reliability - CAIDI Indices

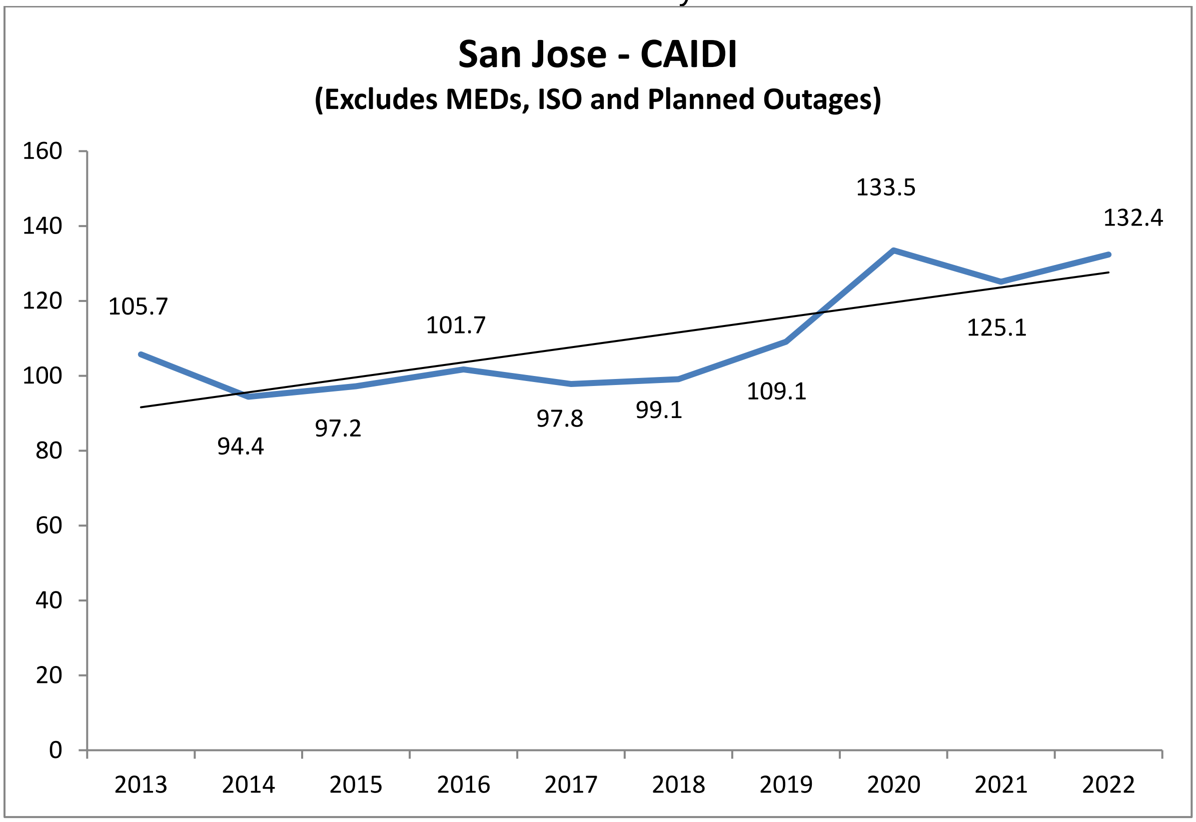


Chart 159: Division Reliability - CAIDI Indices

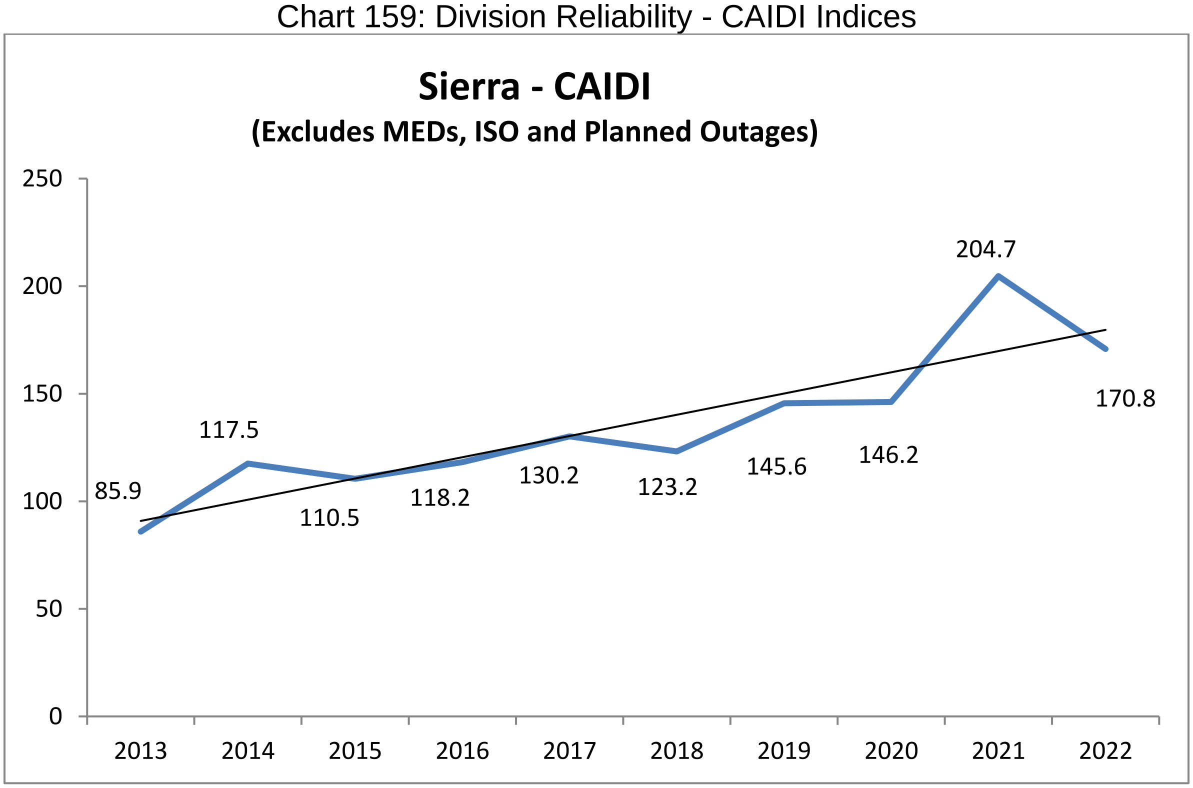


Chart 160: Division Reliability - CAIDI Indices\

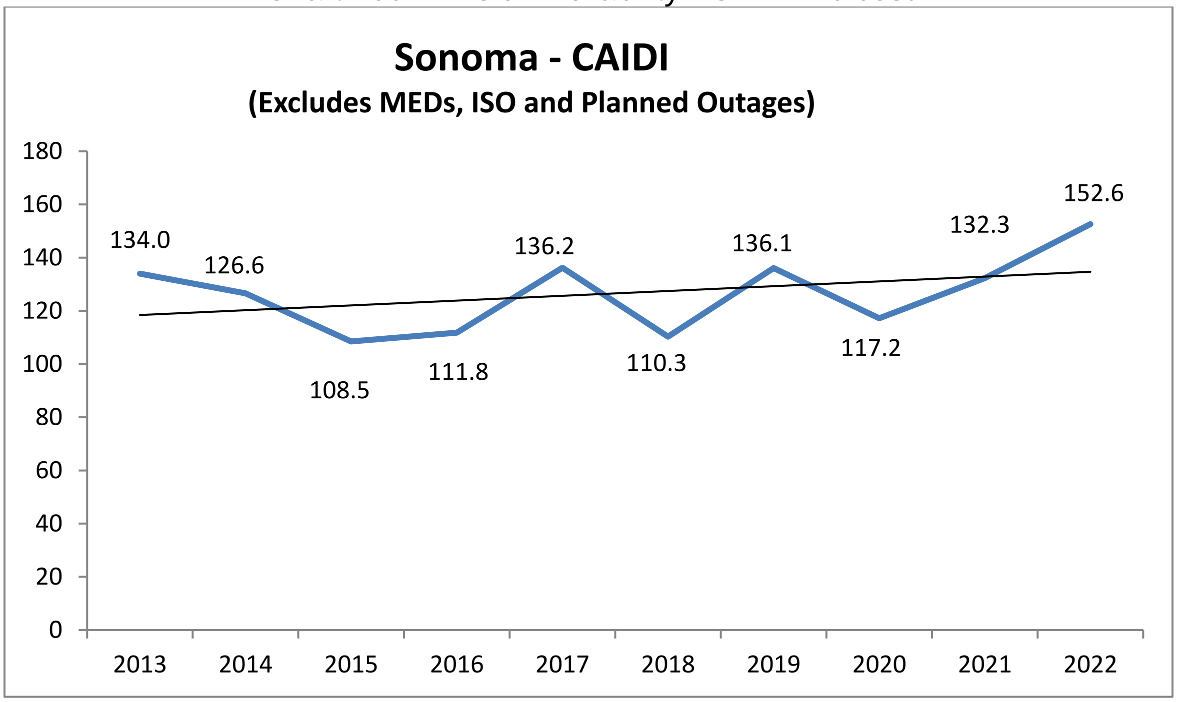


Chart 161: Division Reliability - CAIDI Indices

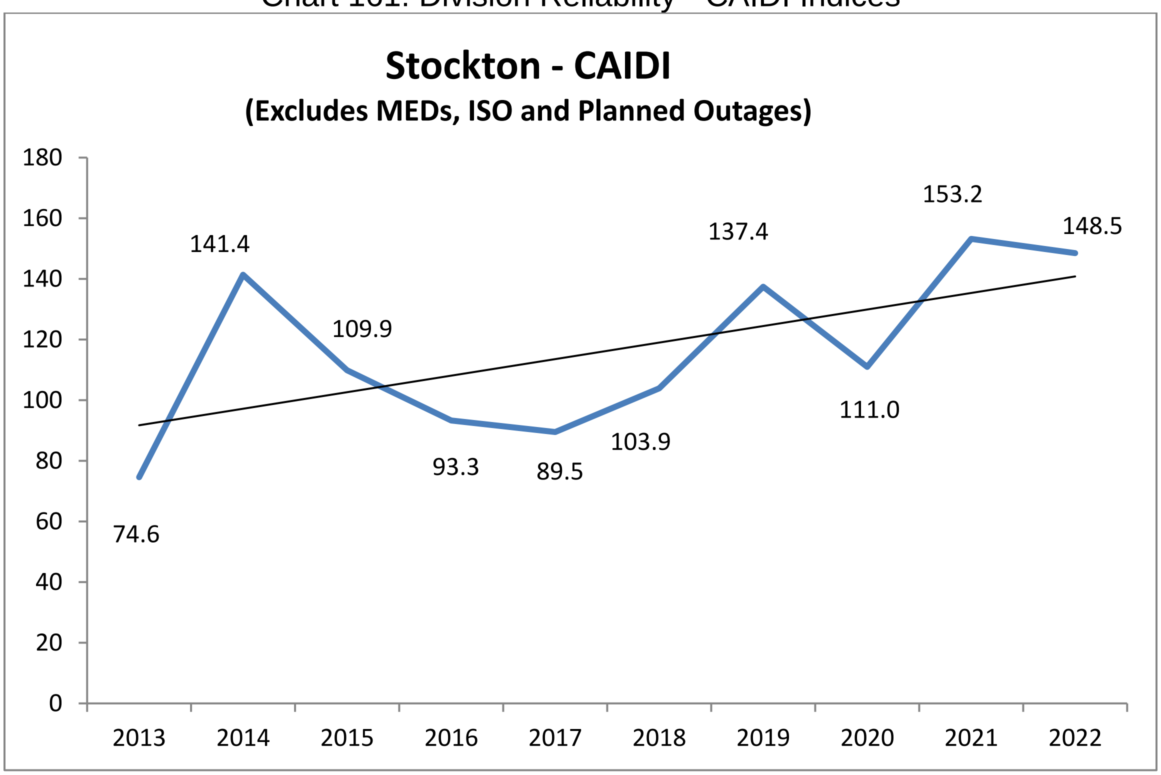
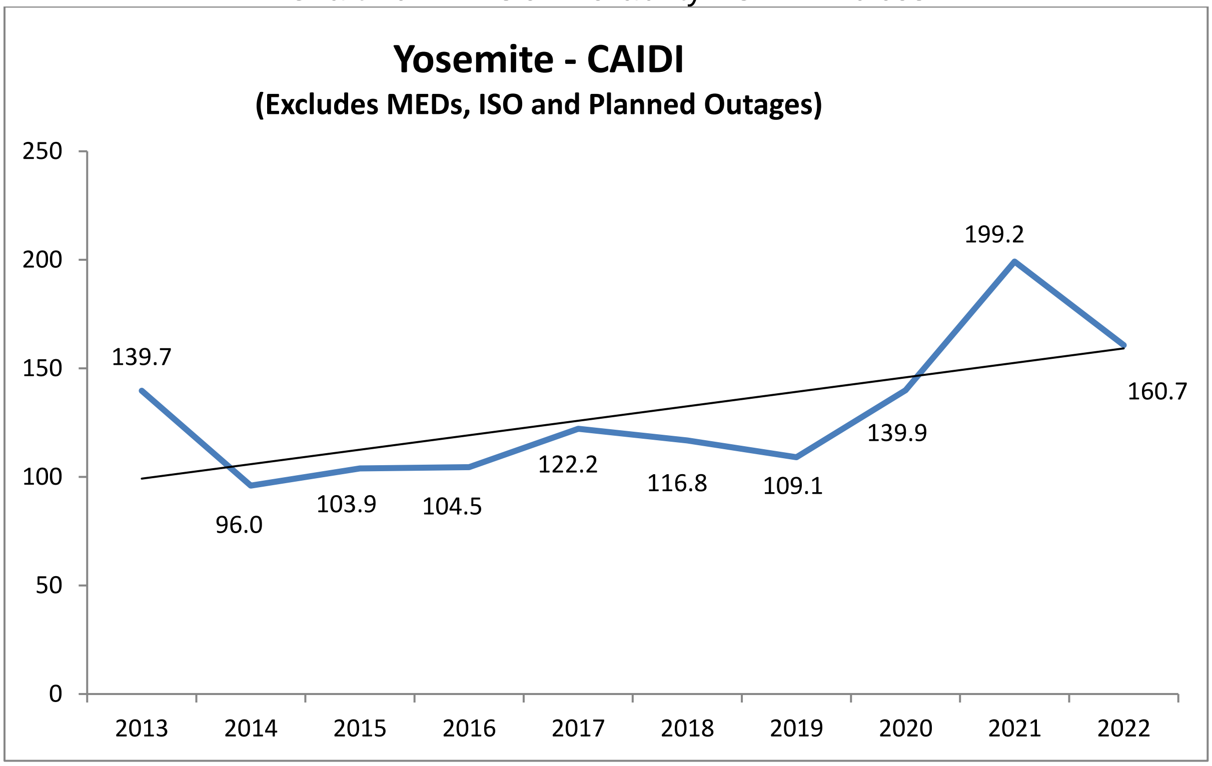


Chart 162: Division Reliability - CAIDI Indices



d. Division and System Reliability Indices Performance Variances (Five-Year Average)

This section contains additional division reliability information, as required by Decision 04-10-034, and Decision 16-01-008, Appendix B, footnote 6. This section explains threshold variations (unplanned outages only) in division and/or system reliability indices relative to the prior five-year averages (excluding major events, as defined per the IEEE 1366 methodology). This section also highlights the large outage events in each division that exceeded the reporting threshold.

Table 7 summarizes the 2022 division indices that meet the reporting requirement thresholds of 10 percent or more for the division, and 5 percent or more at the system level worse than the five-year rolling average of reliability performance per D. 04-10-034.[7] An "X" indicates that the 2022 Division and system index exceeded the 10 percent and 5 percent threshold, respectively, and is thus discussed in detail in this section.

[7] As in prior reports, PG&E does not interpret this reporting requirement as applying to those indices where 2022 reliability was better than the prior five-year average.

Table 7 – 2022 Indices excluding Major Events
(Meeting the Reporting Requirement Thresholds)

	SAIDI	SAIFI	MAIFI	CAIDI
SYSTEM	X	X		X
CENTRAL COAST	X	X	X	X
DE ANZA	X	X		
DIABLO	X	X		X
EAST BAY	X	X	X	X
FRESNO	X	X	X	X
HUMBOLDT	X	X		
KERN	X	X		X
LOS PADRES	X	X		
MISSION	X			X
NORTH BAY	X	X		X
NORTH VALLEY	X	X		
PENINSULA	X	X	X	X
SACRAMENTO	X	X		X
SAN FRANCISCO	X		X	X
SAN JOSE	X	X		X
SIERRA	X	X		X
SONOMA	X	X		X
STOCKTON	X	X		X
YOSEMITE	X	X		X

Table 8: Division and System Reliability Indices Performance Variances (Excluding MED)

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SYSTEM	2017	97.3	0.878	1.487	110.8
SYSTEM	2018	99.6	0.960	1.356	103.8
SYSTEM	2019	117.7	1.009	1.270	116.6
SYSTEM	2020	125.8	1.068	1.292	117.8
SYSTEM	2021	182.8	1.178	1.317	155.2
5-Year Average	17-21 Avg	124.6	1.019	1.344	122.4
SYSTEM	2022	213.5	1.470	1.309	145.2
	%Difference	71.3%	44.3%	-2.6%	18.7%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
CENTRAL COAST	2017	146.3	1.293	2.589	113.1
CENTRAL COAST	2018	162.4	1.447	2.242	112.2
CENTRAL COAST	2019	203.6	1.470	2.231	138.5
CENTRAL COAST	2020	159.1	1.724	1.600	92.3
CENTRAL COAST	2021	289.2	1.643	1.906	176.0
5-Year Average	17-21 Avg	192.1	1.516	2.114	126.8
CENTRAL COAST	2022	377.6	2.657	2.868	142.1
	%Difference	96.6%	75.3%	35.7%	12.1%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
DE ANZA	2017	97.9	0.985	1.150	99.4
DE ANZA	2018	84.0	0.789	1.402	106.4
DE ANZA	2019	91.3	0.873	1.657	104.6
DE ANZA	2020	83.1	0.711	1.213	117.0
DE ANZA	2021	121.0	0.787	0.987	153.8
5-Year Average	17-21 Avg	95.5	0.829	1.282	115.2
DE ANZA	2022	120.6	1.001	1.065	120.4
	%Difference	26.3%	20.8%	-16.9%	4.5%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
DIABLO	2017	78.0	0.876	1.620	89.1
DIABLO	2018	78.3	1.004	1.496	78.0
DIABLO	2019	78.8	0.935	1.212	84.3
DIABLO	2020	110.8	1.206	1.621	91.9
DIABLO	2021	112.0	1.177	1.352	95.2
5-Year Average	17-21 Avg	91.6	1.039	1.460	88.1
DIABLO	2022	179.2	1.566	1.295	114.4
	%Difference	95.7%	50.7%	-11.3%	29.9%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
EAST BAY	2017	73.8	0.903	1.528	81.7
EAST BAY	2018	78.8	0.901	1.080	87.5
EAST BAY	2019	84.5	0.854	0.956	99.0
EAST BAY	2020	95.5	0.838	1.453	114.0
EAST BAY	2021	154.2	1.250	1.368	123.4
5-Year Average	17-21 Avg	97.4	0.949	1.277	102.6
EAST BAY	2022	147.4	1.158	1.661	127.3
	%Difference	51.4%	22.0%	30.1%	24.1%

Division Reliability Indices
2017-2022
(Excluding MED)

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
FRESNO	2017	72.3	0.799	1.546	90.5
FRESNO	2018	73.5	0.861	1.368	85.4
FRESNO	2019	78.8	0.828	1.477	95.2
FRESNO	2020	86.5	0.865	1.352	100.0
FRESNO	2021	142.0	1.081	1.468	131.3
5-Year Average	17-21 Avg	90.6	0.887	1.442	102.2
FRESNO	2022	175.3	1.244	1.731	140.9
	%Difference	93.5%	40.3%	20.0%	37.9%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
HUMBOLDT	2017	275.1	1.306	2.280	210.6
HUMBOLDT	2018	225.9	1.789	1.502	126.3
HUMBOLDT	2019	274.4	1.616	1.850	169.7
HUMBOLDT	2020	191.6	1.336	1.181	143.5
HUMBOLDT	2021	461.3	2.005	1.415	230.0
5-Year Average	17-21 Avg	285.7	1.610	1.645	177.4
HUMBOLDT	2022	472.2	2.501	1.329	188.8
	%Difference	65.3%	55.3%	-19.2%	6.4%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
KERN	2017	78.1	0.733	1.403	106.5
KERN	2018	71.6	0.783	1.720	91.4
KERN	2019	106.6	1.101	1.743	96.8
KERN	2020	114.6	1.060	1.831	108.1
KERN	2021	138.4	1.101	1.503	125.7
5-Year Average	17-21 Avg	101.9	0.956	1.640	106.6
KERN	2022	269.4	1.461	1.209	184.4
	%Difference	164.4%	52.8%	-26.3%	73.0%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
LOS PADRES	2017	106.7	0.944	1.442	113.0
LOS PADRES	2018	130.5	1.195	1.010	109.3
LOS PADRES	2019	150.7	1.188	0.798	126.8
LOS PADRES	2020	139.3	1.141	0.836	122.1
LOS PADRES	2021	195.0	1.125	1.314	173.4
5-Year Average	17-21 Avg	144.4	1.119	1.080	129.1
LOS PADRES	2022	233.3	1.824	0.870	128.0
	%Difference	61.5%	63.0%	-19.4%	-0.9%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
MISSION	2017	60.2	0.602	1.002	99.9
MISSION	2018	62.0	0.644	0.815	96.4
MISSION	2019	65.8	0.669	0.693	98.4
MISSION	2020	91.1	0.766	1.060	119.0
MISSION	2021	113.5	0.957	0.913	118.6
5-Year Average	17-21 Avg	78.5	0.728	0.897	107.9
MISSION	2022	109.9	0.784	0.879	140.2
	%Difference	39.9%	7.7%	-1.9%	29.9%

Division Reliability Indices
2017-2022
(Excluding MED)

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
NORTH BAY	2017	148.5	0.955	1.832	155.5
NORTH BAY	2018	116.3	0.921	1.771	126.3
NORTH BAY	2019	148.2	1.312	1.647	112.9
NORTH BAY	2020	143.3	1.235	2.093	116.0
NORTH BAY	2021	160.0	1.063	1.551	150.5
5-Year Average	17-21 Avg	143.3	1.097	1.779	130.6
NORTH BAY	2022	212.6	1.459	1.100	145.7
	%Difference	48.4%	33.0%	-38.2%	11.6%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
NORTH VALLEY	2017	112.3	0.863	2.007	130.2
NORTH VALLEY	2018	187.1	1.364	1.325	137.2
NORTH VALLEY	2019	205.0	1.506	1.458	136.1
NORTH VALLEY	2020	269.0	1.546	1.369	174.0
NORTH VALLEY	2021	427.7	1.752	2.192	244.1
5-Year Average	17-21 Avg	240.2	1.406	1.670	170.8
NORTH VALLEY	2022	337.6	2.178	1.206	155.0
	%Difference	40.6%	54.9%	-27.8%	-9.3%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
PENINSULA	2017	61.5	0.640	1.176	96.0
PENINSULA	2018	60.5	0.806	1.204	75.0
PENINSULA	2019	88.5	0.816	0.983	108.4
PENINSULA	2020	85.5	0.855	1.042	100.0
PENINSULA	2021	161.2	1.068	0.944	150.9
5-Year Average	17-21 Avg	91.4	0.837	1.070	109.2
PENINSULA	2022	129.9	1.005	1.351	129.2
	%Difference	42.1%	20.1%	26.3%	18.3%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SACRAMENTO	2017	121.2	1.070	1.708	113.2
SACRAMENTO	2018	101.0	1.021	1.825	98.9
SACRAMENTO	2019	98.9	0.866	1.574	114.3
SACRAMENTO	2020	173.6	1.350	1.499	128.6
SACRAMENTO	2021	155.4	1.122	1.874	138.4
5-Year Average	17-21 Avg	130.0	1.086	1.696	119.7
SACRAMENTO	2022	175.1	1.294	1.573	135.3
	%Difference	34.7%	19.2%	-7.3%	13.0%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SAN FRANCISCO	2017	36.5	0.500	0.372	73.0
SAN FRANCISCO	2018	35.2	0.378	0.270	93.0
SAN FRANCISCO	2019	56.8	0.614	0.258	92.4
SAN FRANCISCO	2020	43.9	0.582	0.386	75.5
SAN FRANCISCO	2021	49.4	0.530	0.499	93.2
5-Year Average	17-21 Avg	44.4	0.521	0.357	85.1
SAN FRANCISCO	2022	49.6	0.496	0.458	100.0
	%Difference	11.8%	-4.8%	28.3%	17.4%

Division Reliability Indices
2017-2022
(Excluding MED)

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SAN JOSE	2017	72.3	0.739	1.171	97.8
SAN JOSE	2018	85.0	0.858	1.322	99.1
SAN JOSE	2019	81.5	0.747	1.253	109.1
SAN JOSE	2020	120.9	0.906	1.274	133.5
SAN JOSE	2021	95.4	0.763	0.909	125.1
5-Year Average	17-21 Avg	91.0	0.803	1.186	113.4
SAN JOSE	2022	152.2	1.150	1.180	132.4
	%Difference	67.2%	43.2%	-0.5%	16.7%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SIERRA	2017	155.0	1.191	1.856	130.2
SIERRA	2018	152.9	1.241	1.350	123.2
SIERRA	2019	167.5	1.151	1.482	145.6
SIERRA	2020	208.0	1.422	1.169	146.2
SIERRA	2021	342.2	1.672	1.022	204.7
5-Year Average	17-21 Avg	205.1	1.335	1.376	153.6
SIERRA	2022	529.6	3.101	1.018	170.8
	%Difference	158.2%	132.3%	-26.0%	11.2%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SONOMA	2017	120.7	0.886	1.566	136.2
SONOMA	2018	105.5	0.956	1.201	110.3
SONOMA	2019	145.7	1.070	1.233	136.1
SONOMA	2020	124.5	1.062	1.327	117.2
SONOMA	2021	166.3	1.257	1.420	132.3
5-Year Average	17-21 Avg	132.5	1.046	1.349	126.7
SONOMA	2022	232.9	1.526	1.390	152.6
	%Difference	75.7%	45.8%	3.0%	20.5%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
STOCKTON	2017	84.6	0.946	1.264	89.5
STOCKTON	2018	107.7	1.036	1.872	103.9
STOCKTON	2019	175.3	1.276	1.130	137.4
STOCKTON	2020	131.8	1.187	1.268	111.0
STOCKTON	2021	176.2	1.151	1.471	153.2
5-Year Average	17-21 Avg	135.1	1.119	1.401	120.8
STOCKTON	2022	247.3	1.665	1.064	148.5
	%Difference	83.0%	48.8%	-24.1%	23.0%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
YOSEMITE	2017	143.0	1.170	2.150	122.2
YOSEMITE	2018	158.3	1.355	1.773	116.8
YOSEMITE	2019	160.4	1.470	1.603	109.1
YOSEMITE	2020	197.4	1.411	1.299	139.9
YOSEMITE	2021	434.1	2.180	1.811	199.2
5-Year Average	17-21 Avg	218.6	1.517	1.727	144.1
YOSEMITE	2022	328.9	2.047	1.631	160.7
	%Difference	50.4%	34.9%	-5.6%	11.5%

i. System and Division Performance Assessment

1. System Performance Assessment

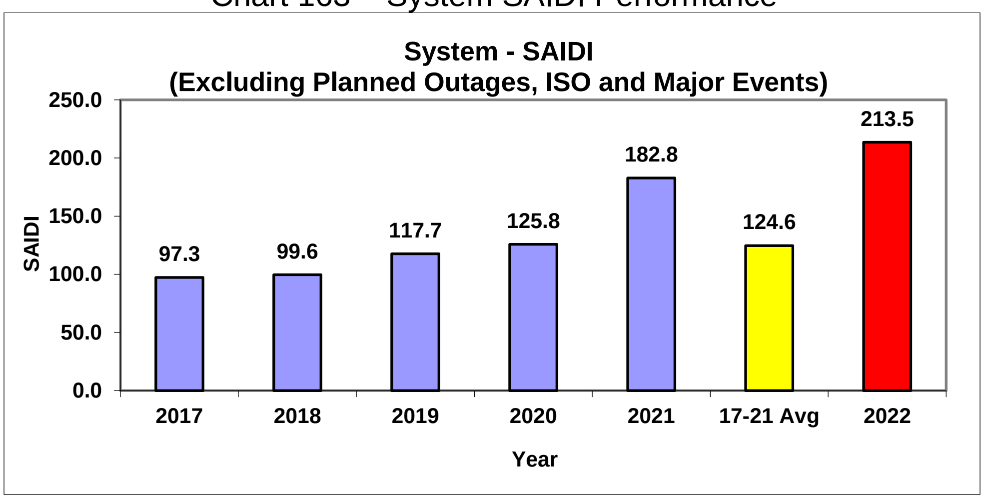
Table 9: System Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SYSTEM	2017	97.3	0.878	1.487	110.8
SYSTEM	2018	99.6	0.960	1.356	103.8
SYSTEM	2019	117.7	1.009	1.270	116.6
SYSTEM	2020	125.8	1.068	1.292	117.8
SYSTEM	2021	182.8	1.178	1.317	155.2
5-Year Average	17-21 Avg	124.6	1.019	1.344	122.4
SYSTEM	2022	213.5	1.470	1.309	145.2
	%Difference	71.3%	44.3%	-2.6%	18.7%

System SAIDI Performance

The system's 2022 SAIDI performance of 213.5 was 88.9 customer-minutes (or 71.3%) higher than the previous 5-year average of 124.6 as shown in the table above and illustrated in the figure below.

Chart 163 – System SAIDI Performance



The higher-than-average 2022 system SAIDI was attributed to the following:

1. On January 8th, a car pole accident on the Monte Rio – Fulton 60 kV transmission line knocked out a transmission pole causing a sustained outage to 8 substations in the Sonoma- Humboldt area. The outages on January 8th contributed 1.5 customer-minutes to the system's SAIDI performance.
2. The January 21st and 22nd outage was due to a strong offshore (northeast) wind

event across Northern California. Winds hit their peak late on 21st and continued into 22nd and wind gusts ranged between 30-55 mph; including Oakland Airport which hit a peak of 54 mph. Other elevated terrain saw peak gusts reach into the 50-60s, with a few exposed peaks like Mt Diablo hitting 71 mph. Winds were strongest along the western Sac Valley, North Bay hills to Lake County, through the Bay/Delta south to about San Jose. This event became the 8th largest event of the year. The January 21st and 22nd event contributed 5.9 customer-minutes to the system's SAIDI performance.

3. The March 3rd lightning storm event brought over 100 strikes of lightning incidents along with rain in some parts of the service territory. A substation breaker related outage at the Oakland X Substation due to a sensitive setting that tripped on load caused an outage to 32,160 customers. Several car pole incidents caused outages to 3,437 customers in the service territory. These and other events contributed 0.8 customer minutes to the system's SAIDI performance.
4. The March 27th winter storm event lasted for three days with light showers throughout the service territory. The outages on March 27th contributed 0.9 customer-minutes to the system's SAIDI performance.
5. The April 11th Wind event in some parts of the service territory resulted in several outages. The largest outage was experienced by 4,542 customers in the Northern region due to equipment failure. The outages on April 11th contributed 2.4 customer-minutes to the system's SAIDI performance.
6. The May 19th-20th wind event actually started on May 18th and brought a prolonged wind event and moderately warm days in the 90-100F in the intermediate and inland Bay Area valleys. This resulted in high electric loads and heat-related outage activity. There were two large outages that had a large impact. 2,088 Customers in the Northern region experienced a lengthy outage due to a car pole and yet in another outage 2,375 customers in the Bay area experienced an outage due to vegetation. The outages during May 19th - 20th wind event contributed 2.7 customer-minutes to the system's SAIDI performance.
7. The May 24th – 26th heat event started on May 23rd and lasted 4 consecutive days bringing 90 – 100F temperatures across the service territory. This event became the fourth largest event in the year and contributed 3.9 customer minutes to the system's SAIDI performance.
8. The June 1st outages on a clear day was due to a Transmission level outage

as a result of a failed equipment on the Vaca – Dixon 60 kV Transmission line. This outage affected 16,268 customers in Solano County. The resulting outages contributed 1.3 customer minutes to the system's SAIDI performance.

9. On June 4th , a failed lightning arrestor at the Castroville Substation resulted in several large outages in the Central Coast region. There were 6 outages involving EPSS enabled circuits as well. The outages on June 4th became the 9th largest event in the year. The resulting outages contributed 1.3 customer minutes to the system's SAIDI performance on July 20th, 2022.
10. The June 10th – 11th heat event started on June 9th bringing high temperatures across the PG&E service territory. Temperatures as high as 105ºF were recorded in the Central Valley and Northern region representing 5-10 degrees above average. Outages involved; (a) malfunctioning equipment, (b) 12 outages involving EPSS enabled circuits. These heat related outages contributed 3.4 customer minutes to the system's SAIDI performance.
11. On June 18th several equipment failure outages among other non-weather related outages. The largest outage was experienced by 3,026 customers in the Central Coast region due to failed underground cable. The outages on June 18th contributed 1.1 customer-minutes to the system's SAIDI performance.
12. The June 21st – 22nd heat event extended into the end of the month. However, the monsoonal moisture moved into the territory bringing lightning and thunderstorms on the 22nd. The lightning event on the 22nd resulted in burned substation equipment at Weedpatch substation in Kern County. The outages on June 21st – 22nd became the 6th largest event in the year. The Edgewood fire in Santa Cruz County June 21st resulted in a large number of Transmission and Substation level outages as two 60 kV Transmission lines (Jefferson #1 and Jefferson-Hillsdale JCT) were de-energized for fire fighter safety. Distribution outages involved; (a) the de-energization for fire fighter safety due to lightning event on the 22nd and (b) 69 outages involving EPSS enabled circuits. These outages contributed 8.5 customer-minutes to the system's SAIDI performance.
13. The June 25th – 28th heat event is the continuation of the heat event from prior days and extended into the end of the month. The Rices fire event in Nevada County on the 28th burnt up over 900 acres and resulted in large number of Transmission and Substation level outages as two 60 kV Transmission lines (Colgate – Grass Valley and Colgate – Alleghany) were de-energized for Fire fighter safety. Distribution outages involved; (a) the de-energization for fire

fighter safety due to lightning event on the 22nd and (b) 20 outages involving EPSS enabled circuits. These outages contributed 2.4 customer-minutes to the system's SAIDI performance.

14. On July 2nd several equipment failure outages among other non weather related outages. The largest outage was experienced by 4,971 customers in the Central Valley region due to failed substation equipment. The outages on July 2nd contributed 1.5 customer-minutes to the system's SAIDI performance.
15. The July 4th Electra Forest fire event that spread over 4,500 acres in Amador and Calaveras counties required sections of transmission and distribution lines be de-energized at the request of Cal Fire. The Electra fire started on July 4th, 2022, rendering the unavailability of 2-230 kV Tiger Creek-Valley Springs as well as Tiger Creek-Electra transmission lines to fight the fire and resulting in the loss of power to seven substations (Salt Springs, West Point -1, West Point -2, Alpine, Pine grove, Electra, Calaveras Cement). In addition, there were fifteen EPSS related prolonged outages on the distribution system as well. These events contributed 1.2 customer minutes to the system's SAIDI performance.
16. The July 11-15th heat related outages across the service territory resulted in a high number of unknown cause related as well as equipment failure related outages. Two large Unknown outages in Central Coast region affected 6,082 customers. A failed lightning arrestor on a riser pole caused an outage to 4,440 customers in the Central Valley region. In addition, there were 69 EPSS related prolonged outages on the distribution system. These events contributed 4.3 customer minutes to the system's SAIDI performance.
17. The July 21-23rd outages occurred as a result of high animal related as well as equipment failure related outages. A bird's nest in the substation bus cause equipment failure in Del Monte Substation causing an outage to 24,940 customers in the Central Coast region. In addition, there were 35 EPSS related prolonged outages on the distribution system. These events contributed 3.8 customer minutes to the system's SAIDI performance.
18. The August 4th outages occurred due to unusually large number of equipment failures as well as third party and unknown cause related outages. High temperature of 104F was recorded in certain areas in the Central Valley. A distribution circuit breaker at the Stockdale substation caused an outage to 14,437 customers in the Central Valley Region. In addition, there were 21 EPSS related prolonged outages on the distribution system. The outages on

August 4th became the 10th largest event in the year. The These events contributed 1.5 customer minutes to the system's SAIDI performance.

19. The August 17-19th outages occurred due to several animal as well as unknown cause outages. A 3rd party vehicle hit and broke a transmission wood pole on the Valley Springs #1 – 60 kV transmission line causing an outage to 3 substations Coral, Linden and North Branch substations serving 8,338 customers in the Central Valley region. In addition, there were 59 EPSS related prolonged outages on the distribution system. These events contributed 3.3 customer minutes to the system's SAIDI performance.
20. The August 24th outages occurred due to a transmission protective equipment relayed during a routine maintenance at the Gold Hills substation de-energizing Gold Hill-Clarksville, Missouri Flat-Gold Hill #1 & #2, El Dorado-Missouri Flat #1 & #2-115kV. The problem was detected and corrected restoring all 6 substations (Placerville, Shingle Springs Source, El Dorado PH, Apple Hill, Diamond Springs and Clarksville). This issue caused an outage to 56,957 customers in the Northern Region. In addition, there were 13 EPSS related prolonged outages on the distribution system. The outages on August 24th became the 7th largest event in the year. The These events contributed 1.5 customer minutes to the system's SAIDI performance.
21. The August 27-29th event resulted from late season heat with temperatures reaching 100-107ºF across the interior and around 90ºF in the Bay area resulted in high electrical loads causing heat related outages. A bird related outage in the central coast region caused a transmission level outage to 4,735 customers served from Castroville substation. In addition, there were 46 EPSS related prolonged outages on the distribution system. The August 27-29th outage activity contributed 2.4 customer-minutes to the system's SAIDI performance.
22. The September 4-5th and 8th major heat event with multiple days of record hot temperatures started with increasing temperatures across interior regions during the end of August. Temperatures then continued to increase while spreading toward the coast during the holiday weekend. By Sunday September 4th, the high temperature at San Jose had reached the 97 degrees, with most other Bay locations seeing temperature in the 90s, and with 100-110F across the interior. Temperatures then reached their maximums on the 6th and 7th in all regions. The low/high temperatures in San Jose on both days was 68/104 and then 74/109 which are 15-30 degrees above normal for that time of year.

The temperatures across the interior reached a high of 100-115F. Onshore flow then slowly returned and started to cool the region from the coast inward from September 7-10. September 6th and 7th became the first two Major event days of the year. A total of 149 EPSS related prolonged outages occurred on the distribution system. The outages on September 4-5th and 8th became the largest event of the year. This #1 event of the year contributed 8.2 customer-minutes to the system's SAIDI performance.

23. The September 12th–13th event was driven by a weather system that moved through Northern California resulting in rain, lightning and flashovers causing several outages. The largest contribution to SAIDI came from a vegetation caused outage in the Bay Area Region that affected 1,206 customers. A total of 36 EPSS related prolonged outages occurred during this period. The outages on September 12th-13th contributed 2.6 customer-minutes to the system's SAIDI performance.
24. The September 18th–19th event was mainly due to a large number of equipment failure related outages. The largest contribution to SAIDI came from a distribution underground cable failure in the Bay Area Region that affected caused outage in the Bay Area Region that affected 5,868 customers served from the Oakland D substation. A total of 74 EPSS related prolonged outages occurred during this period. The outages on September 18th–19th became the 5th largest event in the year. The outages contributed 3.9 customer-minutes to the system's SAIDI performance.
25. The October 23rd wind event arrived on the 22nd bringing a weather system across the West Coast pushing into the Great Basin region on 10/23. This system brought some light valley rainfall/mountain snowfall to the area, but mainly produced breezy to gusty northwest winds. At their peaks, sustained winds topped out ranging 15-25 mph with gusts peaking between 25-40 mph. A total of 22 EPSS related outages occurred on October 23rd. The outages contributed 0.8 customer-minutes to the system's SAIDI performance.
26. The November 1st to 8th rainstorm event moved southeast along the Sierra with SF Bay Areas and parts of the Northern Sac Valley receiving around a half inch of rainfall. North Coast and the northern Sierra, saw the bulk of the precipitation from this event with a few spots recording an inch of total rainfall. Peak sustained winds during this time were 15-30 mph with A total of 22 EPSS related outages occurred on October 23rd. peak gusts ranging 25-45 mph. Sierra mountains saw snow on 11/3. A weather system began to pivot onshore

on 11/6 and 11/7, peaked 11/8, and ended with low to mid elevation snow along the Sierras late on 11/8 continuing into 11/9. Anywhere from 0.5” to 2.5” of liquid fell across valley floors and below 3,000ft, with higher amounts along the North Coast and Sierra during the entirety of this event. Winds reached their peak across the territory on 11/7 and 11/8 with peak sustained winds ranging 15-30 mph with peak gusts between 25-45 mph. As this system exited 11/8 into 11/9 snow levels dropped along the Sierra to around 3k ft and caused lingering outages across North Valley, Sierra, and Stockton divisions. A total of 120 EPSS related outages occurred between November 1st and 8th, 2022. The outages contributed 11.3 customer-minutes to the system’s SAIDI performance.

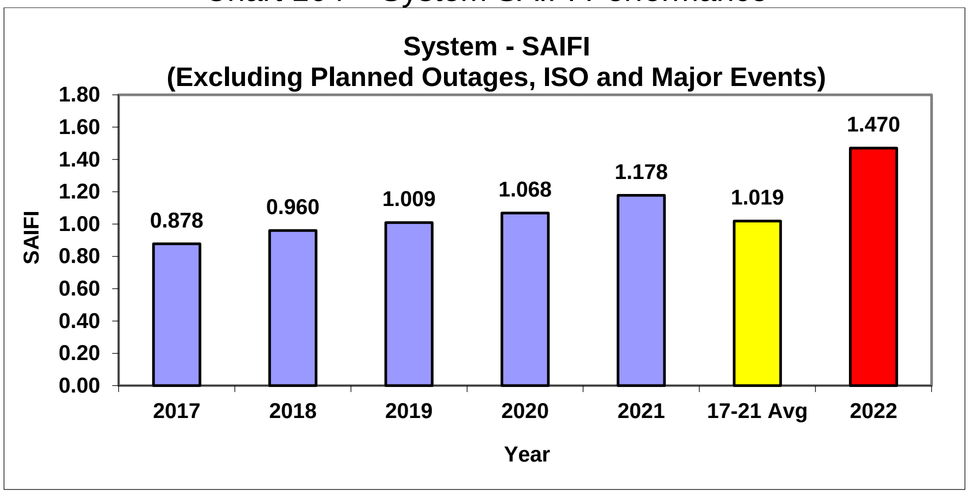
27. December 9th - 13th winter storm began pushing onshore across the Humboldt Coast on the 9th, peaked across the service territory on 10th and 11th, with residual outages on 12th and 13th. Most locations saw 1.0 - 5.0” of precipitation fall with this event, with only the southern San Joaquin Valley seeing less than 0.50”. Peak sustained winds on the 10th reached 20-35 mph with peak gusts ranging 35-55 mph. Wind continued into the 11th at a lesser capacity of 10-30 mph sustained with gusts ranging 20-35 mph. Snow levels also dropped to around 2-3,000ft on the 11th and impact along the Sierra Mountain divisions continued. A total of 3 EPSS related outages occurred between November 1st and 8th,2022. The outages contributed 6.9 customer-minutes to the system’s SAIDI performance.
28. December 26th -27th winter storm began moving onshore across the Humboldt Coast on December 26th and pushed through the remainder of the territory on December 27th, with some residual impact on 28th. As a result, the service territory received 0.50” of rainfall, with the Central Valley seeing anywhere from 0.5 – 1.5” at the lowest elevations. The Coast, SF Bay, and Sierra all saw over an inch of precipitation over the course of the event, with 1.5 - 5.0” of precipitation. Peak sustained winds on the 27th reached 20-45 mph with peak gusts ranging 25-60 mph, with the strongest across the North Coast and far North. The outages contributed 4.6 customer-minutes to the system’s SAIDI performance.
29. December 30th rain event started on the 29th when a warm front ahead of the next major weather system moved onshore across the North Coast on the 29th and pushed south across much of Northern California on the 30th. A slow-moving major winter storm then moved onshore and through the region on the

31st. The warm weather brought moderate to heavy rainfall and windy conditions to the service territory, with 0.75” across the valley floors near the Delta/Northern San Joaquin Valley to 6.0-7.0” of rainfall across parts of the North Coast and northern and central Sierra, and 1.5-5.0” falling along the foothills and parts of the Northern Sacramento Valley. Santa Cruz mountains saw over 3.00” of precipitation. On the 31st, this major storm slowly moved onshore near San Francisco and caused flooding and broke single day precipitation records at Oakland and Hayward Airports. Most of the precipitation fell south of a line from Mendocino to Plumas County, with 1.0-5.0” across the SF Bay/Delta regions and around 7” in the Santa Cruz Range, and anywhere from 1.0-8.0” of precipitation along the Sierra. Parts of Fresno, Kings, and Kern Counties were shadowed in this event and saw less than 0.50” of precipitation. The strongest winds on the 31st were also south of the same Mendocino to Plumas County line, with sustained winds generally ranging 15-30 mph with peak gusts ranging 25-40 mph. Along the higher terrain along the Coast, Diablo Range, and Sierra foothills a few localized gusts 50-60 mph were recorded. On the backside of this system from Yuba south to Stockton northerly winds with gusts ranging 45-60 mph were recorded. The outages contributed 1.2 customer-minutes to the system’s SAIDI performance.

System SAIFI Performance

The system's 2022 SAIFI performance of 1.470 was 0.452 customer-interruptions (or 44.3%) higher than the previous 5-year average of 1.019 as shown in the table above and illustrated in the figure below.

Chart 164 – System SAIFI Performance



The higher-than-average 2022 system SAIFI was attributed to the following:

1. The January 21st and 22nd outage was due to a strong offshore (northeast) wind event across Northern California. Winds hit their peak late on 1/21 and continued into 1/22 and wind gusts ranged between 30-55 mph; including Oakland Airport which hit a peak of 54 mph. Other elevated terrain saw peak gusts reach into the 50-60s, with a few exposed peaks like Mt Diablo hitting 71 mph. Winds were strongest along the western Sac Valley, North Bay hills to Lake County, through the Bay/Delta south to about San Jose. This event became the 8th largest event of the year. The outages on January 21st and 22nd contributed 0.021 customer-interruptions to the system SAIFI.
2. The March 3rd lightning storm event brought over 100 strikes of lightning incidents along with rain in some parts of the service territory. A substation breaker related outage at the Oakland X Substation due to a sensitive setting that tripped on load caused an outage to 32,160 customers. Several car pole incidents caused outages to 3,437 customers in the service territory. These outages on March 3rd contributed 0.008 customer-interruptions to the system SAIFI.
3. The March 27th winter storm event lasted for three days with light showers throughout the service territory. The outages on March 27th contributed 0.009

customer-interruptions to the system SAIFI.

4. The April 11th Wind event in some parts of the service territory resulted in several outages. The largest outage was experienced by 4,542 customers in the Northern region due to equipment failure. These outages on March 3rd contributed 0.016 customer-interruptions to the system SAIFI.
5. The May 19th-20th wind event actually started on May 18th and brought a prolonged wind event and moderately warm days in the 90-100F in the intermediate and inland Bay Area valleys. This resulted in high electric loads and heat-related outage activity. There were two large outages that had a large impact. 2,088 Customers in the Northern region experienced a lengthy outage due to a car pole and yet in another outage 2,375 customers in the Bay area experienced an outage due to vegetation. The outages during May 19th - 20th wind event contributed 0.016 customer-interruptions to the system SAIFI.
6. The May 24th – 26th heat event started on May 23rd and lasted 4 consecutive days bringing 90 – 100F temperatures across the service territory. This event became the fourth largest event in the year and contributed 0.029 customer-interruptions to the system SAIFI.
7. The June 1st outages on a clear day was due to a Transmission level outage as a result of a failed equipment on the Vaca – Dixon 60 kV Transmission line. This outage affected 16,268 customers in Solano County. The resulting outages contributed 0.006 customer-interruptions to the system SAIFI.
8. On June 4th, a failed lightning arrestor at the Castroville Substation resulted in several large outages in the Central Coast region. There were 6 outages involving EPSS enabled circuits as well. The outages on June 4th became the 9th largest event in the year. The resulting outages contributed 0.0194 customer-interruptions to the system SAIFI.
9. The June 10th – 11th heat event started on June 9th bringing high temperatures across the PG&E service territory. Temperatures as high as 105oF were recorded in the Central Valley and Northern region representing 5-10 degrees above average. Outages involved; (a) malfunctioning equipment, (b) 12 outages involving EPSS enabled circuits. These heat related outages contributed 0.026 customer minutes to the system's SAIDI performance.
10. On June 18th several equipment failure outages among other non weather related outages. The largest outage was experienced by 3,026 customers in the Central Coast region due to failed underground cable. The outages on June 18th contributed 0.005 customer-interruptions to the system SAIFI.

11. The June 21st – 22nd heat event extended into the end of the month. However, the monsoonal moisture moved into the territory bringing lightning and thunderstorms on the 22nd. The lightning event on the 22nd resulted in burned substation equipment at Weedpatch substation in Kern County. The outages on June 21st – 22nd became the 6th largest event in the year. The Edgewood fire in Santa Cruz county June 21st resulted in a large number of Transmission and Substation level outages as two 60 kV Transmission lines (Jefferson #1 and Jefferson-Hillsdale JCT) were de-energized for fire fighter safety. Distribution outages involved; (a) the de-energization for fire fighter safety due to lightning event on the 22nd and (b) 69 outages involving EPSS enabled circuits. These outages contributed 0.024 customer-interruptions to the system SAIFI.
12. The June 25th – 28th heat event is the continuation of the heat event from prior days and extended into the end of the month. The Rices fire event in Nevada County on 6/28/22 burnt up over 900 acres and resulted in large number of Transmission and Substation level outages as two 60 kV Transmission lines (Colgate – Grass Valley and Colgate – Alleghany) were de-energized for Fire fighter safety. Distribution outages involved; (a) the de-energization for fire fighter safety due to lightning event on the 22nd and (b) 20 outages involving EPSS enabled circuits. These outages contributed 0.022 customer-interruptions to the system SAIFI.
13. The July 4th Electra Forest fire event that spread over 4,500 acres in Amador and Calaveras counties required sections of transmission and distribution lines be de-energized at the request of Cal Fire. The Electra fire started on July 4th, 2022, rendering the unavailability of 2-230 kV Tiger Creek-Valley Springs as well as Tiger Creek-Electra transmission lines to fight the fire and resulting in the loss of power to seven substations (Salt Springs, West Point -1, West Point -2, Alpine, Pine grove, Electra, Calaveras Cement). In addition, there were fifteen EPSS related prolonged outages on the distribution system as well. These events contributed 0.008 customer-interruptions to the system SAIFI.
14. The July 11-15th heat related outages across the service territory resulted in a high number of unknown cause related as well as equipment failure related outages. Two large unknown outages in Central Coast region affected 6,082 customers. A failed lightning arrestor on a riser pole caused an outage to 4,440 customers in the Central Valley region. In addition, there were 69 EPSS related prolonged outages on the distribution system. These events contributed 0.030

customer-interruptions to the system SAIFI.

15. The July 21-23rd outages occurred as a result of high animal related outages as well as equipment failure related outages. A bird's nest in the substation bus caused equipment failure in Del Monte Substation causing an outage to 24,940 customers in the Central Coast region. In addition, there were 35 EPSS related prolonged outages on the distribution system. These events contributed 0.018 customer-interruptions to the system SAIFI.
16. The August 4th outages occurred due to unusually large number of equipment failures as well as third party and unknown cause related outages. High temperature of 104F was recorded in certain areas in the Central Valley. A distribution circuit breaker at the Stockdale substation caused an outage to 14,437 customers in the Central Valley Region. In addition, there were 21 EPSS related prolonged outages on the distribution system. The outages on August 4th became the 10th largest event in the year. The These events contributed 0.011 customer-interruptions to the system SAIFI.
17. The August 17-19th outages occurred due to several animal as well as unknown cause outages. A 3rd party vehicle hit and broke a transmission wood pole on the Valley Springs #1 – 60 kV transmission line causing an outage to 3 substations Coral, Linden and North Branch substations serving 8,338 customers in the Central Valley region. In addition, there were 59 EPSS related prolonged outages on the distribution system. These events contributed 0.0198 customer-interruptions to the system SAIFI.
18. The August 24th outages occurred due to a transmission protective equipment relayed during a routine maintenance at the Gold Hills substation de-energizing Gold Hill-Clarksville, Missouri Flat-Gold Hill #1 & #2, El Dorado-Missouri Flat #1 & #2-115kV. The error was detected and corrected restoring all 6 substations (Placerville, Shingle Springs Source, El Dorado PH, Apple Hill, Diamond Springs and Clarksville). This problem caused an outage to 56,957 customers in the Northern Region. In addition, there were 13 EPSS related prolonged outages on the distribution system. The outages on August 24th became the 7th largest event in the year. The These events contributed 0.0144 customer-interruptions to the system SAIFI.
19. The August 27-29th event resulted from late season heat with temperatures reaching 100-107oF across the interior and around 90oF in the Bay area resulted in high electrical loads causing heat related outages. A bird related outage in the central coast region caused a transmission level outage to 4,735

customers served from Castroville substation. In addition, there were 46 EPSS related prolonged outages on the distribution system. The August 27-29th outage activity contributed 0.022 customer-interruptions to the system SAIFI.

20. The September 4-5th and 8th major heat event with multiple days of record hot temperatures started with increasing temperatures across interior regions during the end of August. Temperatures then continued to increase while spreading toward the coast during the holiday weekend. By Sunday 9/4 the high temperature at San Jose had reached the 97 degrees, with most other Bay locations seeing temperature in the 90s, and with 100-110F across the interior. Temperatures then reached their maximums on 6th and 7th in all regions. The low/high and San Jose both days was 68/104 and then 74/109 which are 15-30 degrees above normal for that time of year. The temperatures across the interior reached a high of 100-115F. Onshore flow then slowly returned and started to cool the region from the coast inward from 9/7 to 9/10. Sept 6th and 7th became the first two Major event days of the year. A total of 149 EPSS related prolonged outages occurred on the distribution system. The outages on September 4-5th and 8th became the largest event of the year. This #1 event of the year contributed 0.032 customer-interruptions to the system SAIFI.
21. The September 12th–13th event was driven by a weather system that moved through Northern California resulting in rain, lightning and flashovers causing several outages. The largest contribution to SAIDI came from a Vegetation caused outage in the Bay Area Region that affected 1,206 customers. A total of 36 EPSS related prolonged outages occurred during this period. The outages on September 12th-13th contributed 0.016 customer-interruptions to the system's SAIFI performance.
22. The September 18th–19th event was mainly due to a large number of equipment failure related outages. The largest contribution to SAIDI came from a distribution underground cable failure in the Bay Area Region that affected caused outage in the Bay Area Region that affected 5,868 customers served from the Oakland D substation. A total of 74 EPSS related prolonged outages occurred during this period. The outages on September 18th–19th became the 5th largest event in the year. The outages contributed 0.028 customer-interruptions to the system's SAIFI performance.
23. The October 23rd wind event arrived on the 22nd bringing a weather system across the West Coast pushing into the Great Basin region on 10/23. This

system brought some light valley rainfall/mountain snowfall to the area, but mainly produced breezy to gusty northwest winds. At their peaks, sustained winds topped out ranging 15-25 mph with gusts peaking between 25-40 mph. A total of 22 EPSS related outages occurred on October 23rd. The outages contributed 0.008 customer-interruptions to the system's SAIFI performance.

24. The November 1st to 8th rainstorm event moved southeast along the Sierra with SF Bay Areas and parts of the Northern Sac Valley receiving around a half inch of rainfall. North Coast and the northern Sierra, saw the bulk of the precipitation from this event with a few spots recording an inch of total rainfall. Peak sustained winds during this time were 15-30 mph with A total of 22 EPSS related outages occurred on October 23rd. peak gusts ranging 25-45 mph. Sierra mountains saw snow on November 3rd, 2022. A weather system began to pivot onshore on November 6th and 7th, peaked on the 8th, and ended with low to mid elevation snow along the Sierras late on the 8th continuing into November 9th. Anywhere from 0.5" to 2.5" of liquid fell across valley floors and below 3,000ft, with higher amounts along the North Coast and Sierra during the entirety of this event. Winds reached their peak across the territory on 11/7 and 11/8 with peak sustained winds ranging 15-30 mph with peak gusts between 25-45 mph. As this system exited November 8-9th, snow levels dropped along the Sierra to around 3,000 ft and caused lingering outages across North Valley, Sierra, and Stockton divisions. A total of 120 EPSS related outages occurred between November 1st and 8th,2022. The outages between November 1st to 8th contributed 0.066 customer-interruptions to the system's SAIFI performance.
25. December 9th - 13th winter storm began pushing onshore across the Humboldt Coast on the 9th, peaked across the service territory on 10th and 11th, with residual outages on 12th and 13th. Most locations saw 1.0 - 5.0" of precipitation fall with this event, with only the southern San Joaquin Valley seeing less than 0.50". Peak sustained winds on the 10th reached 20-35 mph with peak gusts ranging 35-55 mph. Wind continued into the 11th at a lesser capacity of 10-30 mph sustained with gusts ranging 20-35 mph. Snow levels also dropped to around 2-3,000ft on the 11th and impact along the Sierra Mountain divisions continued. A total of 3 EPSS related outages occurred between November 1st and 8th,2022. The outages between December 9th - 13th contributed 0.030 customer-interruptions to the system's SAIFI performance.
26. December 26th -27th winter storm began moving onshore across the Humboldt

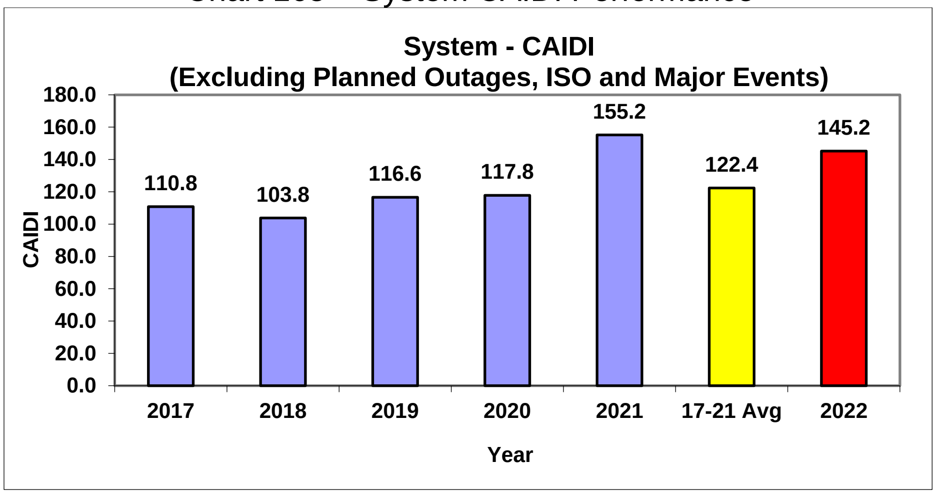
Coast on 12/26 and pushed through the remainder of the territory on 12/27, with some residual impact on 12/28. As a result, the service territory received 0.50" of rainfall, with the Central Valley seeing anywhere from 0.5 – 1.5" at the lowest elevations. The Coast, SF Bay, and Sierra all saw over an inch of precipitation over the course of the event, with 1.5 - 5.0" of precipitation. Peak sustained winds on the 27th reached 20-45 mph with peak gusts ranging 25-60 mph, with the strongest across the North Coast and far North. The outages between December 26th -27th contributed 0.018 customer-interruptions to the system's SAIFI performance.

27. December 30th rain event started on the 29th when a warm front ahead of the next major weather system moved onshore across the North Coast on the 29th and pushed south across much of Northern California on the 30th. A slow-moving major winter storm then moved onshore and through the region on the 31st. The warm weather brought moderate to heavy rainfall and windy conditions to the service territory, with 0.75" across the valley floors near the Delta/Northern San Joaquin Valley to 6.0-7.0" of rainfall across parts of the North Coast and northern and central Sierra, and 1.5-5.0" falling along the foothills and parts of the Northern Sacramento Valley. Santa Cruz mountains saw over 3.00" of precipitation. On the 31st, this major storm slowly moved onshore near San Francisco and caused flooding and broke single day precipitation records at Oakland and Hayward Airports. Most of the precipitation fell south of a line from Mendocino to Plumas County, with 1.0-5.0" across the San Francisco Bay/Delta regions and around 7" in the Santa Cruz Range, and anywhere from 1.0-8.0" of precipitation along the Sierra. Parts of Fresno, Kings, and Kern Counties were shadowed in this event and saw less than 0.50" of precipitation. The strongest winds on the 31st were also south of the same Mendocino to Plumas County line, with sustained winds generally ranging 15-30 mph with peak gusts ranging 25-40 mph. Along the higher terrain, the Coast, Diablo Range, and Sierra foothills, a few localized gusts 50-60 mph were recorded. On the backside of this system from Yuba south to Stockton northerly winds with gusts ranging 45-60 mph were recorded. The outages on December 30th, contributed 0.006 customer-interruptions to the system's SAIFI performance.

System CAIDI Performance

The system's 2022 CAIDI performance of 145.2 was 22.8 customer-minutes (or 18.7%) higher than the previous 5-year average of 122.4 as shown in the table above and illustrated in the figure below.

Chart 165 – System CAIDI Performance



The higher-than-average 2023 system CAIDI was attributed to the following:

Weather-Events:

1. January 21st-22nd – Wind event became the 8th largest event of the year.
2. March 27th – A winter storm event lasted for three days.
3. April 11th – A Wind event in some parts of the service territory resulted in several outages.
4. May 19th-20th – A wind event actually started on May 18th and brought a prolonged wind event and moderately warm days in the 90-100F in the intermediate and inland Bay Area valleys. This resulted in high electric loads and heat-related outage activity.
5. May 24th-26th – A heat event started on May 23rd and lasted 4 consecutive days bringing 90 – 100F temperatures across the service territory. This event became the fourth largest event in the year.
6. June 4th – A heat event occurred. There were 6 outages involving EPSS enabled circuits as well. The outages on June 4th became the 9th largest event in the year.
7. June 10th-11th – A heat event started on June 9th bringing high temperatures across the PG&E service territory. Temperatures as high as 105°F were recorded in the Central Valley and Northern region representing

5-10 degrees above average.

8. June 21st-22nd – An extended heat event occurred through to the end of the month. However, the monsoonal moisture moved into the territory bringing lightning and thunderstorms on the 22nd. The lightning event on the 22nd resulted in burned substation equipment at Weedpatch substation in Kern County. The outages on June 21st – 22nd became the 6th largest event in the year. The Edgewood fire in Santa Cruz county June 21st resulted in a large number of Transmission and Substation level outages as two 60 kV Transmission lines (Jefferson #1 and Jefferson-Hillsdale JCT) were de-energized for fire fighter safety.
9. June 25th– 28th – This heat event is the continuation of the heat event from prior days and extended into the end of the month. The Rices fire event in Nevada County on the 28th burnt up over 900 acres and resulted in large number of Transmission and Substation level outages as two 60 kV Transmission lines (Colgate – Grass Valley and Colgate – Alleghany) were de-energized for Fire fighter safety. Distribution outages involved; (a) the de-energization for fire fighter safety due to lightning event on the 22nd and (b) 20 outages involving EPSS enabled circuits.
10. The July 11-15th heat related outages across the service territory resulted in a high number of unknown cause related as well as equipment failure related outages. Two large Unknown outages in Central Coast region affected 6,082 customers. A failed lightning arrestor on a riser pole caused an outage to 4,440 customers in the Central Valley region. In addition, there were 69 EPSS related prolonged outages on the distribution system.
11. The August 4th outages occurred due to unusually large number of equipment failures as well as third party and unknown cause related outages. High temperature of 104F was recorded in certain areas in the Central Valley. A distribution circuit breaker at the Stockdale substation caused an outage to 14,437 customers in the Central Valley Region. In addition, there were 21 EPSS related prolonged outages on the distribution system. The outages on August 4th became the 10th largest event in the year.
12. The August 17-19th outages occurred due to several animal as well as unknown cause outages. A 3rd party vehicle hit and broke a transmission wood pole on the Valley Springs #1 – 60 kV transmission line causing an outage to 3 substations Coral, Linden and North Branch substations serving

8,338 customers in the Central Valley region. In addition, there were 59 EPSS related prolonged outages on the distribution system.

13. The August 24th outages occurred due to a transmission protective equipment relayed during a routine maintenance at the Gold Hills substation de-energizing Gold Hill-Clarksville, Missouri Flat-Gold Hill #1 & #2, El Dorado-Missouri Flat #1 & #2-115kV. The problem was detected and corrected restoring all 6 substations (Placerville, Shingle Springs Source, El Dorado PH, Apple Hill, Diamond Springs and Clarksville). This problem caused an outage to 56,957 customers in the Northern Region. In addition, there were 13 EPSS related prolonged outages on the distribution system. The outages on August 24th became the 7th largest event in the year. The
14. The August 27-29th event resulted from late season heat with temperatures reaching 100-107ºF across the interior and around 90ºF in the Bay area resulted in high electrical loads causing heat related outages. A bird related outage in the central coast region caused a transmission level outage to 4,735 customers served from Castroville substation. In addition, there were 46 EPSS related prolonged outages on the distribution system.
15. The September 4-5th and 8th major heat event with multiple days of record hot temperatures started with increasing temperatures across interior regions during the end of August. Temperatures then continued to increase while spreading toward the coast during the holiday weekend. By Sunday 9/4 the high temperature at San Jose had reached the 97 degrees, with most other Bay locations seeing temperature in the 90s, and with 100-110F across the interior. Temperatures then reached their maximums on 6th and 7th in all regions. The low/high and San Jose both days was 68/104 and then 74/109 which are 15-30 degrees above normal for that time of year. The temperatures across the interior reached a high of 100-115F. Onshore flow then slowly returned and started to cool the region from the coast inward from 9/7 to 9/10. Sept 6th and 7th became the first two Major event days of the year. A total of 149 EPSS related prolonged outages occurred on the distribution system. The outages on September 4-5th and 8th became the largest event of the year.
16. The September 12th–13th event was driven by a weather system that moved through Northern California resulting in rain, lightning and flashovers causing several outages. The largest contribution to SAIDI came from a Vegetation caused outage in the Bay Area Region that affected 1,206

customers. A total of 36 EPSS related prolonged outages occurred during this period.

17. The September 18th–19th event was mainly due to a large number of equipment failure related outages. The largest contribution to SAIDI came from a distribution underground cable failure in the Bay Area Region that affected caused outage in the Bay Area Region that affected 5,868 customers served from the Oakland D substation. A total of 74 EPSS related prolonged outages occurred during this period. The outages on September 18th–19th became the 5th largest event in the year.
18. The October 23rd wind event arrived on the 22nd bringing a weather system across the West Coast pushing into the Great Basin region on 10/23. This system brought some light valley rainfall/mountain snowfall to the area, but mainly produced breezy to gusty northwest winds. At their peaks, sustained winds topped out ranging 15-25 mph with gusts peaking between 25-40 mph. A total of 22 EPSS related outages occurred on October 23rd.
19. The November 1st to 8th rainstorm event moved southeast along the Sierra with SF Bay Areas and parts of the Northern Sac Valley receiving around a half inch of rainfall. North Coast and the northern Sierra, saw the bulk of the precipitation from this event with a few spots recording an inch of total rainfall. Peak sustained winds during this time were 15-30 mph with A total of 22 EPSS related outages occurred on October 23rd. peak gusts ranging 25-45 mph. Sierra mountains saw snow on 11/3. A weather system began to pivot onshore on 11/6 and 11/7, peaked 11/8, and ended with low to mid elevation snow along the Sierras late on 11/8 continuing into 11/9. Anywhere from 0.5” to 2.5” of liquid fell across valley floors and below 3,000ft, with higher amounts along the North Coast and Sierra during the entirety of this event. Winds reached their peak across the territory on 11/7 and 11/8 with peak sustained winds ranging 15-30 mph with peak gusts between 25-45 mph. As this system exited 11/8 into 11/9 snow levels dropped along the Sierra to around 3k ft and caused lingering outages across North Valley, Sierra, and Stockton divisions. A total of 120 EPSS related outages occurred between November 1st and 8th, 2022.
20. December 9th - 13th winter storm began pushing onshore across the Humboldt Coast on the 9th, peaked across the service territory on 10th and 11th, with residual outages on 12th and 13th. Most locations saw 1.0 - 5.0” of precipitation fall with this event, with only the southern San Joaquin Valley

seeing less than 0.50". Peak sustained winds on the 10th reached 20-35 mph with peak gusts ranging 35-55 mph. Wind continued into the 11th at a lesser capacity of 10-30 mph sustained with gusts ranging 20-35 mph. Snow levels also dropped to around 2-3,000ft on the 11th and impact along the Sierra Mountain divisions continued. A total of 3 EPSS related outages occurred between November 1st and 8th,2022.

21. December 26th -27th winter storm began moving onshore across the Humboldt Coast on December 26th and pushed through the remainder of the territory on December 27th, with some residual impact on 28th. As a result, the service territory received 0.50" of rainfall, with the Central Valley seeing anywhere from 0.5 – 1.5" at the lowest elevations. The Coast, SF Bay, and Sierra all saw over an inch of precipitation over the course of the event, with 1.5 - 5.0" of precipitation. Peak sustained winds on the 27th reached 20-45 mph with peak gusts ranging 25-60 mph, with the strongest across the North Coast and far North.
22. December 30th rain event started on the 29th when a warm front ahead of the next major weather system moved onshore across the North Coast on the 29th and pushed south across much of Northern California on the 30th. A slow-moving major winter storm then moved onshore and through the region on the 31st. The warm weather brought moderate to heavy rainfall and windy conditions to the service territory, with 0.75" across the valley floors near the Delta/Northern San Joaquin Valley to 6.0-7.0" of rainfall across parts of the North Coast and northern and central Sierra, and 1.5-5.0" falling along the foothills and parts of the Northern Sacramento Valley. Santa Cruz mountains saw over 3.00" of precipitation. On the 31st, this major storm slowly moved onshore near San Francisco and caused flooding and broke single day precipitation records at Oakland and Hayward Airports. Most of the precipitation fell south of a line from Mendocino to Plumas County, with 1.0-5.0" across the SF Bay/Delta regions and around 7" in the Santa Cruz Range, and anywhere from 1.0-8.0" of precipitation along the Sierra. Parts of Fresno, Kings, and Kern Counties were shadowed in this event and saw less than 0.50" of precipitation. The strongest winds on the 31st were also south of the same Mendocino to Plumas County line, with sustained winds generally ranging 15-30 mph with peak gusts ranging 25-40 mph. Along the higher terrain along the Coast, Diablo Range, and Sierra foothills a few localized gusts 50-60 mph were recorded. On the

backside of this system from Yuba south to Stockton northerly winds with gusts ranging 45-60 mph were recorded.

These non-weather-related outages contributed an additional 179.7 minutes to the overall system CAIDI.

Non-Weather-Related Events:

1. January 8th – A car pole accident on the Monte Rio – Fulton 60 kV transmission line knocked out a transmission pole on January 8th causing a sustained outage to 8 substations in the Sonoma-Humboldt area. Annapolis, Fort Ross, Garcia, Gualala, Mirabel, Monte Rio, Point Arena, Salmon Creek substations were affected thereby de-energizing 12 distribution feeders. This outage affected 19,055 customers.
2. June 1st – failed equipment on the Vaca – Dixon 60 kV Transmission line affected 16,268 customers in Solano County.
3. June 18th – The largest equipment related outage affected 3,026 customers in the Central Coast region due to failed primary underground cable served from Vineyard 2108 feeder. In another equipment related outage in Central Valley Region, 2,421 customers served from California 1116 feeder were affected when two primary overhead switches failed during restoration.
4. July 2nd – The largest substation equipment failure related outage affected 4,971 customers in the Central Valley region due to failed substation equipment served from Stanislaus 1702 feeder.
5. July 23rd – Two large 3rd party vehicle related accidents resulted in an outage to 5,779 customers in the Central Valley Region served from Stanislaus 1701, Rio Bravo 1102, Merced 2102 feeder.
6. November 4th and 5th – A failed substation equipment at the Kern Power Plant required the Kern-Rosedale 115 kV, Kern-Lamont- transmission line to be de-energized thereby causing an outage to both Kern Power Substation as well as the Rosedale substation. 17,459 Customers suffered this outage.
7. November 5th – A failed substation equipment at the Kern Power Plant required several transmission lines to be de-energized causing an outage to Kern Power Substation, Rosedale, Tevis, Lamont, Stockdale substations. 50,022 customers suffered this outage.

These non-weather-related outages contributed an additional 364.9 minutes to the overall system CAIDI.

2. Central Coast Division Performance Assessment

Central Coast Division Performance

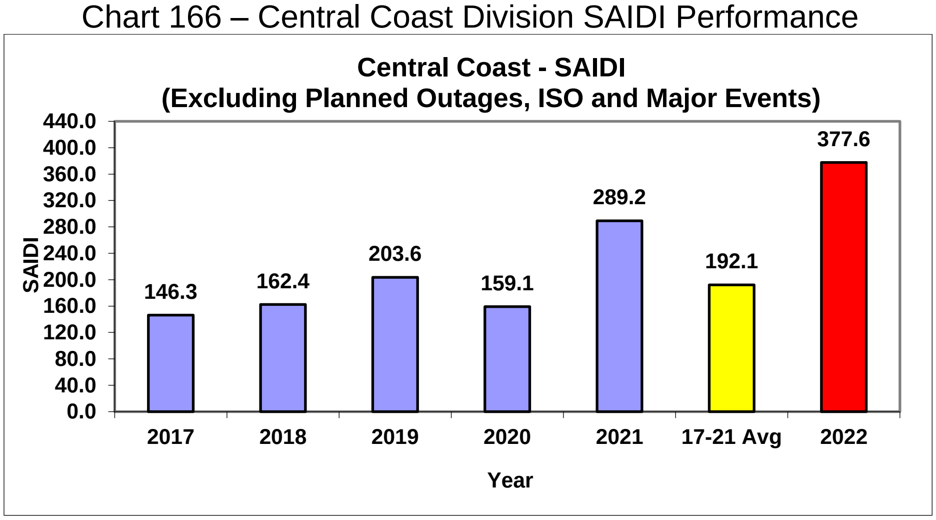
Table 10: Central Coast Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
CENTRAL COAST	2017	146.3	1.293	2.589	113.1
CENTRAL COAST	2018	162.4	1.447	2.242	112.2
CENTRAL COAST	2019	203.6	1.470	2.231	138.5
CENTRAL COAST	2020	159.1	1.724	1.600	92.3
CENTRAL COAST	2021	289.2	1.643	1.906	176.0
5-Year Average	17-21 Avg	192.1	1.516	2.114	126.8
CENTRAL COAST	2022	377.6	2.657	2.868	142.1
	%Difference	96.6%	75.3%	35.7%	12.1%

Central Coast Division SAIDI Performance

Central Coast Division's 2022 SAIDI performance of 377.6 was 185.5 customer-minutes (or 96.6%) higher than the previous 5-year average of 192.1 as shown in the table above and illustrated in the figure below.

Chart 166 – Central Coast Division SAIDI Performance



The higher-than-average 2022 Central Coast Division SAIDI was attributed to the following:

1. The EPSS installed on the distribution line equipment contributed 121.7 customer-minutes to the division's SAIDI performance.
2. On June 26th, the largest EPSS related outage due to an unknown cause on

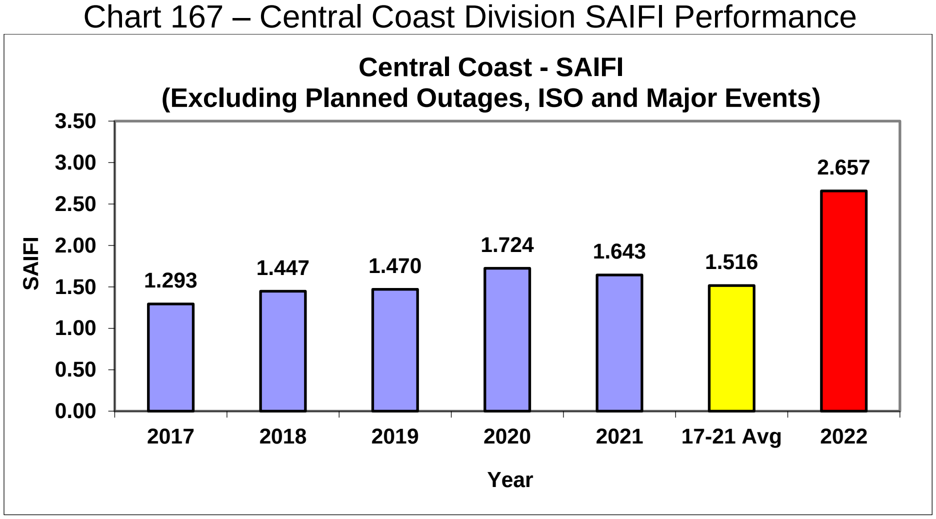
the Camp Evers 2105 feeder contributed 9.8 customer-minutes to the division's SAIDI performance.

3. On December 11th, a failed substation equipment caused an outage on Green Valley 2104 feeder causing a substation transformer level outage that contributed 16.1 customer-minutes to the division's SAIDI performance.
4. On December 12th, a tree fell into the distribution bringing down several spans of wire on the Viejo 2201 feeder. This outage contributed 9.2 customer-minutes to the division's SAIDI performance.
5. On July 21st, a bird's nest in the Del Monte Substation flashed over a bus structure and caused a very large outage. Load Transfers caused other line equipment to fail escalating the outage to 10 feeders. This outage contributed 30.8 customer-minutes to the division's SAIDI performance.
6. On June 4th, the Moss Landing – Del Monte #1 -115kV Transmission line relayed due to a failed lightning arrestor on a circuit switcher. This caused a substation level outage at Castroville Substation as well as Del Monte substation. This outage contributed 7.2 customer-minutes to the division's SAIDI performance.

Central Coast Division SAIFI Performance

Central Coast Division's 2022 SAIFI performance of 2.657 was 1.142 customer-interruptions (or 75.3%) higher than the previous 5-year average of 1.516 as shown in the table above and illustrated in the figure below.

Chart 167 – Central Coast Division SAIFI Performance



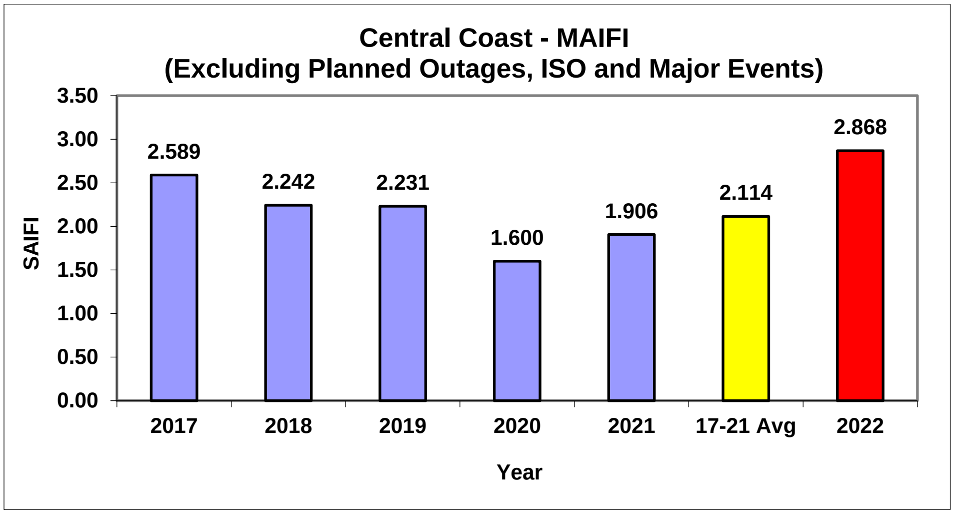
The higher-than-average 2022 Central Coast SAIFI was attributed to the following:

1. The EPSS installed on the distribution line equipment contributed 0.760 customer-interruptions to the division's SAIFI Performance.
2. On August 5th, the largest EPSS related outage due to an unknown cause on the Fort Ord 2106 feeder contributed 0.023 customer-interruptions to the division's SAIFI performance.
3. On June 4th, the Moss Landing – Del Monte #1 -115kV Transmission line relayed due to a failed lightning arrestor on a circuit switcher. This caused a substation level outage at Castroville Substation as well as Del Monte substation. This outage contributed 0.123 customer-interruptions to the division's SAIFI performance.
4. On July 21st, a bird's nest in the Del Monte Substation flashed a bus and caused a very large outage. Load Transfers caused other line equipment to fail escalating the outage to 10 feeders. This outage contributed 0.108 customer-interruptions to the division's SAIFI performance.
5. On November 30th, an internal fault at the Paul Sweet substation transformer caused a substation level outage. This outage contributed 0.058 customer-interruptions to the division's SAIFI performance.
6. On December 11th, a failed substation equipment caused an outage on Green Valley 2104 feeder causing a substation transformer level outage contributed 0.032 customer-interruptions to the division's SAIFI performance.
7. On December 12th, a tree fell into the distribution bringing down several spans of wire on the Viejo 2201 feeder. This outage contributed 0.026 customer-interruptions to the division's SAIFI performance.
8. On April 21st, a broken overhead splice caused a breaker level outage on Green Valley 2104 circuit. This outage contributed 0.021 customer-interruptions to the division's SAIFI performance.

Central Coast Division MAIFI Performance

Central Coast Division's 2022 MAIFI performance of 2.868 was 0.754 customer-interruptions (or 35.7%) higher than the previous 5-year average of 2.114 as shown in the table above and illustrated in the figure below.

Chart 168 – Central Coast Division MAIFI Performance



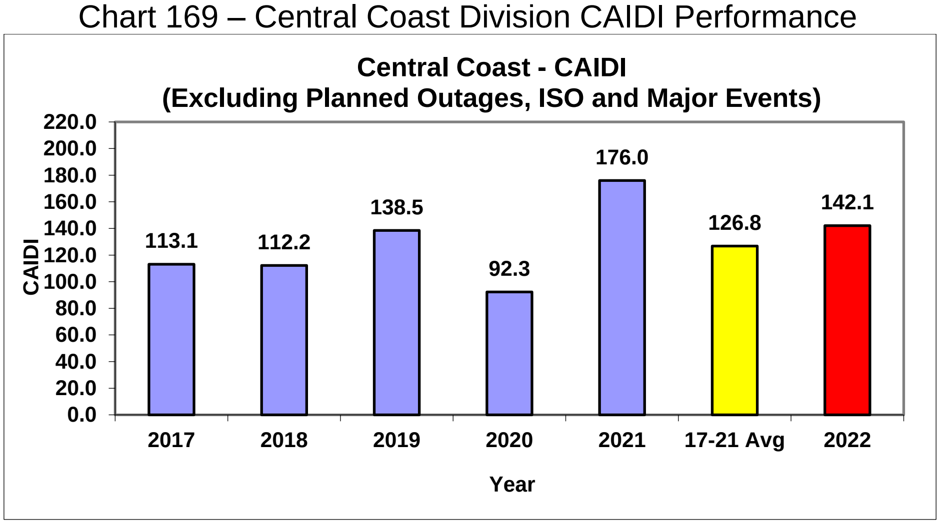
The higher-than-average 2022 Central Coast Division MAIFI was attributed to momentary outages on:

1. A recloser on the Viejo 2202 circuit on July 21st. These outages contributed 0.038 customer-interruptions to the division's MAIFI performance.
2. The Rob Roy 2105 circuit breaker at the substation on April 30th. These outages contributed 0.030 customer-interruptions to the division's MAIFI performance.

Central Coast Division CAIDI Performance

Central Coast Division's 2022 CAIDI performance of 142.1 was 15.3 (or 12.1%) minutes higher than the previous 5-year average of 126.8 as shown in the table above and illustrated in the figure below.

Chart 169 – Central Coast Division CAIDI Performance



The higher-than-average 2022 Central Coast Division CAIDI was attributed to the following outages experienced as follows:

1. On December 12th, a tree fell into the distribution bringing down several spans of wire on the Viejo 2201 feeder. This outage contributed 319.2 minutes to the division's CAIDI performance.
2. On December 11th, a failed substation equipment caused an outage on Green Valley 2104 feeder causing a substation transformer level outage contributed 336.5 minutes to the division's CAIDI performance.

3. De Anza Division Performance Assessment

De Anza Division Performance

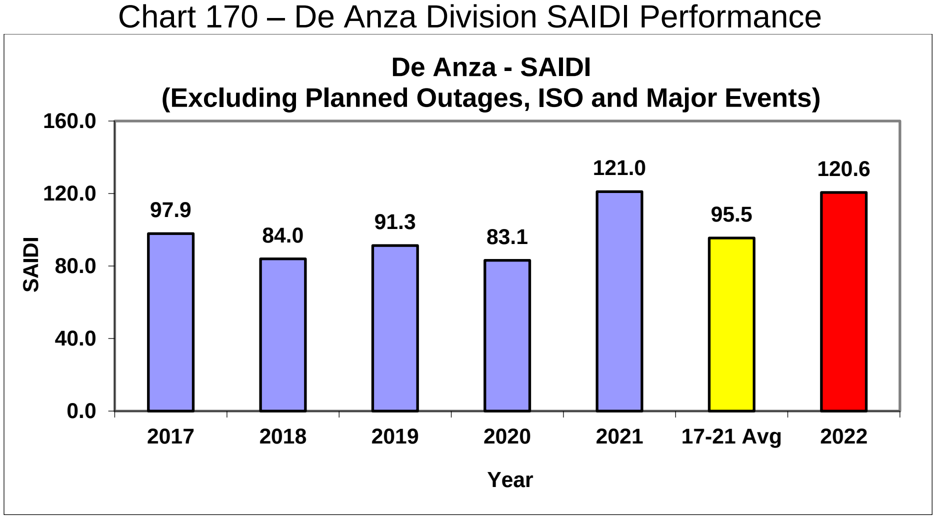
Table 11: De Anza Division Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
DE ANZA	2017	97.9	0.985	1.150	99.4
DE ANZA	2018	84.0	0.789	1.402	106.4
DE ANZA	2019	91.3	0.873	1.657	104.6
DE ANZA	2020	83.1	0.711	1.213	117.0
DE ANZA	2021	121.0	0.787	0.987	153.8
5-Year Average	17-21 Avg	95.5	0.829	1.282	115.2
DE ANZA	2022	120.6	1.001	1.065	120.4
	%Difference	26.3%	20.8%	-16.9%	4.5%

De Anza Division SAIDI Performance

De Anza Division's 2022 SAIDI performance of 120.6 was 25.1 customer-minutes (or 26.3%) higher than the previous 5-year average of 95.5 as shown in the table above and illustrated in the figure below.

Chart 170 – De Anza Division SAIDI Performance



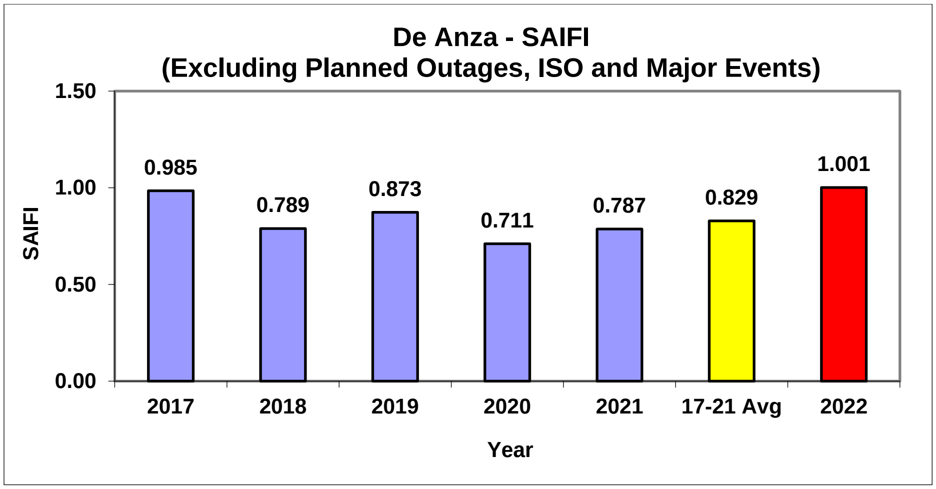
The higher-than-average 2022 De Anza Division SAIDI was attributed to the following:

1. The EPSS installed on the distribution line equipment contributed 47.4 customer-minutes to the division's SAIDI performance.
2. On August 9th, the largest EPSS related outage due to a 3rd party Metallic balloon contacting the LOS GATOS-1106 feeder caused a large outage involving four feeders and contributed 4.3 customer-minutes to the division's SAIDI performance.
3. On September 5th, inadequate settings in line equipment fed from Stelling 1109 feeder resulted in a recloser level outage. This outage contributed 3.6 customer-minutes to the division's SAIDI performance.
4. On September 18th, a broken crossarm on the El Patio 1107 feeder caused a breaker level outage. This outage contributed 2.1 customer-minutes to the division's SAIDI performance.
5. On July 22nd, a failed underground cable on the Saratoga 1109 feeder caused a breaker level outage. This outage contributed 2.1 customer-minutes to the division's SAIDI performance.
6. On November 8th, the El Patio 1107 feeder breaker operated due to an unknown cause and caused a breaker level outage. This outage contributed 2.1 customer-minutes to the division's SAIDI performance.

<u>De Anza Division SAIFI Performance</u>

De Anza Division's 2022 SAIFI performance of 1.001 was 0.172 customer-interruptions (or 20.8%) higher than the previous 5-year average of 0.829 as shown in the table above and illustrated in the figure below.

Chart 171 – De Anza Division SAIFI Performance



The higher-than-average 2022 De Anza division SAIFI was attributed to the following:

1. The EPSS installed on the distribution line equipment contributed 0.335 customer-interruptions to the division's SAIFI.
2. On August 9th, the largest EPSS related outage due to a 3rd party Metallic balloon contacting the LOS GATOS-1106 feeder caused a large outage involving four feeders and contributed 0.036 customer-interruptions to the division's SAIFI
3. On November 8th, the El Patio 1107 feeder breaker operated due to an unknown cause and caused a breaker level outage. This outage contributed 0.026 customer-interruptions to the division's SAIFI.
4. On March 27th, a palm frond fell on a Normally Open switch between Mountain View 1102 and Mountain View 1104 and caused two breaker level outages. This outage contributed 0.033 customer-interruptions to the division's SAIFI.
5. On September 8th, a tree that had grown into our distribution line caused a recloser level outage on the Saratoga 1114 feeder. This outage contributed 0.021 customer-interruptions to the division's SAIFI.
6. On July 22nd, a failed underground cable on the Saratoga 1109 feeder caused a breaker level outage. This outage contributed 0.021 customer-interruptions to the division's SAIFI.

4. Diablo Division Performance Assessment

Diablo Division Performance

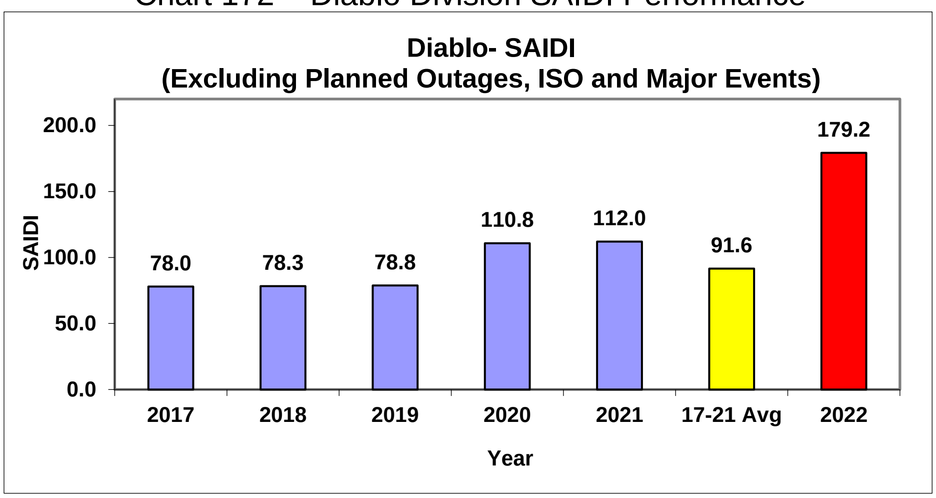
Table 12: Diablo Division Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
DIABLO	2017	78.0	0.876	1.620	89.1
DIABLO	2018	78.3	1.004	1.496	78.0
DIABLO	2019	78.8	0.935	1.212	84.3
DIABLO	2020	110.8	1.206	1.621	91.9
DIABLO	2021	112.0	1.177	1.352	95.2
5-Year Average	17-21 Avg	91.6	1.039	1.460	88.1
DIABLO	2022	179.2	1.566	1.295	114.4
	%Difference	95.7%	50.7%	-11.3%	29.9%

Diablo Division SAIDI Performance

Diablo Division's 2022 SAIDI performance of 179.2 was 87.7 customer-minutes (or 95.7%) higher than the previous 5-year average of 91.6 as shown in the table above and illustrated in the figure below.

Chart 172 – Diablo Division SAIDI Performance



The higher-than-average 2022 Diablo Division SAIDI was attributed to the following:

1. The EPSS installed on the distribution line equipment contributed 79.8 customer-minutes to the division's SAIDI performance.
2. On June 26th, the largest EPSS related outage due to an unknown cause on the Fairview 2207 feeder caused a large outage and contributed 4.2 customer-minutes to the division's SAIDI performance.
3. On August 7th, an underground equipment failure on Kirker 2104 feeder caused

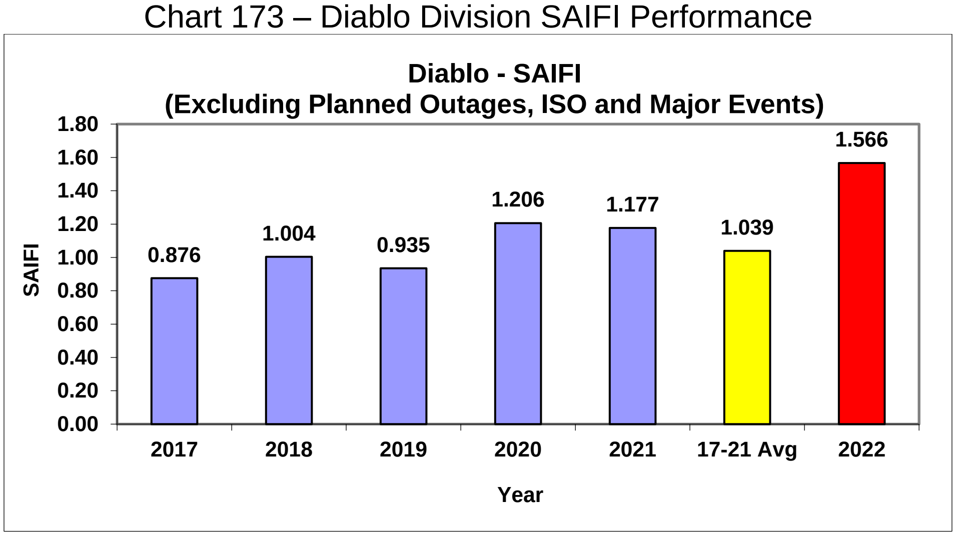
a breaker level outage. This outage contributed 3.5 customer-minutes to the division's SAIDI performance.

4. On June 25th, a 3rd party vehicle broke a pole on the Fairview 2208 feeder and caused an outage. This outage contributed 3.4 customer-minutes to the division's SAIDI performance.
5. On September 13th, an underground equipment failure on the Clayton 2215 resulted in an outage. This outage contributed 3.3 customer-minutes to the division's SAIDI performance.
6. On November 1st, a piece of deteriorated underground cable on Clayton 2215 feeder caused an outage. This outage contributed 3.3 customer-minutes to the division's SAIDI performance.
7. On September 5th, an overhead equipment failure on Meadow Lane 2106 feeder caused and outage. This outage contributed 3.0 customer-minutes to the division's SAIDI performance.
8. On May 15th, a bird related outage on Kirker 2104 feeder caused a breaker level outage. This outage contributed 3.0 customer-minutes to the division's SAIDI performance.

<u>Diablo Division SAIFI Performance</u>

Diablo Division's 2022 SAIFI performance of 1.566 was 0.527 customer-interruptions (or 50.7%) higher than the previous 5-year average of 1.039 as shown in the table above and illustrated in the figure below.

Chart 173 – Diablo Division SAIFI Performance



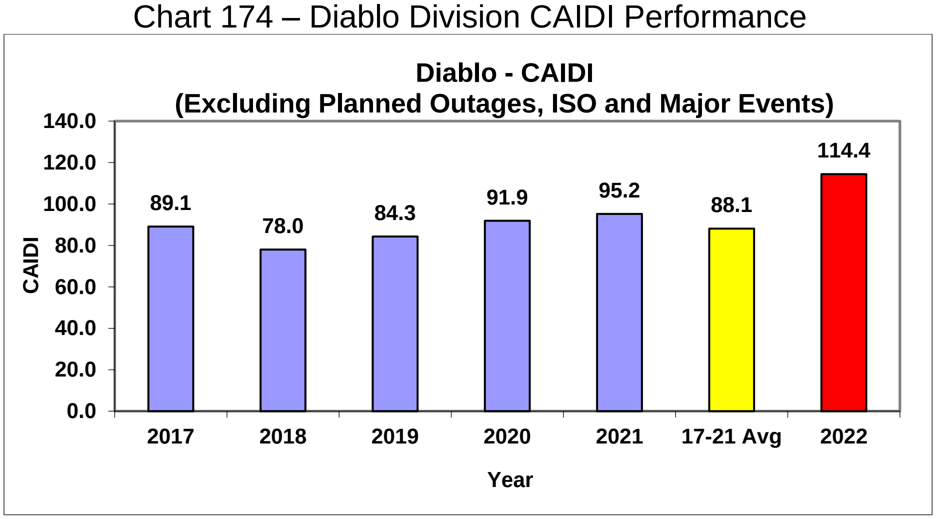
The higher-than-average 2022 Diablo Division SAIFI was attributed to the following:

1. The EPSS installed on the distribution line equipment contributed 0.559 customer-interruptions to the division's SAIFI Performance.
2. On June 26th, the largest EPSS related outage due to an unknown cause on the Fairview 2207 feeder caused a large outage and contributed 0.014 customer-interruptions to the division's SAIFI performance.
3. On January 13th, a substation level outage occurred due to a malfunctioning circuit breaker at the Contra Costa substation. This outage contributed 0.022 customer-interruptions to the division's SAIFI performance.
4. On June 2nd, an overhead equipment failure on Meadow Lane 2108 feeder caused an outage. This outage contributed 0.021 customer-interruptions to the division's SAIFI performance.
5. On July 26th, an underground equipment failure on Kirker 2109 feeder caused an outage. This outage contributed 0.019 customer-interruptions to the division's SAIFI performance.

Diablo Division CAIDI Performance

Diablo Division's 2022 CAIDI performance of 114.4 was 26.3 (or 29.9%) minutes higher than the previous 5-year average of 88.1 as shown in the table above and illustrated in the figure below.

Chart 174 – Diablo Division CAIDI Performance



The higher-than-average 2022 Diablo Division CAIDI was attributed to the following:

1. The EPSS installed on the distribution line equipment contributed 142.7

minutes to the division's CAIDI performance.

2. On June 26th, the largest EPSS related outage due to an unknown cause on the Fairview 2207 feeder caused a large outage and contributed 299.7 minutes to the division's CAIDI performance.
3. On June 25th, a 3rd party vehicle broke a pole on the Fairview 2208 feeder and caused an outage. This outage contributed 1359.9 minutes to the division's CAIDI performance.
4. On May 15th, a bird related outage on Kirker 2104 feeder caused a breaker level outage. This outage contributed 194.8 minutes to the division's CAIDI performance.
5. On November 1st, a piece of deteriorated underground cable on Clayton 2215 feeder caused an outage. This outage contributed 165.9 minutes to the division's CAIDI performance.
6. On September 13th, an underground equipment failure on the Clayton 2215 resulted in an outage. This outage contributed 117.1 minutes to the division's CAIDI performance.
7. On September 5th, an overhead equipment failure on Meadow Lane 2106 feeder caused and outage. This outage contributed 161.1 minutes to the division's CAIDI performance.
8. On August 4th, a broken underground cable on the Willow Pass 2108 feeder caused a breaker level outage. This outage contributed 70.0 minutes to the division's CAIDI performance.
9. On August 4th a breaker level outage occurred on the Tassajara 2103 feeder due to an unknown cause. This outage contributed 72.0 minutes to the division's CAIDI performance.

5. East Bay Division Performance Assessment

East Bay Division Performance

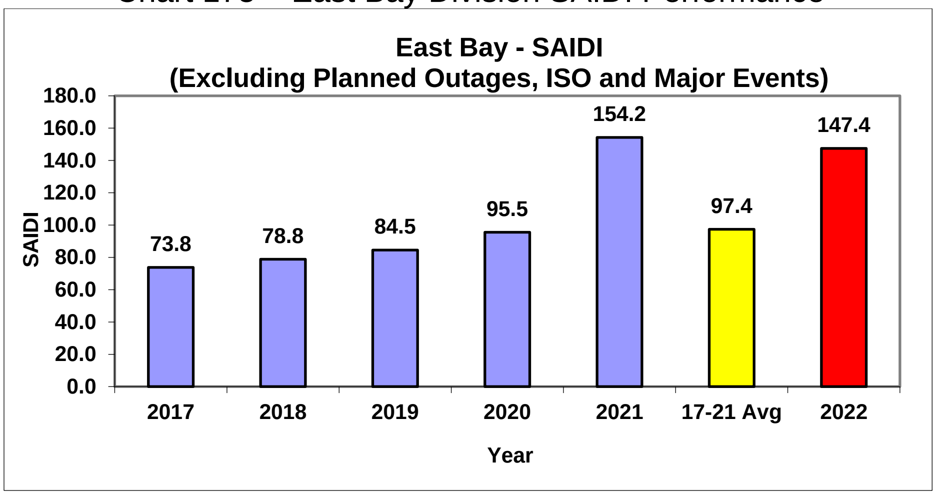
Table 13: East Bay Division Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
EAST BAY	2017	73.8	0.903	1.528	81.7
EAST BAY	2018	78.8	0.901	1.080	87.5
EAST BAY	2019	84.5	0.854	0.956	99.0
EAST BAY	2020	95.5	0.838	1.453	114.0
EAST BAY	2021	154.2	1.250	1.368	123.4
5-Year Average	17-21 Avg	97.4	0.949	1.277	102.6
EAST BAY	2022	147.4	1.158	1.661	127.3
	%Difference	51.4%	22.0%	30.1%	24.1%

East Bay Division SAIDI Performance

East Bay Division's 2022 SAIDI performance of 147.4 was 50.1 customer-minutes (or 51.4%) higher than the previous 5-year average of 97.4 as shown in the table above and illustrated in the figure below.

Chart 175 – East Bay Division SAIDI Performance



The higher-than-average 2022 East Bay Division SAIDI was attributed to the following:

1. The EPSS installed on the distribution line equipment contributed 3.0 customer-minutes to the division's SAIDI performance.
2. On September 10th, the largest EPSS related outage due to an animal related cause on the Oakland X 1106 feeder caused a recloser level outage and contributed 0.3 customer-minutes to the division's SAIDI performance.
3. On January 21st, a broken woodpin caused a breaker level outage on the Stuart 403 feeder and contributed 2.6 customer-minutes to the division's overall SAIDI performance.
4. On January 22nd, a tree branch fell on our lines and broke the conductor causing a breaker level outage on Oakland X 1109 feeder. This outage contributed 6.1 customer-minutes to the division's SAIDI performance.
5. On January 21st a tree branch fell on our lines and broke the overhead conductor causing a breaker level outage on Oakland D 1112 feeder. This outage contributed 3.8 customer-minutes to the division's overall SAIDI performance.
6. On January 21st an equipment failure on Oakland I 402 feeder resulted in a breaker level outage. This outage contributed 3.8 customer-minutes to the

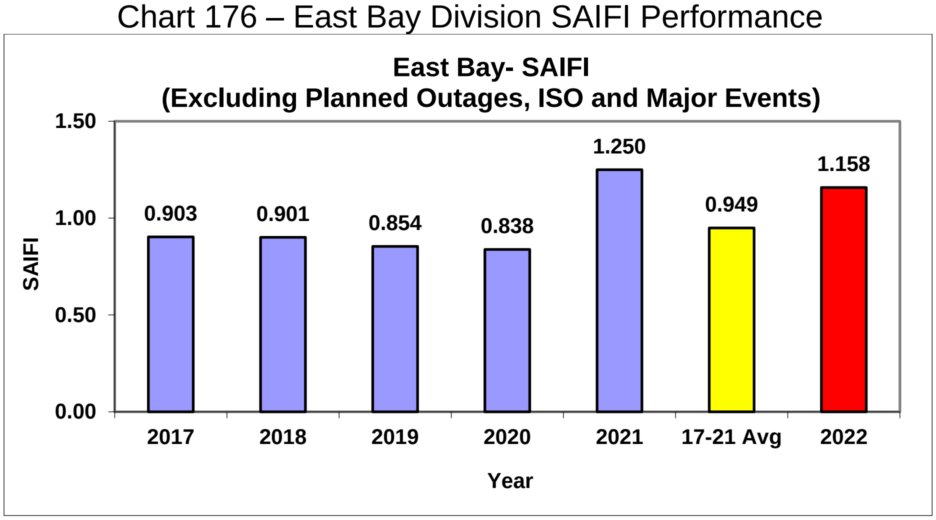
division's overall SAIDI performance.

7. On September 19th, an underground equipment failure caused a breaker level outage on Oakland D 1110 feeder that contributed 2.8 customer-minutes to the division's overall SAIDI performance.
8. On January 21st, a tree branch fell into our lines damaging a fuse on Oakland J 1116 feeder that contributed 2.8 customer-minutes to the division's overall SAIDI performance.
9. On January 22nd, a tree branch fell into our lines damaging a fuse on Oakland J 1116 feeder that contributed 2.6 customer-minutes to the division's overall SAIDI performance.
10. On January 21st, a tree branch fell into our lines and broke a conductor on the Berkeley F 1105 feeder and caused a breaker level outage. This outage contributed 2.3 customer-minutes to the division's overall SAIDI performance.

East Bay Division SAIFI Performance

East Bay Division's 2022 SAIFI performance of 1.158 was 0.209 customer-interruptions (or 22.0%) higher than the previous 5-year average of 0.949 as shown in the table above and illustrated in the figure below.

Chart 176 – East Bay Division SAIFI Performance



The higher-than-average 2022 East Bay Division SAIFI was attributed to the following:

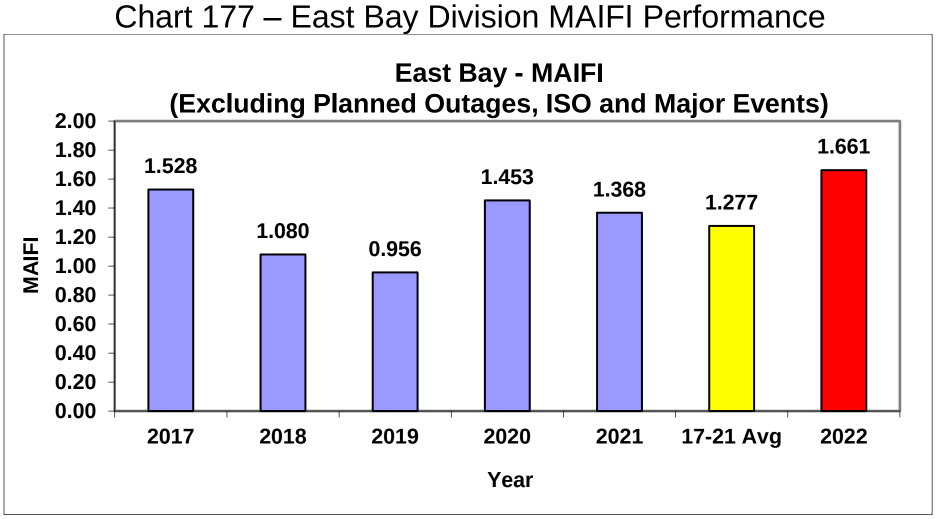
1. The EPSS installed on the distribution line equipment contributed 0.018 customer-interruptions to the division's SAIFI performance.

2. On September 10th, the largest EPSS related outage due to an animal related cause on the Oakland X 1106 feeder caused a recloser level outage and contributed 0.003 customer-interruptions to the division's SAIFI performance.
3. On January 25th, an overloaded equipment on Oakland J 1106 feeder cause a breaker level outage on the Oakland J 1106 feeder. This outage contributed 0.029 customer- interruptions to the division's SAIFI performance.
4. On March 3rd, a relay settings issue caused a substation level outage on the Oakland X substation. This outage contributed 0.025 customer-interruptions to the division's SAIFI performance.
5. On July 11th, an animal related cause resulted in a breaker level outage on Oakland J 1116 feeder. This outage contributed 0.022 customer-interruptions to the division's SAIFI performance.
6. On September 16th, a 3rd party building fire caused a breaker level outage on Oakland J 1116 feeder. This outage contributed 0.020 customer-interruptions to the division's SAIFI performance.

East Bay Division MAIFI Performance

East Bay Division's 2022 MAIFI performance of 1.661 was 0.384 customer-interruptions (or 30.1%) higher than the previous 5-year average of 1.277 as shown in the table above and illustrated in the figure below.

Chart 177 – East Bay Division MAIFI Performance



The higher-than-average 2022 East Bay Division MAIFI was attributed to momentary outages on

1. Oakland L 1106 feeder breaker on October 18th due to a broken underground

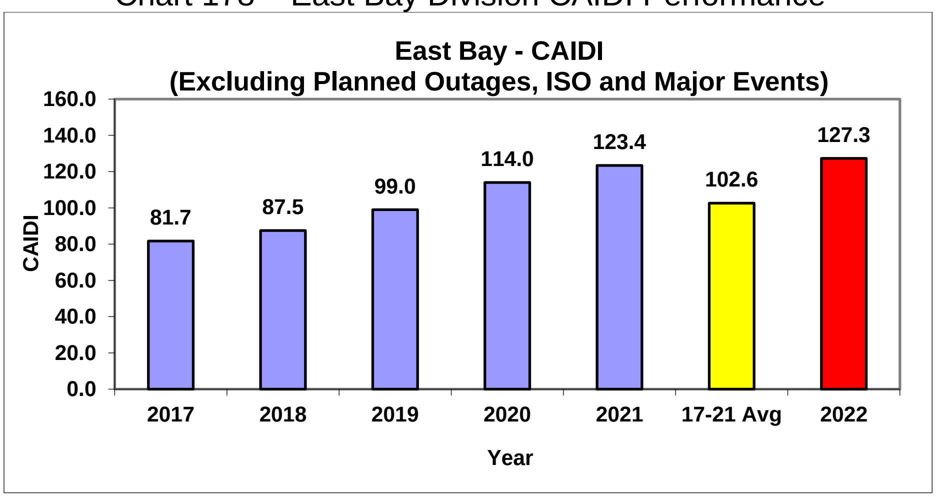
cable. This outage contributed 0.024 customer-interruptions to the division's MAIFI performance.

2. Oakland D 1110 feeder breaker on July 14th due to a flashed fuse holder. This outage contributed 0.021 customer-interruptions to the division's MAIFI performance.
3. Oakland D 1105 feeder breaker on June 2nd due a 3rd party metallic balloon making contact with our overhead conductor. This outage contributed 0.013 customer-interruptions to the division's MAIFI performance.

East Bay Division CAIDI Performance

East Bay Division's 2022 CAIDI performance of 127.3 was 24.7 minutes (or 24.1%) higher than the previous 5-year average of 102.6 as shown in the table above and illustrated in the figure below.

Chart 178 – East Bay Division CAIDI Performance



The higher-than-average 2022 East Bay Division CAIDI was attributed to the following:

1. The EPSS installed on the distribution line equipment contributed 169.7 customer-minutes to the division's CAIDI performance.
2. On September 10th, the largest EPSS related outage due to an animal related cause on the Oakland X 1106 feeder caused a recloser level outage and contributed 59.2 customer-minutes to the division's CAIDI performance.
3. On January 21st, an overhead deteriorated conductor failure caused a breaker level outage on the Oakland I 402 feeder and contributed 550.5 customer-

minutes to the division's CAIDI performance.

4. On January 21st, a broken woodpin caused a breaker level outage on the Stuart 403 feeder and contributed 228.1 customer-minutes to the division's CAIDI performance.
5. On January 22nd, a tree branch fell into our lines and broke the conductor causing a breaker level outage on Oakland X 1109 feeder that contributed 623.9 customer-minutes to the division's CAIDI performance.
6. On March 4th, a deteriorated equipment on Oakland J 1117 feeder caused a breaker level outage and contributed 170.4 customer-minutes to the division's CAIDI performance.
7. On March 4th, and underground equipment failure on the Richmond R 1126 feeder caused a breaker level outage and contributed 153.2 customer-minutes to the division's CAIDI performance.
8. On September 19th, underground equipment failure on the Point Pinole 1101 caused a breaker level outage and contributed 465.4 customer-minutes to the division's CAIDI performance.
9. On December 27th, a tree branch fell into our line served from Fairview 2207 and caused an outage and contributed 85.6 customer-minutes to the division's CAIDI performance.

6. Fresno Division Performance Assessment

Fresno Division Performance

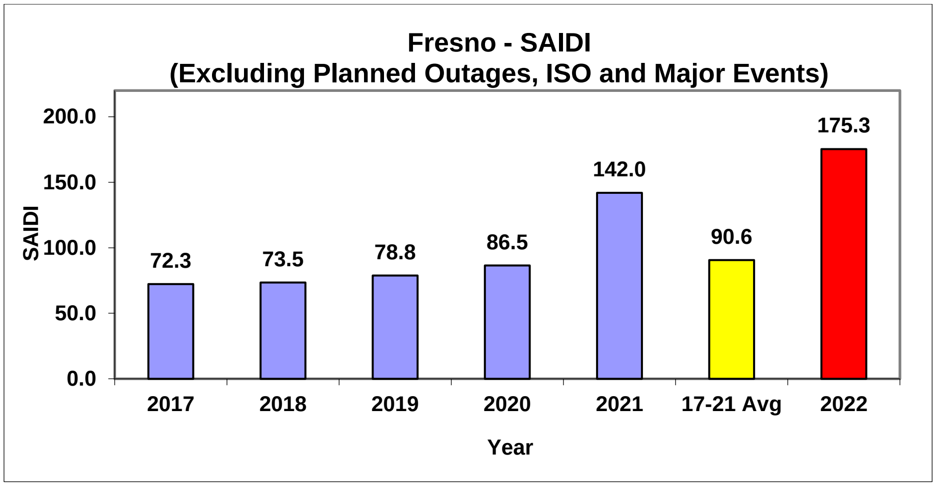
Table 14: Fresno Division Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
FRESNO	2017	72.3	0.799	1.546	90.5
FRESNO	2018	73.5	0.861	1.368	85.4
FRESNO	2019	78.8	0.828	1.477	95.2
FRESNO	2020	86.5	0.865	1.352	100.0
FRESNO	2021	142.0	1.081	1.468	131.3
5-Year Average	17-21 Avg	90.6	0.887	1.442	102.2
FRESNO	2022	175.3	1.244	1.731	140.9
	%Difference	93.5%	40.3%	20.0%	37.9%

Fresno Division SAIDI Performance

Fresno Division's 2022 SAIDI performance of 175.3 was 84.7 customer-minutes (or 93.5%) higher than the previous 5-year average of 90.6 as shown in the table above and illustrated in the figure below.

Chart 179 – Fresno Division SAIDI Performance



The higher-than-average 2022 Fresno Division SAIDI was attributed to the following:

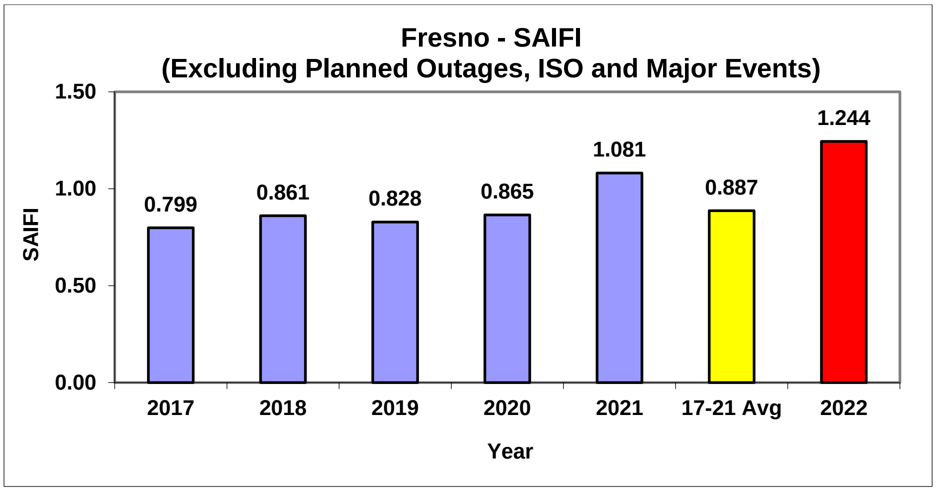
1. EPSS installed on the distribution line equipment contributed 21.7 customer minutes to the division's SAIDI performance.
2. On October 22nd, a 3rd Party vehicle broke a pole and caused a breaker level outage on the Auberry 1102 feeder. This outage contributed 2.3 customer-minutes to the division's SAIDI.
3. On August 25th, a breaker level outage occurred on the Airways 1107 feeder due to deteriorated underground equipment failure that contributed 2.7 customer-minutes to the division's SAIDI.
4. On June 22nd, a tree branch fell into our lines and broke our overhead conductor causing an outage on the Rainbow 1106 feeder. This outage contributed 2.4 customer-minutes to the division's SAIDI.
5. On October 22nd, a breaker level outage occurred on the Auberry 1102 feeder due to a broken pole involved in an incident caused by a 3rd party vehicle. This outage contributed 2.3 customer-minutes to the division's SAIDI.
6. On November 10th, an underground switch failed and caused a breaker level outage on the Figarden 2108 feeder that contributed 2.3 customer-minutes to the division's SAIDI.
7. On June 22nd, a wind event caused the overhead conductors to crossover that resulted in an outage on the Coppermine 1104 feeder. This outage contributed 2.2 customer-minutes to the division's SAIDI.
8. On June 18th, a breaker level outage on the California Avenue 1116 feeder due to an arc caused by 3rd Party equipment malfunction. This outage contributed

2.1 customer-minutes to the division's SAIDI.

Fresno Division SAIFI Performance

Fresno Division's 2022 SAIFI performance of 1.244 was 0.357 customer-interruptions (or 40.3%) higher than the previous 5-year average of 0.887 as shown in the table above and illustrated in the figure below.

Chart 180 – Fresno Division SAIFI Performance



The higher-than-average 2022 Fresno Division SAIFI was attributed to the following:

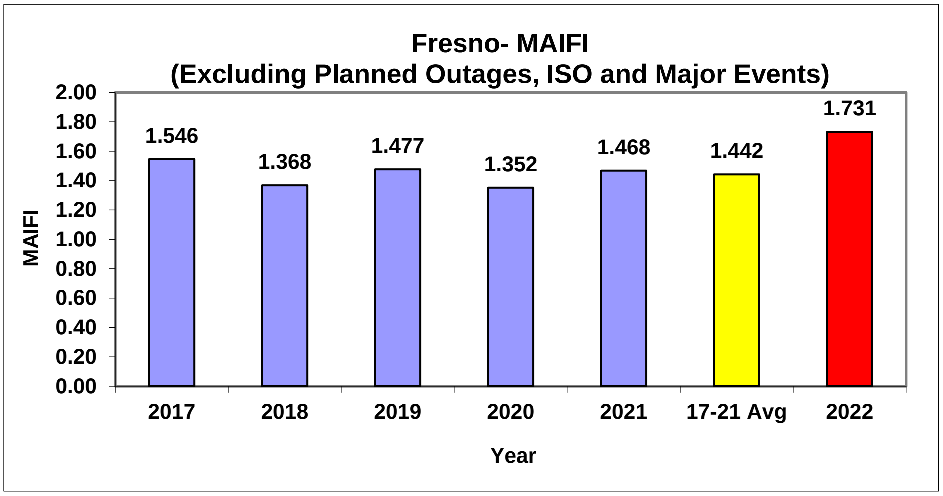
1. EPSS installed on the distribution line equipment contributed 0.087 customer-interruptions to the division's SAIFI performance.
2. On June 30th, a squirrel caused a breaker level outage on the Auberry 1101 feeder. This outage contributed 0.007 customer-interruptions to the division's SAIFI performance.
3. On September 22nd, a breaker level outage occurred on the Woodward 2101 feeder due to an unknown cause that contributed 0.009 customer-interruptions to the division's SAIFI performance.
4. On November 10th, an underground equipment failure caused a breaker level outage on Figarden 2108 feeder. This outage contributed 0.009 customer-interruptions to the division's SAIFI performance.
5. On October 29th, a breaker level outage occurred on the Figarden 2107 feeder due to an unknown cause that contributed 0.008 customer-interruptions to the division's SAIFI performance.
6. On December 9th, a breaker level outage occurred on the Woodward 2102

feeder due to a broken pole as a result of a 3rd party vehicle incident that contributed 0.008 customer-interruptions to the division's SAIFI performance.

Fresno Division MAIFI Performance

Fresno Division's 2022 MAIFI performance of 1.731 was 0.289 customer-interruptions (or 20.0%) higher than the previous 5-year average of 1.442 as shown in the table above and illustrated in the figure below.

Chart 181 – Fresno Division MAIFI Performance



The higher-than-average 2022 Fresno Division MAIFI was attributed to the following:

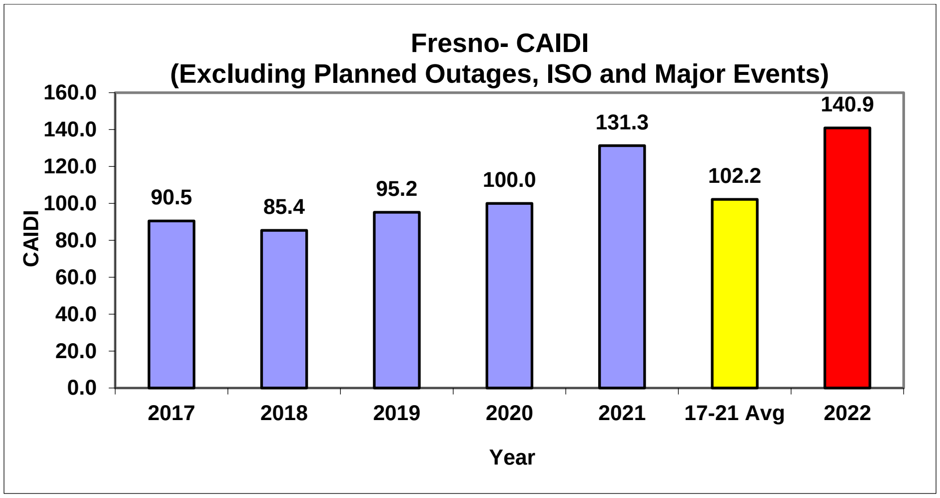
1. On November 13th, the Figarden 2102 feeder circuit breaker operated due to an animal caused incident.
2. On November 21st, the Clovis 2111 feeder circuit breaker operated due to the failure of an underground equipment.
3. On February 14th, the Barton 1108 feeder circuit breaker operated due to an unknown cause.
4. On July 3rd, the Barton 1108 feeder circuit breaker operated due to an unknown cause.
5. On October 21st, the Ashlan Avenue -1109 feeder circuit breaker operated due to an unknown cause.

These outages contributed 0.045 customer-interruptions to the division's MAIFI performance.

Fresno Division CAIDI Performance

Fresno Division's 2022 CAIDI performance of 140.9 was 38.7 minutes (or 37.9%) higher than the previous 5-year average of 102.2 as shown in the table above and illustrated in the figure below.

Chart 182 – Fresno Division CAIDI Performance



The higher-than-average 2022 CAIDI performance was mainly due to the following:

1. EPSS on the distribution line equipment installed contributed 248.8 minutes to the division's CAIDI performance.
2. On June 22nd, a tree branch fell into our lines and broke our overhead conductor causing an outage on the Rainbow 1106 feeder and contributed 510.8 customer-minutes to the division's CAIDI performance.
3. On June 22nd, a wind event caused the overhead conductors to crossover that resulted in an outage on the Coppermine 1104 feeder and contributed 882.7 customer-minutes to the division's CAIDI performance.
4. On August 25th, a breaker level outage occurred on the Airways 1107 feeder due to deteriorated underground equipment failure and contributed 216.0 customer-minutes to the division's CAIDI performance.
5. On October 22nd, a breaker level outage occurred on the Auberry 1102 feeder due to a broken pole involved in an incident caused by a 3rd party vehicle and contributed 522.2 customer-minutes to the division's CAIDI performance.
6. On June 18th, a breaker level outage on the California Avenue 1116 feeder due to an arc caused by 3rd Party equipment malfunction contributed 313.9 customer-minutes to the division's CAIDI performance.

7. Humboldt Division Performance Assessment

Humboldt Division Performance

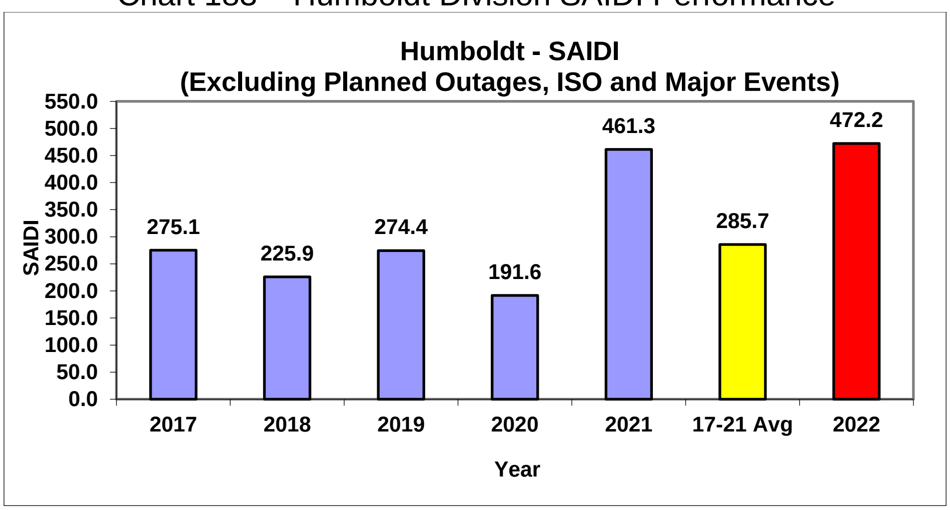
Table 15: Humboldt Division Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
HUMBOLDT	2017	275.1	1.306	2.280	210.6
HUMBOLDT	2018	225.9	1.789	1.502	126.3
HUMBOLDT	2019	274.4	1.616	1.850	169.7
HUMBOLDT	2020	191.6	1.336	1.181	143.5
HUMBOLDT	2021	461.3	2.005	1.415	230.0
5-Year Average	17-21 Avg	285.7	1.610	1.645	177.4
HUMBOLDT	2022	472.2	2.501	1.329	188.8
	%Difference	65.3%	55.3%	-19.2%	6.4%

Humboldt Division SAIDI Performance

Humboldt Division's 2022 SAIDI performance of 472.2 was 186.5 customer-minutes (or 65.3%) higher than the previous 5-year average of 285.7 as shown in the table above and illustrated in the figure below.

Chart 183 – Humboldt Division SAIDI Performance



The higher-than-average 2022 Humboldt Division SAIDI was attributed to the following:

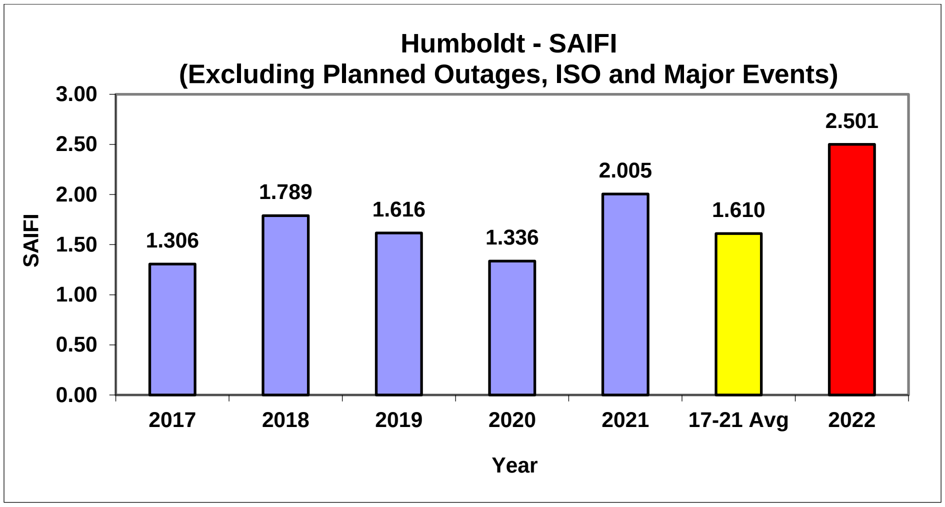
1. EPSS installed on the distribution line equipment contributed 153.8 customer minutes to the division's SAIDI performance.
2. On July 13th, a tree fell into our lines and caused an outage on the Willow Creek 1103 feeder. This outage contributed 6.9 customer-minutes to the division's SAIDI.

3. On January 14th, a broken pole caused breaker level outage on Garberville 1102 feeder. This outage contributed 7.2 customer-minutes to the division's SAIDI.
4. On December 27th, a tree fell into our lines and broke the overhead conductor causing an outage on the Hoopa 1101 feeder. This outage contributed 7.2 customer-minutes to the division's SAIDI.
5. On July 13th, a tree fell into our lines and brought the conductor down causing an outage on the Willow Creek 1103 feeder. This outage contributed 6.9 customer-minutes to the division's SAIDI.
6. On December 27th, a tree fell into our lines and broke the overhead conductor causing an outage on the Fruitland 1142 feeder. This outage contributed 7.9 customer-minutes to the division's SAIDI.
7. On October 18th, there was an outage on the Willits 1103 feeder due to an unknown cause that contributed 5.7 customer-minutes to the division's SAIDI.
8. On April 11th, a tree fell into our lines and broke the conductor causing an outage on the Low Gap 1101 feeder. This outage contributed 5.6 customer-minutes to the division's SAIDI.
9. On December 26th, a tree fell into our lines and broke the pole causing an outage on the Garberville 1102 feeder. This outage contributed 5.1 customer-minutes to the division's SAIDI.

Humboldt Division SAIFI Performance

Humboldt Division's 2022 SAIFI performance of 2.501 was 0.890 customer-interruptions (or 55.3%) higher than the previous 5-year average of 1.610 as shown in the table above and illustrated in the figure below.

Chart 184 – Humboldt Division SAIFI Performance



The higher-than-average 2022 Humboldt Division SAIFI was attributed to the following:

1. EPSS installed on the distribution line equipment contributed 0.950 customer-interruptions to the division's SAIFI performance.
2. On July 12th, an outage occurred because of an overhead equipment arcing on the Highlands 1102 feeder. This outage contributed 0.055 customer-interruptions to the division's SAIFI performance.
3. On August 4th, a breaker level outage occurred on Highlands 1102 feeder due to a forest fire. Cal Fire requested that the breaker be de-energized to make safe for fire personnel's efforts to fight the fire. This outage contributed 0.024 customer-interruptions to the division's SAIFI performance.
4. On January 21st, windy weather conditions caused the overhead conductor to get together and cause an outage on the Highlands 1102 feeder . This outage contributed 0.023 customer-interruptions to the division's SAIFI performance.
5. On June 4th, a tree fell on the Humboldt Bay – Rio Dell junction 60 kV transmission line causing an outage to both the Newburg substation as well as the Eel River substation. This outage contributed 0.064 customer-interruptions to the division's SAIFI performance.
6. On July 28th, an osprey next on a riser pole contacted a lightening arrestor causing a breaker level outage on the Humboldt Bay 1102 feeder. This outage contributed 0.020 customer-interruptions to the division's SAIFI performance.
7. On September 9th, an underground equipment failure resulted in a breaker level outage on the Fort Bragg A -1103 feeder. This outage contributed 0.020 customer-interruptions to the division's SAIFI performance.

8. Kern Division Performance Assessment

Kern Division Performance

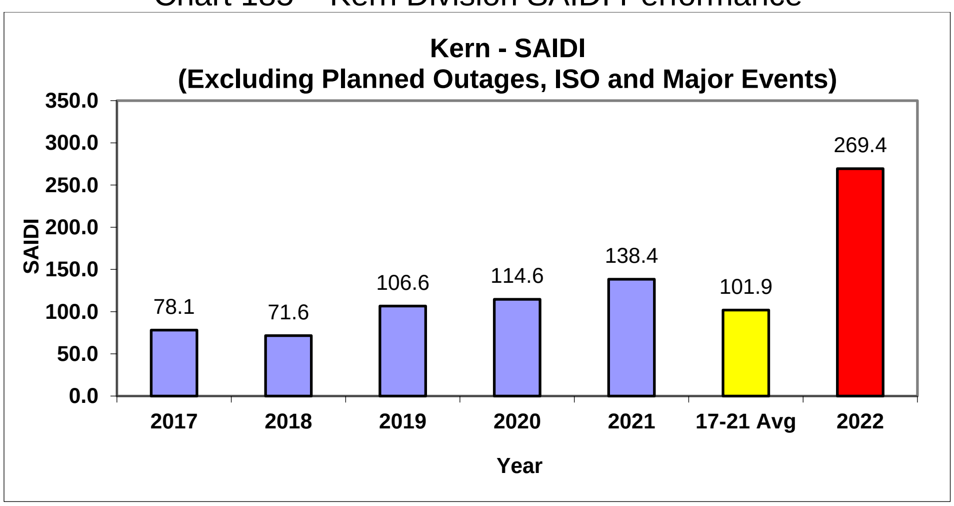
Table 16: Kern Division Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
KERN	2017	78.1	0.733	1.403	106.5
KERN	2018	71.6	0.783	1.720	91.4
KERN	2019	106.6	1.101	1.743	96.8
KERN	2020	114.6	1.060	1.831	108.1
KERN	2021	138.4	1.101	1.503	125.7
5-Year Average	17-21 Avg	101.9	0.956	1.640	106.6
KERN	2022	269.4	1.461	1.209	184.4
	%Difference	164.4%	52.8%	-26.3%	73.0%

Kern Division SAIDI Performance

Kern Division's 2022 SAIDI performance of 269.4 is 167.5 customer-minutes (or 164.4%) higher than the previous 5-year average of 101.9 as shown in the table above and illustrated below.

Chart 185 – Kern Division SAIDI Performance



The higher-than-average 2022 SAIDI performance is due the following outage events:

1. EPSS installed on the distribution line equipment contributed 4.9 customer-interruptions to the division's SAIFI performance.
2. On June 22nd, the substation regulator at the Weedpatch substation flashed

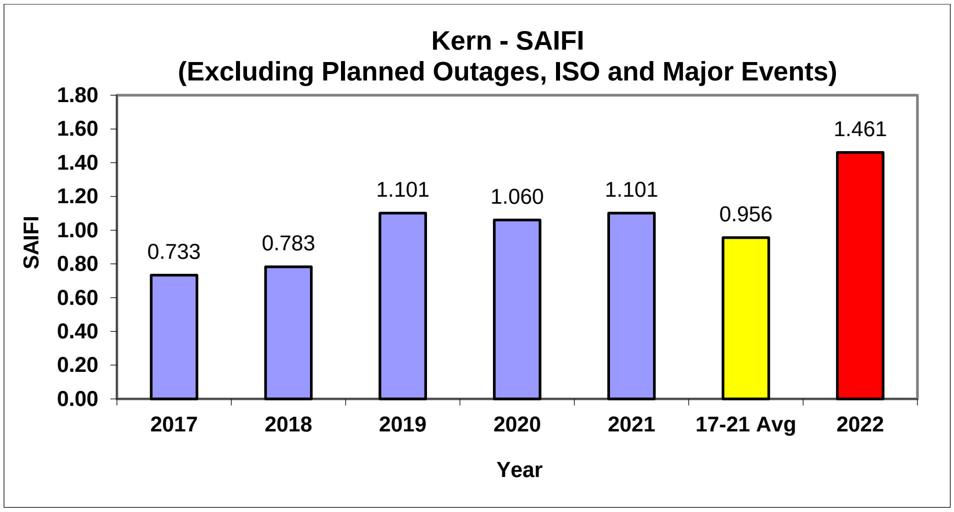
and caused a substation level outage. This outage contributed 46.2 customer-minutes to the division’s SAIDI.

3. On June 12th, an underground equipment failure caused a breaker level outage on Stockdale 2111 feeder. This outage contributed 4.6 customer-minutes to the division’s SAIDI.
4. On November 4th, a blown substation equipment caused a substation level outage at the Kern Power substation. This outage contributed 30.1 customer-minutes to the division’s SAIDI.
5. On November 5th, a routine test at the Kern Power substation after the work done on the previous day resulted in a loss of power to the Tevis substation resulting in an outage at Tevis substation. This outage contributed 15.7 customer-minutes to the division’s SAIDI.
6. On July 31st, an underground equipment failure caused a breaker level outage on the Panama 2102 feeder and contributed 6.2 customer-minutes to the division’s SAIDI.
7. On August 31st, an underground equipment failure caused a breaker level outage on the Magunden 1101 feeder. This outage contributed 5.1 customer-minutes to the division’s SAIDI.
8. On August 4th, a substation equipment failure caused a substation level outage at the Stockdale substation. This outage contributed 12.2 customer-minutes to the division’s SAIDI.

Kern Division SAIFI Performance

Kern Division’s 2022 SAIFI performance of 1.461 is 0.505 customer-interruptions (or 52.8%) higher than the previous 5-year average of 0.956 as shown in the table above and illustrated below.

Chart 186 – Kern Division SAIFI Performance



The higher-than-average 2022 SAIFI performance is due the following outage events:

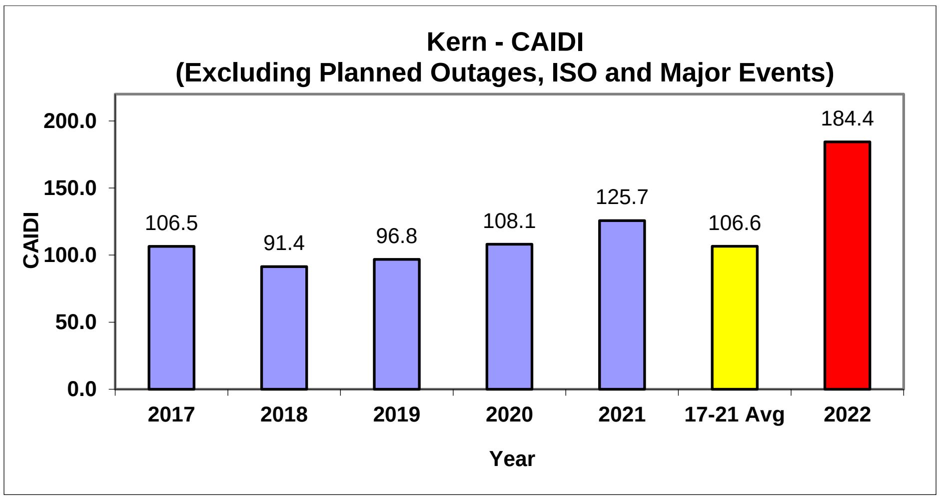
1. EPSS installed on the distribution line equipment contributed 0.016 customer-interruptions to the division's SAIFI.
2. On June 22nd, the substation regulator at the Weedpatch substation flashed and caused a substation level outage. This outage contributed 0.023 customer-interruptions to the division's SAIFI.
3. On November 4th, a blown substation equipment caused a substation level outage at the Kern Power substation. This outage contributed 0.064 customer-interruptions to the division's SAIFI.
4. On November 5th, a routine test at the Kern Power substation after the work done on the previous day resulted in a loss of power to the Tevis substation resulting in an outage at Tevis substation. This outage contributed 0.058 customer-interruptions to the division's SAIFI.
5. On July 31st, an underground equipment failure caused a breaker level outage on the Panama 2102 feeder and contributed 0.022 customer-interruptions to the division's SAIFI.
6. On August 31st, an underground equipment failure caused a breaker level outage on the Magunden 1101 feeder. This outage contributed 0.013 customer-interruptions to the division's SAIFI.
7. On August 4th, a substation equipment failure caused a substation level outage at the Stockdale substation. This outage contributed 0.053 customer-interruptions to the division's SAIFI.
8. On November 17th, a failed overhead equipment caused a breaker level

outage on the Stockdale 2105 feeder. This outage contributed 0.018 customer-interruptions to the division's SAIFI.

Kern Division CAIDI Performance

Kern Division's 2022 CAIDI performance of 184.4 was 77.8 minutes (or 73.0%) higher than the previous 5-year average of 106.6 as shown in the table above and illustrated in the figure below.

Chart 187 – Kern Division CAIDI Performance



The higher-than-average 2022 CAIDI performance was due to the outages experienced as described below:

1. On June 12th, an underground equipment failure caused a breaker level outage on Stockdale 2111 feeder and contributed 185.9 customer-minutes to the division's CAIDI performance.
2. On July 31st, an underground equipment failure caused a breaker level outage on the Panama 2102 feeder and contributed 149.2 customer-minutes to the division's CAIDI performance.
3. On August 31st, an underground equipment failure caused a breaker level outage on the Magunden 1101 feeder and contributed 57.9 customer-minutes to the division's CAIDI performance.

9. Los Padres Division Performance Assessment

Los Padres Division Performance

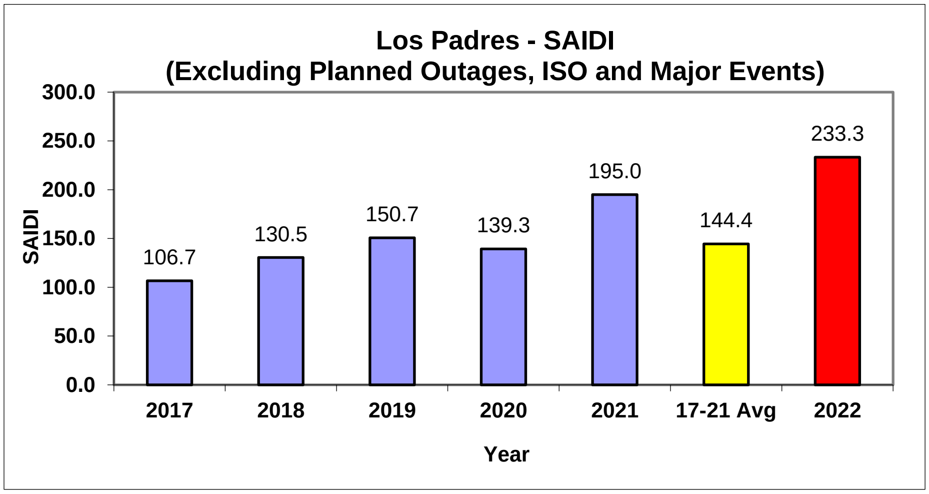
Table 17: Los Padres Division Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
LOS PADRES	2017	106.7	0.944	1.442	113.0
LOS PADRES	2018	130.5	1.195	1.010	109.3
LOS PADRES	2019	150.7	1.188	0.798	126.8
LOS PADRES	2020	139.3	1.141	0.836	122.1
LOS PADRES	2021	195.0	1.125	1.314	173.4
5-Year Average	17-21 Avg	144.4	1.119	1.080	129.1
LOS PADRES	2022	233.3	1.824	0.870	128.0
	%Difference	61.5%	63.0%	-19.4%	-0.9%

Los Padres Division SAIDI Performance

Los Padres Division's 2022 SAIDI performance of 233.3 was 88.9 customer-minutes (or 61.5%) higher than the previous 5-year average of 144.4 as shown in the table above and illustrated in the figure below.

Chart 188 – Los Padres Division SAIDI Performance



The higher-than-average 2022 Los Padres Division SAIDI was attributed to the following:

1. EPSS installed on the distribution line equipment contributed 108.0 minutes to the division's SAIDI performance.
2. On September 23rd, an outage occurred due to unknown cause on Oilfields 1103 feeder. This outage contributed 4.3 customer-minutes to the division's SAIDI.
3. On October 2nd, an outage equipment failure caused an outage on Oceano 1106 feeder. This outage contributed 9.6 customer-minutes to the division's

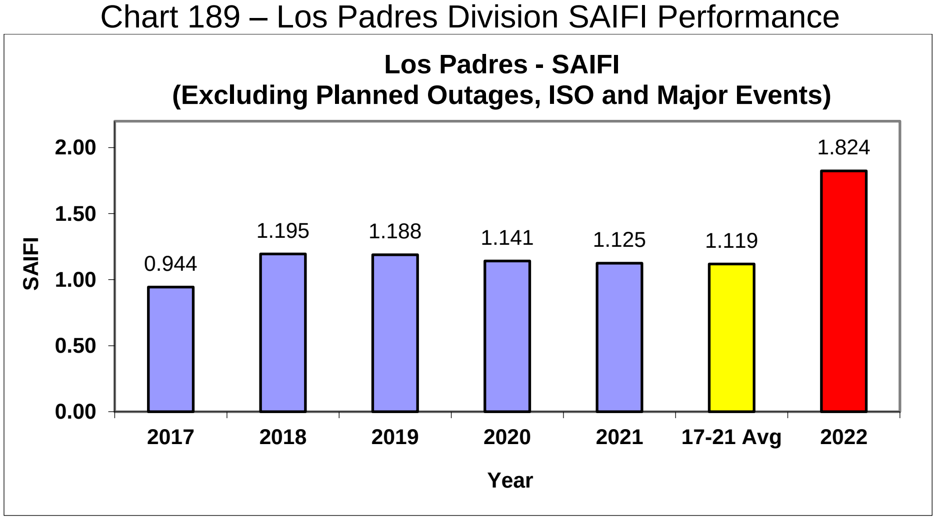
SAIDI.

4. On October 14th, transmission line feeding Cayucos substation relayed due to unknown cause. This outage contributed 3.9 customer-minutes to the division's SAIDI.
5. On July 30th, a 3rd party equipment caused an outage on the Templeton 2113 feeder. This outage contributed 3.8 customer-minutes to the division's SAIDI.
6. On September 13th, a burnt jumper caused an outage on the Santa Maria 1108 feeder. This outage contributed 3.7 customer-minutes to the division's SAIDI.
7. On September 8th, an overhead equipment failure caused a breaker level outage on the Atascadero 1101 feeder. This outage contributed 3.6 customer-minutes to the division's SAIDI

Los Padres Division SAIFI Performance

Los Padres Division's 2022 SAIFI performance of 1.824 was 0.705 customer-interruptions (or 63.0%) higher than the previous 5-year average of 1.119 as shown in the table above and illustrated in the figure below.

Chart 189 – Los Padres Division SAIFI Performance



The higher-than-average 2022 SAIFI performance is due the following outage events:

1. EPSS installed on the distribution line equipment contributed 0.805 customer-interruptions to the division's SAIFI.
2. On September 23rd, an outage occurred due to unknown cause on Oilfields

1103 feeder. This outage contributed 0.011 customer-interruptions to the division's SAIFI.

3. On October 2nd, an overhead equipment failure caused an outage on the Oceano 1106 feeder. This outage contributed 0.027 customer-interruptions to the division's SAIFI.
4. On March 1st, a deteriorated pole fell and brought the wire down causing a breaker level outage on the Mesa 1103 feeder. This outage contributed 0.036 customer-interruptions to the division's SAIFI.
5. On April 25th, a broken fire hydrant shot up water into our overhead lines and caused a breaker level outage on Santa Maria 1108 feeder. This outage contributed 0.027 customer-interruptions to the division's SAIFI.
6. On November 16th, a failed overhead equipment caused an outage on Oceano 1106 feeder. This outage contributed 0.027 customer-interruptions to the division's SAIFI.
7. On October 19th, a flashed overhead equipment caused a breaker level outage on Fairway 1108 feeder. This outage contributed 0.027 customer-interruptions to the division's SAIFI.
8. On July 8th, 3rd party metallic balloons caused an outage on Oceano 1104 feeder. This outage contributed 0.025 customer-interruptions to the division's SAIFI.

10. Mission Division Performance Assessment

Mission Division Performance

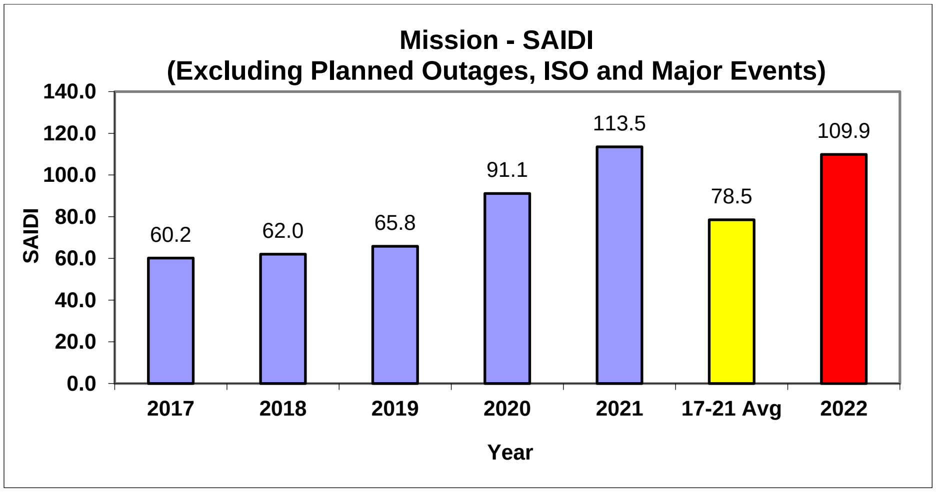
Table 18: Mission Division Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
MISSION	2017	60.2	0.602	1.002	99.9
MISSION	2018	62.0	0.644	0.815	96.4
MISSION	2019	65.8	0.669	0.693	98.4
MISSION	2020	91.1	0.766	1.060	119.0
MISSION	2021	113.5	0.957	0.913	118.6
5-Year Average	17-21 Avg	78.5	0.728	0.897	107.9
MISSION	2022	109.9	0.784	0.879	140.2
	%Difference	39.9%	7.7%	-1.9%	29.9%

Mission Division SAIDI Performance

Mission Division's 2022 SAIDI performance of 109.9 was 31.3 customer-minutes (or 39.9%) higher than the previous 5-year average of 78.5 as shown in the table above and illustrated in the figure below.

Chart 190 – Mission Division SAIDI Performance



The higher-than-average 2022 Mission Division SAIDI was attributed to the following:

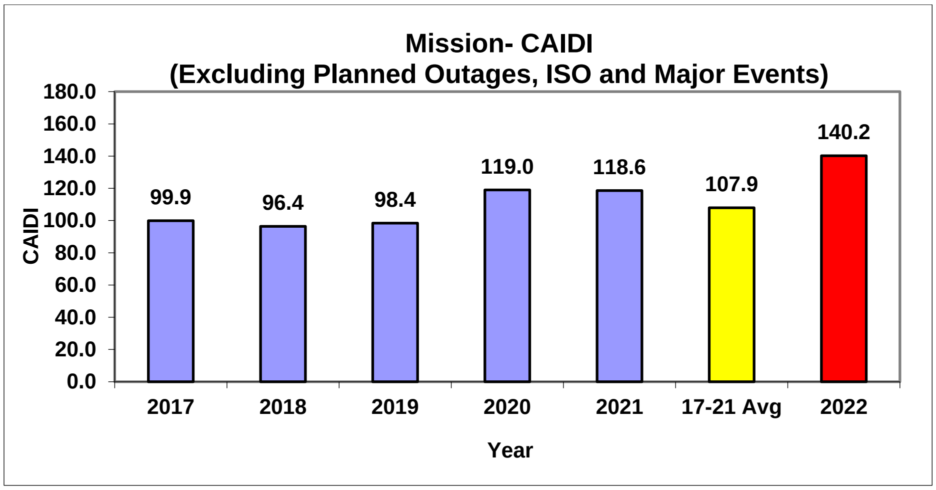
1. EPSS installed on the distribution line equipment contributed 31.9 minutes to the division's SAIDI performance.
2. On September 5th, an underground equipment failure caused a breaker level outage on Las Positas 2109 feeder. This outage contributed 7.9 customer-minutes to the division's SAIDI performance.
3. On June 18th, a broken underground cable caused an outage on Vineyard 2108 feeder. This outage contributed 4.0 customer-minutes to the division's SAIDI performance.
4. On September 17th, a 3rd party vehicle broke our distribution pole and caused a breaker level outage on San Ramon 2107 feeder. This outage contributed 4.0 customer-minutes to the division's SAIDI.
5. On April 9th, a bird related issue damaged our cutouts and caused an outage on Grant 1104 feeder. This outage contributed 2.8 customer-minutes to the division's SAIDI.
6. On June 13th, a breaker level outage occurred on North Dublin 2103 feeder due to an unknown cause. This outage contributed 2.5 customer-minutes to the division's SAIDI.
7. On June 10th, an underground equipment failure caused a breaker level outage on San Ramon 2101 feeder. This outage contributed 2.2 customer-minutes to the division's SAIDI performance.

8. On August 18th, an underground equipment failure caused a breaker level outage on Las Positas 2108 feeder. This outage contributed 2.0 customer-minutes to the division's SAIDI performance.

Mission Division CAIDI Performance

Mission Division's 2022 CAIDI performance of 140.2 was 132.3 minutes (or 29.9%) higher than the previous 5-year average of 107.9 as shown in the table above and illustrated in the figure below.

Chart 191 – Mission Division CAIDI Performance



The higher-than-average 2022 Mission Division CAIDI was attributed to the following:

1. On June 19th, a bird related issue caused a breaker level outage on the San Ramon 2107 feeder and contributed 67.9 customer-minutes to the division's CAIDI performance.
2. On September 5th, an underground equipment failure caused a breaker level outage on Las Positas 2109 feeder and contributed 358.9 customer-minutes to the division's CAIDI performance.
3. On June 18th, a broken underground cable caused an outage on Vineyard 2108 feeder and contributed 309.9 customer-minutes to the division's CAIDI performance.
4. On April 9th, a bird related issue damaged our cutouts and caused an outage on Grant 1104 feeder and contributed 42.0 customer-minutes to the division's CAIDI performance.
5. On September 17th, a 3rd party vehicle broke our distribution pole and caused a breaker level outage on San Ramon 2107 feeder and contributed 55.9

customer-minutes to the division's CAIDI performance.

6. On June 13th, a breaker level outage occurred on North Dublin 2103 feeder due to an unknown cause and contributed 146.4 customer-minutes to the division's CAIDI performance.
7. On June 10th, an underground equipment failure caused a breaker level outage on San Ramon 2101 feeder and contributed 121.7 customer-minutes to the division's CAIDI performance.
8. On August 18th, an underground equipment failure caused a breaker level outage on Las Positas 2108 feeder and contributed 169.1 customer-minutes to the division's CAIDI performance.

11. North Bay Division Performance Assessment

North Bay Division Performance

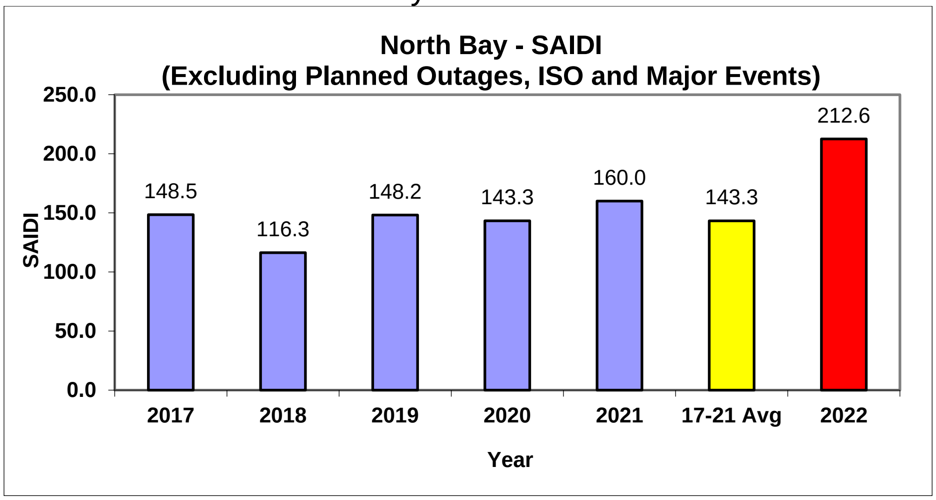
Table 19: North Bay Division Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
NORTH BAY	2017	148.5	0.955	1.832	155.5
NORTH BAY	2018	116.3	0.921	1.771	126.3
NORTH BAY	2019	148.2	1.312	1.647	112.9
NORTH BAY	2020	143.3	1.235	2.093	116.0
NORTH BAY	2021	160.0	1.063	1.551	150.5
5-Year Average	17-21 Avg	143.3	1.097	1.779	130.6
NORTH BAY	2022	212.6	1.459	1.100	145.7
	%Difference	48.4%	33.0%	-38.2%	11.6%

North Bay Division SAIDI Performance

North Bay Division's 2022 SAIDI performance of 212.6 was 69.3 customer-minutes (or 48.4%) higher than the previous 5-year average of 143.3 as shown in the table above and illustrated in the figure below.

Chart 192 – North Bay Division SAIDI Performance



The higher-than-average 2022 North Bay Division SAIDI was attributed to the following outage events:

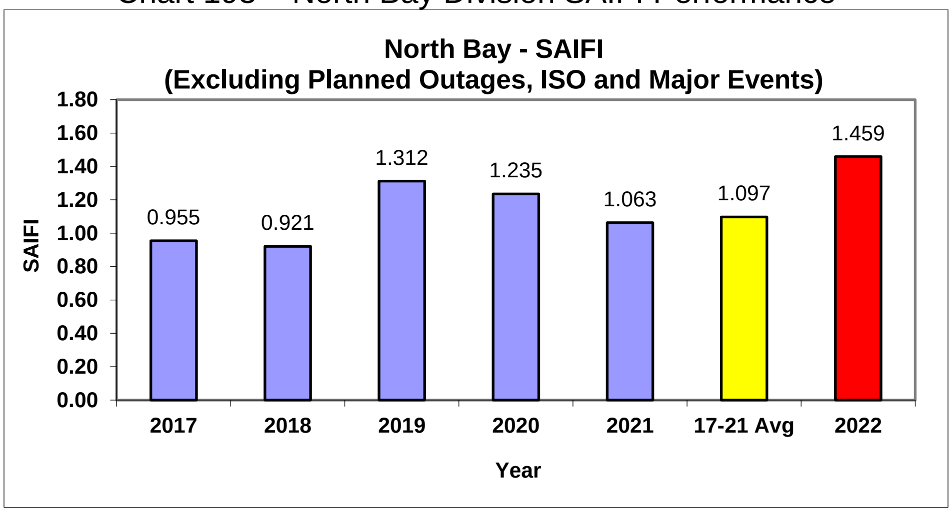
1. EPSS installed on the distribution line equipment contributed 102.8 minutes to the division's SAIDI performance. performance.
2. On July 23rd, a breaker level outage occurred on Stafford 1102 feeder due to an unknown cause. This outage contributed 5.5 customer-minutes to the division's SAIDI performance.
3. On May 19th, a tree branch fell on a section of the overhead conductor and caused an outage on Silverado 2104 feeder. This outage contributed 5.4 customer-minutes to the division's SAIDI performance.
4. On August 10th, a breaker level outage occurred on the Calistoga 1101 feeder due to an unknown cause. This outage contributed 3.4 customer-minutes to the division's SAIDI.
5. On August 19th, a 3rd party equipment caused a breaker level outage on Novato 1104 feeder. This outage contributed 2.0 customer-minutes to the division's SAIDI.
6. On September 12th, a tree fell on the overhead conductor and broke a pole causing an outage on the Olema 1101 feeder. This outage contributed 6.8 customer-minutes to the division's SAIDI.
7. On September 23rd, a tree fell on the overhead conductor and broke a pole causing an outage on the Silverado 2104 feeder. This outage contributed 2.8 customer-minutes to the division's SAIDI performance.
8. On April 14th, a section of the overhead conductor failure caused a breaker

level outage on the Olema 1101 feeder. This outage contributed 3.3 customer-minutes to the division's SAIDI performance.

North Bay Division SAIFI Performance

North Bay Division's 2022 SAIFI performance of 1.459 was 0.362 customer-interruptions (or 33.0%) higher than the previous 5-year average of 1.097 as shown in the table above and illustrated in the figure below.

Chart 193 – North Bay Division SAIFI Performance



The higher-than-average 2022 SAIFI performance is due the following outage events:

1. EPSS installed on the distribution line equipment contributed 0.575 customer-interruptions to the division's SAIFI.
2. On September 22nd, an outage occurred when the overhead conductor wrapped together due to 3rd Party metallic balloon causing an outage on the North Tower 2104 feeder. This outage contributed 0.025 customer-interruptions to the division's SAIFI.
3. On July 23rd, a breaker level outage occurred on Stafford 1102 feeder due to an unknown cause. This outage contributed 0.016 customer-interruptions to the division's SAIFI.
4. On June 12th, a breaker level outage occurred on the Alto 1122 feeder due to an unknown cause. This outage contributed 0.015 customer-interruptions to the division's SAIFI.
5. On July 4th, an underground equipment failure caused an outage on the Las Gallinas A-1105 feeder. This outage contributed 0.010 customer-

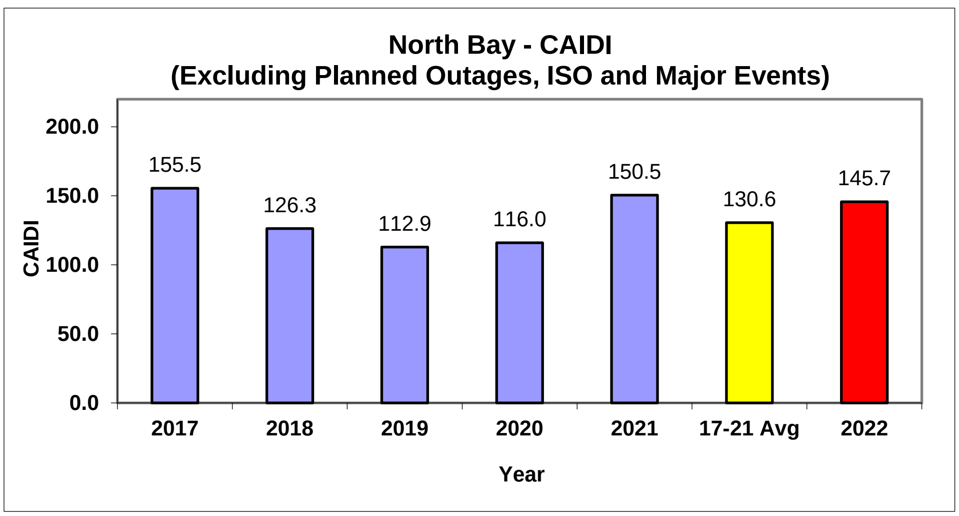
interruptions to the division's SAIFI.

6. On August 19th, a 3rd party equipment caused a breaker level outage on Novato 1104 feeder. This outage contributed 0.010 customer-interruptions to the division's SAIFI.
7. On September 5th, a flashed overhead equipment caused a breaker level outage on Pueblo 2103 feeder. This outage contributed 0.019 customer-interruptions to the division's SAIFI.
8. On September 18th, an insulator at a riser flashed and caused a breaker level outage on the Napa 1110 feeder. This outage contributed 0.014 customer-interruptions to the division's SAIFI.
9. On September 22nd, an outage occurred when the overhead conductor wrapped together due to 3rd Party metallic balloon causing an outage on the Vallejo B – 0411 feeder. This outage contributed 0.010 customer-interruptions to the division's SAIFI.

North Bay Division CAIDI Performance

North Bay Division's 2022 CAIDI performance of 145.7 was 15.1 minutes (or 11.6%) higher than the previous 5-year average of 130.6 as shown in the table above and illustrated in the figure below.

Chart 194 – North Bay Division CAIDI Performance



The higher-than-average 2022 North Bay Division CAIDI was attributed to the following:

1. On May 19th, a tree branch fell on a section of the overhead primary conductor and caused an outage on Silverado 2104 feeder and contributed 313.9 customer-minutes to the division's CAIDI performance.

2. On July 23rd, a breaker level outage occurred on the Stafford 1102 feeder due to an unknown cause and contributed 178.8 customer-minutes to the division's CAIDI performance.
3. On August 10th, a breaker level outage occurred on the Calistoga 1101 feeder due to an unknown cause and contributed 251.3 customer-minutes to the division's CAIDI performance.
4. On August 19th, an underground equipment failure caused an outage on Carquinez 1105 feeder and contributed 858.0 customer-minutes to the division's CAIDI performance.
5. On September 12th, a tree fell on the overhead conductor and broke a pole causing an outage on the Olema 1101 feeder and contributed 1229.8 customer-minutes to the division's CAIDI performance.
6. On September 23rd, a tree fell on the overhead conductor and broke a pole causing an outage on the Silverado 2104 feeder and contributed 503.3 customer-minutes to the division's CAIDI performance.
7. On April 14th, a section of the overhead conductor failure caused a breaker level outage on the Olema 1101 feeder and contributed 613.5 customer-minutes to the division's CAIDI performance.

12. North Valley Division Performance Assessment

North Valley Division Performance

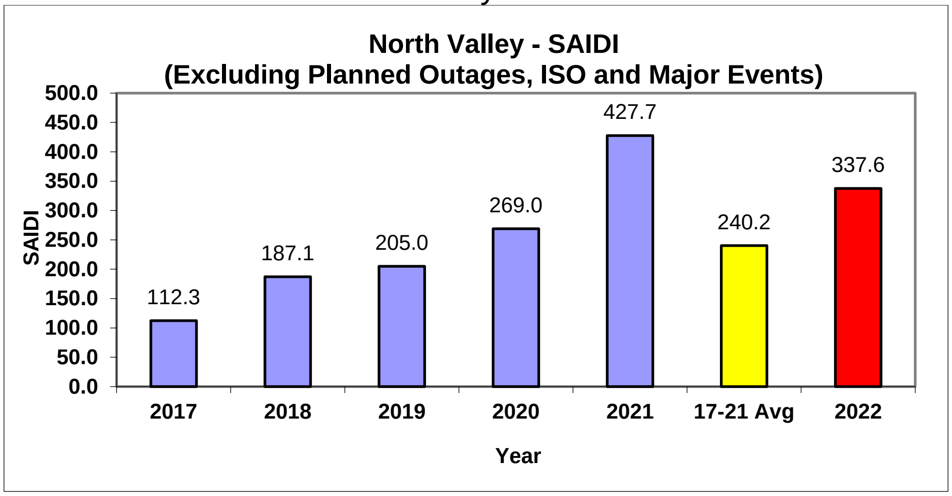
Table 20: North Valley Division Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
NORTH VALLEY	2017	112.3	0.863	2.007	130.2
NORTH VALLEY	2018	187.1	1.364	1.325	137.2
NORTH VALLEY	2019	205.0	1.506	1.458	136.1
NORTH VALLEY	2020	269.0	1.546	1.369	174.0
NORTH VALLEY	2021	427.7	1.752	2.192	244.1
5-Year Average	17-21 Avg	240.2	1.406	1.670	170.8
NORTH VALLEY	2022	337.6	2.178	1.206	155.0
	%Difference	40.6%	54.9%	-27.8%	-9.3%

North Valley Division SAIDI Performance

North Valley Division's 2022 SAIDI performance of 337.6 was 97.4 customer-minutes (or 40.6%) higher than the previous 5-year average of 240.2 as shown in the table above and illustrated in the figure below.

Chart 195 – North Valley Division SAIDI Performance



The higher-than-average 2022 North Valley Division SAIDI was attributed to the following outage events:

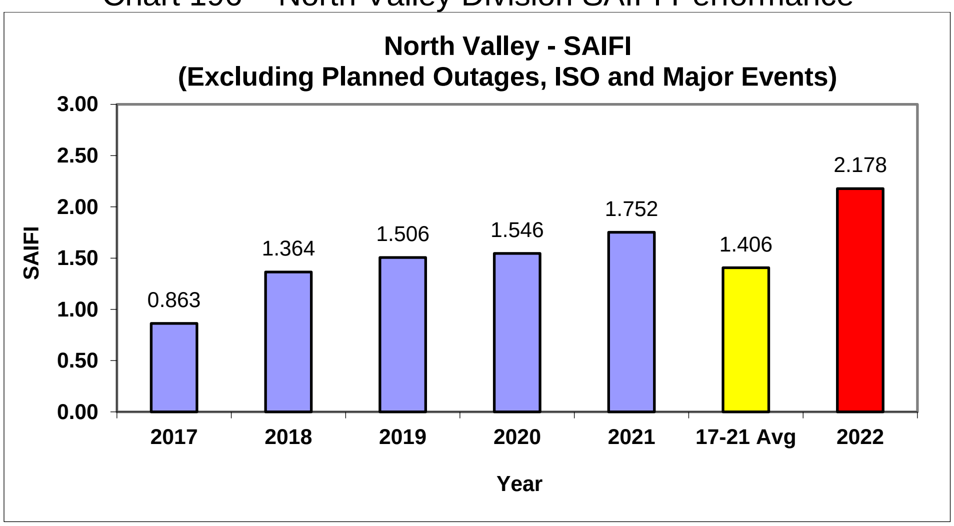
1. EPSS installed on the distribution line equipment contributed 149.0 minutes to the division's SAIDI performance. performance.
2. On April 11th, a breaker level outage occurred on Red Bluff 1103 feeder due to a tree falling on our lines and breaking the conductor. This outage contributed 2.8 customer-minutes to the division's SAIDI performance.
3. On September 10th, 10th a 3rd party vehicle broke a wooden pole and caused an outage on Glenn 1101 feeder. This outage contributed 5.9 customer-minutes to the division's SAIDI performance.
4. On November 8th, an outage occurred on the Challenge 1101 feeder due to an overhead conductor failure. This outage contributed 5.3 customer-minutes to the division's SAIDI.
5. On September 18th, a tree branch fell across a transmission line feeding Anita substation, then flashed over causing a pole fire that resulted in a substation level outage at the Anita substation. This outage contributed 3.7 customer-minutes to the division's SAIDI.
6. On January 3rd, a tree fell on a section of the overhead conductor and broke a pole causing an outage on the Rising River 1101 feeder. This outage contributed 3.3 customer-minutes to the division's SAIDI.
7. On July 5th, an underground equipment failure caused a breaker level outage on the Rawson 1103 feeder. This outage contributed 3.3 customer-minutes to the division's SAIDI performance.

8. On August 9th, an unknown cause resulted in a substation level outage at the Burney substation that affected both Burney 1101 as well as Burney 1102 feeders. This outage contributed 3.2 customer-minutes to the division's SAIDI performance.
9. On December 30th, an underground equipment failure inside the substation caused breaker level outages on both Notre Dame 1101 and 1102 feeders. This outage contributed 3.0 customer-minutes to the division's SAIDI performance.

North Valley Division SAIFI Performance

North Valley Division's 2022 SAIFI performance of 2.178 was 0.772 customer-interruptions (or 54.9%) higher than the previous 5-year average of 1.406 as shown in the table above and illustrated in the figure below.

Chart 196 – North Valley Division SAIFI Performance



The higher-than-average 2022 North Valley Division SAIFI was attributed to the following:

1. EPSS installed on the distribution line equipment contributed 0.863 customer-interruptions to the division's SAIFI.
2. On October 24th, a tree fell on a section of the overhead conductor and broke the wire causing an outage on the Wyandotte 1107 feeder. This outage contributed 0.014 customer-interruptions to the division's SAIFI.
3. On April 18th, a grounding condition required the company to initiate an outage for safe operation on the Paradise 1105 feeder. This outage

contributed 0.019 customer-interruptions to the division's SAIFI.

4. On October 21st, a breaker level outage occurred on the Wyandotte 1109 feeder due to unknown cause. This outage contributed 0.017 customer-interruptions to the division's SAIFI.
5. On June 17th, an overhead splice failure caused a breaker level outage on the Sycamore Creek 1101 feeder. This outage contributed 0.015 customer-interruptions to the division's SAIFI.
6. On December 30th, an underground equipment failure inside the substation caused a breaker level outage on both Notre Dame 1101 and 1102 feeders. This outage contributed 0.014 customer-interruptions to the division's SAIFI.
7. On April 11th, a tree fell on the overhead conductor and broke the wire causing a breaker level outage on the Red Bluff 1103 feeder. This outage contributed 0.013 customer-interruptions to the division's SAIFI.
8. On December 27th, a breaker level outage occurred on the Red Bluff 1103 feeder due to an overhead conductor failure. This outage contributed 0.013 customer-interruptions to the division's SAIFI.
9. On June 6th, transmission line work resulted in an outage to the Volta substation. This outage contributed 0.013 customer-interruptions to the division's SAIFI.

13. Peninsula Division Performance Assessment

Peninsula Division Performance

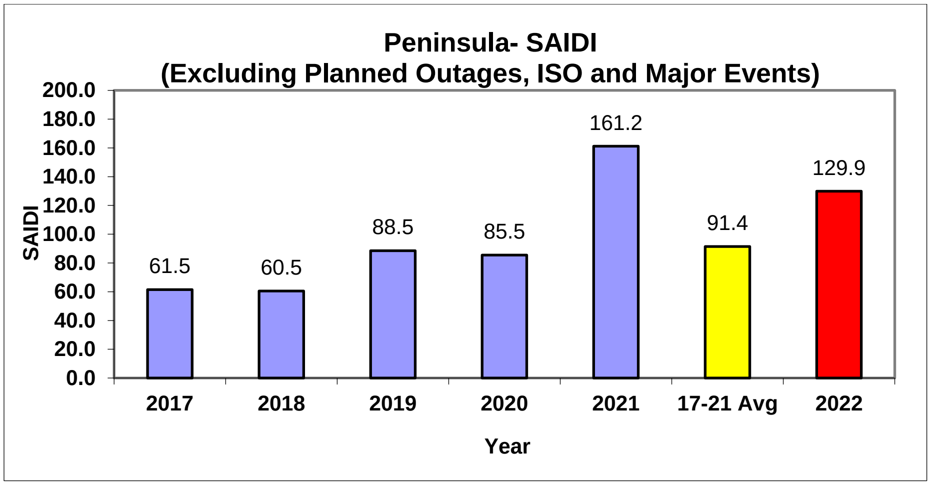
Table 21: Peninsula Division Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
PENINSULA	2017	61.5	0.640	1.176	96.0
PENINSULA	2018	60.5	0.806	1.204	75.0
PENINSULA	2019	88.5	0.816	0.983	108.4
PENINSULA	2020	85.5	0.855	1.042	100.0
PENINSULA	2021	161.2	1.068	0.944	150.9
5-Year Average	17-21 Avg	91.4	0.837	1.070	109.2
PENINSULA	2022	129.9	1.005	1.351	129.2
	%Difference	42.1%	20.1%	26.3%	18.3%

Peninsula Division SAIDI Performance

Peninsula Division's 2022 SAIDI performance of 129.9 was 38.5 customer-minutes (or 42.1%) higher than the previous 5-year average of 91.4 as shown in the table above and illustrated in the figure below.

Chart 197 – Peninsula Division SAIDI Performance



The higher-than-average 2022 Peninsula Division SAIDI was attributed to the following:

1. EPSS installed on the distribution line equipment contributed 24.4 minutes to the division's SAIDI performance.
2. On June 21st, a tree branch fell on our lines and broke our conductor causing an outage on the Belmont 1103 feeder. This event contributed 7.7 customer-minutes to the division's SAIDI performance.
3. On June 21st, a burnt transmission line equipment caused an outage to Emerald substation. This event contributed 9.7 customer-minutes to the division's SAIDI performance.
4. On June 21st, a tree branch fell into our distribution line and caused a recloser level outage on the Belmont 1103 feeder. This event contributed 7.7 customer-minutes to the division's SAIDI performance.
5. On June 21st, transmission line serving Ralston substation was de-energized due to the Edgewood fire in Santa Cruz county for fire fighter safety. This event contributed 6.5 customer-minutes to the division's SAIDI performance.
6. On June 21st, transmission line serving Carolands substation was de-energized due to the Edgewood fire in Santa Cruz county for fire fighter safety. This event contributed 4.1 customer-minutes to the division's SAIDI performance.
7. On June 21st, there was a breaker level outage due to an unknown cause on the Las Pulgas 401 feeder. This event contributed 2.6 customer-minutes to

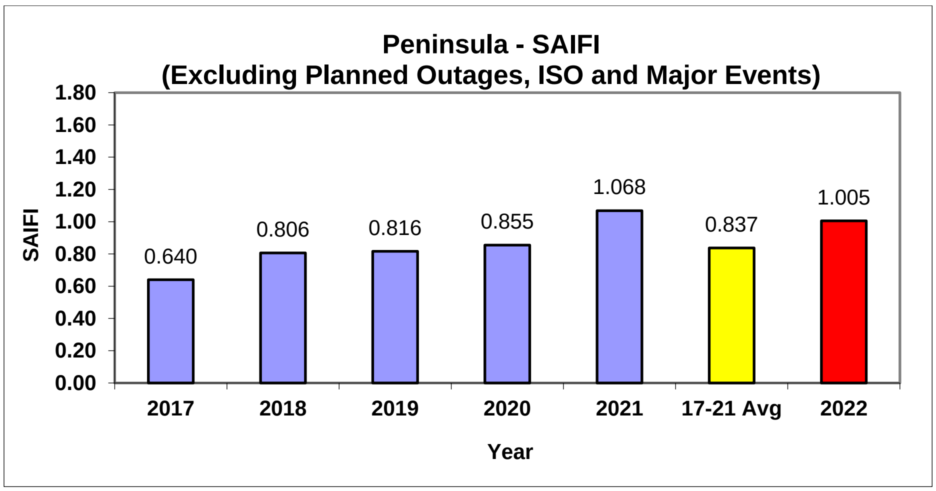
the division's SAIDI performance.

8. On January 6th, a tree fell into our lines and broke our conductor causing a breaker level outage on the Belhaven 408 feeder. This event contributed 2.5 customer-minutes to the division's SAIDI performance.

Peninsula Division SAIFI Performance

Peninsula Division's 2022 SAIFI performance of 1.005 was 0.168 customer-interruptions (or 20.1%) higher than the previous 5-year average of 0.837 as shown in the table above and illustrated in the figure below.

Chart 198 – Peninsula Division SAIFI Performance



The higher-than-average 2022 Peninsula Division SAIFI was attributed to the following:

1. EPSS installed on the distribution line equipment contributed 0.095 customer-interruptions to the division's SAIFI performance.
2. On June 21st, a tree branch fell on our lines and broke our conductor causing an outage on the Belmont 1103 feeder. This event contributed 0.008 customer-interruptions to the division's SAIFI performance.
3. On June 21st, transmission line serving Ralston substation was de-energized due to the Edgewood fire in Santa Cruz County for fire fighter safety. This event contributed 0.020 customer-minutes to the division's SAIDI performance.
4. On December 11th, a malfunctioning equipment on the Bay Meadows -2101 feeder caused an outage. This event contributed 0.018 customer-interruptions

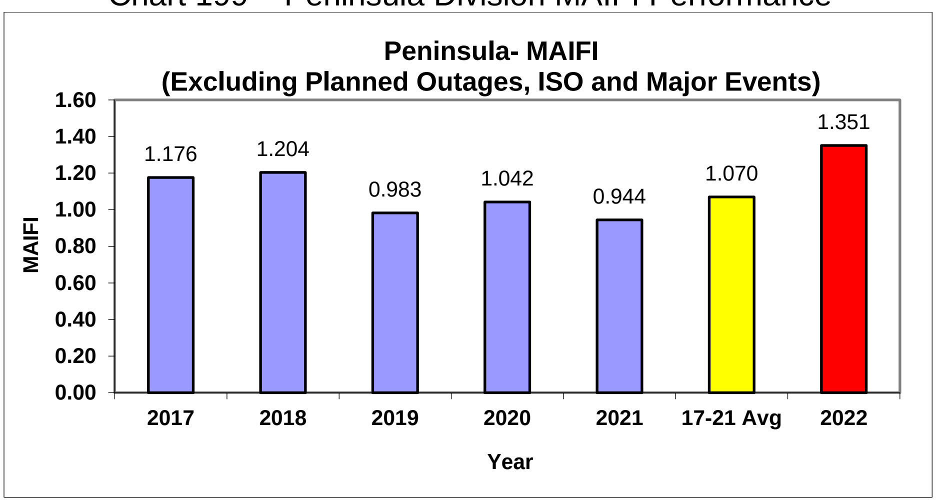
to the division's SAIFI performance.

5. On July 6th, an underground equipment failure caused a breaker level outage on the Daly City 1111 feeder. This event contributed 0.018 customer-interruptions to the division's SAIFI performance.
6. On May 19th, the feeder breaker on the Burlingame 403 caused an outage due to an unknown cause. This event contributed 0.018 customer-interruptions to the division's SAIFI performance.
7. On Feb 9th, a normally open switch between Sneath Lane 1107 feeder and Pacifica 1102 feeder flashed over and caused breaker level outages on both breakers. This event contributed 0.017 customer-interruptions to the division's SAIFI performance.

Peninsula Division MAIFI Performance

Peninsula Division's 2022 MAIFI performance of 1.351 was 0.281 customer-interruptions (or 26.3%) higher than the previous 5-year average of 1.070 as shown in the table above and illustrated in the figure below.

Chart 199 – Peninsula Division MAIFI Performance



The higher-than-average 2022 Peninsula Division MAIFI was attributed to the following momentary outages:

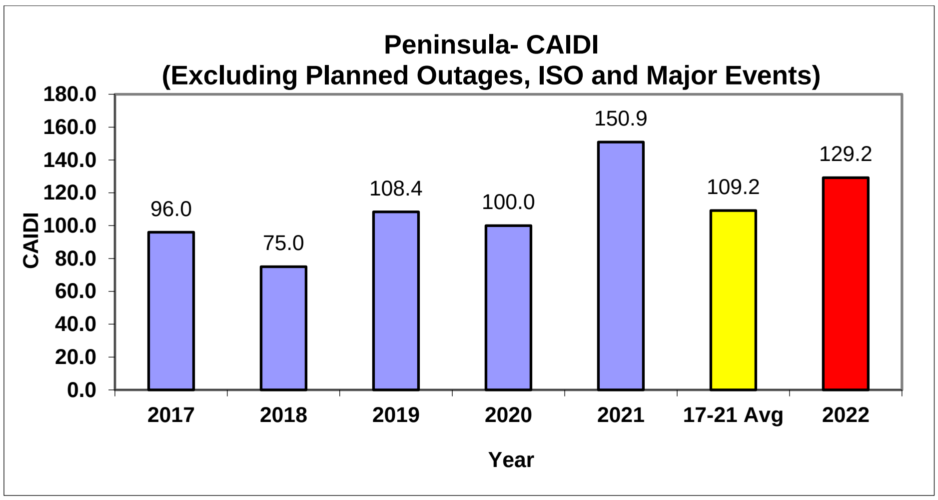
1. On May 7th, a loss of power event to Daly City substation resulted in an outage.
2. On September 28th, the Bay Meadows 1106 feeder circuit breaker operated due to an unknown cause.
3. On December 7th, the Seremonte 1104 feeder circuit breaker operated due to an unknown cause.

4. On May 7th, the Seremonte substation lost power due to unknown reasons. These outages contributed 0.084 customer-interruptions to the division's MAIFI performance.

Peninsula Division CAIDI Performance

Peninsula Division's 2022 CAIDI performance of 129.2 was 20.0 minutes (or 18.3%) higher than the previous 5-year average of 109.2 as shown in the table above and illustrated in the figure below.

Chart 200 – Peninsula Division CAIDI Performance



The higher-than-average 2022 Peninsula Division CAIDI was attributed to the following:

1. On June 21st, a burnt transmission line equipment caused an outage to Emerald substation and contributed 2446.3 minutes to the division's CAIDI performance.
2. On June 21st, a tree branch fell into our distribution line and caused a recloser level outage on the Belmont 1103 feeder and contributed 672.4 minutes to the division's CAIDI performance.
3. On January 6th, a tree fell into the overhead lines and broke the conductor causing a breaker level outage on the Belhaven 408 feeder. This outage contributed 325.9 minutes to the division's CAIDI performance.
4. On December 11th, a malfunctioning equipment on the Bay Meadows -2101 feeder caused an outage that contributed 55.6 minutes to the division's CAIDI performance.
5. On June 21st, a burned underground equipment caused an outage on the Half

Moon Bay 1102 feeder and contributed 420.7 minutes to the division's CAIDI performance.

14. Sacramento Division Performance Assessment

Sacramento Division Performance

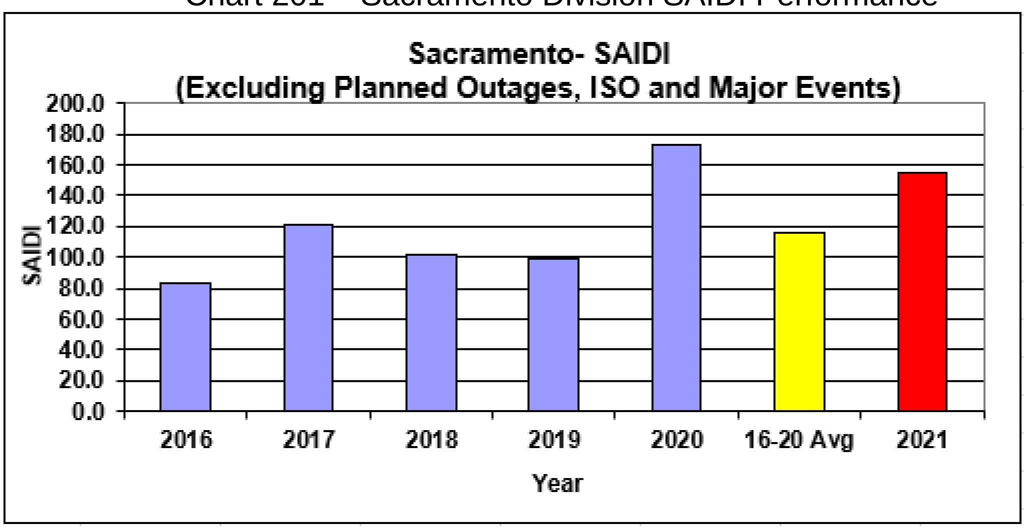
Table 22: Sacramento Division Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SACRAMENTO	2017	121.2	1.070	1.708	113.2
SACRAMENTO	2018	101.0	1.021	1.825	98.9
SACRAMENTO	2019	98.9	0.866	1.574	114.3
SACRAMENTO	2020	173.6	1.350	1.499	128.6
SACRAMENTO	2021	155.4	1.122	1.874	138.4
5-Year Average	17-21 Avg	130.0	1.086	1.696	119.7
SACRAMENTO	2022	175.1	1.294	1.573	135.3
	%Difference	34.7%	19.2%	-7.3%	13.0%

Sacramento Division SAIDI Performance

Sacramento Division's 2022 SAIDI performance of 175.1 was 45.1 customer-minutes (or 67.2%) higher than the previous 5-year average of 130.0 as shown in the table above and illustrated in the figure below.

Chart 201 – Sacramento Division SAIDI Performance



The higher-than-average 2022 Sacramento Division SAIDI was attributed to the following outage events:

1. EPSS installed on the distribution line equipment contributed 29.6 minutes to the division's SAIDI performance.
2. On May 19th, a 3rd party vehicle broke a pole and caused an outage on the

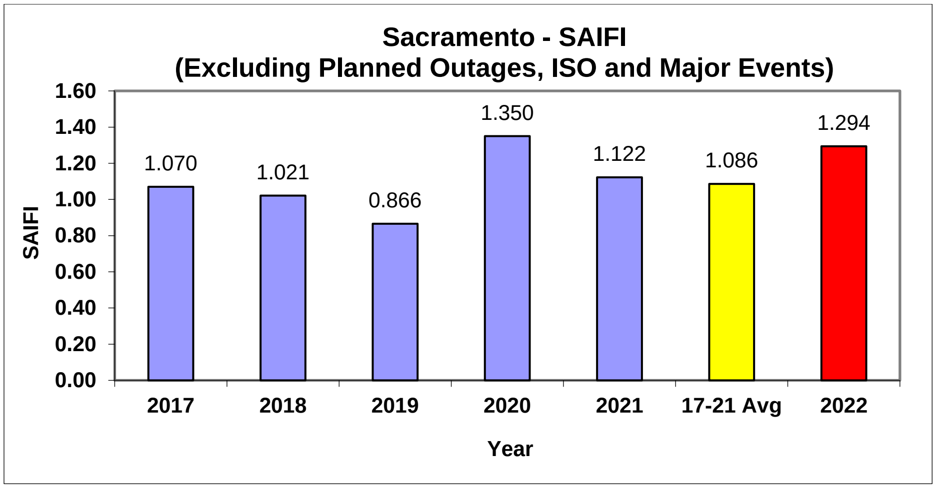
Madison 2101 feeder. This event contributed 4.5 customer-minutes to the division's SAIDI performance.

3. On June 1st, an overhead equipment failure on the transmission lie caused an outage to the Dixon substation. This event contributed 9.1 customer-minutes to the division's SAIDI performance.
4. On April 11th, an overhead equipment failure caused a breaker level outage on Grand Island 2226 feeder. This event contributed 3.5 customer-minutes to the division's SAIDI performance.
5. On June 9th, a failed riser termination caused a breaker level outage on the Peabody 2113 feeder. This event contributed 2.5 customer-minutes to the division's SAIDI performance.
6. On September 12th, a 3rd party vehicle broke a pole and caused a breaker level outage on the West Sacramento 1109 feeder. This event contributed 2.3 customer-minutes to the division's SAIDI performance.
7. On March 4th, a breaker level outage occurred on the Grand Island 2226 feeder due to an unknown cause. This event contributed 2.1 customer-minutes to the division's SAIDI performance.
8. On November 26th, a wire down incident at multiple locations caused a breaker level outage on the Live Oak 1104 feeder. This event contributed 2.3 customer-minutes to the division's SAIDI performance.

<u>Sacramento Division SAIFI Performance</u>

Sacramento Division's 2022 SAIFI performance of 1.150 was 0.347 customer-interruptions (or 43.2%) higher than the previous 5-year average of 0.803 as shown in the table above and illustrated in the figure below.

Chart 202 – Sacramento Division SAIFI Performance



The higher-than-average 2022 Sacramento Division SAIFI was attributed to the following:

1. EPSS installed on the distribution line equipment contributed 0.165 customer-interruptions to the division's SAIFI performance.
2. On June 9th, a failed riser termination caused a breaker level outage on the Peabody 2113 feeder. This event contributed 0.025 customer-interruptions to the division's SAIFI performance.
3. On June 1st, an overhead equipment failure on the transmission line caused an outage to the Dixon substation. This event contributed 0.024 customer-minutes to the division's SAIDI performance.
4. On September 5th, a breaker level outage occurred on the Peabody 2105 feeder due to conductor wrapping together. This event contributed 0.019 customer-interruptions to the division's SAIFI performance.
5. On October 23rd, a breaker level outage occurred on the Peabody 2113 feeder due to an underground equipment failure. This event contributed 0.018 customer-interruptions to the division's SAIFI performance.
6. On May 18th, an underground equipment failure caused a breaker level outage on the Peabody 2107 feeder. This event contributed 0.015 customer-interruptions to the division's SAIFI performance.
7. On October 15th, an overhead splice failure caused an outage on Peabody 2107 feeder. This event contributed 0.015 customer-interruptions to the division's SAIFI performance.
8. On April 11th, an overhead equipment failure caused a breaker level outage on Grand Island 2226 feeder. This event contributed 0.014 customer-

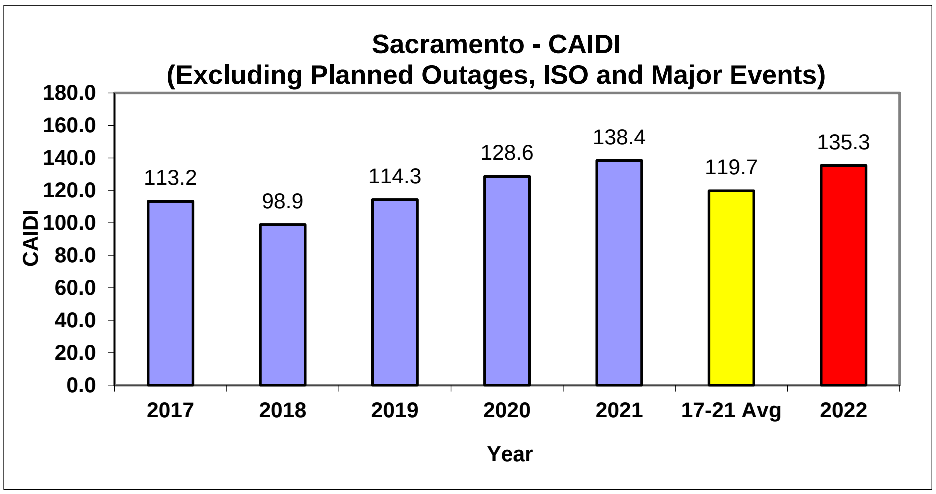
interruptions to the division's SAIFI performance.

9. On March 4th, a breaker level outage occurred on Grand Island 2226 feeder due to an unknown cause on the Grand Island 2226 feeder. This event contributed 0.014 customer-interruptions to the division's SAIFI performance.

Sacramento Division CAIDI Performance

Sacramento Division's 2022 CAIDI performance of 132.4 was 19.0 minutes (or 16.7%) higher than the previous 5-year average of 113.4 as shown in the table above and illustrated in the figure below.

Chart 203 – Sacramento Division CAIDI Performance



The higher-than-average 2022 Sacramento Division CAIDI was attributed to the following:

1. On February 1st, a tree branch fell on a section of the overhead primary conductor and caused an outage on the Davis 1105 feeder and contributed 43.6 minutes to the division's CAIDI performance.
2. On April 11th, an overhead equipment failure caused a breaker level outage on the Grand Island 2226 feeder and contributed 118.8 minutes to the division's CAIDI performance.
3. On May 19th, a 3rd party vehicle broke a pole and caused an outage on the Madison 2101 feeder . This outage contributed 501.2 minutes to the division's CAIDI performance.

15. San Francisco Division Performance Assessment

San Francisco Division Performance

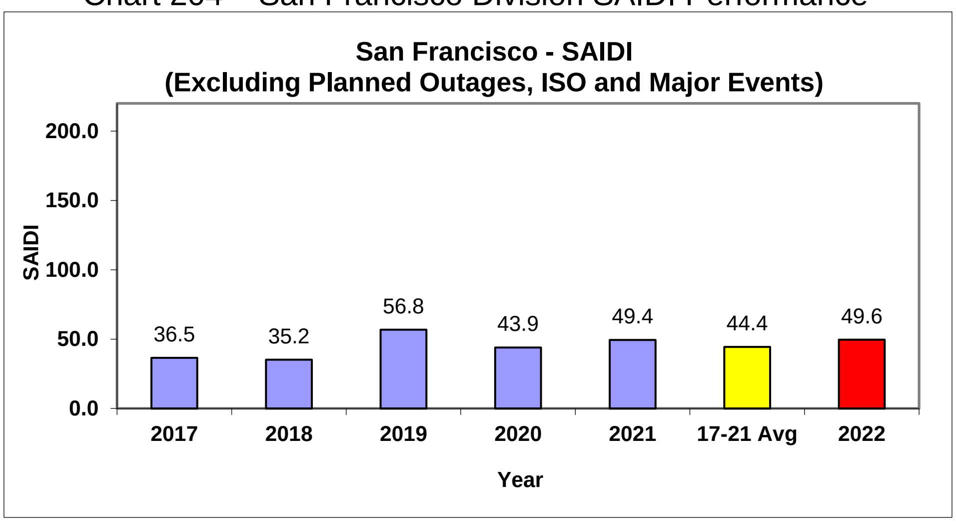
Table 23: San Francisco Division Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SAN FRANCISCO	2017	36.5	0.500	0.372	73.0
SAN FRANCISCO	2018	35.2	0.378	0.270	93.0
SAN FRANCISCO	2019	56.8	0.614	0.258	92.4
SAN FRANCISCO	2020	43.9	0.582	0.386	75.5
SAN FRANCISCO	2021	49.4	0.530	0.499	93.2
5-Year Average	17-21 Avg	44.4	0.521	0.357	85.1
SAN FRANCISCO	2022	49.6	0.496	0.458	100.0
	%Difference	11.8%	-4.8%	28.3%	17.4%

San Francisco Division SAIDI Performance

San Francisco Division's 2022 SAIDI performance of 49.4 was 5.2 customer-minutes (or 11.8%) higher than the previous 5-year average of 44.4 as shown in the table above and illustrated in the figure below.

Chart 204 – San Francisco Division SAIDI Performance



The higher-than-average 2022 San Francisco Division SAIDI was attributed to the following outage events:

1. On May 29th, an underground splice failure caused a breaker level outage on SF E -1103 feeder. This event contributed 3.7 customer-minutes to the division's SAIDI performance.
2. On June 26th, a flashed overhead equipment caused an outage on the Daly

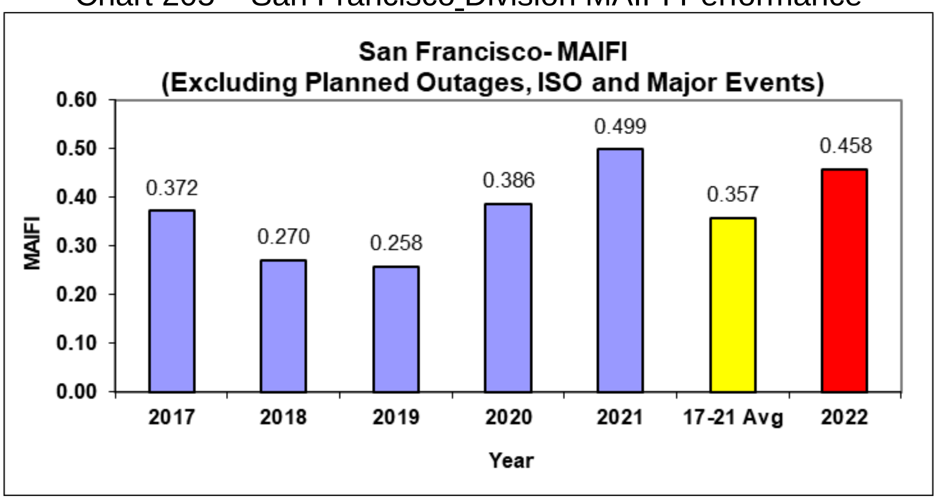
City -1111. This event contributed 2.7 customer-minutes to the division's SAIDI performance.

3. On December 12th, an underground equipment failure caused a breaker level outage on the SF Z-1120 feeder. This event contributed 1.6 customer-minutes to the division's SAIDI performance.
4. On May 25th, a pole fire caused an outage on the SF A-1117 feeder. This event contributed 1.4 customer-minutes to the division's SAIDI performance.
5. On June 4th, an underground equipment failure caused a breaker level outage on the Marina 1101 feeder. This event contributed 1.2 customer-minutes to the division's SAIDI performance.

San Francisco Division MAIFI Performance

San Francisco Division's 2022 MAIFI performance of 0.458 was 0.101 customer-interruptions (or 28.3%) higher than the previous 5-year average of 0.357 as shown in the table above and illustrated in the figure below.

Chart 205 – San Francisco Division MAIFI Performance



The higher-than-average 2022 San Francisco Division MAIFI was attributed to the following:

1. On August 23rd, the SF A substation operated due to an unknown cause.
2. On May 8th, the SF H Martin 1108 feeder circuit breaker operated due to an overhead equipment failure.
3. On May 2nd, a recloser located on Daly City 1106 feeder operated due to an overhead equipment failure.
4. On January 26th, the SF P 1103 feeder circuit breaker operated due to an

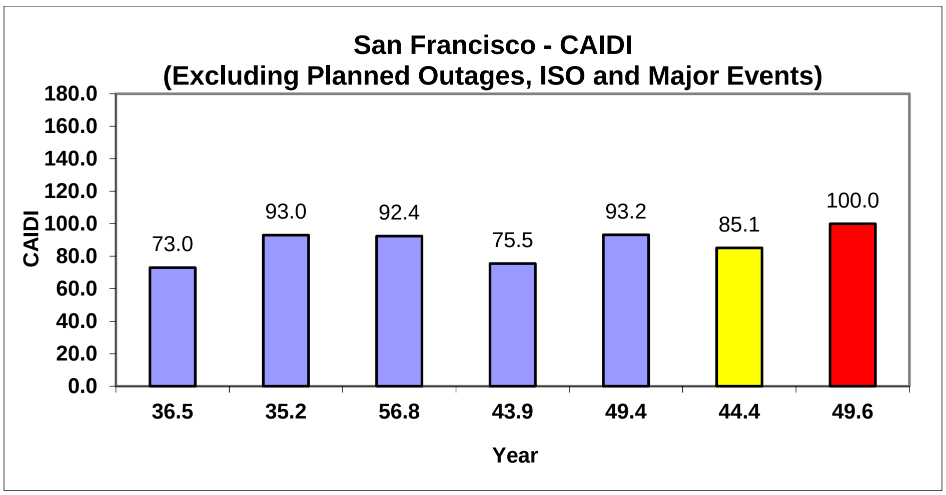
overhead equipment failure.

These outages contributed 0.102 customer-interruptions to the division's MAIFI performance.

San Francisco Division CAIDI Performance

San Francisco Division's 2022 CAIDI performance of 100.0 was 14.9 minutes (or 17.4%) higher than the previous 5-year average of 85.1 as shown in the table above and illustrated in the figure below.

Chart 206 – San Francisco Division CAIDI Performance



The higher-than-average 2022 San Francisco Division CAIDI was attributed to the following:

1. On June 26th, a flashed overhead equipment caused an outage on the Daly City -1111. This outage contributed 288.7 minutes to the division's CAIDI performance.
2. On May 25th, a pole fire caused an outage on the SF A-1117 feeder. This outage contributed 287.8 minutes to the division's CAIDI performance.
3. On May 29th, an underground splice failure caused a breaker level outage on SF E -1103 feeder. This outage contributed 97.3 minutes to the division's CAIDI performance.
4. On December 12th, an underground equipment failure caused a breaker level

outage on the SF Z-1120 feeder. This outage contributed 69.6 minutes to the division's CAIDI performance.

5. On June 4th, an underground equipment failure caused a breaker level outage on the Marina 1101 feeder. This outage contributed 39.9 minutes to the division's CAIDI performance.

16. San Jose Division Performance Assessment

San Jose Division Performance

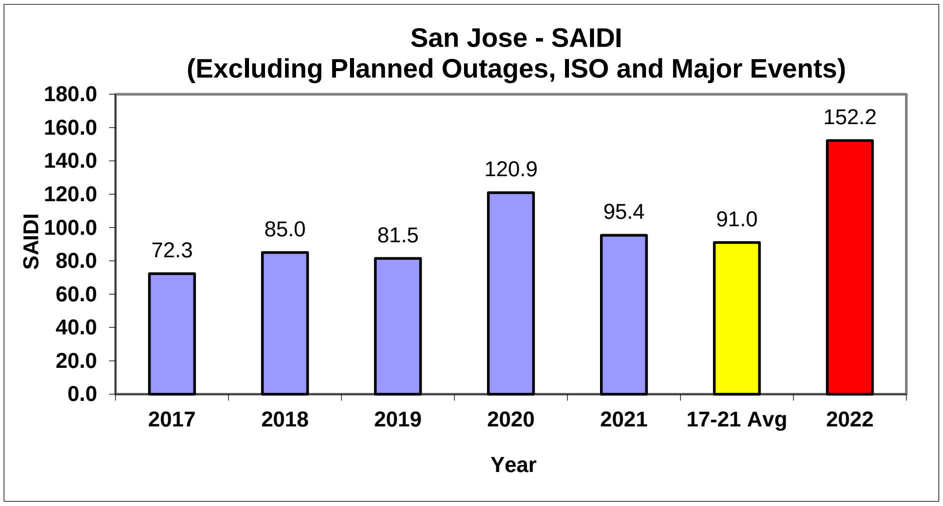
Table 24: San Jose Division Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SAN JOSE	2017	72.3	0.739	1.171	97.8
SAN JOSE	2018	85.0	0.858	1.322	99.1
SAN JOSE	2019	81.5	0.747	1.253	109.1
SAN JOSE	2020	120.9	0.906	1.274	133.5
SAN JOSE	2021	95.4	0.763	0.909	125.1
5-Year Average	17-21 Avg	91.0	0.803	1.186	113.4
SAN JOSE	2022	152.2	1.150	1.180	132.4
	%Difference	67.2%	43.2%	-0.5%	16.7%

San Jose Division SAIDI Performance

San Jose Division's 2022 SAIDI performance of 152.2 was 61.2 customer-minutes (or 67.2%) higher than the previous 5-year average of 91.0 as shown in the table above and illustrated in the figure below.

Chart 207 – San Jose Division SAIDI Performance



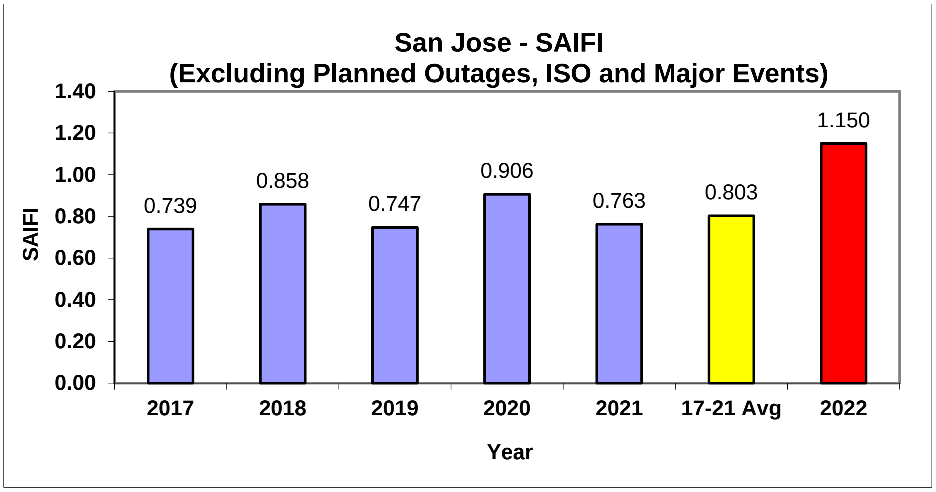
The higher-than-average 2022 San Jose Division SAIDI was attributed to the following:

1. EPSS installed on the distribution line equipment that contributed 52.9 customer minutes to the division's SAIDI performance.
2. On June 21st, a 3rd party structural fire caused a breaker level outage on the Morgan Hill 2111 feeder. This outage contributed 4.2 customer minutes to the division's SAIDI performance.
3. On June 21st, an underground splice failure caused a breaker level outage on Morgan Hill 2110 feeder. This outage contributed 3.3 customer minutes to the division's SAIDI performance.
4. On July 11th, a breaker level outage occurred due to an unknown cause on the Hicks 2101 feeder. This outage contributed 3.0 customer minutes to the division's SAIDI performance.
5. On August 23rd, an overhead splice failure caused an outage on the Piercy 2109 feeder. This outage contributed 2.5 customer minutes to the division's SAIDI performance.
6. On June 21st, an underground splice failure caused an outage a substation level outage at the Piercy substation. This outage contributed 3.9 customer minutes to the division's SAIDI performance.
7. On July 16th, a 3rd party vehicle damaged a riser termination and caused a breaker level outage on the Evergreen 2104 feeder. This outage contributed 2.4 customer minutes to the division's SAIDI performance.

San Jose Division SAIFI Performance

San Jose Division's 2022 SAIFI performance of 1.150 was 0.347 customer-interruptions (or 43.2%) higher than the previous 5-year average of 0.803 as shown in the table above and illustrated in the figure below.

Chart 208 – San Jose Division SAIFI Performance



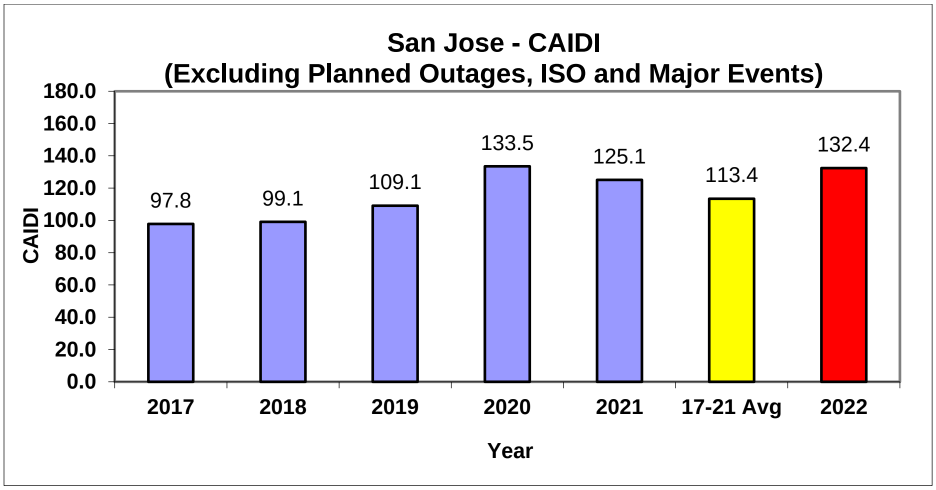
The higher-than-average 2022 San Jose Division SAIFI was attributed to the following:

1. EPSS installed on the distribution line equipment contributed 0.335 customer-interruptions to the division's SAIFI performance.
2. On September 1st, a breaker level outage occurred on the Edenvale 2105 feeder due to an unknown cause. This outage contributed 0.013 customer-interruptions to the division's SAIFI performance.
3. On June 21st, underground splice failure caused a substation level outage at the Piercy substation. This outage contributed 0.020 customer-interruptions to the division's SAIFI performance.

San Jose Division CAIDI Performance

San Jose Division's 2022 CAIDI performance of 132.4 was 19.0 minutes (or 16.7%) higher than the previous 5-year average of 113.4 as shown in the table above and illustrated in the figure below.

Chart 209 – San Jose Division CAIDI Performance



The higher-than-average 2022 San Jose Division CAIDI was attributed to the following:

1. On June 21st, a 3rd party structural fire caused a breaker level outage on the Morgan Hill 2111 feeder. This outage contributed 430.6 minutes to the division's CAIDI performance.
2. On June 21st, an underground splice failure caused a breaker level outage on Morgan Hill 2110 feeder. This outage contributed 138.9 minutes to the division's CAIDI performance.
3. On July 11th, a breaker level outage occurred due to an unknown cause on the Hicks 2101 feeder. This outage contributed 156.3 minutes to the division's CAIDI performance.
4. On September 5th, an occurred due to an unknown cause on the Hicks 2101 feeder. This outage contributed 209.0 minutes to the division's CAIDI performance.
5. On September 5th, an overhead equipment failure caused an outage on the Hicks 2101 feeder. This outage contributed 356.3 minutes to the division's CAIDI performance.

17. Sierra Division Performance Assessment

Sierra Division Performance

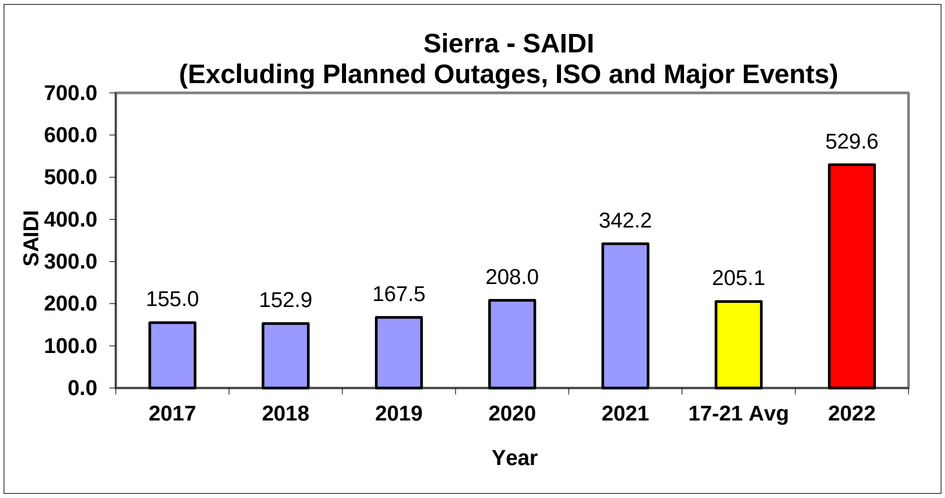
Table 25: Sierra Division Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SIERRA	2017	155.0	1.191	1.856	130.2
SIERRA	2018	152.9	1.241	1.350	123.2
SIERRA	2019	167.5	1.151	1.482	145.6
SIERRA	2020	208.0	1.422	1.169	146.2
SIERRA	2021	342.2	1.672	1.022	204.7
5-Year Average	17-21 Avg	205.1	1.335	1.376	153.6
SIERRA	2022	529.6	3.101	1.018	170.8
	%Difference	158.2%	132.3%	-26.0%	11.2%

Sierra Division SAIDI Performance

Sierra Division's 2022 SAIDI performance of 529.6 was 324.5 customer-minutes (or 158.2%) higher than the previous 5-year average of 205.1 as shown in the table above and illustrated in the figure below.

Chart 210 – Sierra Division SAIDI Performance



The higher-than-average 2022 Sierra Division SAIDI was attributed to the following:

1. EPSS installed on the distribution line equipment contributed 296.0 customer-minutes to the division's SAIDI performance.
2. On September 8th, a Forest fire in the Placerville area result in an outage to a section of the Placerville 2106 feeder upon a request from CalFire. This outage contributed 24.7 customer-minutes to the division's SAIDI performance.
3. On September 4th, an unknown cause resulted in an outage on a section of

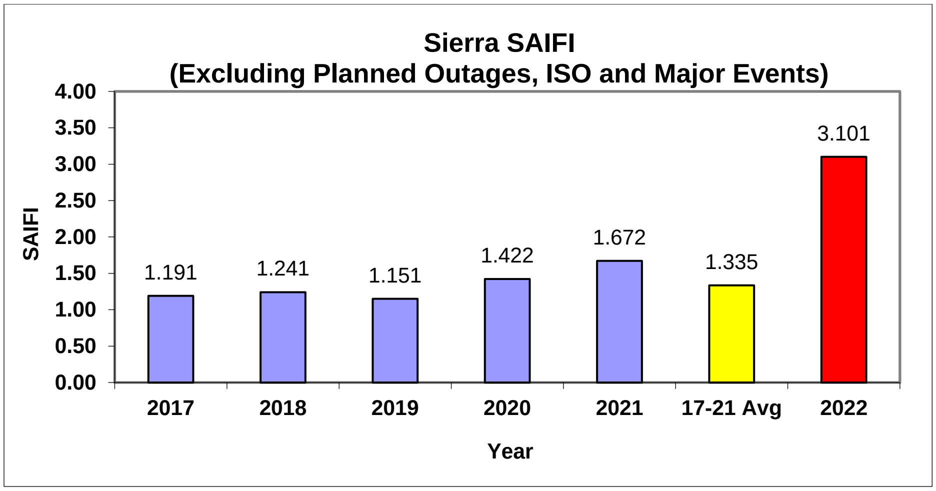
the Mountain Quarries 2101 feeder. This outage contributed 10.1 customer-minutes to the division's SAIDI performance.

4. On November 9th, a tree branch fell on a section of the overhead conductor and broke the conductor causing an outage on the El Dorado PH-2101 feeder. This outage contributed 9.7 customer-minutes to the division's SAIDI performance.
5. On May 21st, a tree branch fell on a section of the overhead conductor and broke the conductor causing an outage on the El Dorado PH-2101 feeder. This outage contributed 7.4 customer-minutes to the division's SAIDI performance.
6. On September 4th, an animal related issue caused an outage on the Placerville 2106 feeder. This outage contributed 8.0 customer-minutes to the division's SAIDI performance.
7. On May 21st, a tree branch fell on a section of the overhead conductor and caused an outage on the Narrows 2105 feeder. This outage contributed 7.4 customer-minutes to the division's SAIDI performance.
8. On June 11th, an underground equipment failure caused a breaker level outage on the Clarksville 2106 feeder. This outage contributed 6.6 customer-minutes to the division's SAIDI performance.
9. On July 1st, an outage occurred on the Apple Hill 2102 feeder due to an unknown fault. This outage contributed 6.0 customer-minutes to the division's SAIDI performance.

Sierra Division SAIFI Performance

Sierra Division's 2022 SAIFI performance of 3.101 was 1.766 customer-interruptions (or 132.3%) higher than the previous 5-year average of 1.335 as shown in the table above and illustrated in the figure below.

Chart 211 – Sierra Division SAIFI Performance



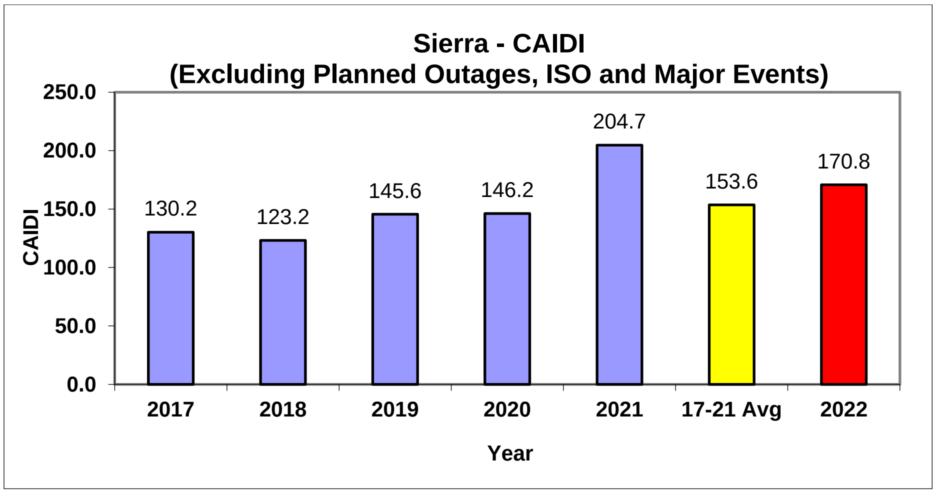
The higher-than-average 2022 Sierra Division SAIFI was attributed to the following:

1. EPSS installed on the distribution line equipment contributed 1.526 customer-interruptions to the division's SAIFI performance.
2. On July 9th, an animal related incident that caused a breaker level outage on the Brunswick 1107 feeder. This event contributed 0.025 customer-interruptions to the division's SAIFI performance.
3. On September 4th, an unknown cause related outage occurred on Mountain Quarries 2101 feeder. This event contributed 0.016 customer-minutes to the division's SAIDI performance.
4. On August 31st, overhead equipment failure caused a breaker level outage on the Placerville 2106 feeder. This event contributed 0.023 customer-interruptions to the division's SAIFI performance.
5. On August 24th, six substations lost power due to loss of source. The substations affected were Diamond springs, Eldorado, Placerville, Clarksville, Shingle Springs, Apple Hill. This event contributed 0.244 customer-interruptions to the division's SAIFI performance.
6. On May 26th, a bank failure at the Atlantic substation caused a loss of power to three substations, Rocklin, Pleasant Grove and Del Mar substations. This event contributed 0.021 customer-interruptions to the division's SAIFI performance.
7. On August 2nd, a breaker level outage occurred on the Clarksville 2106 feeder due to an unknown cause. This event contributed 0.021 customer-interruptions to the division's SAIFI performance.

<u>Sierra Division CAIDI Performance</u>

Sierra Division's 2022 CAIDI performance of 170.8 was 17.2 minutes (or 11.2%) higher than the previous 5-year average of 153.6 as shown in the table above and illustrated in the figure below.

Chart 212 – Sierra Division CAIDI Performance



The higher-than-average 2022 Sierra Division CAIDI was attributed to the following:

1. On September 8th, a forest fire caused an outage on Placerville 2106 feeder. This outage contributed 8552.5 minutes to the division's CAIDI performance.
2. On September 4th, an unknown cause related outage occurred on Mountain Quarries 2101 feeder. This outage contributed 311.3 minutes to the division's CAIDI performance.
3. On May 21st, a tree branch fell on a section of the overhead conductor and caused an outage on the Narrows 2105 feeder. This outage contributed 368.0 minutes to the division's CAIDI performance.
4. On September 4th, an animal related issue caused an outage on the Placerville 2106 feeder. This outage contributed 255.8 minutes to the division's CAIDI performance.
5. On June 11th, a bird related issue caused a conductor to flash on a riser pole and caused an outage on the Narrows 2102 feeder. This outage contributed 293.7 minutes to the division's CAIDI performance.
6. On November 8th, a tree branch fell on a section of the overhead conductor and broke the wire causing an outage to the Bonnie Nook 1102 feeder. This

outage contributed 504.1 minutes to the division's CAIDI performance.

18. Sonoma Division Performance Assessment

Sonoma Division Performance

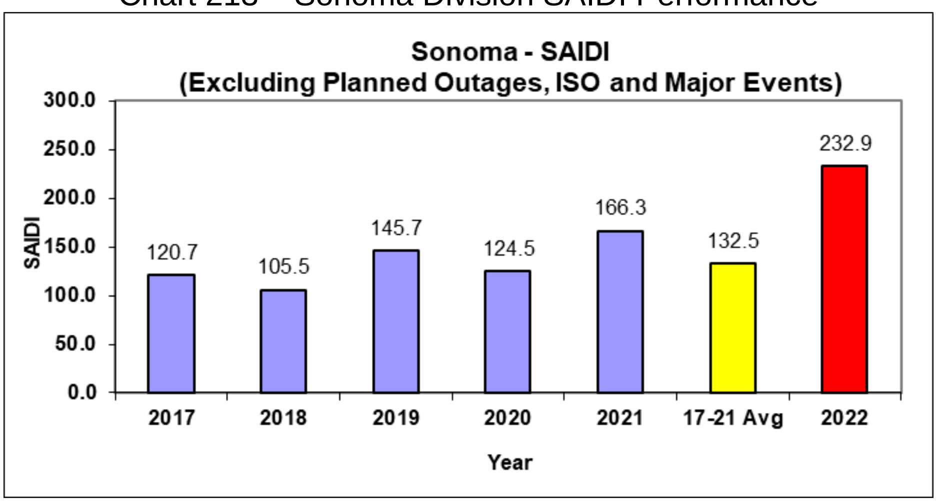
Table 26: Sonoma Division Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SONOMA	2017	120.7	0.886	1.566	136.2
SONOMA	2018	105.5	0.956	1.201	110.3
SONOMA	2019	145.7	1.070	1.233	136.1
SONOMA	2020	124.5	1.062	1.327	117.2
SONOMA	2021	166.3	1.257	1.420	132.3
5-Year Average	17-21 Avg	132.5	1.046	1.349	126.7
SONOMA	2022	232.9	1.526	1.390	152.6
	%Difference	75.7%	45.8%	3.0%	20.5%

Sonoma Division SAIDI Performance

Sonoma Division's 2022 SAIDI performance of 232.9 was 100.3 customer-minutes (or 75.7%) higher than the previous 5-year average of 132.5 as shown in the table above and illustrated in the figure below.

Chart 213 – Sonoma Division SAIDI Performance



The higher-than-average 2022 Sonoma Division SAIDI was attributed to the following:

1. EPSS installed on the distribution line equipment that contributed 69.7 customer minutes to the division's SAIDI performance.
2. On June 21st, an underground equipment failure resulted in an outage on Rincon 1101 feeder. This outage contributed 7.0 customer minutes to the

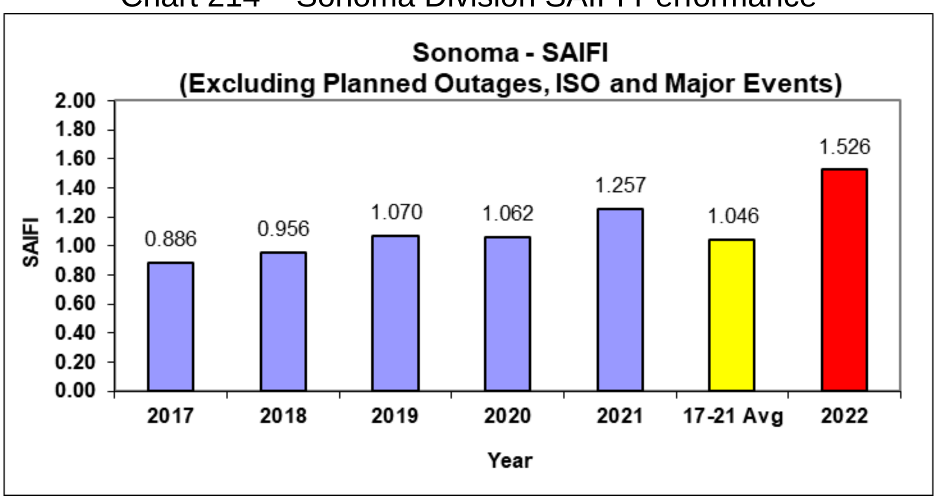
division's SAIDI performance.

3. On Jan 8th, a car pole accident on the Monte Rio – Fulton 60 kV transmission line knocked out a transmission pole causing a sustained outage to 8 substations in the Sonoma-Humboldt area. Annapolis, Fort Ross, Garcia, Gualala, Mirabel, Monte Rio, Point Arena, Salmon Creek substations were affected thereby de-energizing 12 distribution feeders. This outage contributed 30.6 customer minutes to the division's SAIDI performance.
4. On June 21st, an underground equipment failure caused an outage on Rincon 1101 feeder. This outage contributed 7.0 customer minutes to the division's SAIDI performance.
5. On January 22nd, a tree fell on a section of the overhead conductor and caused an outage on Dunbar 1102 feeder. This outage contributed 5.7 customer minutes to the division's SAIDI performance.

Sonoma Division SAIFI Performance

Sonoma Division's 2022 SAIFI performance of 1.526 was 0.480 customer-interruptions (or 45.8%) higher than the previous 5-year average of 1.046 as shown in the table above and illustrated in the figure below.

Chart 214 – Sonoma Division SAIFI Performance



The higher-than-average 2022 Sonoma Division SAIFI was attributed to the following:

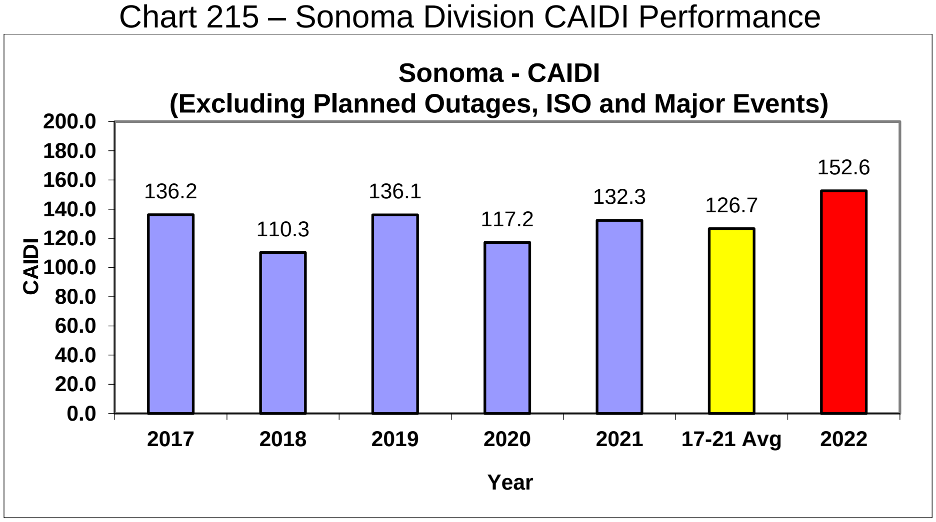
1. EPSS installed on the distribution line equipment contributed 0.411 customer-interruptions to the division's SAIFI performance.

2. On August 27th, an underground equipment failure caused a breaker level outage on Petaluma C 1109 feeder. This outage contributed 0.018 customer- interruptions to the division's SAIFI performance.
3. On January 8th, car pole accident on the Monte Rio – Fulton 60 kV transmission line knocked out a transmission pole on January 8th causing a sustained outage to 8 substations in the Sonoma-Humboldt area. This outage contributed 0.060 customer-interruptions to the division's SAIFI performance.
4. On December 27th, an underground splice failure caused a breaker level outage on the Monroe 1105 feeder. This outage contributed 0.023 customer-interruptions to the division's SAIFI performance.
5. On January 31st, a malfunctioning relay at the Santa Rosa substation caused a breaker level outage on the Santa Rosa A - 1103 feeder. This outage contributed 0.022 customer-interruptions to the division's SAIFI performance

<u>Sonoma Division CAIDI Performance</u>

Sonoma Division's 2022 CAIDI performance of 152.6 was 25.9 minutes (or 20.5%) higher than the previous 5-year average of 126.7 as shown in the table above and illustrated in the figure below.

Chart 215 – Sonoma Division CAIDI Performance



The higher-than-average 2022 Sonoma Division CAIDI was attributed to the following:

1. On June 21st, an underground equipment failure caused an outage on

Rincon 1101 feeder. This outage contributed 383.7 minutes to the division's CAIDI performance.

2. On January 22nd, a tree fell on a section of the overhead conductor and caused an outage on Dunbar 1102 feeder 298.7. This outage contributed 298.7 minutes to the division's CAIDI performance.
3. On January 22nd, a tree fell on a section of the overhead conductor and caused an outage on Sonoma 1105 feeder. This outage contributed 317.6 minutes to the division's CAIDI performance.

19. Stockton Division Performance Assessment

Stockton Division Performance

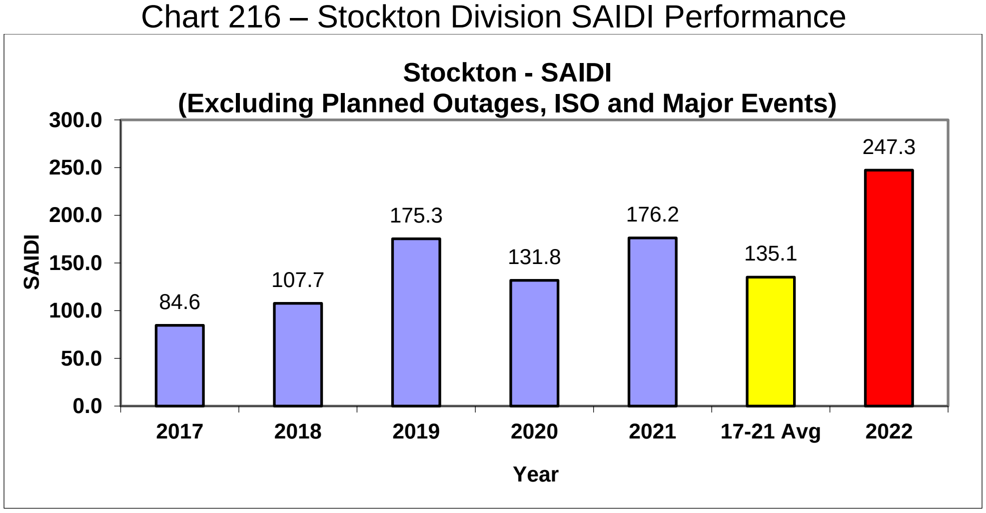
Table 27: Stockton Division Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
STOCKTON	2017	84.6	0.946	1.264	89.5
STOCKTON	2018	107.7	1.036	1.872	103.9
STOCKTON	2019	175.3	1.276	1.130	137.4
STOCKTON	2020	131.8	1.187	1.268	111.0
STOCKTON	2021	176.2	1.151	1.471	153.2
5-Year Average	17-21 Avg	135.1	1.119	1.401	120.8
STOCKTON	2022	247.3	1.665	1.064	148.5
	%Difference	83.0%	48.8%	-24.1%	23.0%

Stockton Division SAIDI Performance

Stockton Division's 2022 SAIDI performance of 247.3 was 112.1 customer-minutes (or 83.0%) higher than the previous 5-year average of 135.1 as shown in the table above and illustrated in the figure below.

Chart 216 – Stockton Division SAIDI Performance



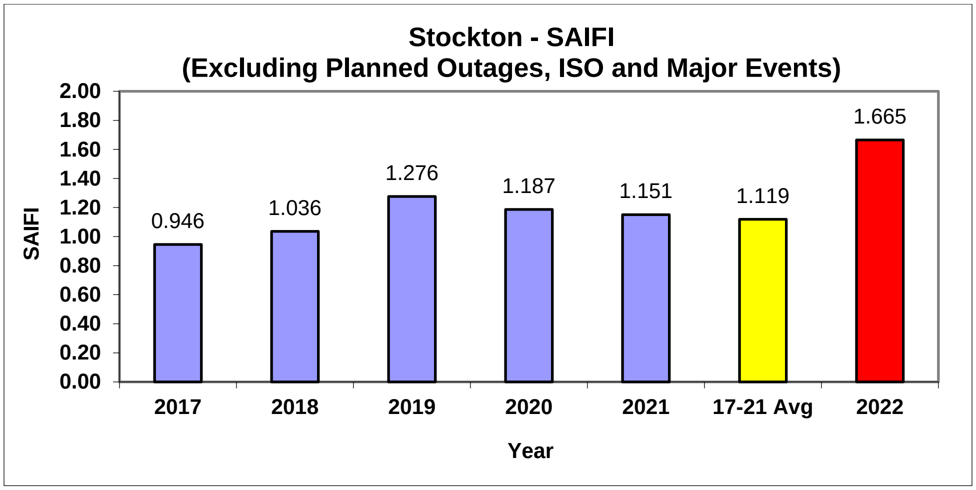
The higher-than-average 2022 Stockton Division SAIDI was attributed to the following:

1. EPSS installed on the distribution line equipment that contributed 87.3 customer minutes to the division's SAIDI performance.
2. On August 6th, a bird contact inside the Corral substation caused a transmission level outage. This outage contributed 4.8 customer minutes to the division's SAIDI performance.
3. On July 2nd, a failed current transformer caused a breaker level outage on the Stanislaus 1702 feeder. This outage contributed 16.1 customer-minutes to the division's SAIDI performance.
4. On August 19th, a 3rd party vehicle broke a pole and caused a substation level outage at the Corral substation. This outage contributed 11.4 customer minutes to the division's SAIDI performance.
5. On July 23rd, a 3rd party vehicle broke a pole and caused a breaker level outage on the Stanislaus 1701 feeder. This outage contributed 5.0 customer minutes to the division's SAIDI performance.
6. The February 20th, a transmission level outage due to an unknown cause resulted in outages to four substations - Oak Park, West Lane, Mettler and Mosher. This outage contributed 15.1 customer-minutes to the division's SAIDI performance.
7. On July 4th, Electra Forest fire event that spread over 4,500 acres in Amador and Calaveras counties required sections of transmission and distribution lines be de-energized at the request of Cal Fire. The Electra fire started on July 4th, 2022, rendering the unavailability of 2-230 kV Tiger Creek-Valley Springs as well as Tiger Creek-Electra transmission lines to fight the fire and resulting in the loss of power to seven substations (Salt Springs, West Point -1, West Point -2, Alpine, Pine grove, Electra, Calaveras Cement). This outage contributed 9.6 customer-minutes to the division's SAIDI performance.

Stockton Division SAIFI Performance

Stockton Division's 2022 SAIFI performance of 1.665 was 0.546 customer-interruptions (or 48.8%) higher than the previous 5-year average of 1.119 as shown in the table above and illustrated in the figure below.

Chart 217 – Stockton Division SAIFI Performance



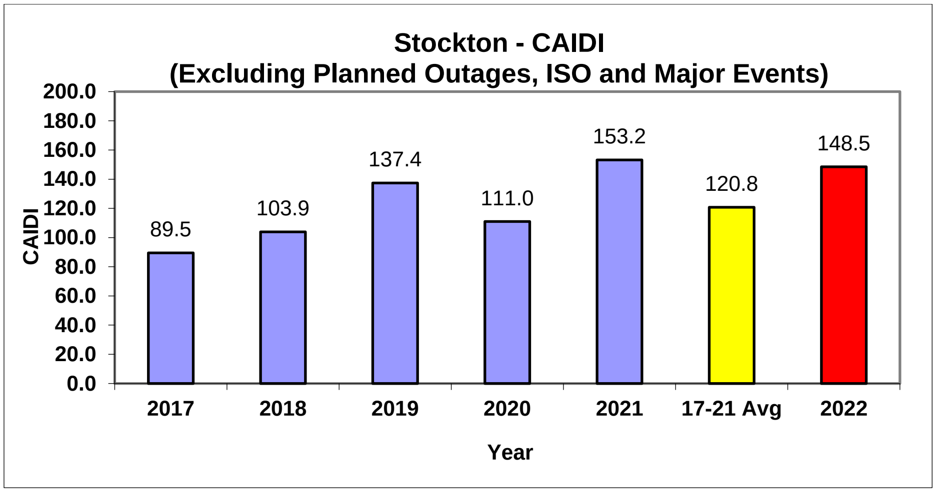
The higher-than-average 2022 Stockton Division SAIFI was attributed to the following:

1. EPSS installed on the distribution line equipment that contributed 0.406 customer minutes to the division's SAIDI performance.
2. On August 6th, a bird contact inside the Corral substation caused a transmission level outage. This outage contributed 0.021 customer-interruptions to the division's SAIFI performance.
3. On July 2nd, a failed current transformer caused a breaker level outage on the Stanislaus 1702 feeder. This outage contributed 0.016 customer-interruptions to the division's SAIFI performance.
4. On August 19th, a 3rd party vehicle broke a pole and caused a substation level outage at the Corral substation. This outage contributed 0.027 customer-interruptions to the division's SAIFI performance.
5. The February 20th, a transmission level outage due to an unknown cause resulted in outages to four substations - Oak Park, West Lane, Mettler and Mosher. This outage contributed 0.060 customer- interruptions to the division's SAIFI performance.
6. On July 4th, Electra Forest fire event contributed 0.016 customer-interruptions to the division's SAIFI performance.

<u>Stockton Division CAIDI Performance</u>

Stockton Division's 2022 CAIDI performance of 148.5 was 27.7 minutes (or 23.0%) higher than the previous 5-year average of 120.8 as shown in the table above and illustrated in the figure below.

Chart 218 – Stockton Division CAIDI Performance



The higher-than-average 2022 Stockton Division CAIDI was attributed to the following:

1. On August 11th, a breaker level outage occurred on the Pine Grove 1102 feeder due to an unknown cause. This outage contributed 182.2 minutes to the Division's CAIDI performance.
2. On July 18th, an outage occurred on the Peoria Flat 1704 feeder due to an unknown cause. This outage contributed 151.7 minutes to the Division's CAIDI performance.

20. Yosemite Division Performance Assessment

Yosemite Division Performance

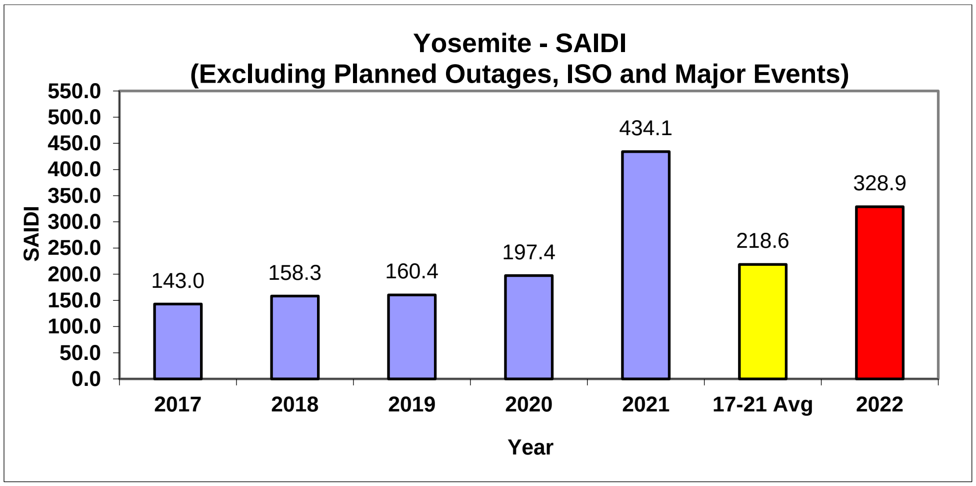
Table 28: Yosemite Division Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
YOSEMITE	2017	143.0	1.170	2.150	122.2
YOSEMITE	2018	158.3	1.355	1.773	116.8
YOSEMITE	2019	160.4	1.470	1.603	109.1
YOSEMITE	2020	197.4	1.411	1.299	139.9
YOSEMITE	2021	434.1	2.180	1.811	199.2
5-Year Average	17-21 Avg	218.6	1.517	1.727	144.1
YOSEMITE	2022	328.9	2.047	1.631	160.7
	%Difference	50.4%	34.9%	-5.6%	11.5%

Yosemite Division SAIDI Performance

Yosemite Division's 2022 SAIDI performance of 328.9 was 110.2 customer-minutes (or 50.4%) higher than the previous 5-year average of 218.6 as shown in the table above and illustrated in the figure below.

Chart 219 – Yosemite Division SAIDI Performance



The higher-than-average 2022 Yosemite Division SAIDI was attributed to the following:

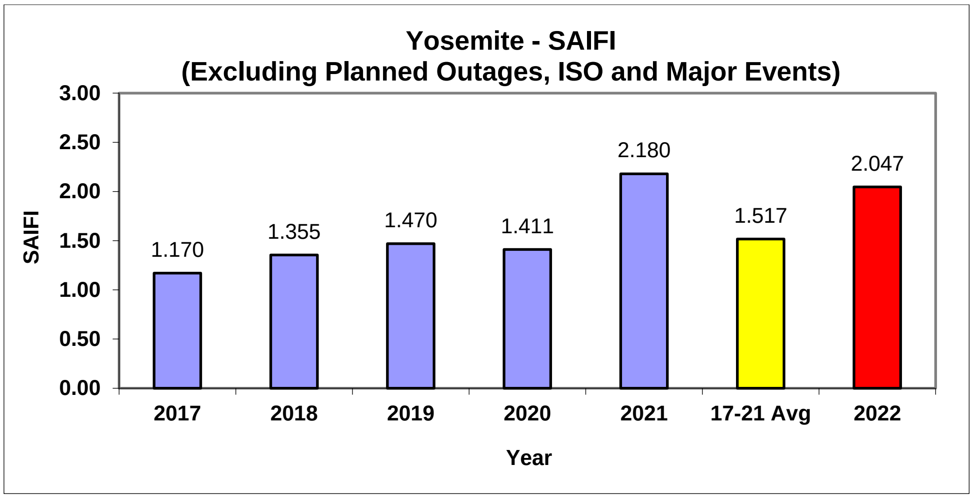
8. EPSS installed on the distribution line equipment that contributed 162.5 customer minutes to the division's SAIDI performance.
9. On July 2nd, a failed current transformer at the Stanislaus substation caused a breaker level outage on the Stanislaus 1702 feeder. This outage contributed 19.8 customer minutes to the division's SAIDI performance.
10. On August 1st, an outage occurred on the Mariposa 2102 feeder due to an unknown cause. This outage contributed 6.3 customer-minutes to the division's SAIDI performance.
11. On December 11th, an overhead wire down incident caused an outage on Spring Gap 1702 feeder. This outage contributed 4.7 customer minutes to the division's SAIDI performance.
12. On August 6th, a riser termination failure caused a breaker level outage on the Curtis 1702 feeder. This outage contributed 4.3 customer minutes to the division's SAIDI performance.
13. The July 17th a 3rd party vehicle broke a pole and caused a breaker level outage on Dos Palos 1101 feeder. This outage contributed 4.2 customer-minutes to the division's SAIDI performance.

14. On June 3rd, a breaker level outage occurred on the Oakhurst 1103 feeder due to an unknown cause. This outage contributed 4.1 customer-minutes to the division's SAIDI performance.

Yosemite Division SAIFI Performance

Yosemite Division's 2022 SAIFI performance of 2.047 was 0.530 customer-interruptions (or 53.0%) higher than the previous 5-year average of 1.517 as shown in the table above and illustrated in the figure below.

Chart 220 – Yosemite Division SAIFI Performance



The higher-than-average 2022 Yosemite Division SAIFI was attributed to the following:

1. EPSS installed on the distribution line equipment contributed 0.751 customer-interruptions to the division's SAIFI performance.
2. On July 11th, a failed lightning arrestor on a riser pole caused a breaker level outage on the Curtis 1702 feeder. This event contributed 0.031 customer-interruptions to the division's SAIFI performance.
3. On August 3rd, an underground equipment failure caused a breaker level outage on the El Capitan 2110 feeder. This event contributed 0.026 customer-minutes to the division's SAIDI performance.
4. On November 13th, a breaker level outage occurred on the Curtis 1702 feeder due to an unknown cause. This event contributed 0.018 customer-minutes to the division's SAIDI performance.
5. On August 6th, a breaker level outage occurred on the Curtis 1702 due to a riser termination failure. This event contributed 0.018 customer-minutes to the

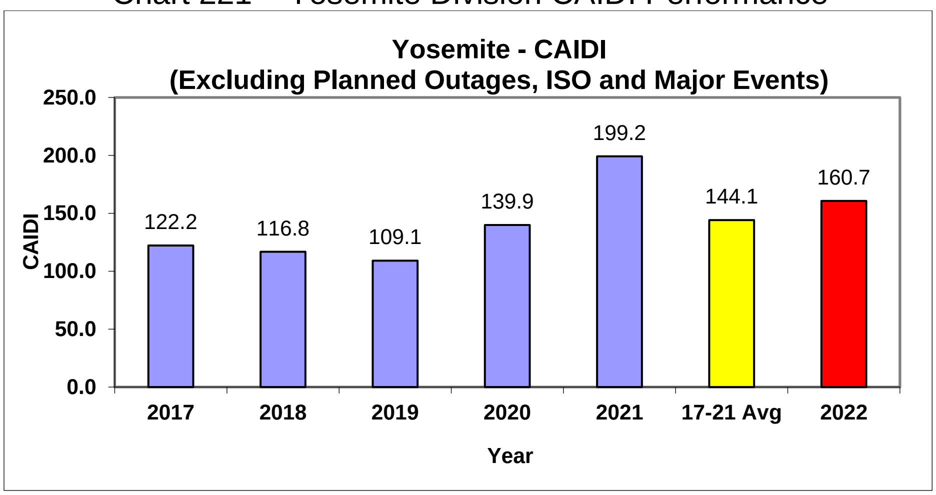
division's SAIDI performance.

6. On August 5th, a breaker level outage occurred on the Curtis 1702 feeder due to an unknown cause. This event contributed 0.018 customer-interruptions to the division's SAIFI performance.

Yosemite Division CAIDI Performance

Yosemite Division's 2022 CAIDI performance of 160.7 was 16.6 minutes (or 11.5%) higher than the previous 5-year average of 118.8 as shown in the table above and illustrated in the figure below.

Chart 221 – Yosemite Division CAIDI Performance



The higher-than-average 2022 Yosemite Division CAIDI was attributed to the following:

3. On August 5th, a breaker level outage occurred on the Curtis 1702 feeder due to an unknown cause. This outage contributed 126.0 minutes to the Division's CAIDI performance.
4. On August 3rd, a broken crossarm caused an caused on the Bear Valley 2105 feeder. This outage contributed 446.1 minutes to the Division's CAIDI performance.

ii. 2022 Excludable Major Event Day (MED) CAIDI Performance

Excludable Major Event Days (MED) In 2022

This section contains PG&E's report on weather related excludable major event days (MED) for each division in which CAIDI[8] varied by 25 percent or more in the division benchmark, as required by Decision 04-10-034 and Decision 16-01-008, Appendix B, footnote 6. Per D.04-10-034, the division benchmark is calculated from the rolling average of the prior 10 weather-related excludable major events.[9] PG&E is also required by D.04-10-034 to provide a variance explanation, when the system performance varies by more than 10 percent from the rolling average of the prior 10 weather-related system-wide excludable major event days, whichever yields more event days.

There were four weather-related major events totaling 5 weather-related Major Event Days in 2022. The table below summarizes these major events that also includes wildfire related outages.

Table 29 – Summary MED days

2022 Weather - Related Major Event Days	# of weather related events	MEDS
September 6-7, 2022	1	2
December 10, 2022	2	1
December 20, 2022	3	1
December 31, 2022	4	1
		5

1. September 6-7, 2022 Major Event Days

The first weather-related major event of the year resulted in two Major Event Days (MEDs) on September 6-7, 2022. This major heat event started with increasing temperatures across interior regions during the end of August. Temperatures then continued to increase while spreading toward the coast during the holiday weekend. By Sunday, September 4th, temperatures reached 97 degrees in San Jose and with 100-110F across the interior. Temperatures then reached their maximums on the 6th and 7th in all regions. Maximum recorded temperatures in San Jose during this event was 109 degrees. These temperatures are 15-30 degrees above normal for that time

8 Per Decision 16-01-008, Appendix B footnote 6, Decision 04-10-034 only applies to PG&E: Investigate and report on all weather-related excludable major events for each division in which CAIDI varies by 25 percent or more from the division benchmark. The division benchmarks are calculated from the rolling average of the prior 10 weather-related excludable events as defined by IEEE 1366.

9 A major event is defined in the IEEE Standard 1366. As in prior reports, PG&E is using the "prior ten weather related excludable major events" prior to the calendar year that is the subject of the report.

of year. The maximum temperatures across the interior ranged between 100-115 degrees. This event resulted in the year's largest outage event that impacted a total of 512,900 customers in the service territory.

Table 30 summarizes the system and division CAIDI performances during this event and the average of the prior ten weather related major events.

(September 6-7, 2022 vs. Prior 10 MED)

System / Division	Average CAIDI of Prior 10 System / Division Specific Excludable ME	September 6-7, 2022 / Division Specific CAIDI	Percent Difference From the Prior CAIDI Average	Exceeds the Investigation Threshold?
SYSTEM	690.5	265.8	38.5%	NO
CENTRAL COAST	343.5	104.1	30.3%	NO
DE ANZA	439.6	287.7	65.4%	NO
DIABLO	217.3	104.1	47.9%	NO
EAST BAY	196.9	65.7	33.3%	NO
FRESNO	233.9	97.9	41.9%	NO
HUMBOLDT	1,399.5	181.6	13.0%	NO
KERN	146.8	93.5	63.7%	NO
LOS PADRES	185.8	211.3	113.7%	NO
MISSION	171.2	0.0	0.0%	NO
NORTH BAY	396.9	121.8	30.7%	NO
NORTH VALLEY	1,176.5	152.1	12.9%	NO
PENINSULA	429.7	143.8	33.5%	NO
SACRAMENTO	277.1	134.8	48.6%	NO
SAN FRANCISCO	171.4	42.1	24.5%	NO
SAN JOSE	295.9	269.8	91.2%	NO
SIERRA	2,721.9	2360.5	86.7%	NO
SONOMA	586.1	235.6	40.2%	NO
STOCKTON	1,233.5	137.5	11.2%	NO
YOSEMITE	541.9	92.9	17.1%	NO

Table 30 – September 6-7, 2022 CAIDI Performance

2. December 10, 2022 Major Event Day

The second weather-related major event of the year resulted in MEDs on December 10^{th}, 2022. A strong winter storm began in the North Coast on the 9th and then impacted the entire territory by the 10^{th}. This system had 15-30 mph sustained winds with gusts in the range of 35-50 mph. Parts of the North Coast, Sierra foothills, and Sierra crest saw 50-65 mph wind gusts. Valley floors received $1/10^{th}$ of an inch to 2 inches of rain, with several inches falling across coastal regions, elevated terrain, and in the Sierra. Snow levels with this system mainly stayed above 4,000 feet with several feet of snow above that elevation. There were also a few embedded/isolated lightning strikes with storms that moved through the region across the North Coast, northern Sacramento Valley, and across a few regions in the Sierra foothills. This storm activity delivered strong winds and rain leading to the second largest outage event of the year between the 10th and the 12th impacting a total of 344,525 customers in the service territory.

Table 31 summarizes the system and division CAIDI performances during this event and the average of the prior ten weather related major events.

(December 10, 2022 vs. Prior 10 MED)

System / Division	Average CAIDI of Prior 10 System / Division Specific Excludable ME	December 10, 2022 / Division Specific CAIDI	Percent Difference From the Prior CAIDI Average	Exceeds the Investigation Threshold?
SYSTEM	690.5	248.9	36.0%	NO
CENTRAL COAST	343.5	222.4	64.8%	NO
DE ANZA	439.6	144.9	33.0%	NO
DIABLO	217.3	45.2	20.8%	NO
EAST BAY	196.9	46.8	23.8%	NO
FRESNO	233.9	234.0	100.0%	NO
HUMBOLDT	1,399.5	341.7	24.4%	NO
KERN	146.8	92.1	62.7%	NO
LOS PADRES	185.8	469.0	252.4%	Yes
MISSION	171.2	0.0	0.0%	NO
NORTH BAY	396.9	138.0	34.8%	NO
NORTH VALLEY	1,176.5	220.3	18.7%	NO
PENINSULA	429.7	220.3	51.3%	NO
SACRAMENTO	277.1	154.4	55.7%	NO
SAN FRANCISCO	171.4	78.7	45.9%	NO
SAN JOSE	295.9	160.2	54.1%	NO
SIERRA	2,721.9	282.0	10.4%	NO
SONOMA	586.1	345.5	58.9%	NO
STOCKTON	1,233.5	108.1	8.8%	NO
YOSEMITE	541.9	148.6	27.4%	NO

Table 31 – December 10, 2022 CAIDI Performance

2.1 Los Padres CAIDI Assessment

System / Division	Major Event Day	CAIDI	SO / Day
LOS PADRES	August 4th, 2021	263.6	2
LOS PADRES	August 12th, 22021	57.8	4
LOS PADRES	August 17th, 22021	144	6
LOS PADRES	September 10th, 2021	229.9	6
LOS PADRES	October 11th, 2021	198.8	20
LOS PADRES	October 17th, 2021	279.9	21
LOS PADRES	October 24-25th, 2021	150.6	46
LOS PADRES	December 13-15th, 2021	310.6	12
LOS PADRES	December 25-27th, 2021	233.1	5
LOS PADRES	December 29th, 2021	97.5	2
	Average of 10 excludable major events	185.8	12
LOS PADRES	December 10th, 2022	469.0	50
	% Difference	152.4%	304%

Table 32 – Los Padres Historical Performance

As indicated in Table 32, the Los Padres Division CAIDI value of 469.0 minutes for the December 10th, 2022 major event was 152.4% higher than the 185.8 - minute average of the prior 10 weather-related excludable major events.

The top contributing factors to the higher division CAIDI value was due to the following outages:

- 14 Vegetation related outages contributed 463.0 minutes to the overall December 10th CAIDI performance.

3. December 20, 2022 Major Event Day

The third major event of the year resulted in an MED on December 20, 2022 due to a 6.4 magnitude earthquake occurred in the Eureka/Fortuna/Humboldt area.

(December 20, 2022 vs. Prior 10 MED)

System / Division	Average CAIDI of Prior 10 System / Division Specific Excludable ME	December 20, 2022 / Division Specific CAIDI	Percent Difference From the Prior CAIDI Average	Exceeds the Investigation Threshold?
SYSTEM	690.5	1025.3	148.5%	Yes
CENTRAL COAST	343.5	359.0	104.5%	NO
DE ANZA	439.6	42.5	9.7%	NO
DIABLO	217.3	0.0	0.0%	NO
EAST BAY	196.9	86.8	44.1%	NO
FRESNO	233.9	384.6	164.4%	Yes
HUMBOLDT	1,399.5	1086.1	77.6%	NO
KERN	146.8	173.0	117.9%	NO
LOS PADRES	185.8	174.9	94.1%	NO
MISSION	171.2	0.0	0.0%	NO
NORTH BAY	396.9	151.0	38.0%	NO
NORTH VALLEY	1,176.5	122.8	10.4%	NO
PENINSULA	429.7	332.6	77.4%	NO
SACRAMENTO	277.1	30.4	11.0%	NO
SAN FRANCISCO	171.4	8.0	4.7%	NO
SAN JOSE	295.9	123.6	41.8%	NO
SIERRA	2,721.9	124.5	4.6%	NO
SONOMA	586.1	0.0	0.0%	NO
STOCKTON	1,233.5	179.9	14.6%	NO
YOSEMITE	541.9	262.9	48.5%	NO

Table 33 – December 20, 2022 CAIDI Performance

3.1 SYSTEM CAIDI Assessment

System / Division	Major Event Day	CAIDI	SO / Day
SYSTEM	August 4th, 2021	855.0	120
SYSTEM	August 12th, 22021	884.1	86
SYSTEM	August 17th, 22021	1228.0	370
SYSTEM	September 10th, 2021	467.3	218
SYSTEM	October 11th, 2021	478.5	713
SYSTEM	October 17th, 2021	230.2	229
SYSTEM	October 24-25th, 2021	351.6	896
SYSTEM	December 13-15th, 2021	361.3	470
SYSTEM	December 25-27th, 2021	3365.1	563
SYSTEM	December 29th, 2021	594.2	202
	Average of 10 excludable major events	690.5	387
SYSTEM	December 20th, 2022	1025.3	115
	% Difference	48.5%	-70.3%

Table 34 – SYSTEM Historical Performance

As indicated in Table 34, the System Division CAIDI value of 1025.3 minutes for the December 20, 2022 major event was 48.5% higher than the 690.5-minute average of the prior 10 weather-related excludable major events.

The top contributing factor to the higher System CAIDI value was the magnitude 6.4 earthquake that occurred in Eureka-Fortuna area. The earthquake rendered the unavailability of twenty-nine 60 kV and nine 115 kV transmission lines multiple times. This outage contributed 1098.7 minutes to the overall December 20th, 2022 CAIDI performance.

3.2 Fresno CAIDI Assessment

System / Di	Major Event Day	CAIDI	SO / Day
Fresno	August 4th, 2021	115.2	10
Fresno	August 12th, 22021	42.6	14
Fresno	August 17th, 22021	202.1	12
Fresno	September 10th, 2021	35.9	7
Fresno	October 11th, 2021	364.0	130
Fresno	October 17th, 2021	198.8	13
Fresno	October 24-25th, 2021	153.7	53
Fresno	December 13-15th, 2021	290.7	24
Fresno	December 25-27th, 2021	242.3	9
Fresno	December 29th, 2021	196.5	7
	Average of 10 excludable major events	233.9	28
Fresno	December 20th, 2022	384.6	8
	% Difference	64.4%	-71.2%

Table 35 – Fresno Historical Performance

As indicated in Table 35, the Fresno Division CAIDI value of 384.6 minutes for the December 20, 2022 major event was 64.4% higher than the 233.9 minutes average of the prior 10 weather-related excludable major events.

The top contributing factor to the higher division CAIDI value was due to the following outage:

- A 3rd Party vehicle hooked on to a low hanging telephone line and dragged it causing a PG&E pole to break at ground level on the Manchester 1106 feeder in Fresno Division. This single outage contributed 440.1 minutes to the overall December 20th CAIDI performance.

4. December 31st, 2022 Major Event Day

The fourth major event of the year resulted in an MED on December 31st, 2022. A slow moving weather system moved onshore near San Francisco and caused flooding dropping an inch to several inches of rain across the San Francisco Bay and Sacramento River and delta regions. Precipitation in these areas exceeded in the Bay Area - Santa Cruz Range was around 7". Sierra Range saw anywhere between 1-8" of precipitation. There were also breezy to gusty winds with this system, generally 25-45 mph. As this system wrapped through the region during the evening strong northerly winds developed along the Sacramento - Central Valley region that reached 35-60 mph.

(December 31, 2022 vs. Prior 10 MED)

System / Division	Average CAIDI of Prior 10 System / Division Specific Excludable ME	December 31, 2022 / Division Specific CAIDI	Percent Difference From the Prior CAIDI Average	Exceeds the Investigation Threshold?
SYSTEM	690.5	694.0	100.5%	NO
CENTRAL COAST	343.5	487.6	142.0%	Yes
DE ANZA	439.6	416.9	94.8%	NO
DIABLO	217.3	330.7	152.2%	Yes
EAST BAY	196.9	183.3	93.1%	NO
FRESNO	233.9	233.8	100.0%	NO
HUMBOLDT	1,399.5	249.2	17.8%	NO
KERN	146.8	106.4	72.5%	NO
LOS PADRES	185.8	180.0	96.8%	NO
MISSION	171.2	628.1	366.9%	Yes
NORTH BAY	396.9	84.3	21.2%	NO
NORTH VALLEY	1,176.5	184.5	15.7%	NO
PENINSULA	429.7	372.6	86.7%	NO
SACRAMENTO	277.1	1300.5	469.4%	Yes
SAN FRANCISCO	171.4	206.2	120.3%	NO
SAN JOSE	295.9	199.7	67.5%	NO
SIERRA	2,721.9	650.2	23.9%	NO
SONOMA	586.1	83.4	14.2%	NO
STOCKTON	1,233.5	1283.2	104.0%	NO
YOSEMITE	541.9	126.9	23.4%	NO

Table 36 – December 31, 2022 CAIDI Performance

4.1 Central Coast CAIDI Assessment

System / Division	Major Event Day	CAIDI	SO / Day
Central Coast	August 4th, 2021	642	2
Central Coast	August 12th, 22021	293.2	5
Central Coast	August 17th, 22021	789.6	7
Central Coast	September 10th, 2021	681.8	10
Central Coast	October 11th, 2021	352.7	44
Central Coast	October 17th, 2021	120.2	20
Central Coast	October 24-25th, 2021	466.6	80
Central Coast	December 13-15th, 2021	181.3	41
Central Coast	December 25-27th, 2021	150.3	10
Central Coast	December 29th, 2021	242.3	9
	Average of 10 excludable major events	343.5	23
Central Coast	December 31st, 2022	487.6	97
	% Difference	42.0%	325%

Table 37 – System Historical Performance

As indicated in Table 37, the Central Coast Division CAIDI value of 487.6 minutes for the December 31st, 2022 major event was 42.0% higher than the 343.5-minute average of the prior 10 weather-related excludable major events.

There were 71 Vegetation related outages in the Central Coast division due to the rainstorm that contributed 36,637.0 minutes to the overall December 31st, 2022 CAIDI performance. Many trees were uprooted in the storm making restoration efforts lengthy due to several access issues. The top contributing factor to the higher division CAIDI value was an incident where a tree fell into our line on Viejo 2202 feeder and broke the wire. This outage contributed 563.5 minutes to the overall December 31st, 2022 CAIDI performance.

4.2 Diablo CAIDI Assessment

System / Division	Major Event Day	CAIDI	SO / Day
Diablo	August 4th, 2021	138	1
Diablo	August 12th, 22021	115.4	2
Diablo	August 17th, 22021	314.6	4
Diablo	September 10th, 2021	86.4	2
Diablo	October 11th, 2021	292.4	23
Diablo	October 17th, 2021	10	5
Diablo	October 24-25th, 2021	273.2	42
Diablo	December 13-15th, 2021	68.2	7
Diablo	December 25-27th, 2021	141.7	3
Diablo	December 29th, 2021	98	5
	Average of 10 excludable major events	217.3	9
Diablo	December 31st, 2022	330.7	32
	% Difference	52.2%	242%

Table 38 – Diablo Historical Performance

As indicated in Table 38, the Diablo Division CAIDI value of 330.7 minutes for the December 31st, 2022 major event was 52.2% higher than the 217.3-minute average of the prior 10 weather-related excludable major events.

The top contributing factor to the higher division CAIDI value was due to the following outage:

- A tree fell into the PG&E distribution line on Tassajara 2112 feeder and contributed 1135.8 minutes to the overall December 31st, 2022 CAIDI performance.

4.3 Mission CAIDI Assessment

System / Division	Major Event Day	CAIDI	SO / Day
Mission	August 4th, 2021	124.9	4
Mission	August 12th, 22021	31	1
Mission	August 17th, 22021	115.4	7
Mission	September 10th, 2021	99	13
Mission	October 11th, 2021	369	35
Mission	October 17th, 2021	96.9	31
Mission	October 24-25th, 2021	130.2	11
Mission	December 13-15th, 2021	49.4	3
Mission	December 25-27th, 2021	208.9	11
Mission	December 29th, 2021	205.3	7
	Average of 10 excludable major events	171.2	12
Mission	December 31st, 2022	628.1	17
	% Difference	266.9%	39%

Table 39 – Mission Historical Performance

As indicated in Table 39, the Mission Division CAIDI value of 628.1 minutes for the December 31st, 2022 major event was 266.9% higher than the 171.2-minute average of the prior 10 weather-related excludable major events.

The top contributing factor to the higher division CAIDI value was due to the following outages:

- A tree fell on the PG&E line and broke the wire on Sunol 1101 feeder contributing 1742.1 minutes to the overall December 31st CAIDI performance.
- An underground switch failure on Grant 1104 feeder contributed 1069.5 minutes to the overall December 31st CAIDI performance.

4.4 Sacramento CAIDI Assessment

System / Division	Major Event Day	CAIDI	SO / Day
Sacramento	August 4th, 2021	216.1	6
Sacramento	August 12th, 22021	168.6	10
Sacramento	August 17th, 22021	1013.4	27
Sacramento	September 10th, 2021	282.6	16
Sacramento	October 11th, 2021	435.6	91
Sacramento	October 17th, 2021	225.4	23
Sacramento	October 24-25th, 2021	143.5	50
Sacramento	December 13-15th, 2021	132.2	23
Sacramento	December 25-27th, 2021	348.8	6
Sacramento	December 29th, 2021	284.3	8
	Average of 10 excludable major events	277.1	26
Sacramento	December 31st, 2022	1300.5	116
	% Difference	369.4%	346%

Table 40 – North Valley Historical Performance

As indicated in Table 40, the Sacramento Division CAIDI value of 1300.5 minutes for the December 31st, 2022 major event was 369.4% higher than the 277.1-minute average of the prior 10 weather-related excludable major events.

The top contributing factor to the higher division CAIDI value was due to an outage on Grand Island 2227 feeder caused by the heavy rainstorm that resulted in floods casing delay in restoration. This outage contributed 6631.8 minutes to the overall December 31st 2022 CAIDI performance.

3. System and Division Indices Based on IEEE 1366 for the past 10 years including Planned Outages and including and excluding MED

Table 115 below provides the T&D system reliability indices from 2013 to 2022 (excluding ISO outages) for unplanned and planned outages combined (both including and excluding Major Event Days).

Table 41: Combined Transmission and Distribution System Indices with Planned Outages

Year	Major Events Included				Major Events Excluded			
	SAIDI	SAIFI	MAIFI	CAIDI	SAIDI	SAIFI	MAIFI	CAIDI
2013	137.3	1.171	1.637	117.3	116.1	1.070	1.527	108.5
2014	149.4	1.133	1.567	131.9	108.4	0.966	1.396	112.2
2015	147.2	1.052	1.820	139.9	95.9	0.871	1.594	110.1
2016	121.9	1.103	1.603	110.6	108.9	1.021	1.494	106.7
2017	374.2	1.549	2.297	241.6	113.4	0.958	1.489	118.3
2018	309.4	1.175	1.428	263.3	126.3	1.080	1.361	117.0
2019	1,395.4	1.996	1.793	699.3	148.8	1.128	1.282	131.9
2020	478.4	1.556	1.571	307.5	153.2	1.179	1.316	130.0
2021	626.3	1.837	1.907	341.0	218.2	1.318	1.327	165.5
2022	326.4	1.778	1.409	183.5	255.8	1.630	1.320	156.9

a. System and Division Indices Based on IEEE 1366 for the past ten years including Planned Outages and including MED, and excluding ISO Outages

Table 42:

Division	Year	SAIDI	SAIFI	MAIFI	CAIDI
CENTRAL COAST	2013	151.8	1.469	2.054	103.3
CENTRAL COAST	2014	214.1	1.432	2.134	149.5
CENTRAL COAST	2015	269.6	1.376	2.176	195.9
CENTRAL COAST	2016	202.8	1.714	2.739	118.3
CENTRAL COAST	2017	819.7	2.522	4.577	325.0
CENTRAL COAST	2018	217.7	1.733	2.507	125.6
CENTRAL COAST	2019	1,328.1	2.706	3.153	490.8
CENTRAL COAST	2020	417.0	2.215	1.968	188.3
CENTRAL COAST	2021	740.2	2.515	2.544	294.3
CENTRAL COAST	2022	523.3	3.132	3.002	167.1
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
DE ANZA	2013	100.8	0.935	1.175	107.8
DE ANZA	2014	134.2	1.113	1.319	120.6
DE ANZA	2015	80.7	0.680	1.291	118.7
DE ANZA	2016	119.4	0.977	1.415	122.1
DE ANZA	2017	332.0	1.583	1.793	209.7
DE ANZA	2018	121.3	0.967	1.429	125.4
DE ANZA	2019	435.7	1.496	2.011	291.3
DE ANZA	2020	252.7	1.043	1.642	242.2
DE ANZA	2021	327.8	1.301	1.798	251.9
DE ANZA	2022	227.7	1.384	1.116	164.5
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
DIABLO	2013	99.9	1.112	1.299	89.9
DIABLO	2014	97.0	1.060	1.375	91.5
DIABLO	2015	97.6	1.066	1.878	91.6
DIABLO	2016	97.8	1.121	1.736	87.3
DIABLO	2017	161.0	1.327	2.143	121.3
DIABLO	2018	122.1	1.278	1.544	95.6
DIABLO	2019	640.8	1.728	1.857	370.9
DIABLO	2020	269.0	1.523	1.825	176.6
DIABLO	2021	201.1	1.588	1.673	126.6
DIABLO	2022	244.5	1.844	1.385	132.6
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
EAST BAY	2013	130.4	1.059	1.267	123.1
EAST BAY	2014	89.1	0.883	1.520	100.9
EAST BAY	2015	65.9	0.749	1.179	87.9
EAST BAY	2016	137.1	1.246	1.243	110.0
EAST BAY	2017	162.1	1.271	1.983	127.6
EAST BAY	2018	121.0	1.089	1.132	111.1
EAST BAY	2019	485.2	1.419	1.217	342.0
EAST BAY	2020	238.2	1.174	1.647	202.9
EAST BAY	2021	265.6	1.772	1.685	149.9
EAST BAY	2022	195.3	1.351	1.682	144.5

Division	Year	SAIDI	SAIFI	MAIFI	CAIDI
FRESNO	2013	119.5	1.227	2.108	97.4
FRESNO	2014	101.0	1.088	1.782	92.8
FRESNO	2015	115.2	1.238	2.060	93.1
FRESNO	2016	99.4	1.206	1.978	82.4
FRESNO	2017	116.6	1.064	1.866	109.6
FRESNO	2018	128.0	1.142	1.416	112.1
FRESNO	2019	139.2	1.090	1.697	127.8
FRESNO	2020	130.3	1.205	1.464	108.1
FRESNO	2021	227.8	1.424	1.699	159.9
FRESNO	2022	201.3	1.378	1.799	146.0
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
HUMBOLDT	2013	344.6	1.552	2.627	222.0
HUMBOLDT	2014	350.5	1.528	1.941	229.4
HUMBOLDT	2015	738.9	2.388	2.739	309.4
HUMBOLDT	2016	251.0	1.757	2.100	142.9
HUMBOLDT	2017	955.5	2.526	3.511	378.2
HUMBOLDT	2018	448.5	2.333	1.571	192.3
HUMBOLDT	2019	7,018.7	4.731	2.490	1,483.6
HUMBOLDT	2020	1,058.7	2.460	1.499	430.4
HUMBOLDT	2021	1,717.4	3.196	2.145	537.4
HUMBOLDT	2022	1,161.0	3.599	1.451	322.6
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
KERN	2013	101.7	1.138	1.232	89.4
KERN	2014	127.0	1.198	1.853	106.0
KERN	2015	104.5	1.022	1.929	102.2
KERN	2016	101.9	0.998	2.078	102.1
KERN	2017	149.9	1.132	1.959	132.4
KERN	2018	83.3	0.859	1.748	97.0
KERN	2019	172.4	1.391	2.080	123.9
KERN	2020	137.6	1.196	1.968	115.1
KERN	2021	193.7	1.454	1.869	133.2
KERN	2022	288.2	1.565	1.288	184.2
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
LOS PADRES	2013	239.3	1.607	1.105	148.9
LOS PADRES	2014	201.8	1.322	1.354	152.6
LOS PADRES	2015	148.2	0.931	1.814	159.1
LOS PADRES	2016	130.2	1.255	1.674	103.7
LOS PADRES	2017	335.7	1.688	2.127	198.9
LOS PADRES	2018	165.9	1.408	1.155	117.8
LOS PADRES	2019	261.0	1.670	1.134	156.3
LOS PADRES	2020	221.5	1.408	0.916	157.3
LOS PADRES	2021	341.5	1.825	1.951	187.1
LOS PADRES	2022	362.4	2.207	1.001	164.2

Division	Year	SAIDI	SAIFI	MAIFI	CAIDI
MISSION	2013	89.4	0.878	0.837	101.9
MISSION	2014	82.7	0.812	0.820	101.9
MISSION	2015	71.7	0.654	1.152	109.6
MISSION	2016	95.2	0.828	0.972	114.9
MISSION	2017	149.1	1.074	1.471	138.8
MISSION	2018	79.5	0.738	0.853	107.6
MISSION	2019	308.2	1.014	0.943	303.9
MISSION	2020	231.5	1.258	1.389	184.0
MISSION	2021	172.2	1.287	1.225	133.8
MISSION	2022	142.6	0.915	0.921	155.9
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
NORTH BAY	2013	146.4	1.144	1.731	127.9
NORTH BAY	2014	253.7	1.352	2.724	187.7
NORTH BAY	2015	156.3	1.171	2.162	133.5
NORTH BAY	2016	133.5	1.040	1.436	128.3
NORTH BAY	2017	752.8	1.840	2.812	409.0
NORTH BAY	2018	204.7	1.145	1.856	178.9
NORTH BAY	2019	3,551.3	3.321	2.276	1,069.4
NORTH BAY	2020	555.2	1.897	2.536	292.6
NORTH BAY	2021	405.0	1.839	2.293	220.2
NORTH BAY	2022	295.7	1.785	1.206	165.7
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
NORTH VALLEY	2013	178.4	1.250	1.975	142.7
NORTH VALLEY	2014	212.2	1.302	1.816	163.0
NORTH VALLEY	2015	505.6	1.920	2.536	263.4
NORTH VALLEY	2016	194.4	1.357	2.195	143.3
NORTH VALLEY	2017	417.4	1.760	3.164	237.1
NORTH VALLEY	2018	4,318.7	1.774	1.401	2,434.4
NORTH VALLEY	2019	4,960.1	4.212	2.515	1,177.5
NORTH VALLEY	2020	2,102.1	2.964	1.685	709.3
NORTH VALLEY	2021	2,223.8	3.224	3.269	689.7
NORTH VALLEY	2022	460.1	2.593	1.339	177.4
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
PENINSULA	2013	106.8	0.946	1.322	112.9
PENINSULA	2014	110.7	1.129	1.363	98.1
PENINSULA	2015	90.5	0.940	1.798	96.3
PENINSULA	2016	102.6	1.065	1.383	96.3
PENINSULA	2017	181.4	1.394	2.383	130.1
PENINSULA	2018	106.1	0.991	1.256	107.0
PENINSULA	2019	771.5	1.661	1.642	464.5
PENINSULA	2020	196.8	1.288	1.383	152.8
PENINSULA	2021	436.2	1.762	1.927	247.6
PENINSULA	2022	206.2	1.282	1.415	160.8

Division	Year	SAIDI	SAIFI	MAIFI	CAIDI
SACRAMENTO	2013	122.6	1.121	1.699	109.4
SACRAMENTO	2014	126.2	1.020	1.437	123.7
SACRAMENTO	2015	113.0	1.009	1.776	112.0
SACRAMENTO	2016	118.5	1.133	1.810	104.6
SACRAMENTO	2017	300.0	1.970	3.218	152.3
SACRAMENTO	2018	134.3	1.190	1.937	112.8
SACRAMENTO	2019	686.8	1.761	2.349	390.1
SACRAMENTO	2020	302.1	1.690	1.797	178.7
SACRAMENTO	2021	608.9	1.849	2.892	329.4
SACRAMENTO	2022	417.7	1.660	1.720	251.6
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SAN FRANCISCO	2013	64.8	0.708	0.332	91.6
SAN FRANCISCO	2014	141.7	0.858	0.353	165.1
SAN FRANCISCO	2015	44.2	0.569	0.553	77.7
SAN FRANCISCO	2016	49.7	0.597	0.398	83.3
SAN FRANCISCO	2017	127.0	0.906	0.514	140.3
SAN FRANCISCO	2018	62.2	0.506	0.300	123.0
SAN FRANCISCO	2019	104.9	0.817	0.363	128.4
SAN FRANCISCO	2020	66.8	0.713	0.429	93.7
SAN FRANCISCO	2021	94.4	0.770	0.595	122.6
SAN FRANCISCO	2022	76.1	0.611	0.475	124.6
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SAN JOSE	2013	121.4	1.087	1.039	111.6
SAN JOSE	2014	120.0	1.107	1.071	108.4
SAN JOSE	2015	90.2	0.873	1.164	103.4
SAN JOSE	2016	80.8	0.753	1.203	107.2
SAN JOSE	2017	201.1	1.342	1.808	149.8
SAN JOSE	2018	112.1	0.986	1.351	113.7
SAN JOSE	2019	290.8	1.154	1.425	252.0
SAN JOSE	2020	193.6	1.145	1.528	169.1
SAN JOSE	2021	189.4	1.079	1.252	175.5
SAN JOSE	2022	234.5	1.488	1.332	157.6
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SIERRA	2013	173.0	1.503	3.257	115.1
SIERRA	2014	208.2	1.478	2.419	140.9
SIERRA	2015	197.3	1.378	3.224	143.2
SIERRA	2016	188.4	1.341	1.887	140.4
SIERRA	2017	641.5	2.193	3.112	292.4
SIERRA	2018	445.6	1.693	1.446	263.3
SIERRA	2019	5,898.4	4.364	2.630	1,351.5
SIERRA	2020	2,402.7	2.901	2.076	828.3
SIERRA	2021	3,142.9	3.236	2.544	971.3
SIERRA	2022	795.8	3.669	1.212	216.9

Division	Year	SAIDI	SAIFI	MAIFI	CAIDI
SONOMA	2013	208.9	1.253	2.537	166.7
SONOMA	2014	239.4	1.395	2.050	171.6
SONOMA	2015	140.7	0.985	1.993	142.8
SONOMA	2016	114.5	0.931	1.605	123.0
SONOMA	2017	1,868.6	2.064	2.887	905.3
SONOMA	2018	150.4	1.152	1.242	130.5
SONOMA	2019	3,929.2	2.801	1.786	1,402.9
SONOMA	2020	643.8	1.819	1.621	353.9
SONOMA	2021	454.1	1.989	1.891	228.3
SONOMA	2022	299.9	1.795	1.490	167.1
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
STOCKTON	2013	134.6	1.558	2.138	86.4
STOCKTON	2014	136.3	0.918	1.446	148.6
STOCKTON	2015	135.0	1.105	2.249	122.1
STOCKTON	2016	118.1	1.087	1.778	108.7
STOCKTON	2017	289.5	1.718	1.930	168.5
STOCKTON	2018	239.2	1.232	2.000	194.1
STOCKTON	2019	1,602.3	2.465	1.920	650.0
STOCKTON	2020	678.8	1.680	1.596	403.9
STOCKTON	2021	1,152.2	2.178	2.421	529.0
STOCKTON	2022	516.0	2.037	1.198	253.3
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
YOSEMITE	2013	204.0	1.436	3.432	142.1
YOSEMITE	2014	147.6	1.350	2.675	109.3
YOSEMITE	2015	130.6	1.162	3.098	112.4
YOSEMITE	2016	147.9	1.333	2.164	111.0
YOSEMITE	2017	323.8	1.796	3.053	180.2
YOSEMITE	2018	190.6	1.544	1.841	123.5
YOSEMITE	2019	1,425.6	2.767	2.689	515.2
YOSEMITE	2020	809.2	2.077	1.592	389.6
YOSEMITE	2021	1,366.4	3.353	2.644	407.6
YOSEMITE	2022	407.2	2.428	1.875	167.7
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SYSTEM	2013	137.3	1.171	1.637	117.3
SYSTEM	2014	149.4	1.133	1.567	131.9
SYSTEM	2015	147.2	1.052	1.820	139.9
SYSTEM	2016	121.9	1.103	1.603	110.6
SYSTEM	2017	374.2	1.549	2.297	241.6
SYSTEM	2018	309.4	1.175	1.428	263.3
SYSTEM	2019	1,395.4	1.996	1.793	699.3
SYSTEM	2020	478.4	1.556	1.571	307.5
SYSTEM	2021	626.3	1.837	1.907	341.0
SYSTEM	2022	326.4	1.778	1.409	183.5

b. System and Division Indices Based on IEEE 1366 for the past 10 years including Planned Outages and excluding ISO, and MED

Table 43:

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
CENTRAL COAST	2013	145.9	1.445	1.971	101.0
CENTRAL COAST	2014	136.9	1.168	1.835	117.2
CENTRAL COAST	2015	118.6	0.934	1.847	126.9
CENTRAL COAST	2016	180.2	1.548	2.485	116.4
CENTRAL COAST	2017	157.8	1.352	2.590	116.7
CENTRAL COAST	2018	193.0	1.582	2.247	122.0
CENTRAL COAST	2019	235.7	1.587	2.235	148.5
CENTRAL COAST	2020	180.0	1.808	1.680	99.6
CENTRAL COAST	2021	317.1	1.774	1.906	178.7
CENTRAL COAST	2022	416.7	2.808	2.872	148.4
Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
DE ANZA	2013	98.8	0.924	1.140	107.0
DE ANZA	2014	110.4	0.985	1.214	112.1
DE ANZA	2015	68.2	0.561	1.182	121.7
DE ANZA	2016	96.8	0.806	1.337	120.2
DE ANZA	2017	114.3	1.063	1.150	107.5
DE ANZA	2018	117.8	0.918	1.406	128.3
DE ANZA	2019	124.0	0.982	1.660	126.4
DE ANZA	2020	108.7	0.793	1.257	137.0
DE ANZA	2021	153.5	0.896	1.001	171.2
DE ANZA	2022	169.0	1.171	1.067	144.3
Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
DIABLO	2013	96.9	1.089	1.238	89.0
DIABLO	2014	80.9	0.973	1.220	83.1
DIABLO	2015	87.5	0.939	1.671	93.2
DIABLO	2016	95.2	1.107	1.701	86.0
DIABLO	2017	97.9	0.982	1.625	99.8
DIABLO	2018	110.7	1.168	1.501	94.7
DIABLO	2019	105.8	1.057	1.215	100.1
DIABLO	2020	130.1	1.295	1.623	100.5
DIABLO	2021	148.4	1.328	1.354	111.7
DIABLO	2022	215.3	1.713	1.298	125.7
Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
EAST BAY	2013	76.0	0.881	1.155	86.2
EAST BAY	2014	72.7	0.762	1.303	95.5
EAST BAY	2015	51.1	0.611	1.085	83.6
EAST BAY	2016	110.2	1.091	1.080	101.0
EAST BAY	2017	88.3	0.956	1.528	92.4
EAST BAY	2018	111.9	0.999	1.081	112.0
EAST BAY	2019	109.1	0.924	0.957	118.1
EAST BAY	2020	111.1	0.896	1.453	124.0
EAST BAY	2021	181.0	1.341	1.369	135.0
EAST BAY	2022	183.0	1.265	1.662	144.7

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
FRESNO	2013	116.8	1.195	2.067	97.8
FRESNO	2014	98.6	1.069	1.710	92.3
FRESNO	2015	84.8	0.935	1.832	90.7
FRESNO	2016	97.5	1.184	1.955	82.4
FRESNO	2017	85.9	0.874	1.549	98.2
FRESNO	2018	87.3	0.955	1.369	91.4
FRESNO	2019	96.6	0.920	1.478	105.0
FRESNO	2020	99.4	0.931	1.364	106.7
FRESNO	2021	156.1	1.149	1.469	135.9
FRESNO	2022	194.2	1.327	1.736	146.3
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
HUMBOLDT	2013	250.5	1.305	2.437	191.9
HUMBOLDT	2014	274.3	1.377	1.810	199.3
HUMBOLDT	2015	319.8	1.774	2.426	180.2
HUMBOLDT	2016	234.5	1.657	2.040	141.6
HUMBOLDT	2017	310.5	1.469	2.281	211.4
HUMBOLDT	2018	271.4	1.976	1.503	137.4
HUMBOLDT	2019	391.2	1.964	1.900	199.2
HUMBOLDT	2020	280.3	1.631	1.346	171.8
HUMBOLDT	2021	569.3	2.368	1.481	240.4
HUMBOLDT	2022	621.2	3.039	1.373	204.4
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
KERN	2013	97.9	1.092	1.138	89.6
KERN	2014	99.1	1.024	1.640	96.7
KERN	2015	92.8	0.938	1.855	99.0
KERN	2016	101.3	0.982	2.071	103.1
KERN	2017	88.5	0.790	1.403	112.0
KERN	2018	82.4	0.852	1.721	96.7
KERN	2019	116.1	1.162	1.744	99.9
KERN	2020	122.5	1.099	1.843	111.4
KERN	2021	151.7	1.155	1.516	131.3
KERN	2022	284.9	1.530	1.210	186.1
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
LOS PADRES	2013	113.3	0.837	0.961	135.3
LOS PADRES	2014	110.1	1.125	1.135	97.8
LOS PADRES	2015	88.1	0.773	1.438	113.9
LOS PADRES	2016	128.4	1.230	1.672	104.4
LOS PADRES	2017	126.3	1.054	1.443	119.8
LOS PADRES	2018	154.5	1.325	1.011	116.6
LOS PADRES	2019	184.0	1.319	0.798	139.5
LOS PADRES	2020	162.4	1.252	0.837	129.8
LOS PADRES	2021	233.6	1.320	1.330	177.0
LOS PADRES	2022	275.6	1.999	0.871	137.9

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
MISSION	2013	83.7	0.809	0.776	103.6
MISSION	2014	71.8	0.732	0.771	98.2
MISSION	2015	65.6	0.601	1.055	109.3
MISSION	2016	85.1	0.766	0.927	111.1
MISSION	2017	71.1	0.664	1.004	107.1
MISSION	2018	74.3	0.710	0.829	104.7
MISSION	2019	77.0	0.732	0.697	105.1
MISSION	2020	103.2	0.821	1.061	125.6
MISSION	2021	129.2	1.027	0.922	125.7
MISSION	2022	124.5	0.858	0.883	145.0
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
NORTH BAY	2013	133.8	1.057	1.456	126.5
NORTH BAY	2014	132.9	0.974	2.509	136.4
NORTH BAY	2015	117.9	1.014	1.978	116.2
NORTH BAY	2016	107.2	0.887	1.210	120.8
NORTH BAY	2017	167.7	1.033	1.835	162.3
NORTH BAY	2018	156.0	1.082	1.790	144.2
NORTH BAY	2019	180.8	1.449	1.652	124.8
NORTH BAY	2020	188.8	1.413	2.107	133.6
NORTH BAY	2021	210.7	1.267	1.555	166.3
NORTH BAY	2022	291.0	1.746	1.152	166.7
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
NORTH VALLEY	2013	157.8	1.192	1.917	132.4
NORTH VALLEY	2014	150.0	1.092	1.559	137.3
NORTH VALLEY	2015	158.7	1.195	1.938	132.9
NORTH VALLEY	2016	165.7	1.220	1.959	135.9
NORTH VALLEY	2017	130.9	0.949	2.008	138.0
NORTH VALLEY	2018	218.5	1.508	1.333	144.9
NORTH VALLEY	2019	277.4	1.751	1.473	158.4
NORTH VALLEY	2020	390.3	1.940	1.400	201.1
NORTH VALLEY	2021	517.0	1.999	2.219	258.6
NORTH VALLEY	2022	443.6	2.517	1.234	176.2
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
PENINSULA	2013	82.5	0.845	1.114	97.6
PENINSULA	2014	89.4	0.965	1.164	92.7
PENINSULA	2015	74.8	0.826	1.602	90.6
PENINSULA	2016	94.4	0.984	1.197	96.0
PENINSULA	2017	75.6	0.704	1.176	107.3
PENINSULA	2018	99.7	0.940	1.204	106.0
PENINSULA	2019	124.1	0.920	0.983	134.9
PENINSULA	2020	112.5	0.943	1.043	119.3
PENINSULA	2021	204.3	1.199	0.945	170.4
PENINSULA	2022	174.7	1.155	1.352	151.3

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SACRAMENTO	2013	117.2	1.075	1.568	109.1
SACRAMENTO	2014	112.4	0.913	1.258	123.1
SACRAMENTO	2015	100.7	0.913	1.561	110.3
SACRAMENTO	2016	102.6	1.042	1.545	98.5
SACRAMENTO	2017	137.9	1.168	1.713	118.1
SACRAMENTO	2018	126.6	1.152	1.827	110.0
SACRAMENTO	2019	114.3	0.939	1.575	121.7
SACRAMENTO	2020	193.7	1.438	1.500	134.7
SACRAMENTO	2021	183.6	1.228	1.878	149.6
SACRAMENTO	2022	206.4	1.407	1.573	146.7
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SAN FRANCISCO	2013	58.8	0.655	0.303	89.8
SAN FRANCISCO	2014	52.2	0.535	0.236	97.5
SAN FRANCISCO	2015	41.8	0.551	0.516	75.8
SAN FRANCISCO	2016	48.7	0.577	0.356	84.4
SAN FRANCISCO	2017	46.5	0.543	0.372	85.6
SAN FRANCISCO	2018	58.9	0.466	0.273	126.5
SAN FRANCISCO	2019	88.4	0.707	0.259	125.0
SAN FRANCISCO	2020	61.7	0.651	0.389	94.8
SAN FRANCISCO	2021	73.8	0.622	0.500	118.7
SAN FRANCISCO	2022	72.3	0.578	0.460	125.0
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SAN JOSE	2013	118.2	1.039	0.979	113.7
SAN JOSE	2014	96.8	0.935	1.031	103.6
SAN JOSE	2015	80.4	0.787	1.020	102.3
SAN JOSE	2016	77.4	0.719	1.155	107.6
SAN JOSE	2017	92.9	0.837	1.172	111.0
SAN JOSE	2018	110.1	0.972	1.324	113.3
SAN JOSE	2019	96.1	0.815	1.256	117.8
SAN JOSE	2020	136.4	0.974	1.276	140.0
SAN JOSE	2021	112.5	0.835	0.910	134.7
SAN JOSE	2022	175.4	1.249	1.183	140.4
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SIERRA	2013	125.9	1.370	3.120	91.9
SIERRA	2014	155.5	1.277	2.198	121.8
SIERRA	2015	138.4	1.218	2.887	113.6
SIERRA	2016	135.8	1.118	1.728	121.4
SIERRA	2017	176.3	1.308	1.864	134.8
SIERRA	2018	198.9	1.482	1.366	134.3
SIERRA	2019	239.3	1.408	1.555	170.0
SIERRA	2020	265.4	1.695	1.328	156.5
SIERRA	2021	415.4	2.016	1.105	206.0
SIERRA	2022	621.0	3.455	1.048	179.7

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SONOMA	2013	140.4	0.979	2.257	143.5
SONOMA	2014	138.2	1.024	1.588	135.0
SONOMA	2015	94.3	0.790	1.535	119.5
SONOMA	2016	107.7	0.887	1.508	121.3
SONOMA	2017	139.0	0.998	1.567	139.3
SONOMA	2018	147.9	1.133	1.203	130.5
SONOMA	2019	202.1	1.325	1.358	152.5
SONOMA	2020	166.7	1.232	1.351	135.2
SONOMA	2021	221.2	1.492	1.429	148.2
SONOMA	2022	289.6	1.755	1.427	165.0
Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
STOCKTON	2013	125.3	1.522	2.026	82.3
STOCKTON	2014	118.3	0.823	1.311	143.7
STOCKTON	2015	106.5	0.944	1.952	112.8
STOCKTON	2016	102.1	0.994	1.664	102.7
STOCKTON	2017	102.3	1.033	1.270	99.1
STOCKTON	2018	121.8	1.115	1.878	109.3
STOCKTON	2019	196.8	1.372	1.146	143.4
STOCKTON	2020	149.3	1.271	1.315	117.5
STOCKTON	2021	208.5	1.323	1.481	157.6
STOCKTON	2022	277.9	1.811	1.071	153.5
Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
YOSEMITE	2013	202.6	1.418	3.262	142.8
YOSEMITE	2014	129.6	1.286	2.452	100.8
YOSEMITE	2015	120.4	1.073	2.641	112.2
YOSEMITE	2016	141.3	1.277	2.032	110.6
YOSEMITE	2017	155.5	1.242	2.155	125.2
YOSEMITE	2018	171.4	1.433	1.780	119.6
YOSEMITE	2019	186.0	1.581	1.607	117.6
YOSEMITE	2020	222.6	1.542	1.304	144.3
YOSEMITE	2021	479.6	2.359	1.818	203.3
YOSEMITE	2022	381.4	2.241	1.658	170.2
Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SYSTEM	2013	116.1	1.070	1.527	108.5
SYSTEM	2014	108.4	0.966	1.396	112.2
SYSTEM	2015	95.9	0.871	1.594	110.1
SYSTEM	2016	108.9	1.021	1.494	106.7
SYSTEM	2017	113.4	0.958	1.489	118.3
SYSTEM	2018	126.3	1.080	1.361	117.0
SYSTEM	2019	148.8	1.128	1.282	131.9
SYSTEM	2020	153.2	1.179	1.316	130.0
SYSTEM	2021	218.2	1.318	1.327	165.5
SYSTEM	2022	255.8	1.630	1.320	156.9

c. Charts for System and Division Indices Based on IEEE 1366 for the past 10 years including Planned Outages and including and excluding MED

i. Charts for System and Division Reliability Indices based on IEEE 1366 for the past 10 years with linear trend line, and including planned outages and excluding ISO, and MED

1. SAIDI Performance Results (MED Excluded)

Chart 222: Division Reliability – AIDI Indices

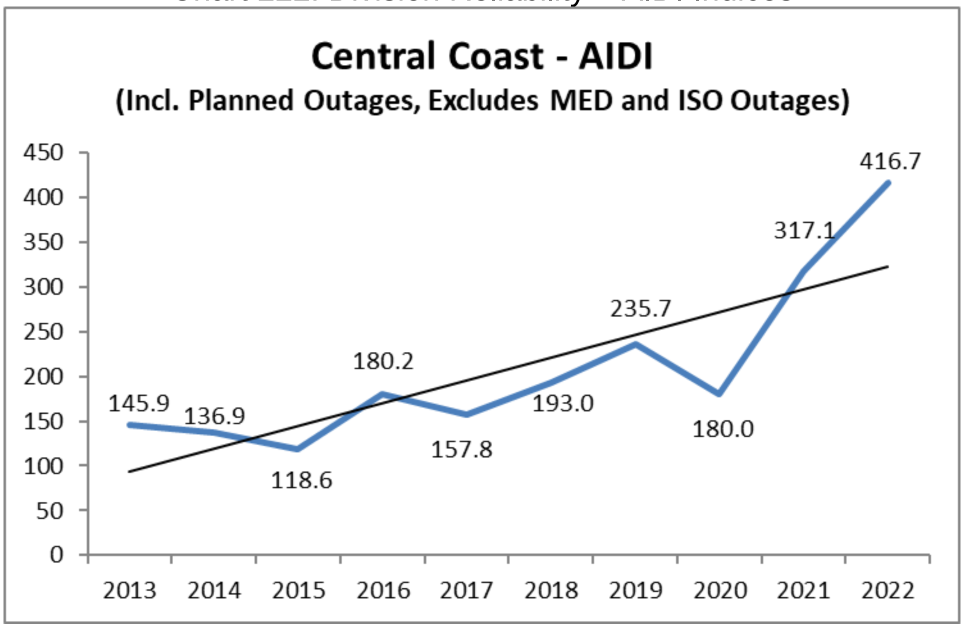


Chart 223: Division Reliability – AIDI Indices

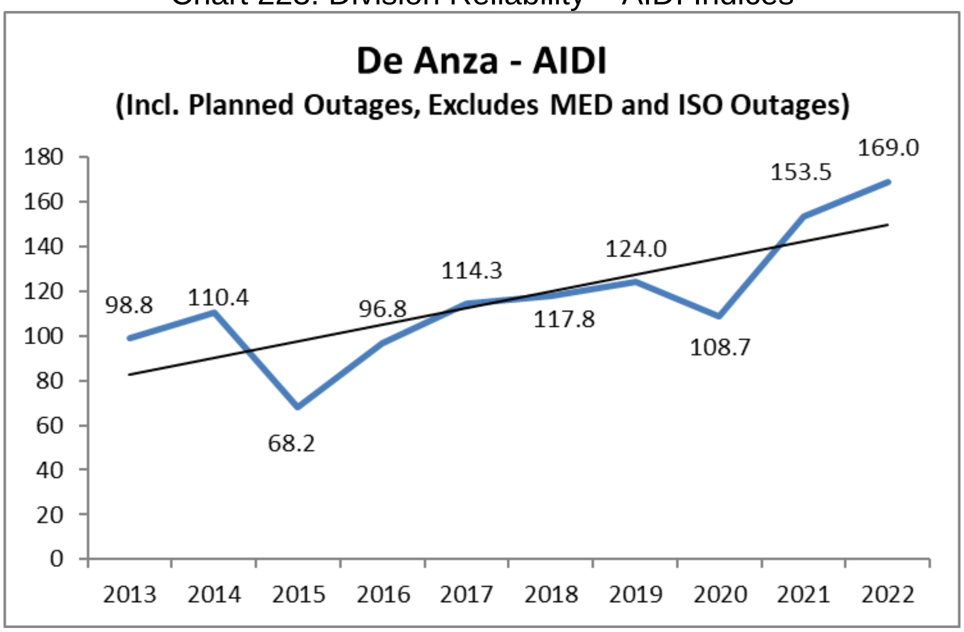


Chart 224: Division Reliability – AIDI Indices

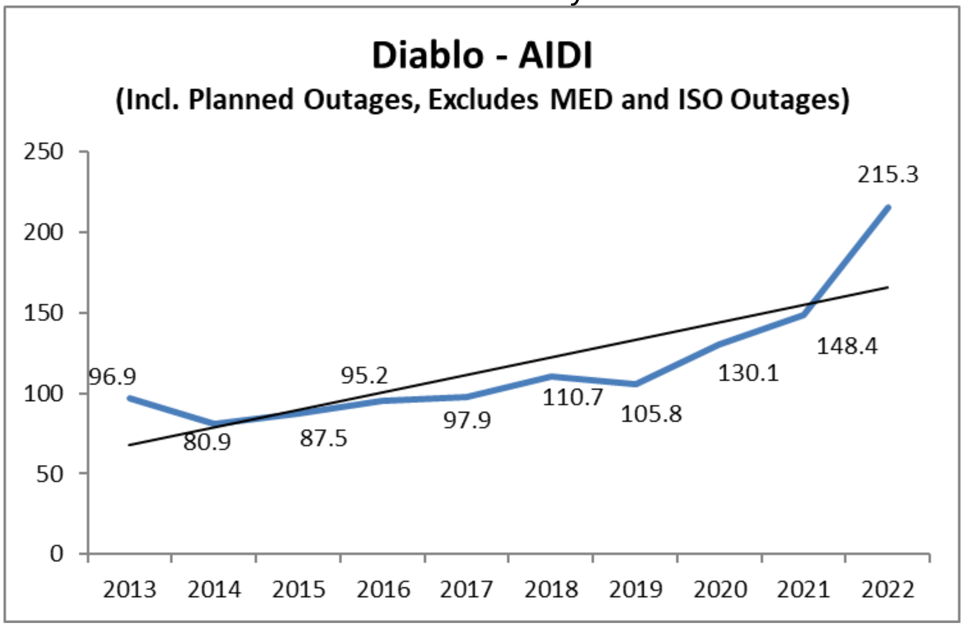


Chart 225: Division Reliability – AIDI Indices

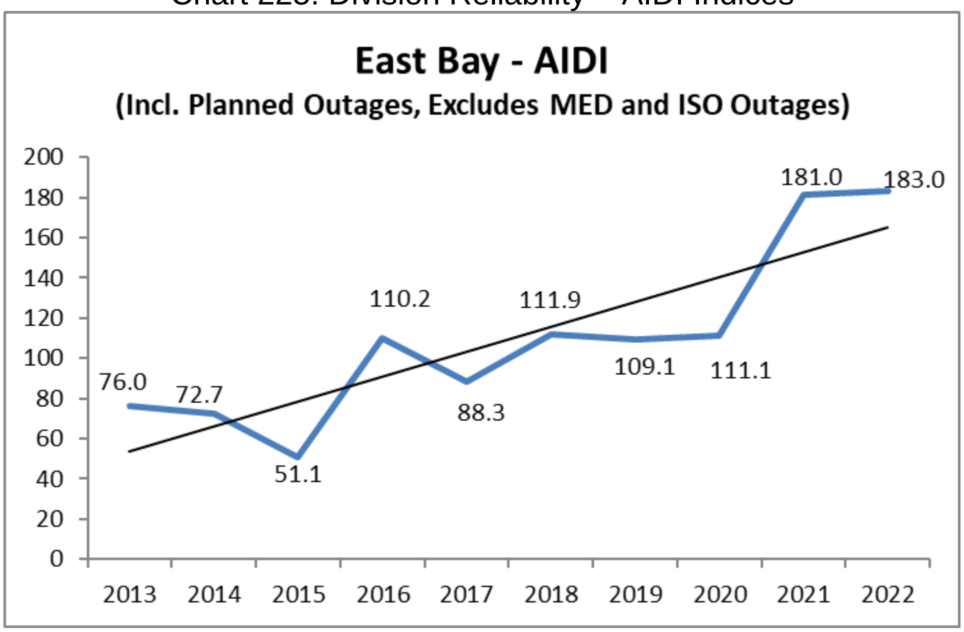


Chart 226: Division Reliability – AIDI Indices

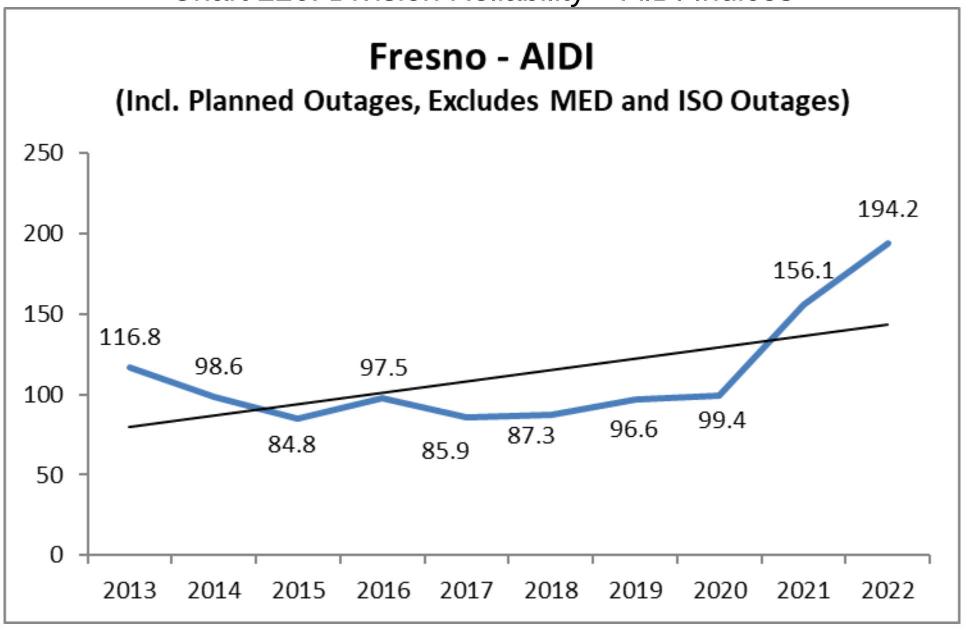


Chart 227: Division Reliability – AIDI Indices

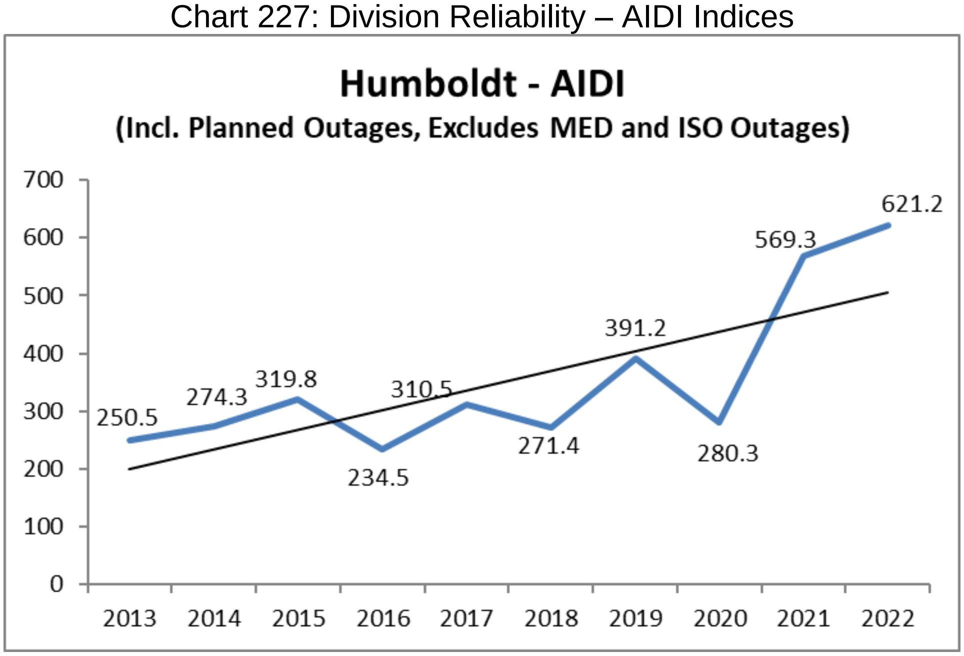


Chart 228: Division Reliability – AIDI Indices

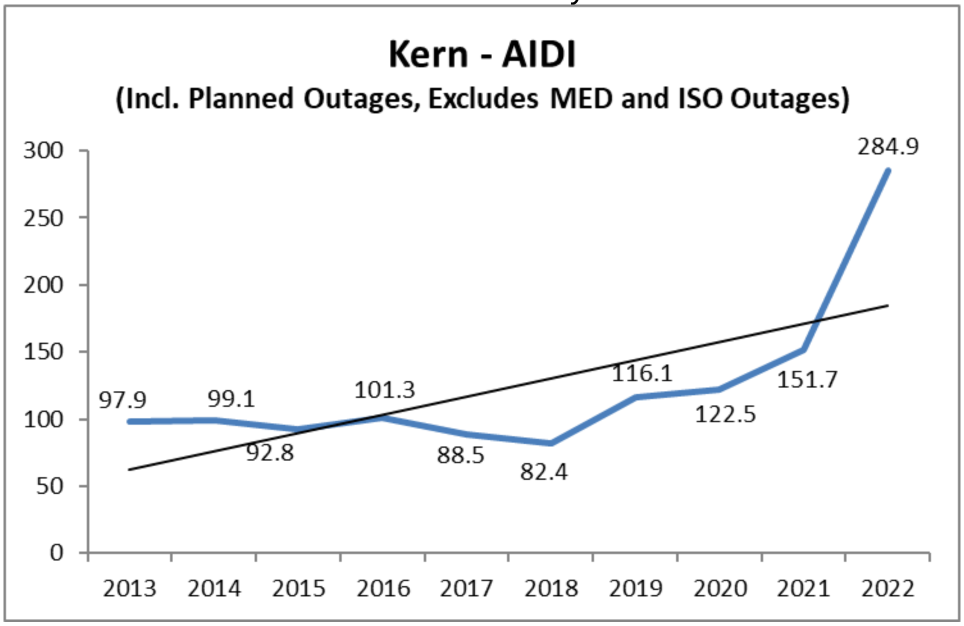


Chart 229: Division Reliability – AIDI Indices

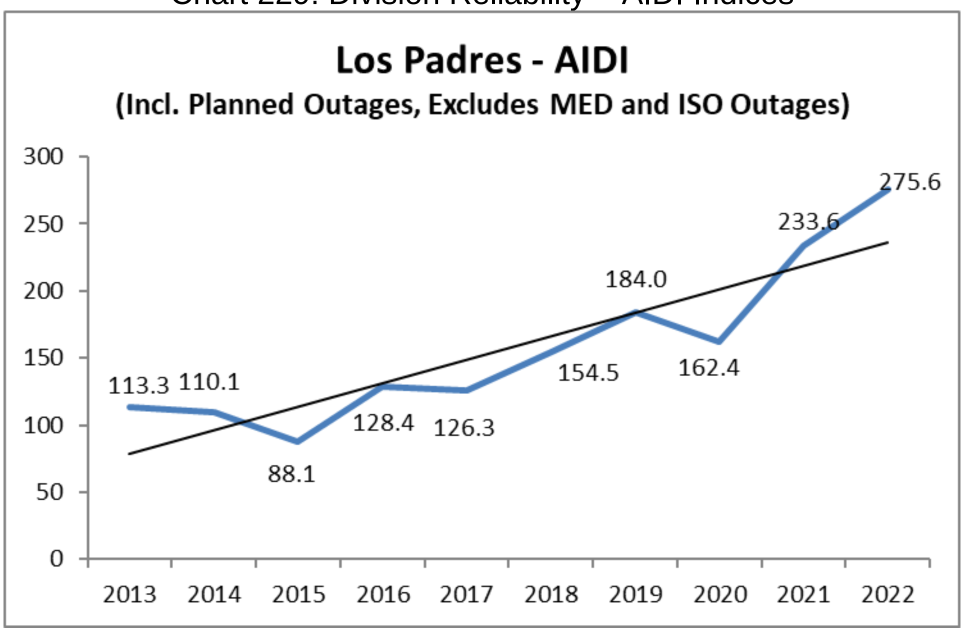


Chart 230: Division Reliability – AIDI Indices

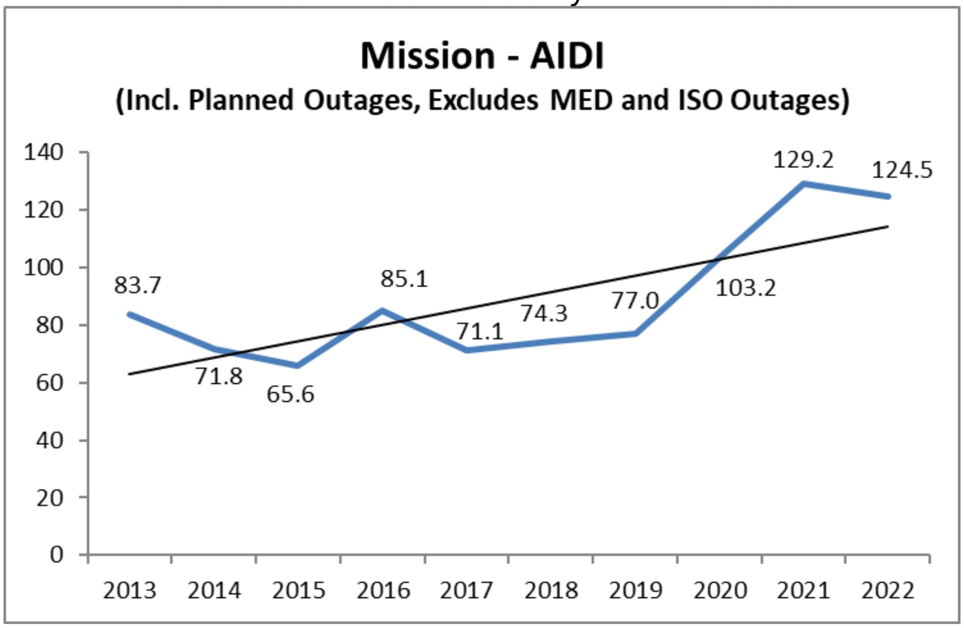


Chart 231: Division Reliability – AIDI Indices

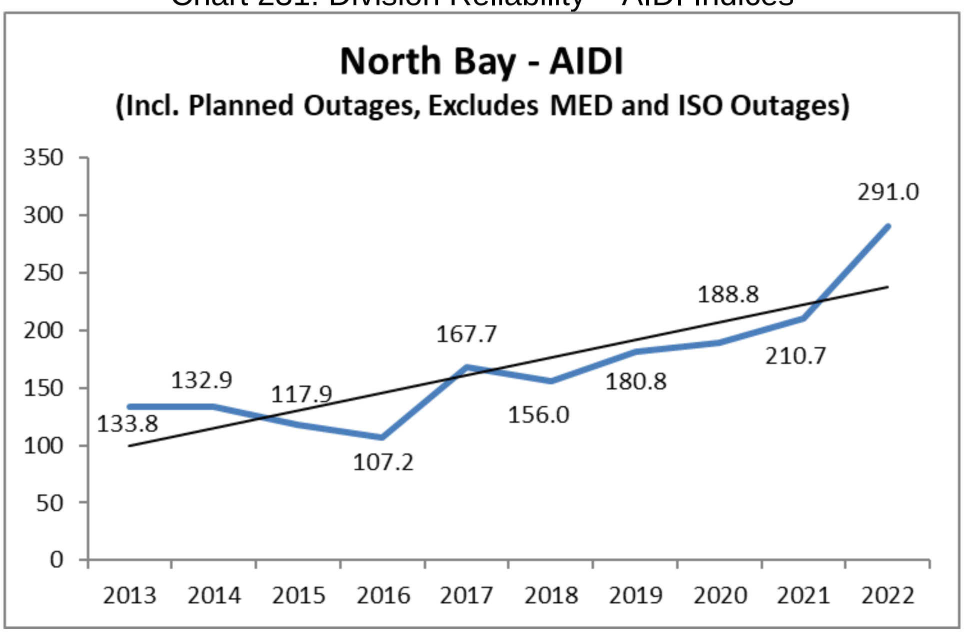


Chart 232: Division Reliability – AIDI Indices

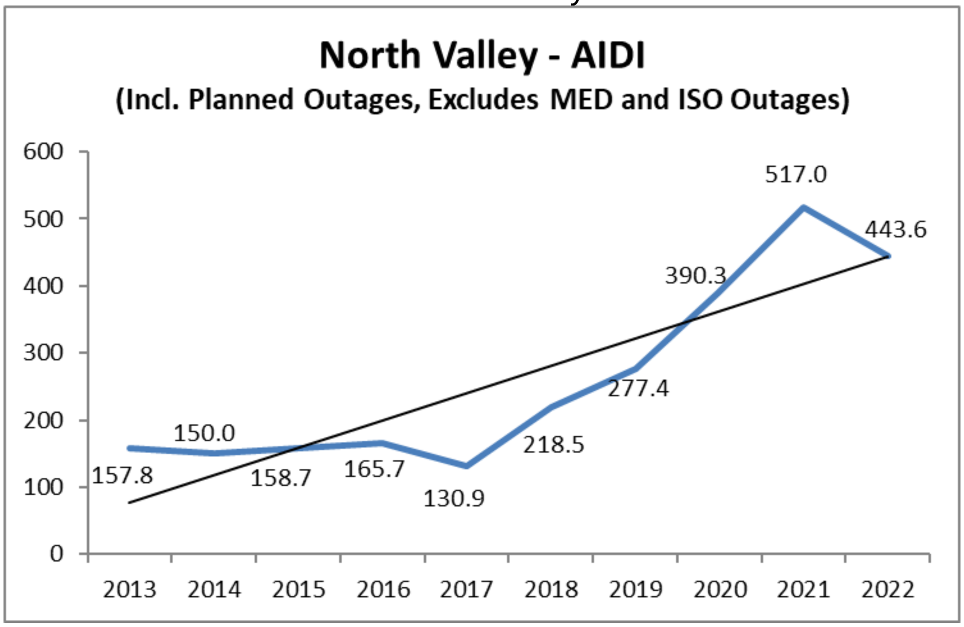


Chart 233: Division Reliability – AIDI Indices

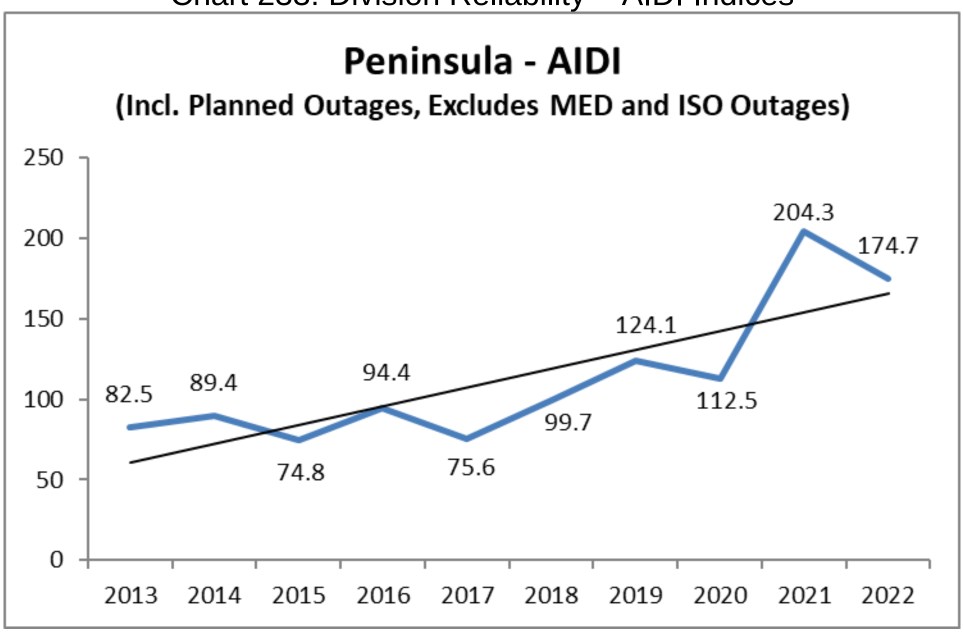


Chart 234: Division Reliability – AIDI Indices

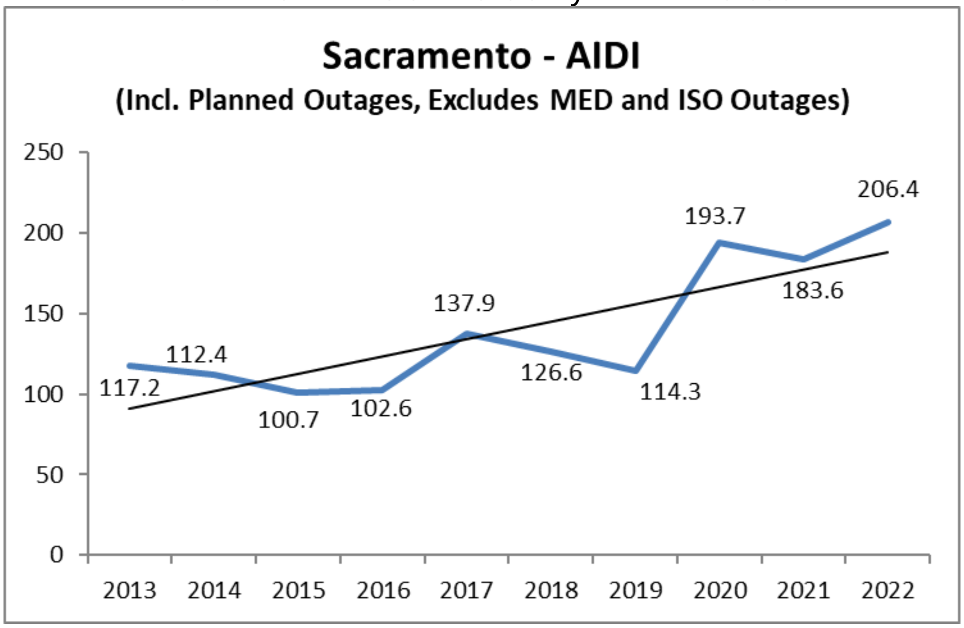


Chart 235: Division Reliability – AIDI Indices

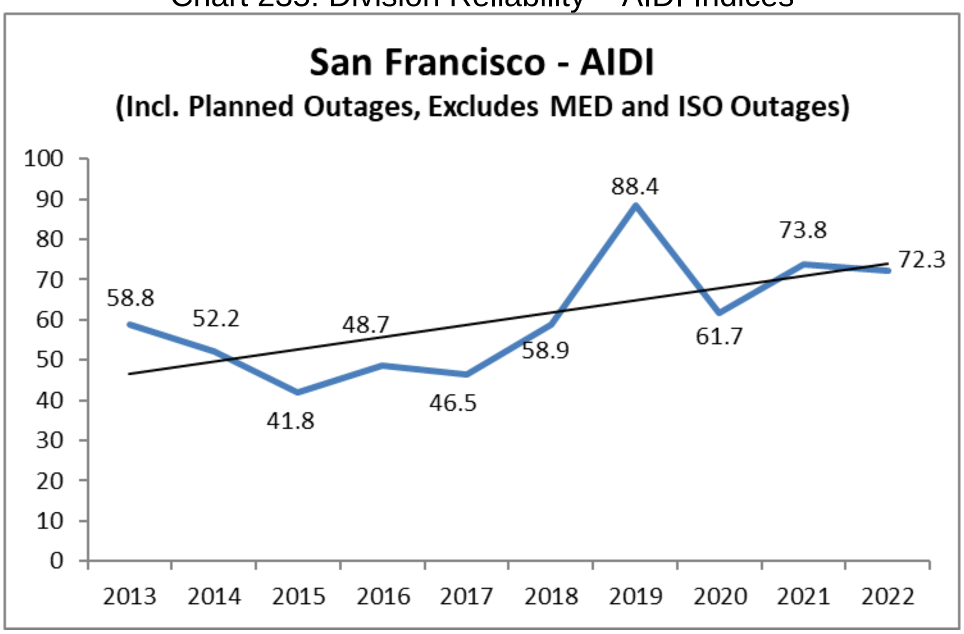


Chart 236: Division Reliability – AIDI Indices

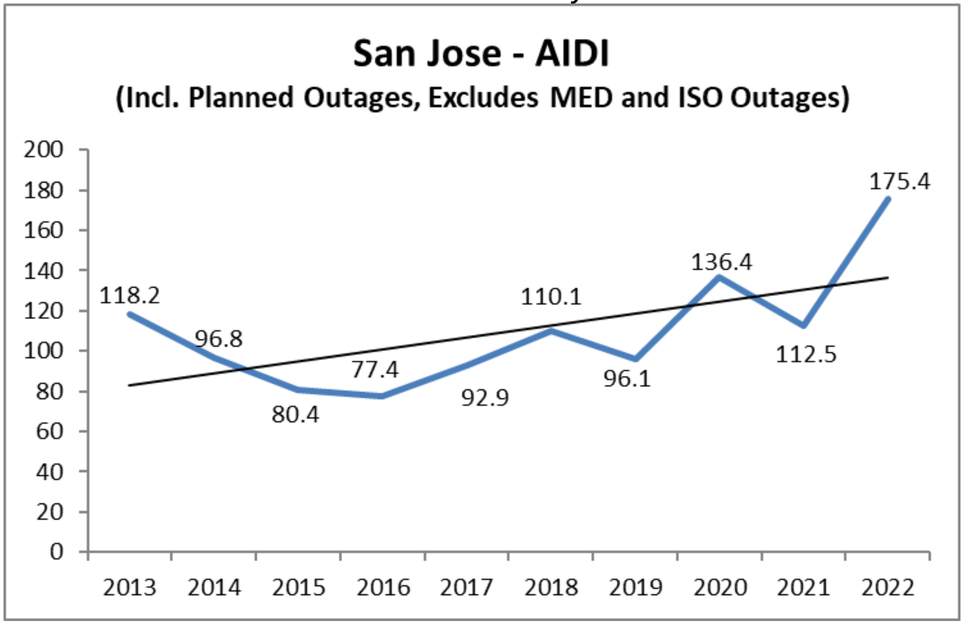


Chart 237: Division Reliability – AIDI Indices

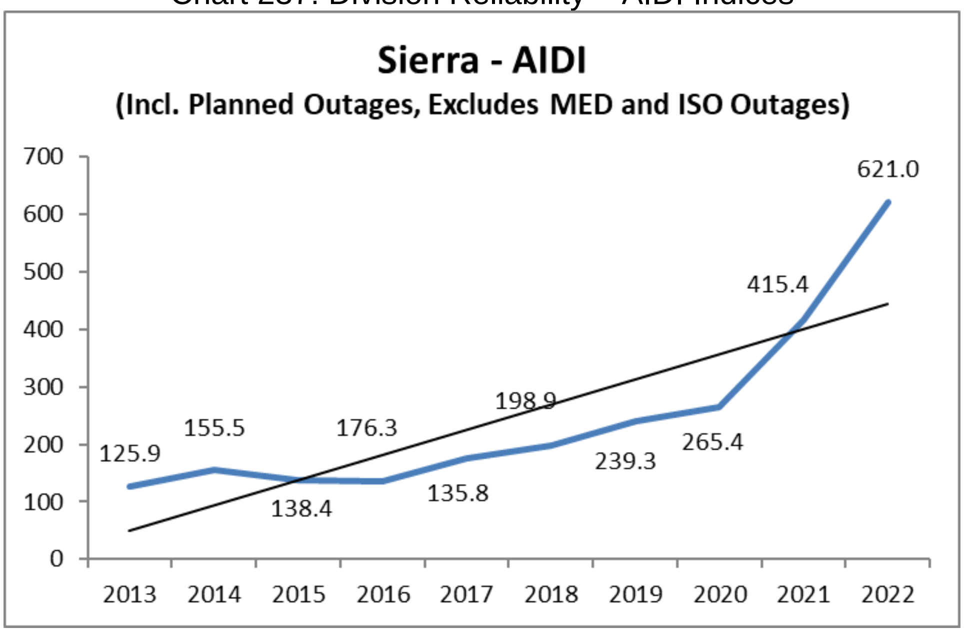


Chart 238: Division Reliability – AIDI Indices

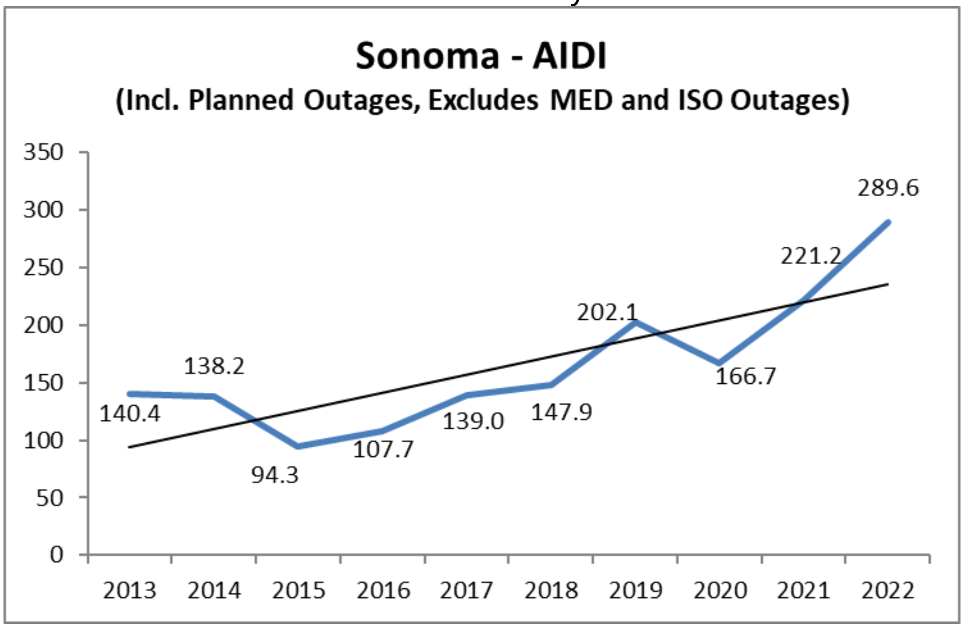


Chart 239: Division Reliability – AIDI Indices

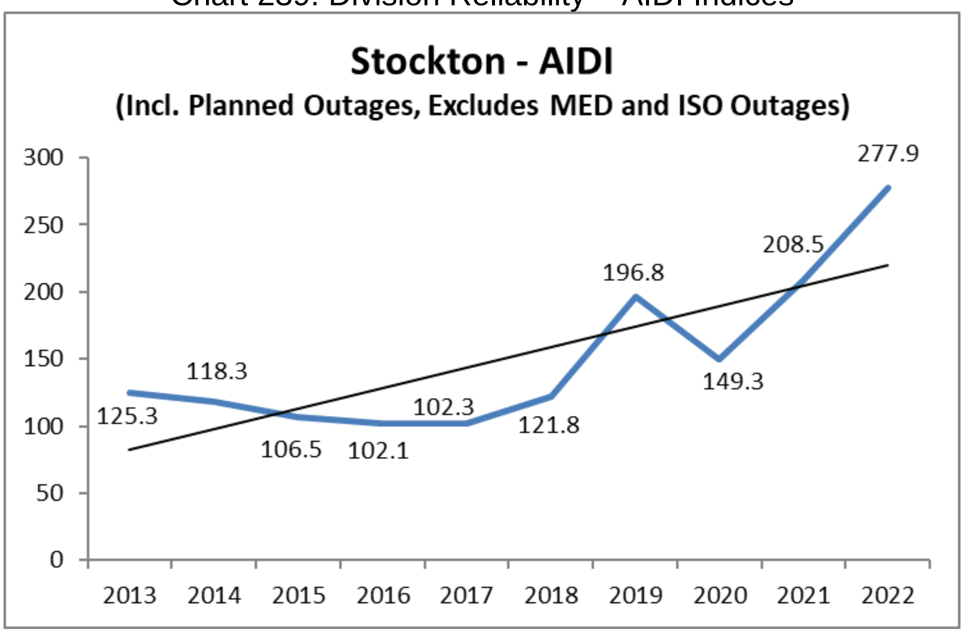


Chart 240: Division Reliability – AIDI Indices

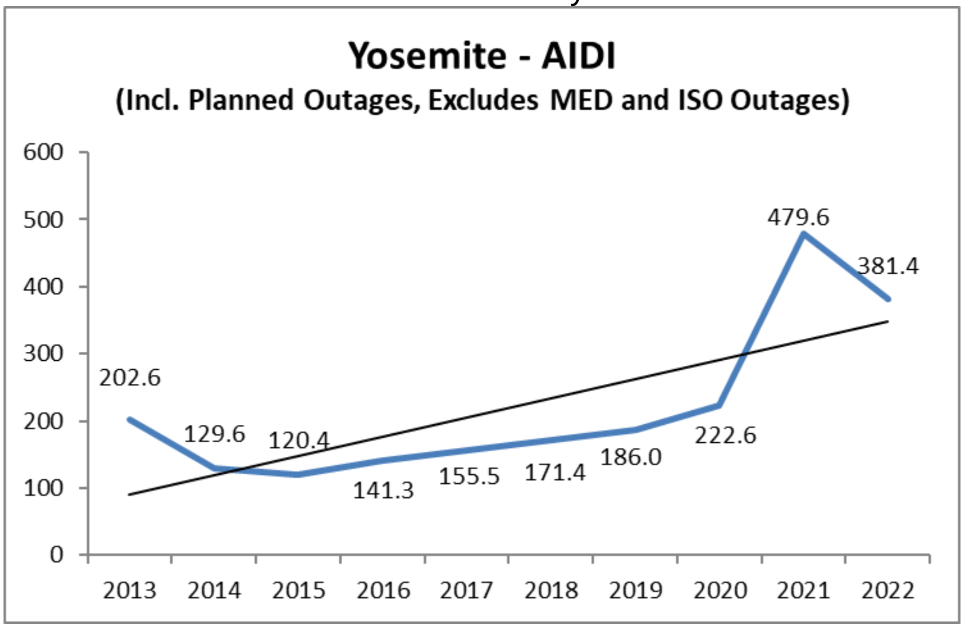
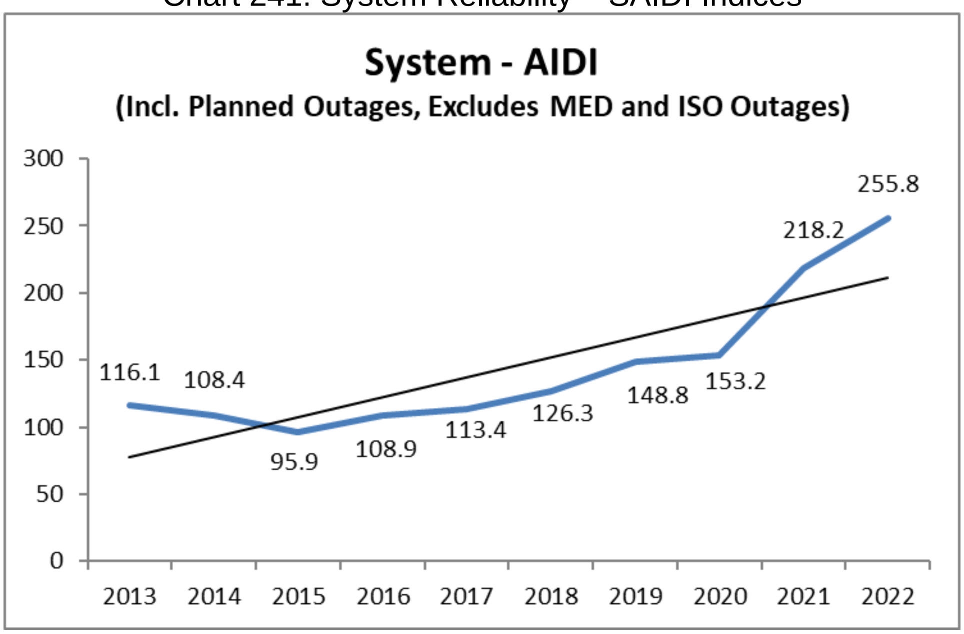


Chart 241: System Reliability – SAIDI Indices



2. SAIFI Performance Results (MED Excluded)

Chart 242: Division Reliability – AIFI Indices

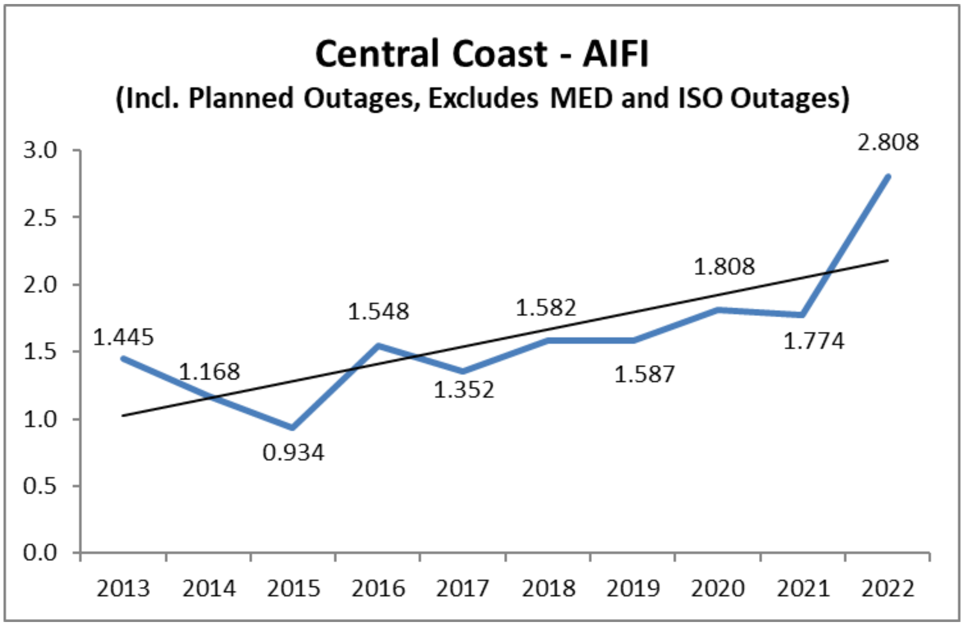


Chart 243: Division Reliability – AIFI Indices

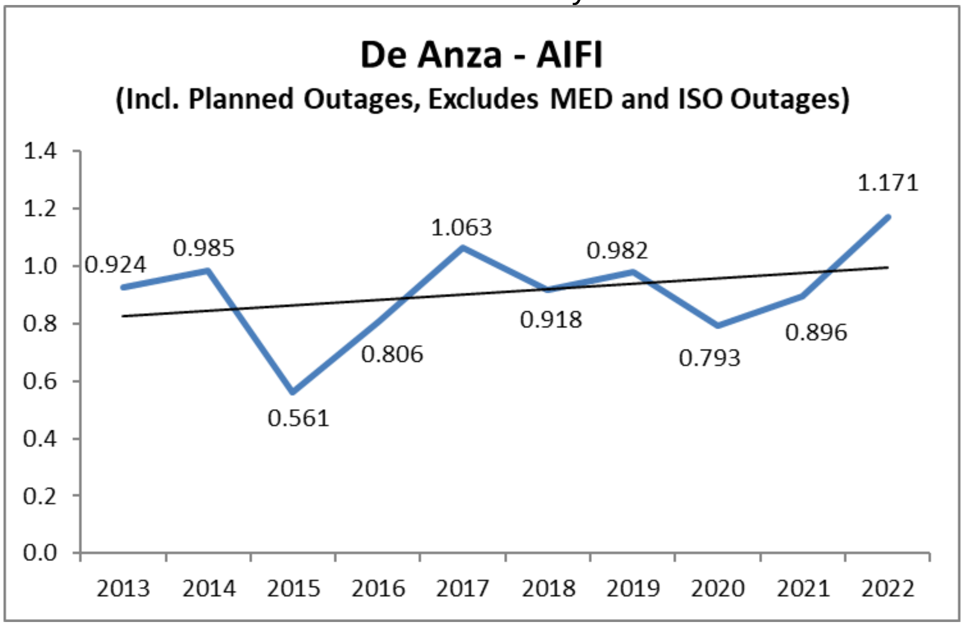


Chart 244: Division Reliability – AIFI Indices

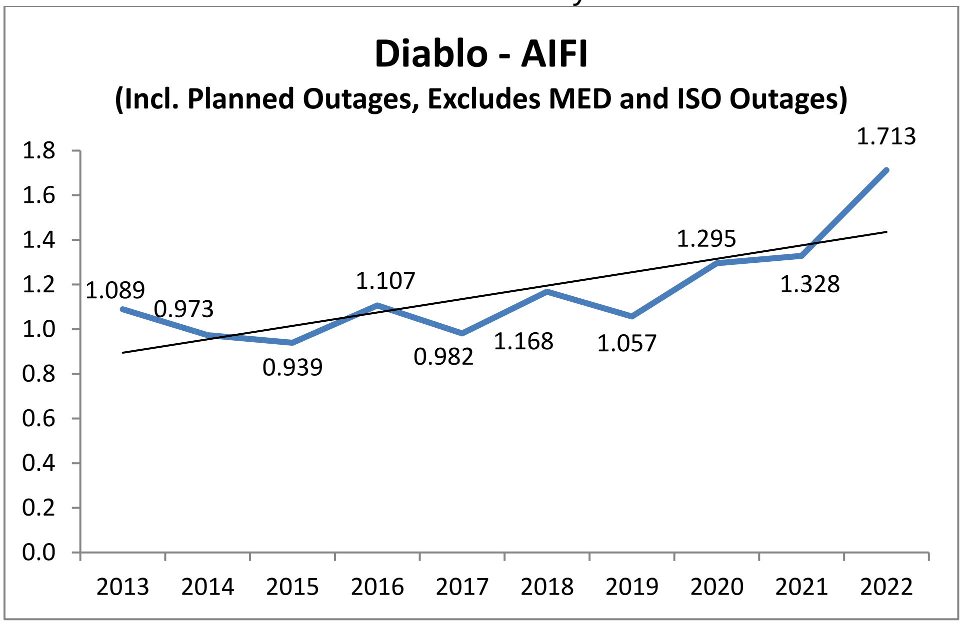


Chart 245: Division Reliability – AIFI Indices

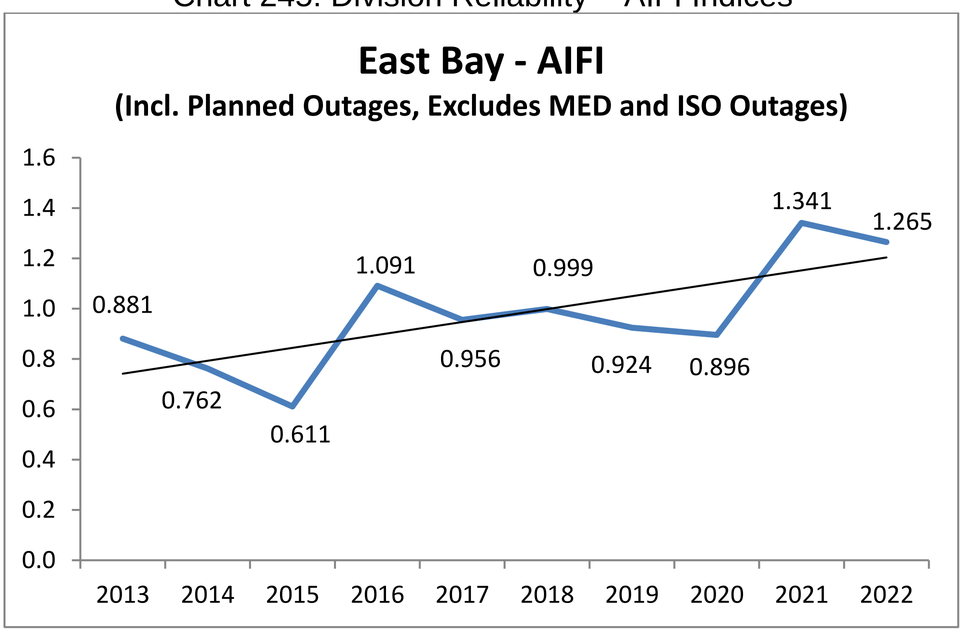


Chart 246: Division Reliability – AIFI Indices

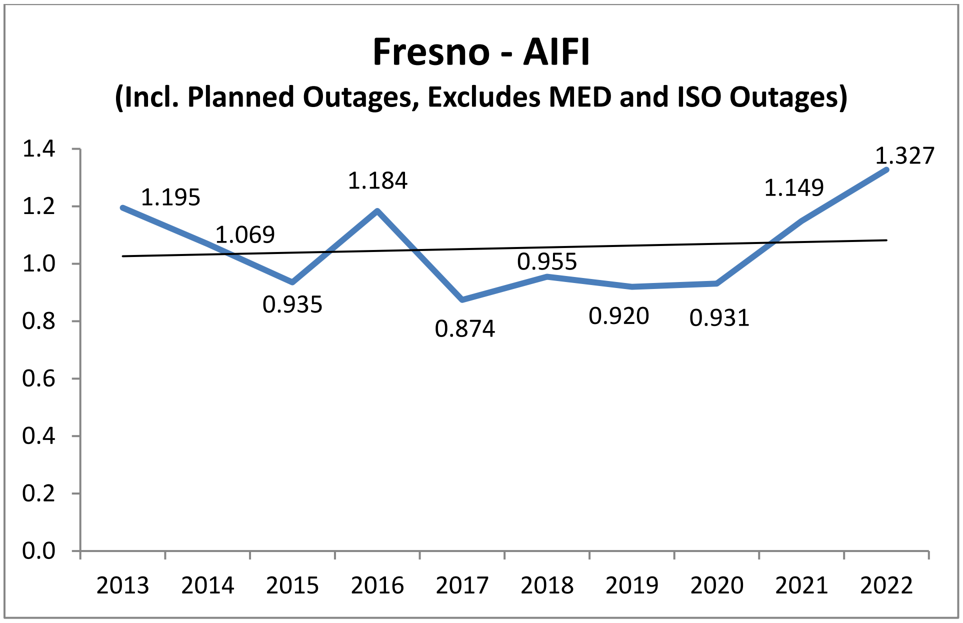


Chart 247: Division Reliability – AIFI Indices

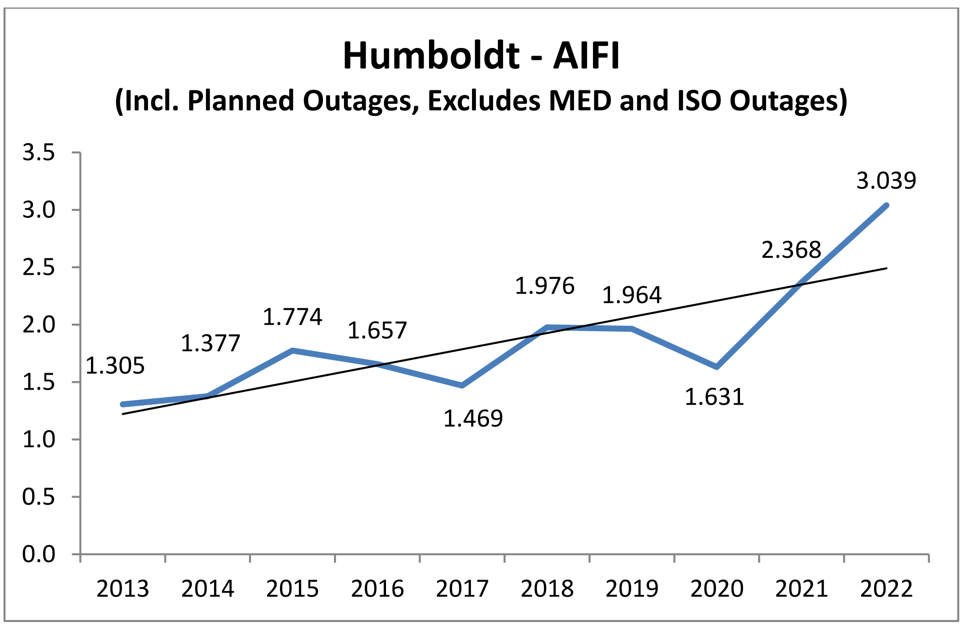


Chart 248: Division Reliability – AIFI Indices

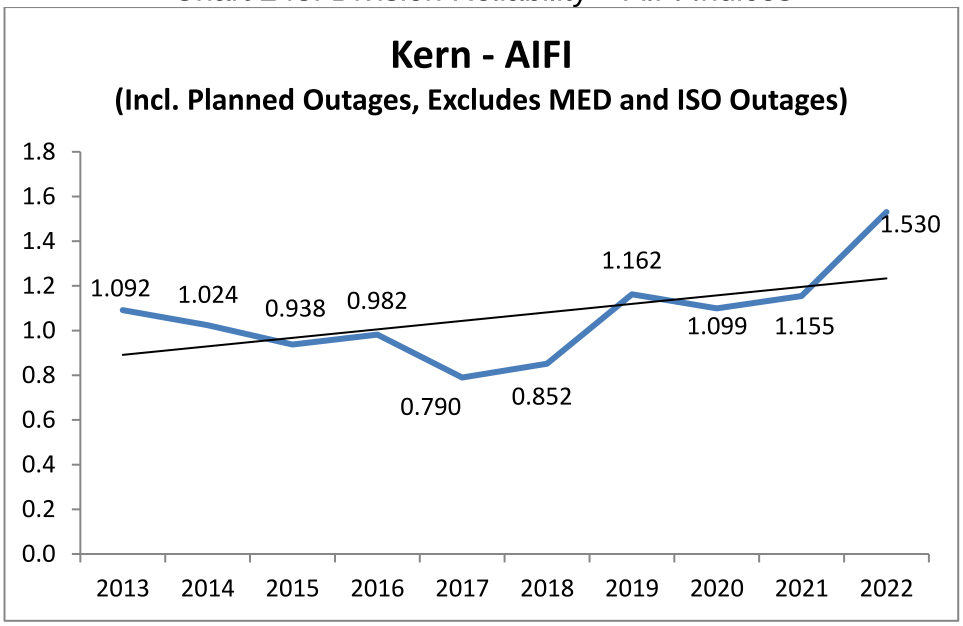


Chart 249: Division Reliability – AIFI Indices

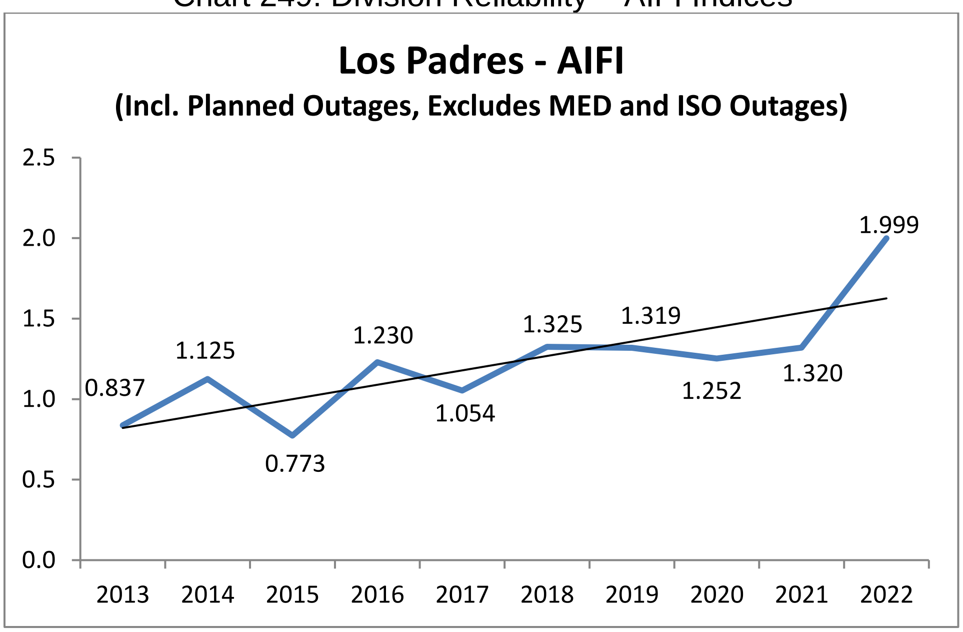


Chart 250: Division Reliability – AIFI Indices

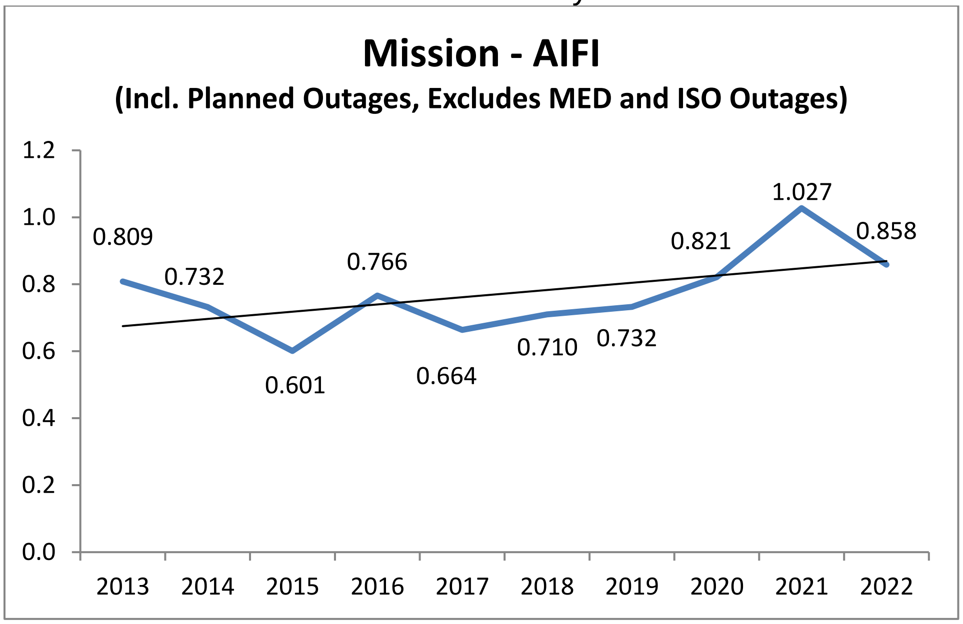


Chart 251: Division Reliability – AIFI Indices

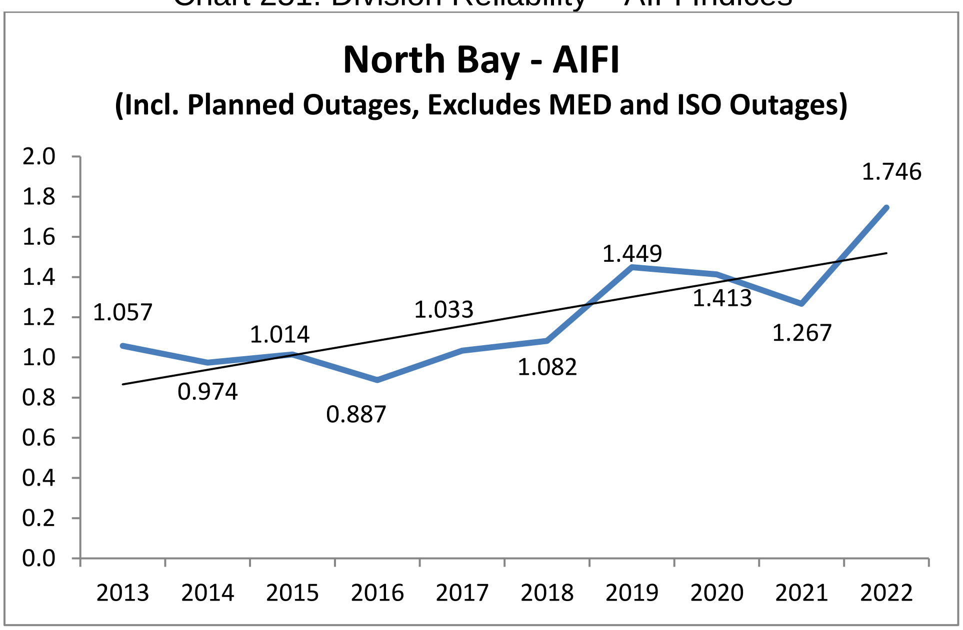


Chart 252: Division Reliability – AIFI Indices

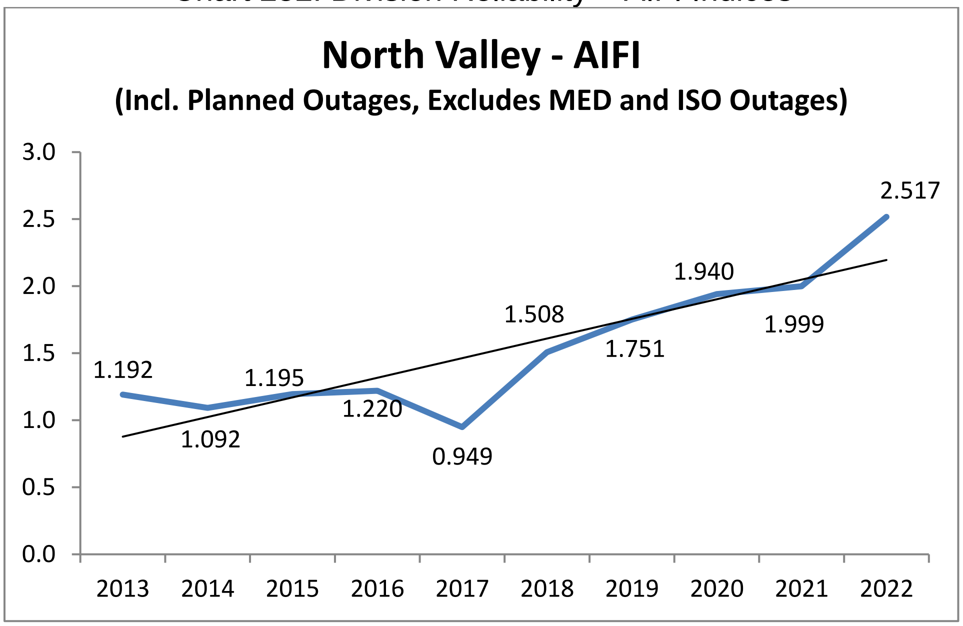


Chart 253: Division Reliability – AIFI Indices

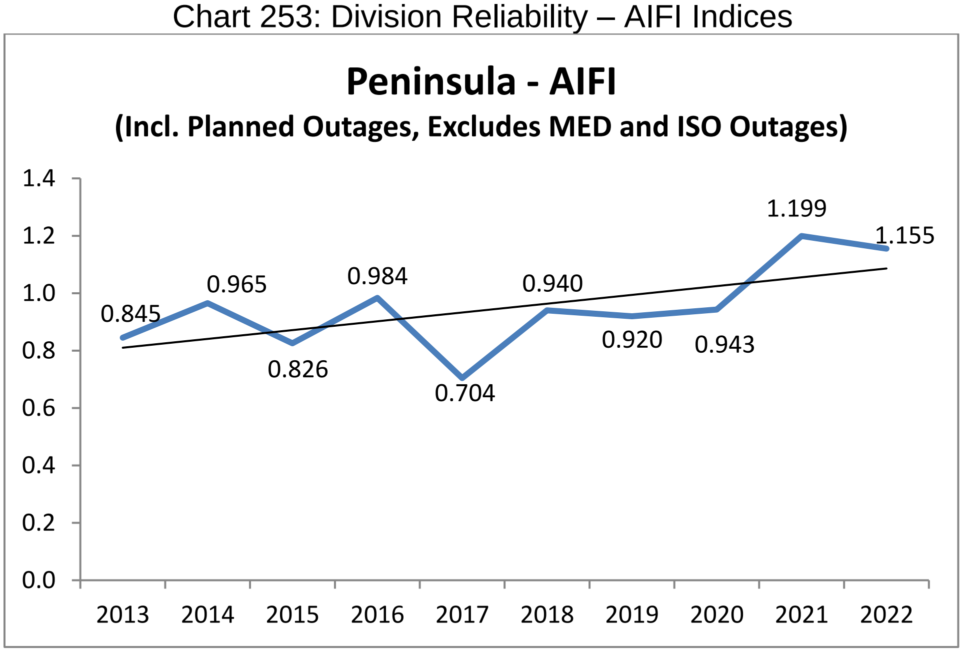


Chart 254: Division Reliability – AIFI Indices

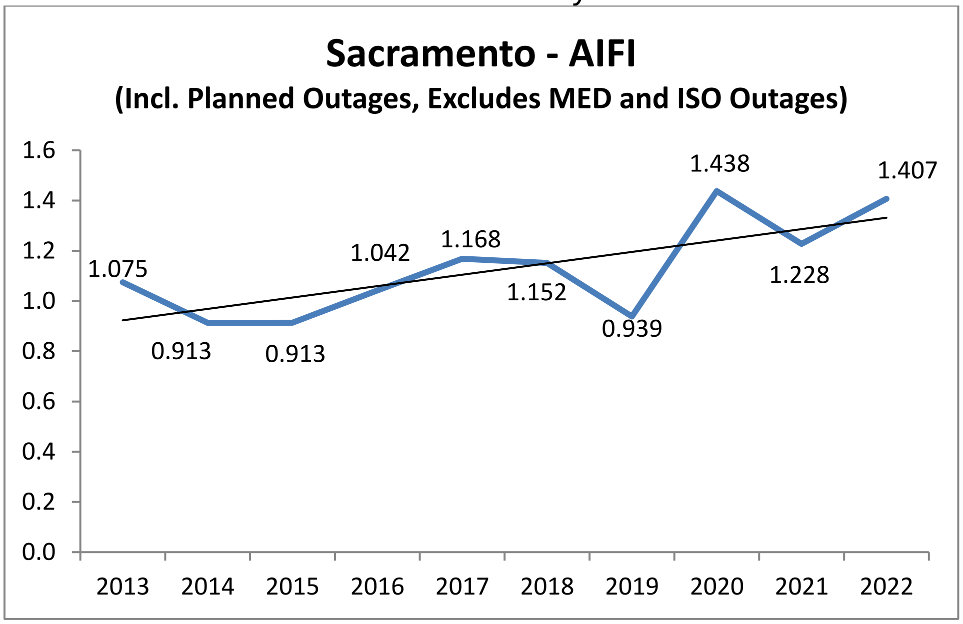


Chart 255: Division Reliability – AIFI Indices

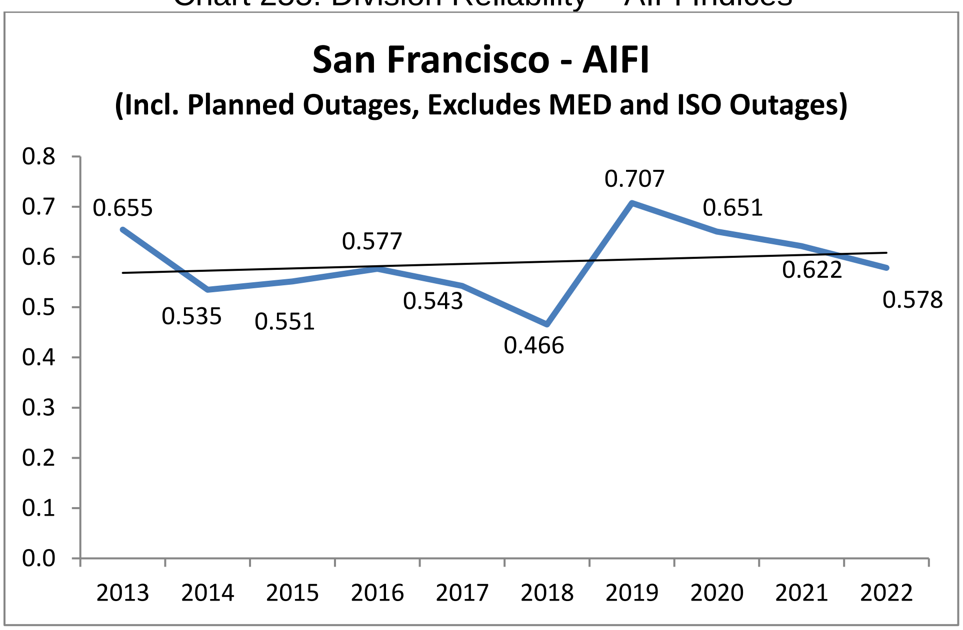


Chart 256: Division Reliability – AIFI Indices

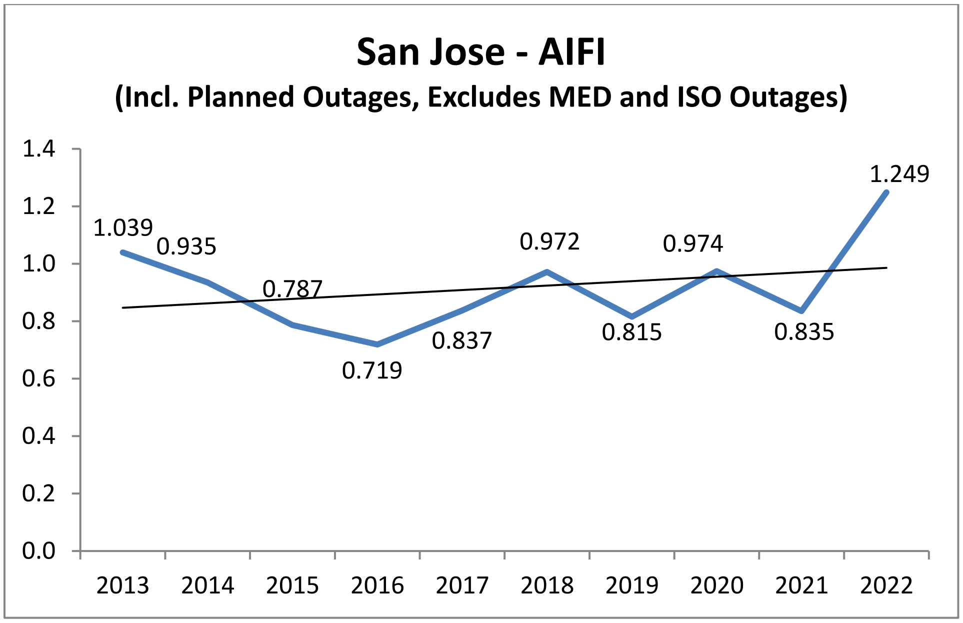


Chart 257: Division Reliability – AIFI Indices

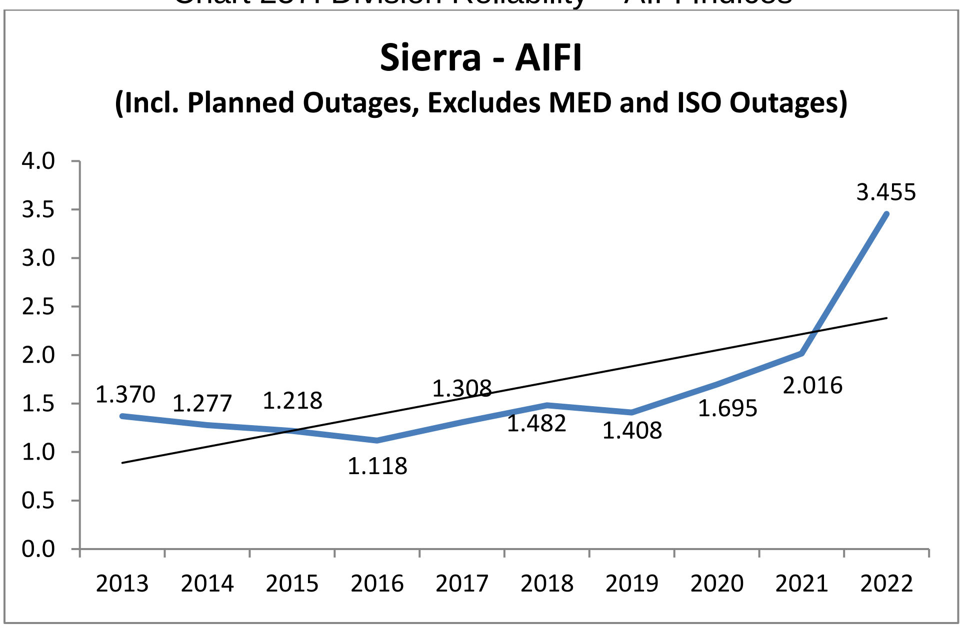


Chart 258: Division Reliability – AIFI Indices

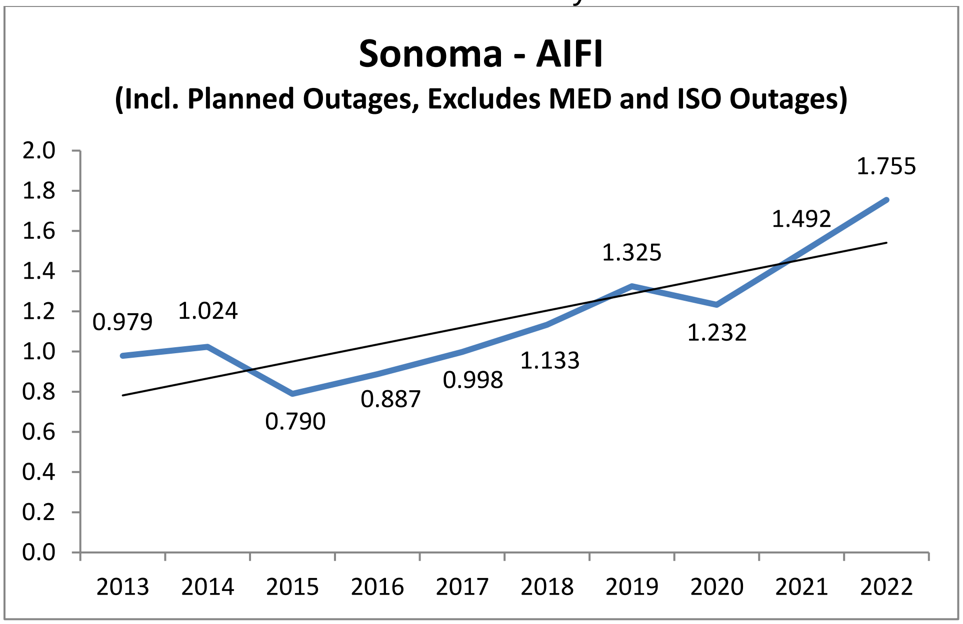


Chart 259: Division Reliability – AIFI Indices

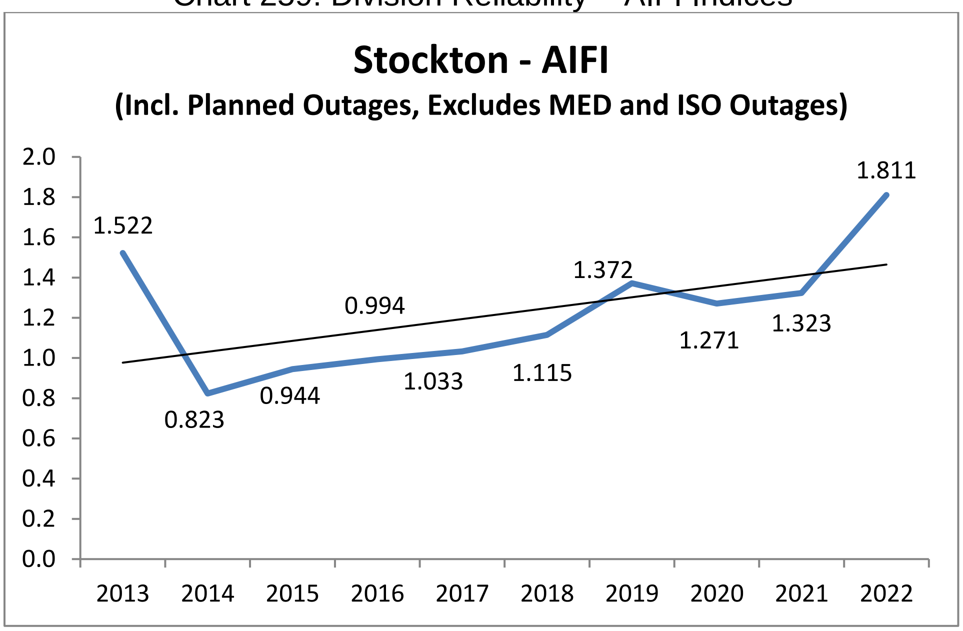


Chart 260: Division Reliability – AIFI Indices

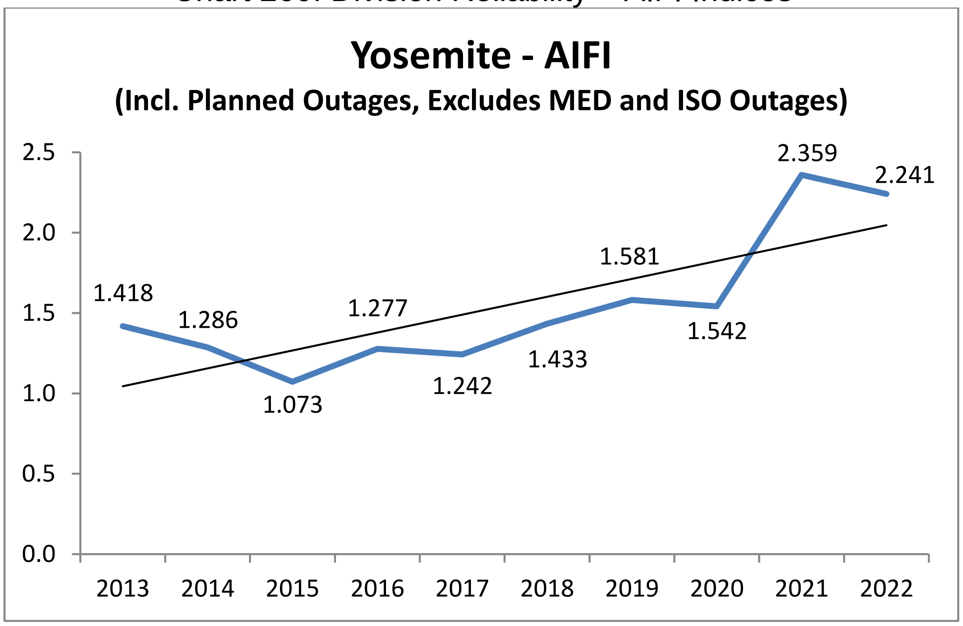
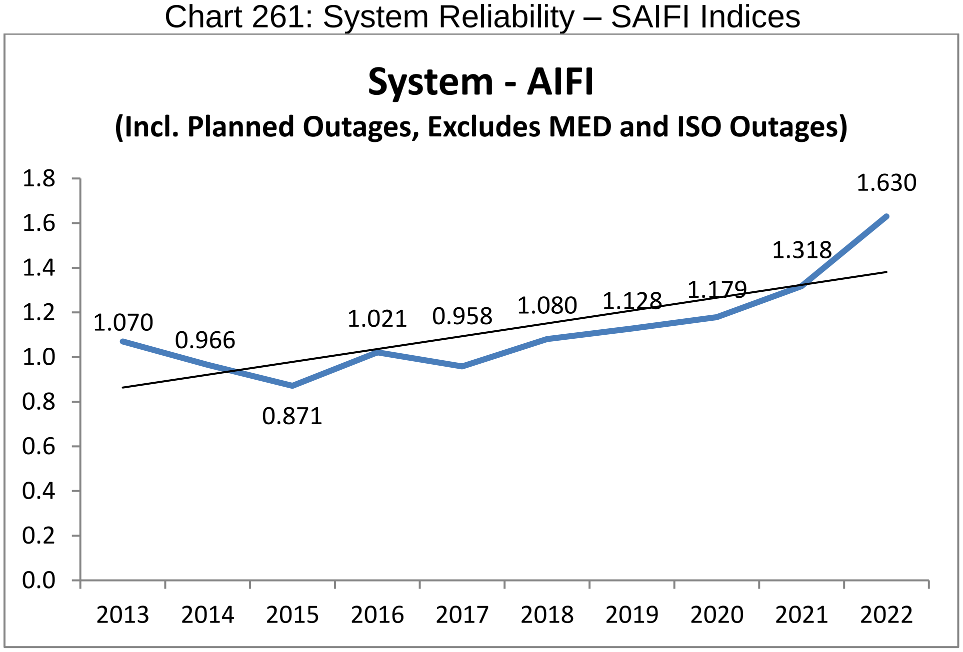


Chart 261: System Reliability – SAIFI Indices



3. MAIFI[10] Performance Results (MED Excluded)

Chart 262: Division Reliability – MAIFI Indices

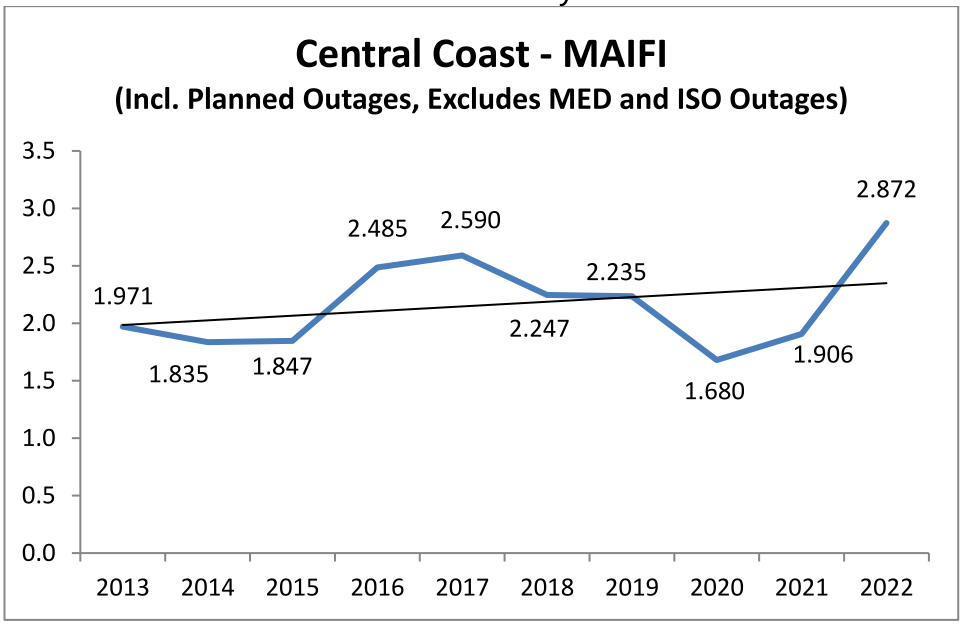
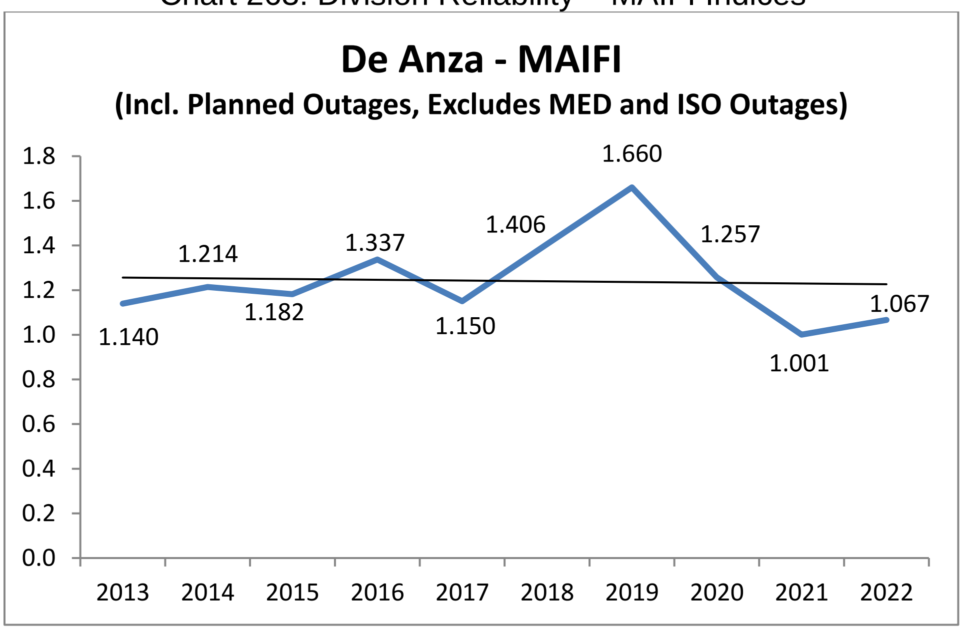


Chart 263: Division Reliability – MAIFI Indices



10 See footnote 4.

Chart 264: Division Reliability – MAIFI Indices

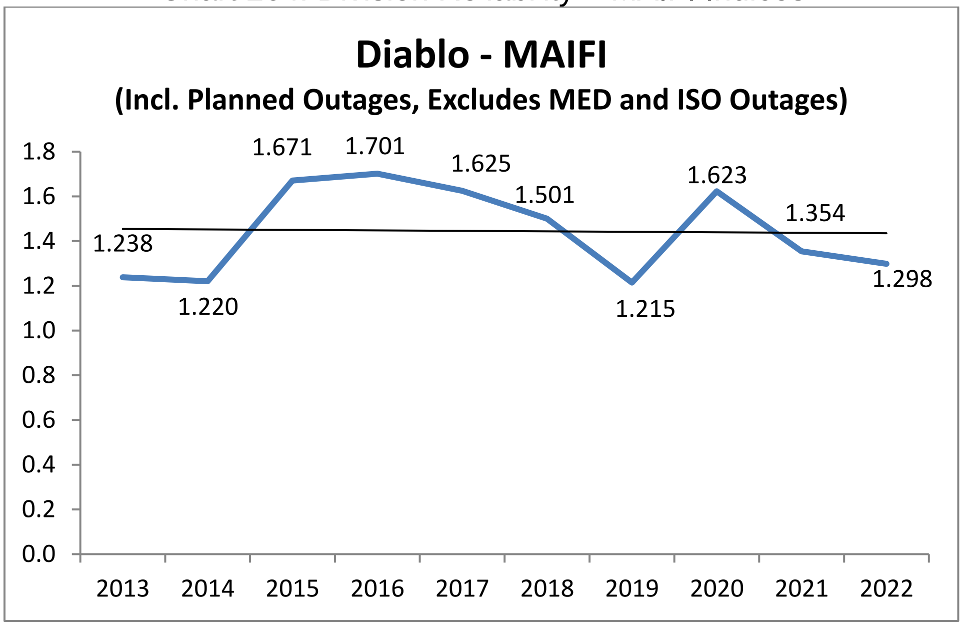


Chart 265: Division Reliability – MAIFI Indices

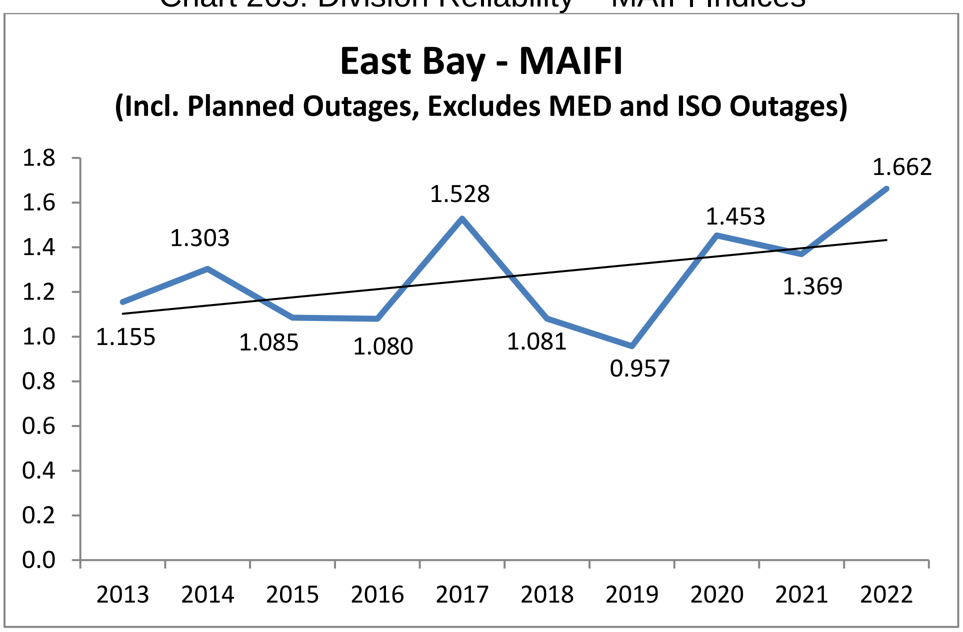


Chart 266: Division Reliability – MAIFI Indices

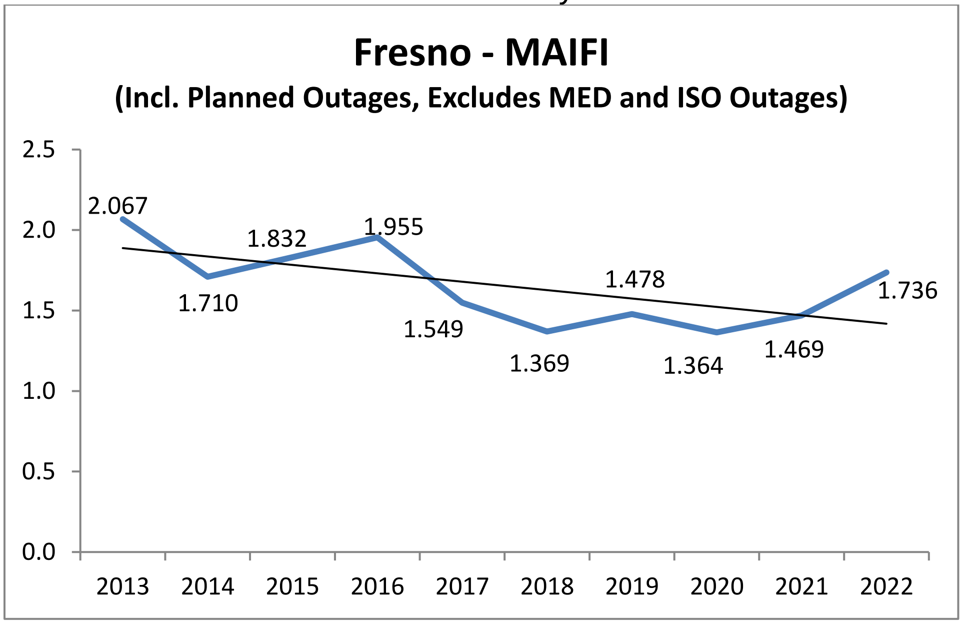


Chart 267: Division Reliability – MAIFI Indices

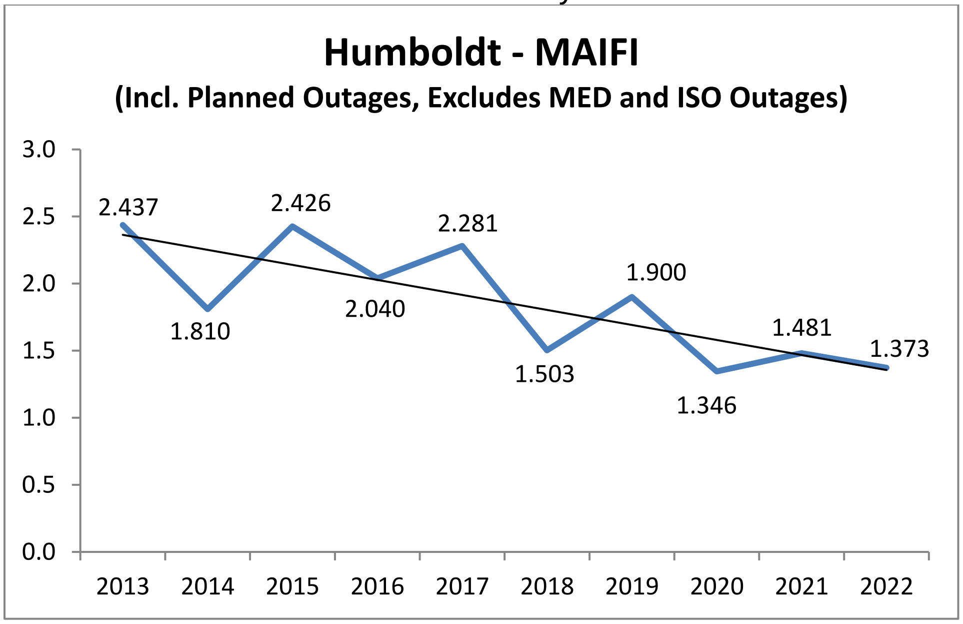


Chart 268: Division Reliability – MAIFI Indices

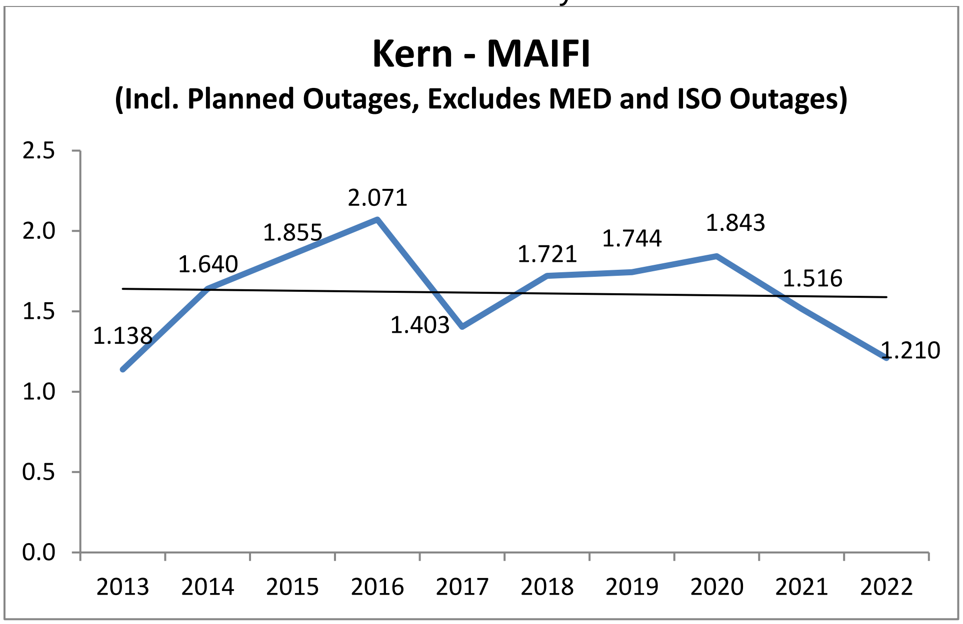


Chart 269: Division Reliability – MAIFI Indices

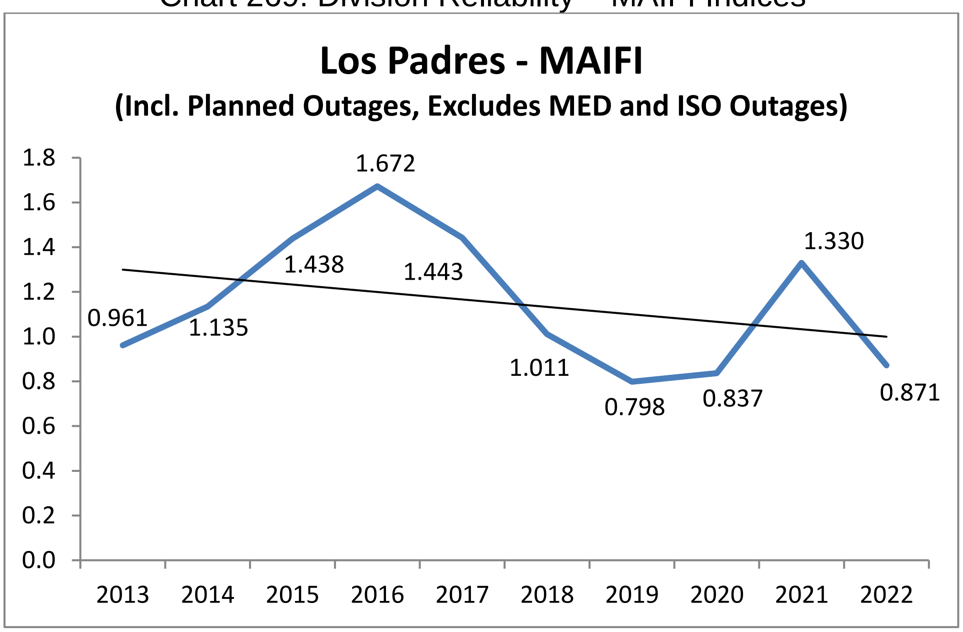


Chart 270: Division Reliability – MAIFI Indices

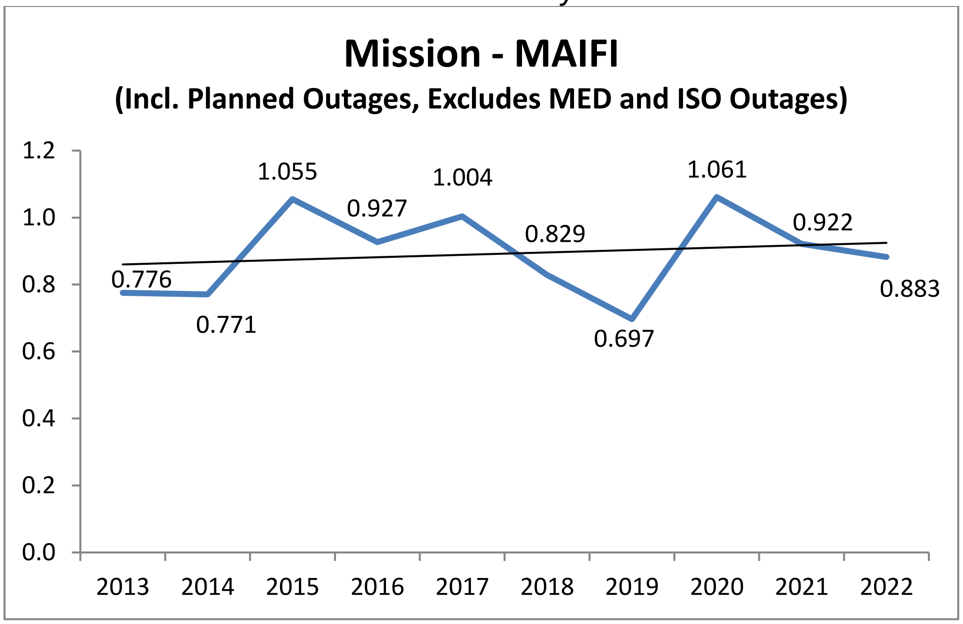


Chart 271: Division Reliability – MAIFI Indices

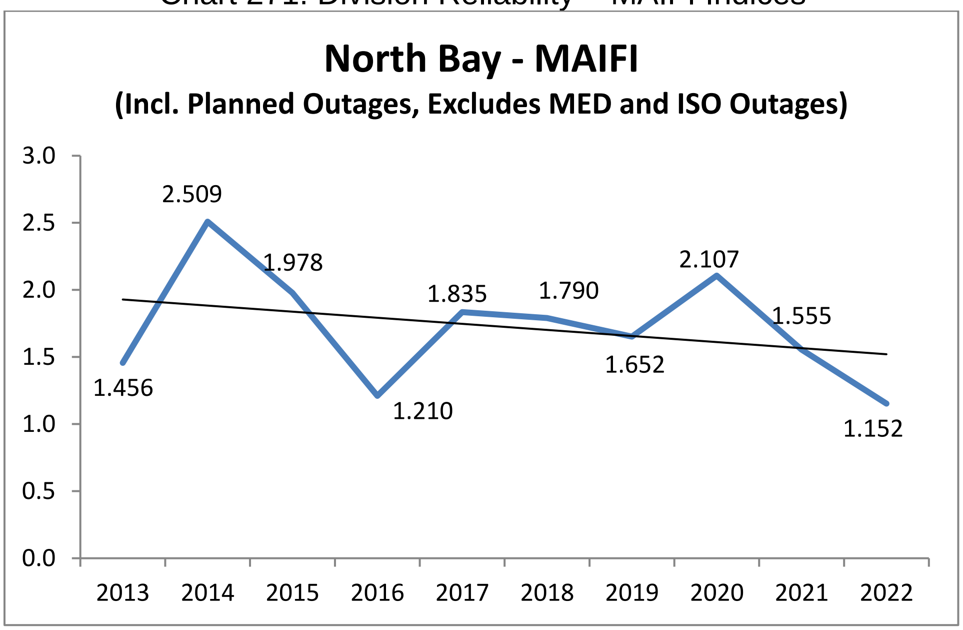


Chart 272: Division Reliability – MAIFI Indices

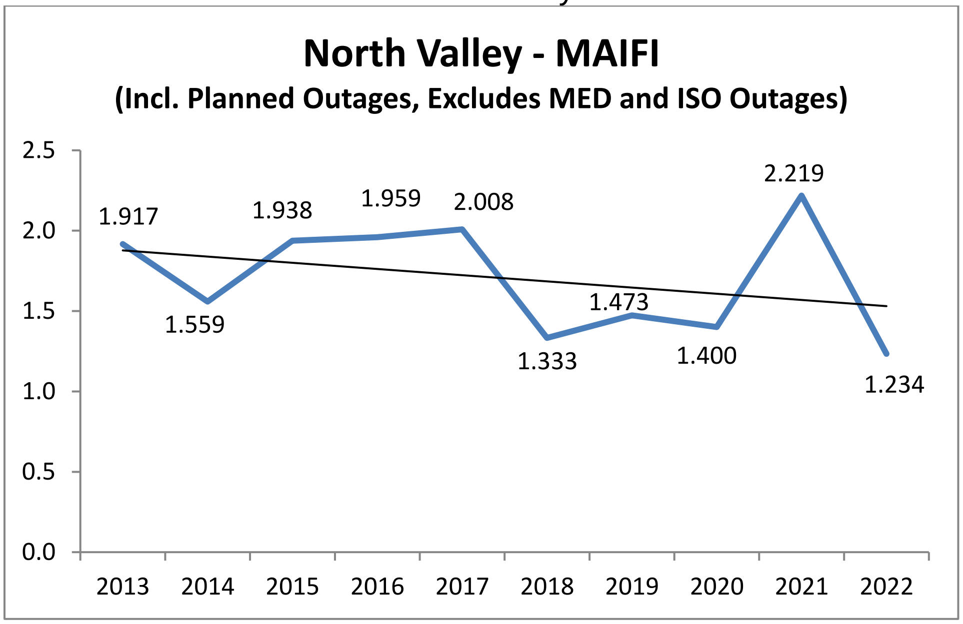


Chart 273: Division Reliability – MAIFI Indices

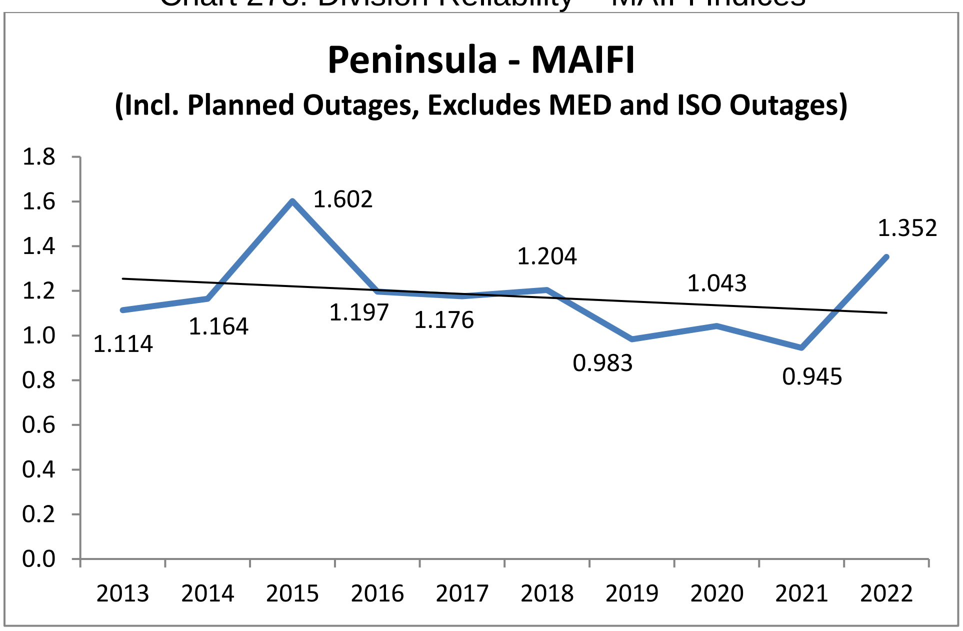


Chart 274: Division Reliability – MAIFI Indices

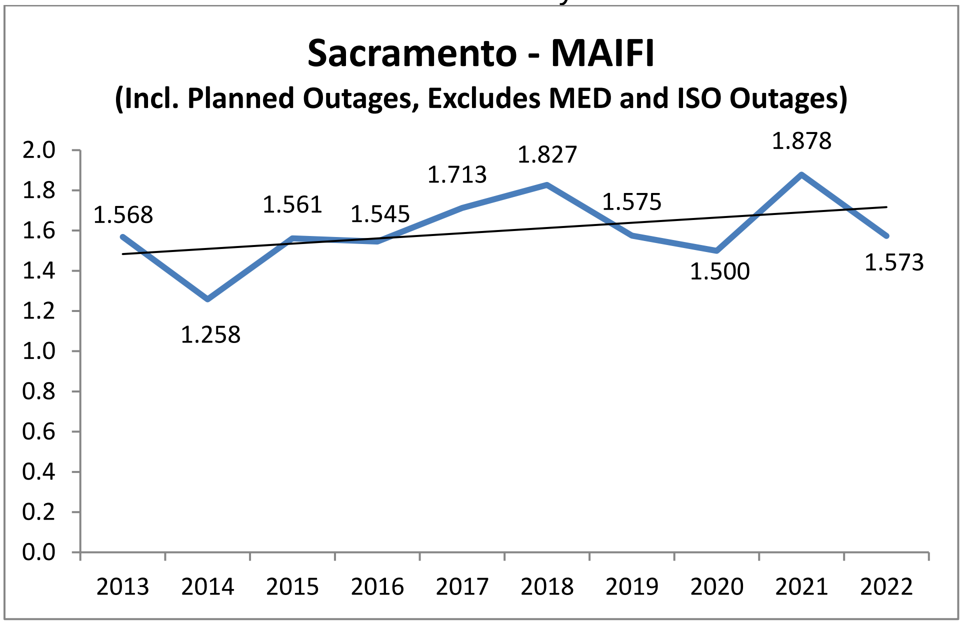


Chart 275: Division Reliability – MAIFI Indices

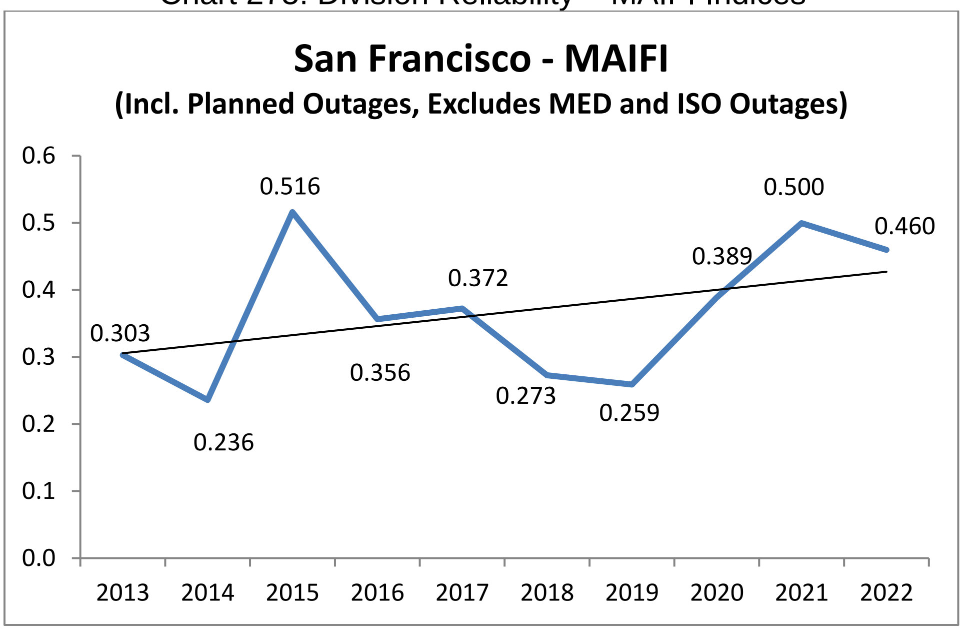


Chart 276: Division Reliability – MAIFI Indices

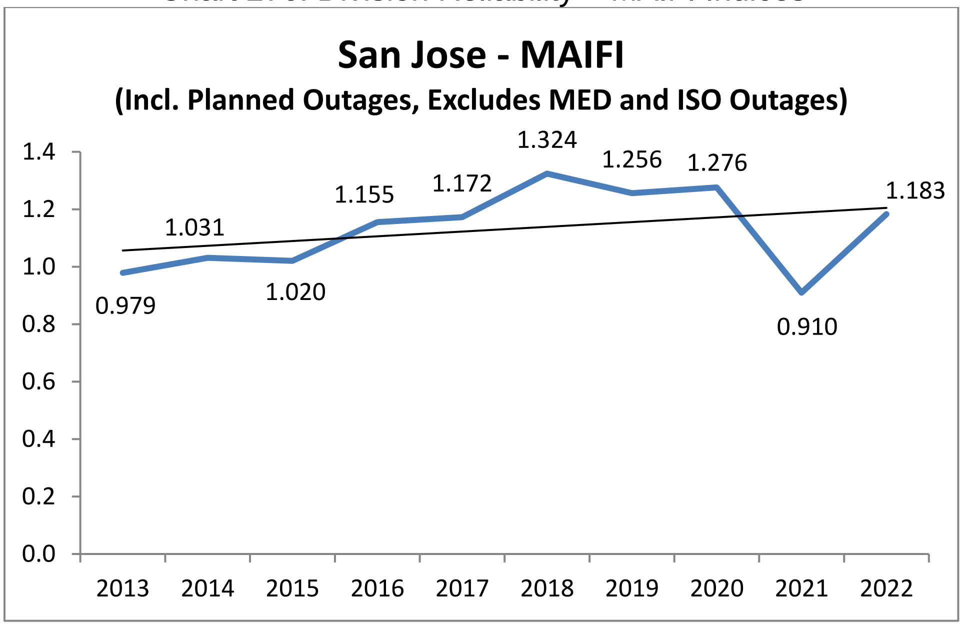


Chart 277: Division Reliability – MAIFI Indices

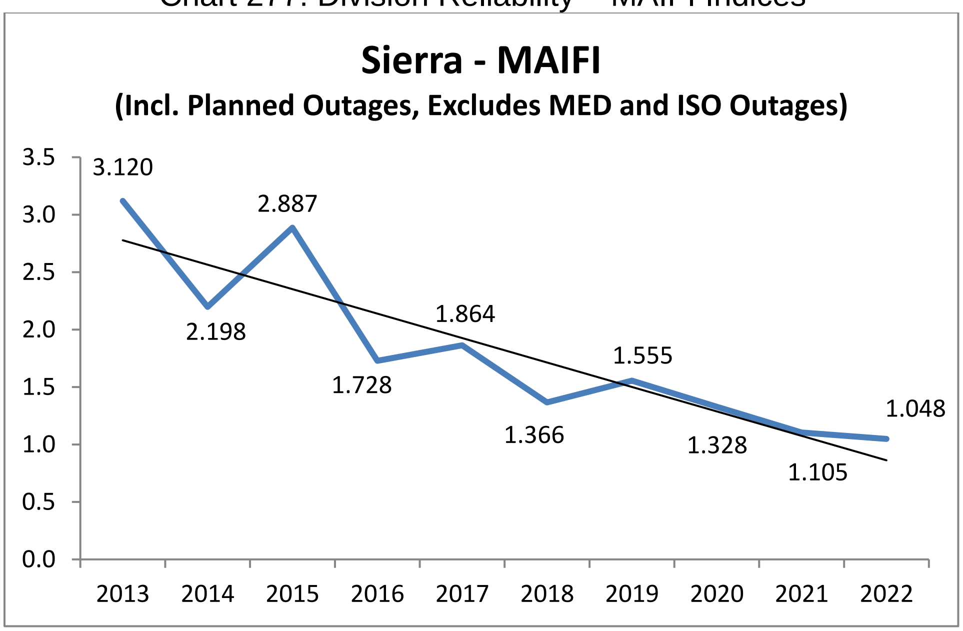


Chart 278: Division Reliability – MAIFI Indices

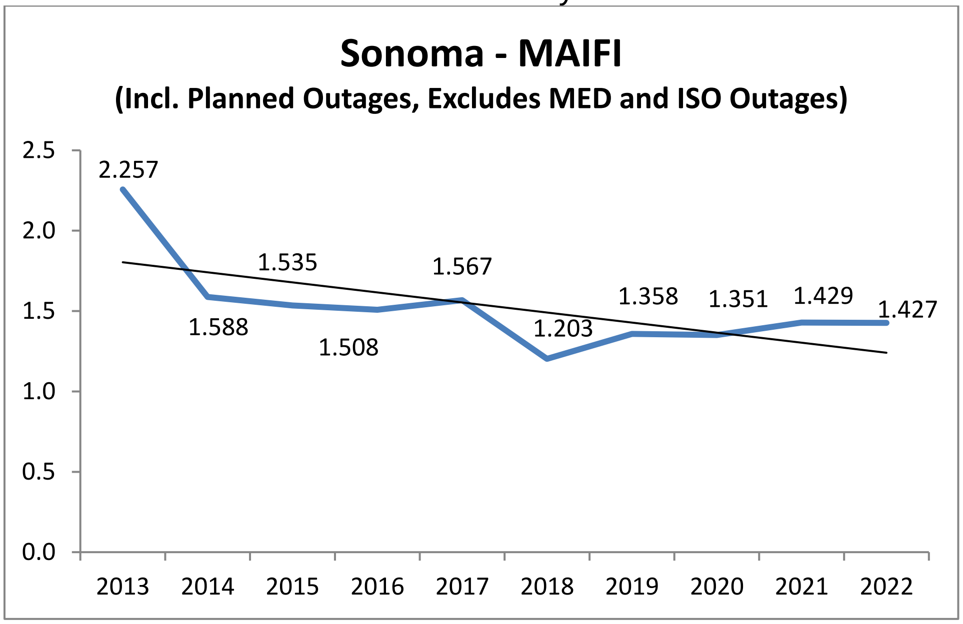


Chart 279: Division Reliability – MAIFI Indices

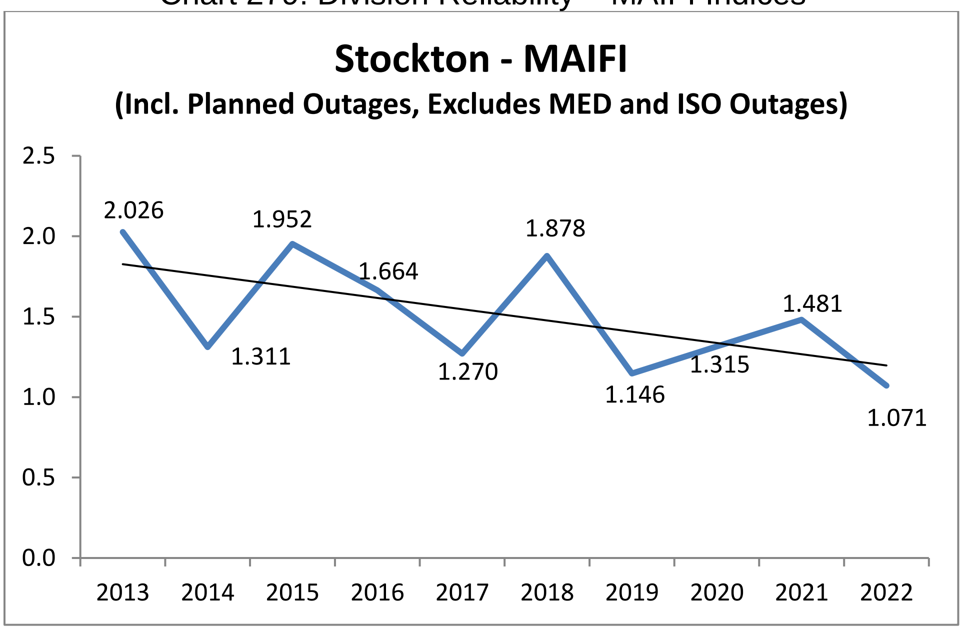


Chart 280: Division Reliability – MAIFI Indices

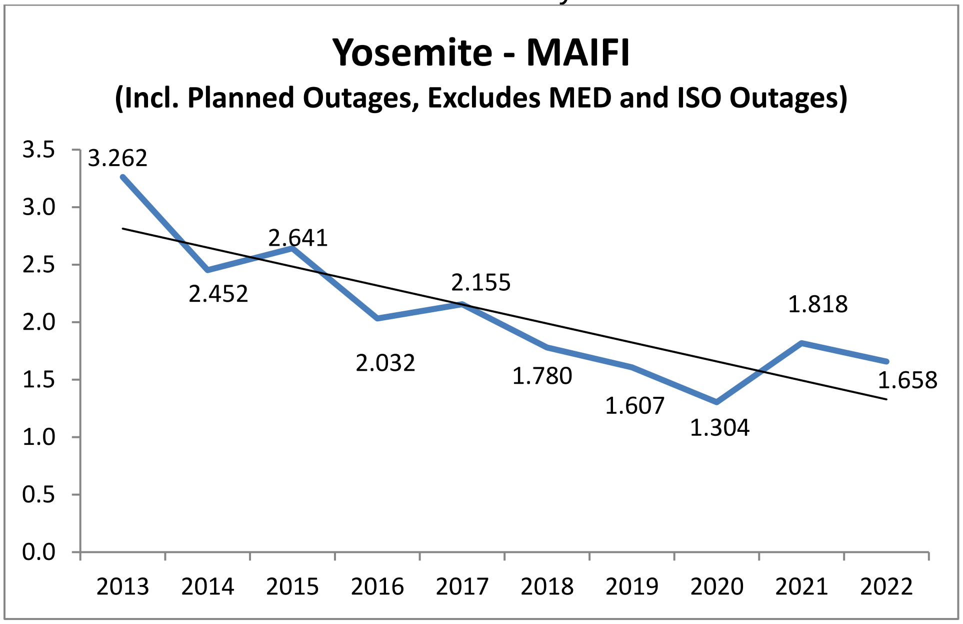
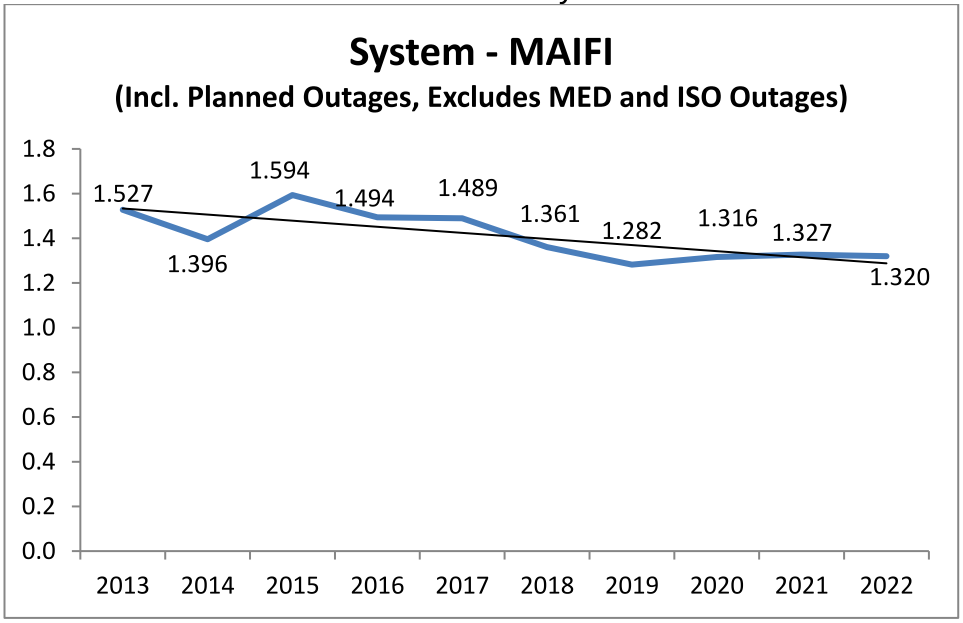


Chart 281: Division Reliability – MAIFI Indices



4. CAIDI Performance Results (MED Excluded)

Chart 282: Division Reliability – CAIDI Indices

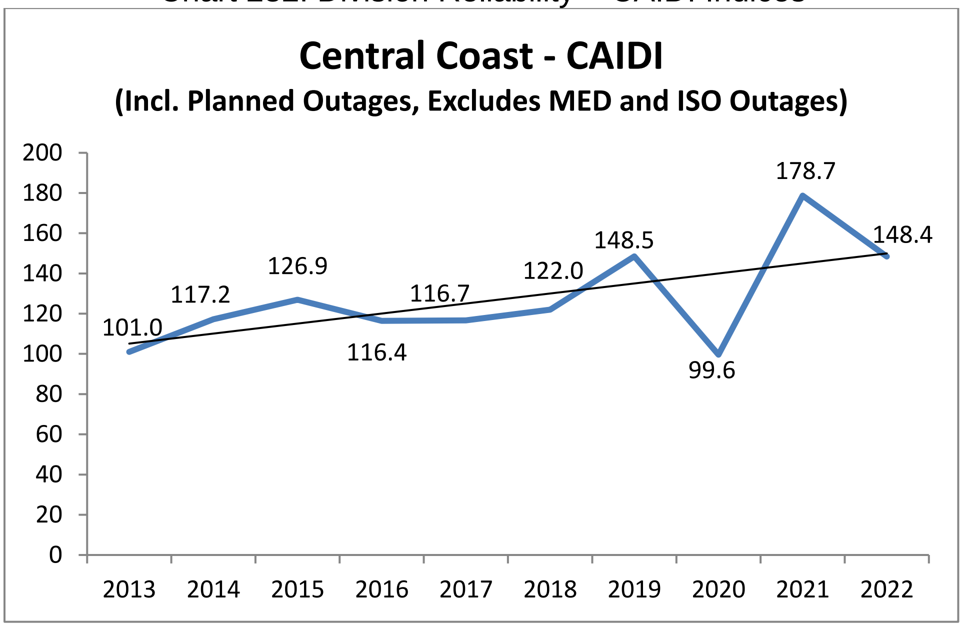


Chart 283: Division Reliability – CAIDI Indices

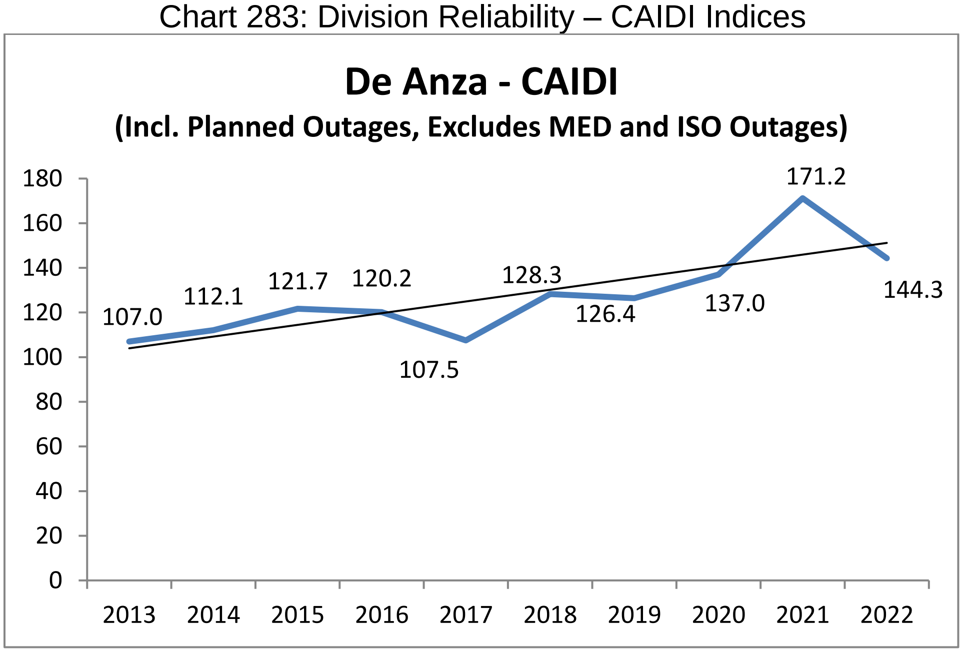


Chart 284: Division Reliability – CAIDI Indices

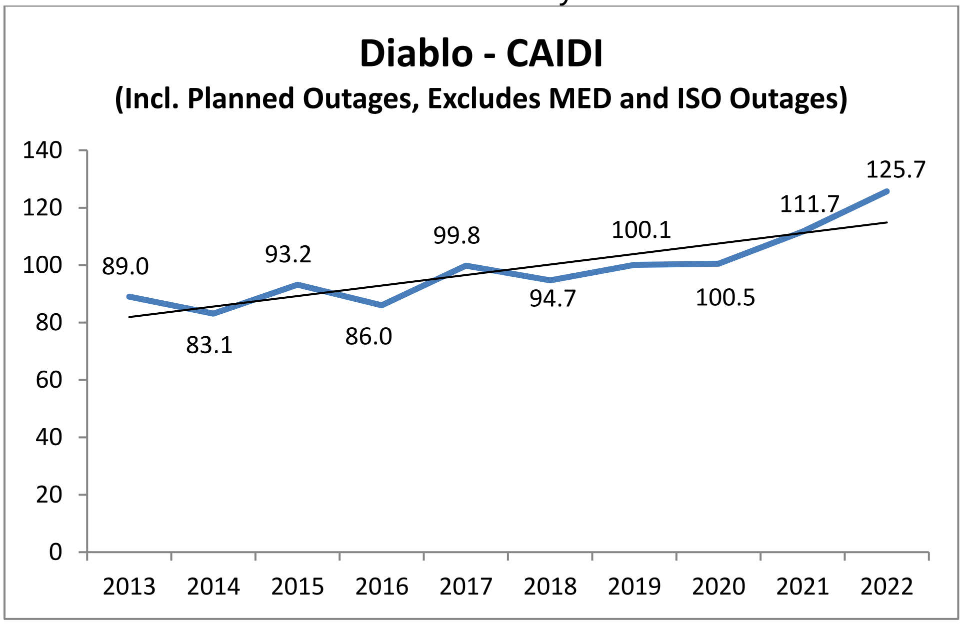


Chart 285: Division Reliability – CAIDI Indices

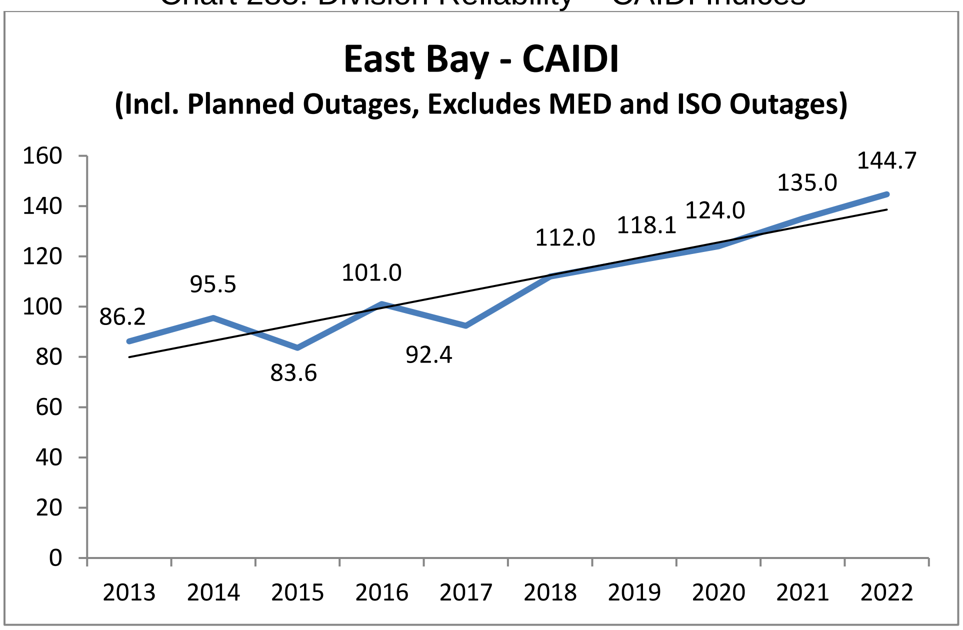


Chart 286: Division Reliability – CAIDI Indices

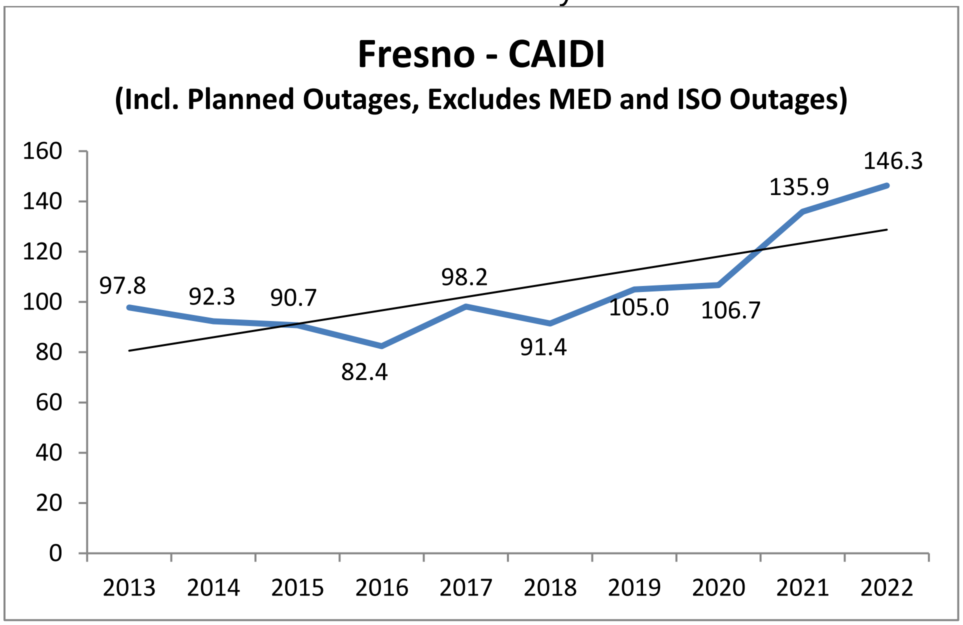


Chart 287: Division Reliability – CAIDI Indices

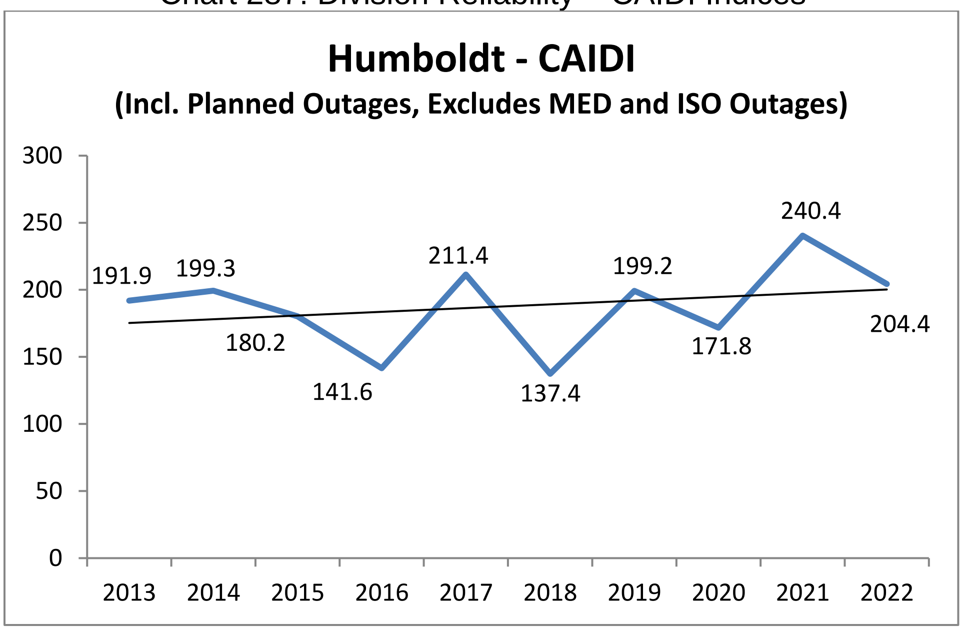


Chart 288: Division Reliability – CAIDI Indices

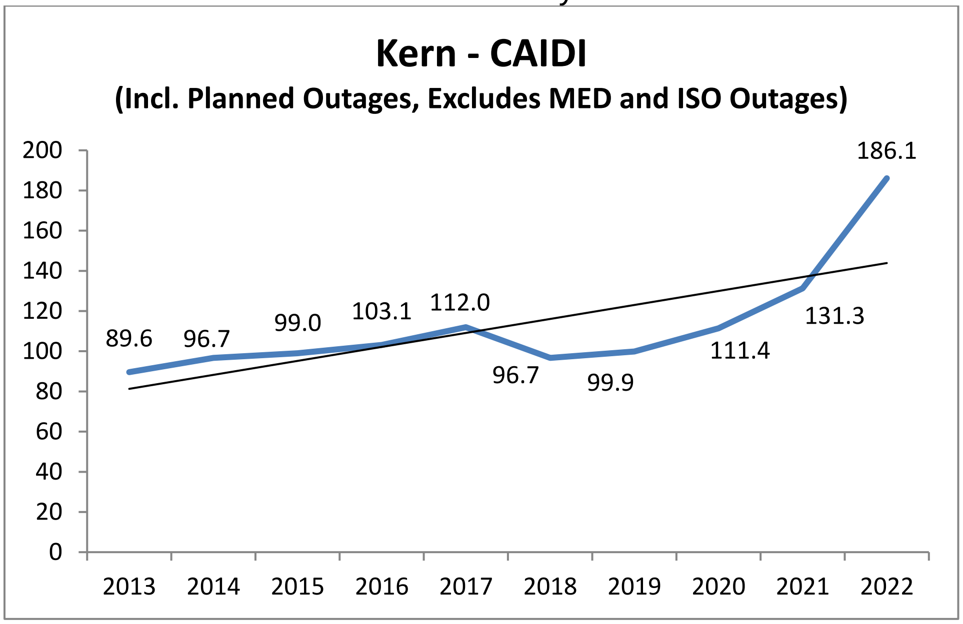


Chart 289: Division Reliability – CAIDI Indices

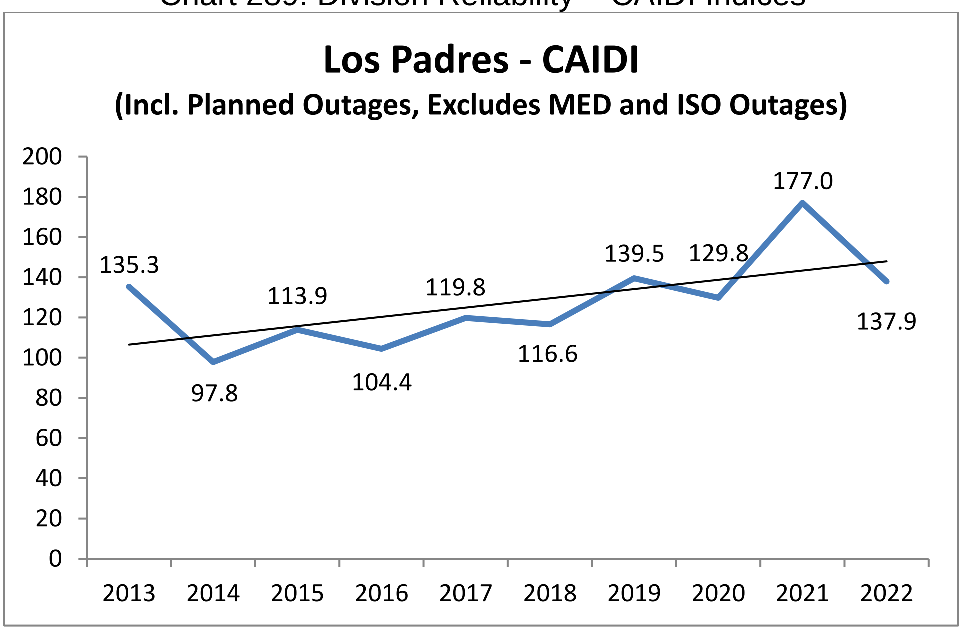


Chart 290: Division Reliability – CAIDI Indices

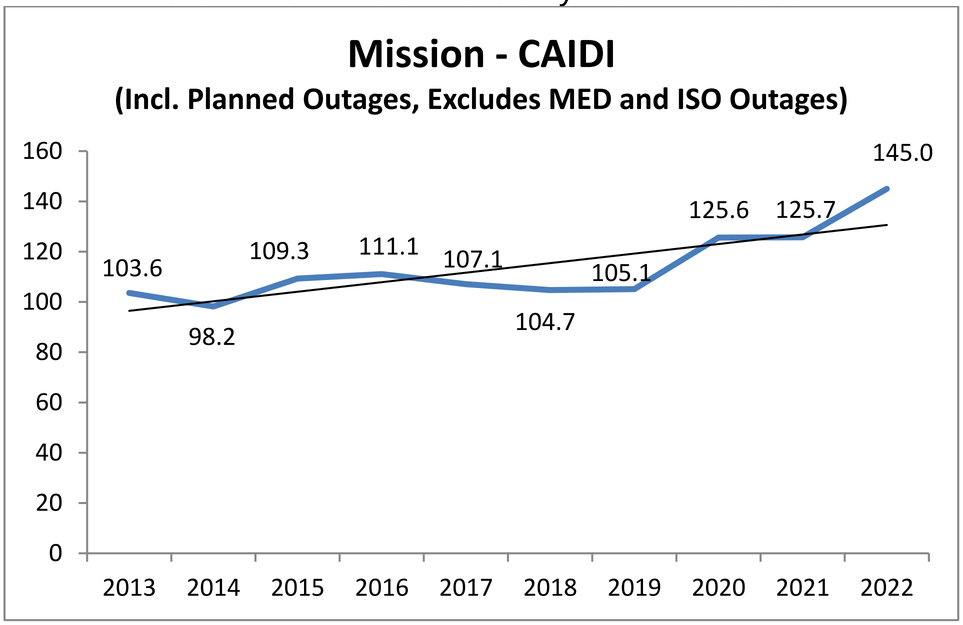


Chart 291: Division Reliability – CAIDI Indices

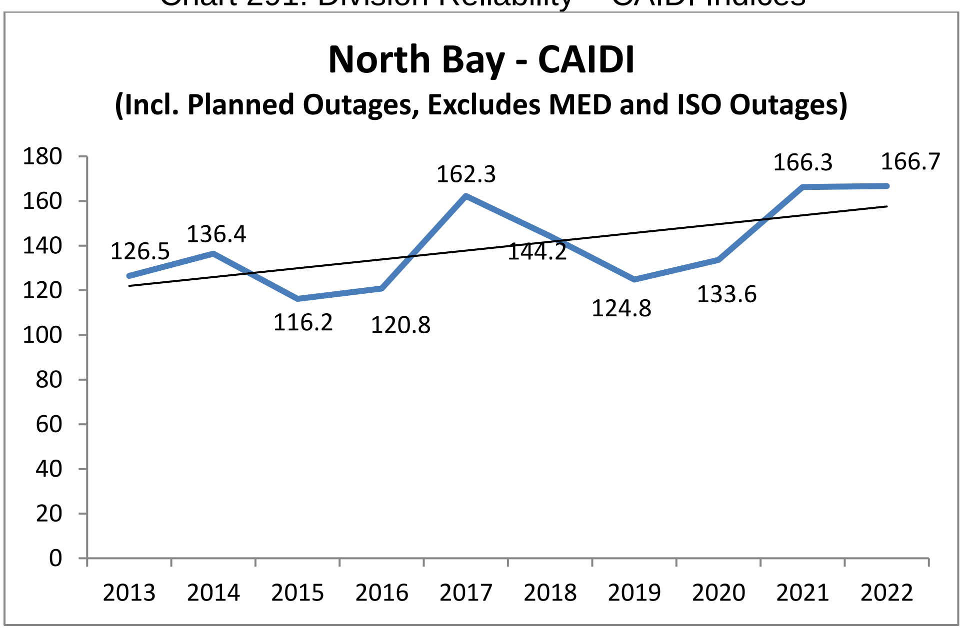


Chart 292: Division Reliability – CAIDI Indices

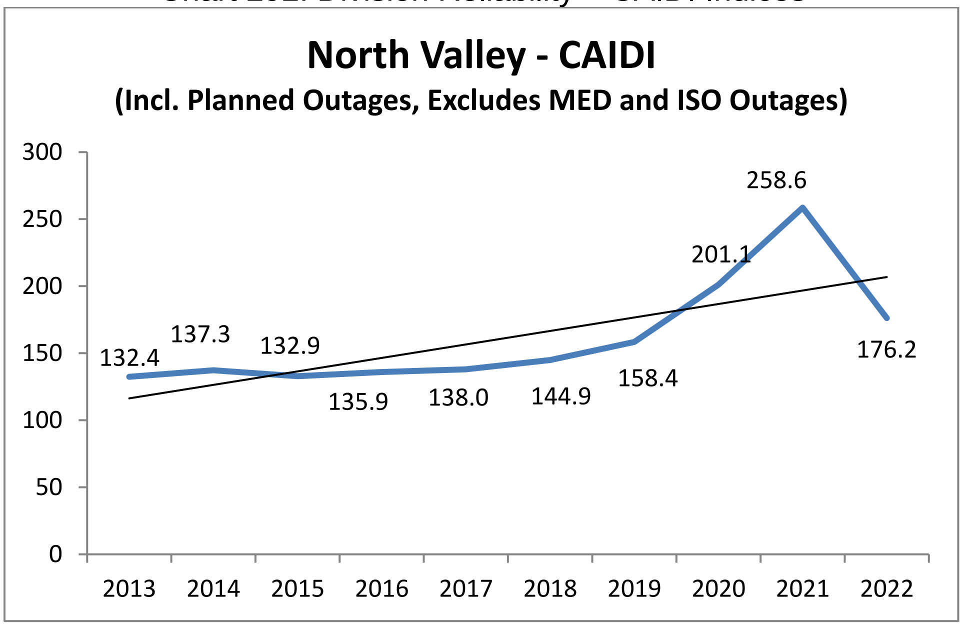


Chart 293: Division Reliability – CAIDI Indices

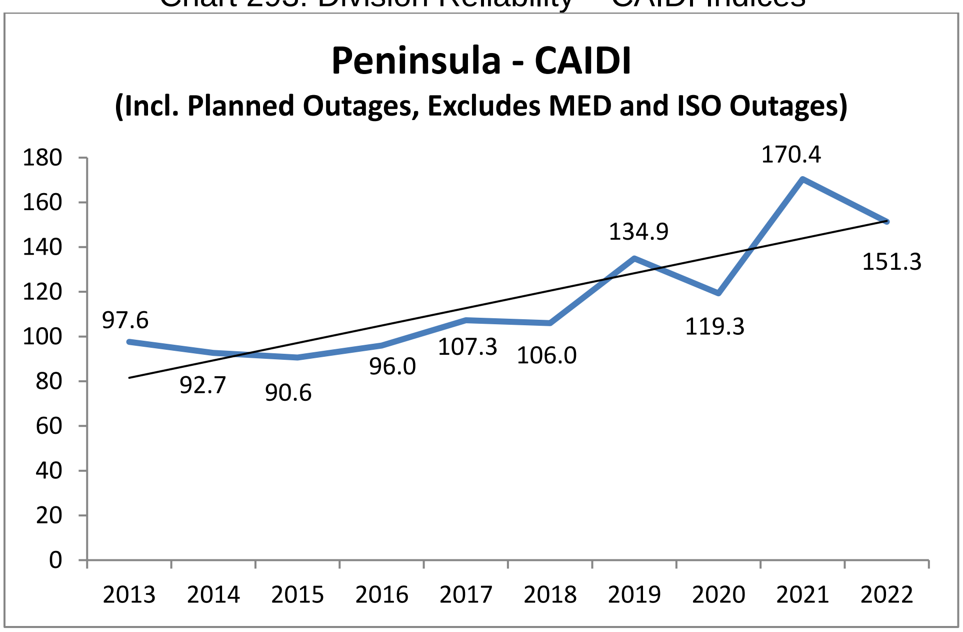


Chart 294: Division Reliability – CAIDI Indices

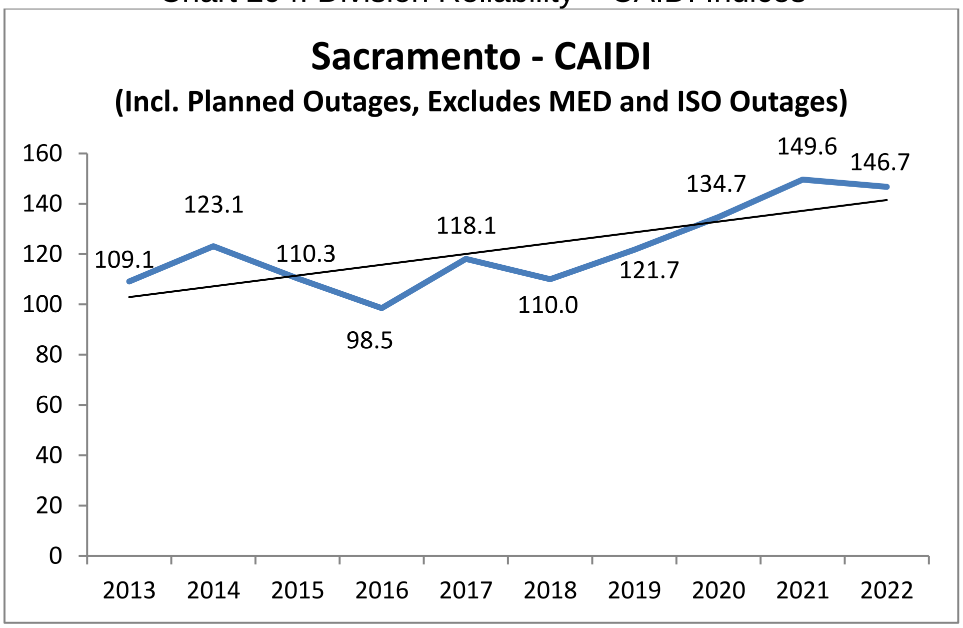


Chart 295: Division Reliability – CAIDI Indices

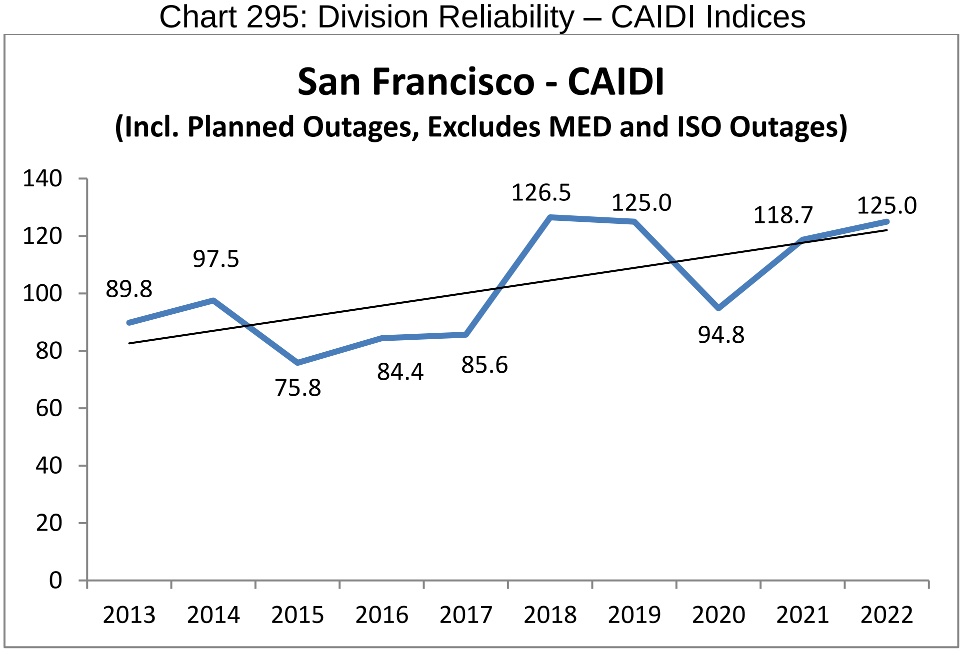


Chart 296: Division Reliability – CAIDI Indices

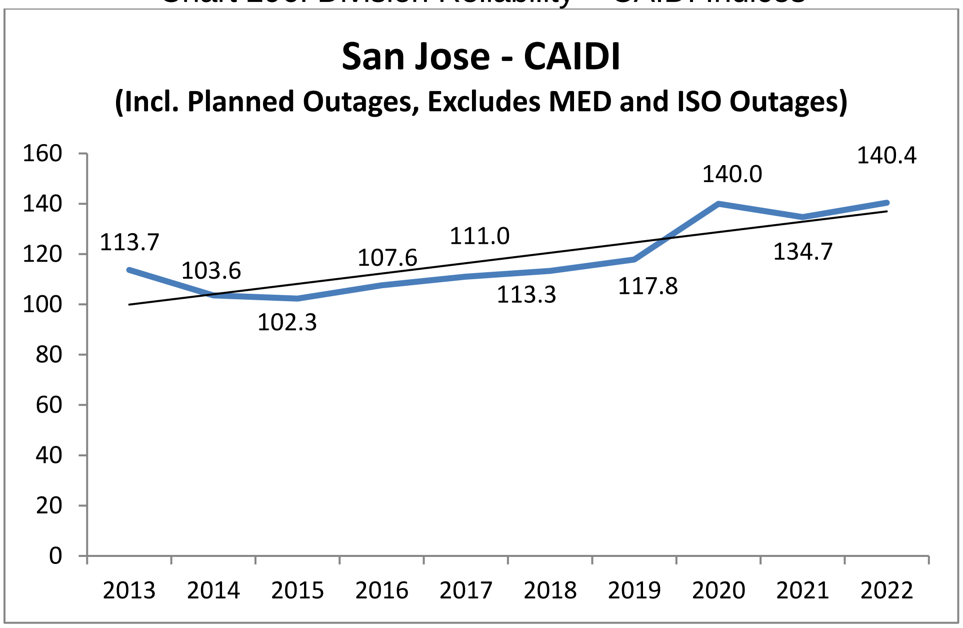


Chart 297: Division Reliability – CAIDI Indices

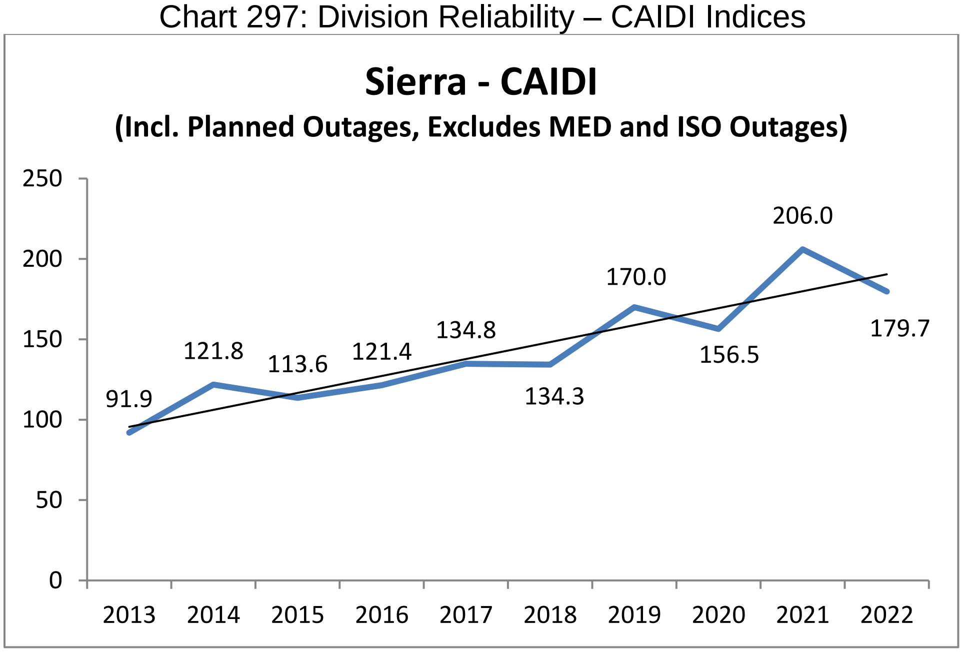


Chart 298: Division Reliability – CAIDI Indices

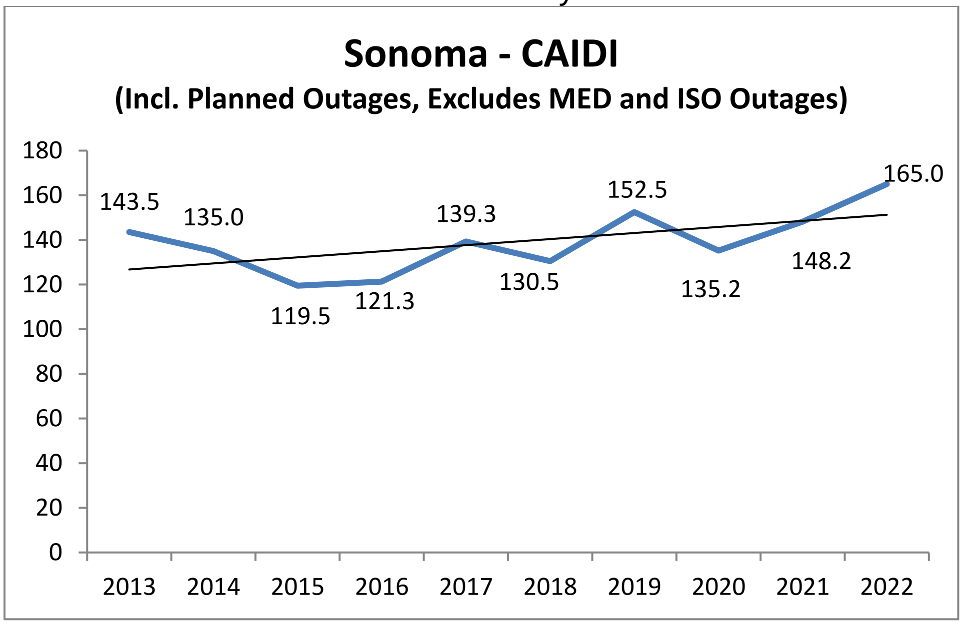


Chart 299: Division Reliability – CAIDI Indices

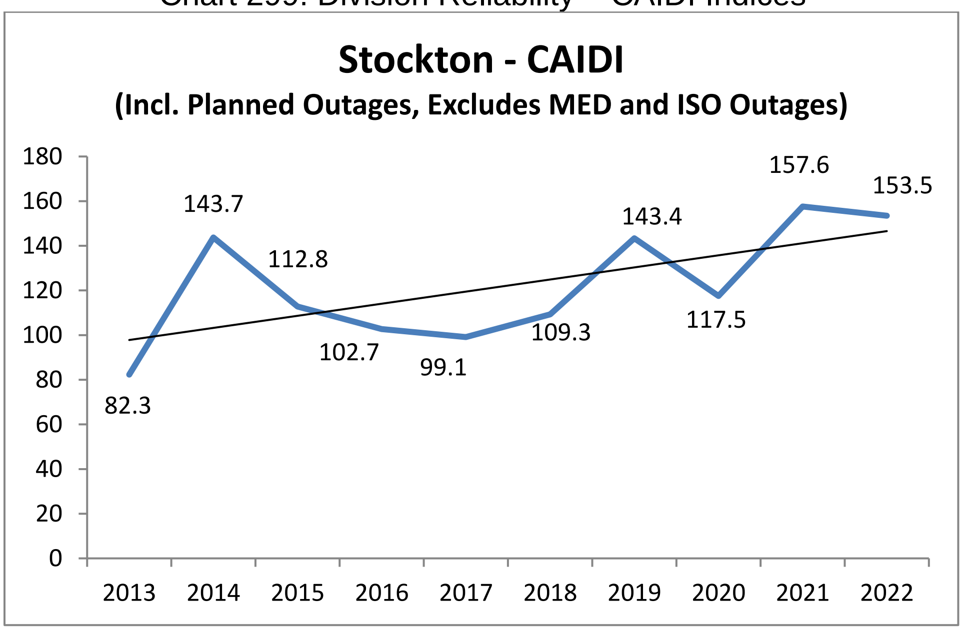


Chart 300: Division Reliability – CAIDI Indices

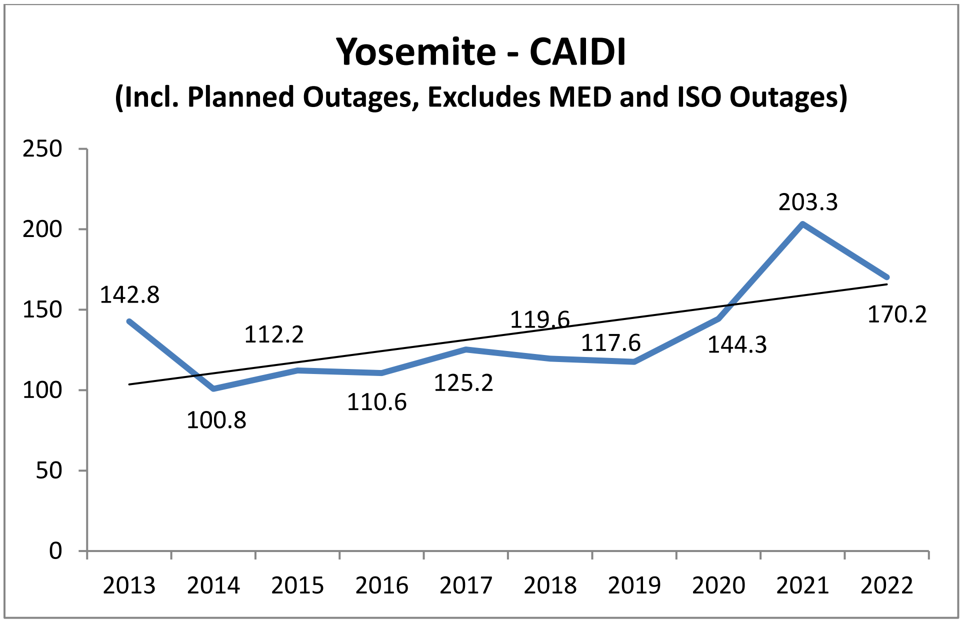
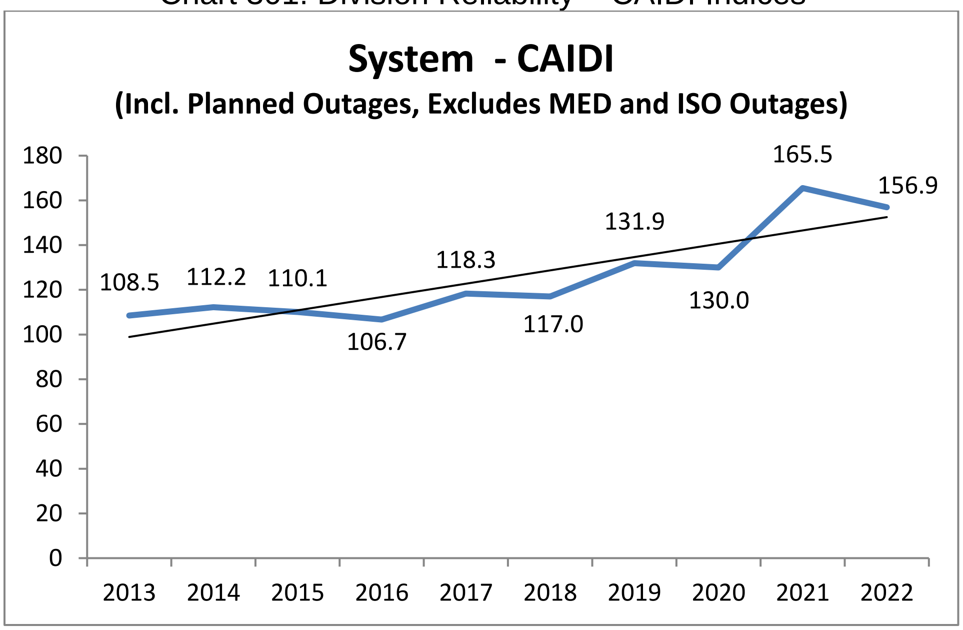


Chart 301: Division Reliability – CAIDI Indices



ii. Charts for System and Division Reliability Indices based on IEEE 1366 for the past 10 years including planned outages and including MED

1. SAIDI Performance Results (MED Included)

Chart 302: Division Reliability – AIDI Indices

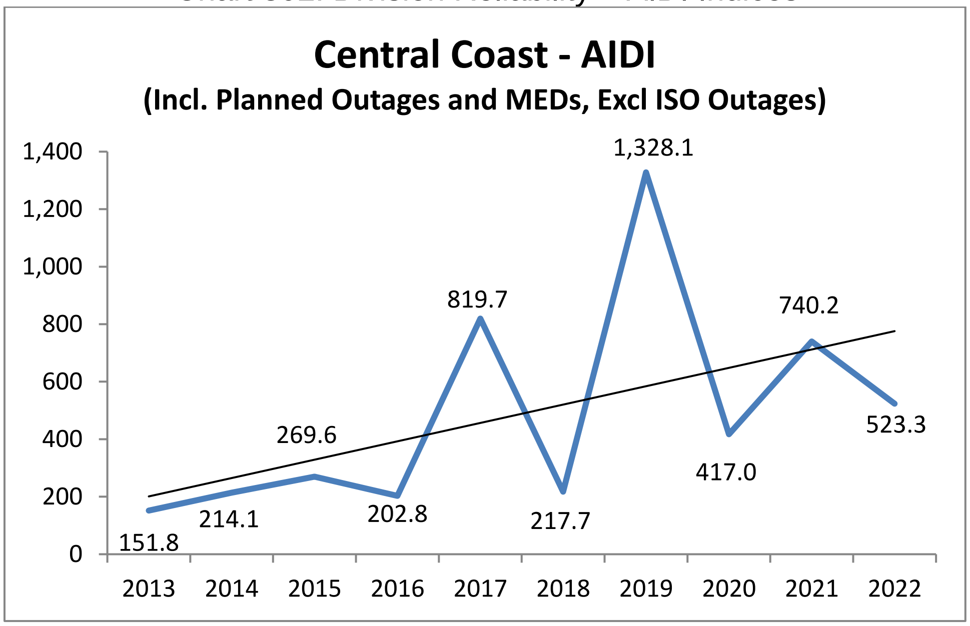


Chart 303: Division Reliability – AIDI Indices

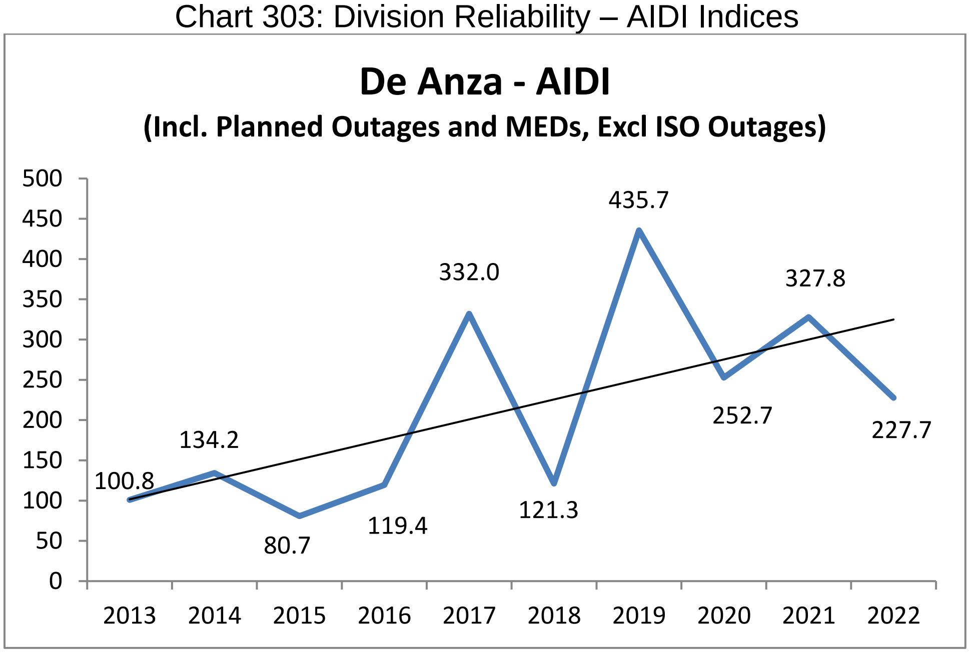


Chart 304: Division Reliability – AIDI Indices

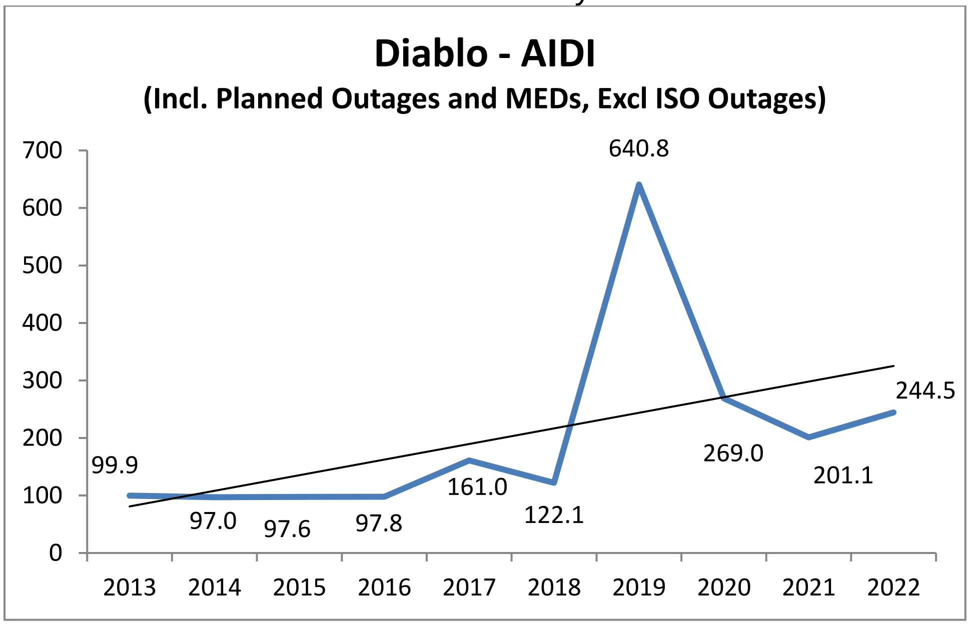


Chart 305: Division Reliability – AIDI Indices

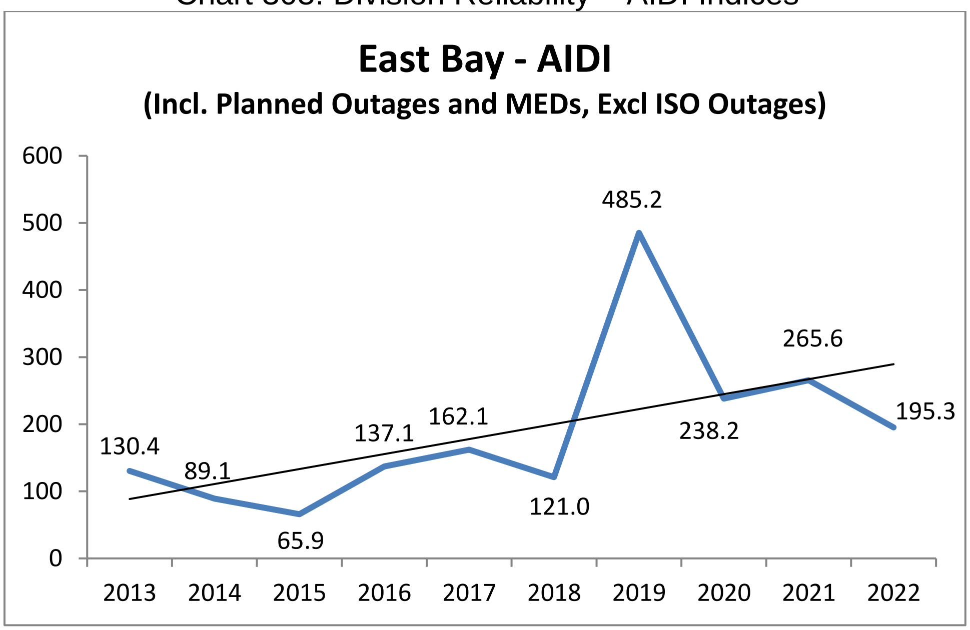


Chart 306: Division Reliability – AIDI Indices

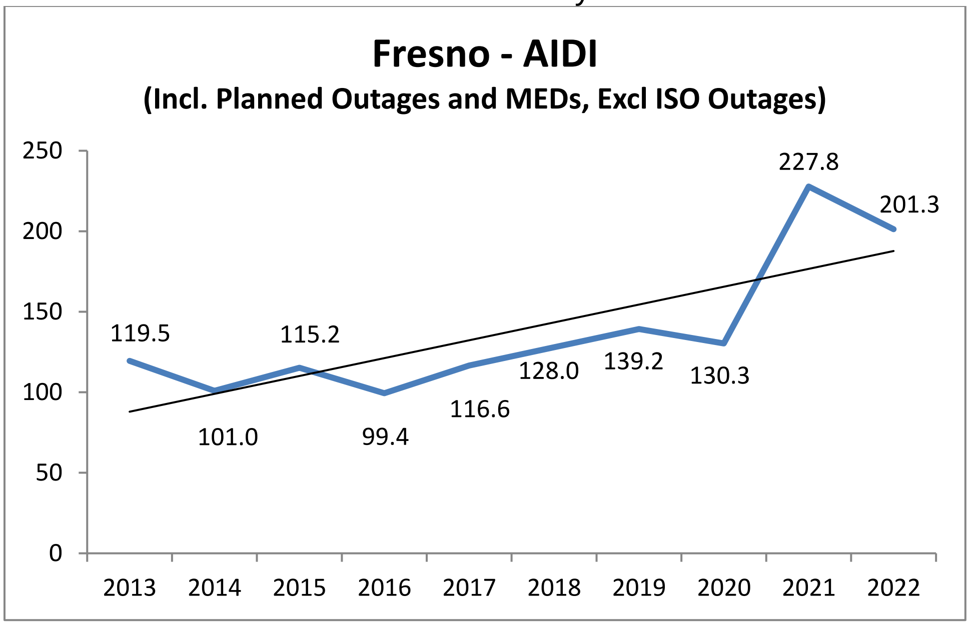


Chart 307: Division Reliability – AIDI Indices

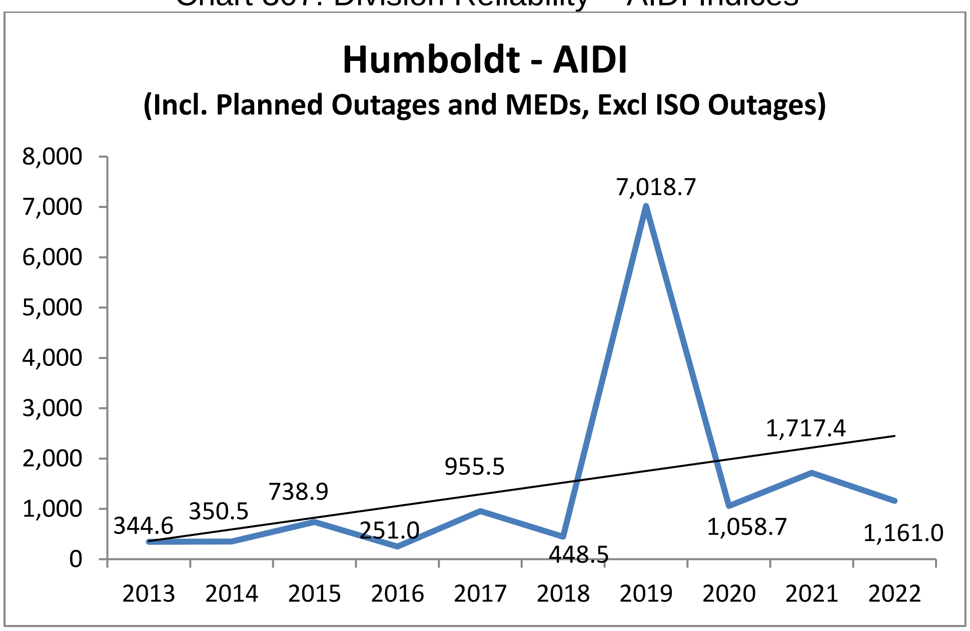


Chart 308: Division Reliability – AIDI Indices

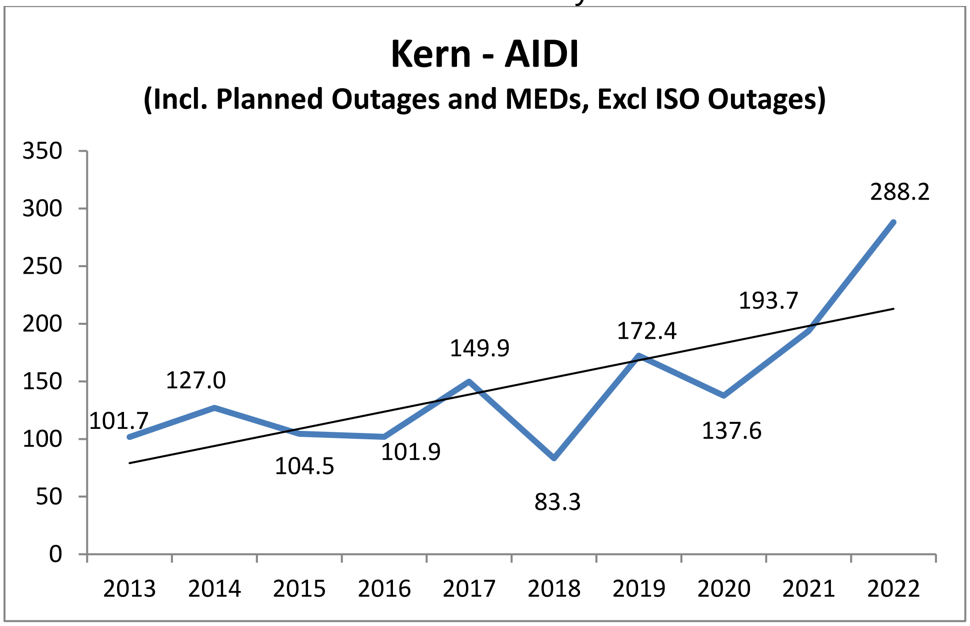


Chart 309: Division Reliability – AIDI Indices

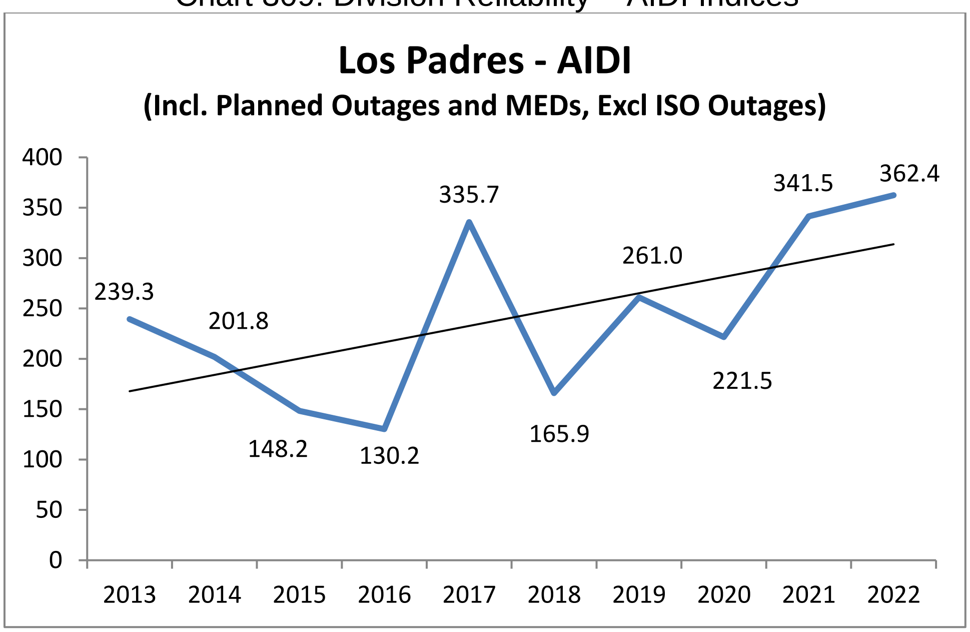


Chart 310: Division Reliability – AIDI Indices

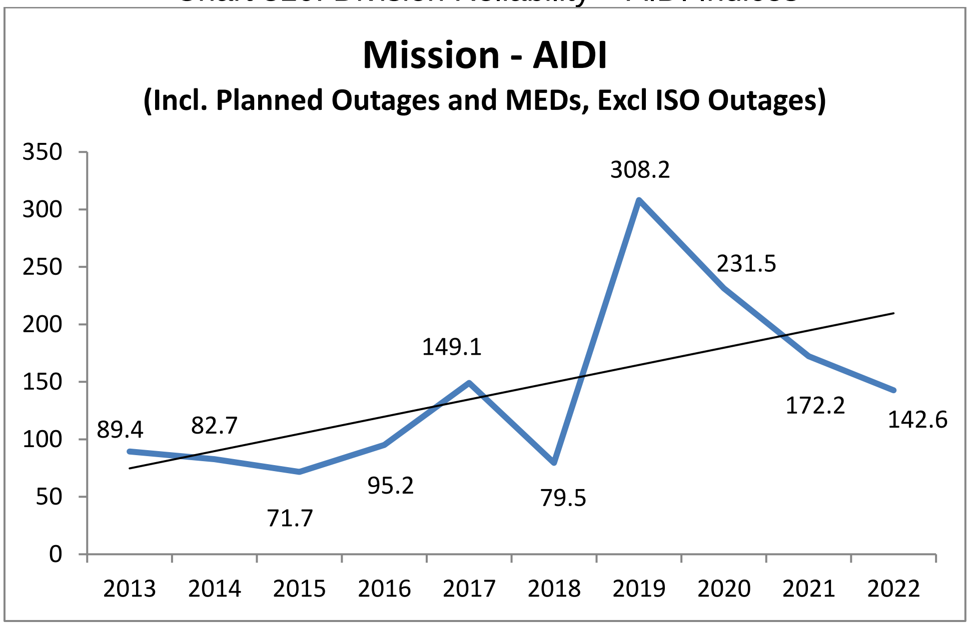


Chart 311: Division Reliability – AIDI Indices

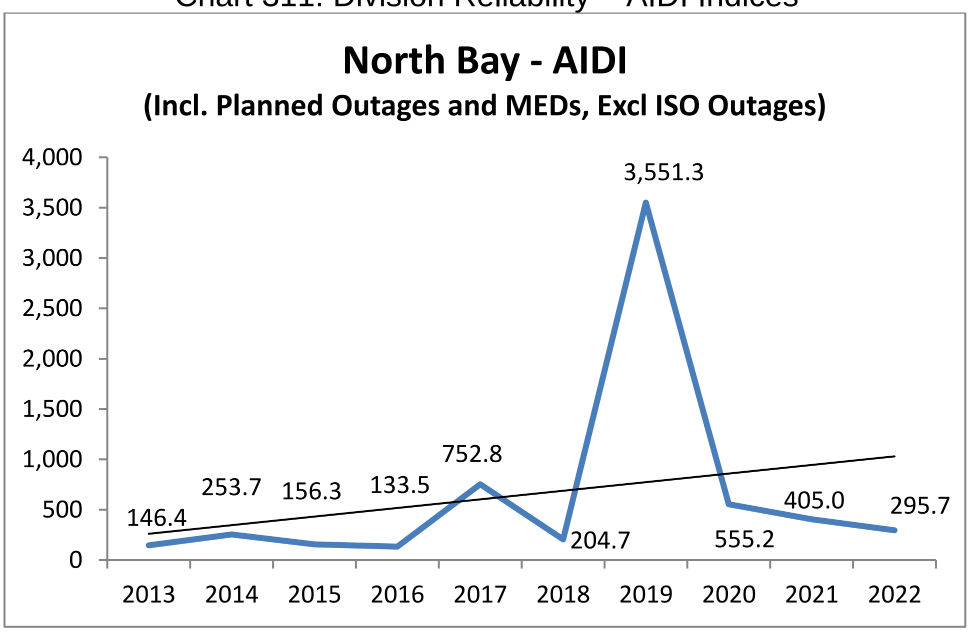


Chart 312: Division Reliability – AIDI Indices

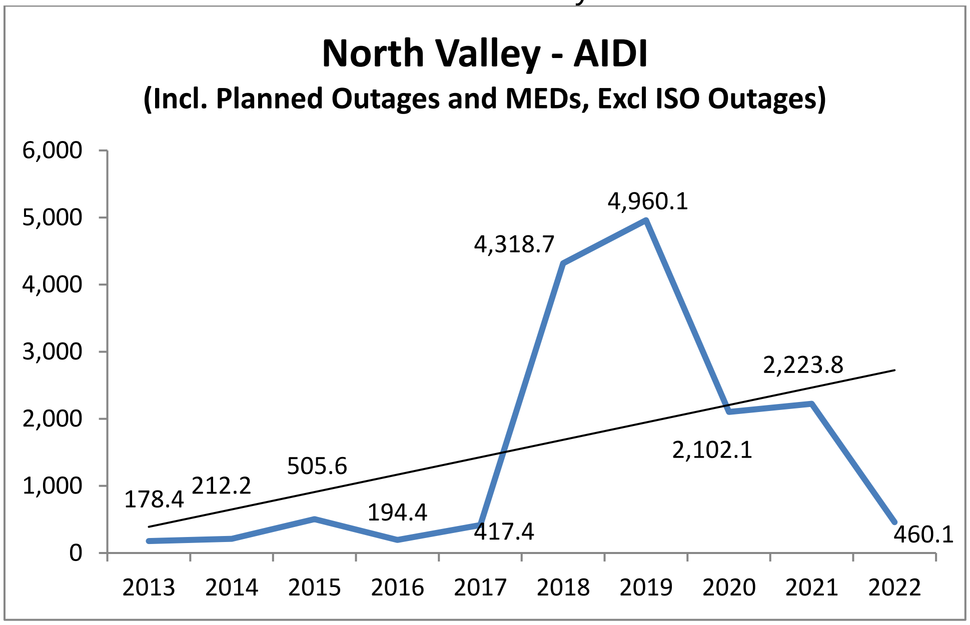


Chart 313: Division Reliability – AIDI Indices

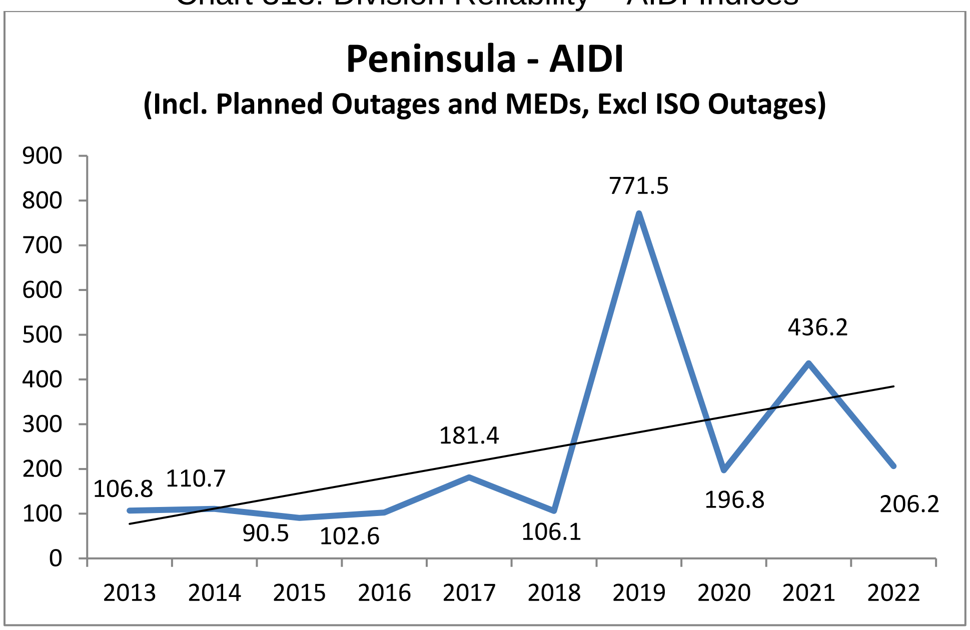


Chart 314: Division Reliability – AIDI Indices

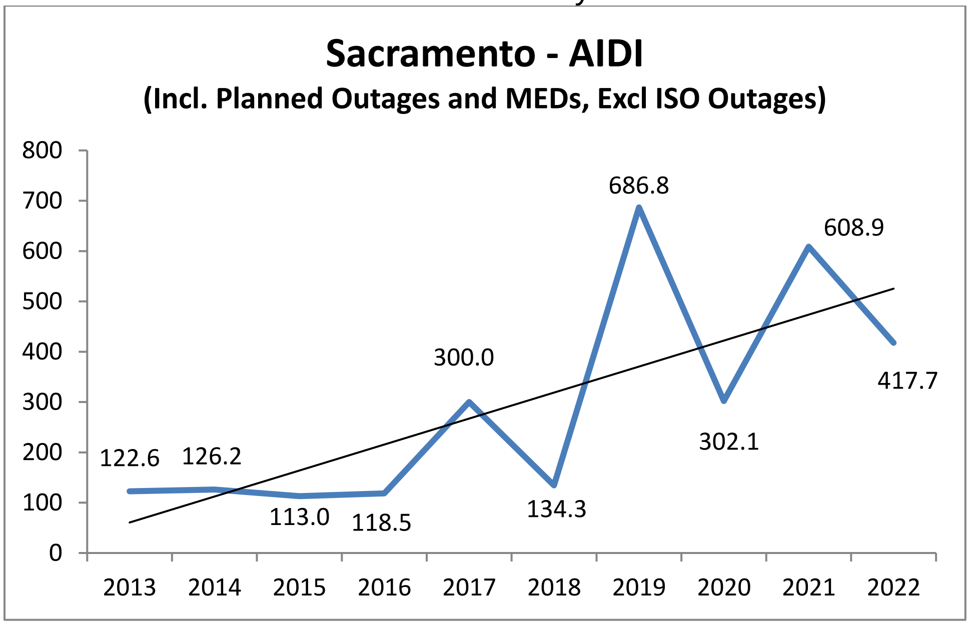


Chart 315: Division Reliability – AIDI Indices

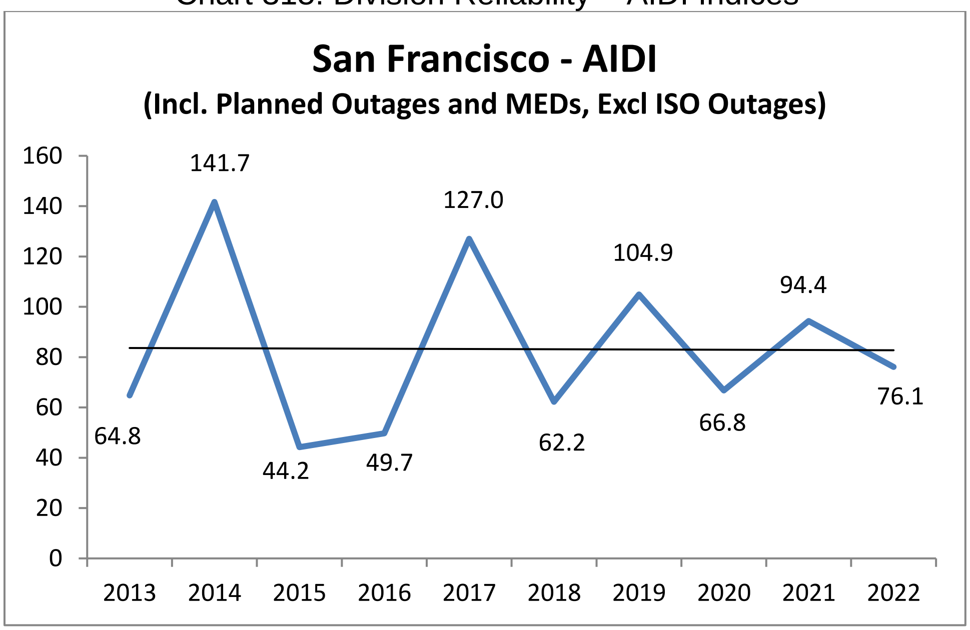


Chart 316: Division Reliability – AIDI Indices

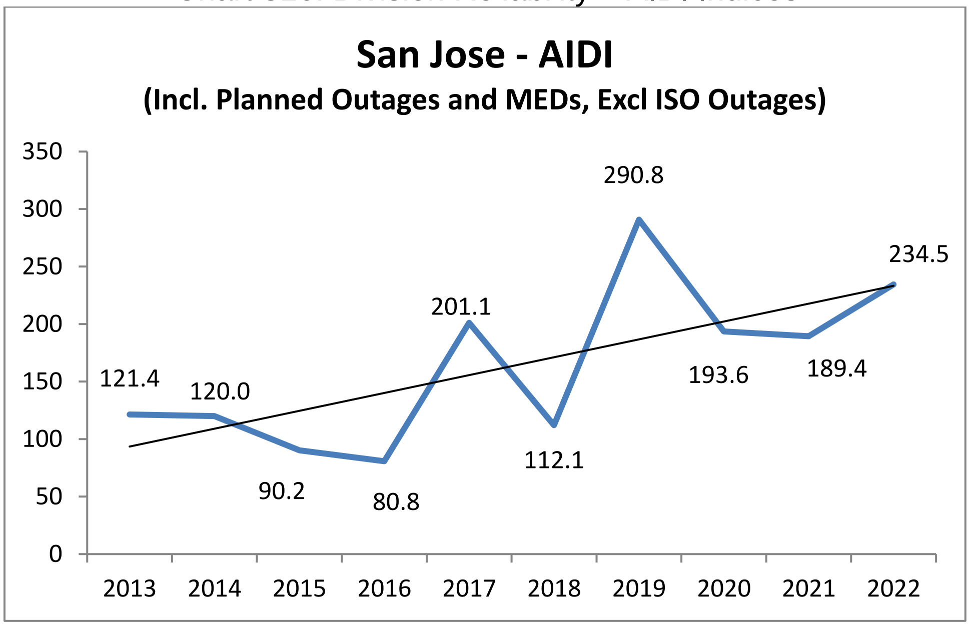


Chart 317: Division Reliability – AIDI Indices

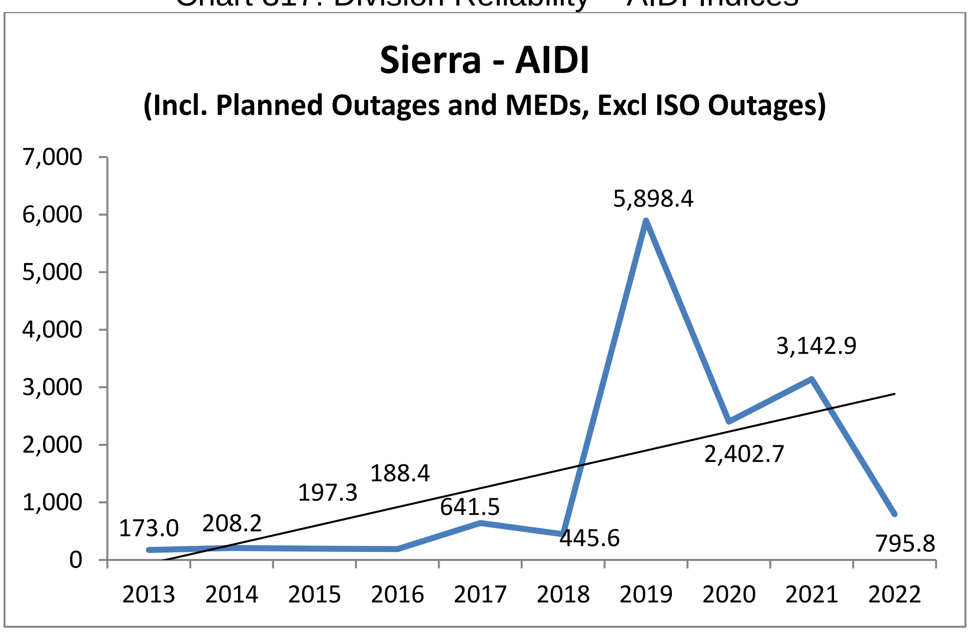


Chart 318: Division Reliability – AIDI Indices

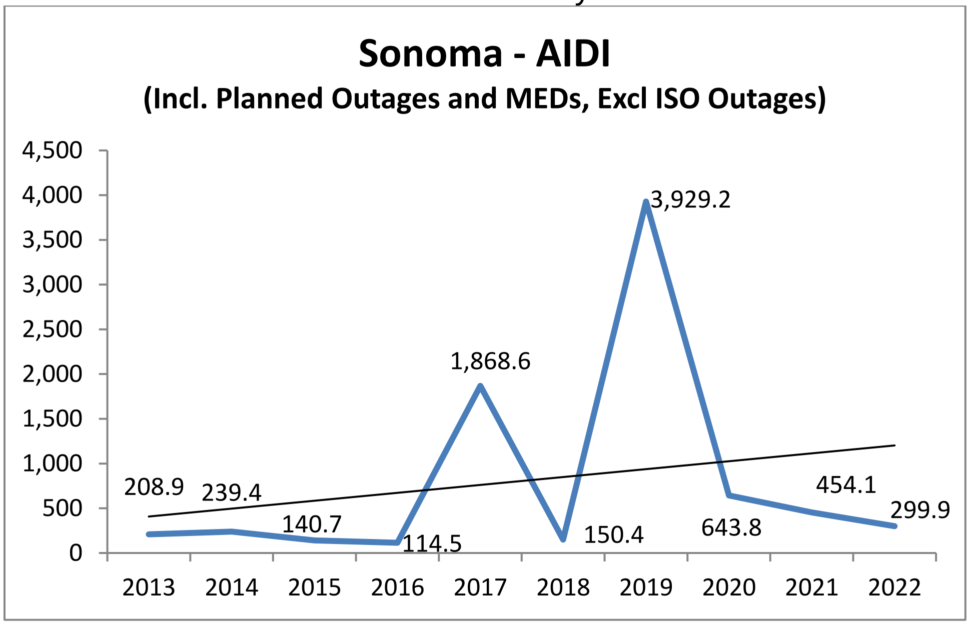


Chart 319: Division Reliability – AIDI Indices

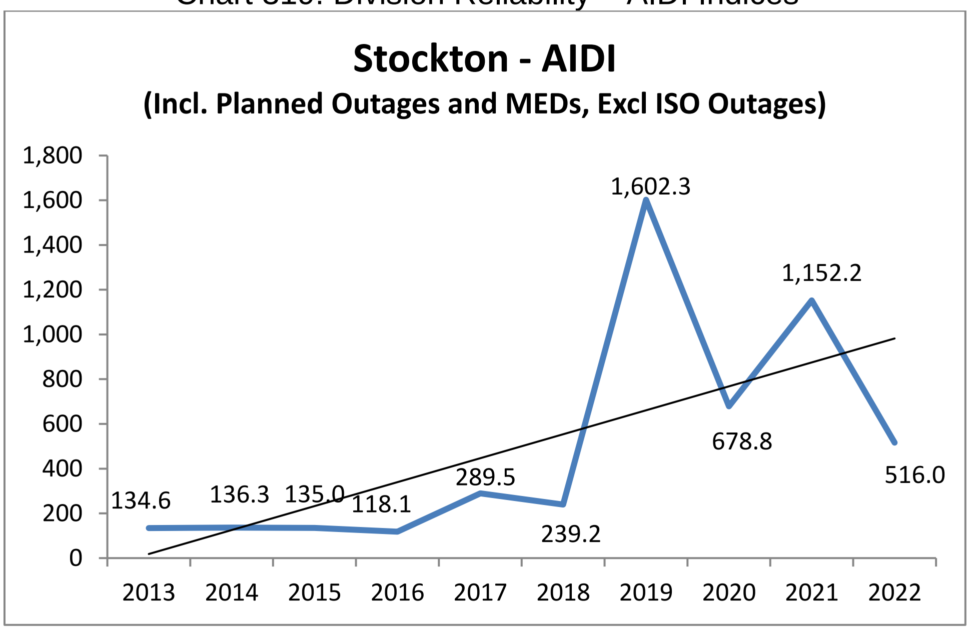


Chart 320: Division Reliability – AIDI Indices

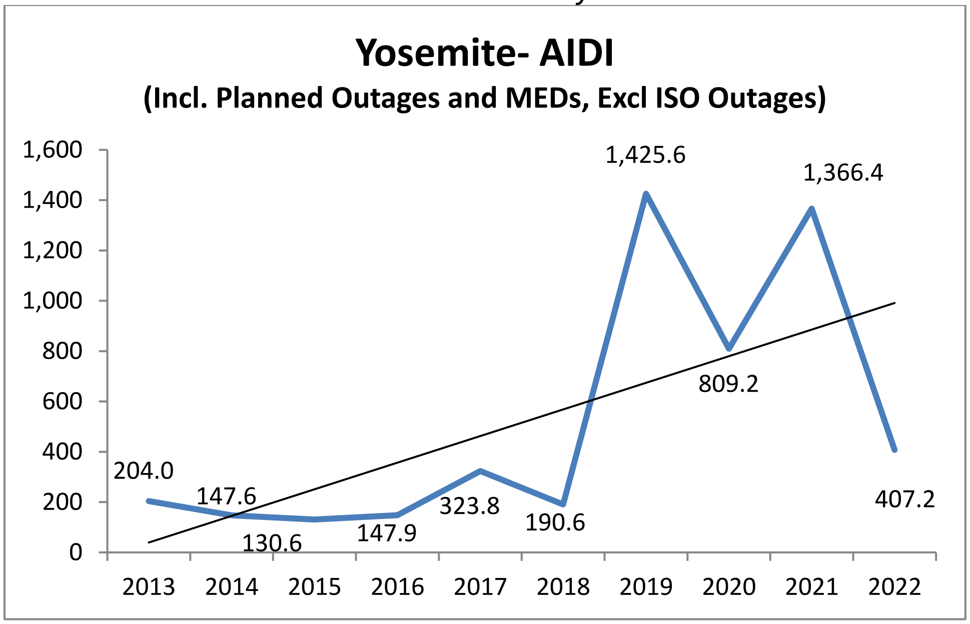
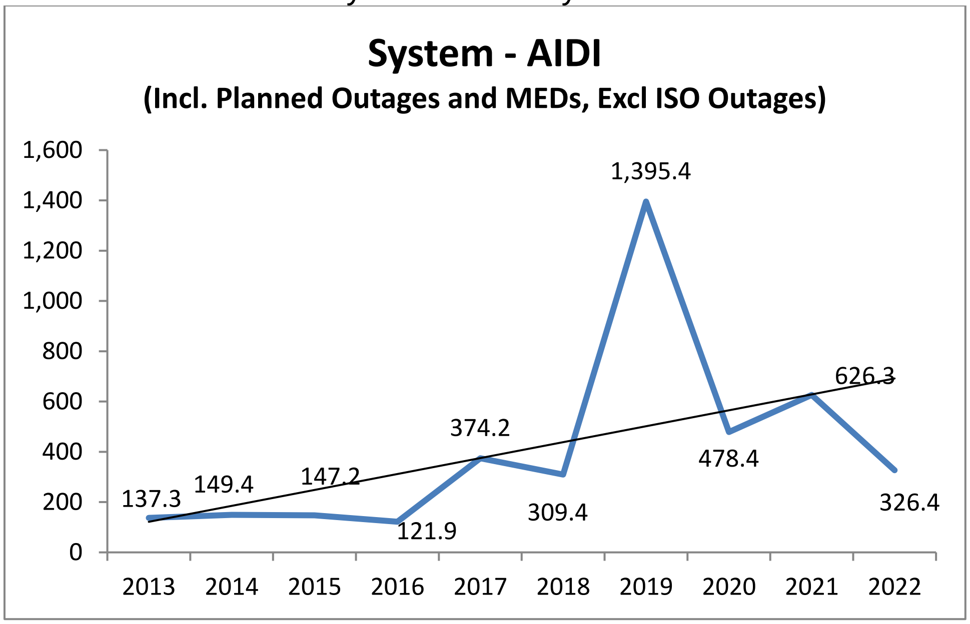


Chart 321: System Reliability – SAIDI Indices



2. SAIFI Performance Results (MED Included)

Chart 322: Division Reliability – AIFI Indices

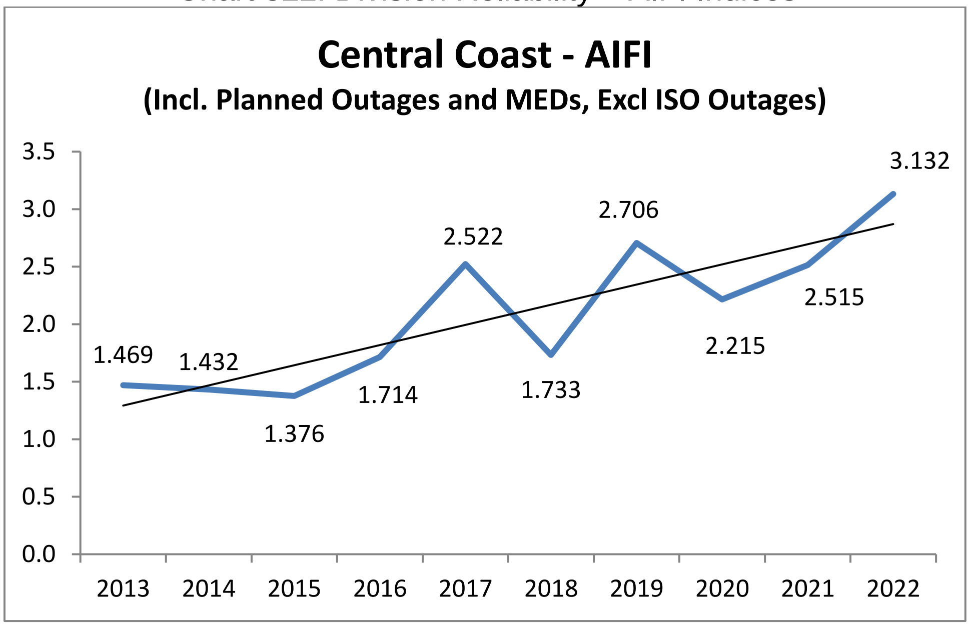


Chart 323: Division Reliability – AIFI Indices

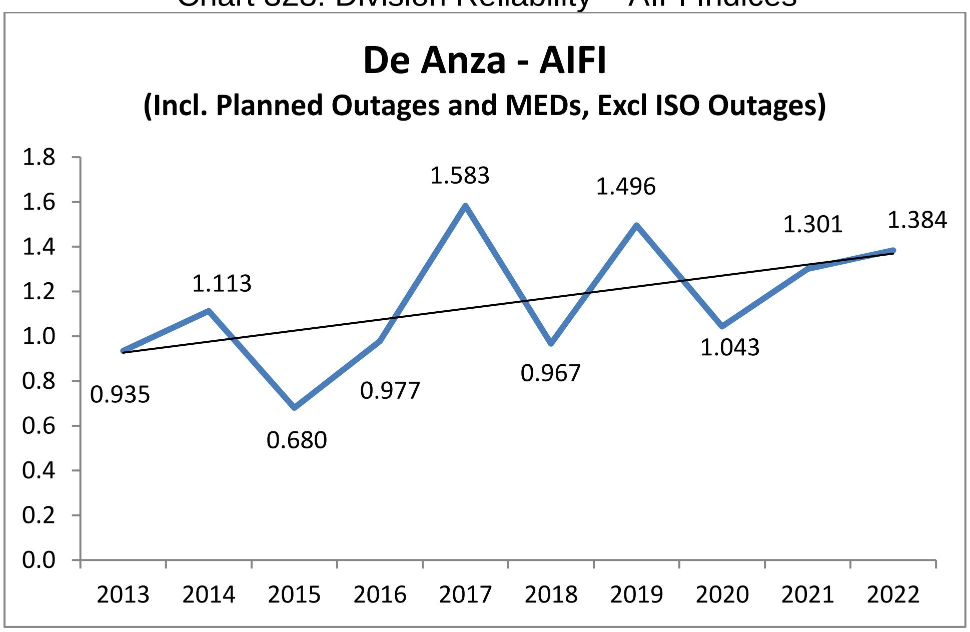


Chart 324: Division Reliability – AIFI Indices

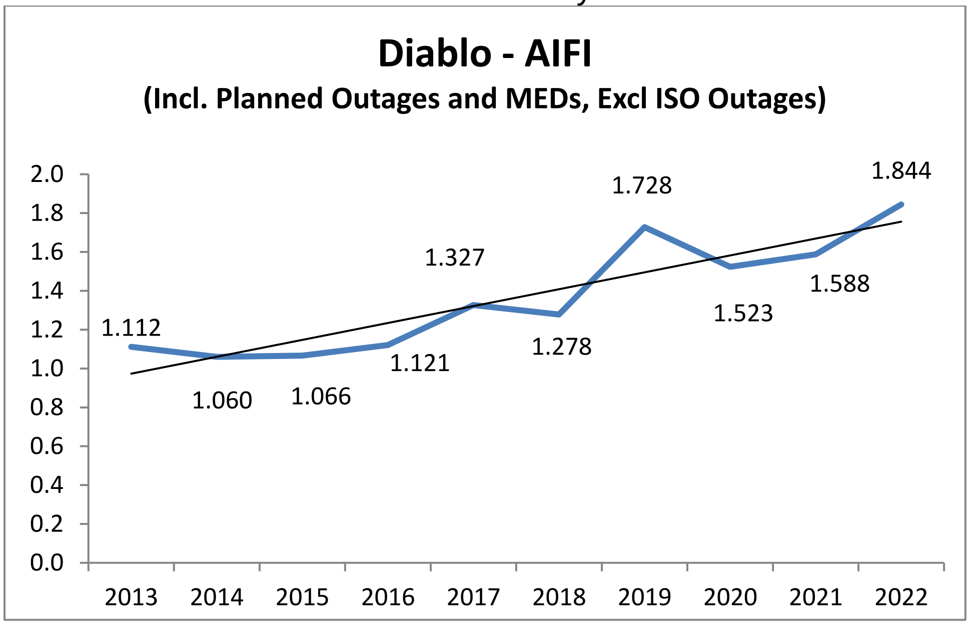


Chart 325: Division Reliability – AIFI Indices

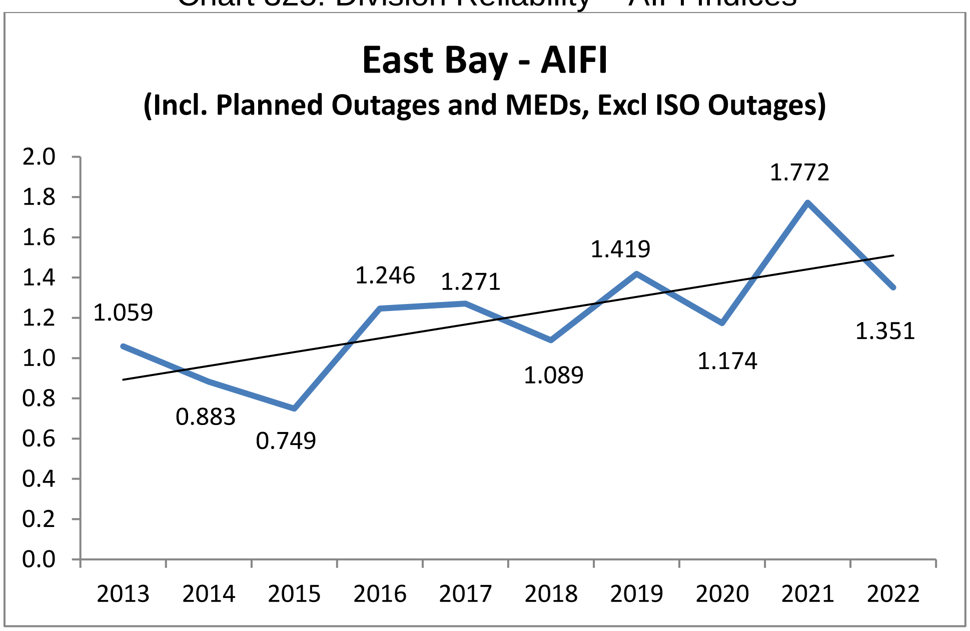


Chart 326: Division Reliability – AIFI Indices

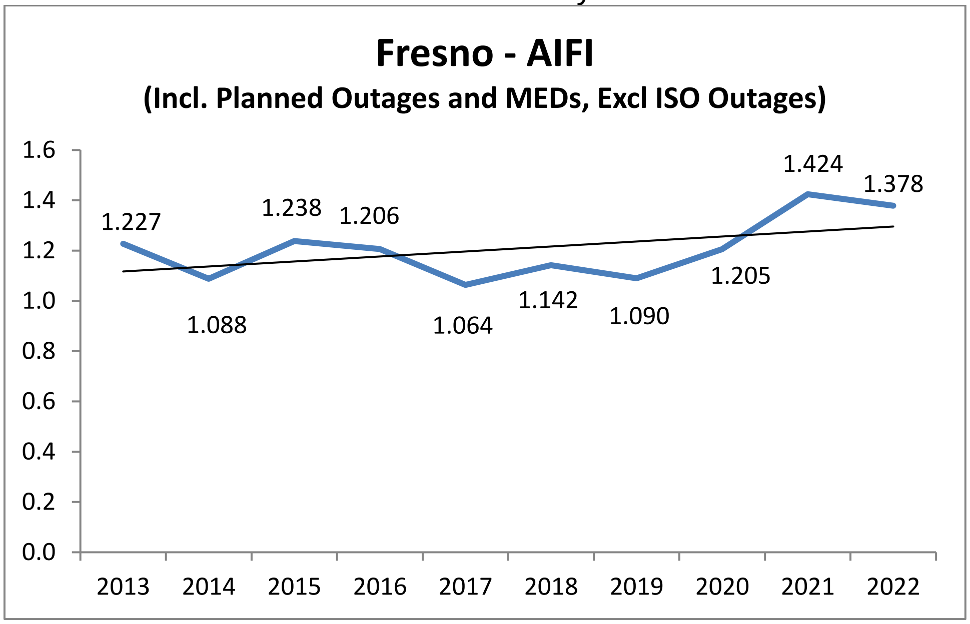


Chart 327: Division Reliability – AIFI Indices

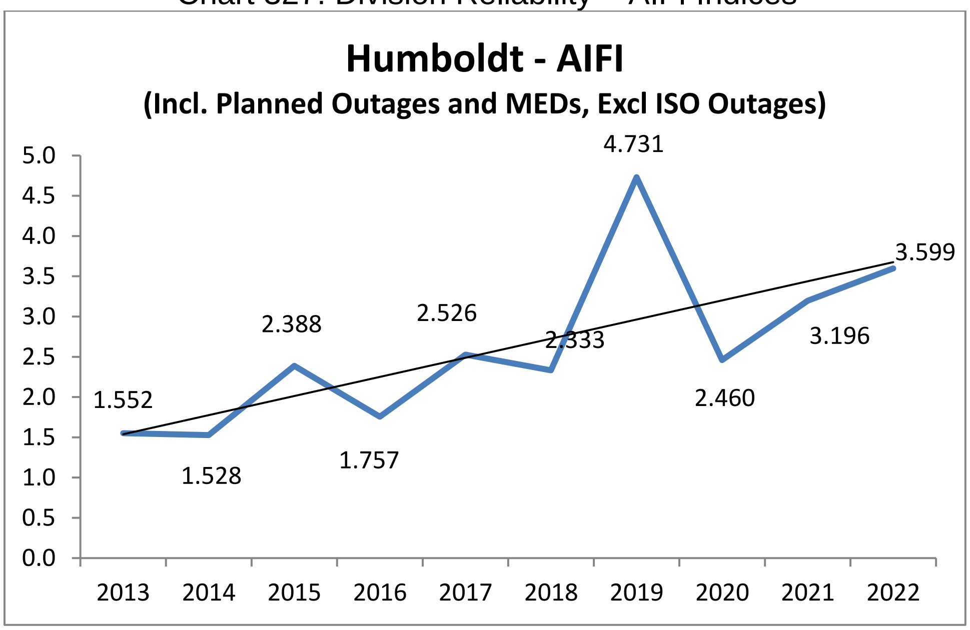


Chart 328: Division Reliability – AIFI Indices

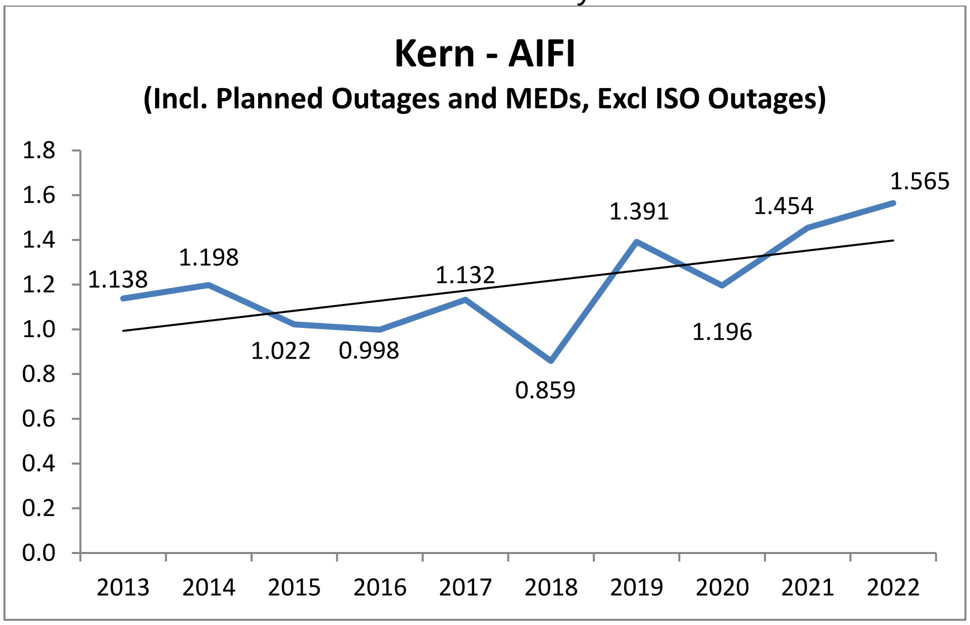


Chart 329: Division Reliability – AIFI Indices

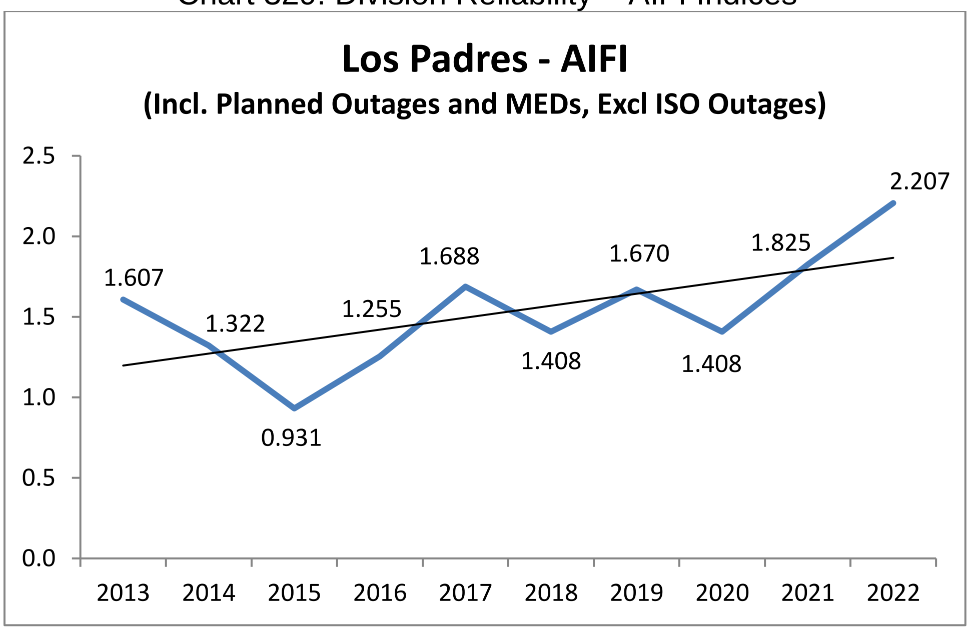


Chart 330: Division Reliability – AIFI Indices

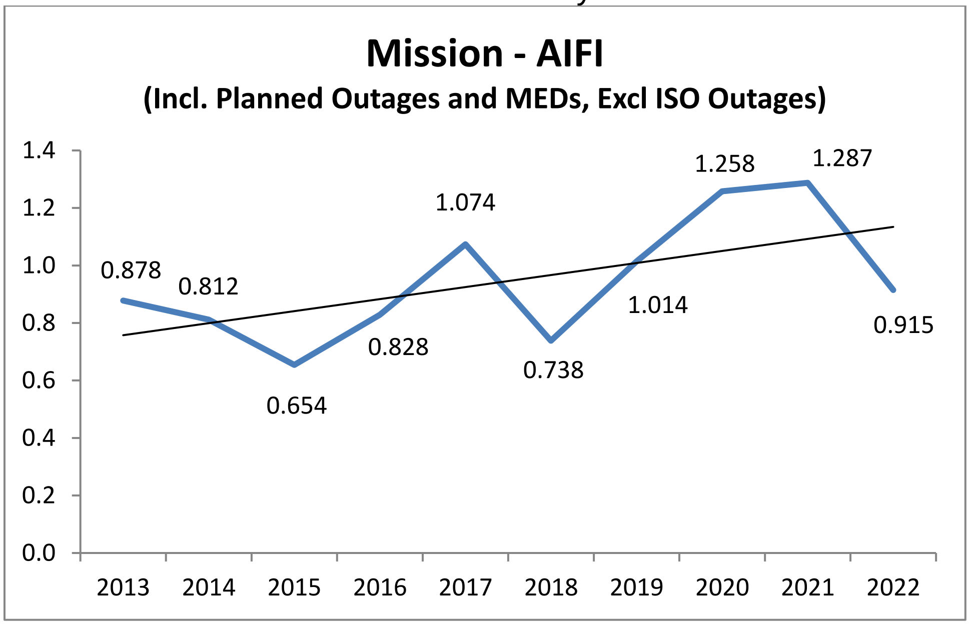


Chart 331: Division Reliability – AIFI Indices

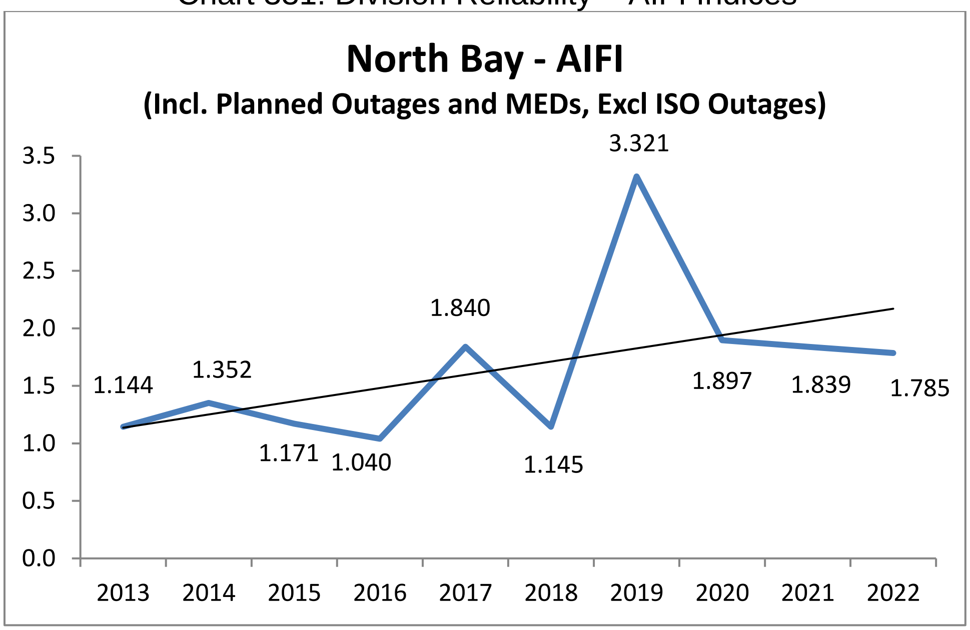


Chart 332: Division Reliability – AIFI Indices

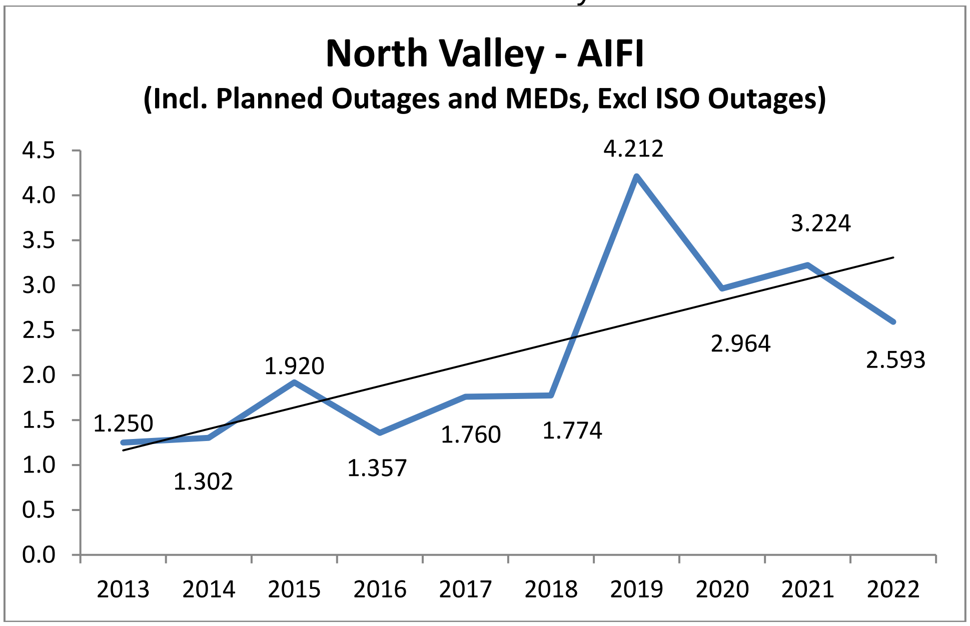


Chart 333: Division Reliability – AIFI Indices

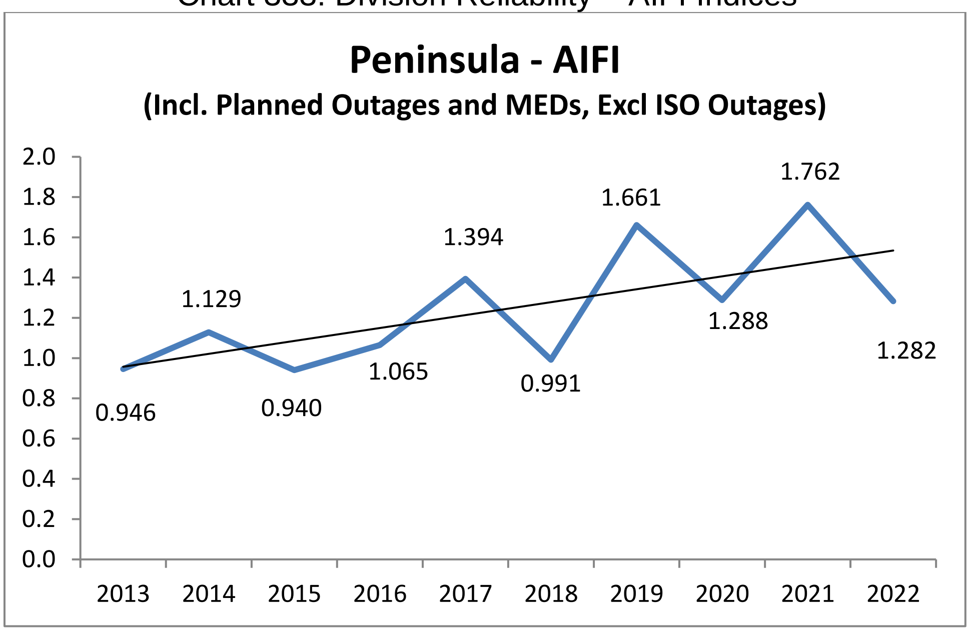


Chart 334: Division Reliability – AIFI Indices

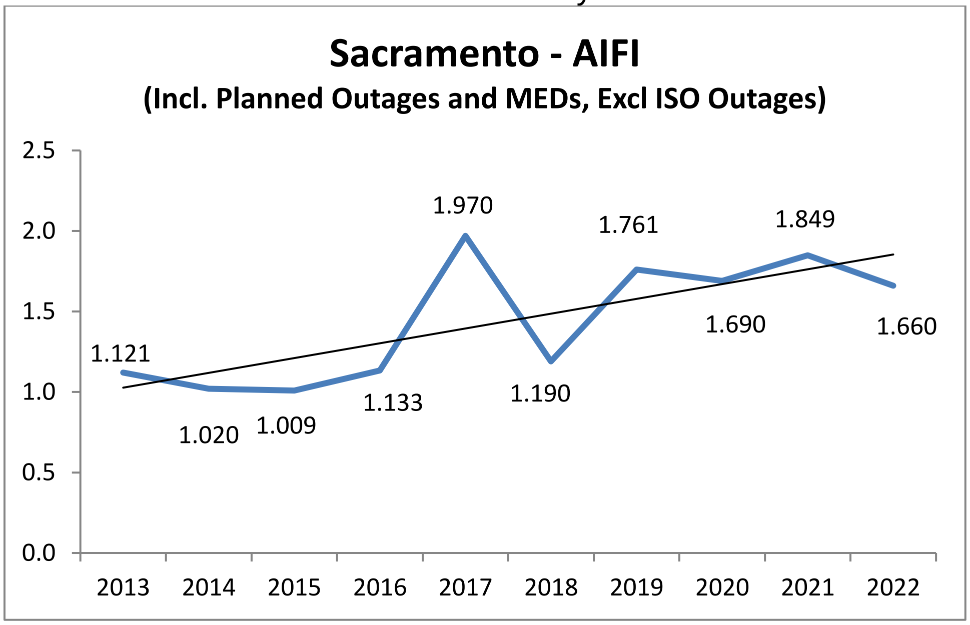


Chart 335: Division Reliability – AIFI Indices

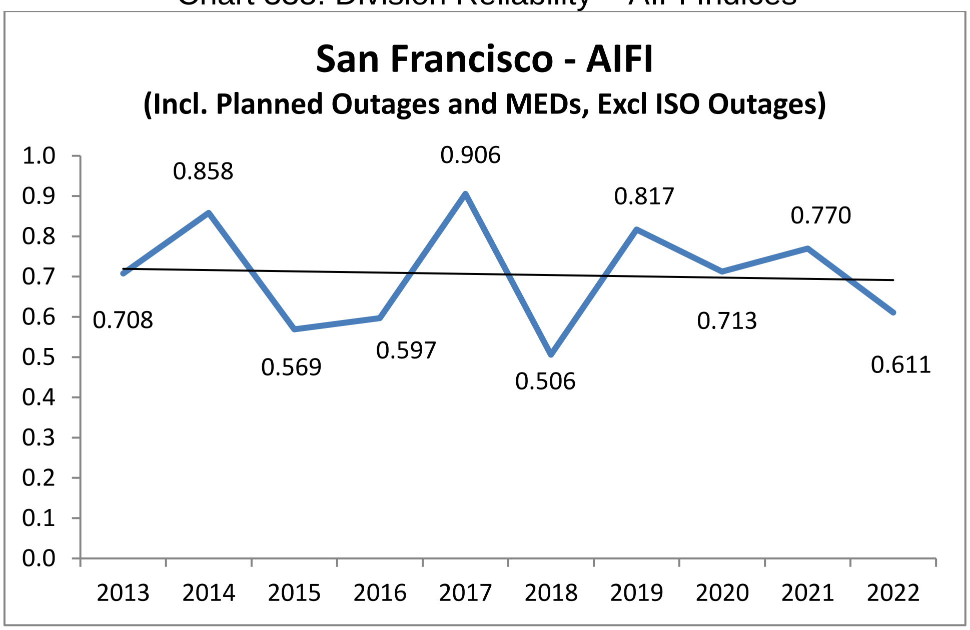


Chart 336: Division Reliability – AIFI Indices

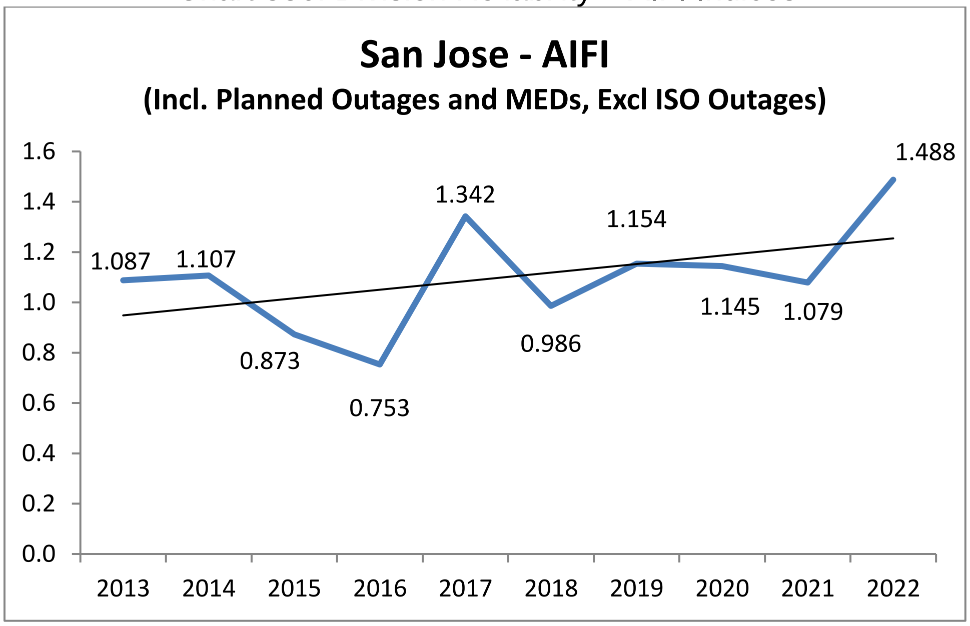


Chart 337: Division Reliability – AIFI Indices

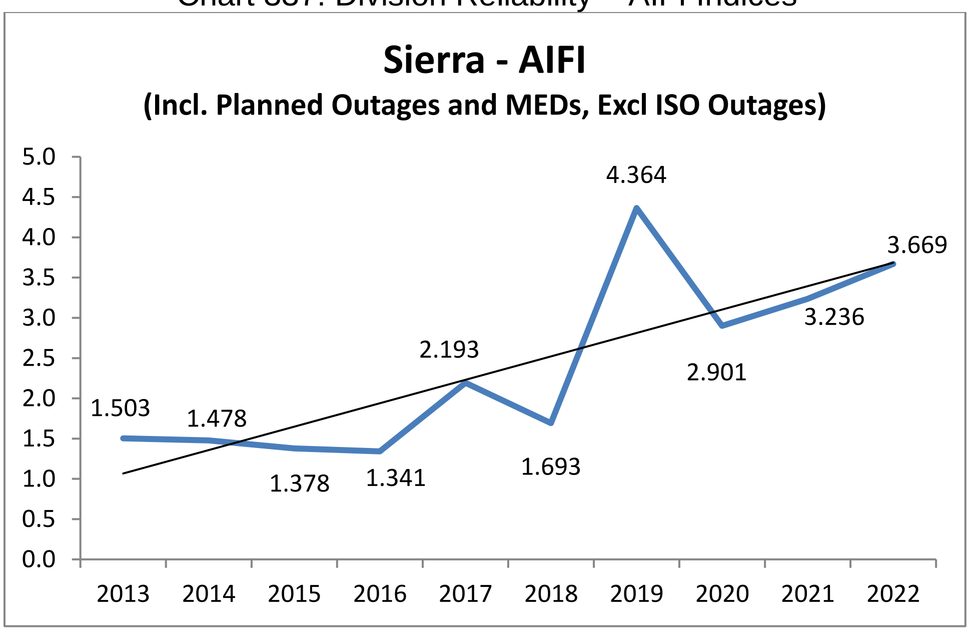


Chart 338: Division Reliability – AIFI Indices

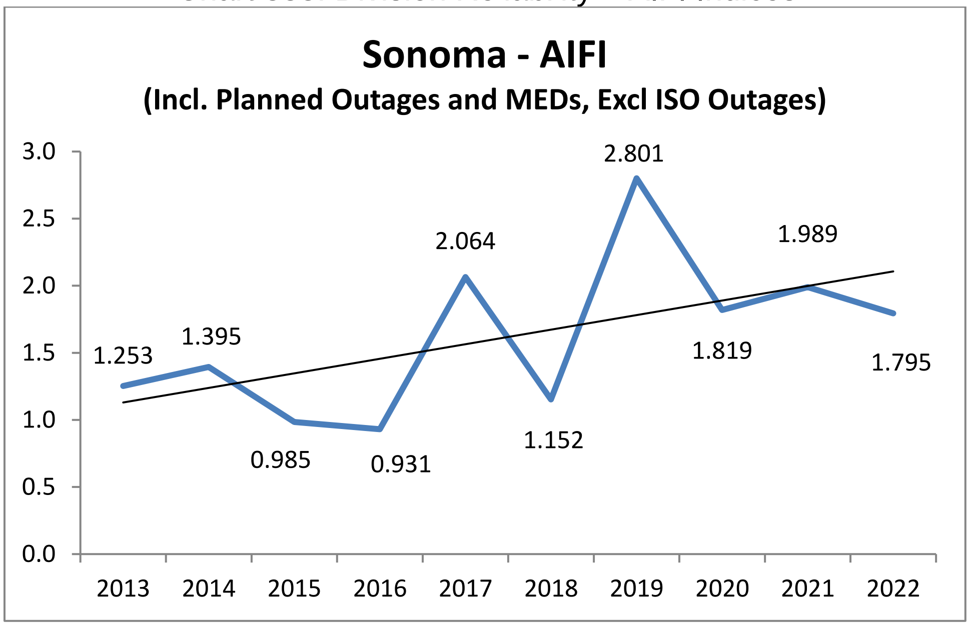


Chart 339: Division Reliability – AIFI Indices

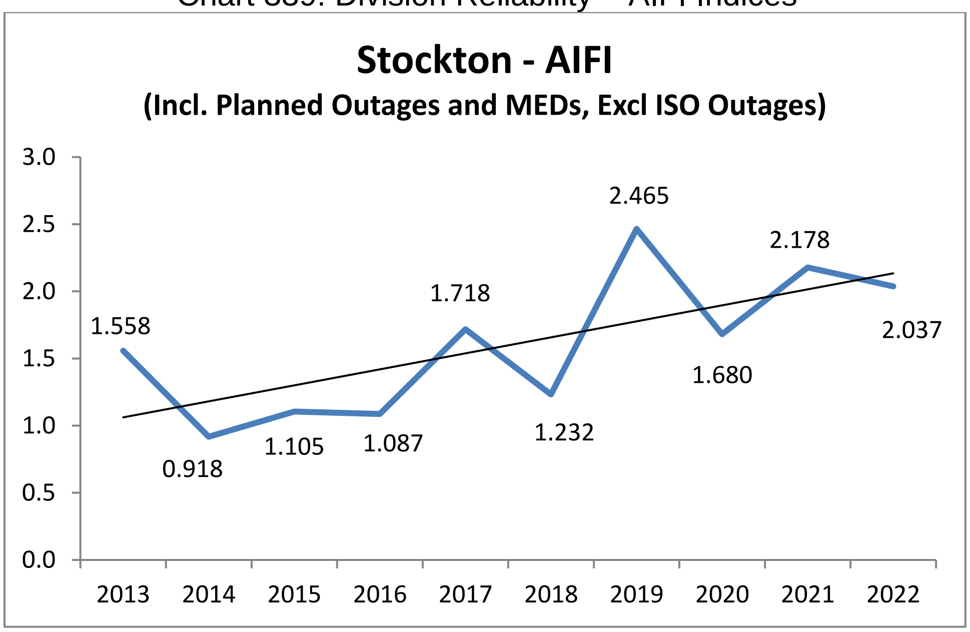


Chart 340: Division Reliability – AIFI Indices

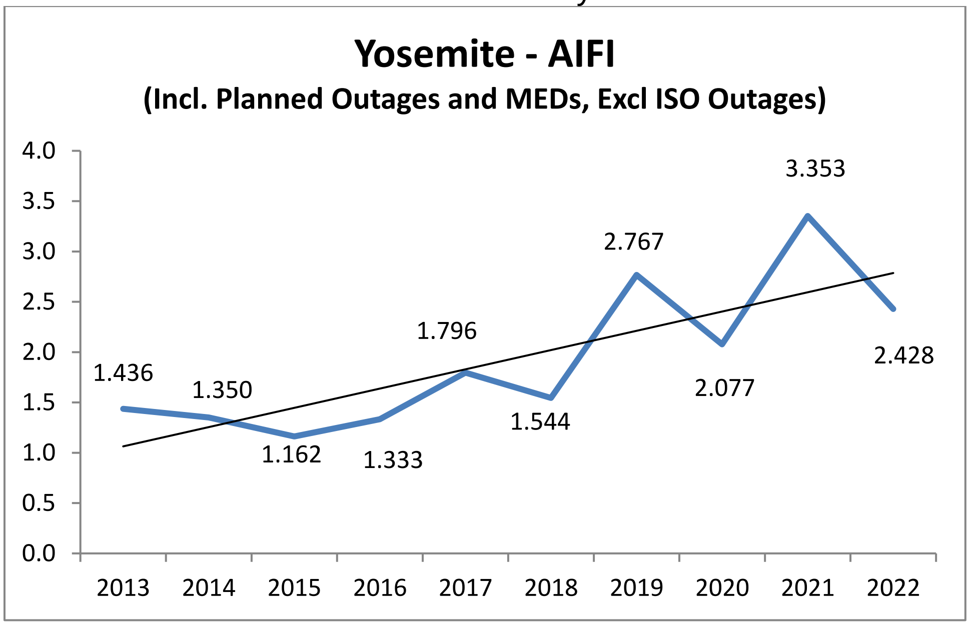
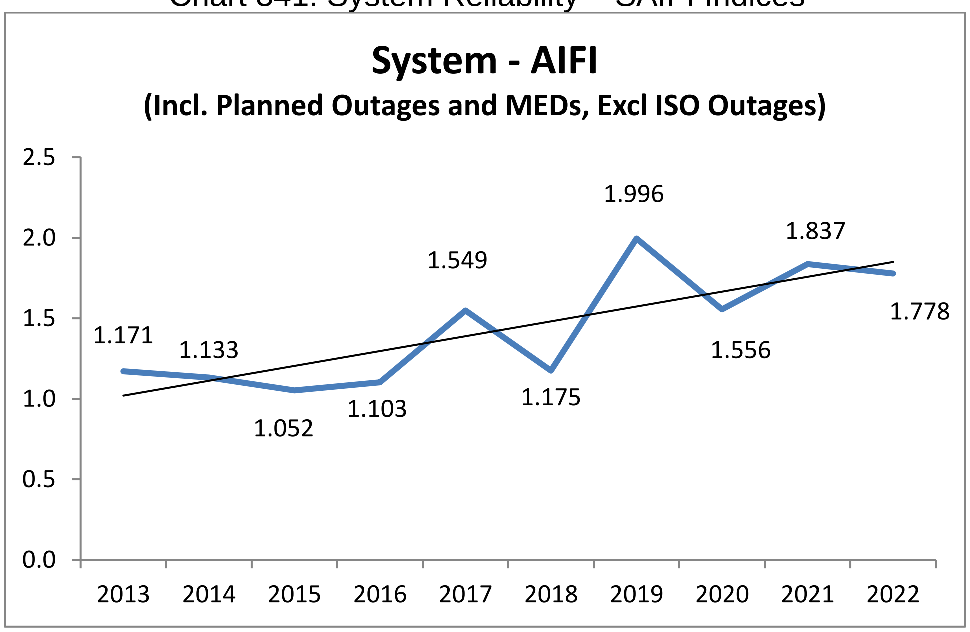


Chart 341: System Reliability – SAIFI Indices



3. MAIFI[11] Performance Results (MED Included)

Chart 342: Division Reliability – MAIFI Indices

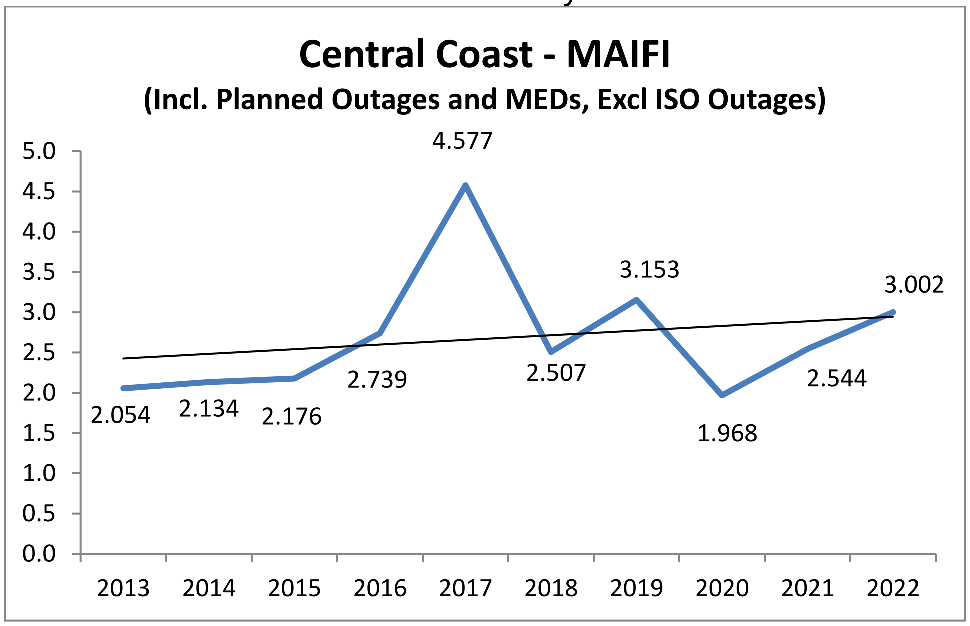
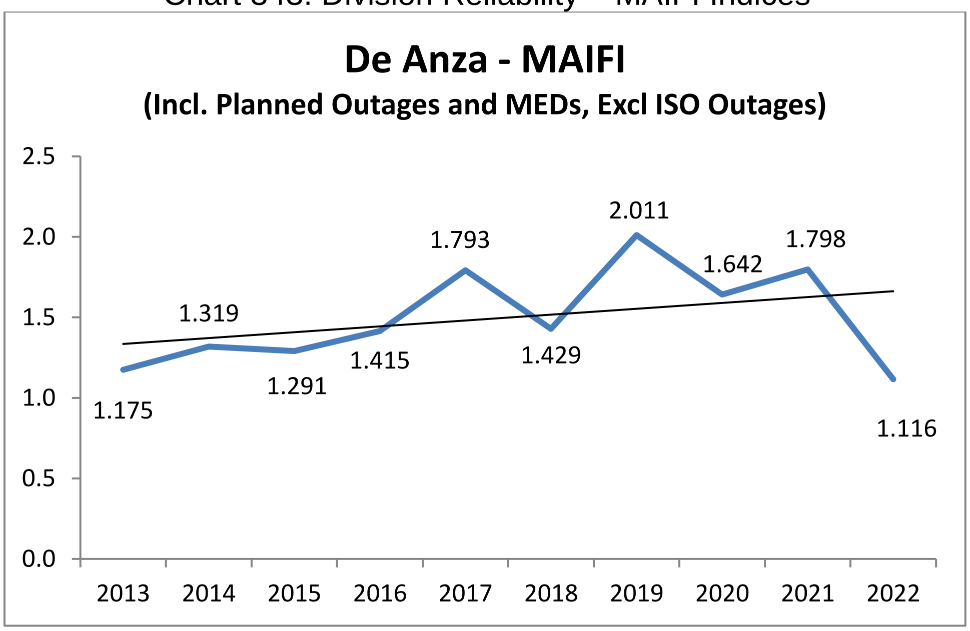


Chart 343: Division Reliability – MAIFI Indices



11 See footnote 4 above.

Chart 344: Division Reliability – MAIFI Indices

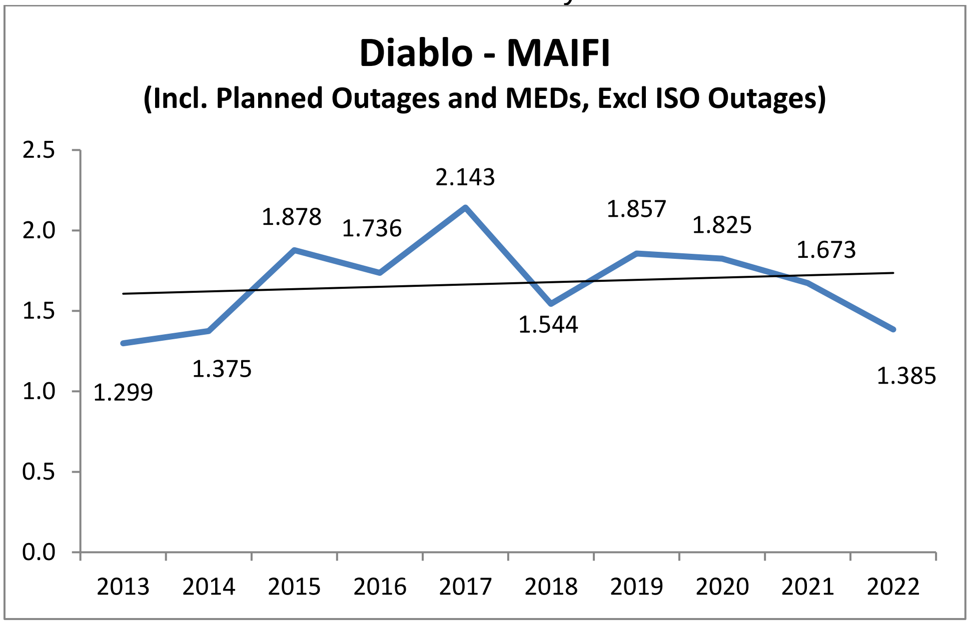


Chart 345: Division Reliability – MAIFI Indices

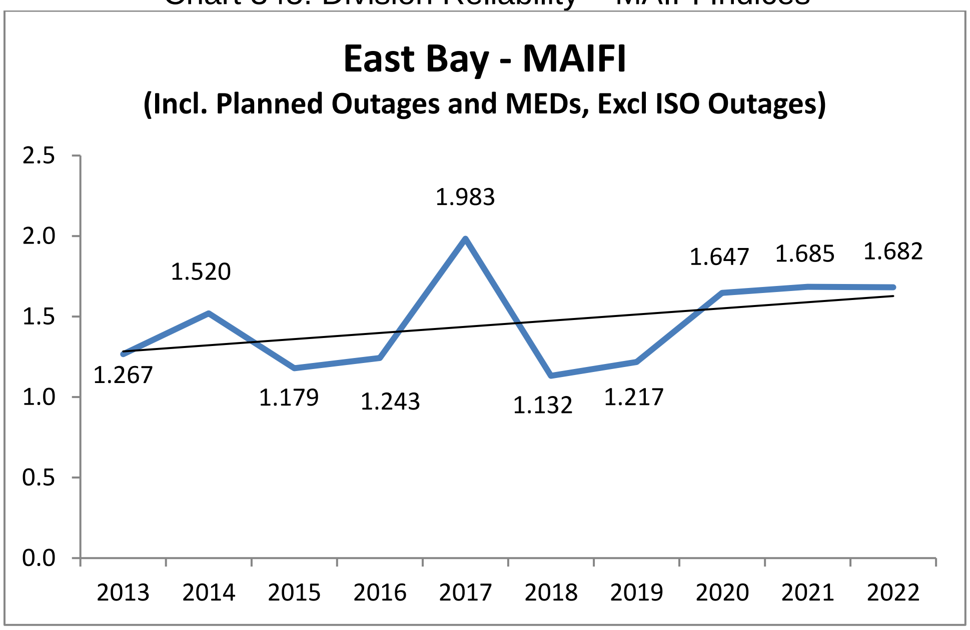


Chart 346: Division Reliability – MAIFI Indices

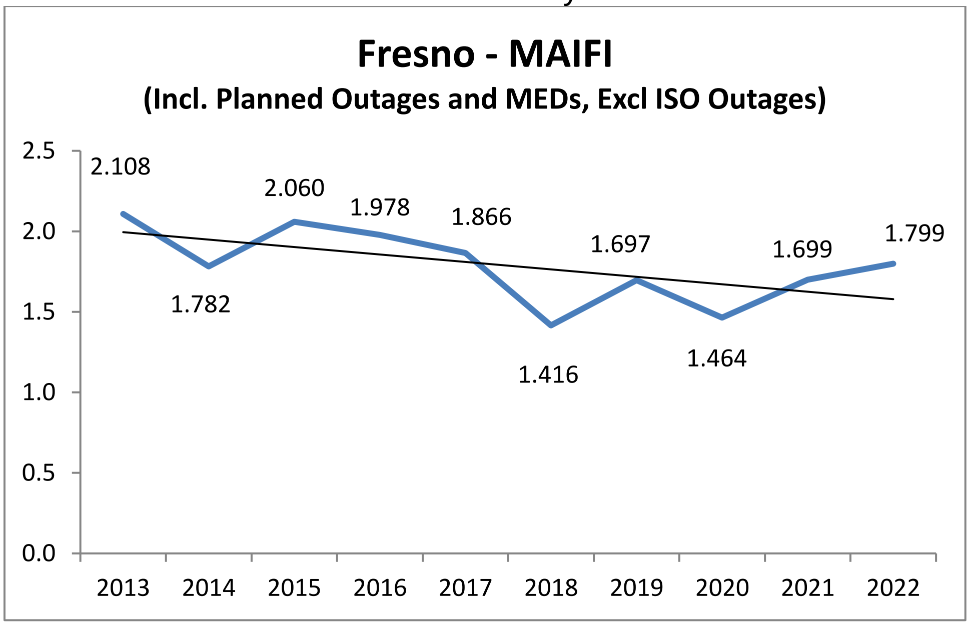


Chart 347: Division Reliability – MAIFI Indices

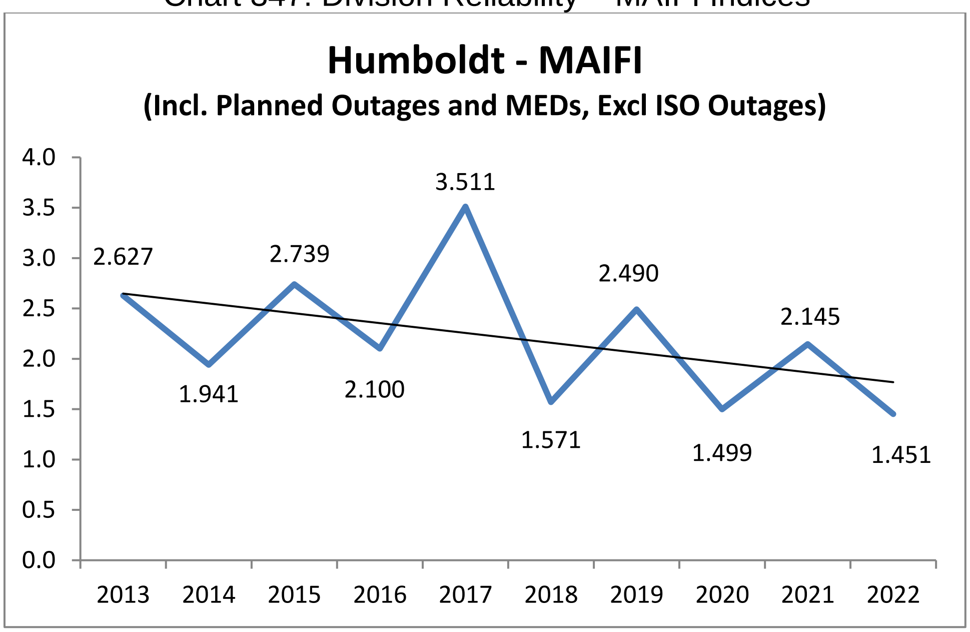


Chart 348: Division Reliability – MAIFI Indices

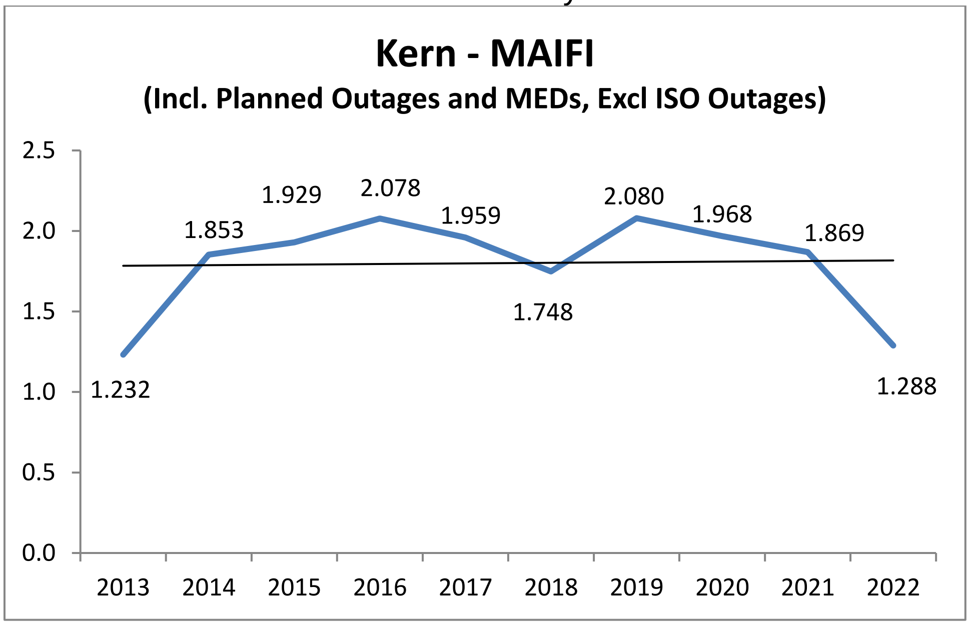


Chart 349: Division Reliability – MAIFI Indices

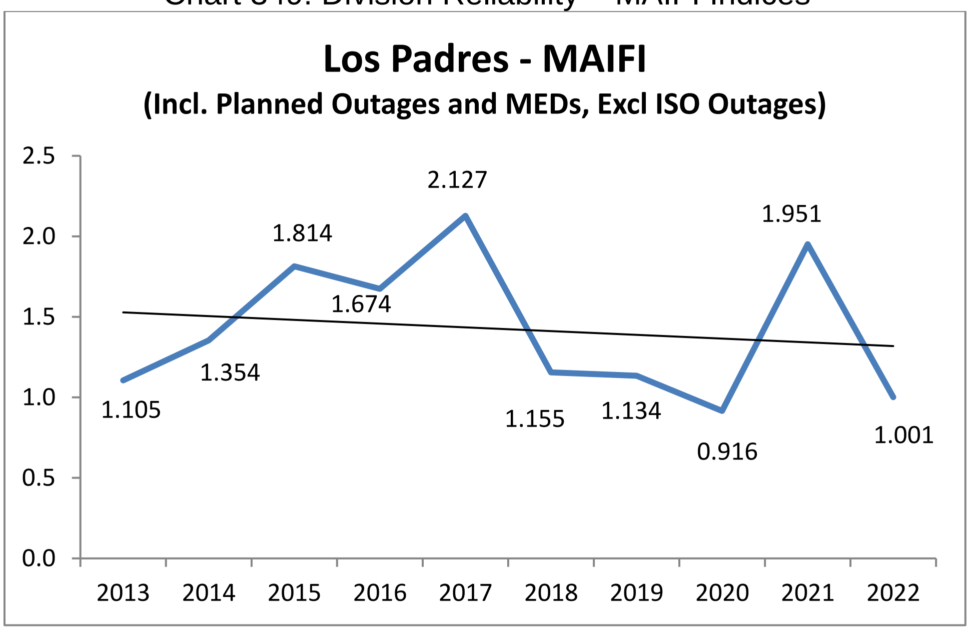


Chart 350: Division Reliability – MAIFI Indices

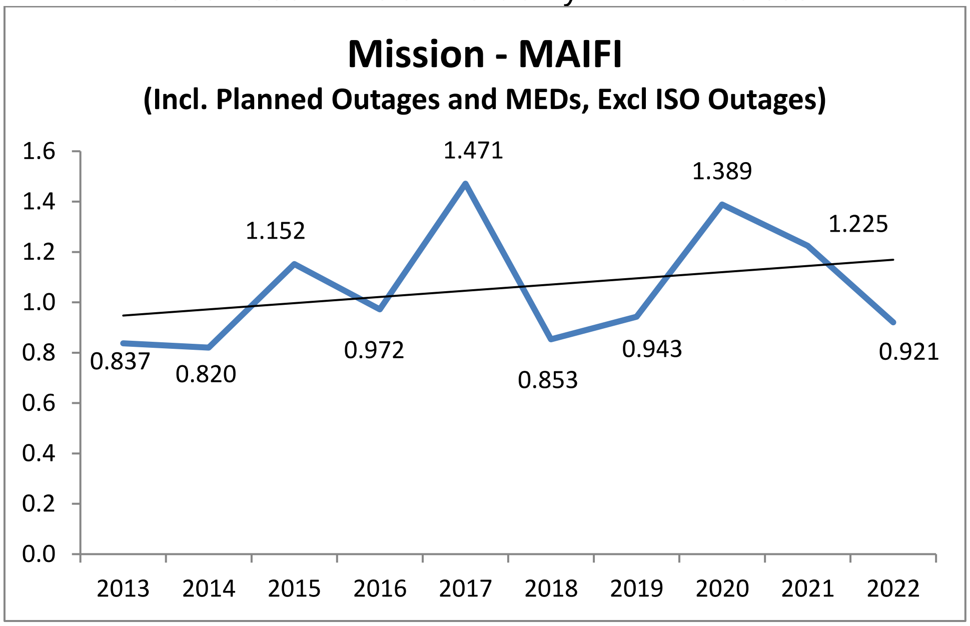


Chart 351: Division Reliability – MAIFI Indices

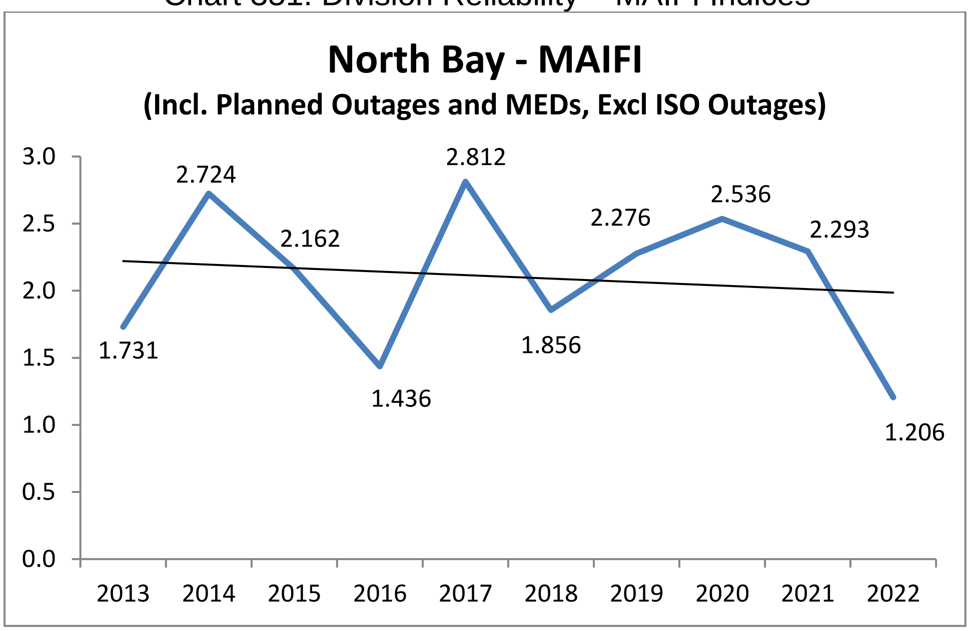


Chart 352: Division Reliability – MAIFI Indices

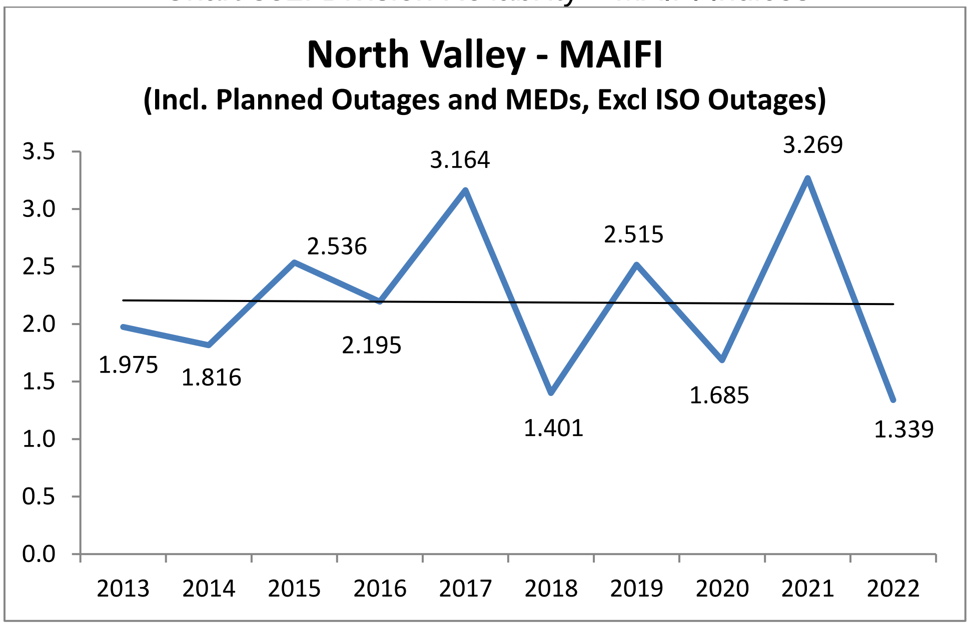


Chart 353: Division Reliability – MAIFI Indices

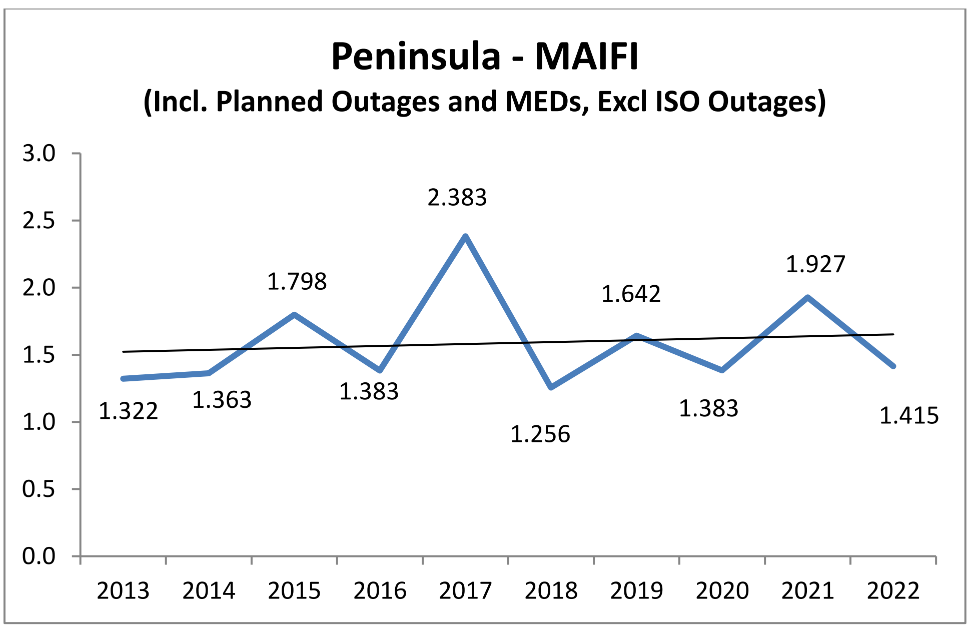


Chart 354: Division Reliability – MAIFI Indices

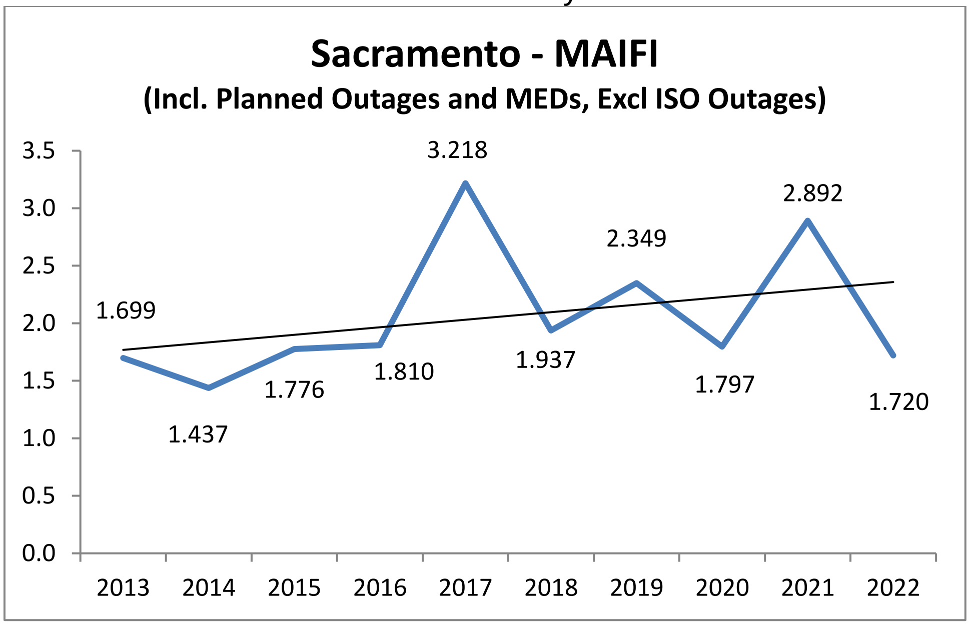


Chart 355: Division Reliability – MAIFI Indices

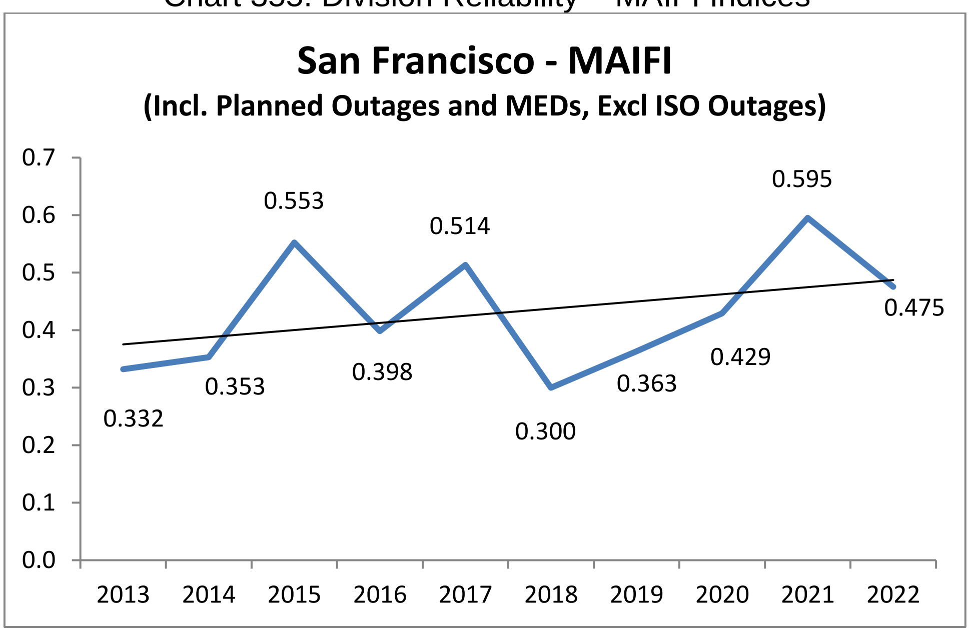


Chart 356: Division Reliability – MAIFI Indices

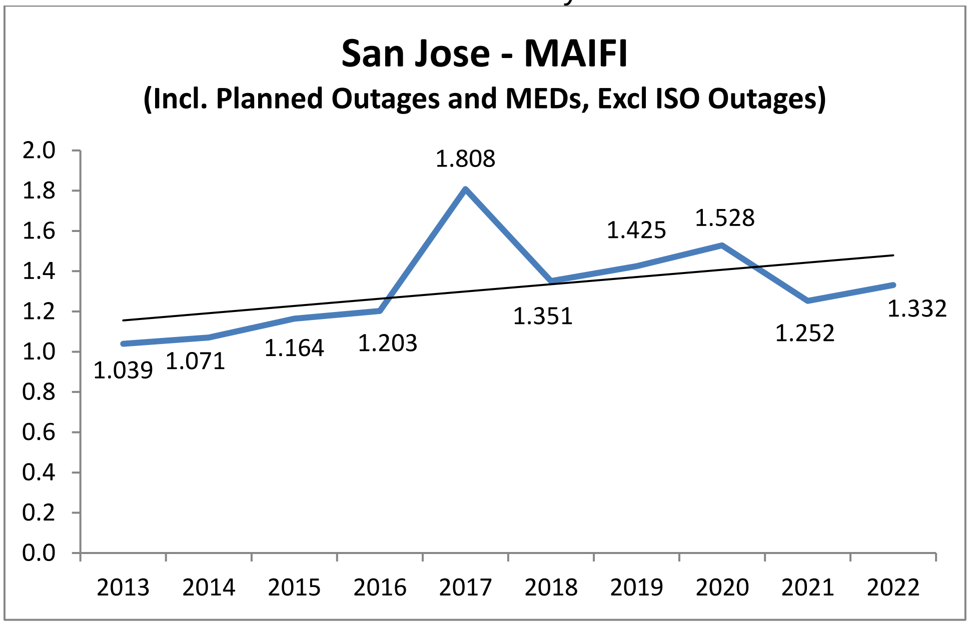


Chart 357: Division Reliability – MAIFI Indices

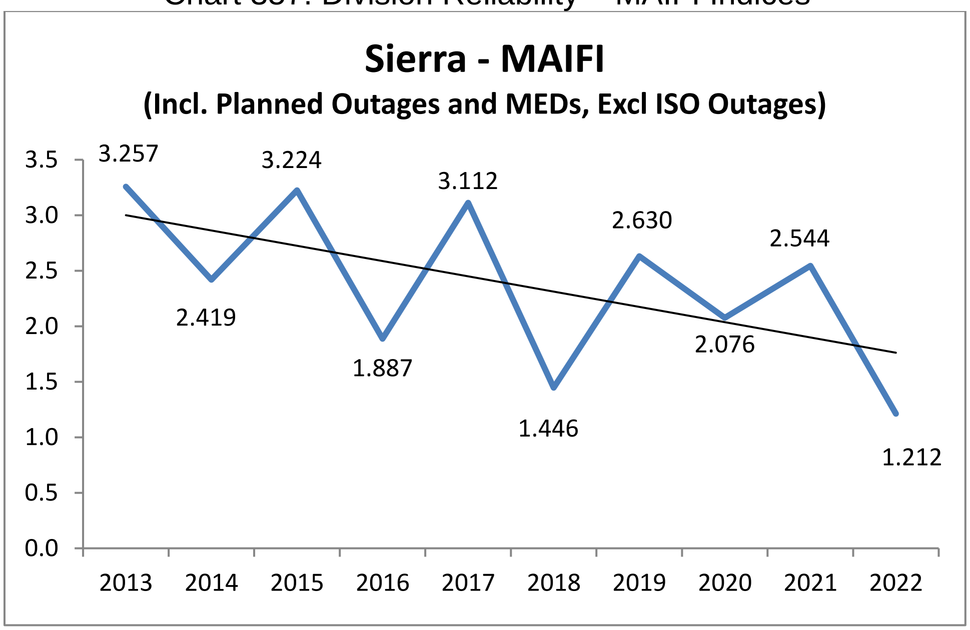


Chart 358: Division Reliability – MAIFI Indices

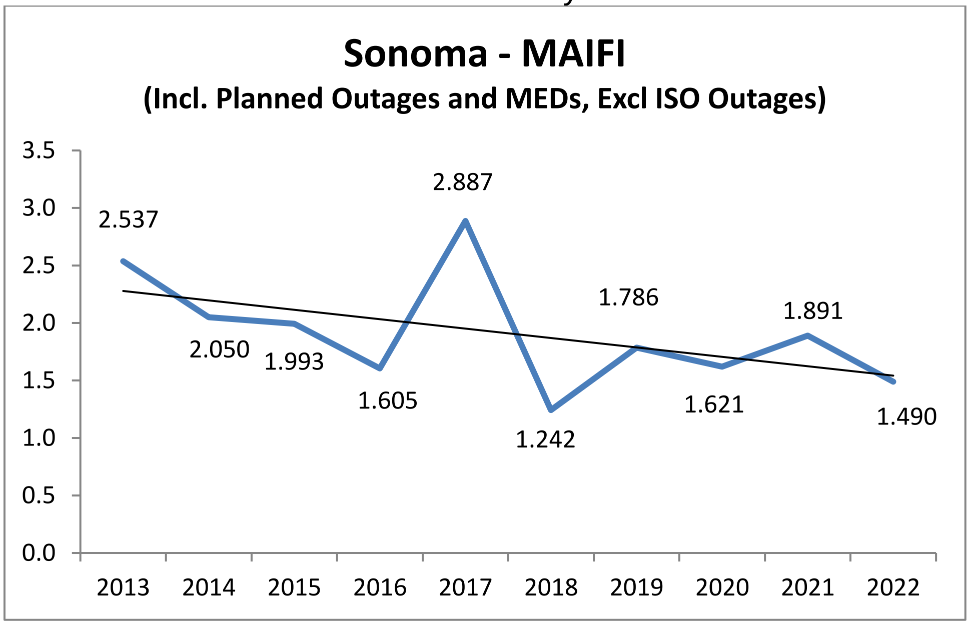


Chart 359: Division Reliability – MAIFI Indices

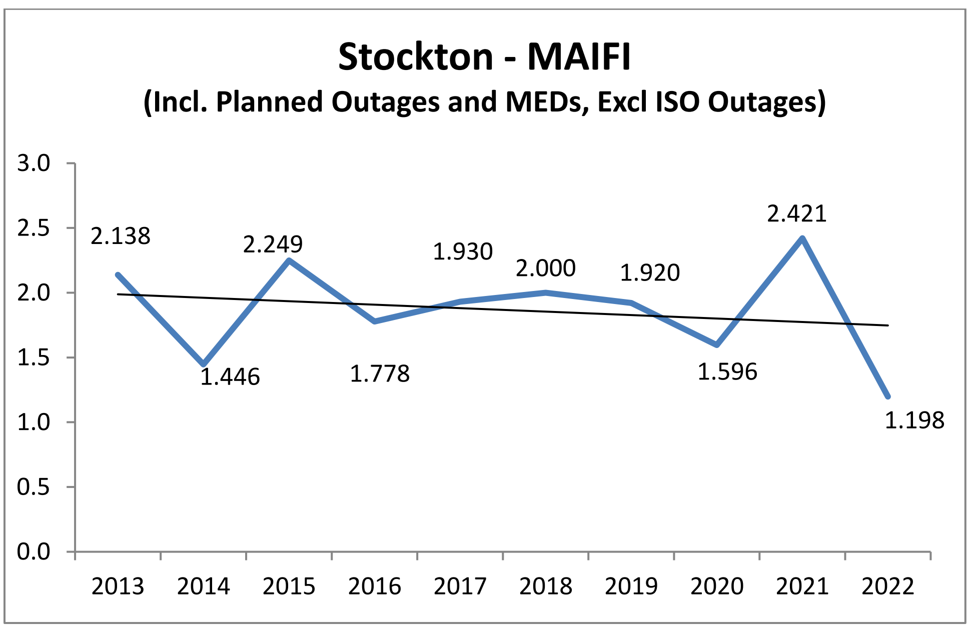


Chart 360: Division Reliability – MAIFI Indices

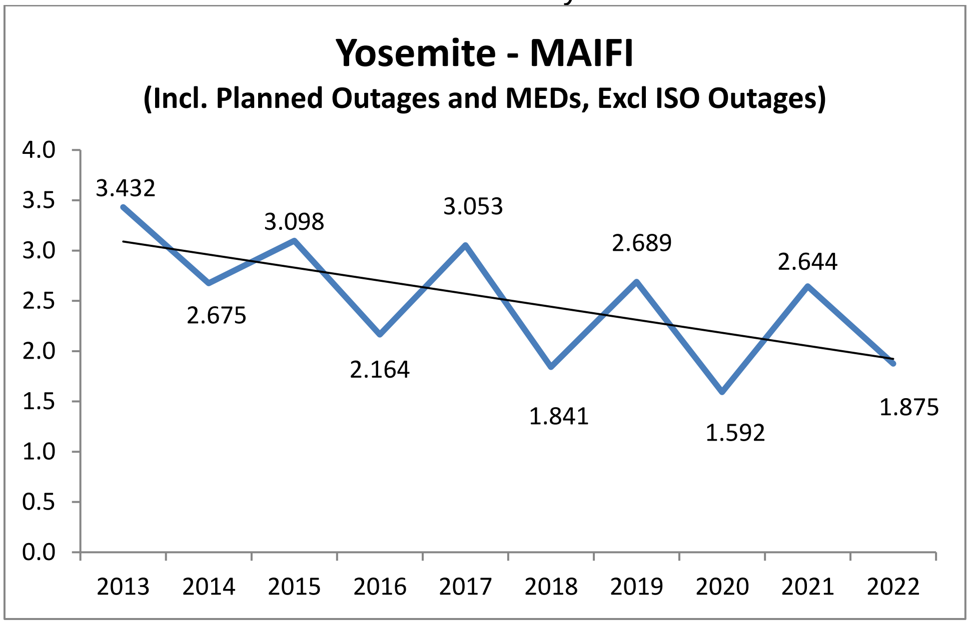
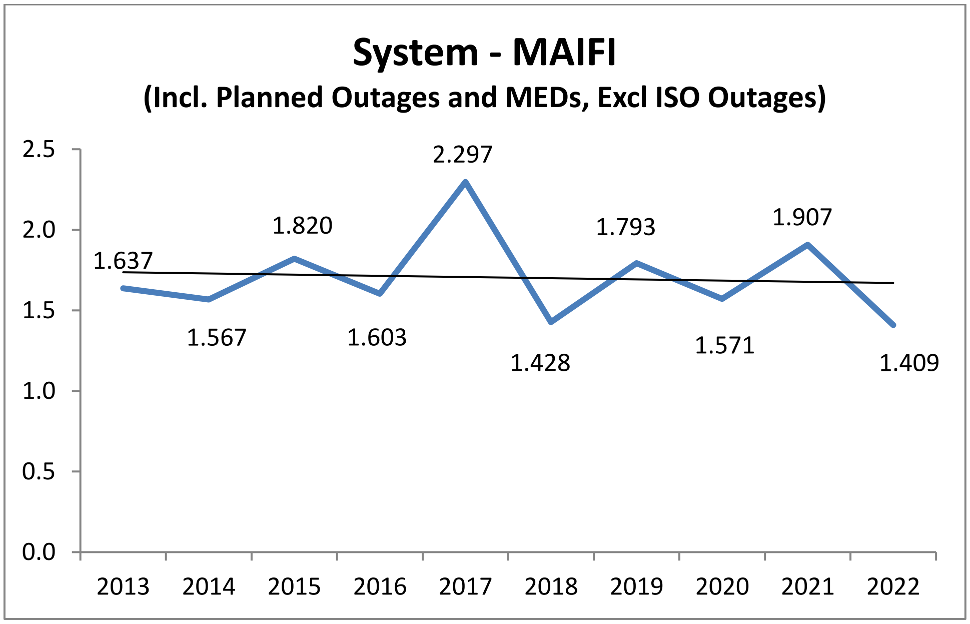


Chart 361: System Reliability – MAIFI Indices



4. CAIDI Performance Results (MED Included)

Chart 362: Division Reliability – CAIDI Indices

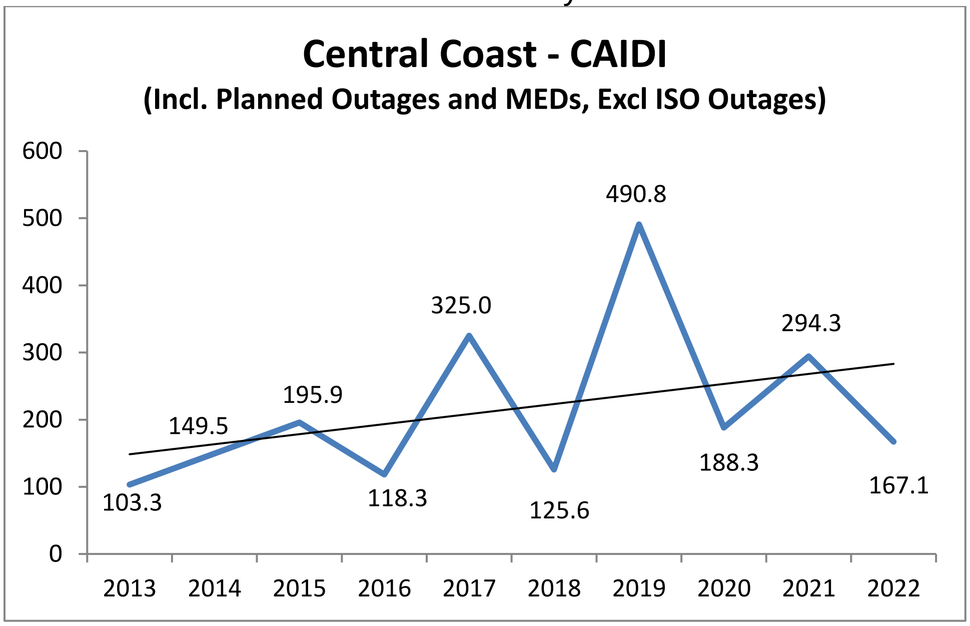


Chart 363: Division Reliability – CAIDI Indices

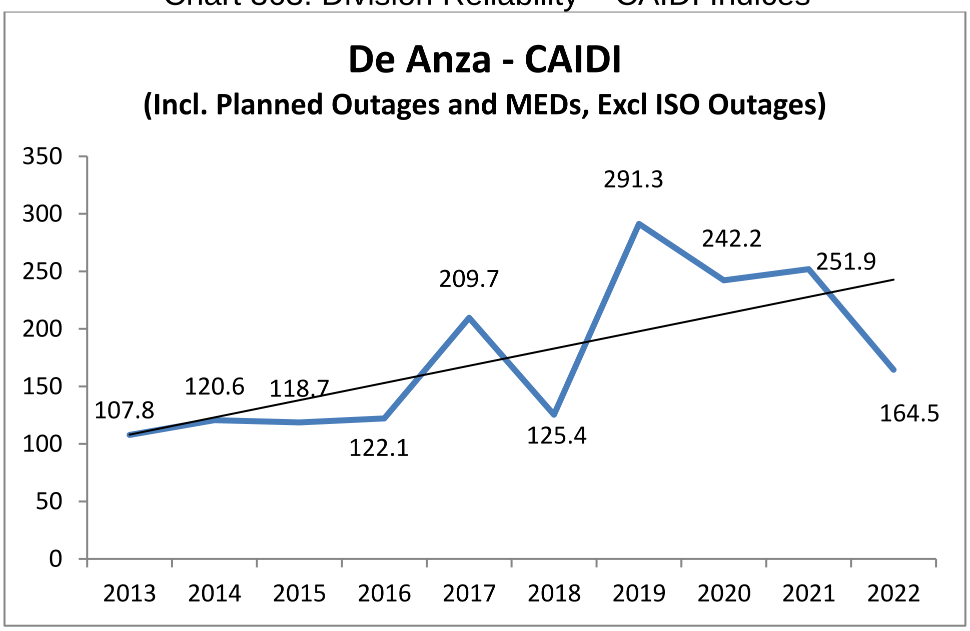


Chart 364: Division Reliability – CAIDI Indices

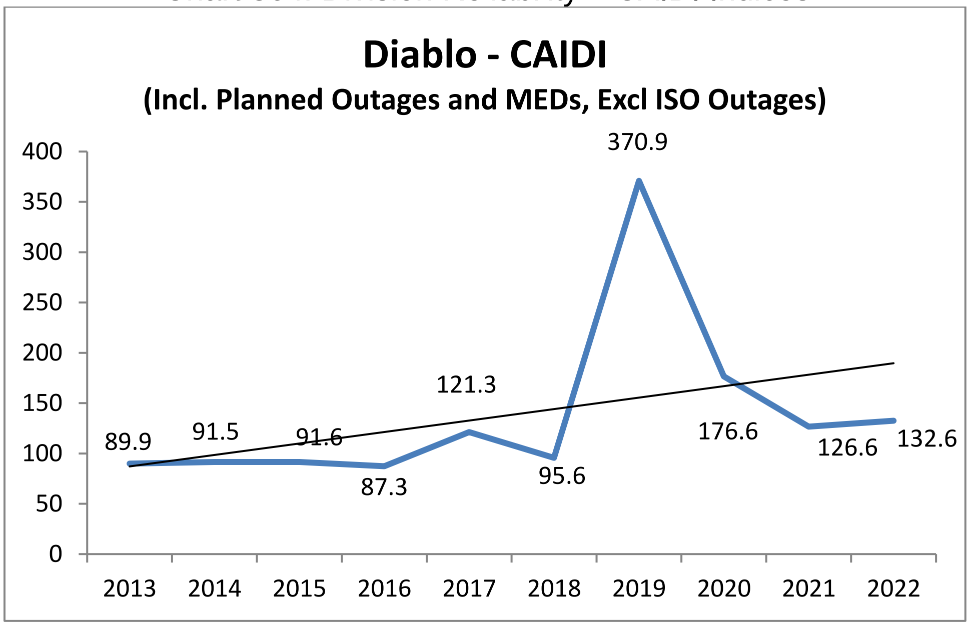


Chart 365: Division Reliability – CAIDI Indices

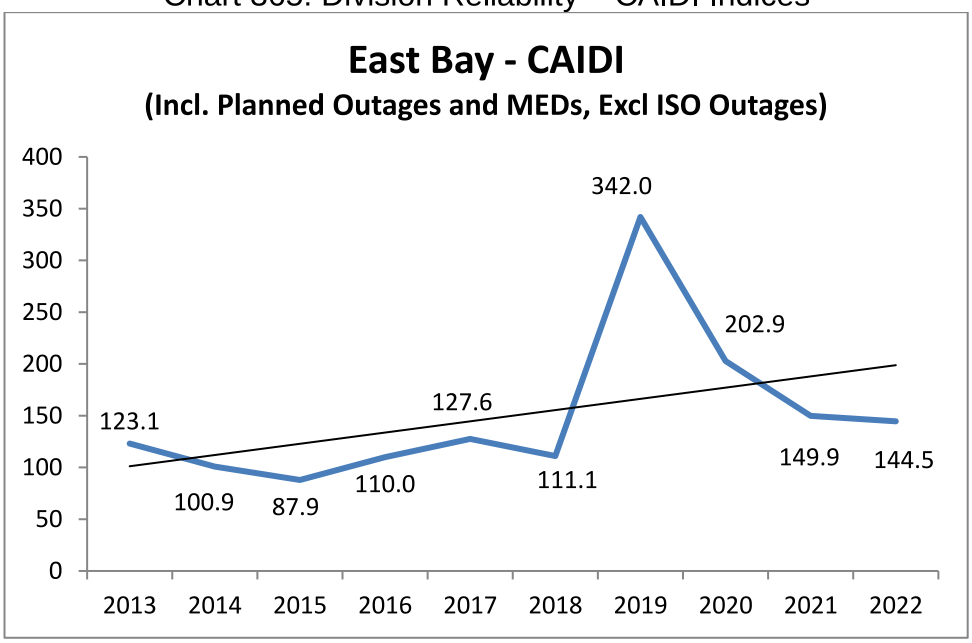


Chart 366: Division Reliability – CAIDI Indices

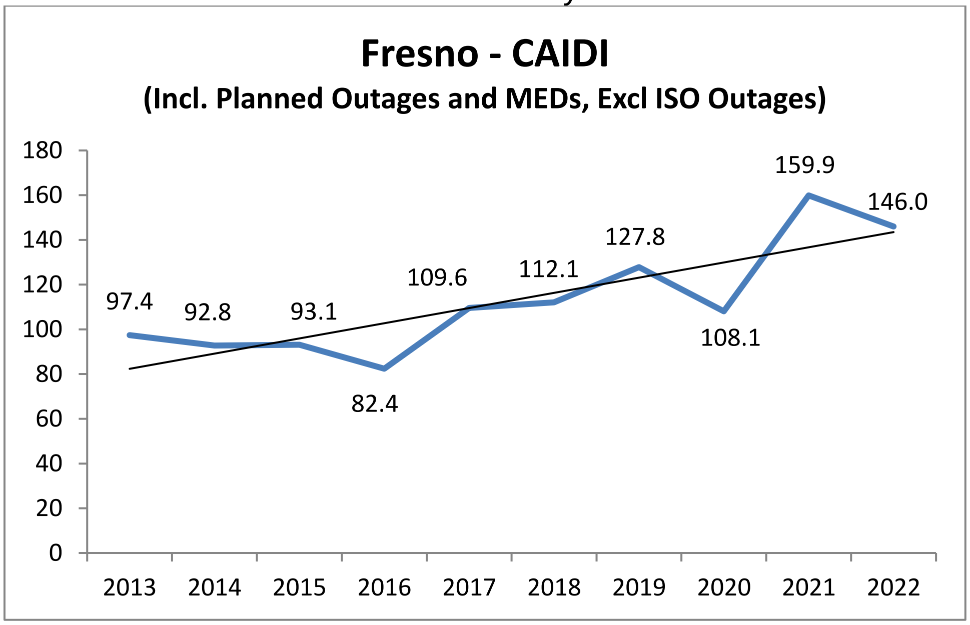


Chart 367: Division Reliability – CAIDI Indices

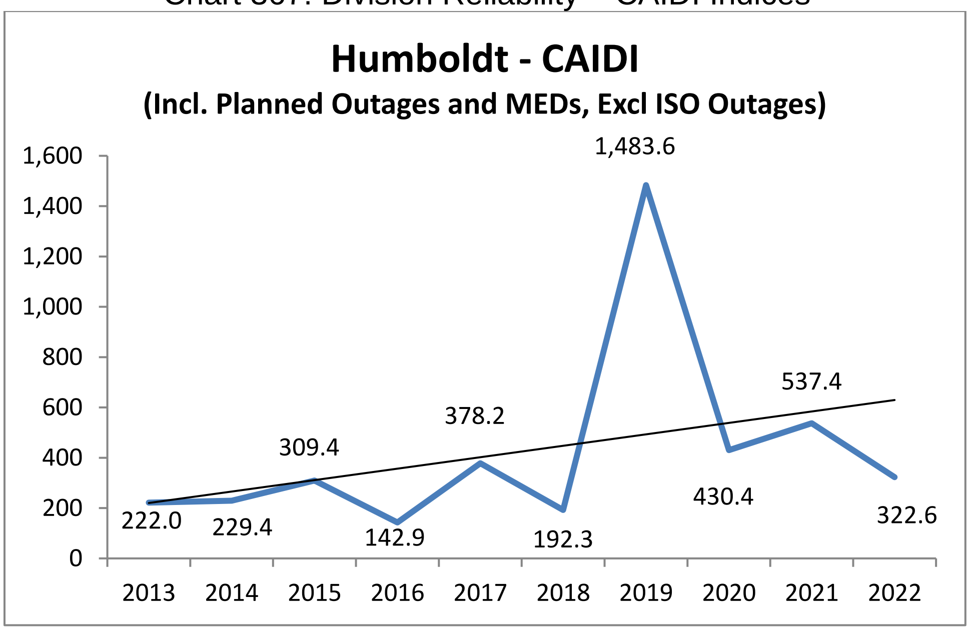


Chart 368: Division Reliability – CAIDI Indices

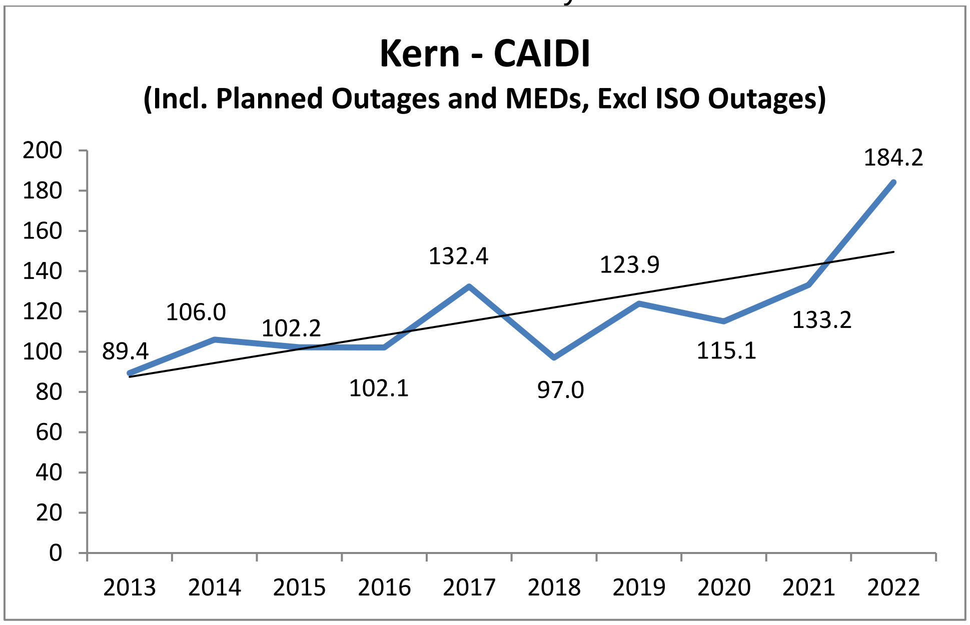


Chart 369: Division Reliability – CAIDI Indices

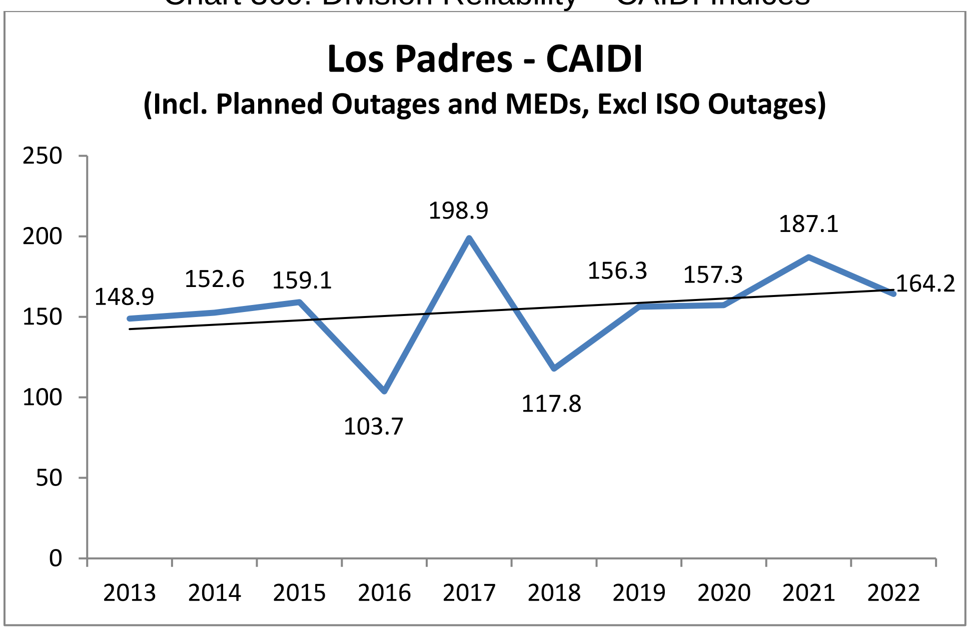


Chart 370: Division Reliability – CAIDI Indices

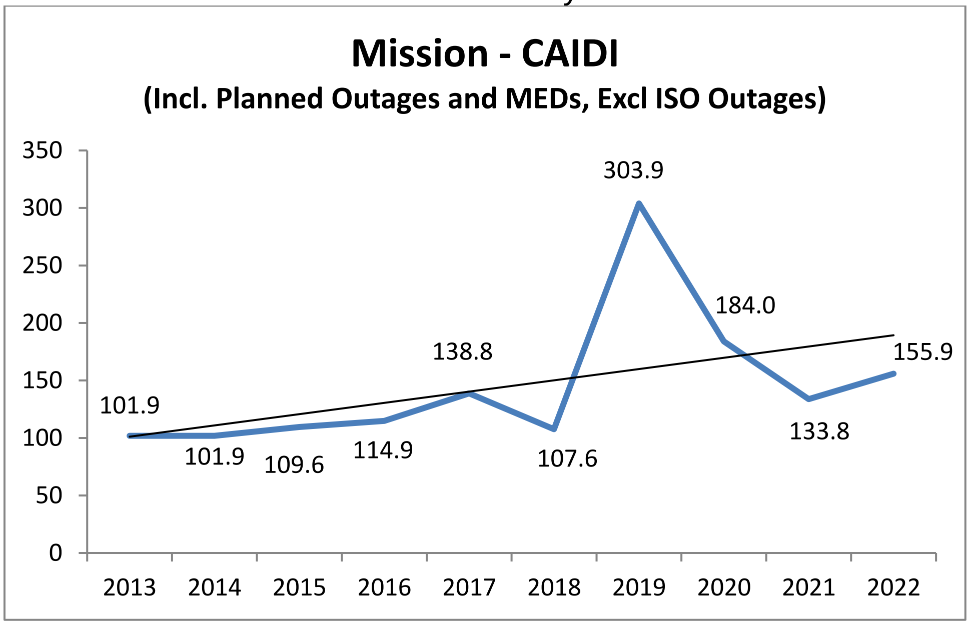


Chart 371: Division Reliability – CAIDI Indices

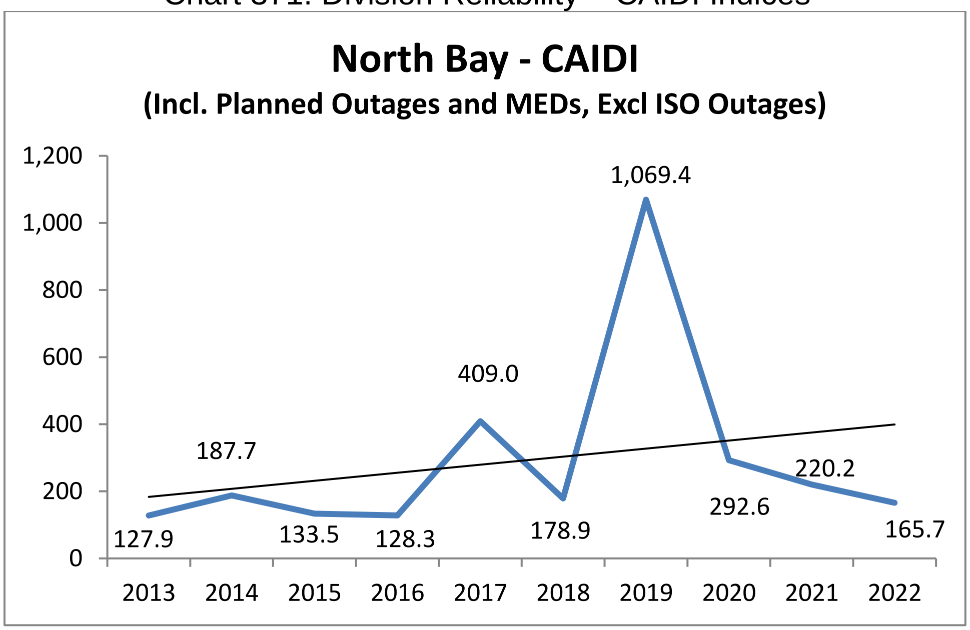


Chart 372: Division Reliability – CAIDI Indices

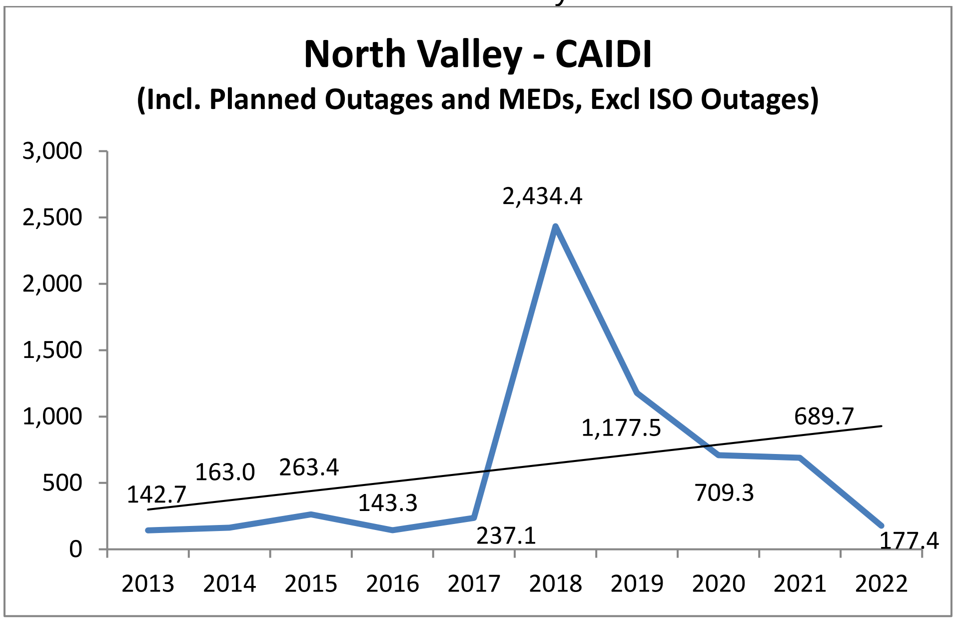


Chart 373: Division Reliability – CAIDI Indices

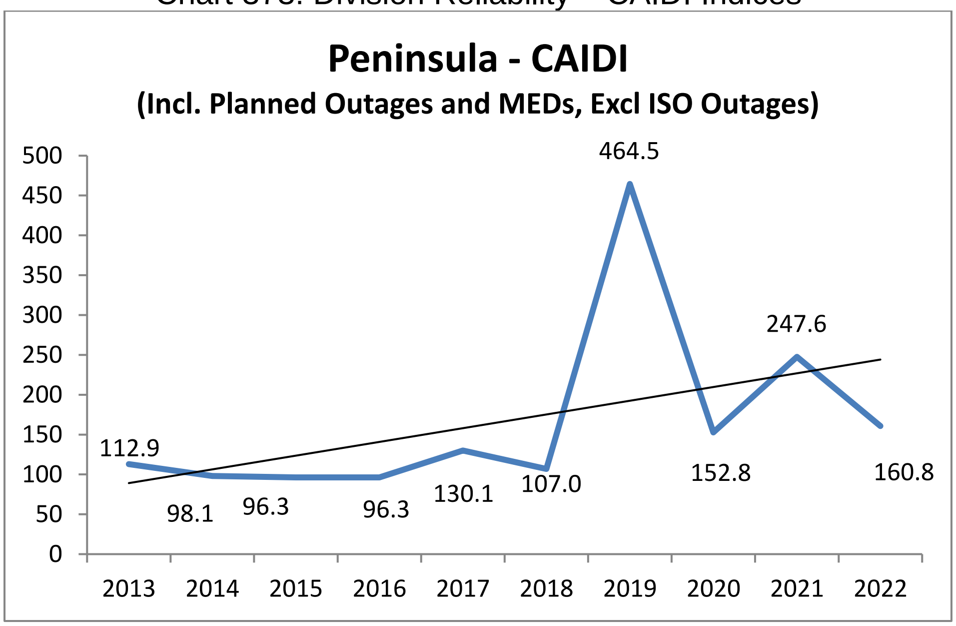


Chart 374: Division Reliability – CAIDI Indices

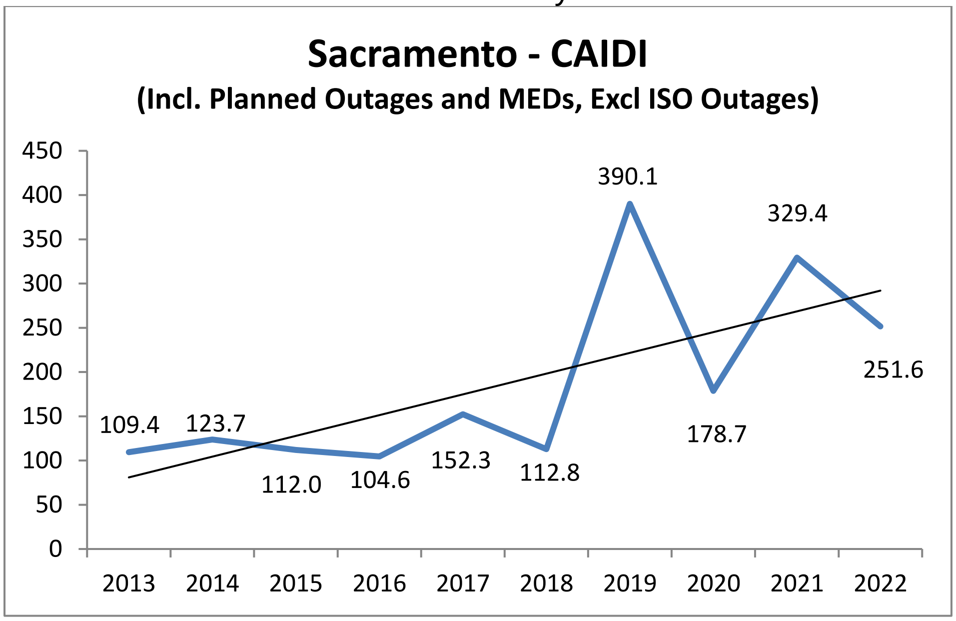


Chart 375: Division Reliability – CAIDI Indices

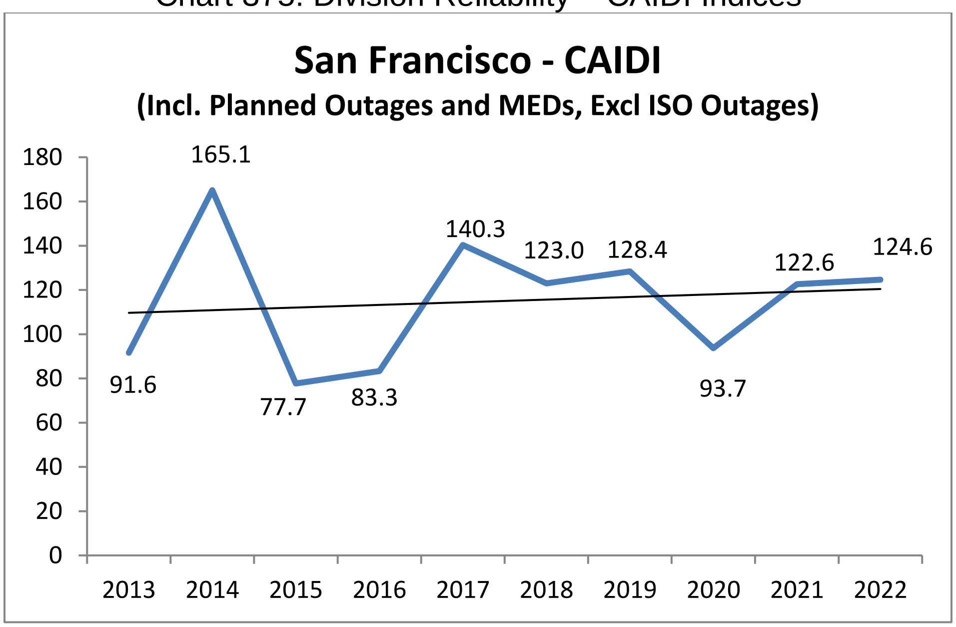


Chart 376: Division Reliability – CAIDI Indices

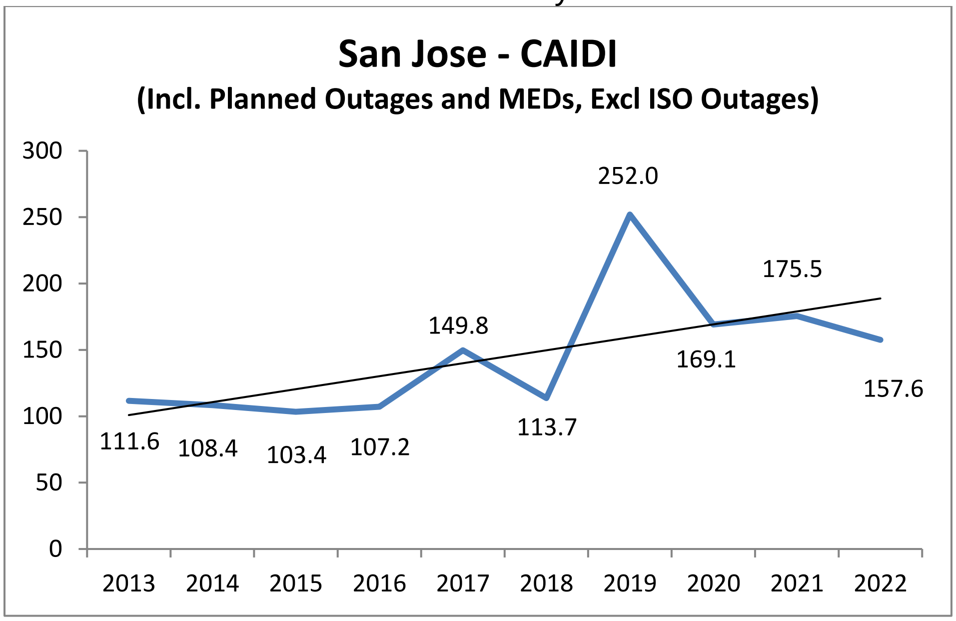


Chart 377: Division Reliability – CAIDI Indices

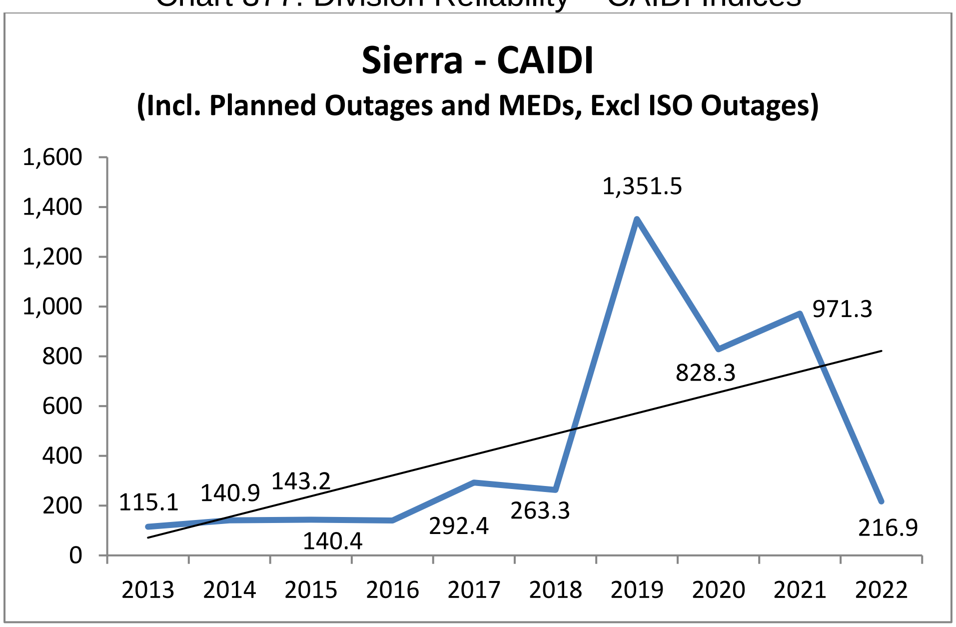


Chart 378: Division Reliability – CAIDI Indices

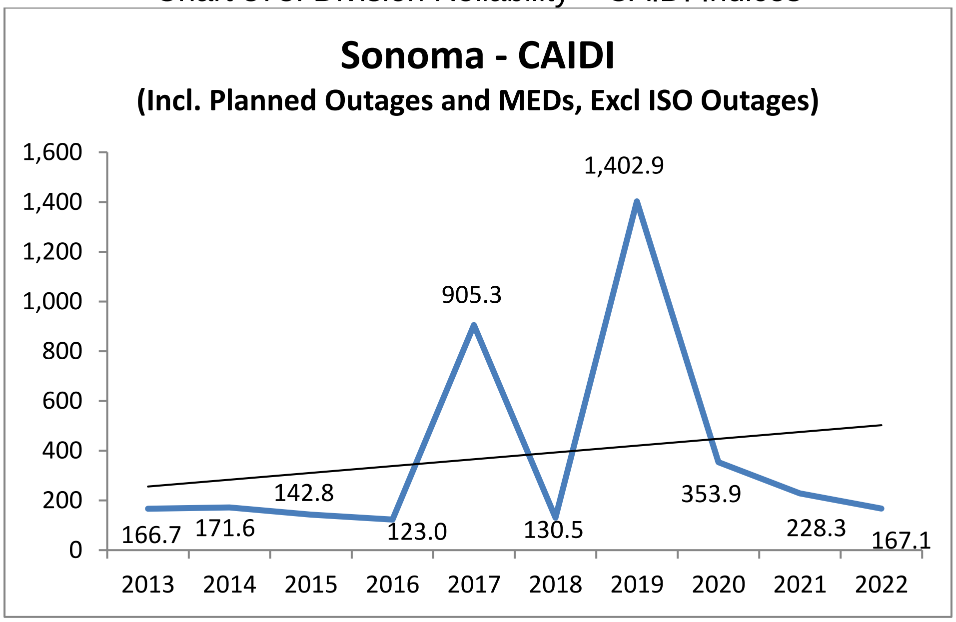


Chart 379: Division Reliability – CAIDI Indices

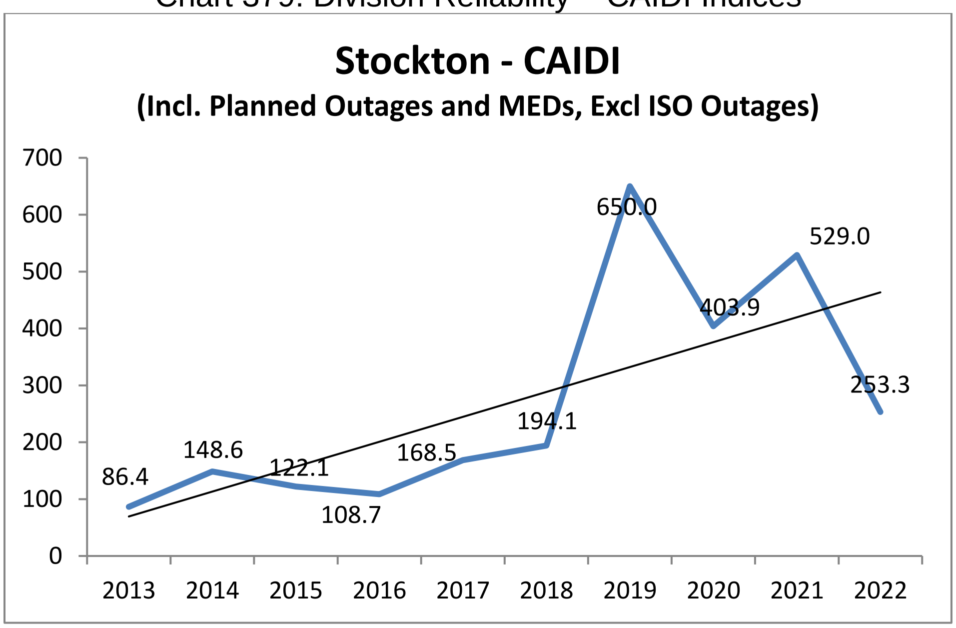


Chart 380: Division Reliability – CAIDI Indices

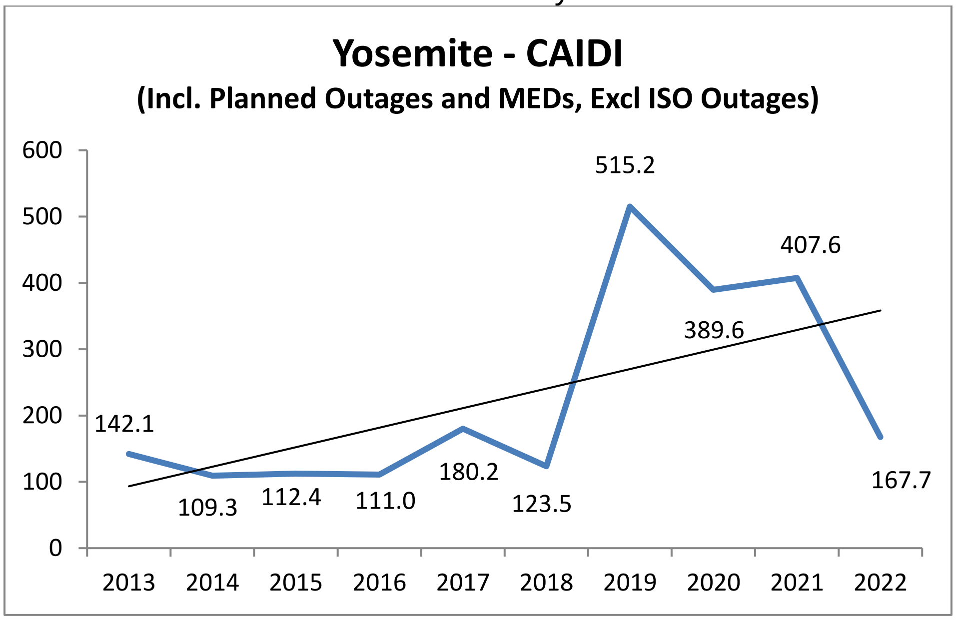
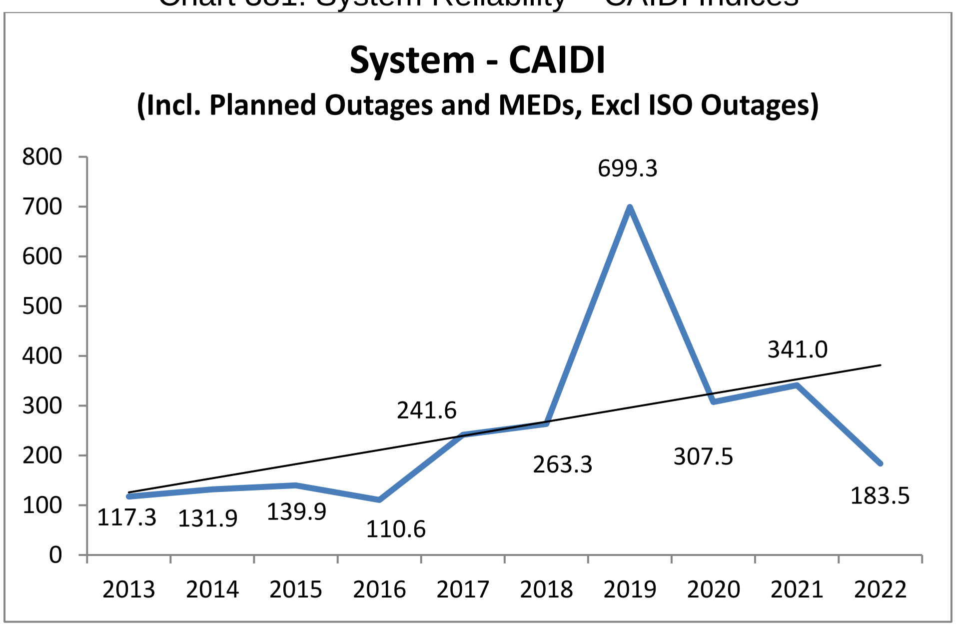


Chart 381: System Reliability – CAIDI Indices



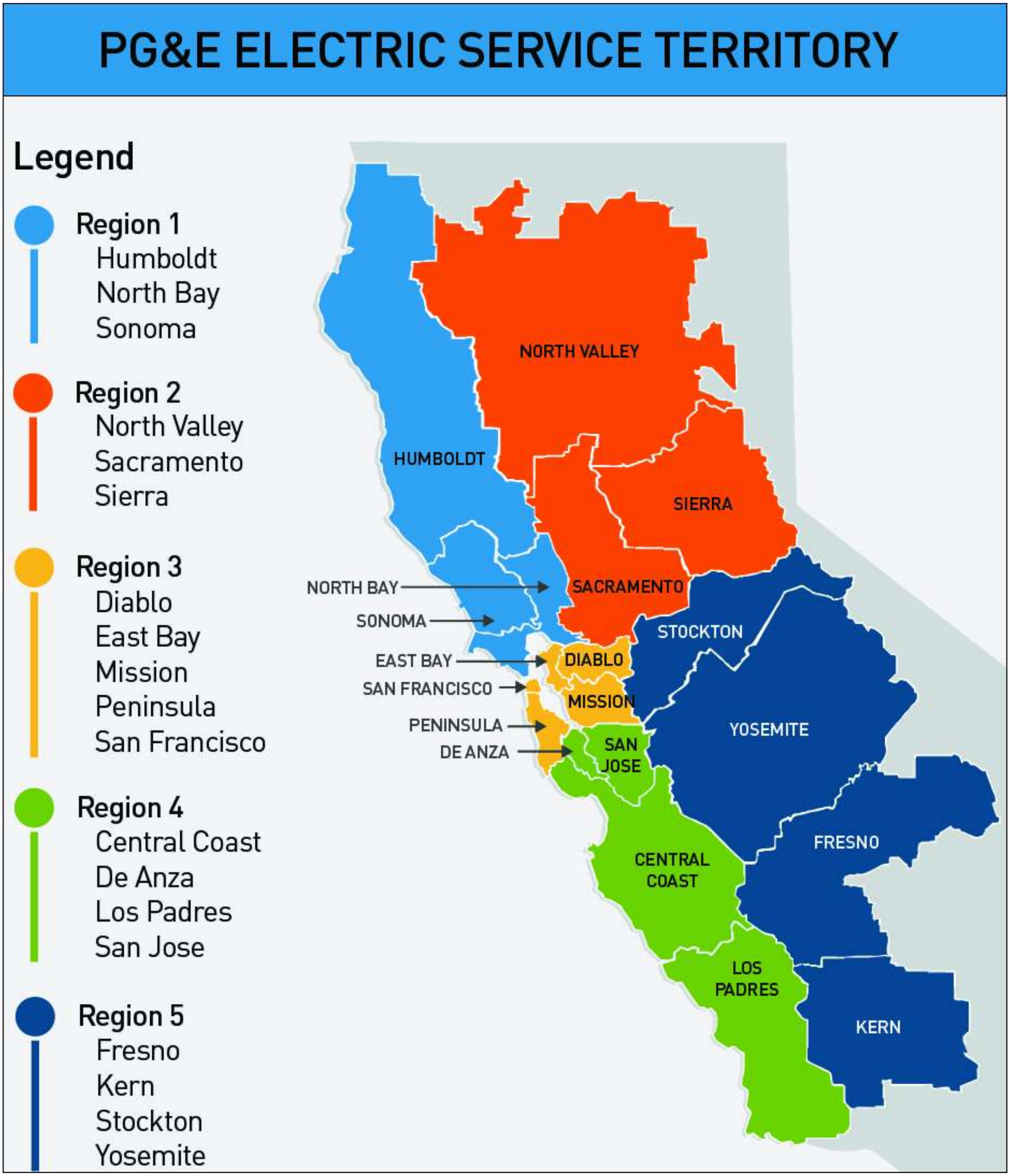
d. The number of planned outages, date, and location of planned outages in each division on an annual basis.

PG&E is submitting detailed planned outage information on a confidential basis under seal as required by Appendix B of Decision 16-01-008, footnote 7. Listed below is a summary of planned outages by year from 2013 through 2022:

Table 44: Ten Years Planned Outage Summary (2013-2022)

Year	Total Planned Outages
2013	21,982
2014	18,026
2015	18,891
2016	20,253
2017	18,913
2018	36,576
2019	31,409
2020	36,118
2021	45,087
2022	43,915

4. Service Territory Map



5. Top 1% of Worst Performing Circuits (WPC) excluding Major Event Day (MED)

PG&E's selection of its worst performing circuits is comprised of two lists. List #1 (see Table 45 below) is ranked by the highest number of sustained outages the average customer on the circuit experiences on an annual basis (AIFI). List #2 (see Table 46 below) is ranked by the highest total number of sustained outage minutes that the average customer on the circuit experiences on an annual basis (AIDI). PG&E recognizes that a given circuit could appear on both the AIDI and AIFI lists of worst performing circuits. In consideration of this overlap, PG&E identified 22 circuits on each list with eleven circuits appearing on both lists. The net total of 33 individual circuits represents one percent of the total number of circuits in PG&E's distribution system. For purposes of this reliability report, PG&E's focus in developing the worst performing circuit lists has been on the impact to the average customer on the circuit. This is different than a focus on a circuit's impact or contribution to overall system reliability performance. For example, a circuit with 50 customers that experienced 5 sustained outages affecting the entire circuit (a total of 250 sustained customer outages) would have a higher worst performing circuit ranking than a circuit with 1,000 customers where each customer experienced 3 sustained outages (a total of 3,000 sustained customer outages). For purposes of the worst performing circuit list, the fact that the average customer on the smaller circuit experienced five sustained outages caused that circuit to rank as performing worse than a circuit where the average customer only experienced three sustained outages.

Consistent with Decision 16-01-008, PG&E has used three years (2020 - 2022) of outage data in developing the worst performing circuit lists. PG&E has excluded outage data involving planned outages, CAISO outages and major event days. PG&E has also limited its review to mainline circuit outages only (in other words, only outages involving a circuit breaker, a recloser, or an interrupter). Finally, PG&E has excluded outage occurrences in which the circuit was in an abnormal configuration. An abnormal circuit configuration occurs when additional customers are temporarily added to a circuit to support construction or maintenance work performed on an adjacent circuit. Analysis has shown that outages associated with abnormal circuit configurations would skew the results of the worst performing circuit lists. PG&E believes that this approach best defines a worst performing circuit.

Table 45 lists the worst performing circuits by outage frequency and indicates the worst AIFI circuit was the Ben Lomond 0401 circuit. The average customer on the Ben

Lomond 0401 circuit experienced 7.78 sustained mainline outages per year from 2020-2022 (resulting from the operation of a circuit breaker or an automatic recloser). Table 46 focuses on the duration of the sustained outages. Here, the Crescent Mills 2101 circuit was identified as the worst AIDI performing circuit. For this circuit, the average customer on the circuit experienced 3,445 sustained mainline outage minutes per year from 2020-2022 (resulting from the operation of a circuit breaker or an automatic recloser).

Eleven circuits (Alleghany 1101, Ben Lomond 0401, Casserly 0401, Challenge 1101, Crescent Mills 2101, El Dorado PH 2101, Garberville 1102, Hoopa 1101, Los Gatos 1106, Los Ositos 2103, and Placerville 2106) appear on both lists. These eleven circuits are highlighted in red within Tables 45 and 46. Additionally, thirteen circuits marked with an asterisk (*) indicates that they are “deficient”. A “deficient” circuit is defined as a circuit that has appeared consecutively on the WPC lists for the previous two years (see the “Deficient” Worst Performing Section below for further details).

#	DIVISION	SUBSTATION	CIRCUIT NAME	TOTAL CUSTOMERS	CIRCUIT MILES	% OH	% UG	HFTD	3 YR AVG MAINLINE OUTAGES	3 YR AVG AIFI
1	CENTRAL COAST	BEN LOMOND	BEN LOMOND-0401*	884	24	96	4	3	10	7.78
2	DE ANZA	LOS GATOS	LOS GATOS-1106*	1618	74	96	4	2 & 3	15	7.27
3	CENTRAL COAST	CASSERLY	CASSERLY-0401	215	3	100	0	1	7	6.67
4	HUMBOLDT	GARBERVILLE	GARBERVILLE-1102	1816	142	94	6	1 & 2	22	5.32
5	HUMBOLDT	FRUITLAND	FRUITLAND-1141	386	26	100	0	1 & 2	7	5.26
6	HUMBOLDT	GARBERVILLE	GARBERVILLE-1101*	1275	164	98	2	1 & 2	15	5.22
7	CENTRAL COAST	LOS OSITOS	LOS OSITOS-2103	1058	177	96	4	1 & 2	11	4.98
8	STOCKTON	ALPINE	ALPINE-1101*	281	8	12	88	1	5	4.94
9	CENTRAL COAST	BIG TREES	BIG TREES-0402	868	17	100	0	1, 2, & 3	4	4.89
10	NORTH VALLEY	CHALLENGE	CHALLENGE-1101	705	49	98	2	2 & 3	8	4.83
11	SIERRA	EL DORADO PH	EL DORADO PH-2101*	3952	144	96	4	1, 2, & 3	17	4.80
12	YOSEMITE	CURTIS	CURTIS-1702	4449	124	94	6	1, 2, & 3	10	4.75
13	LOS PADRES	TEMPLETON	TEMPLETON-2113*	5521	352	92	8	1, 2, & 3	18	4.60
14	SIERRA	ALLEGHANY	ALLEGHANY-1101*	1079	79	97	3	1, 2, & 3	10	4.39
15	CENTRAL COAST	GREEN VALLEY	GREEN VALLEY-2101	3130	167	93	7	1, 2, & 3	17	4.34
16	SIERRA	PLACERVILLE	PLACERVILLE-2106	5281	286	95	5	1, 2, & 3	15	4.33
17	SIERRA	SHINGLE SPRINGS	SHINGLE SPRINGS-2108	2903	40	70	30	1, 2, & 3	6	4.22
18	HUMBOLDT	HOOPA	HOOPA-1101	2086	142	92	8	1, 2, & 3	13	4.17
19	DE ANZA	CAMP EVERS	CAMP EVERS-2106*	6111	166	88	12	1, 2, & 3	22	4.16
20	YOSEMITE	MARIPOSA	MARIPOSA-2102	3324	262	98	2	1, 2, & 3	10	4.06
21	NORTH VALLEY	CRESCENT MILLS	CRESCENT MILLS-2101	881	85	93	7	1 & 2	7	3.95
22	SACRAMENTO	GRAND ISLAND	GRAND ISLAND-2227	1124	159	99	1	1	9	3.94

Table 45

#	DIVISION	SUBSTATION	CIRCUIT NAME	TOTAL CUSTOMERS	CIRCUIT MILES	% OH	% UG	HFTD	3 YR AVG MAINLINE OUTAGES	3 YR AVG AIDI
1	NORTH VALLEY	CRESCENT MILLS	CRESCENT MILLS-2101	881	85	93	7	1 & 2	7	3445
2	FRESNO	BALCH NO 1	BALCH NO 1-1101	28	15	100	0	2	2	3129
3	DE ANZA	LOS GATOS	LOS GATOS-1106	1618	74	96	4	2 & 3	15	2457
4	NORTH VALLEY	CHALLENGE	CHALLENGE-1101*	705	49	98	2	2 & 3	8	2188
5	NORTH VALLEY	PIT NO 5	PIT NO 5-1101*	120	27	89	11	2	6	2035
6	HUMBOLDT	GARBERVILLE	GARBERVILLE-1102	1816	142	94	6	1 & 2	22	1891
7	HUMBOLDT	HOOPA	HOOPA-1101	2086	142	92	8	1, 2, & 3	13	1645
8	SIERRA	ALLEGHANY	ALLEGHANY-1101*	1079	79	97	3	1, 2, & 3	10	1627
9	CENTRAL COAST	BEN LOMOND	BEN LOMOND-0401	884	24	96	4	3	10	1523
10	SIERRA	ALLEGHANY	ALLEGHANY-1102	165	18	94	6	3	3	1519
11	SIERRA	EL DORADO PH	EL DORADO PH-2101*	3952	144	96	4	1, 2, & 3	17	1509
12	HUMBOLDT	WILLOW CREEK	WILLOW CREEK-1103	1519	77	99	1	2 & 3	8	1422
13	CENTRAL COAST	LOS OSITOS	LOS OSITOS-2103	1058	177	96	4	1 & 2	11	1410
14	SIERRA	PLACERVILLE	PLACERVILLE-2106	5281	286	95	5	1, 2, & 3	15	1372
15	NORTH VALLEY	ELK CREEK	ELK CREEK-1101*	903	173	99	1	1 & 2	9	1328
16	KERN	POSO MOUNTAIN	POSO MOUNTAIN-2101	142	59	100	0	1 & 2	8	1293
17	CENTRAL COAST	OTTER	OTTER-1102*	527	64	84	16	2 & 3	5	1284
18	NORTH BAY	SILVERADO	SILVERADO-2104	3833	156	88	12	1, 2, & 3	18	1277
19	NORTH VALLEY	CEDAR CREEK	CEDAR CREEK-1101*	776	111	99	1	2 & 3	4	1147
20	YOSEMITE	SPRING GAP	SPRING GAP-1702	1495	47	91	9	1, 2, & 3	7	1126
21	SIERRA	APPLE HILL	APPLE HILL-2102	4902	377	97	3	1, 2, & 3	19	1119
22	CENTRAL COAST	CASSERLY	CASSERLY-0401	215	3	100	0	1	7	1094

Table 46

<u>Cost Effective Reliability Remediation:</u>

The Targeted Circuit Program was previously PG&E's primary reliability improvement program to cost effectively remediate PG&E's worst performing circuits. Under the Targeted Circuit Program, PG&E's distribution engineers analyzed the causes and characteristics of historical outages as well as reviewed the current circuit design to cost effectively identify work that would improve the circuit's reliability performance. The typical targeted circuit work included, as appropriate for the circuit, installing new protection equipment, replacing overhead and underground conductors, installing new fault indicators, reframing poles to increase phase separation, installing animal/bird guards, repairing or replacing deteriorated equipment, completing pending reliability related maintenance work, performing infrared inspections, and trimming trees. The anticipated goal of each targeted circuit was to achieve a 25 percent reliability performance improvement from its 3-year historical AIFI and AIDI average. The typical timeline for a targeted circuit project to be initiated, engineered, and constructed was three years. Although historical reliability metric results have shown the Targeted Circuit Program to be effective in remediating worst performing circuit performance, funding for the Targeted Circuit Program was or will not be submitted in the 2023 General Rate Case (GRC). PG&E's reliability improvement strategy and focus are outlined in the following paragraphs.

In compliance with California SB 901, AB 1054 and guidelines from the Office of Energy Infrastructure Safety (Energy Safety), PG&E submitted a 2023-2025 Wildfire Mitigation Plan (WMP) to support PG&E's stance that catastrophic wildfires shall stop. Several components in the 2023 WMP have had both positive and negative impacts to reliability performance. Under the System Hardening Program, PG&E's distribution engineers evaluate a rebuild of overhead distribution circuits in the High Fire Threat District (HFTD) and High Fire Risk Areas (HFRA) areas. The typical system hardening work included, as appropriate for the circuit, replacing bare wire with insulated or covered conductor, increasing strength requirements for poles, installing new system automation and protection equipment, line removal, and targeted conversion of overhead equipment to underground equipment. The program focus moving forward is to aggressively underground 10,000 circuit miles of overhead equipment. The anticipated goal of each system hardened circuit is to minimize the risk of an asset failure that could result in a fire ignition. The anticipated reliability improvement of each system hardened circuit is to minimize vegetation, equipment failure, third party, animal, and other (unknown) caused outages that could result in a fire ignition. PG&E completed 342, 210, and 332 miles of system hardening work in HFTD and HFRA areas in 2020, 2021, and 2022 respectively as part of the PG&E's Wildfire Mitigation Plan. In 2023-2026, PG&E overall system hardening mileage forecasts is approximately 2,285 circuit miles.

Another key component of the 2023 Wildfire Mitigation Plan is the continued effort of the Vegetation Management (VM) program. In 2023, the Enhanced Vegetation Management (EVM) Program transitioned to three new risk-informed VM programs: Focus Tree Inspections, VM for Operational Mitigations, and Tree Removal Inventory. Under the EVM Program from 2020 to 2022, PG&E aggressively expanded its vegetation management efforts around its assets in the HFTD areas. The typical EVM work included, as appropriate for the circuit, clearing overhang, targeted trimming/removal of specific tree species, and performing "ground to conductor" vegetative fuel reduction. The anticipated goal of each EVM circuit is to minimize the risk of a fire ignition due to vegetation-conductor contact. The anticipated reliability improvement of each EVM circuit is to minimize vegetation caused outages. As part of the 2020, 2021, and 2022 PG&E's Wildfire Safety Plans, PG&E completed 1,878, 1,983, and 1,924 circuit miles of EVM work in HFTD areas, respectively. The VM program will continue to be a multi-year effort to address the approximately 24,911 overhead distribution circuit miles in the HFTD areas.

In 2021, PG&E piloted the Enhanced Powerline Safety Settings (EPSS) Program. Under the EPSS effort, PG&E's distribution engineers re-adjusted the sensitivity settings on distribution line protection equipment to quickly react to problems detected on the system and automatically turn off power. Power was restored once a line patrol was conducted to ensure no wildfire ignition risk persisted. In 2022, the EPSS effort expanded to include all distribution lines in the HFTD areas and High Fire Risk Areas (HFRA), as well as select non-HFTD areas (Buffer zone) that are adjacent to HFTD areas and HFRA. As a result, a 68 percent reduction in CPUC-reportable ignitions in HFTD was observed in 2022 in comparison to 2018 to 2020 weather normalized average performance. However, it was also observed that the EPSS effort negatively impacted reliability performance in terms of both outage impacts to customers and outage duration times. This was primarily due to the sensitivity setting adjustments causing a decrease in coordination with downstream protection equipment. Efforts to minimize the negative reliability impacts of EPSS include the continued adjustment of the safety settings, installing Fault Indicators (FI) and Line Sensors to help pinpoint the problem locations, installing Fuse Savers (FS) to help re-establish proper protection coordination, and taking a more surgical approach in applying EPSS settings for areas most at risk.

In 2023, PG&E is deploying a new Down Conductor Detection (DCD) program to further reduce wildfire risk. Specifically, this program focuses on enhancing ground fault protection by sensing low current, high impedance faults. As a result, it is anticipated that the implementation of DCD technology would have a negative impact to reliability performance. The full reliability impacts will be better understood and evaluated after completion of the full roll out in 2023. This includes PG&E's distribution engineers performing DCD sensitivity setting readjustments as part of their EPSS outage review efforts.

In addition to the Wildfire Mitigation Plan, internal reviews of unplanned outages are performed on a regular basis through PG&E Outage Review Team (ORT) Process. The objective of the ORT process is to identify and minimize chronic localized reliability issues that affect a smaller number of customers. Cost effective remediation work that addresses those circuits identified from the ORT process are incorporated into PG&E's base reliability work.

As identified in Tables 45 and 46, 19 and 21 of PG&E's worst performing AIFI and AIDI circuits respectively are in EPSS circuits. As a result, these worst performing circuits have or would be incorporated into the Wildfire Mitigation Plan. For the worst performing circuits located in non-EPSS circuits, PG&E will evaluate what remedial action, if any, is appropriate through the ORT process. This includes determining whether any cost-effective remedial action will be performed through PG&E's base reliability improvement work. Any future funding requests for PG&E's Targeted Circuit Program would be submitted in the 2027 General Rate Case.

"Deficient" Worst Performing Circuits:

The circuits listed below are "deficient" (WPC) circuits in response to section 5b of CPUC D 16-008-001, Appendix B:

1. ALLEGHANY 1101

   i. An explanation of why it was ranked as a "deficient" circuit:
      - Three-year (2018-2020) average AIFI score of 3.09 and AIDI score of 994.
      - Three-year (2019-2021) average AIFI score of 3.47 and AIDI score of 1,343.
      - Three-year (2020-2022) average AIFI score of 4.39 and AIDI score of 1,627.

   ii. A historical record of the metric:
      - AIFI 2018 = 2.32
      - AIFI 2019 = 4.71
      - AIFI 2020 = 2.23
      - AIFI 2021 = 3.48
      - AIFI 2022 = 7.45

      - AIDI 2018 = 420
      - AIDI 2019 = 2,231
      - AIDI 2020 = 330
      - AIDI 2021 = 1,468
      - AIDI 2022 = 3,077

   iii. An explanation of why it was on the deficiency list again:

      The Alleghany 1101 circuit provides electric service to approximately 1,079 customers in Sierra County through 79 circuit-miles of primarily overhead conductor. This circuit also serves customers located in the CPUC High Fire Threat District - Tier 2 (Elevated Risk) and High

Fire Threat District - Tier 3 (Extreme Risk) and is an EPSS circuit. The Alleghany 1101 circuit is comprised of about 45 miles of mainline with various branches that travel through a mix of rural highway and cross-country access. Its most northern branch travels through mountainous terrain including the Plumas National Forest. The major factors driving the Alleghany 1101 reliability performance are the remote service territory, overhead conductor exposure, and minimal ties to adjacent circuits for outage restoration support. Specifically, the overall 2019 AIDI performance was driven by a single unknown caused event. Securing helicopter resources to perform visual patrols of the mainline sections inaccessible by foot was the primary driver in the elevated outage restoration time. The elevated 2022 outage activity was primarily driven by the vegetation caused outages and contributed over half of the AIDI and AIFI performance.

iv. An explanation of what is being done to improve the circuit's future performance:

The Alleghany 1101 circuit is included as part of the 10-year System Hardening/Undergrounding Work Plan. As of May 2023, the current plan is targeting approximately 23 miles to be hardened/undergrounded by year 2029. In addition, the 2023 work plan calls to install 4 fault indicators to help pin-point problem locations and to support the outage restoration efforts during the EPSS enablement season.

v. A quantitative description of the utility's expectation for that circuit's future performance:

Incremental reliability improvement is anticipated after completion of the base reliability work and the System Hardening/Undergrounding Plan to further minimize wildfire ignition risks on the EPPS circuit. Alleghany 1101 circuit performance will also be actively monitored on a continuous basis. This includes initiating any base reliability improvement work to minimize re-occurring outage activities as part of the Outage Review Process.

2. ALPINE 1101

i. An explanation of why it was ranked as a "deficient" circuit:

- Three-year (2018-2020) average AIFI score of 3.73.
- Three-year (2019-2021) average AIFI score of 3.73.
- Three-year (2020-2022) average AIFI score of 4.94.

ii. A historical record of the metric:

- AIFI 2018 = 3.99
- AIFI 2019 = 5.40
- AIFI 2020 = 1.80
- AIFI 2021 = 4.00
- AIFI 2022 = 9.00

iii. An explanation of why it was on the deficiency list again:

The Alpine 1101 circuit provides electric service to approximately 281 customers in Alpine County through 8 circuit-miles of primarily underground conductor. Specifically, the Alpine 1101 circuit supports the Bear Valley community. The Salt Springs 2101 circuit provides the primary service to the Alpine 1101 circuit through 21/12 kV voltage step down transformers. Its main line travels through mountainous terrain including the Stanislaus National Forest. The major factor driving the Alpine 1101 reliability performance is the reliability performance of the Salt Springs 2101 circuit. This includes its remote service territory, overhead conductor exposure, minimal ties to adjacent circuits for outage restoration support, and elevated terrain which makes it susceptible to snow loading conditions. The Salt Springs 2101 circuit also serves customers located in the CPUC High Fire Threat District - Tier 2 (Elevated Risk) and is an EPSS circuit.

iv. An explanation of what is being done to improve the circuit's future performance:

It is anticipated any improvement work on the Salt Springs 2101 will also improve the Alpine 1101 reliability performance. A targeted circuit project had been initiated on the Salt Springs 2101 circuit but has since been repurposed to support the wildfire mitigation efforts. A 2023 base reliability project has been identified for installing a new UG switch to aid with operational and restoration efforts. In addition, the 2023 work plan calls to install 1 set of fault indicators to help pin-point problem location and to support the outage restoration efforts during the EPSS enablement season. The

Salt Springs 2101 circuit is included as part of the 10-year System Hardening/Undergrounding Work Plan. As of May 2023, the current plan is targeting approximately 0.7 miles to be hardened/undergrounded by year 2032.

v. A quantitative description of the utility's expectation for that circuit's future performance:

Incremental reliability improvement is anticipated after completion of the base reliability work and the comprehensive Wildfire Mitigation Plan to minimize wildfire ignition risks in the Tier 2 High Fire Threat District. Alpine 1101 circuit performance will be actively monitored on a continuous basis. This includes initiating any base reliability improvement work to minimize re-occurring outage activities as part of the Outage Review Process.

3. BEN LOMOND 0401

i. An explanation of why it was ranked as a "deficient" circuit:

- Three-year (2018-2020) average AIFI score of 3.66.
- Three-year (2019-2021) average AIFI score of 5.10.
- Three-year (2020-2022) average AIFI score of 7.78.

ii. A historical record of the metric:

- AIFI 2018 = 4.01
- AIFI 2019 = 4.98
- AIFI 2020 = 2.00
- AIFI 2021 = 8.32
- AIFI 2022 = 12.27

iii. An explanation of why it was on the deficiency list again:

The Ben Lomond 0401 circuit provides electric service to 884 primarily residential customers, along rural Highway 9 in Santa Cruz County. This circuit comprises of approximately 24 circuit-miles of primarily OH conductors, which includes its source circuit of 8 circuit-miles of Camp Evers 2105 – 21kv distribution circuit. The Ben Lomond 0401 is located entirely in the CPUC High Fire Threat District - Tier 3 (Extreme Risk) and is an EPSS circuit. The major factors driving Ben Lomond 0401 reliability performance are the remote mountainous service territory with increased vegetation caused outage risks, overhead conductor exposure, and minimal ties to adjacent circuits for outage restoration support, roughly 50% of the circuit are comprised of radial line sections. The primary driver for 2021 and 2022 reliability performance was implementation of the Enhance Powerline Safety Settings (EPSS) scheme.

iv. An explanation of what is being done to improve the circuit's future performance:

A system hardening project to replace over 7,000' of OH conductor was completed in 2019 and 2 fault indicators installed in 2022 on the Ben Lomond 0401 circuit; and 12 fault indicators installed on the Camp Evers 2105 in 2022 as part of the Wildfire Mitigation Plan. Base reliability projects have been initiated on Camp Evers 2105 and Ben Lemond 0401 circuits to minimize the impacts of EPSS. Specifically, the 2023 work plan calls to install 4 fault indicators on the Ben Lomond 0401 circuit and 17 fault indicators on the Camp Evers 2105 circuit to help pin-point problem locations and to support the outage restoration efforts during the EPSS enablement season. In addition, projects to update 3 fuses to Fuse Saver devices have been identified and currently being evaluated for feasibility. The Ben Lomond 0401 and Camp Evers 2105 circuits are included as part of the 10-year System Hardening/Undergrounding Work Plan. As of May 2023, the current plan for Ben Lomond 0401 is targeting approximately 8 miles to be hardened/undergrounded by year 2032 and for Camp Evers 2105 approximately 37 miles to be hardened/undergrounded by year 2029.

v. A quantitative description of the utility's expectation for that circuit's future performance:

After the successful completion of the system hardening project in 2019, no additional outages have been observed on the hardened line section from 2020 to 2022. Minimizing the negative impacts of the EPSS effort is anticipated after completion of the 2023 base reliability projects. In addition, incremental reliability improvement is anticipated after completion of the comprehensive Wildfire Mitigation Plan to minimize wildfire ignition risks in the Tier 3 High Fire Threat District. Ben Lomond 0401 and Camp Evers 2105 circuit performance will be actively monitored on a continuous basis. This includes initiating any base reliability improvement work to minimize re-occurring outage activities as part of the Outage Review Process.

4. CAMP EVERS 2106

i. An explanation of why it was ranked as a "deficient" circuit:

- Three-year (2018-2010) average AIFI score of 3.14.
- Three-year (2019-2021) average AIFI score of 3.78.
- Three-year (2020-2022) average AIFI score of 4.16.

ii. A historical record of the metric:

- AIFI 2018 = 2.04
- AIFI 2019 = 3.27
- AIFI 2020 = 4.11
- AIFI 2021 = 3.97
- AIFI 2022 = 4.38

iii. An explanation of why it was on the deficiency list again:

The Camp Evers 2106 circuit provides electric service to 6,111 customers to the communities of Scotts Valley, Felton, and Santa Cruz County through 166 circuit-miles of primarily overhead conductor. This circuit also serves customers located in the CPUC High Fire Threat District - Tier 2 (Elevated Risk) and Tier 3 (Extreme Risk) and is an EPSS circuit. The Camp Evers 2106 circuit is comprised of two main branches that travels northwest along Hwy 17 and west to area south of Hwy 9. The major factors driving the Camp Evers 2106 reliability performance are the remote mountainous service territory with increased vegetation caused outage risks and overhead conductor exposure. The primary driver for 2021 and 2022 reliability performance was implementation of the Enhance Powerline Safety Settings (EPSS) scheme.

iv. An explanation of what is being done to improve the circuit's future performance:

Several system hardening projects have been completed as part the Wildfire Mitigation Plan with 6.7 miles successfully completed in 2020-2021. As part of 2022 Wildfire Mitigation Plan, 19 sets of fault indicators were installed. The 2023 work plan calls to install 10 sets of fault indicators to help pin-point problem locations and to support the outage restoration efforts during the EPSS enablement season. New base reliability projects have been initiated on Camp Evers 2106 circuit to minimize the impacts of EPSS. Specifically, the 2023 work plan calls to replace 2 fuses with Recloser devices and to update 3 fuses to Fuse Saver devices to help reestablish proper protection coordination. In addition, the Camp Evers 2106 circuit is included as part of the 10-year System Hardening/Undergrounding Work Plan. As of May 2023, the current plan is targeting approximately 44 miles to be hardened/undergrounded by year 2032.

v. A quantitative description of the utility's expectation for that circuit's future performance:

After the successful completion of the system hardening projects in 2021, no additional outages have been observed on the hardened line sections from 2021 to 2022. Incremental reliability improvement is anticipated after completion of the base reliability work and the System Hardening/Undergrounding Plan to further minimize wildfire ignition risks on the EPPS circuit. Camp Evers 2106 circuit performance will be actively monitored on a continuous basis. This includes initiating any base reliability improvement work to minimize re-occurring outage activities as part of the Outage Review Process.

5. CEDAR CREEK 1101

i. An explanation of why it was ranked as a "deficient" circuit:

- Three-year (2018-2020) average AIDI score of 966.
- Three-year (2019-2021) average AIDI score of 991.
- Three-year (2020-2022) average AIDI score of 1,147.

ii. A historical record of the metric:

- AIDI 2018 = 24
- AIDI 2019 = 55
- AIDI 2020 = 2,824
- AIDI 2021 = 91
- AIDI 2022 = 511

iii. An explanation of why it was on the deficiency list again:

The Cedar Creek 1101 circuit provides electric service to 776 customers to the communities of Round Mountain, Montgomery

Creek, and Shasta County through 111 circuit-miles of primarily overhead conductor. This circuit also serves customers located in the CPUC High Fire Threat District - Tier 2 (Elevated Risk) and Tier 3 (Extreme Risk) and is an EPSS circuit. The Cedar Creek 1101 circuit is comprised of two main line branches along Hwy 299. The major factors driving the Cedar Creek 1101 reliability performance are the remote mountainous service territory with increased vegetation caused outage risks and overhead conductor exposure. The primary driver for 2020 reliability performance was Public Power Shut-off (PSPS) outages during non-major event days.

iv. An explanation of what is being done to improve the circuit's future performance:

Base reliability projects have been initiated on Cedar Creek 1101 circuit to minimize the impacts of EPSS. Specifically, the 2023 work plan calls to install 5 fault indicators to help pin-point problem locations and to support the outage restoration efforts during the EPSS enablement season. The Cedar Creek 1101 circuit is included as part of the 10-year System Hardening/Undergrounding Work Plan. As of May 2023, the current plan is targeting approximately 78 miles to be hardened/undergrounded by year 2029.

v. A quantitative description of the utility's expectation for that circuit's future performance:

Incremental reliability improvement is anticipated after completion of the base reliability work and the comprehensive Wildfire Mitigation Plan to minimize wildfire ignition risks in the Tier 2 and 3 High Fire Threat Districts. Cedar Creek 1101 circuit performance will be actively monitored on a continuous basis. This includes initiating any base reliability improvement work to minimize re-occurring outage activities as part of the Outage Review Process.

6. CHALLENGE 1101

i. An explanation of why it was ranked as a "deficient" circuit:

- Three-year (2018-2020) average AIDI score of 883.
- Three-year (2019-2021) average AIDI score of 921.
- Three-year (2020-2022) average AIDI score of 2,188.

ii. A historical record of the metric:

- AIDI 2018 = 250
- AIDI 2019 = 333
- AIDI 2020 = 2,072
- AIDI 2021 = 361
- AIDI 2022 = 4,120

iii. An explanation of why it was on the deficiency list again:

The Challenge 1101 circuit provides electric service to approximately 705 customers in Yuba, Butte and Plumas Counties through 49 circuit-miles of primarily overhead conductor. This circuit also serves customers located mainly in the CPUC High Fire Threat District - Tier 2 (Elevated Risk) and Tier 3 (Extreme Risk) and is an EPSS circuit. The Challenge 1101 circuit is comprised of one main branch that travels northeast through remote, mountainous terrain including the Plumas National Forest. The major factors driving the Challenge 1101 reliability performance are the remote mountainous service territory with increased vegetation caused outage risks, overhead conductor exposure, and minimal ties to adjacent circuits for outage restoration support. About half contribution of the 2020 AIDI performance was driven by a single vegetation caused outage resulting in wire down. And about a third of the contribution of the 2022 AIDI performance was driven by single equipment failure outage during a winter storm event.

iv. An explanation of what is being done to improve the circuit's future performance:

Base reliability projects have been initiated on Challenge 1101 circuit to minimize the impacts of EPSS. Specifically, the 2023 work plan calls to install 4 fault indicators to help pin-point problem locations and to support the outage restoration efforts during the EPSS enablement season. The Challenge 1101 circuit is included as part of the 10-year System Hardening/Undergrounding Work Plan. As of May 2023, the current plan is targeting approximately 48 miles to be hardened/undergrounded by year 2032.

v. A quantitative description of the utility's expectation for that circuit's future performance:

Incremental reliability improvement is anticipated after completion of the base reliability work and the comprehensive Wildfire Mitigation

Plan to minimize wildfire ignition risks in the Tier 2 and 3 High Fire Threat Districts. Challenge 1101 circuit performance will be actively monitored on a continuous basis. This includes initiating any base reliability improvement work to minimize re-occurring outage activities as part of the Outage Review Process.

7. EL DORADO PH 2101

i. An explanation of why it was ranked as a "deficient" circuit:

- Three-year (2018-2020) average AIFI score of 3.25 and AIDI score of 1,046.
- Three-year (2019-2021) average AIFI score of 4.23 and AIDI score of 1,215.
- Three-year (2020-2022) average AIFI score of 4.80 and AIDI score of 1,509.

ii. A historical record of the metric:

- AIFI 2018 = 2.62
- AIFI 2019 = 2.37
- AIFI 2020 = 4.75
- AIFI 2021 = 5.77
- AIFI 2022 = 3.87

- AIDI 2018 = 702
- AIDI 2019 = 326
- AIDI 2020 = 2,107
- AIDI 2021 = 1,208
- AIDI 2022 = 1,109

iii. An explanation of why it was on the deficiency list again:

The El Dorado PH 2101 circuit provides electric service to approximately 3,952 customers in Humboldt County through 144 circuit-miles of primarily overhead conductor. This circuit also serves customers located in the CPUC High Fire Threat District - Tier 2 (Elevated Risk) and Tier 3 (Extreme Risk) and is an EPSS circuit. The El Dorado PH 2101 circuit is comprised of one main branch that travels east along Highway 50 through a 30 mile stretch of mountainous terrain including El Dorado National Forest. The primary mainline section splits near the town of Polluck Pines, approximately 4 miles southeast of El Dorado PH (Power House). The southwest branch extends 8 miles to Pleasant Valley while the south branch extends 10 miles to the community of Grizzly Flat. The major factors driving the El Dorado PH 2101 reliability performance are the remote mountainous service territory with increased vegetation caused outage risks, overhead conductor exposure, and minimal ties to adjacent circuits for outage restoration support. In particular, vegetation caused outages contributed to about 70% for AIDI and about 39% for AIFI performance from 2018 to 2022.

iv. An explanation of what is being done to improve the circuit's future performance:

As part of PG&E’s base reliability work, a project was completed in 2019 by adding remote operating capabilities to existing line reclosers and replacing overhead conductor for improve operational flexibility. In addition, several system hardening projects have been initiated to replace approximately 149.6 miles of OH conductor as part of the Wildfire Mitigation Plan with 73.8 miles successfully completed in 2019-2023. The remaining 75.8 miles are planned to be completed by year 2027. As part of the 2022 Wildfire Mitigation Plan 6 fault indicators successfully installed. New base reliability projects have been initiated on El Dorado PH 2101 circuit to minimize the impacts of EPSS. Specifically, the 2023 work plan calls to replace 2 fuses with Fuse Saver devices and to install 7 fault indicators to help pin-point problem locations and to support the outage restoration efforts during the EPSS enablement season.

v. A quantitative description of the utility's expectation for that circuit's future performance:

Incremental reliability improvement is anticipated after completion of the base reliability work and the comprehensive Wildfire Mitigation Plan to minimize wildfire ignition risks in the Tiers 2 and 3 High Fire Threat District. El Dorado PH 2101 circuit performance will be actively monitored on a continuous basis. This includes initiating any base reliability improvement work to minimize re-occurring outage activities as part of the Outage Review Process.

8. ELK CREEK 1101

i. An explanation of why it was ranked as a "deficient" circuit:
- Three-year (2018-2020) average AIDI score of 1,173.
- Three-year (2019-2021) average AIDI score of 862.
- Three-year (2020-2022) average AIDI score of 1,328.

ii. A historical record of the metric:
- AIDI 2018 = 1,936
- AIDI 2019 = 971
- AIDI 2020 = 614
- AIDI 2021 = 1,001
- AIDI 2022 = 2,384

iii. An explanation of why it was on the deficiency list again:

The Elk Creek 1101 circuit provides electric service to approximately 903 customers in Southern Glenn and Northern Colusa Counties through 173 circuit-miles of primarily overhead conductor. This circuit also serves customers located in the CPUC High Fire Threat District - Tier 2 (Elevated Risk) and is an EPSS circuit. The Elk Creek 1101 circuit is comprised of several branches that travel north along Hwy 162, west into Mendocino National Forest, and south along Hwy 306 past Stony Gorge Reservoir. The major factors driving the Elk Creek 1101 reliability performance are the remote service territory, overhead conductor exposure, and minimal ties to adjacent circuits for outage restoration support. The 2018 reliability performance was primarily driven by several unknown and animal caused outages impacting a recloser zone of 500 customers. And the primary driver for 2022 reliability performance was implementation of the Enhance Powerline Safety Settings (EPSS) scheme.

iv. An explanation of what is being done to improve the circuit's future performance:

Base reliability projects have been initiated on Elk Creek 1101 circuit to minimize the impacts of EPSS. Specifically, the 2023 work plan calls to install 4 fault indicators to help pin-point problem locations and to support the outage restoration efforts during the EPSS enablement season. Several system hardening projects have been initiated for the Elk Creek 1101 circuit. As of May 2023, the plan is to harden/underground and OH line removal of approximately 31.7 miles by year 2025. In addition, approximately 29 miles to be targeted by year 2029 as part of the 10-year System Hardening/Undergrounding Work Plan.

v. A quantitative description of the utility's expectation for that circuit's future performance:

Incremental reliability improvement is anticipated after completion of the base reliability work and the comprehensive Wildfire Mitigation Plan to minimize wildfire ignition risks in the Tier 2 High Fire Threat District. Elk Creek 1101 circuit performance will be actively monitored on a continuous basis. This includes initiating any base reliability improvement work to minimize re-occurring outage activities as part of the Outage Review Process.

9. GARBERVILLE 1101

i. An explanation of why it was ranked as a "deficient" circuit:

- Three-year (2018-2020) average AIFI score of 4.12.
- Three-year (2019-2021) average AIFI score of 4.70.
- Three-year (2020-2022) average AIFI score of 5.22.

ii. A historical record of the metric:

- AIFI 2018 = 2.49.
- AIFI 2019 = 5.46
- AIFI 2020 = 4.40
- AIFI 2021 = 4.24
- AIFI 2022 = 7.03

iii. An explanation of why it was on the deficiency list again:

The Garberville 1101 circuit provides electric service to approximately 1,275 customers in Southern Humboldt and Northern Mendocino Counties through 164 circuit-miles of primarily overhead conductor. This circuit also serves customers located in the CPUC High Fire Threat District - Tier 2 (Elevated Risk) and is an EPSS circuit. The Garberville 1101 circuit is comprised of three main branches. The eastern branch serves approximately 288 customers through a 22 circuit-mile line section that travels through remote, mountainous terrain including zones with intermediate and heavy snow loading. The western branch serves approximately 179 customers through a 12 circuit-mile line section that traverses through coastal mountains to the community of Whitethorn. The southern branch serves approximately 787 customers through a 28 circuit-mile line section that follows the Hwy 101 corridor between Garberville and Leggett. The southern branch also runs along the South Fork of the Eel River and crosses several State Parks including Richardson's Grove, Smith Redwoods, and Standish Hickey Recreation Area. The major factors driving the Garberville 1101 reliability performance are the remote mountainous service territory with increased vegetation caused outage risks, overhead conductor exposure, and minimal ties to adjacent circuits for outage restoration support. Particularly, 2022 reliability performance driven by vegetation caused outages contributing about half of AIFI metric.

iv. An explanation of what is being done to improve the circuit's future performance:

Base reliability projects have been initiated on Garberville 1101 circuit to minimize the impacts of EPSS. Specifically, as part of the 2022 work plan 11 fault indicators were installed to help pin-point problem locations and to support the outage restoration efforts during the EPSS enablement season. And the 2023 work plan calls to install 6 fault indicators. In addition, projects to update 3 fuses to Fuse Saver devices to help reestablish protection coordination have been identified and currently being evaluated. Currently no system hardening projects have been identified on the Garberville 1101 circuit.

v. A quantitative description of the utility's expectation for that circuit's future performance:

Incremental reliability improvement is anticipated after completion of the base reliability work. Garberville 1101 circuit performance will be actively monitored on a continuous basis. This includes initiating any base reliability improvement work to minimize re-occurring outage activities as part of the Outage Review Process.

10. LOS GATOS 1106

i. An explanation of why it was ranked as a "deficient" circuit:

- Three-year (2018-2020) average AIFI score of 3.89.
- Three-year (2019-2021) average AIFI score of 5.19.

- Three-year (2020-2022) average AIFI score of 7.27.

ii. A historical record of the metric:

- AIFI 2018 = 5.54
- AIFI 2019 = 1.24
- AIFI 2020 = 4.88
- AIFI 2021 = 9.43
- AIFI 2022 = 7.51

iii. An explanation of why it was on the deficiency list again:

Los Gatos is located approximately seven miles southwest of San Jose in De Anza Division. The Los Gatos 1106 circuit provides electric service to approximately 1,618 customers in Santa Clara County through 74 miles of primary overhead conductor. This circuit also serves customers located in the CPUC High Fire Threat District - Tier 2 (Elevated Risk) and Tier 3 (Extreme Risk) and is an EPSS circuit. The Los Gatos 1106 circuit is comprised of one main branch that travels south along Highway 17 through a 3 mile stretch of mountainous terrain including Lexington Reservoir Park. The primary mainline section splits into various branches near the Lexington Reservoir and extends into the Santa Cruz mountains. The major factors driving the Los Gatos 1106 reliability performance are the mountainous service territory with increased vegetation caused outage risks, overhead conductor exposure, and minimal ties to adjacent circuits for outage restoration support. The primary driver for 2021 and 2022 reliability performance was implementation of the Enhance Powerline Safety Settings (EPSS) scheme.

iv. An explanation of what is being done to improve the circuit's future performance:

Several system hardening projects have been completed as part the Wildfire Safety Plan with 6.1 miles successfully completed in 2019-2022. In addition, the Los Gatos 1106 circuit is included as part of the 10-year System Hardening/Undergrounding Work Plan. As of May 2023, the current plan is targeting approximately 36 miles to be hardened/undergrounded by year 2029. As part of 2022 Wildfire Mitigation Plan, 3 sets of fault indicators were installed. The 2023 work plan calls to install 7 sets of fault indicators to help pin-point problem locations and to support the outage restoration efforts during the EPSS enablement season. New base reliability projects have been initiated on Los Gatos 1106 circuit to minimize the impacts of EPSS. Specifically, the 2023 work plan calls to update 2 fuses to Fuse Saver devices to help reestablish proper protection coordination.

v. A quantitative description of the utility's expectation for that circuit's future performance:

After the successful completion of the system hardening projects from 2019 to 2022, no additional outages have been observed on the hardened line sections in 2022. Incremental reliability improvement is anticipated after completion of the base reliability and system hardening projects. This includes the associated reliability benefits after completion of the comprehensive Wildfire Mitigation Plan to minimize wildfire ignition risks in the Tiers 2 and 3 High Fire Threat Districts. Los Gatos 1106 circuit performance will be actively monitored on a continuous basis. This includes initiating any base reliability improvement work to minimize re-occurring outage activities as part of the Outage Review Process.

11. OTTER 1102

i. An explanation of why it was ranked as a "deficient" circuit:

- Three-year (2018-2020) average AIDI score of 1,849.
- Three-year (2019-2021) average AIDI score of 1,291.
- Three-year (2020-2022) average AIDI score of 1,284.

ii. A historical record of the metric:

- AIDI 2018 = 1,713
- AIDI 2019 = 3,421
- AIDI 2020 = 412
- AIDI 2021 = 33
- AIDI 2022 = 3,409

iii. An explanation of why it was on the deficiency list again:

The Otter 1102 circuit provides electric service to approximately 527 customers in Monterey County through 64 circuit-miles of primarily overhead conductor. This circuit also serves customers located in the CPUC High Fire Threat District - Tier 2 (Elevated Risk) and is an EPSS circuit. The primary mainline section of Otter 1102 circuit travels south along Central California's coastline through a 26 mile stretch of mountainous terrain including Andrew Molera and Pfeiffer Big Sur State Parks. The major factors driving the Otter 1102 reliability performance are the remote mountainous and coastal service territory with increased winter storm and vegetation caused outage risks, overhead conductor exposure with elevated corrosion conditions, and minimal ties to adjacent circuits for outage restoration support. 2019 reliability performance was primarily driven by several vegetation and 3rd party caused outages impacting a recloser zone of 475 customers. And about half of the contribution of the 2022 AIDI performance was driven by a single equipment failure outage. Securing helicopter resources to perform visual patrols of the mainline sections inaccessible by foot was the primary driver in the elevated outage restoration time.

iv. An explanation of what is being done to improve the circuit's future performance:

Base reliability project has been initiated on Otter 1102 circuit to minimize the impacts of EPSS. Specifically, the 2023 work plan calls to update 1 fuse to Fuse Saver device to help reestablish proper protection coordination. In addition, the 2023 work plan calls to install 1 fault indicator set to help pin-point problem locations and to support the outage restoration efforts during the EPSS enablement season. The Otter 1102 circuit is included as part of the 10-year System Hardening/Undergrounding Work Plan. As of May 2023, the current plan is targeting approximately over 15 miles to be hardened/undergrounded by year 2032.

v. A quantitative description of the utility's expectation for that circuit's future performance:

Incremental reliability improvement is anticipated after completion of the base reliability and system hardening projects. This includes the associated reliability benefits after completion of the comprehensive Wildfire Mitigation Plan to minimize wildfire ignition risks in the Tier 2 High Fire Threat District. Otter 1102 circuit performance will be actively monitored on a continuous basis. This includes initiating any base reliability improvement work to minimize re-occurring outage activities as part of the Outage Review Process.

12. PIT NO 5 1101

i. An explanation of why it was ranked as a "deficient" circuit:

- Three-year (2018-2020) average AIDI score of 1,197.
- Three-year (2019-2021) average AIDI score of 1,948.
- Three-year (2020-2022) average AIDI score of 2,035.

ii. A historical record of the metric:

- AIDI 2018 = 130
- AIDI 2019 = 12
- AIDI 2020 = 3,493
- AIDI 2021 = 2,353
- AIDI 2022 = 243

iii. An explanation of why it was on the deficiency list again:

The Pit No 5 1101 circuit provides electric service to approximately 120 customers in community of Big Bend and Shasta County through 27 circuit-miles of primarily overhead conductor. This circuit is in the CPUC High Fire Threat District - Tier 2 (Elevated Risk) and is an EPSS circuit. The main drivers for the Pit No 5 1101 AIDI reliability performance is Public Power Shut-off (PSPS) outages during non-major event days in 2020 and single vegetation caused outage in 2021.

iv. An explanation of what is being done to improve the circuit's future performance:

Base reliability projects have been initiated on Pit No 5 1101 circuit to minimize the impacts of EPSS. Specifically, as part of the 2022 work plan a project was completed for installing new Recloser for improve operational flexibility. In addition, the 2023 work plan calls to install 1 fault indicator set to help pin-point problem locations and to support the outage restoration efforts during the EPSS enablement season. In addition, the Pit No 5 1101 circuit is included as part of the 10-year System Hardening/Undergrounding Work Plan. As of May 2023, the current plan is targeting approximately over 18 miles to be hardened/undergrounded by year 2029.

v. A quantitative description of the utility's expectation for that circuit's future performance:

Incremental reliability improvement is anticipated after completion of the base reliability projects and comprehensive Wildfire Mitigation Plan to minimize wildfire ignition risks in the Tier 2 High Fire Threat District. Pit No 5 1101 circuit performance will be actively monitored on a continuous basis. This includes initiating any additional base reliability improvement work to minimize re-occurring outage activities as part of the Outage Review Process.

13. TEMPLETON 2113

i. An explanation of why it was ranked as a "deficient" circuit:

- Three-year (2018-2020) average AIFI score of 2.93.
- Three-year (2019-2021) average AIFI score of 3.89.
- Three-year (2020-2022) average AIFI score of 4.60.

ii. A historical record of the metric:

- AIFI 2018 = 3.27
- AIFI 2019 = 1.67
- AIFI 2020 = 3.86
- AIFI 2021 = 6.12
- AIFI 2022 = 3.83

iii. An explanation of why it was on the deficiency list again:

Templeton 2113 circuit provides electric service to approximately 5,521 customers in the community of Atascadero and San Luis Obispo County through 352 circuit-miles of primarily overhead conductor. The Templeton 2113 circuit serves area east of Hwy 101 and along and south of Hwy 41. This circuit also serves customers located in the CPUC High Fire Threat District - Tier 2 (Elevated Risk) and Tier 3 (Extreme Risk) and is an EPSS circuit. The major factors driving Templeton 2113 reliability performance are overhead conductor exposure and foothill service territory with increase animal and unknown cause outage risks. The primary driver for 2021 and 2022 reliability performance was implementation of the Enhance Powerline Safety Settings (EPSS) scheme and primarily driven by unknown caused outages.

iv. An explanation of what is being done to improve the circuit's future performance:

Base reliability projects have been initiated on Templeton 2113 circuit to minimize the impacts of EPSS. Specifically, as part of the 2023 work plan several projects have been initiated to install 5 Reclosers and 3 Fuse Savers to help reestablish proper protection coordination and for operational flexibility. In addition, as part of the part of the 2022 work plan 33 fault indicator sets were installed and 2023 work plan calls for additional 7 installations to help pin-point problem locations and to support the outage restoration efforts during the EPSS enablement season. In addition, the Templeton 2113 circuit is included as part of the 10-year System Hardening/Undergrounding Work Plan. As of May 2023, the current plan is targeting approximately 111 miles to be hardened/undergrounded by year 2029.

v. A quantitative description of the utility's expectation for that circuit's future performance:

Incremental reliability improvement is anticipated after completion of the base reliability and system hardening projects. This includes the associated reliability benefits after completion of the comprehensive Wildfire Mitigation Plan to minimize wildfire ignition risks in the Tiers 2 and 3 High Fire Threat Districts. Templeton 2113 circuit performance will be actively monitored on a continuous basis. This includes initiating any base reliability improvement work to minimize re-occurring outage activities as part of the Outage Review Process.

6. Top 10 major unplanned power outage events of 2022

Significant Outage Events Of 2022

The table below lists the ten largest outage events experienced during 2022. PG&E interprets this reporting requirement as the ten events (individual days or in some cases a group of consecutive days) with a significant number of customer interruptions in the system or a portion of the system. These events are listed in descending order of customer interruptions.

Table 47 - Ten Largest 2022 Outage Events

Rank	Description	Date	Number of Customers Affected	Longest Customer Interruption (Hours)	# of People Used To Restore Service	CPUC Major Event?
1	A major heat event with several locations experiencing multiple days of record hot temperatures occurred. This event technically started with increasing temperatures across interior regions during the end of August. Temperatures then continued to increase while spreading toward the coast during the holiday weekend. By Sunday 9/4 the high temperature at San Jose had reached the 97 degrees, with most other Bay locations seeing temperature in the 90s, and with 100-110F across the interior. Temperatures then reached their maximums on 9/6 and 9/7 with all regions except for some immediate coast locations seeing highs at least in the 90s. The low/high and San Jose both days was 68/104 and then 74/109. For perspective those temperatures are 15-30 degrees above normal for that time of year. The temperatures across the interior ranged from the upper 60s/low 70s for lows to 100-115 for highs. Onshore flow then slowly returned and started to cool the region from the coast inward from 9/7 to 9/10.	9/4/2022 - 9/8/2022	512,900	653	2,148	Yes 9/6/2022 and 9/7/2022
2	A strong winter storm began entering the region via the North Coast on 12/9 and then impacted the entire territory on 12/10. This system had sustained winds ranging 15-30 mph with gusts mainly ranging 35-50. Parts of the North Coast, Sierra foothills, and Sierra crest saw gusts 50-65 mph. Anywhere from a tenth of an inch to two inches of rain fell across valley floors, with several inches falling across coastal regions, elevated terrain, and the Sierra. Snow levels with this system mainly stay above 4,000 feet with several feet of snow above that elevation. There were also a few embedded/isolated lightning strikes with storms that moved through the region. Mainly across the North Coast, northern Sac Valley, and across a few Sierra foothill regions	12/10/2022 - 12/12/2022	344,525	635	2,079	Yes
3	A slow moving weather system moved through central and southern portions of the territory, dropping an inch to several inches of rain across the SF Bay and Sac River/Sac Delta regions. Oakland and Hayward airports both set their 1 day precipitation records which both exceeded 4" in the day (4.87" at KOAK and 4.32 at KHWD) There were also breezy to gusty winds with this system, generally 25-45 mph. But as this system wrapped through the region during the evening there were also strong northerly winds that developed along the Sac/Central Valley that reached 35-60 mph.	12/30/2022 - 12/31/2022	323,195	1,033	2,927	Yes 12/31/2022
4	Heat began to build across the region on Monday 5/23 with increased outages also starting to appear. Maximum temperatures hit the low to mid 90s across the interior, with Concord and Santa Rosa also seeing max temps reach the low to mid 90s on 5/23. San Jose only reached a max temperature of 83 degrees by Monday. Temperatures then increased across the region Tuesday and Wednesday. Max temperatures hit triple digits across the interior and the upper 90s to around 100 across coastal valleys both days. Notable lows/highs across the region for both 5/24 and 5/25: San Jose: 56/93 then 61/93; Concord: 57/98 then 62/99; Santa Rosa: 51/100 then 50/95 Sacramento: 58/100 then 62/102: Fresno: 67/97 then 68/103 Paso Robles: 48/100 then 56/98. Temperatures then cooled across the region on 5/26 but some residual outages continued	05/24/2022 - 05/26/2022	176,742	75	168	No
5	A winter storm moved through the region 9/18 and 9/19 and had moderate to heavy rainfall, breezy to gusty winds, and isolated thunderstorms. Wind gusts generally ranged 25-40 mph on 9/18, with a few elevated areas seeing gusts 45-50 mph. Precipitation amounts ranged anywhere from 1-3" across Northern California with most along the coast, and 1-2" along the South Coast, with trace to up to 0.25" across the San Joaquin Valley. There were 66 total lightning strikes reported on 9/18 with 24 strikes across Humboldt below 3k ft, with 11 strikes in Sonoma, 30 in North Valley, and 1 in Sacramento	09/18/2022 - 09/19/2022	162,726	82	711	No
6	Heat was the primary cause of impact on 6/21, with heat continuing to cause issues on 6/22. However, monsoonal moisture also moved into the region on 6/22 and sparked scattered thunderstorms across the southern San Joaquin Valley. Airports with notable temperatures from 6/21 and 6/22: Redding: 75/102 then 69/105; Stockton: 59/106 then 64/94; Fresno: 65/103 then 71/100; Concord 61/102 then 65/97; Paso Robles: 53/100 then 51/99; Bakersfield 68/101 then 73/97. Otherwise on 6/22 1252 lightning strikes occurred below 3000ft with an additional 170 above 3k ft. Most strikes occurred across Central Coast (159), Yosemite (150), Fresno (309), and Kern (633) divisions.	6/21/2022 - 6/22/2022	143,986	421	692	No
7	Not weather related. There was a substation outage in Sierra division as well as several other long customer min outages. Cause is under investigation.	8/24/2022 - 8/25/2022	131,359	51	0	No
8	On 1/21 and 1/22 there was a strong offshore (northeast) wind event across Northern California. Winds hit their peak late on 1/21 and continued into 1/22 and wind gusts ranged between 30-55 mph; including Oakland Airport which hit a peak of 54 mph. Other elevated terrain saw peak gusts reach into the 50-60s, with a few exposed peaks like Mt Diablo hitting 71 mph. Winds were strongest along the western Sac Valley, North Bay hills to Lake County, through the Bay/Delta south to about San Jose	1/21/2022 - 1/22/2022	123,844	134	1,114	No
9	Flashover may have contributed to outages this day along the south coast as there was a thick marine layer with drizzle being reported. There were also 4 separate substation outages in the Central Coast near Monterrey that affected ~65k customers	06/04/2022	111,901	32	173	No
10	Heat played a role in some of the outages on 8/3 and 8/4, but there was also a substation outage in Kern on 8/4 that affected ~14k customers. Airports with notable temperatures from 8/3 and 8/4: Redding: 76/108 then 79/107; Stockton: 67/102 then 72/100; Fresno: 76/104 then 80/107; Concord 63/96 then 63/92; Paso Robles: 62/104 then 65/96; Bakersfield 74/102 then 82/104	8/3/2022 - 8/4/2022	108,809	76	0	No

*Note: Values exclude planned outages. PG&E resources are through December 31, 2022. PSPS event data reflects PG&E crew repairs only (excludes patrols, inspections and vegetation management). PG&E employees counted based on time records on activities logged past 12/31/2022 to restore outages that occurred in the year 2022 are reflected in this table.

7. Summary List of Major Event Day (MED) per IEEE 1366

Major Event Day

IEEE Standard 1366 defines MED as follows:

IEEE Standard 1366-2012 uses a statistically based method of identifying excludable events. Specifically, the IEEE standard provides for the exclusion of all outages occurring on any day where its SAIDI is greater than "TMED" where:

$$T_{MED} = e^{\text{average over 5 yrs. of Ln (daily SAIDI)} + 2.5 * \text{STD DEV of 5 yrs. of Ln (daily SAIDI)}}$$

The IEEE 1366 Standard includes outage resulting from the failure of a single line transformer.

Table 48 – 2022 Major Event Day

Date	Description	Reason
09/06/2022-09/07/2022	A major heat event with several locations experiencing multiple days of record hot temperatures occurred. This event started with increasing temperatures across interior regions during the end of August. Temperatures then continued to increase while spreading toward the coast during the holiday weekend. By Sunday the 4th, temperature at San Jose had reached 97°F, with 100-110°F across the interior. Temperatures then reached their maximums on the 6th and 7th with San Jose recording a high of 109°F. For perspective, those temperatures are 15-30 degrees above normal for that time of year. The temperatures across the interior during this event was as high as 115°F.	IEEE MED
12/10/2022	A strong winter storm began in the North Coast on the 9th and then impacted the entire territory by the 10th. This system had 15-30 mph sustained winds with gusts in the range of 35-50 mph. Parts of the North Coast, Sierra foothills, and Sierra crest saw 50-65 mph wind gusts. Valley floors received 1/10th of an inch to 2 inches of rain, with several inches falling across coastal regions, elevated terrain, and in the Sierra. Snow levels with this system mainly stayed above 4,000 feet with several feet of snow above that elevation. There were also a few embedded/isolated lightning strikes with storms that moved through the region across the North Coast, northern Sacramento Valley, and across a few regions in the Sierra foothill. This storm activity delivered strong winds and rain leading to the second largest outage event of the year between the 10th and the 12th impacting a total of 344,525 customers in the service territory.	IEEE MED
12/20/2022	A 6.4 magnitude earthquake occurred in the Eureka/Fortuna/Humboldt Area.	IEEE MED
12/31/2022	A slow moving weather system moved onshore near San Francisco and caused flooding dropping an inch to several inches of rain across the San Francisco Bay and Sacramento River and delta regions. Precipitation in these areas exceeded in the Bay Area - Santa Cruz Range was around 7". Sierra Range saw anywhere between 1-8" of precipitation. There were also breezy to gusty winds with this system, generally 25-45 mph. As this system wrapped through the region during the evening strong northerly winds developed along the Sacramento - Central Valley region that reached 35-60 mph.	IEEE MED

*MED is defined as Major Events Day

7.1 Major Event Day (MED) Discussions:

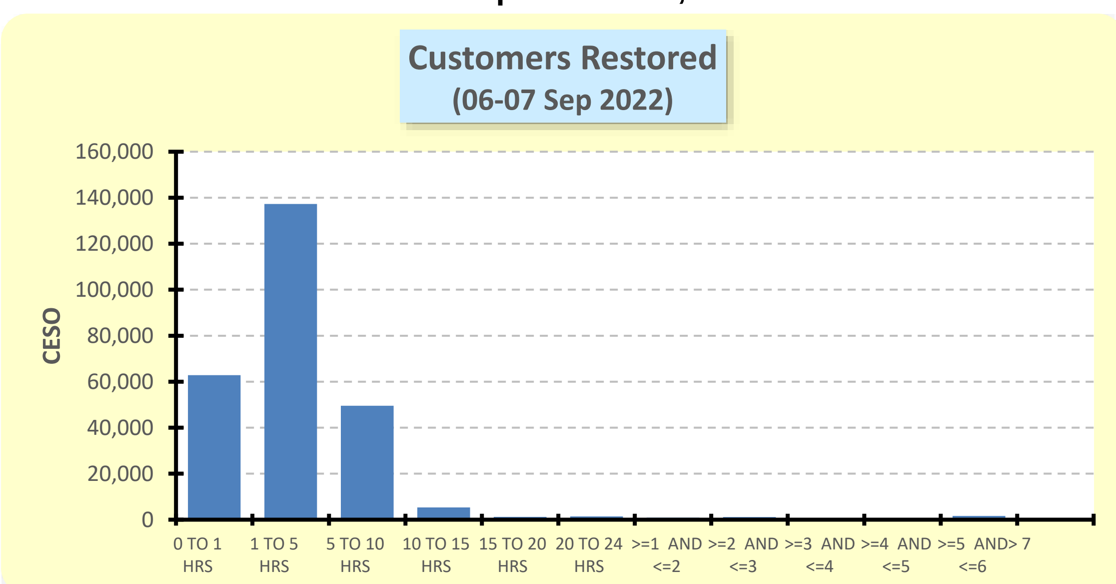
September 6-7, 2022 Major Event Days

Table 49 below indicates the number of customers without service at periodic intervals for this event (09/06/2022 – 09/07/2022). The numbers of customers noted in the table are for only those divisions impacted by this event.

Table 49 – September 6-7, 2022

Outage Duration	Customers Impacted	Cumulative %
0 TO 1 HRS	62,836	23.99%
1 TO 5 HRS	137,280	52.42%
5 TO 10 HRS	49,556	18.92%
10 TO 15 HRS	5,352	2.04%
15 TO 20 HRS	1,216	0.46%
20 TO 24 HRS	1,397	0.53%
>=1 AND <=2	861	0.33%
>=2 AND <=3	1,118	0.43%
>=3 AND <=4	5	0.00%
>=4 AND <=5	25	0.01%
>=5 AND <=6	1,656	0.63%
> 7	592	0.23%
Total	261,894	

Chart 382: September 6-7, 2022 MED



Note: The number of customer outages segmented by hourly restoration periods requires a level of detail not normally maintained by PG&E in its central computerized records. The information shown here is what PG&E has been able to reconstruct from several databases and may have a margin of error of up to 5%.

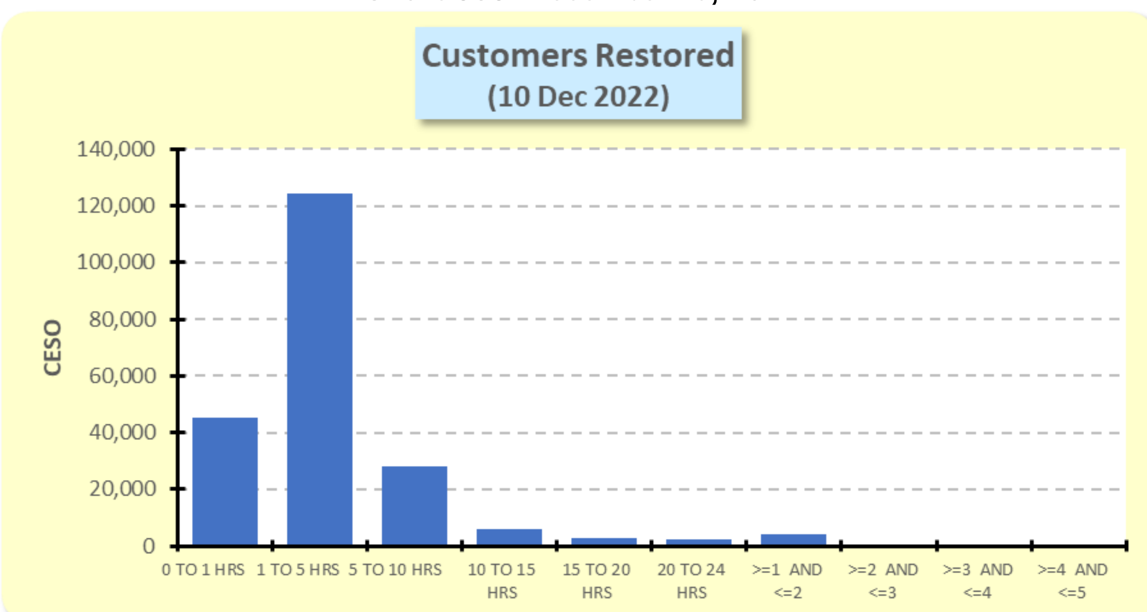
December 10, 2022 Major Event Days

Table 50 below indicates the number of customers without service at periodic intervals for this event (12/10/2022). The number of customers noted in the table are for only those divisions impacted by this event.

Table 50 – December 10, 2022

Outage Duration	Customers Impacted	Cumulative %
0 TO 1 HRS	45,389	21.21%
1 TO 5 HRS	124,576	58.20%
5 TO 10 HRS	28,115	13.14%
10 TO 15 HRS	5,930	2.77%
15 TO 20 HRS	2,907	1.36%
20 TO 24 HRS	2,470	1.15%
>=1 AND <=2	3,927	1.83%
>=2 AND <=3	229	0.11%
>=3 AND <=4	165	0.08%
>=4 AND <=5	331	0.15%
Total	214,039	

Chart 383: December 10, 2022 MED



Note: The number of customer outages segmented by hourly restoration periods requires a level of detail not normally maintained by PG&E in its central computerized records. The information shown here is what PG&E has been able to reconstruct from several databases and may have a margin of error of up to 5%.

December 20, 2022 Major Event Day

Table 51 below indicates the number of customers without service at periodic intervals for this event (12/20/2022). The numbers of customers noted in the table are for only those divisions impacted by this event.

Table 51 – December 20, 2022

Outage Duration	Customers Impacted	Cumulative %
0 TO 1 HRS	3,360	4.31%
1 TO 5 HRS	2,082	2.67%
5 TO 10 HRS	4,254	5.46%
10 TO 15 HRS	22,598	29.01%
15 TO 20 HRS	31,706	40.70%
20 TO 24 HRS	52	0.07%
>=1 AND <=2	13,858	17.79%
Total	77,910	

Chart 384: December 20, 2022 MED

Note: The number of customer outages segmented by hourly restoration periods requires a level of detail not normally maintained by PG&E in its central computerized records. The information shown here is what PG&E has been able to reconstruct from several databases and may have a margin of error of up to 5%.

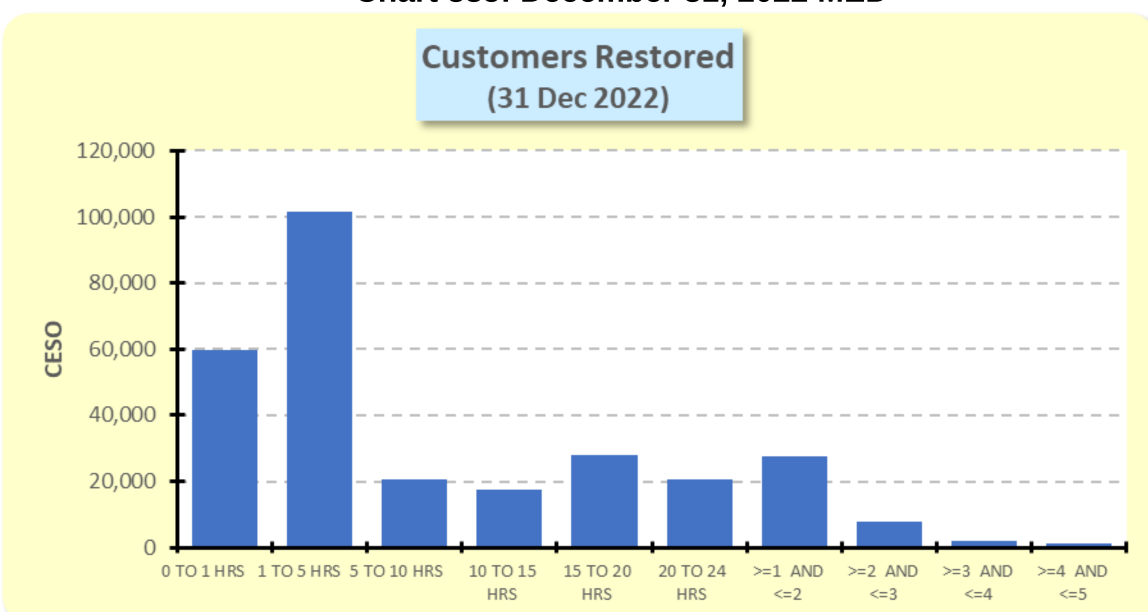
December 31, 2022 Major Event Day

Table 52 below indicates the number of customers without service at periodic intervals for this event (12/31/2022). The numbers of customers noted in the table are for only those divisions impacted by this event.

Table 52 – December 31st, 2022

Outage Duration	Customers Impacted	Cumulative %
0 TO 1 HRS	59,759	20.83%
1 TO 5 HRS	101,397	35.35%
5 TO 10 HRS	20,644	7.20%
10 TO 15 HRS	17,674	6.16%
15 TO 20 HRS	28,066	9.78%
20 TO 24 HRS	20,575	7.17%
>=1 AND <=2	27,672	9.65%
>=2 AND <=3	7,871	2.74%
>=3 AND <=4	1,880	0.66%
>=4 AND <=5	1,057	0.37%
>=5 AND <=6	190	0.07%
>=6 AND <=7	14	0.00%
> 7	36	0.01%
Total	286,835	

Chart 385: December 31, 2022 MED



Note: The number of customer outages segmented by hourly restoration periods requires a level of detail not normally maintained by PG&E in its central computerized records. The information shown here is what PG&E has been able to reconstruct from several databases and may have a margin of error of up to 5%.

8. Historical Ten Largest Unplanned Outage Events for 2012-2021

Table 53 - Ten Largest 2021 Outage Events

Rank	Description	Date	Number of Customers Affected *	Longest Customer Interruption (Hours)	# of People Used To Restore Service	CPUC Major Event?
1	A major winter storm and an "atmospheric river" event produced significant mountain snowfall, gusty southerly winds and moderate to heavy rainfall. Low to mid elevation snowfall impacts occurred across Humboldt, North Valley, Sierra, and Stockton divisions.	1/25/2021 – 1/28/2021	734,309	454	2,884	Yes
2	A major winter storm and an "atmospheric river" event produced very strong southerly winds and several inches of heavy rainfall across the territory.	10/24/2021 – 10/25/2021	622,050	120	3,494	Yes
3	There was a succession of 3 weather systems that that resulted in wind and flashover outages during this period. The first system moved through the state Ocober 17 and October 18, largely impacting SF Bay Area divisions with wind and flashover outages. The second system moved onshore across the North Coast on October 19 causing wind and flashover related outages, with flashover outages continuing October 20 across Northern California divisions. A third system swept across the entire state October 21 and October 22 producing additional flashover outages.	10/17/2021 – 10/22/2021	423,063	457	1,034	Yes (10/17/2021)
4	A strong weather system moved through the state and produced moderate rainfall and breezy to gusty winds. Snow levels dropped to around 2000-3500' and low to mid elevation snowfall also produced impact across North Valley and Sierra divisions.	12/13/2021 – 12/15/2021	339,075	194	1,743	Yes
5	A strong and prolonged offshore wind event occurred across the entire state with the execution of a PSPS across the southern Sierra, southern Coastal Ranges, and Kern County.	1/18/2021 – 1/19/2021	294,129	378	2,435	Yes
6	A three-day triple digit heat event brought temperatures that ranged from 105-112F across the Central Valley with mid-90s to around 105F for intermediate and inland Bay Area valleys. This resulted in high electric loads and heat-related outage activity.	6/17/2021 – 6/19/2021	219,892	35	735	No
7	A weather system brought major low elevation snow that impacted Humboldt, Sierra, and Stockton Divisions. The "Atmospheric River" system brought strong rain activity to the North Valley and Yosemite divisions, including of low snow impacts.	12/25/2021 – 12/27/2021	230,018	431	3,095	Yes
8	Late season heat with temperatures reaching 100-107F across the Interior and around 90F in the Bay lead to high electric load and heat related outages on September 8. Heat impact continued September 9 across the San Joaquin Valley; meanwhile, during that evening a weather system moved onshore across Northern California and produced lightning and flashover impacts that continued into September 10.	9/8/2021 – 9/10/2021	180,415	73	285	Yes (09/10/2021)
9	Strong north to northwest winds brought system wide impact October 11 and created critical fire weather resulting in PSPS shutoffs across the Northern Sierra and Coastal Ranges.	10/11/2021	171,765	81	925	Yes
10	A weather system moved through Northern California on September 18 and 19 resulting in outages due to lightning and flashover. This system was then followed immediately by strong north to northeast winds, and critical fire weather conditions lead to the execution of PSPS along the western Sacramento Valley/Northern Coastal Range as well as across the elevated terrain of Kern and Santa Barbara Counties.	9/18/2021 – 9/20/2021	143,924	41	300	No

***** Note: Values exclude single distribution line transformer and planned outages.

Table 54 - Ten Largest 2020 Outage Events

Rank	Description	Date	Number of Customers Affected *	Longest Customer Interruption (Hours)	# of People Used To Restore Service	CPUC Major Event?
1	A prolonged heat wave featuring widespread triple-digit temperatures resulted in significant heat-related outages across the territory over the course of several days and energy capacity issues across CA. Additionally, abundant subtropical moisture from Tropical Storm Fausto produced widespread thunderstorm activity 8/15 – 8/18 resulting in over 7700 lightning strikes and the ignition of several hundred wildfires, which formed into several large complex events.	8/13/2020 – 8/20/2020	834,760	1,180	2,157	Yes (8/15 – 8/17)
2	High gusts of wind that started in the Central CA area. A strong offshore wind event developed across a wide swath of the territory resulting in critical fire weather conditions and the implementation of PSPS.	10/25/2020	399,863	79	1,503	Yes
3	A significant heat wave event resulted in widespread triple-digit temperatures away from the coast and heat-related outage activity. Additionally, gusty offshore flow led to critical fire weather conditions and the execution of PSPS across the North, along the Sierra and in southern Kern division.	9/06/2020 – 9/08/2020	354,169	1,599	395	Yes (9/7 – 9/8)
4	A significant offshore wind event impacted the northern and central territory resulting in very strong winds and considerable outage activity along the Sierra and across the Bay Area and Central Coast.	02/09/2020	323,381	170	1,357	Yes
5	A major winter storm delivered rain, heavy mountain snow and thunderstorms to the territory resulting in significant low-snow related outage activity across Humboldt and along the Sierra.	3/15/2020 – 3/16/2020	203,685	227	1,272	Yes
6	An early-season heat wave brought 90-100F+ temperatures to the Bay Area and central territory resulting in high electric loads and heat-related outage activity.	6/01/2020 – 6/04/2020	168,672	41	105	No
7	A potent cold front delivered strong winds, rain and snow to the territory with low elevation snow leading to outage activity across Humboldt and along the Sierra.	1/16/2020 – 1/17/2020	147,270	178	853	Yes
8	A storm system brought gusty winds and widespread rain to the north and central territory, including the first precipitation event in many months for Bay Area locations, resulting in flashover-related outage activity.	11/13/2020 – 11/14/2020	133,040	74	193	No
9	Gusty offshore winds led to critical fire weather conditions and the execution of PSPS across the North and in southern Kern.	09/27/2020	132,498	1,575	969	Yes
10	A weather system delivered breezy winds, isolated thunderstorms and the first precipitation event of the season for most of the territory, which resulted in flashover-related outage activity.	11/05/2020 – 11/06/2020	126,983	37	162	No

*Note: Values exclude planned outages. PG&E resources are through December 31, 2020. PSPS event data reflects PG&E crew repairs only (excludes patrols, inspections and vegetation management). Contractor information not readily available.

Table 55 - Ten Largest 2019 Outage Events

Rank	Description	Date	Number of Customers Affected *	Longest Customer Interruption (Hours)	# of People Used To Restore Service	CPUC Major Event?
1	Strong, damaging winds and associated critical fire danger resulted in Extreme-Plus fire potential and the most widespread implementation of PSPS	10/26/2019 – 10/27/2019	1,258,339	312	1,576	Yes
2	A strong offshore wind event developed across Northern CA resulting in critical fire potential and the implementation of PSPS	10/09/2019 – 10/10/2019	799,312	89	378	Yes
3	A pair of potent storms impacted the territory beginning with an "atmospheric river" event, which produced gusty winds, heavy rain and significant low snow in Redding, followed by a colder, dynamic storm that resulted in additional periods of rain and gusty south winds along with low snow and isolated thunderstorms.	2/12/2019 – 2/17/2019	587,843	625	1,677	Yes
4	A series of winter storms resulted in periods of strong gusty south winds, heavy rain, thunderstorms and low elevation snowfall	2/02/2019 – 2/05/2019	378,432	177	1,683	Yes (Feb 2,4,5)
5	A potent winter storm impacted the territory with strong south-southeast winds, isolated thunderstorms and heavy rain and mountain snow	11/25/2019 – 11/27/2019	346,907	120	1,804	Yes (Nov 26, 27)
6	A powerful Pacific storm delivered gusty south winds, heavy rain and mountain snow to the territory	1/16/2019 – 1/17/2019	338,564	87	1,796	Yes
7	Critical fire weather conditions associated with dry, gusty winds led to Extreme-Plus fire potential and the implementation of PSPS	10/23/2019	209,215	384	558	Yes
8	A pair of robust winter storms produced adverse weather in the form of strong gusty winds, heavy rain and mountain snow	1/05/2019 – 1/06/2019	197,290	50	1,977	Yes (Jan 6)
9	Strong high pressure produced triple-digit temperatures away from the coast resulting in widespread heat-related outage activity	8/14/2019 – 8/16/2019	179,699	40	201	Yes (Aug 15)
10	Breezy to gusty north-northeast winds produced critical fire weather conditions across the North leading to the implementation of PSPS	10/29/2019 – 10/30/2019	171,644	72	951	Yes (Oct 29)

* Note: Values exclude planned outages. PG&E resources are through December 31, 2019. PSPS event data reflects PG&E crew repairs only (excludes patrols, inspections and vegetation management). Contractor information not currently available.

Table 56 - Ten Largest 2018 Outage Events

Rank	Description	Date	Number of Customers Affected *	Longest Customer Interruption (Hours)	# of People Used To Restore Service	CPUC Major Event?
1	A trio of early winter-season storms generated a significant amount of outage activity due to gusty south winds and heavy rain with considerable flashover activity across the interior south.	11/21/2018 – 11/23/2018	224,103	97	460	Yes (11/21 only)
2	Carr Fire	7/28/2018 – 7/30/2018	121,187	248	132	Yes (7/28 only)
3	Early season low pressure system brought the first rain in months to the territory resulting in significant flashover-related outages with widespread thunderstorm activity across the interior and south on 10/3 producing over 2,000 lightning strikes.	10/2/2018 – 10/3/2018	115,705	30		
4	A dynamic Pacific weather system delivered gusty south winds, heavy rain, scattered thunderstorms and heavy mountain snow to the territory; causing significant outage activity, especially in Central Coast division.	11/28/2018 – 11/29/2018	109,891	99	741	Yes (11/29 only)
5	A strong winter storm impacted the territory with heavy rain, heavy mountain snow and gusty south winds followed by a secondary wave generating low snow and thunderstorms the next day	3/1/2018 – 3/2/2018	108,654	100		
6	Not weather related	5/17/2018	75,292	19	120	Yes
7	An offshore wind event developed across the northern two thirds of the territory and produced Extreme-Plus fire danger resulting in execution of PSPS.	10/14/2018	70,326	89	441	Yes
8	Camp Fire	11/8/2018	68,468	936	214	Yes
9	Breezy to gusty northeast winds developed across the territory producing considerable outage activity in San Jose and Central Coast divisions	12/31/2018	57,736	31		
10	A moist, atmospheric-river storm system delivered copious amounts of rainfall to parts of the territory with thunderstorm activity across the interior producing over 900 lightning strikes and widespread outage activity.	3/22/2018	55,598	39		

* Note: Values exclude planned outages

Table 57 - Ten Largest 2017 Outage Events

Rank	Description	Date	Number of Customers Affected *	Longest Customer Interruption (Hours)	# of People Used To Restore Service	CPUC Major Event?
1	A series of atmospheric river storm events impacted the territory with heavy rain and strong south winds. Extensive damage occurred on the Central Coast where Salinas Airport recorded a gust to 69 mph. This was caused by a rapidly intensifying area of low pressure, also known as 'bombogenesis'.	02/17/2017 – 02/22/2017	732,590	235	3,496 Total 3,186 PG&E 310 Mutual Assistance	Y (except Feb 19)
2	Another winter storm series comprised of three storms impacted the territory from 1/18 – 1/23 with heavy rain, mountain snow, and strong south winds.	1/18/2017 – 1/23/2017	653,502	170	3,274 Total 3,151 PG&E 123 Mutual Assistance	Y
3	A vigorous storm produced significant damage across the territory on 1/8/17 due to a combination of very heavy rain and strong south winds. The heavy rain resulted in flooding along rivers, creeks, and streams. A second strong winter storm impacted the territory 1/10/2017 to 1/11/2017.	1/8/2017 – 1/11/2017	560,246	450	3,357 Total 3,180 PG&E 177 Mutual Assistance	Y
4	A strong and dynamic winter storm impacted the territory 4/6 to 4/7 and produced significant outage activity. The storm was the most impactful April storm in the 22+ year PG&E outage record (back to 1995). This storm put the capstone on the wettest water year in PG&E's history.	4/6/2017 – 4/7/2017	249,024	328	1,945	Y
5	October wildfires	10/8/2017 – 10/9/2017	211,812	587	2,336 Total 2,125 PG&E 211 Mutual Assistance	Y
6	A winter storm brought heavy rain and gusty southerly winds through the northern two thirds of the service area, causing significant outage activity	2/7/2017	146,210	127	2,103	Y
7	An offshore wind event developed across the northern two thirds of the territory and produced wind gusts up to 45 mph across lower elevations. Multiple Red Flag Warnings were posted.	12/16/2017	112,218	59	1,385	Y
8	A winter storm moved in the territory and produced considerable outage activity due to rain, gusty south winds, and mountain snow	1/3/2017 – 1/4/2017	102,123	172	1,227	Y (except Jan 4)
9	This event was not weather related. Bad breaker at Larkin Sub in San Francisco.	4/21/2017	93,863	13	220	Y
10	A weather system moved into the territory from the Pacific and generated wind and rain-related outage activity	10/20/2017	70,839	101	499	Y

* Note: Values exclude planned outages

Table 58 - Ten Largest 2016 Outage Events

Rank	Description	Date	Number of Customers Affected *	Longest Customer Interruption (Hours)	# of People Used To Restore Service	CPUC Major Event?
1	A strong winter storm passed through northern and central CA producing strong south winds of 30 - 50 mph across the lower elevations and 60+ across the exposed higher terrain, as well as moderate to heavy rain. A strong squall line nearly 200 miles long developed in the Sacramento Valley.	3/5/2016 – 3/7/2016	266,173	87	2,405	Yes (Mar 5th)
2	A series of three storms impacted northern and central CA with periods of moderate to heavy rain and gusty south winds. Some locations saw rain totals near 10 inches and gusts 50+ mph were also observed.	10/14/2016 – 10/16/2016	255,680	59	1,553	Yes (Oct 14th)
3	A dynamic weather system moved through the PG&E territory late Wednesday into Thursday with strong south winds. Wind gusts were generally 25 - 40 mph across the Sacramento and northern San Joaquin valley, but very strong gusts to 50 - 60 were observed over the Sierra foothills.	2/17/2016 – 2/18/2016	166,492	46	1,292	Yes (Feb 17th)
4	A weather system produced breezy northwest winds 25 – 35 mph with gusts to 50 mph in some locations. Thunderstorms were also reported in the Sacramento, San Joaquin Valleys and the Sierra foothills.	4/24/2016 – 4/25/2016	96,897	24		No
5	Tropical moisture interacted with a Pacific weather system and associated cold front to wring out significant rain across the PG&E territory. 4 – 7 inches of rain were observed along with wind gusts from 20 – 40+ mph.	12/15/2016 – 12/16/2016	91,581	38		No
6	Generally fair and seasonably cool weather was observed across the PG&E territory.	6/16/2016	82,691	15		No
7	A winter storm brought moderate to heavy rain showers, prompting flash flood watches for recent burn scars (e.g., Rim, King, Butte).	1/5/2016 – 1/6/2016	79,600	44		No
8	A very wet weather system produced considerable rain across central CA. 24 hours rain totals topped 6 inches in the wettest locations in the Sierra Nevada.	12/10/2016	77,546	56		No
9	A winter storm and associated cold front pushed west to east across the territory today bringing moderate to heavy rain and gusty southeast winds 25 to 35 with higher gusts over elevated and exposed terrain	3/11/2016	52,342	47		No
10	A strong storm system across southern CA produced low elevation snow in the southern Sierra down to near 2500 ft. and gusty northwest winds from 30 – 40 mph.	1/31/2016	48,120	52		No

* Note: Values exclude planned outages

Table 59 - Ten Largest 2015 Outage Events

Rank	Description	Date	Number of Customers Affected *	Longest Customer Interruption (Hours)	# of People Used To Restore Service	IEEE Major Event?
1	A series of strong Pacific storms moved into CA producing very heavy rain and gusty south winds. South wind gusts near 50 mph were observed along the coast with gusts near 60 mph observed in the northern Sacramento Valley. Generally, 4 - 8 inches of rain were observed across the elevated terrain in the northern part of the territory. Some locations topped 8 inches with Bucks Lake for example, recording 9 inches of rain during the series.	2/6/2015 - 2/8/2015	389,567	114	2836	Yes
2	Tropical moisture associated with former Hurricane Dolores drifted over the territory. Atmospheric instability combined with the abundant tropical moisture initiated a widespread thunderstorm outbreak across the San Joaquin Valley and Central Coast. More than 6000 cloud to ground strikes were recorded.	7/18/2015 - 7/19/2015	154,459	54	925	Yes
3	A strong cold front (squall line) moved into the northern part of the territory and produced strong wind gusts, a period of very heavy rainfall, and significant outage activity. The front swiftly progressed south through the remainder of the territory. Widespread wind gusts from 40 - 55 mph were observed across the Sacramento Valley and Redding recorded a gust near 60 mph.	12/13/2015	142,059	42	364	Yes
4	A late winter-storm moved through the territory producing moderate rain showers, gusty south winds from 30 - 40 mph, and thunderstorms. Nearly 1000 cloud to ground lighting strikes were recorded across the Sacramento and San Joaquin Valleys	4/6/2015 - 4/7/2015	134,789	17	442	Yes
5	A strong high-pressure ridge developed over the territory and produced the first significant heat of the season. Some selected high temperature readings: Redding 107, Fresno 106, Livermore 106, Sacramento 104, Santa Rosa 99, and San Jose 91.	6/8/2015	99,439	41	1104	Yes
6	The first widespread rain and snow producing system of the fall/winter season passed through the territory. Thunderstorms also developed and near 500 cloud to ground lightning strikes were recorded. Wind gusts from 25 - 35 mph were observed.	11/2/2015	92,777	22	33	No
7	A large transmission outage in the central coast at Moss Landing occurred. No significant adverse weather was recorded.	10/18/2015	69,906	21	1080	No
8	A potent Pacific weather system produced wind gusts to 40 - 50 mph across the lower elevations with gusts near 60 - 70 mph across the exposed, higher terrain. Most of the adverse weather and resultant outage impacts were observed across the northern part of the PG&E service territory.	12/10/2015	64,533	42	602	No
9	A cold frontal system with moderate rain showers moved through the territory and was followed by gusty northwest winds primarily along the coast. Peak winds gusts from 40 - 50 mph were observed.	11/15/2015	59,547	46	554	No
10	An upper level weather system moved over the territory and produced rain showers, breezy winds, and thunderstorms. The PG&E lightning detection network recorded 456 lightning strikes in the territory.	5/7/2015	57,241	28	1740	No

* Note: Values exclude planned outages

Table 60 - Ten Largest 2014 Outage Events

Rank	Description	Date	Number of Customers Affected *	Longest Customer Interruption (Hours)	# of People Used To Restore Service (Major Events) **	IEEE Major Event?
1	The strongest storm event in more than 3 years slammed the territory with strong winds and heavy rain showers starting on 12/11. Rain and unsettled weather began Wednesday along the north coast and then a very strong cold front developed and intensified Wednesday evening and overnight into Thursday and very slowly progressed through the territory bringing very heavy rain and strong southerly winds. The gusty southerly winds reached up to 50 mph across the Santa Cruz mountains, near 70 mph across elevated Bay Area terrain, and near 120 mph across the Sierra Crest. Over 3 inches of rain fell across many Bay Area locations and over 2 inches for northern Central Valley by Thursday afternoon.	12/11/2014 - 12/12/2014	467,394	77		Yes
2	A strong but dry storm system originating from Western Canada dropped south through the Service Area and produced very strong north to northeast winds from Tuesday morning through early Wednesday. Gusts in excess of 60 mph were reported across the Bay Area elevated terrain and foothills across the Sierra Nevada. A strong mountain wave moved into San Jose division from the east, resulting in reported gusts above 50 mph in downtown San Jose.	12/30/2014 – 12/31/2014	296,402	67		Yes (Dec 30th)
3	A strong storm moved in from the southwest, bringing heavy rain and gusty southeast winds to many areas, especially the Central Coast and San Joaquin Valley. A secondary line of heavy showers with imbedded thundershowers developed over the San Joaquin Valley during the early afternoon hours, which caused significant outage activity. Wind gusts up to 47 mph were also observed across the lower elevations.	2/28/2014 – 3/1/2014	167,137	55		N
4	Two strong Pacific weather systems produced an impressive round of precipitation across the territory Tuesday and Wednesday. Accompanying the rain showers were breezy to gusty southerly winds that developed through the San Joaquin Valley and adjacent elevated terrain. Rainfall totals were 7 inches across the Santa Cruz Mountains and the Central Sierra and generally 2 - 4 inches across the lower elevations in the Bay Area.	12/02/2014 – 12/04/2014	138,447	34		Yes (Dec 3rd)
5	An “Atmospheric River” weather event delivered significant rain and high-elevation mountain snow to the territory. The abundant rain and gusty south winds to 40 mph at times produced a prolonged stretch of light to moderate elevated outage activity. Rain totals from the event were highest across the central Sierra and the north coast where 7 – 15 inches of rain fell during the event.	2/7/2014 – 2/8/2014	102,832	35		N
6	At 3:20 AM on Sun 8/24/2014 a magnitude 6.0 earthquake was observed in the North Bay Area near American Canyon, Ca. An earthquake summary poster from USGS can be found here: http://earthquake.usgs.gov/earthquakes/eqarchives/poster/2014/20140824.pdf	8/24/2014	99,705	30		Yes
7	A strong ridge of high pressure and lack of the marine layer and sea-breeze combined to produce hot temperatures for Bay Area interior valleys and across the interior. Maximum temperatures reached over 100 in Santa Rosa and Livermore on Sunday and up to 105 across the interior Central Valley.	6/8/2014 – 6/9/2014	83,962	39		N
8	A wet weather system delivered heavy rain across Northern California and the Sierra, along with moderate rain throughout the Bay Area. After the front moved through, thunderstorms developed and produced 331 lightning strikes within the PG&E territory.	9/25/2014	61,597	23		N
9	A weather system delivered the first widespread rain of the season south of a Salinas to Sonora line and also produced a northwest gust front down the San Joaquin Valley where gusts up to 40 mph were observed in Fresno and Bakersfield.	10/31/2014	55,145	22		N
10	The weather system with a very moist air mass slid through the Bay Area early Thursday morning and produced light showers and drizzly conditions that resulted in isolated significant outage activity in the east Bay Area.	9/18/2014	39,860	17		N

* Note: Values exclude planned outages.
** Note: This data is requested only for Major Event days.

Table 61 - Ten Largest 2013 Outage Events

Rank	Description	Date	Number of Customers Affected *	Longest Customer Interruption (Hours)	# of People Used To Restore Service (Major Events) **	CPUC Major Event?
1	On 11/19 into 11/20, a weather system moved into the territory and delivered up to 2 inches of rain over elevated terrain. It was the first significant rainstorm of the season. Then on 11/21 into 11/22 surface low pressure over southern California combined with developing high pressure in Nevada to deliver very strong north to northeast winds across the north half of the Service Territory. Winds were very strong over elevated terrain; wind gusts up to 65 mph were observed in the Oakland hills (Oakland North RAWS) and to 101 mph in the northern Sierra Nevada. (The wind gust at Oakland north was second only to the January 4th mega-storm gust of 71 mph). Wind speeds near 45 - 50 mph were also observed over lower elevation locations such as Oakland and Santa Rosa.	11/19/2013 - 11/22/2013	385,017	143		N
2	The marine layer surged onto the coast and delivered coastal mist and drizzle which ultimately resulted in an insulator flashover event. The event was preceded by a series of brisk wind events which may have increased salt contamination along the coast.	6/23/2013	170,429	15		N
3	Fair and dry weather was observed on 11/12/2013. An unplanned outage occurred in the Bellota substation.	11/12/2013	113,266	10		N
4	High pressure built over California and maximum temperatures from 99 - 107 were observed along the Central Valley. Temperature maximums near the coast were in the 60s to 70s with 70s - 90s for coastal to intermediate valleys. Most customers were impacted by trouble on the Transmission system.	7/19/2013	99,738	18		N
5	Overnight Sunday into the early morning hours of Monday April 8, 2013, a strong Pacific Jet Stream drove a small but intense cold front with very gusty northwest winds into the California coast and Bay Area. Gusts along the coast reached generally into the 50 - 60 mph range with the peak gust of 75 mph recorded at a station on the west edge of San Francisco County.	4/8/2013	93,200	42		N
6	A strong ridge of high pressure built over California bringing extreme heat to all locations except the coast and immediate coastal valleys. High temperatures on 7/1 near the coast ranged from the 70s - 80s with 90s - low 100s for coastal Valleys. Temperatures were extreme in the interior with maximum temperatures up to 111 in the Central Valley. The heat intensified on 7/2 where maximum soared again into the 100s, with Redding observing a 116-degree maximum.	7/1/2013- 7/2/2013	93,194	29		N
7	On Sunday a weak area of low pressure moved west to east through the Territory bringing increasing clouds, light showers and snow showers over the Sierra and a few light stray showers elsewhere, primarily across the south. Most customers were impacted by a fault on a substation relay.	3/3/2013	69,578	11		N
8	A classic California October offshore wind event unfolded 10/3/2013 as surface high pressure built north of the Service Territory. Wind speeds were generally 20 – 35 mph with gusts to 40 – 55 across the Sacramento valley, northern Sierra Nevada and elevated terrain around the Bay Area.	10/3/2013	56,573	25		N
9	The ridge of high pressure dramatically amplified delivering significant heat across the Territory. Maximum temperatures across the interior valley locations reached above 105 with Red Bluff reaching 112 degrees. Overnight temperatures remained warm on the far ends of the valley, with minimum temperatures only dipping into the upper 70s in the southern San Joaquin and mid 80s in the northern Sacramento Valley.	6/8/2013	52,442	22		N
10	A cold and dynamic weather system dropped southwestward into the territory and brought cooler and very unsettled weather in the form of rain, snow and gusty winds. Winds were strongest over elevated terrain of the Bay Area – Altamont pass gusted to 69 mph.	10/27/2013	49,692	36		N

* Note: Values exclude planned outages.
** Note: This data is requested only for Major Event days.

Table 62 - Ten Largest 2012 Outage Events

Rank	Description	Date	Number of Customers Affected *	Longest Customer Interruption (Hours)	# of People Used To Restore Service (Major Events) **	CPUC Major Event?
1	The final and strongest storm of an 'Atmospheric River' series moved through the territory on 12/02/2012 delivering widespread gusts of 50-70 mph in the northern Sacramento Valley. The strongest wind observed was in Plumas National Forest where a gust of 102 mph was recorded. This system also brought heavy amounts of rain across northern California where localized flooding and mudslides were reported in numerous locations. Precipitation totals from the entire series (See Rank #3) topped 20 inches in the wettest locations in the north.	12/02/2012	298,393	80		N
2	A series of moderate to strong storms impacted the Service Area delivering rain, wind, thunderstorms and several feet of snow across the northern mountains and Sierra. The second storm in the series moved onto the Humboldt coast during the evening of 12/21 and then progressed south and east through the territory overnight into 12/22. The third and strongest storm of the series developed just off the coast and pushed a vigorous cold front through the Service Area on 12/23. Gusts up to 80 mph were observed over elevated terrain. Yet another round of heavy mountain snow fell across the north and the Sierra. Up to 6 feet of snow fell in some locations across the north during the series making restoration difficult.	12/21/2012 – 12/23/2012	195,099	172		N
3	The first storm of the 'Atmospheric River' series moved into the territory on 11/28 and delivered strong south winds up to 50-60 mph and heavy rains. The second and stronger system impacted the Territory 11/29 through 11/30. This system brought significant rainfall totals across the north half of the Territory with up to 10" observed in the wettest locations across elevated terrain. After a brief break on 12/1 the final and strongest storm of the series moved through on 12/2 (see Rank 1).	11/28/2012 – 11/30/2012	183,145	71		N
4	On 1/20 a strong Pacific weather system with an associated well-organized frontal band pushed north to south through the territory. This system delivered heavy rains and gusty southerly winds to most locations and was the first rain in a month or more for many locations across the south half of the territory.	1/20/2012 – 1/21/2012	168,496	40		N
5	On 3/16 a system impacted Northern Region and the Bay Area with heavy showers, gusty southerly winds, and a few lightning strikes. On 3/17 this system progressed south through Central Coast and Central Valley Divisions bringing heavy rains, thunderstorms and gusty winds. On 3/18, snow levels fell as cold air filtered in resulting in low snow outage activity from Grass Valley south into Fresno division.	3/16/2012 – 3/18/2012	146,602	63		N
6	Overnight Sunday, 10/21/2012 into Monday, 10/22/2012 a cold front associated with a unusually cold, early-season storm swept west to east across the PG&E Service Area bringing a variety of adverse weather including rain, wind, thunderstorms and low snow. Two tornados also formed in the eastern Sacramento Valley and Sierra foothills.	10/22/2012	129,801	22		N
7	A vigorous late season weather system swept through the Service Area on 6/4 – 6/5 and brought a variety of adverse weather conditions. This system delivered over 700 lightning strikes across the Service Territory with the majority occurring in the northern Sacramento Valley. Winds gusting to 40 mph came up abruptly in the San Joaquin causing numerous wind related outages.	6/4/2012 – 6/5/2012	93,735	22		N
8	On 12/17 a weakening front moved through the Service Area bringing rain showers and breezy southerly winds up to 35-40 mph across the Sacramento Valley. Showers progressed into the southern San Joaquin overnight into 12/18. Post-frontal northwest winds then developed across the San Joaquin Valley, with gusts up to 35 mph observed at Fresno.	12/17/2012 – 12/18/2012	83,063	18		N
9	A Pacific storm system and associated cold front and swept through the north half of the PG&E Service Area. The front brought brisk south winds of 30 to 40 mph, with higher gusts over elevated terrain. During the afternoon, thunderstorms formed along the north coast and northern Sacramento Valley in the post-frontal environment.	3/31/2012	68,165	21		N
10	Non-weather-related event.	7/21/2012	47,182	30		N

* Note: Values exclude planned outages. ** Note: This data is requested only for Major Event days.

9. Number of Customer Inquiries About Electric Reliability and the Number of Days per Response

The following table provides the total number of customer inquiries, and PG&E response times for the year 2022.

YTD 2022 ESR Closed Cases							
Division Name	Total Cases	Closed 0-7 Days	Closed 8-14 Days	Closed >14 Days	% Closed 0-7 Days	% Closed 8-14 Days	% Closed >14 Days
Central Coast	63	27	5	31	43%	8%	49%
DeAnza	47	41	3	3	87%	6%	6%
Diablo	75	73	1	1	97%	1%	1%
East Bay	80	74	1	5	93%	1%	6%
Fresno	41	39	2	0	95%	5%	0%
Humboldt	12	12	0	0	100%	0%	0%
Kern	41	31	2	8	76%	5%	20%
Los Padres	21	13	2	6	62%	10%	29%
Mission	69	68	1	0	99%	1%	0%
North Valley	32	6	2	24	19%	6%	75%
North Bay	49	32	5	12	65%	10%	24%
Peninsula	52	15	8	29	29%	15%	56%
Sacramento	34	8	4	22	24%	12%	65%
San Francisco	25	22	0	3	88%	0%	12%
San Jose	145	107	14	24	74%	10%	17%
Sierra	128	52	18	58	41%	14%	45%
Sonoma	121	118	3	0	98%	2%	0%
Stockton	30	24	3	3	80%	10%	10%
Yosemite	32	28	2	2	88%	6%	6%
Grand Total	1097	790	76	231	72%	7%	21%

Table 63 – Electric Reliability Customer Inquiries

Note: ESR = Electric Service Reliability (Recurring Outages). This Includes ESR cases created on or after January 1, 2022 and closed as of December 31, 2022. It excludes canceled and re-directed ESR tickets. Re-directed help tickets are those initially categorized as an ESR ticket but subsequently determined to be non-reliability related and then forwarded to the appropriate department. An example of a re-direct: a customer calls regarding a PG&E planned outage. This request is forwarded to the maintenance and construction department and a new help ticket is created.

10. Appendix A – Definitions, Acronyms & Abbreviations

AIDI – Average Interruption Duration Indices

AIFI – Average Interruption Frequency Indices for sustained outages only

Customer: A metered electrical service point for which an active bill account is established at a specific location.

CAIDI: Customer Average Interruption Duration Index - The Customer Average Interruption Duration Index (CAIDI) represents the average time required to restore service.

CESO: A term that counts the number of Customers Experiencing Sustained Outages.

DART – Distribution Asset Reconciliation Tools – a distribution asset database used by PG&E.

DCD – Down Conductor Detection scheme

Distribution system: That portion of an electric system that delivers electric energy from transformation points on the transmission system to the customer. PG&E defines its distribution system as line voltage less than 60 kilovolts (kV). The distribution system is generally considered to be anything from the distribution substation fence to the transformer prior to stepping down the voltage to the customer premise.

EPSS – Enhanced Powerline Safety Scheme

ILIS – Integrated Logging and Information System – The tool PG&E's distribution operators use to log electric outages.

ISO: The California Independent System Operator. The ISO operates the transmission system throughout most of the State of California, including throughout PG&E's service territory.

Major Event: Designates an event that exceeds reasonable design and or operational limits of the electric power system. A Major Event includes at least one Major Event Day. *See also:* **Major Event Day**.

Major Event Day (MED): A day in which the daily system, System Average Interruption Duration Index (SAIDI) exceeds a Major Event Day threshold value. For the purposes of calculating daily system SAIDI, any interruption that spans multiple calendar days is accrued to the day on which the interruption began.

MAIFI: Momentary Average Interruption Frequency Index

The Momentary Average Interruption Frequency Index (MAIFI) indicates the average frequency of momentary interruptions. PG&E's momentary outage reporting tools were originally designed to track momentary outages based on D96-09-045. As provided in D.16-01-008, the provided MAIFI metric is the same as what PG&E has used in its prior annual reliability reports and corresponds to the $MAIFI_E$ definition contained in the IEEE Guide for Electric Power Distribution Reliability Indices (IEEE 1366 standard), which counts multiple outage interruptions that occur close to each other in time as a single momentary outage event. This metric is equal to the total number of customer momentary interruption events divided by the total number of customers served and does not include the events immediately preceding a sustained interruption.

Momentary interruption: The brief (five minutes or less) loss of power delivery to one or more customers caused by the opening and closing operation of an interrupting device**.**

Non-Restorable Outage Process – PG&E utilizes a non-restorable outage designation and process for unique outage events involving requests by customers or agencies requiring that facilities be de-energized, access not permitted, and/or restoration be delayed due to circumstances not initiated or controlled by PG&E. This process includes adjusting the outage minutes to accurately reflect these situations and to measure PG&E's actual true performance.

ODB – Operations Database - ODB is the outage database for PG&E

Planned outage: The intentional disabling of a component's capability to deliver power, done at a preselected time, usually for the purposes of construction, preventative maintenance, or repair.

SAIDI: System Average Interruption Duration Index

The System Average Interruption Duration Index (SAIDI) indicates the total duration of interruption for the average customer during a predefined time period. It is commonly measured in minutes or hours of interruption.

SAIFI: System Average Interruption Frequency Index

The System Average Interruption Frequency Index (SAIFI) indicates how often the average customer experiences a sustained interruption over a predefined time period.

SCADA: Supervisory Control and Data Acquisition – an online database for distribution operators to remotely gather information and control the distribution system.

Sustained interruption: Any interruption not classified as a part of a momentary event. That is, any interruption that lasts more than five minutes.

Unplanned interruption: The loss of electric power to one or more customers that does not result from a planned outage.