Energy Division Compliance Report Filing Cover Sheet

A. Document Name

1. Utility Name: Pacific Gas and Electric
2. Document Submission Frequency (Annual, Semi-Annual, YTD, Quarterly, Monthly, Weekly, Ad-Hoc, Once, Other Event): Annual
3. Report Name:

Electric Distribution Reliability Report

4. Reporting Interval (for this submission, e.g., 2015 Q1): 2016
5. Document File Name (format as 1 + 2 + 3 + 4):

PG&E Annual Electric Distribution Reliability Report 2016 Final

6. Append the confidential and/or cover sheet notation, as appropriate.

Sample Document Names

Utility Name + Submittal Frequency + Report Name + Year + Reporting Interval + (COV or CONF or both or neither)

SCE Annual Procurement Report 2014	*PGE Monthly Gas Report 201602* CONF
SDGE Quarterly DR Forecast 2015Q1	*PGE Daily Gas Report 20160230* COV
PGE Monthly Gas Report 201602	*PGE Monthly Gas Report 201602* COV CONF

7. Identify whether this filing is: ◉ original or ○ revision to a previous filing.
   a. If revision, identify date of the original filing:

B. Documents Related to a Proceeding

All submittals should reference both a proceeding and a decision, if applicable. If not applicable, leave blank and fill out Section C.

1. Proceeding Number (starts with R, I, C, A, or P plus 7 numbers):

R.14-12-014

2. Decision Number (starts with D. plus 7 numbers):

D.16-01-008

3. Ordering Paragraph (OP) Number from the Decision:

OP 1

C. Documents Submitted as Requested by Other Requirements

If the document submitted is in compliance with something other than a proceeding, (e.g., Resolution, Ruling, Staff Letter, Public Utilities Code, or sender's own motion), please explain:

Energy Division Compliance Report Filing Cover Sheet

D. Document Summary

Provide a Document Summary that explains why this report is being filed with the Energy Division (ED). This information is often contained in the cover letter, introduction, or executive summary.

D.16-01-008, OP 1, requires PG&E to submit the Report to the Energy Division.

E. Sender Contact Information

1. Sender Name:
Bruce Smith
2. Sender Organization:
Pacific Gas and Electric
3. Sender Phone:
415-973-2616
4. Sender Email:
BTS1@pge.com

F. Confidentiality

Is this document confidential? ◉ No ○ Yes

If **Yes**, provide an explanation of why confidentiality is claimed and identify the expiration of the confidentiality designation (e.g., Confidential until December 31, 2020.)

G. CPUC Routing

Energy Division's Director, Ed Randolph, requests that you not copy him on filings sent to ED Central Files. Identify below any Commission staff that were copied on the submittal of this document. Names of Commission staff that sender copied on the submittal of this Document:

The Notification was directed to Energy Division Central Files; with cc to
Timothy Sullivan, Executive Director
Elizaveta Malashenko, Director, Safety and Enforcement Division
David K. Lee, Energy Division

Pacific Gas and Electric Company

Erik B. Jacobson
Director
Regulatory Relations

Pacific Gas and Electric Company
77 Beale St., Mail Code B10C
P.O. Box 770000
San Francisco, CA 94177

Tel.: 415-973-4464
Fax: 415.973.7226

July 14, 2017

BY ELECTRONIC MAIL

Timothy Sullivan, Executive Director
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

Re: 2016 Annual Electric Distribution Reliability Report, D.16-01-008

Dear Mr. Sullivan:

Pursuant to Decision (D.) 16-01-008, attached is PG&E's 2016 Annual Electric Distribution Reliability Report.

On June 1, 2017, as required by the Decision, PG&E submitted, under seal, the list of planned outages for the previous ten years to the Energy Division Director. A copy of the planned outage data, under seal, is being provided today to the Director of the Safety and Enforcement Division on a CD via hand delivery.

Please contact Bruce Smith (BTS1@PGE.COM, 415-973-2616) if you have any questions or comments on this report.

Very truly yours,

Erik B. Jacobson
Director, Regulatory Relations

cc: Elizaveta Malashenko, Director, Safety and Enforcement Division
David K. Lee, Energy Division
EnergyDivisionCentralFiles@cpuc.ca.gov

Enclosure

PACIFIC GAS AND ELECTRIC COMPANY

2016 ANNUAL ELECTRIC RELIABILITY REPORT
(Per Decision16-01-008)

July 14, 2017

Table of Contents

Executive Summary

From 2009 to 2015, electric customers of Pacific Gas and Electric Company (PG&E) experienced steadily improving reliability. Reliability in 2016 represented the second best SAIDI over the past ten years, though it was challenged by early El Niño winter storm outages. Even with these storm related impacts, strong SAIDI performance attributed to PG&E's investment in its electric infrastructure and its commitment to integrating innovative technology continue to pay dividends for customers.

Utilities measure reliability in many ways: duration of outages, frequency of outages, average restoration time, counting only unplanned outages, counting planned outages, excluding unusual events such as major storms (so called Major Event Days or "MED" days), including or excluding certain types of outages, among other distinctions. This report explains the various 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. PG&E believes these metrics best reflect the typical customer's experience and are common benchmark metrics across the industry.

Compared to 10 years ago (2007 versus 2016), PG&E has reduced the average amount of time customers experienced a sustained outage in a given year from 167.0 minutes to 108.9 minutes. This is a 35 percent improvement. In the same period, PG&E also reduced the average number of times customers experienced a sustained outage in a given year from 1.306 to 1.021, a 22 percent improvement. Table 1 below displays improvement in electric reliability from 2007 through 2016.

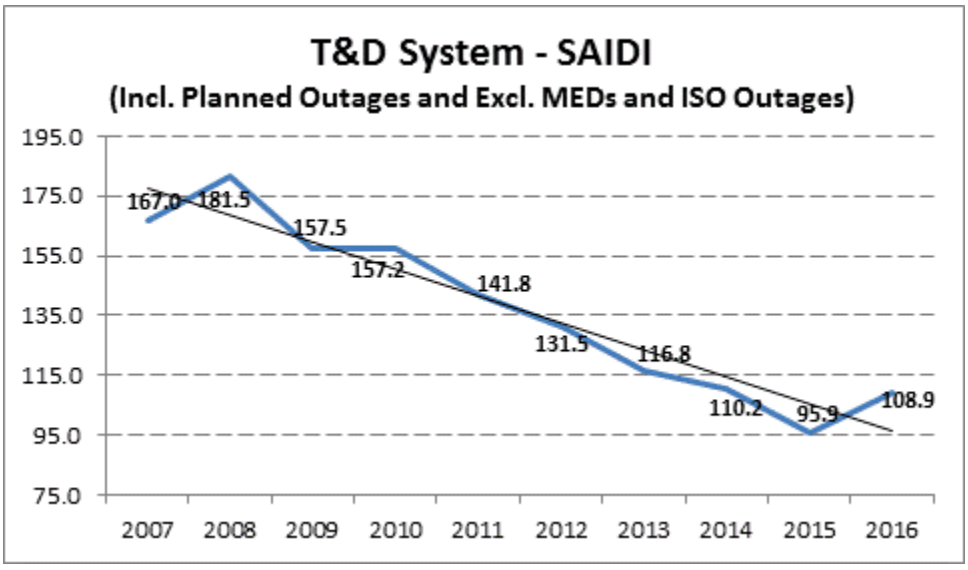
Table 1 – Combined Transmission and Distribution System Indices (2007-2016)
(Excludes MED and Independent System Operator ISO outages, and includes planned outages)

Year	Major Events Excluded			
	SAIDI	SAIFI	MAIFI	CAIDI
2007	167.0	1.306	1.526	127.9
2008	181.5	1.299	1.597	139.7
2009	157.5	1.206	1.398	130.6
2010	157.2	1.207	1.257	130.2
2011	141.8	1.087	1.180	130.5
2012	131.5	1.125	1.805	116.9
2013	116.8	1.065	1.533	109.7
2014	110.2	0.965	1.400	114.2
2015	95.9	0.871	1.594	110.1
2016	108.9	1.021	1.502	106.7

Chart A below shows the reduction in duration of the amount of time the average PG&E customer experienced a sustained outage or outages in a given year in graph form:

2007-2016 Transmission & Distribution System SAIDI Performance Results

Chart A



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

[1] See Table 28 as shown in Section 3.

Not surprisingly, similar trends are mirrored at the division level. Reliability improved in 18 of PG&E's 19 divisions in 2016 compared to 2007, as shown by the 10-year charts included later in this report.

How PG&E Measures Reliability

PG&E uses four metrics commonly utilized in the electric utility industry to measure reliability: 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 2016, PG&E's SAIDI was about 108.9 minutes per customer. This is a better than 35 percent improvement over the last 10 years.**
- SAIFI is the number of times the average PG&E customer experiences a sustained outage in a given year. **In 2016, PG&E's SAIFI was 1.021 for the year, including planned outages. This is a better than 22 percent improvement over the last 10 years.**
- 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 2016, PG&E's MAIFI was 1.502, or more than one per customer. This value is an improvement over 2015 MAIFI results.**
- CAIDI is the average duration of a sustained outage. It is determined by taking the total outage minutes for all customer outages[3] (System Average Interruption Duration Index (SAIDI)) and dividing it by the total number of customer outages (System Average Interruption Frequency Index (SAIFI)). **In 2016, PG&E's CAIDI was 106.7 minutes**. **This value represents a 17 percent improvement over the past 10 years and the lowest value (most favorable) over the same period.**

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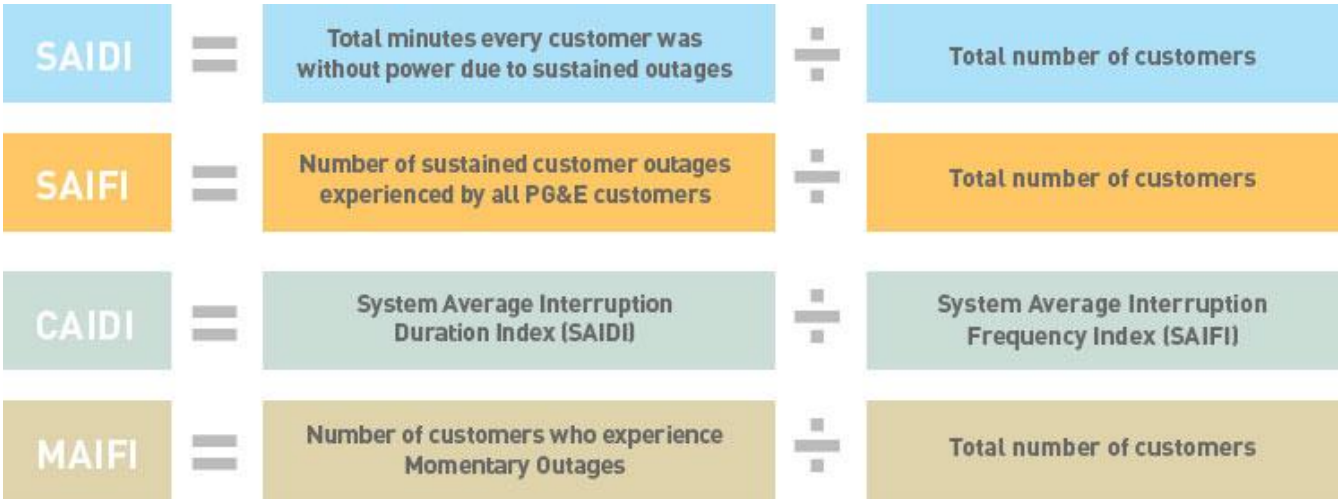
[2] PG&E's momentary outage reporting tools are based on D96-09-045. As provided in D.16-01-008, the provided MAIFI metric is the same as what PG&E has used in its prior annual reliability reports and corresponds to the $MAIFI_E$ definition contained in the IEEE Guide for Electric Power Distribution 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.

[3] Measures sustained outage events and excludes momentary outage events.



What's Behind The Reliability Performance?

PG&E continues to integrate a wide range of advanced communications and control technologies throughout its electric grid to enhance the resiliency of the system and to identify and restore power outages more quickly. In the last five years, PG&E has invested more than $15 billion dollars to enhance and harden its electric transmission and distribution system assets.

Some highlights of the technology that has boosted reliability include:

New Distribution Control Centers: Since 2014, PG&E has opened state-of-the-art electric distribution control centers that manage more than 3,300 circuits throughout Northern and Central California. These facilities are the nerve centers of the grid that delivers energy to the homes and businesses of more than 16 million Californians. Located in Fresno and Concord, in addition to a new distribution control center opened last year in Rocklin/Placer County, the centers are already enhancing electric reliability for PG&E customers while incorporating clean, renewable energy into the grid.

Smart Grid: PG&E continues to install advanced automated technology on power lines throughout its service area. This technology can automatically "self-heal" the grid by re-routing the flow of electricity around a damaged power line and effectively restore power to the majority of impacted customers within minutes. These systems have been installed on more than 25 percent of PG&E's electrical distribution circuits, helping the company avoid more than 160 million customer outage minutes and saving more than 1.6 million customers from a sustained outage since the program began in 2012. Other advances, including line sensors that help pinpoint the specific location of an outage, continue to be integrated into the system.

What follows is the 2016 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 Chapter 5.

Introduction

This is the 2016 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 (2007-2016)
2.	Division Reliability Indices (2007-2016) Including and Excluding Major Event Day (MED)
3.	System and Division Indices Based on IEEE 1366 (2007-2016) 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 2016
7.	Summary List of MEDs per IEEE 1366
8.	Historical Ten Largest Unplanned Outage Events (2007-2016)
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 our previous 2015 report, PG&E implemented a new outage reporting system 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 as 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 (2007-2016)

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 – Combine Transmission and Distribution System Indices (2007-2016)
(Excludes planned and ISO outages)

Year	Major Events Included				Major Events Excluded			
	SAIDI	SAIFI	MAIFI	CAIDI	SAIDI	SAIFI	MAIFI	CAIDI
2007	162.4	1.254	1.570	129.5	144.8	1.204	1.521	120.3
2008	424.0	1.575	1.831	269.2	156.9	1.208	1.594	129.9
2009	211.8	1.316	1.544	160.9	134.3	1.119	1.395	120.0
2010	249.5	1.394	1.488	179.0	130.2	1.106	1.253	117.7
2011	278.8	1.267	1.483	219.9	109.7	0.966	1.172	113.6
2012	141.4	1.125	1.923	125.7	111.2	1.031	1.802	107.8
2013	117.8	1.065	1.638	110.6	96.4	0.964	1.529	100.0
2014	133.8	1.044	1.565	128.2	92.8	0.879	1.393	105.6
2015	131.8	0.967	1.812	136.3	80.7	0.787	1.585	102.5
2016	106.6	1.021	1.605	104.5	93.7	0.940	1.495	99.8

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

[4] On November 18, 2011 the EON recording system was removed from service. Momentary outage data is now being collected from SCADA devices and through the use of Smart Meters. Data collection from the Smart Meters is more effective than the previous EON system since Smart Meters don't rely on customer volunteers having EON devices connected inside their buildings. The increased frequency of momentary outages recorded does not necessarily indicate an actual increase in momentary outages in 2012 and after as compared to prior years, but is a result of this improved method for recording momentary outages.

[5] Several tables containing the 2015 system results have been updated based on PG&E's master outage data base as of January 30, 2017. These updates show slightly different overall system results compared to the August 12, 2016 final report provided to the Energy Division. These minor updates were a result of further subsequent data corrections made related to PG&E's new outage reporting tools and software enhancements implemented in 2015. For example, the T&D SAIDI and SAIFI values shown in Table 1 of last year's report were 95.8 and 0.870 respectively compared to 95.9 and 0.871 in this draft report.

i. Distribution System Indices

Table 3 – Distribution System Indices (2007-2016)
(Excludes planned outages, transmission, substation, and generation related outages)

Year	Major Events Included			Major Events Excluded		
	SAIDI	SAIFI	CAIDI	SAIDI	SAIFI	CAIDI
2007	131.1	1.047	125.2	121.5	1.019	119.2
2008	374.9	1.363	275.0	132.8	1.041	127.5
2009	191.2	1.151	166.1	119.4	0.974	122.5
2010	210.8	1.164	181.1	108.2	0.921	117.5
2011	239.2	1.041	229.7	92.8	0.796	116.5
2012	120.1	0.959	125.2	96.3	0.882	109.2
2013	100.1	0.869	115.2	84.8	0.804	105.5
2014	119.7	0.926	129.2	85.2	0.780	109.2
2015	99.4	0.804	123.6	72.5	0.689	105.3
2016	95.4	0.895	106.6	83.0	0.818	101.5

Note: PG&E defines its distribution system as line voltage less than 50 kilovolts (KV)

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

ii. Transmission System Indices

Table 4 – Transmission System Indices (2007-2016)
(Excludes planned outages, distribution, and generation related outages)
(Includes substation outages)

Year	Major Events Included			Major Events Excluded		
	SAIDI	SAIFI	CAIDI	SAIDI	SAIFI	CAIDI
2007	31.3	0.208	150.9	23.3	0.185	126.4
2008	48.8	0.211	231.0	23.8	0.166	143.6
2009	20.6	0.165	124.8	14.9	0.144	103.4
2010	38.7	0.230	168.2	22.0	0.186	118.4
2011	39.5	0.224	176.2	16.9	0.168	100.6
2012	21.3	0.165	128.7	14.8	0.149	99.6
2013	13.1	0.168	77.7	11.7	0.160	72.6
2014	14.1	0.116	121.0	7.5	0.097	77.8
2015	32.1	0.160	201.0	7.8	0.095	82.7
2016	11.2	0.125	89.5	10.7	0.121	88.3

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

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

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

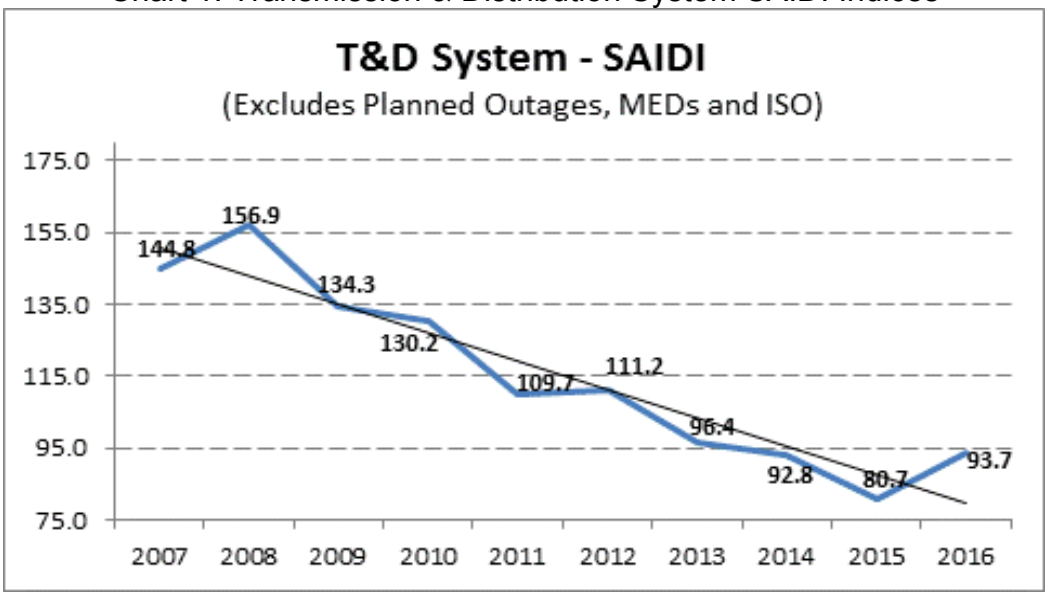


Chart 2: Distribution System SAIDI Indices

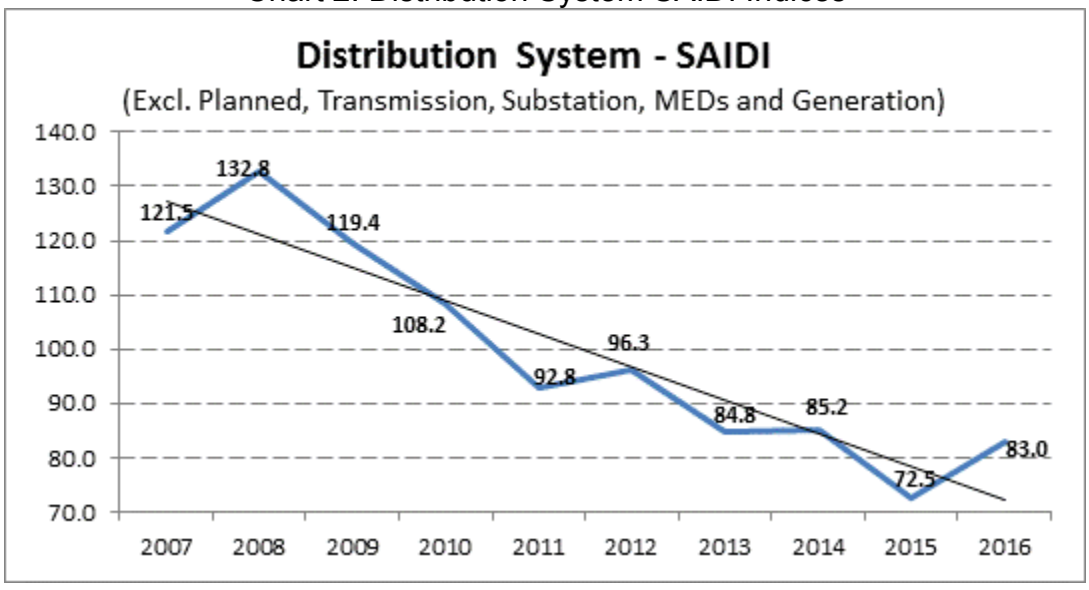
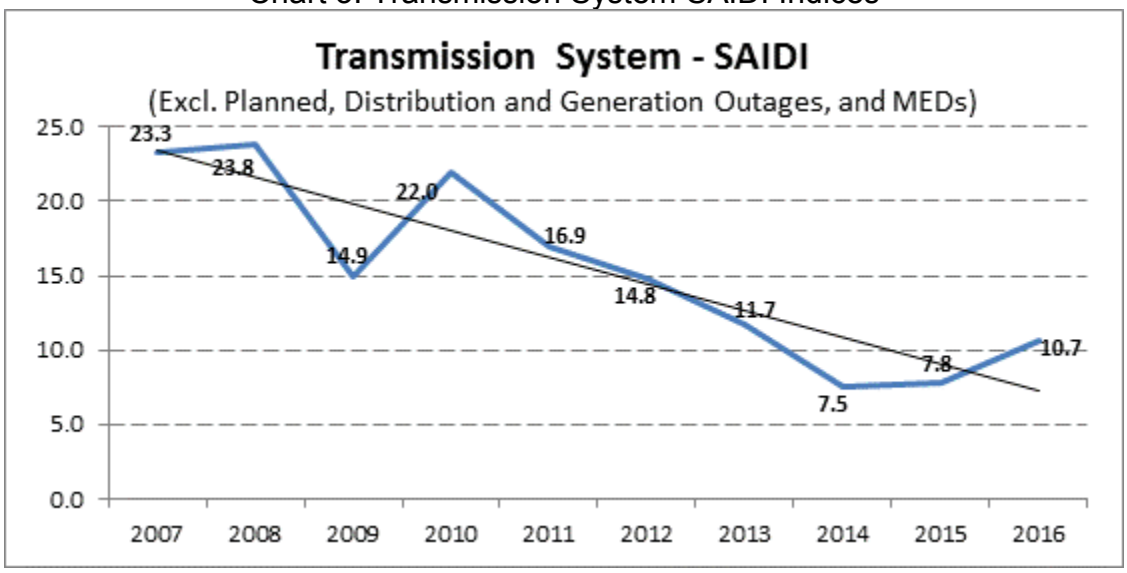


Chart 3: Transmission System SAIDI Indices



(Includes substation outages)

ii. SAIFI Performance Results (MED Excluded)

Chart 4: Transmission & Distribution System SAIFI Indices

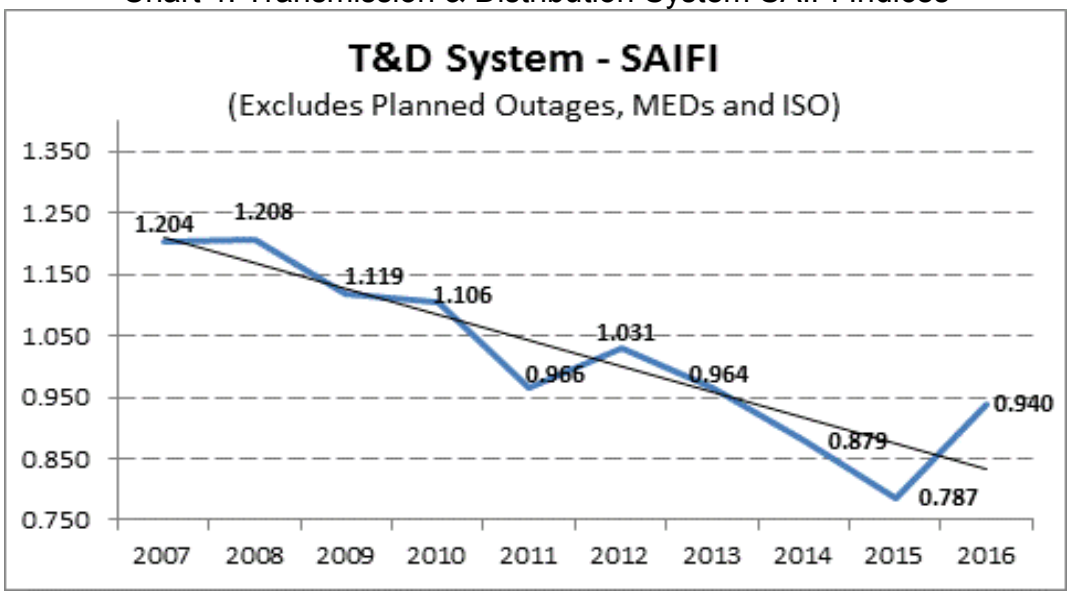


Chart 5: Distribution System SAIFI Indices

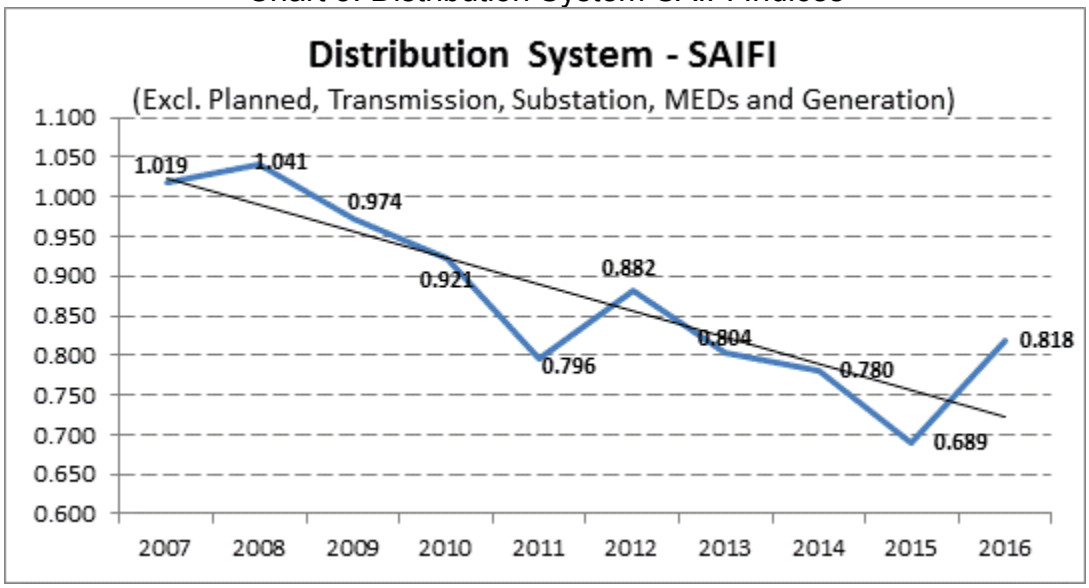
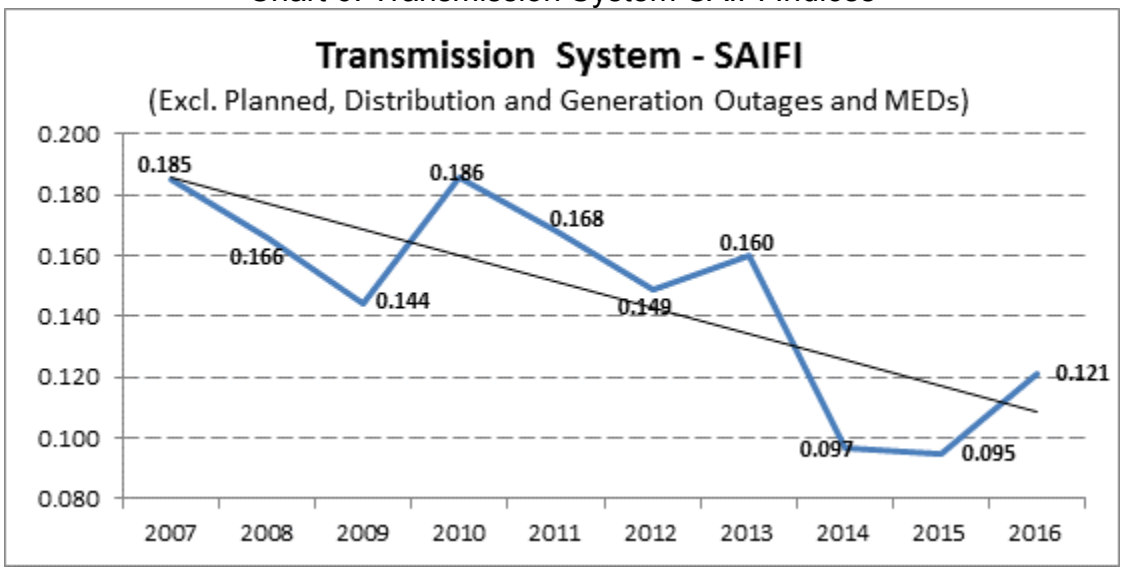


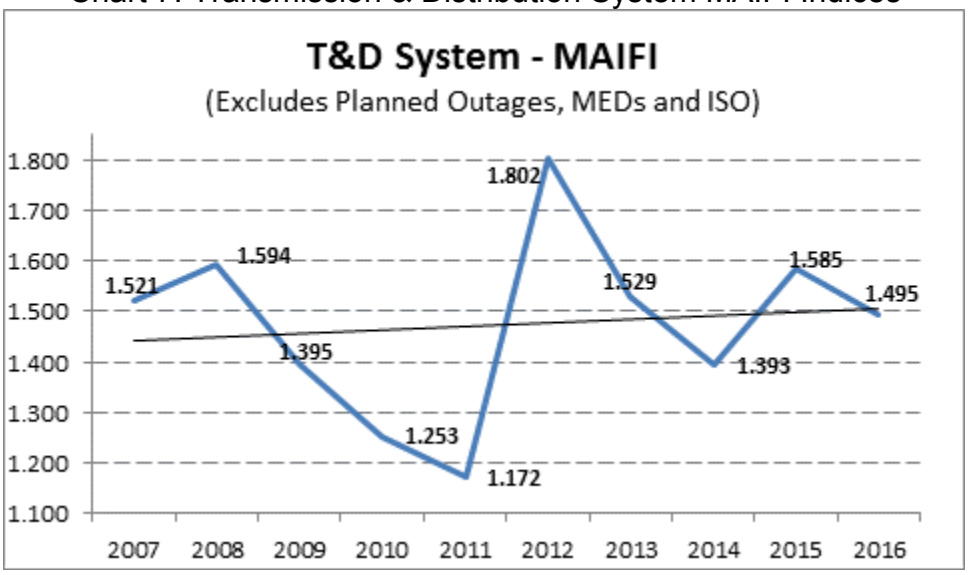
Chart 6: Transmission System SAIFI Indices



(Includes substation outages)

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

Chart 7: Transmission & Distribution System MAIFI Indices



[6] As explained in footnote 4 above, on November 18, 2011 the EON recording system was removed from service. Momentary outage data is now being collected from SCADA devices and through the use of Smart Meters. Data collection from the Smart Meters is more effective than the previous EON system since Smart Meters don't rely on customer volunteers having EON devices connected inside their buildings. The increased frequency of momentary outages recorded in 2012 and following years does not necessarily indicate an actual increase in momentary outages in 2012 and after as compared to prior years, but is a result of this improved method for recording momentary outages.

iv. CAIDI Performance Results (MED Excluded)

Chart 8: Transmission & Distribution System CAIDI Indices

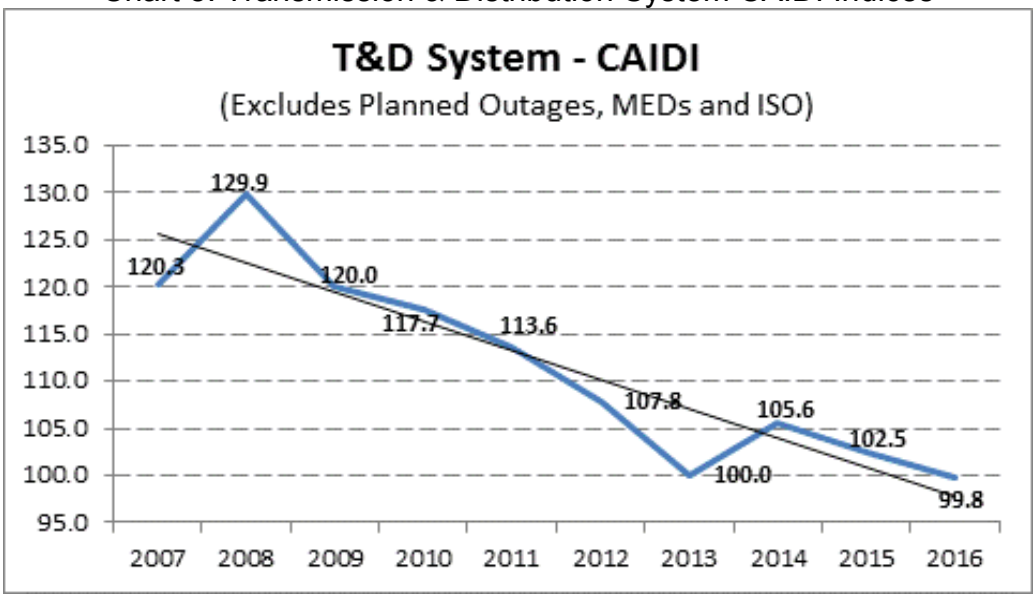


Chart 9: Distribution System CAIDI Indices

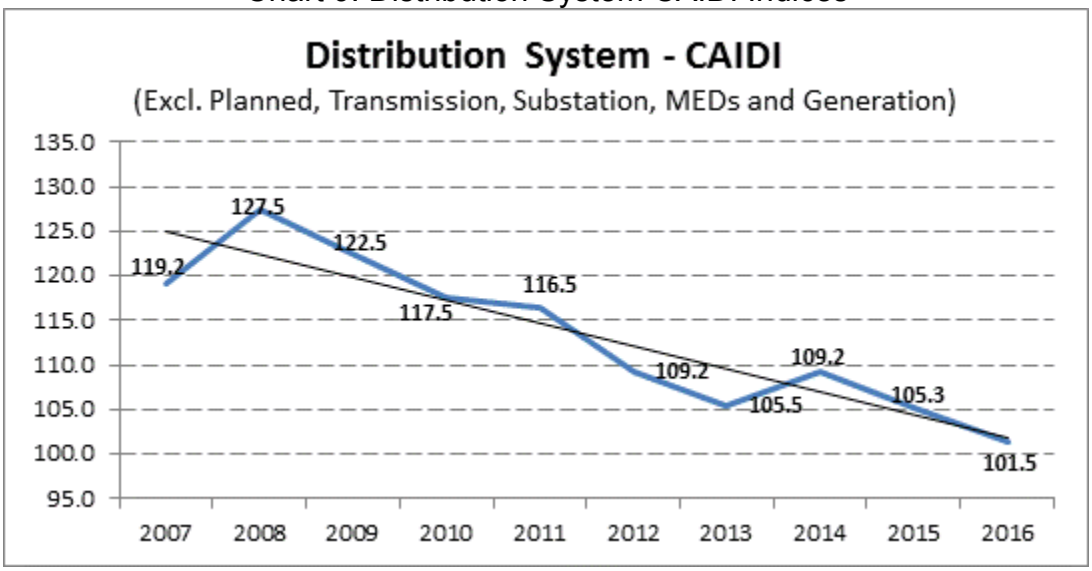
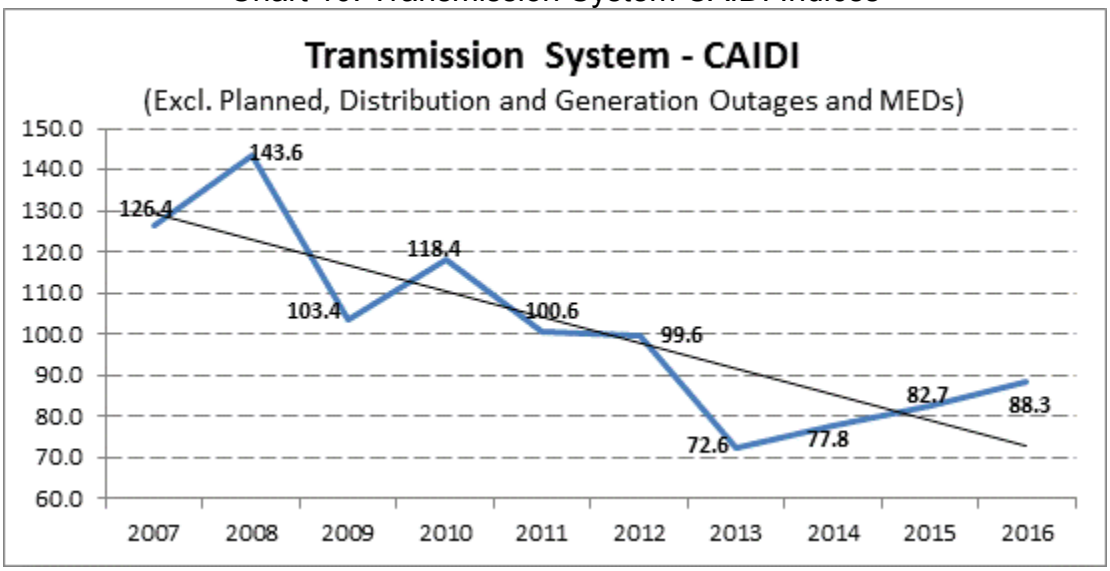


Chart 10: Transmission System CAIDI Indices



(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	2007	214.2	1.859	2.732	115.2
CENTRAL COAST	2008	831.3	2.355	2.746	353.0
CENTRAL COAST	2009	451.9	2.371	3.206	190.5
CENTRAL COAST	2010	390.6	1.977	3.948	197.6
CENTRAL COAST	2011	496.0	1.985	2.084	249.9
CENTRAL COAST	2012	152.0	1.311	2.368	115.9
CENTRAL COAST	2013	127.2	1.321	2.035	96.2
CENTRAL COAST	2014	204.4	1.358	2.130	150.5
CENTRAL COAST	2015	253.0	1.289	2.173	196.3
CENTRAL COAST	2016	188.6	1.637	2.734	115.2
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
DE ANZA	2007	96.3	0.873	1.136	110.3
DE ANZA	2008	270.6	1.311	1.687	206.3
DE ANZA	2009	163.7	0.992	1.655	165.0
DE ANZA	2010	172.8	1.154	1.437	149.8
DE ANZA	2011	81.6	0.718	1.489	113.6
DE ANZA	2012	82.8	0.718	1.223	115.3
DE ANZA	2013	78.8	0.817	1.186	96.4
DE ANZA	2014	114.2	1.028	1.307	111.1
DE ANZA	2015	63.4	0.594	1.281	106.7
DE ANZA	2016	109.4	0.914	1.423	119.7
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
DIABLO	2007	122.4	1.103	1.579	111.0
DIABLO	2008	202.5	1.500	2.130	135.0
DIABLO	2009	159.4	1.398	1.196	114.1
DIABLO	2010	119.9	1.386	1.313	86.5
DIABLO	2011	78.7	0.929	1.402	84.6
DIABLO	2012	105.4	1.225	1.405	86.0
DIABLO	2013	83.5	1.016	1.304	82.2
DIABLO	2014	86.2	0.965	1.388	89.3
DIABLO	2015	83.7	0.985	1.873	85.0
DIABLO	2016	79.0	1.016	1.723	77.8
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
EAST BAY	2007	166.9	1.318	1.012	126.6
EAST BAY	2008	161.6	1.077	0.863	150.1
EAST BAY	2009	138.1	1.259	0.894	109.7
EAST BAY	2010	126.3	1.089	0.757	116.0
EAST BAY	2011	104.5	0.963	1.079	108.6
EAST BAY	2012	110.9	1.364	1.369	81.3
EAST BAY	2013	119.5	0.999	1.282	119.6
EAST BAY	2014	83.6	0.878	1.495	95.2
EAST BAY	2015	59.6	0.723	1.179	82.5
EAST BAY	2016	128.2	1.215	1.230	105.5

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
FRESNO	2007	232.0	1.779	2.243	130.4
FRESNO	2008	196.3	1.641	1.797	119.6
FRESNO	2009	154.7	1.357	1.899	114.0
FRESNO	2010	175.3	1.273	1.955	137.7
FRESNO	2011	165.8	1.116	2.022	148.6
FRESNO	2012	100.8	1.064	2.361	94.7
FRESNO	2013	96.8	1.098	2.110	88.2
FRESNO	2014	84.5	1.008	1.774	83.8
FRESNO	2015	100.3	1.151	2.057	87.2
FRESNO	2016	85.1	1.129	1.974	75.4
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
HUMBOLDT	2007	556.8	1.837	3.325	303.0
HUMBOLDT	2008	1,005.1	2.730	3.365	368.1
HUMBOLDT	2009	240.7	1.709	2.483	140.9
HUMBOLDT	2010	575.3	2.512	1.719	229.0
HUMBOLDT	2011	543.1	1.956	2.279	277.6
HUMBOLDT	2012	339.5	1.736	4.665	195.6
HUMBOLDT	2013	302.1	1.382	2.650	218.6
HUMBOLDT	2014	288.5	1.354	1.954	213.0
HUMBOLDT	2015	695.2	2.234	2.736	311.2
HUMBOLDT	2016	219.0	1.627	2.066	134.6
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
KERN	2007	124.0	1.132	1.580	109.6
KERN	2008	175.9	1.448	1.212	121.5
KERN	2009	112.3	1.206	1.493	93.2
KERN	2010	137.4	1.197	1.567	114.8
KERN	2011	169.5	1.286	1.621	131.8
KERN	2012	91.0	0.995	1.222	91.4
KERN	2013	92.4	1.103	1.196	83.8
KERN	2014	113.2	1.114	1.843	101.6
KERN	2015	92.0	0.947	1.925	97.1
KERN	2016	89.8	0.925	2.109	97.1
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
LOS PADRES	2007	141.4	1.172	2.683	120.7
LOS PADRES	2008	236.8	1.847	3.067	128.2
LOS PADRES	2009	179.9	1.277	1.713	140.9
LOS PADRES	2010	276.9	1.737	2.052	159.4
LOS PADRES	2011	135.4	1.229	2.195	110.1
LOS PADRES	2012	98.2	1.036	1.632	94.7
LOS PADRES	2013	215.5	1.506	1.094	143.1
LOS PADRES	2014	187.0	1.214	1.378	154.0
LOS PADRES	2015	132.2	0.844	1.783	156.6
LOS PADRES	2016	114.1	1.171	1.676	97.4

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
MISSION	2007	83.5	0.833	1.022	100.2
MISSION	2008	109.1	0.999	1.515	109.1
MISSION	2009	93.6	0.786	0.902	119.0
MISSION	2010	111.7	0.998	0.785	112.0
MISSION	2011	74.6	0.833	0.692	89.6
MISSION	2012	93.9	0.907	0.885	103.5
MISSION	2013	74.0	0.804	0.837	92.0
MISSION	2014	75.9	0.745	0.826	101.8
MISSION	2015	62.6	0.596	1.150	105.1
MISSION	2016	82.7	0.763	0.985	108.4
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
NORTH BAY	2007	119.0	1.076	1.802	110.6
NORTH BAY	2008	564.3	1.681	1.979	335.7
NORTH BAY	2009	155.0	1.232	1.010	125.9
NORTH BAY	2010	159.1	1.232	1.401	129.1
NORTH BAY	2011	203.2	1.339	1.223	151.8
NORTH BAY	2012	140.4	0.920	1.949	152.6
NORTH BAY	2013	114.0	0.995	1.730	114.6
NORTH BAY	2014	234.6	1.261	2.710	186.1
NORTH BAY	2015	135.4	1.059	2.161	127.9
NORTH BAY	2016	110.2	0.911	1.449	121.0
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
NORTH VALLEY	2007	267.4	1.586	2.133	168.6
NORTH VALLEY	2008	1,550.2	2.382	4.194	650.8
NORTH VALLEY	2009	281.6	1.486	3.143	189.5
NORTH VALLEY	2010	552.3	1.842	1.980	299.8
NORTH VALLEY	2011	625.2	2.032	2.134	307.7
NORTH VALLEY	2012	513.9	1.882	2.950	273.0
NORTH VALLEY	2013	139.7	1.094	1.962	127.8
NORTH VALLEY	2014	173.2	1.166	1.793	148.6
NORTH VALLEY	2015	479.6	1.787	2.528	268.3
NORTH VALLEY	2016	175.0	1.265	2.173	138.4
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
PENINSULA	2007	82.9	0.764	1.062	108.5
PENINSULA	2008	425.0	1.840	2.044	231.0
PENINSULA	2009	123.6	1.088	0.890	113.7
PENINSULA	2010	164.1	1.601	1.449	102.5
PENINSULA	2011	112.6	1.170	0.964	96.2
PENINSULA	2012	101.3	1.145	1.709	88.5
PENINSULA	2013	94.8	0.874	1.333	108.4
PENINSULA	2014	99.3	1.060	1.367	93.7
PENINSULA	2015	76.2	0.867	1.798	87.9
PENINSULA	2016	87.1	0.986	1.383	88.3

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SACRAMENTO	2007	115.6	0.853	1.054	135.6
SACRAMENTO	2008	861.8	1.922	2.285	448.5
SACRAMENTO	2009	251.2	1.387	1.833	181.1
SACRAMENTO	2010	193.1	1.104	1.434	175.0
SACRAMENTO	2011	182.6	1.182	1.918	154.5
SACRAMENTO	2012	153.9	1.330	2.152	115.7
SACRAMENTO	2013	98.9	0.969	1.713	102.1
SACRAMENTO	2014	110.2	0.899	1.452	122.6
SACRAMENTO	2015	92.4	0.894	1.771	103.3
SACRAMENTO	2016	99.4	1.035	1.839	96.1
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SAN FRANCISCO	2007	104.8	1.048	0.386	100.0
SAN FRANCISCO	2008	155.9	0.891	0.272	175.1
SAN FRANCISCO	2009	77.8	0.823	0.136	94.5
SAN FRANCISCO	2010	56.4	0.704	0.097	80.2
SAN FRANCISCO	2011	50.1	0.570	0.215	88.0
SAN FRANCISCO	2012	52.4	0.611	1.051	85.8
SAN FRANCISCO	2013	58.1	0.656	0.333	88.6
SAN FRANCISCO	2014	131.1	0.782	0.351	167.6
SAN FRANCISCO	2015	36.1	0.521	0.537	69.3
SAN FRANCISCO	2016	40.7	0.537	0.397	75.8
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SAN JOSE	2007	101.0	0.950	1.010	106.3
SAN JOSE	2008	178.9	1.032	1.174	173.5
SAN JOSE	2009	89.7	0.854	0.817	105.1
SAN JOSE	2010	103.7	0.920	0.607	112.6
SAN JOSE	2011	113.8	0.973	0.808	117.0
SAN JOSE	2012	85.2	0.830	0.985	102.6
SAN JOSE	2013	100.2	0.962	1.036	104.1
SAN JOSE	2014	103.2	0.970	1.070	106.4
SAN JOSE	2015	75.6	0.763	1.151	99.1
SAN JOSE	2016	68.9	0.678	1.204	101.5
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SIERRA	2007	234.7	1.635	2.011	143.5
SIERRA	2008	1,199.3	2.239	2.028	535.6
SIERRA	2009	819.7	2.100	1.501	390.4
SIERRA	2010	754.7	2.289	1.567	329.7
SIERRA	2011	1,012.3	2.195	2.759	461.1
SIERRA	2012	244.0	1.478	3.228	165.2
SIERRA	2013	158.4	1.391	3.242	113.8
SIERRA	2014	195.1	1.399	2.362	139.5
SIERRA	2015	181.9	1.274	3.150	142.8
SIERRA	2016	174.3	1.248	1.892	139.6

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SONOMA	2007	158.9	1.194	1.806	133.1
SONOMA	2008	453.7	1.387	1.175	327.2
SONOMA	2009	183.7	1.250	1.574	147.0
SONOMA	2010	205.2	1.384	1.018	148.3
SONOMA	2011	246.4	1.288	1.529	191.3
SONOMA	2012	208.4	1.107	2.032	188.3
SONOMA	2013	183.6	1.127	2.536	163.0
SONOMA	2014	214.8	1.250	2.069	171.9
SONOMA	2015	119.1	0.868	1.992	137.3
SONOMA	2016	95.4	0.834	1.610	114.3
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
STOCKTON	2007	184.9	1.640	1.829	112.7
STOCKTON	2008	284.7	1.547	2.210	184.1
STOCKTON	2009	410.7	1.781	3.143	230.6
STOCKTON	2010	386.3	1.710	1.603	225.8
STOCKTON	2011	473.5	1.748	1.200	271.0
STOCKTON	2012	164.9	1.163	2.099	141.8
STOCKTON	2013	116.0	1.455	2.144	79.7
STOCKTON	2014	126.0	0.848	1.468	148.5
STOCKTON	2015	124.5	1.035	2.243	120.3
STOCKTON	2016	100.0	0.994	1.787	100.6
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
YOSEMITE	2007	228.2	1.605	1.419	142.2
YOSEMITE	2008	318.3	1.732	1.625	183.7
YOSEMITE	2009	261.5	1.477	1.721	177.1
YOSEMITE	2010	711.1	2.013	3.166	353.3
YOSEMITE	2011	1,172.0	1.975	2.642	593.4
YOSEMITE	2012	147.7	1.303	4.176	113.3
YOSEMITE	2013	189.8	1.329	3.463	142.8
YOSEMITE	2014	135.6	1.281	2.677	105.9
YOSEMITE	2015	112.4	1.072	3.095	104.8
YOSEMITE	2016	129.9	1.234	2.161	105.2

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	2007	212.5	1.850	2.691	114.9
CENTRAL COAST	2008	253.8	1.707	2.363	148.7
CENTRAL COAST	2009	223.2	1.953	2.991	114.3
CENTRAL COAST	2010	171.0	1.506	2.933	113.6
CENTRAL COAST	2011	155.7	1.501	1.588	103.7
CENTRAL COAST	2012	137.4	1.239	2.190	110.9
CENTRAL COAST	2013	121.0	1.290	1.960	93.8
CENTRAL COAST	2014	127.1	1.090	1.835	116.5
CENTRAL COAST	2015	102.0	0.847	1.844	120.4
CENTRAL COAST	2016	166.1	1.471	2.480	112.9
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
DE ANZA	2007	95.5	0.870	1.106	109.8
DE ANZA	2008	109.0	0.983	1.459	110.9
DE ANZA	2009	109.3	0.850	1.587	128.6
DE ANZA	2010	116.3	0.941	1.167	123.6
DE ANZA	2011	62.0	0.632	1.181	98.2
DE ANZA	2012	74.6	0.668	1.109	111.7
DE ANZA	2013	77.1	0.808	1.151	95.4
DE ANZA	2014	90.0	0.892	1.211	100.9
DE ANZA	2015	51.2	0.476	1.171	107.6
DE ANZA	2016	87.2	0.743	1.346	117.3
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
DIABLO	2007	122.1	1.101	1.577	110.9
DIABLO	2008	139.9	1.378	1.950	101.5
DIABLO	2009	145.1	1.304	1.157	111.2
DIABLO	2010	104.3	1.234	1.220	84.5
DIABLO	2011	66.8	0.801	1.243	83.4
DIABLO	2012	98.9	1.182	1.367	83.7
DIABLO	2013	80.8	0.995	1.243	81.2
DIABLO	2014	70.0	0.872	1.240	80.3
DIABLO	2015	73.8	0.860	1.666	85.8
DIABLO	2016	76.5	1.003	1.688	76.3
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
EAST BAY	2007	164.6	1.297	1.003	126.9
EAST BAY	2008	101.5	0.905	0.809	112.1
EAST BAY	2009	124.3	1.161	0.847	107.1
EAST BAY	2010	90.5	0.871	0.681	103.8
EAST BAY	2011	88.1	0.850	0.849	103.7
EAST BAY	2012	100.7	1.268	1.300	79.4
EAST BAY	2013	63.2	0.818	1.171	77.3
EAST BAY	2014	67.3	0.758	1.279	88.8
EAST BAY	2015	45.0	0.586	1.085	76.9
EAST BAY	2016	101.4	1.060	1.067	95.6

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
FRESNO	2007	230.2	1.759	2.224	130.9
FRESNO	2008	171.6	1.514	1.740	113.3
FRESNO	2009	138.0	1.227	1.755	112.4
FRESNO	2010	114.9	1.054	1.847	109.0
FRESNO	2011	82.5	0.816	1.689	101.2
FRESNO	2012	99.3	1.042	2.324	95.3
FRESNO	2013	94.2	1.066	2.070	88.4
FRESNO	2014	82.3	0.990	1.702	83.1
FRESNO	2015	70.0	0.849	1.829	82.4
FRESNO	2016	83.4	1.107	1.951	75.3
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
HUMBOLDT	2007	396.1	1.669	3.250	237.3
HUMBOLDT	2008	394.8	1.958	2.921	201.7
HUMBOLDT	2009	221.4	1.572	2.342	140.9
HUMBOLDT	2010	403.0	2.125	1.538	189.6
HUMBOLDT	2011	227.0	1.450	1.885	156.6
HUMBOLDT	2012	278.1	1.549	4.341	179.5
HUMBOLDT	2013	208.3	1.161	2.435	179.4
HUMBOLDT	2014	212.5	1.204	1.822	176.5
HUMBOLDT	2015	276.3	1.621	2.423	170.5
HUMBOLDT	2016	202.6	1.527	2.006	132.7
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
KERN	2007	123.9	1.131	1.580	109.5
KERN	2008	138.9	1.229	1.075	113.0
KERN	2009	101.0	1.134	1.398	89.1
KERN	2010	120.4	1.075	1.409	112.0
KERN	2011	112.1	0.991	1.344	113.1
KERN	2012	89.9	0.977	1.222	92.0
KERN	2013	88.3	1.046	1.114	84.4
KERN	2014	83.7	0.952	1.619	87.9
KERN	2015	80.4	0.862	1.850	93.2
KERN	2016	89.2	0.909	2.103	98.1
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
LOS PADRES	2007	141.3	1.171	2.683	120.7
LOS PADRES	2008	138.0	1.387	2.722	99.5
LOS PADRES	2009	102.3	1.012	1.322	101.1
LOS PADRES	2010	110.5	1.152	1.730	95.9
LOS PADRES	2011	89.9	0.969	1.666	92.7
LOS PADRES	2012	97.6	1.034	1.625	94.4
LOS PADRES	2013	89.7	0.736	0.950	121.8
LOS PADRES	2014	95.6	1.019	1.159	93.8
LOS PADRES	2015	72.2	0.687	1.408	105.1
LOS PADRES	2016	112.3	1.146	1.675	98.0

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
MISSION	2007	83.4	0.832	1.022	100.3
MISSION	2008	82.3	0.868	1.425	94.8
MISSION	2009	87.1	0.721	0.875	120.7
MISSION	2010	102.0	0.920	0.713	110.9
MISSION	2011	63.1	0.740	0.627	85.2
MISSION	2012	91.2	0.881	0.884	103.4
MISSION	2013	68.3	0.735	0.776	92.9
MISSION	2014	65.1	0.666	0.776	97.7
MISSION	2015	56.7	0.543	1.054	104.4
MISSION	2016	72.7	0.702	0.939	103.7
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
NORTH BAY	2007	118.3	1.073	1.800	110.3
NORTH BAY	2008	157.2	1.157	1.777	135.9
NORTH BAY	2009	112.3	1.054	0.894	106.6
NORTH BAY	2010	131.3	1.035	1.295	126.8
NORTH BAY	2011	111.1	1.081	1.087	102.8
NORTH BAY	2012	109.7	0.791	1.647	138.8
NORTH BAY	2013	101.8	0.909	1.455	111.9
NORTH BAY	2014	114.0	0.885	2.495	128.8
NORTH BAY	2015	97.4	0.904	1.977	107.8
NORTH BAY	2016	83.9	0.758	1.223	110.7
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
NORTH VALLEY	2007	163.5	1.344	1.947	121.6
NORTH VALLEY	2008	313.4	1.666	3.448	188.1
NORTH VALLEY	2009	203.8	1.272	3.010	160.2
NORTH VALLEY	2010	156.9	1.219	1.815	128.7
NORTH VALLEY	2011	161.2	1.217	1.558	132.4
NORTH VALLEY	2012	223.2	1.503	2.578	148.5
NORTH VALLEY	2013	119.3	1.036	1.904	115.1
NORTH VALLEY	2014	111.1	0.957	1.537	116.1
NORTH VALLEY	2015	132.8	1.062	1.930	125.0
NORTH VALLEY	2016	146.4	1.128	1.937	129.8
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
PENINSULA	2007	81.9	0.758	1.058	108.0
PENINSULA	2008	122.3	1.154	1.770	106.0
PENINSULA	2009	80.5	0.850	0.767	94.8
PENINSULA	2010	118.4	1.360	1.035	87.0
PENINSULA	2011	83.7	1.023	0.807	81.8
PENINSULA	2012	87.0	0.999	1.527	87.1
PENINSULA	2013	70.7	0.774	1.124	91.3
PENINSULA	2014	77.8	0.900	1.166	86.5
PENINSULA	2015	60.5	0.752	1.601	80.4
PENINSULA	2016	78.8	0.905	1.197	87.2

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SACRAMENTO	2007	112.4	0.833	1.037	135.0
SACRAMENTO	2008	186.2	1.257	1.719	148.2
SACRAMENTO	2009	134.3	1.099	1.549	122.2
SACRAMENTO	2010	118.6	0.874	1.083	135.6
SACRAMENTO	2011	108.4	0.970	1.715	111.8
SACRAMENTO	2012	131.3	1.190	1.979	110.4
SACRAMENTO	2013	93.4	0.922	1.584	101.4
SACRAMENTO	2014	96.6	0.793	1.272	121.9
SACRAMENTO	2015	80.1	0.799	1.556	100.3
SACRAMENTO	2016	83.6	0.944	1.563	88.5
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SAN FRANCISCO	2007	104.0	1.040	0.386	99.9
SAN FRANCISCO	2008	62.4	0.698	0.272	89.4
SAN FRANCISCO	2009	74.9	0.802	0.099	93.3
SAN FRANCISCO	2010	49.7	0.647	0.078	76.7
SAN FRANCISCO	2011	46.6	0.541	0.210	86.1
SAN FRANCISCO	2012	47.7	0.569	1.009	83.8
SAN FRANCISCO	2013	52.1	0.603	0.304	86.4
SAN FRANCISCO	2014	41.6	0.459	0.234	90.5
SAN FRANCISCO	2015	33.9	0.504	0.501	67.2
SAN FRANCISCO	2016	39.7	0.518	0.355	76.7
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SAN JOSE	2007	100.3	0.945	1.008	106.1
SAN JOSE	2008	91.9	0.799	1.010	115.1
SAN JOSE	2009	75.8	0.752	0.795	100.7
SAN JOSE	2010	69.4	0.759	0.538	91.5
SAN JOSE	2011	101.6	0.885	0.700	114.7
SAN JOSE	2012	80.6	0.779	0.958	103.5
SAN JOSE	2013	97.1	0.915	0.976	106.1
SAN JOSE	2014	80.3	0.800	1.030	100.3
SAN JOSE	2015	65.9	0.678	1.008	97.2
SAN JOSE	2016	65.5	0.644	1.157	101.7
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SIERRA	2007	164.8	1.353	1.464	121.8
SIERRA	2008	251.9	1.595	1.532	157.9
SIERRA	2009	259.6	1.419	1.213	182.9
SIERRA	2010	194.0	1.334	1.123	145.4
SIERRA	2011	178.5	1.165	1.394	153.2
SIERRA	2012	183.2	1.319	2.910	138.9
SIERRA	2013	111.5	1.259	3.105	88.6
SIERRA	2014	142.5	1.198	2.141	119.0
SIERRA	2015	123.2	1.115	2.816	110.5
SIERRA	2016	121.6	1.025	1.733	118.6

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SONOMA	2007	157.4	1.178	1.806	133.6
SONOMA	2008	155.5	1.114	0.942	139.6
SONOMA	2009	153.6	1.141	1.321	134.7
SONOMA	2010	151.4	1.130	0.818	134.0
SONOMA	2011	103.8	0.901	1.338	115.1
SONOMA	2012	117.9	0.895	1.732	131.8
SONOMA	2013	113.9	0.846	2.256	134.7
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	1.513	111.8
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
STOCKTON	2007	150.0	1.517	1.781	98.9
STOCKTON	2008	160.7	1.121	1.818	143.4
STOCKTON	2009	159.9	1.252	2.722	127.7
STOCKTON	2010	166.2	1.310	1.402	126.9
STOCKTON	2011	180.4	1.222	0.911	147.6
STOCKTON	2012	91.4	0.989	1.975	92.4
STOCKTON	2013	106.9	1.420	2.032	75.2
STOCKTON	2014	108.0	0.754	1.333	143.2
STOCKTON	2015	96.1	0.874	1.947	109.9
STOCKTON	2016	84.0	0.900	1.674	93.3
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
YOSEMITE	2007	152.9	1.349	1.240	113.4
YOSEMITE	2008	204.6	1.390	1.532	147.2
YOSEMITE	2009	183.9	1.229	1.466	149.6
YOSEMITE	2010	226.3	1.474	2.598	153.5
YOSEMITE	2011	207.9	1.273	1.818	163.4
YOSEMITE	2012	140.8	1.264	4.096	111.3
YOSEMITE	2013	188.4	1.312	3.293	143.6
YOSEMITE	2014	117.6	1.218	2.454	96.6
YOSEMITE	2015	102.3	0.984	2.638	103.9
YOSEMITE	2016	123.2	1.178	2.030	104.5

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

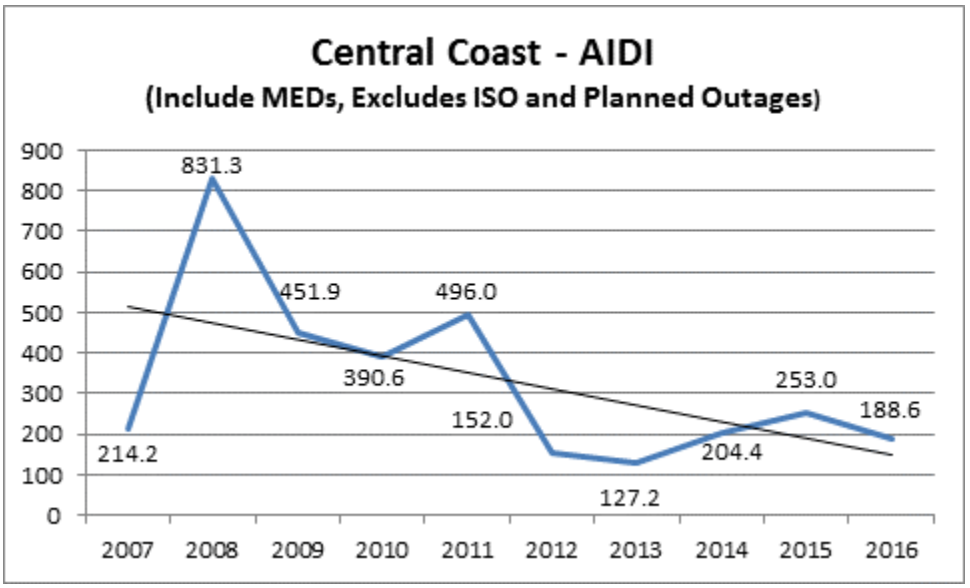


Chart 12: Division Reliability - AIDI Indices

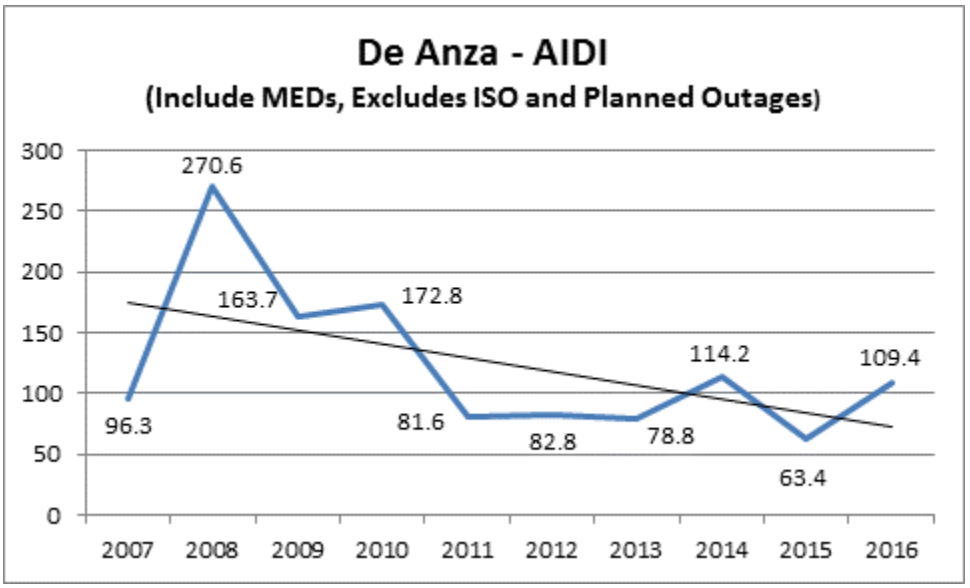


Chart 13: Division Reliability - AIDI Indices

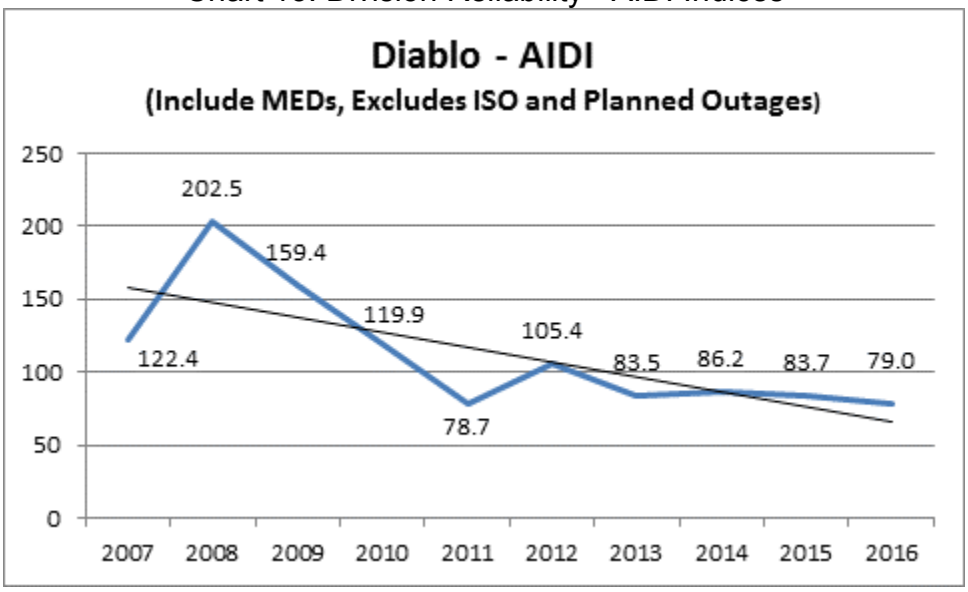


Chart 14: Division Reliability - AIDI Indices

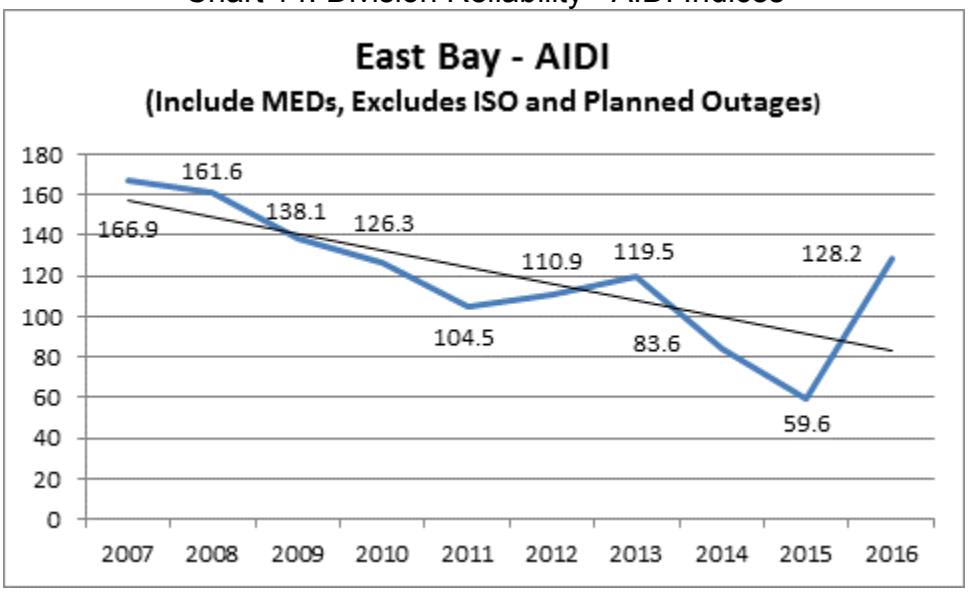


Chart 15: Division Reliability - AIDI Indices

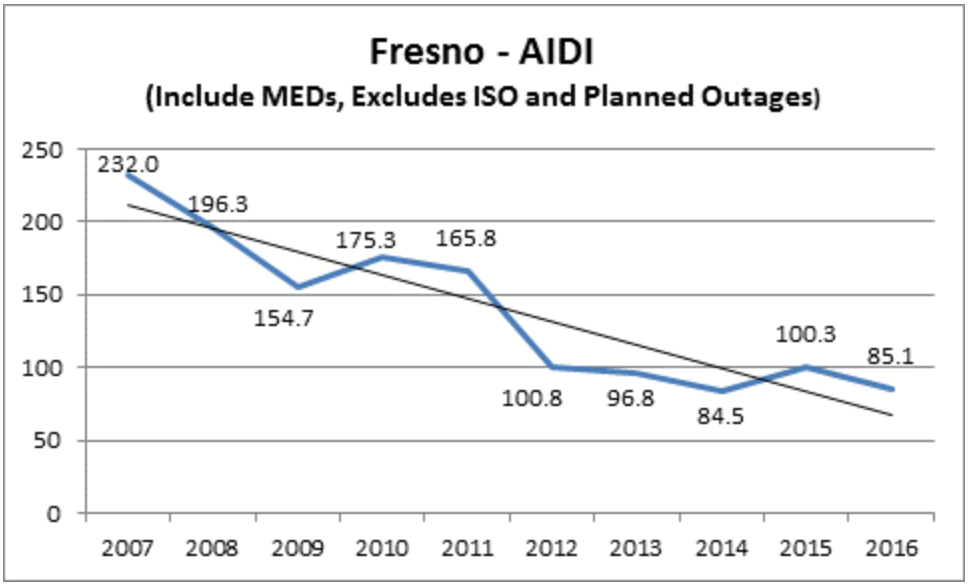


Chart 16: Division Reliability - AIDI Indices

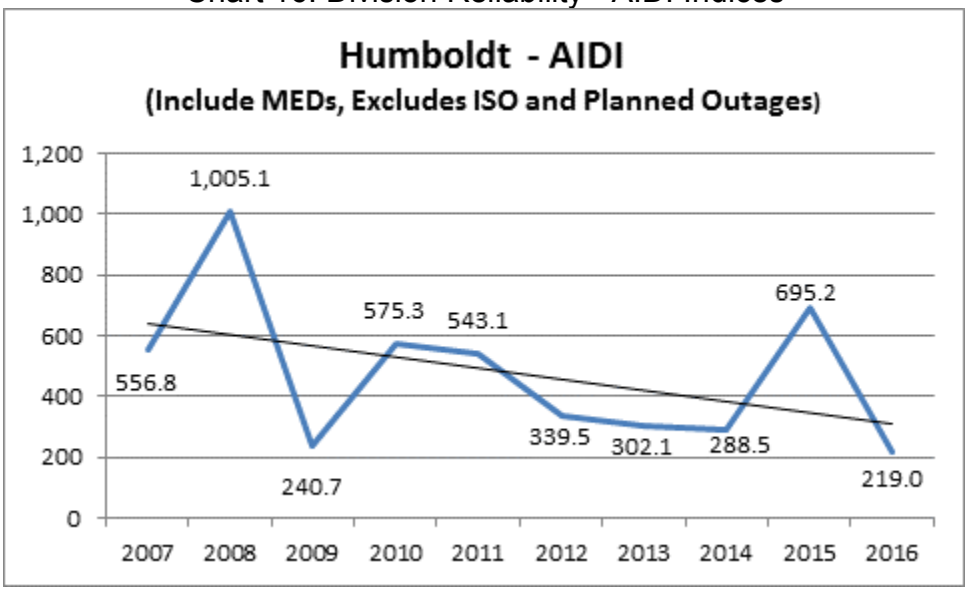


Chart 17: Division Reliability - AIDI Indices

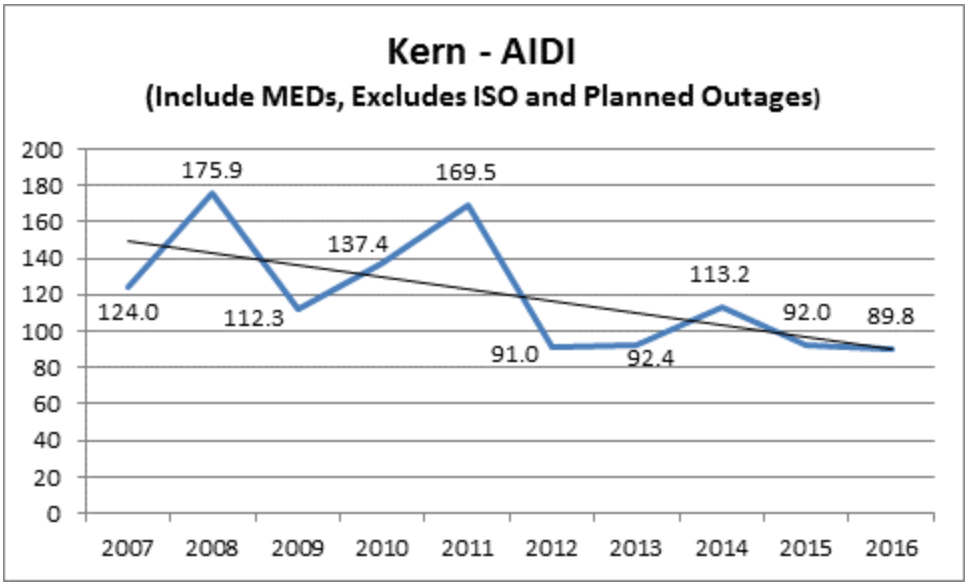


Chart 18: Division Reliability - AIDI Indices

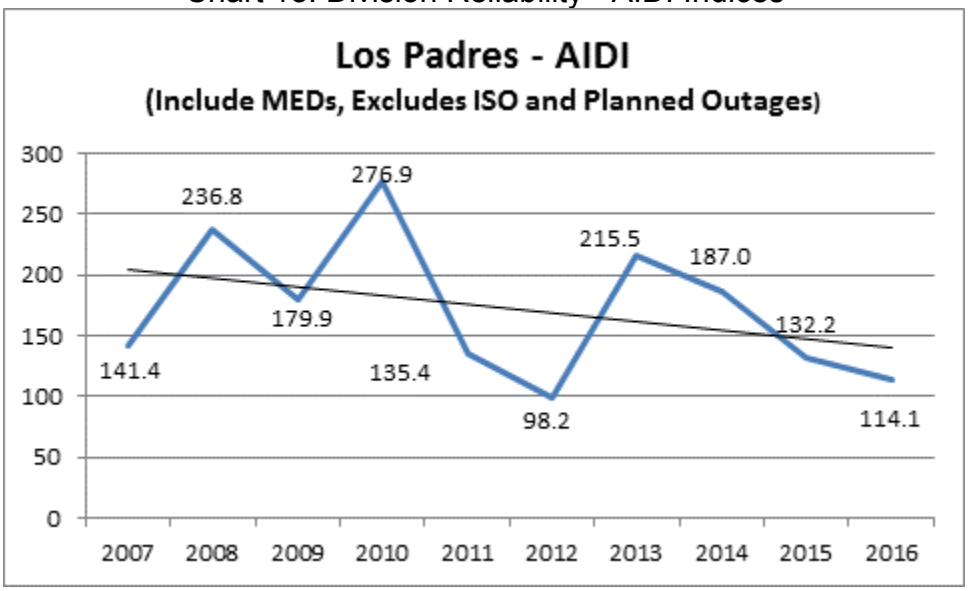


Chart 19: Division Reliability - AIDI Indices

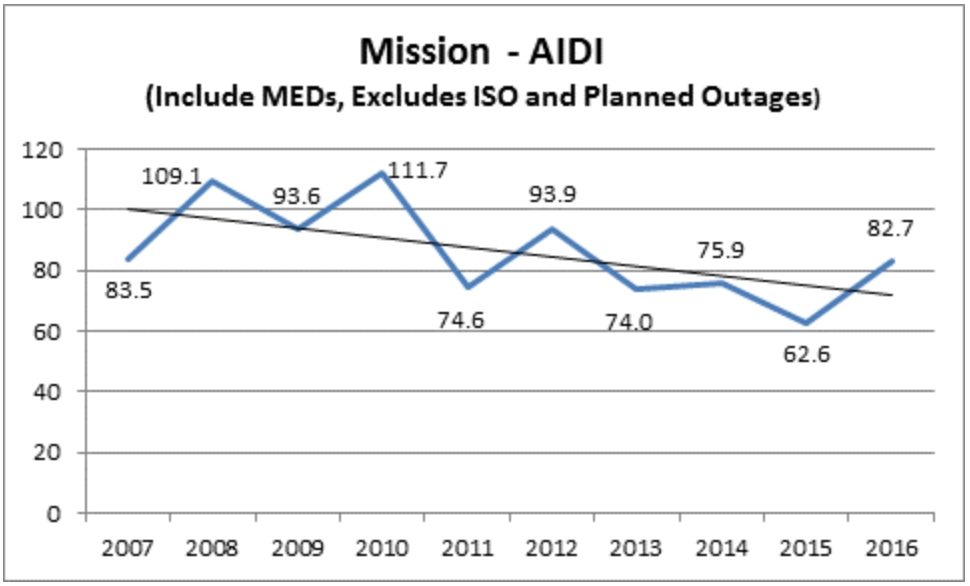


Chart 20: Division Reliability – AIDI Indices

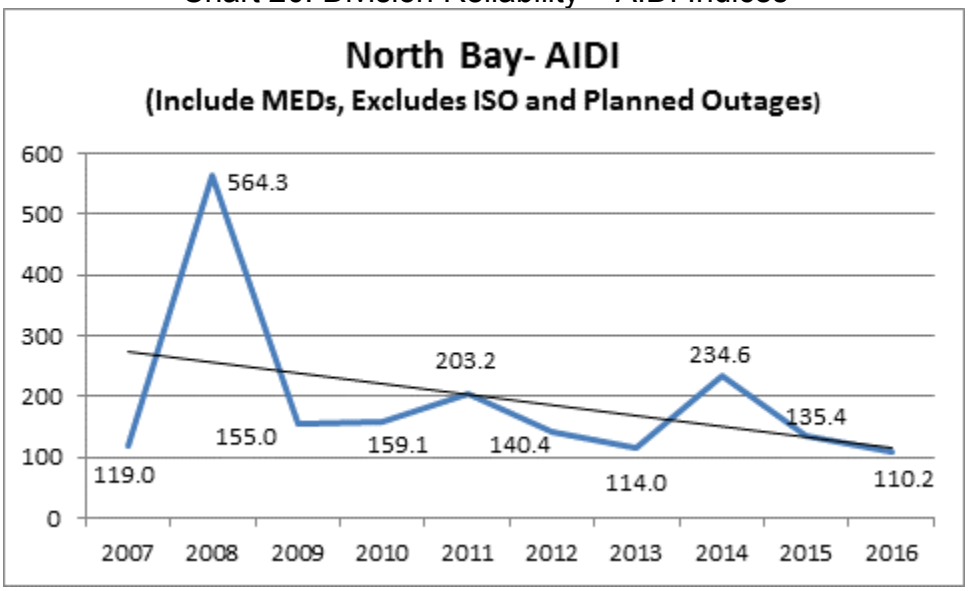


Chart 21: Division Reliability - AIDI Indices

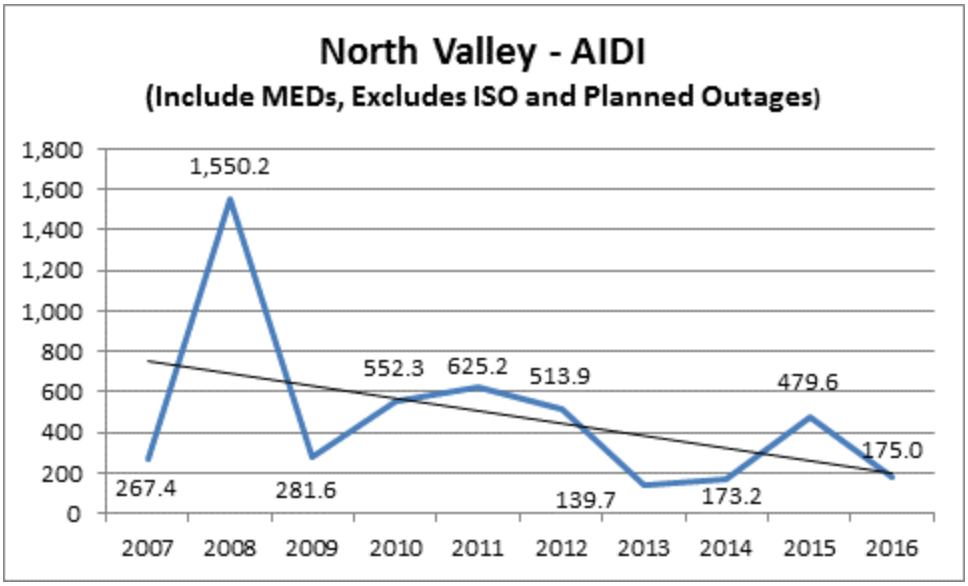


Chart 22: Division Reliability - AIDI Indices

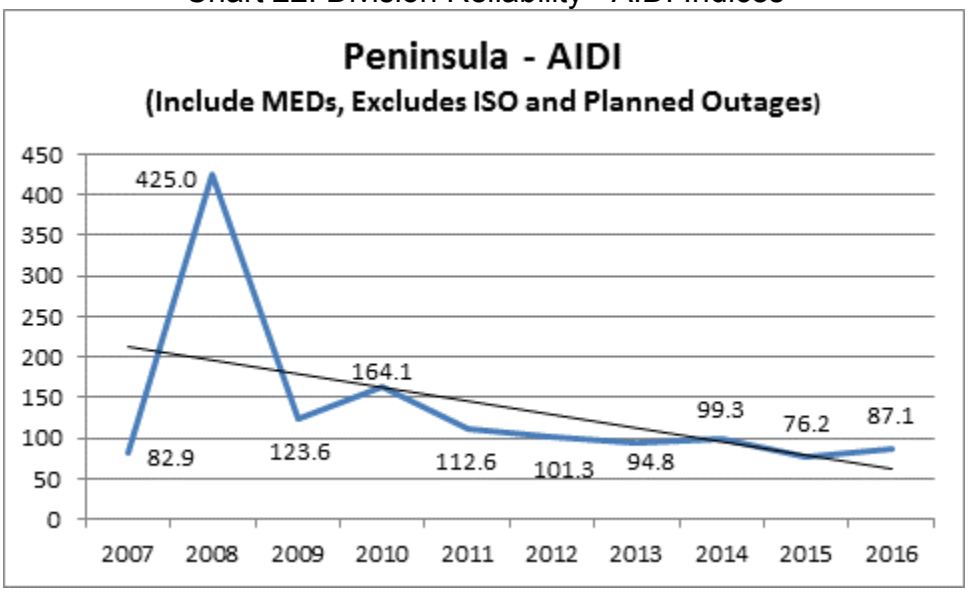


Chart 23: Division Reliability - AIDI Indices

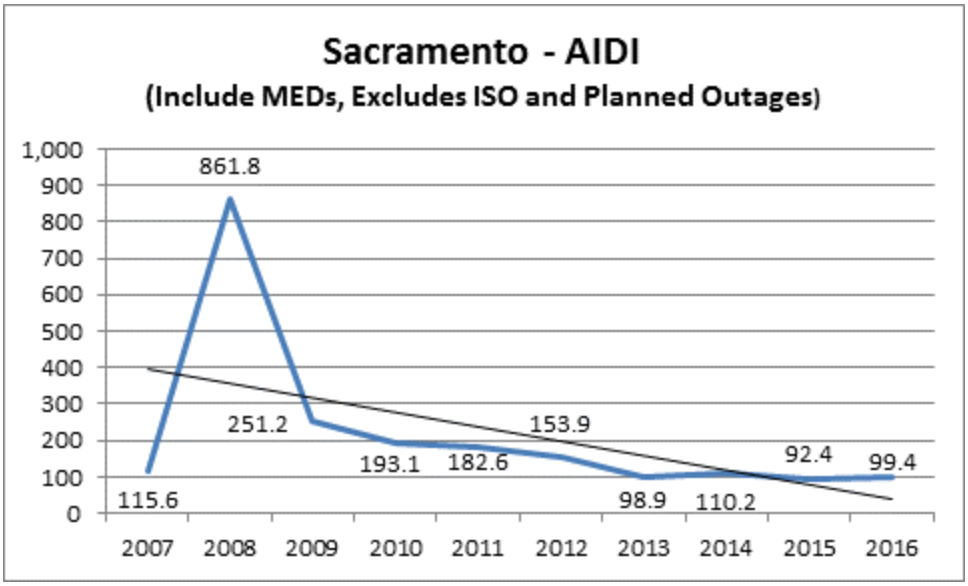


Chart 24: Division Reliability - AIDI Indices

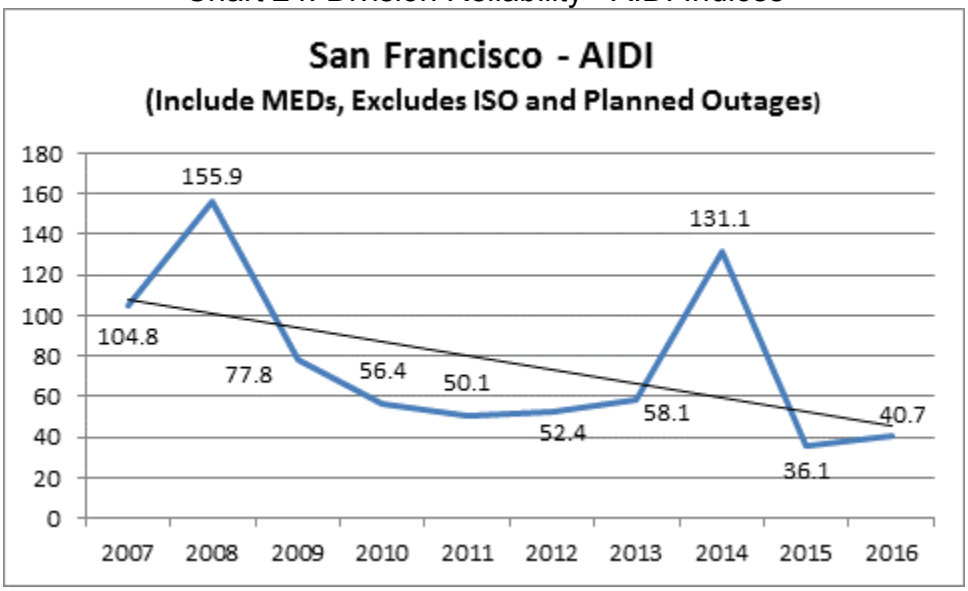


Chart 25: Division Reliability - AIDI Indices

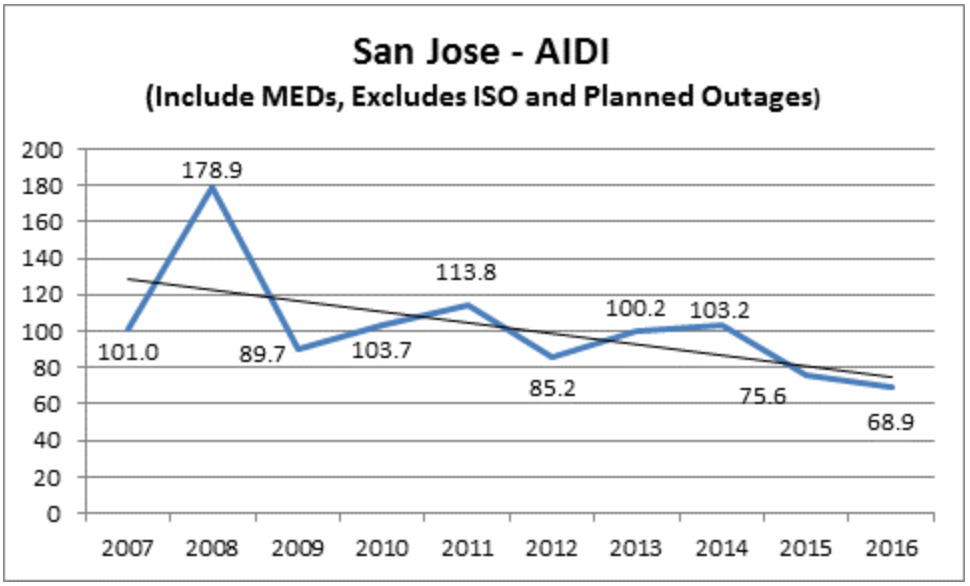


Chart 26: Division Reliability – AIDI Indices

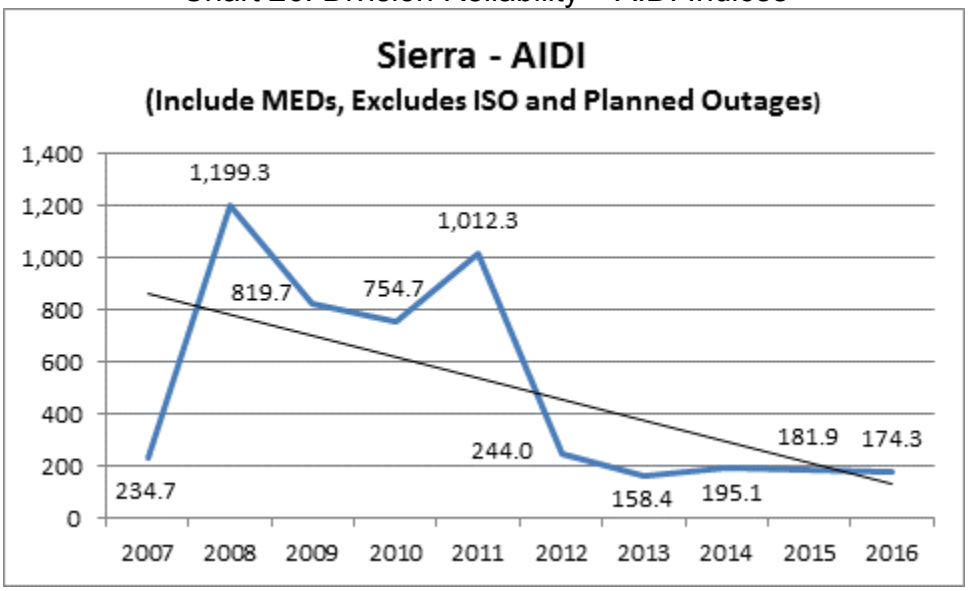


Chart 27: Division Reliability – AIDI Indices

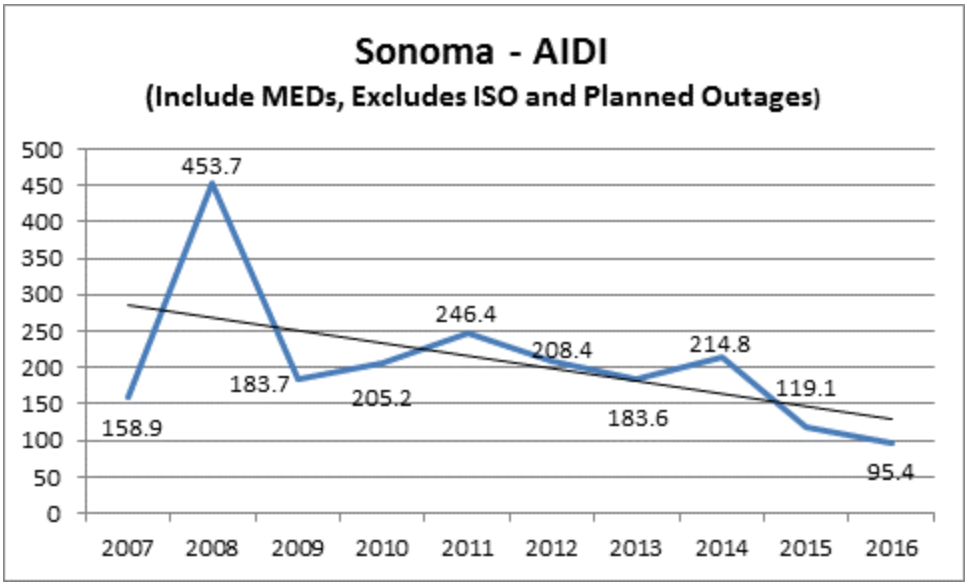


Chart 28: Division Reliability - AIDI Indices

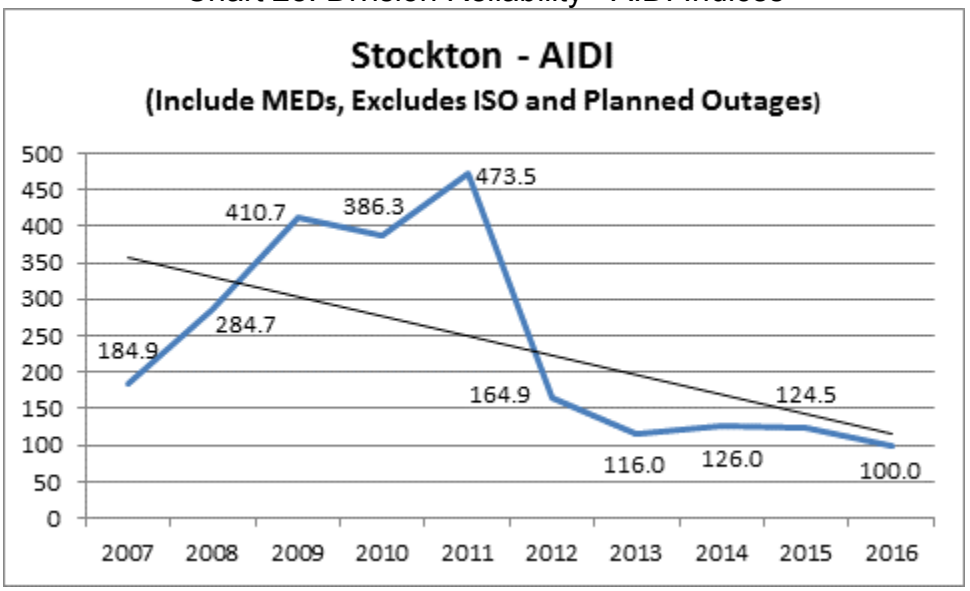
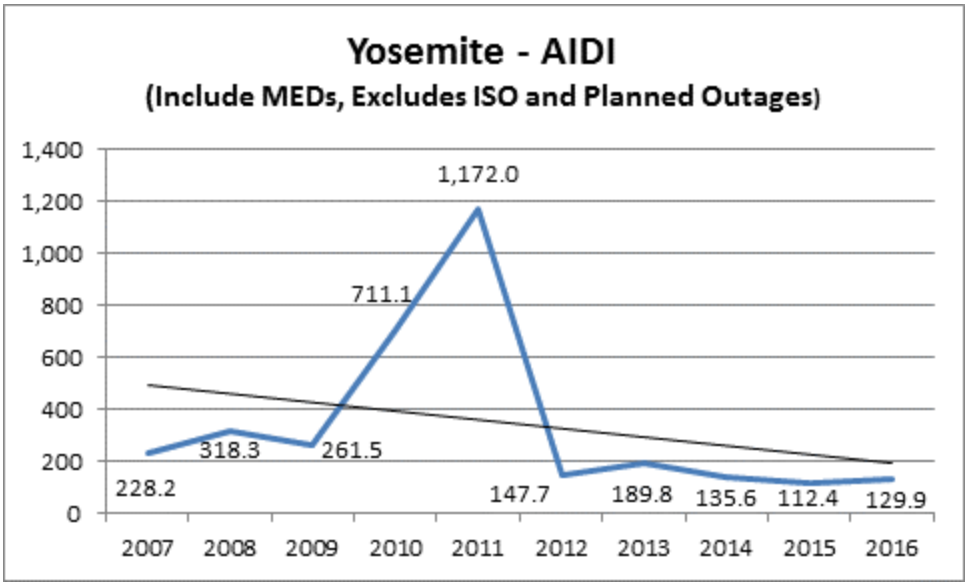


Chart 29: Division Reliability - AIDI Indices



2. AIFI Performance Results (MED Included)

Chart 30: Division Reliability - AIFI Indices

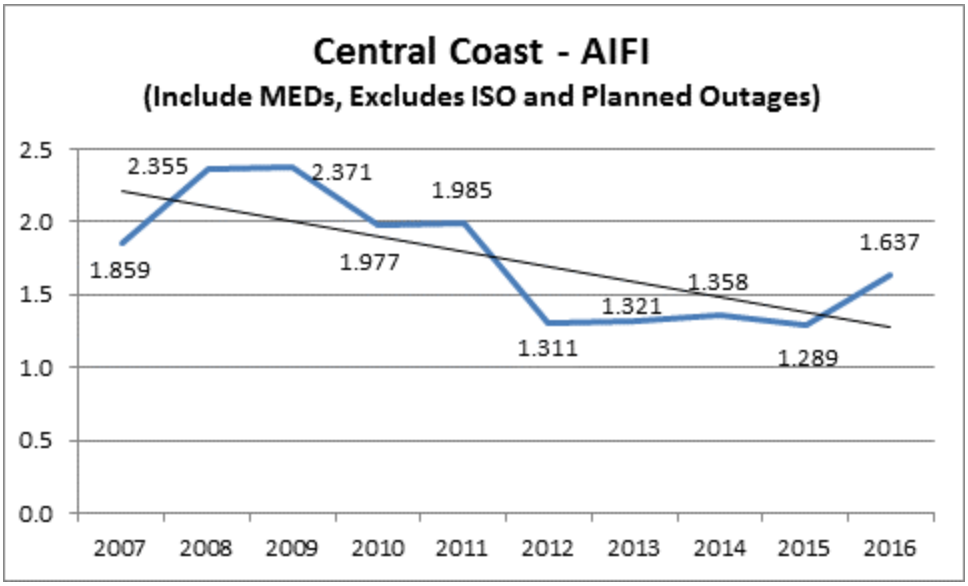


Chart 31: Division Reliability - AIFI Indices

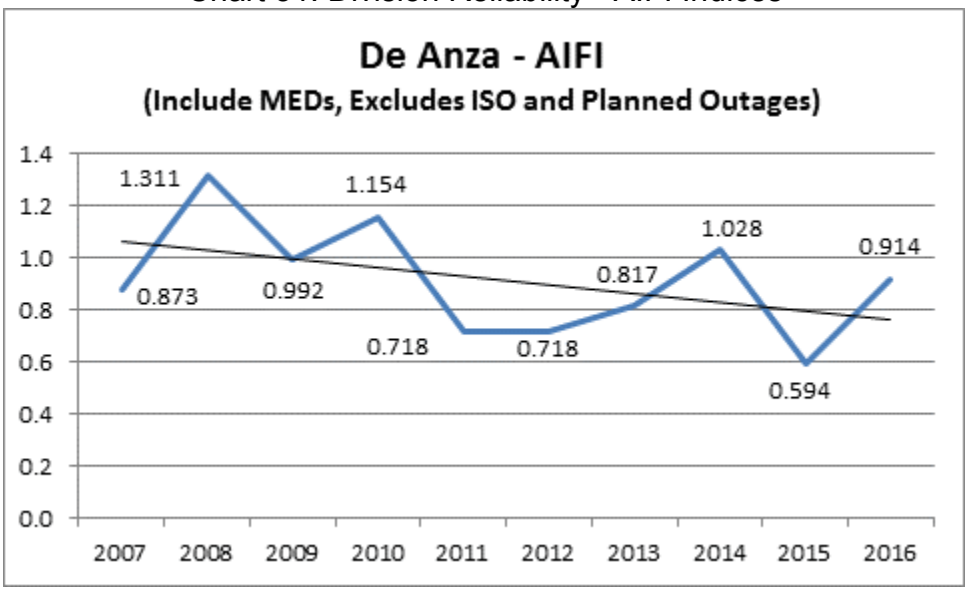


Chart 32: Division Reliability - AIFI Indices

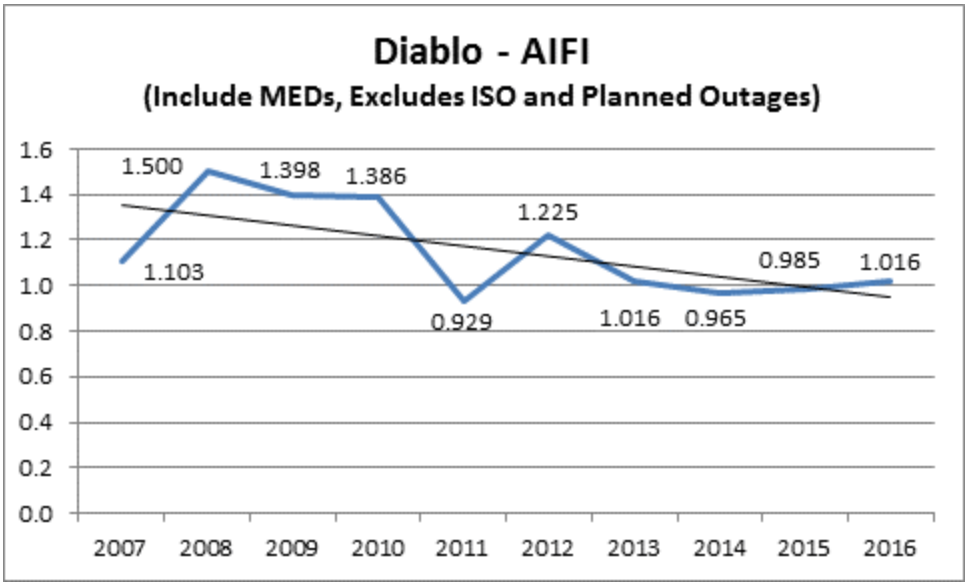


Chart 33: Division Reliability - AIFI Indices

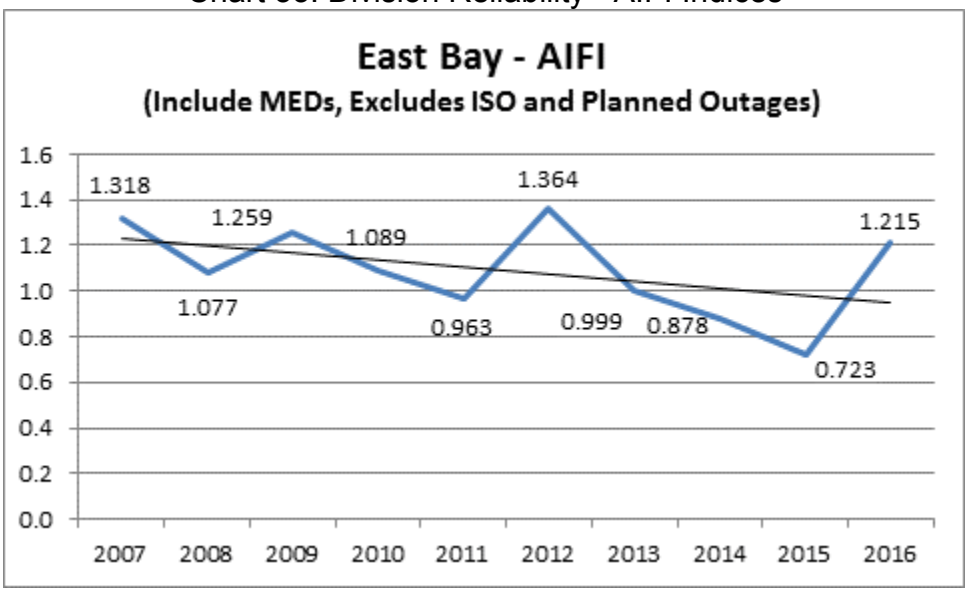


Chart 34: Division Reliability - AIFI Indices

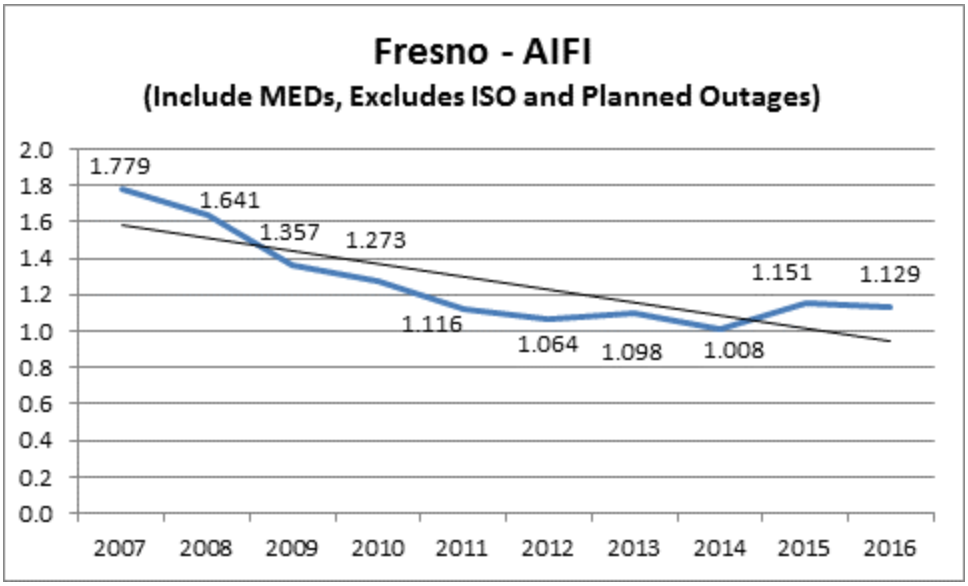


Chart 35: Division Reliability - AIFI Indices

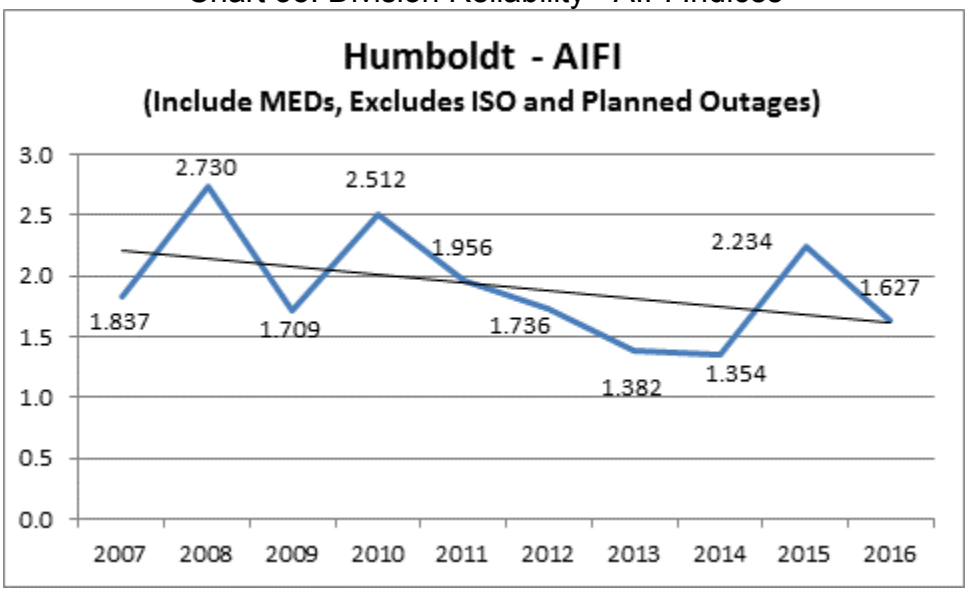


Chart 36: Division Reliability - AIFI Indices

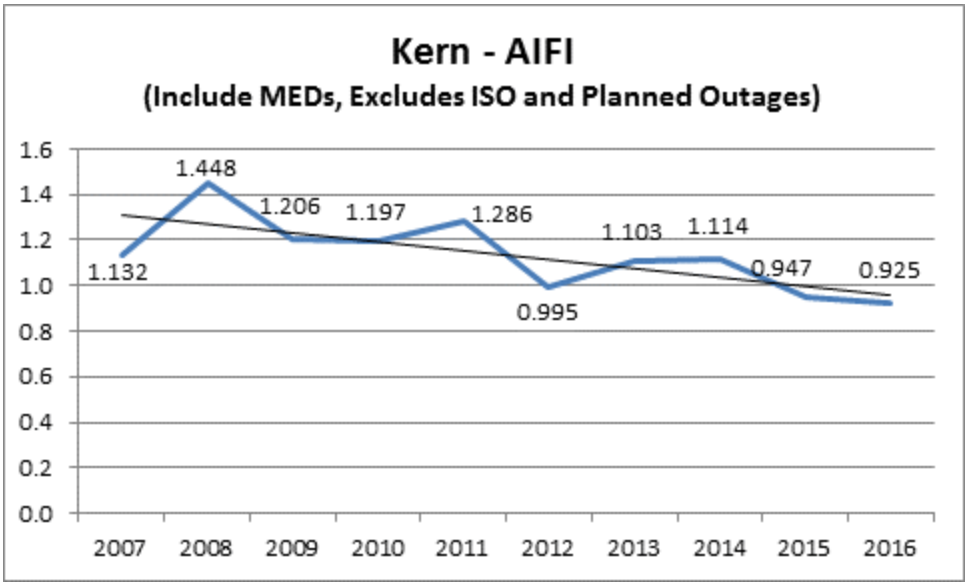


Chart 37: Division Reliability - AIFI Indices

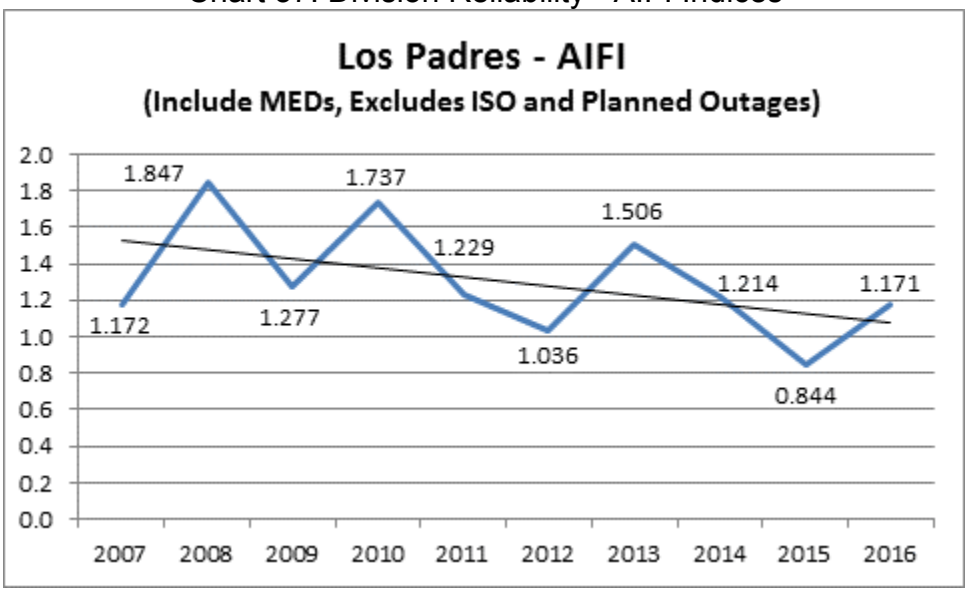


Chart 38: Division Reliability - AIFI Indices

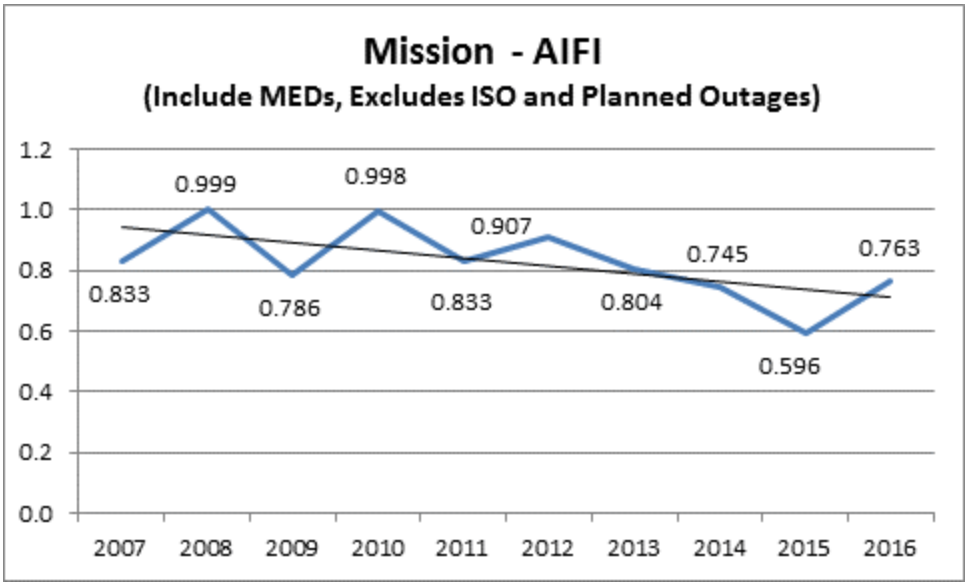


Chart 39: Division Reliability - AIFI Indices

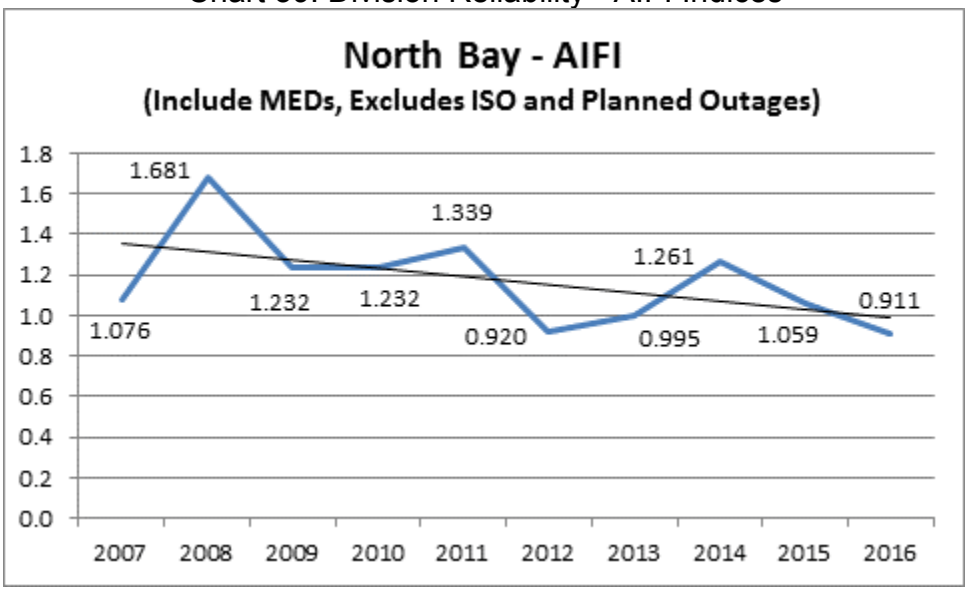


Chart 40: Division Reliability - AIFI Indices

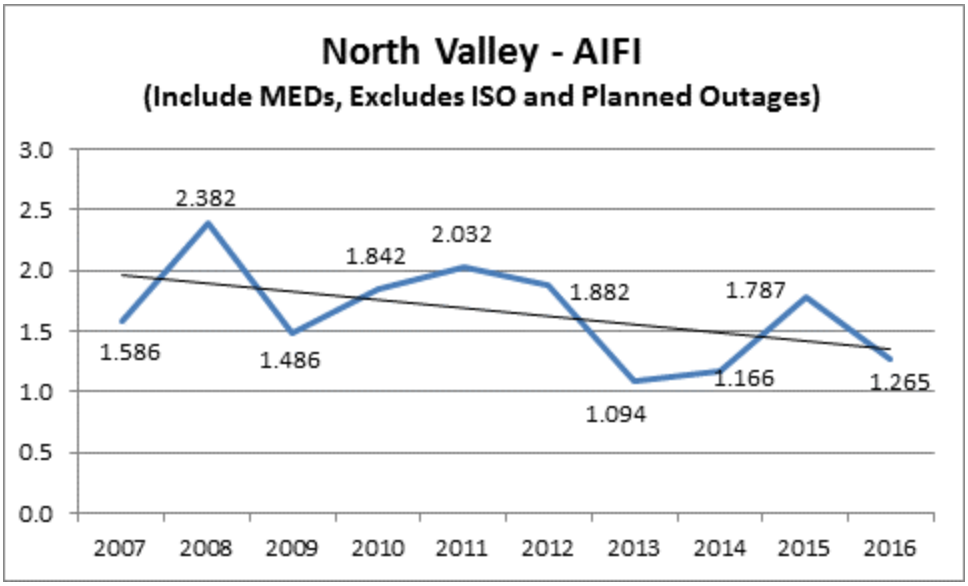


Chart 41: Division Reliability - AIFI Indices

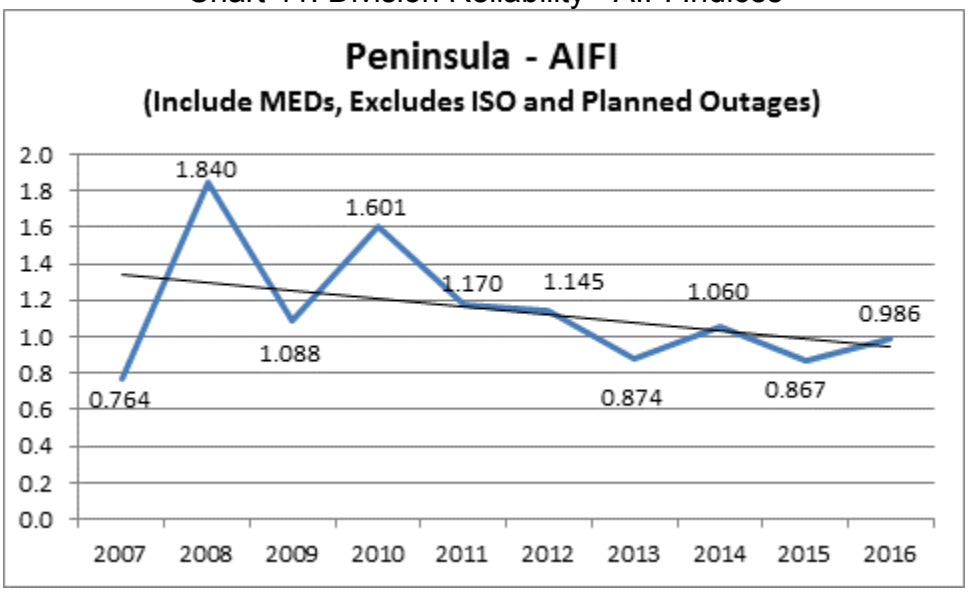


Chart 42: Division Reliability - AIFI Indices

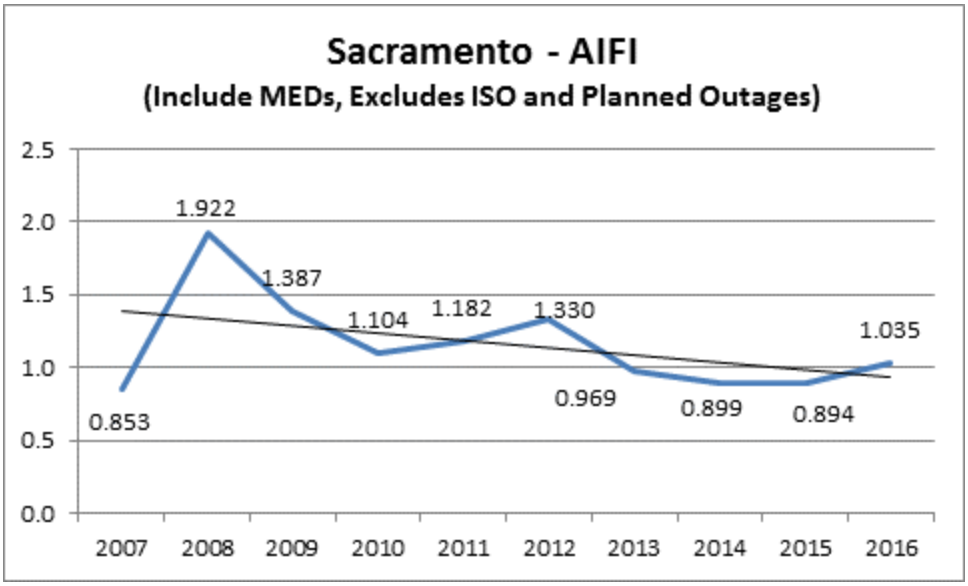


Chart 43: Division Reliability - AIFI Indices

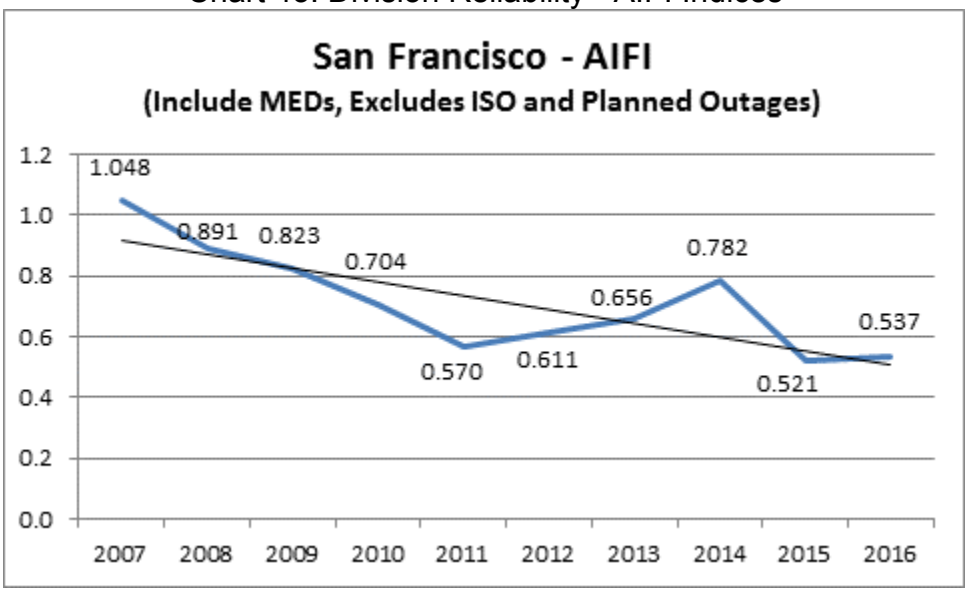


Chart 44: Division Reliability - AIFI Indices

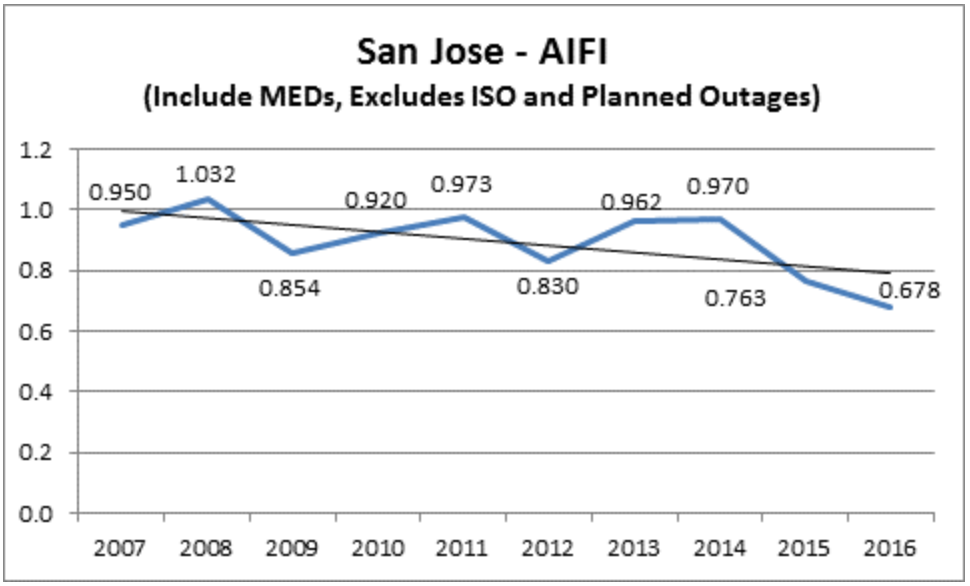


Chart 45: Division Reliability - AIFI Indices

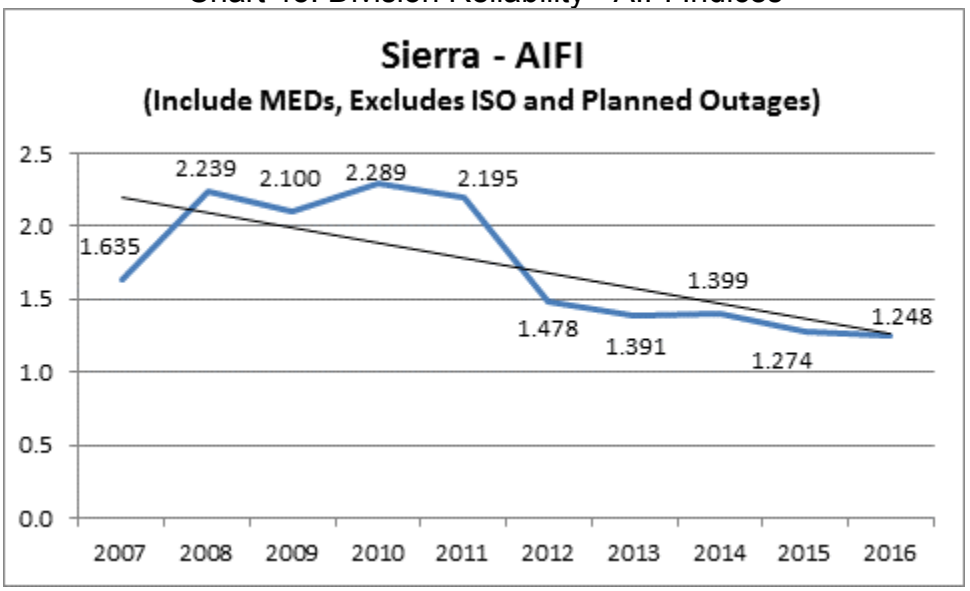


Chart 46: Division Reliability - AIFI Indices

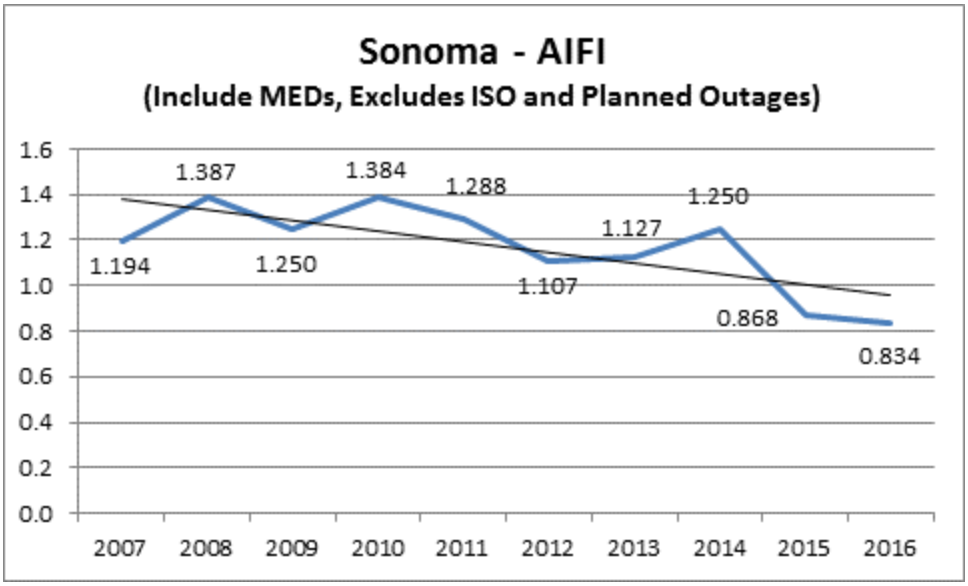


Chart 47: Division Reliability - AIFI Indices

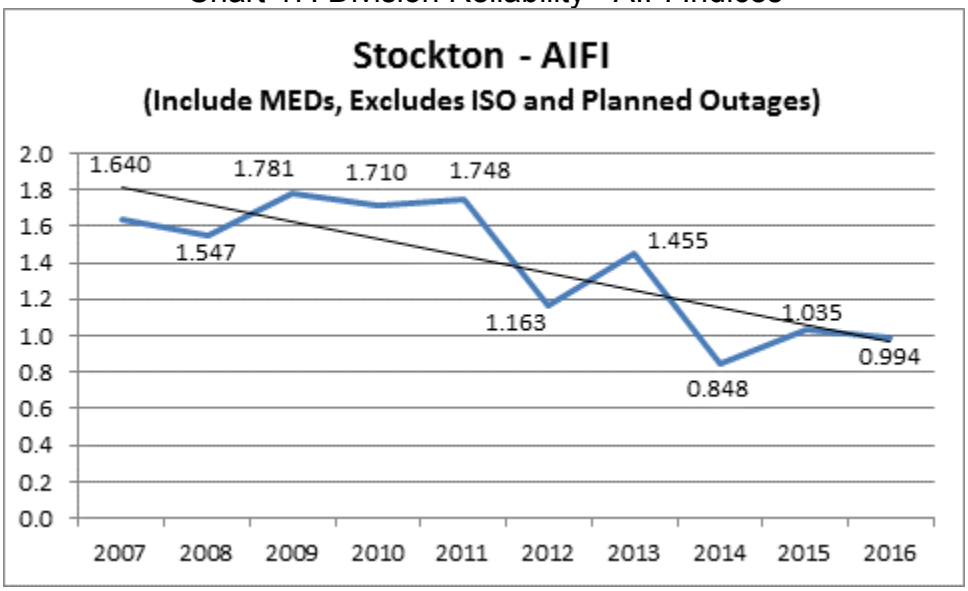
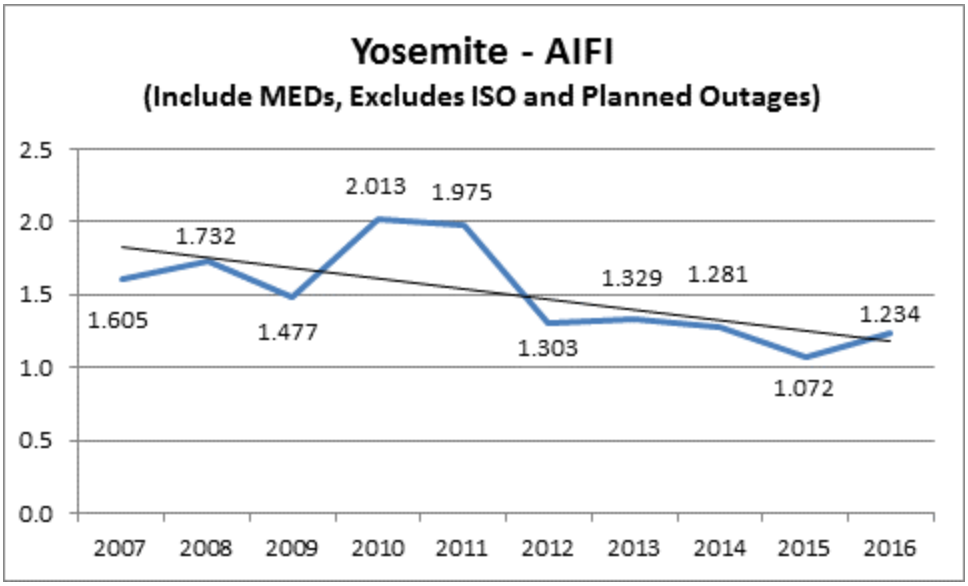


Chart 48: Division Reliability - AIFI Indices


Yosemite - AIFI
(Include MEDs, Excludes ISO and Planned Outages)
2.5
2.0
1.5
1.0
0.5
0.0
1.605
1.732
1.477
2.013
1.975
1.303
1.329
1.281
1.072
1.234
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016

3. MAIFI Performance Results (MED Included)

Chart 49: Division Reliability - MAIFI Indices

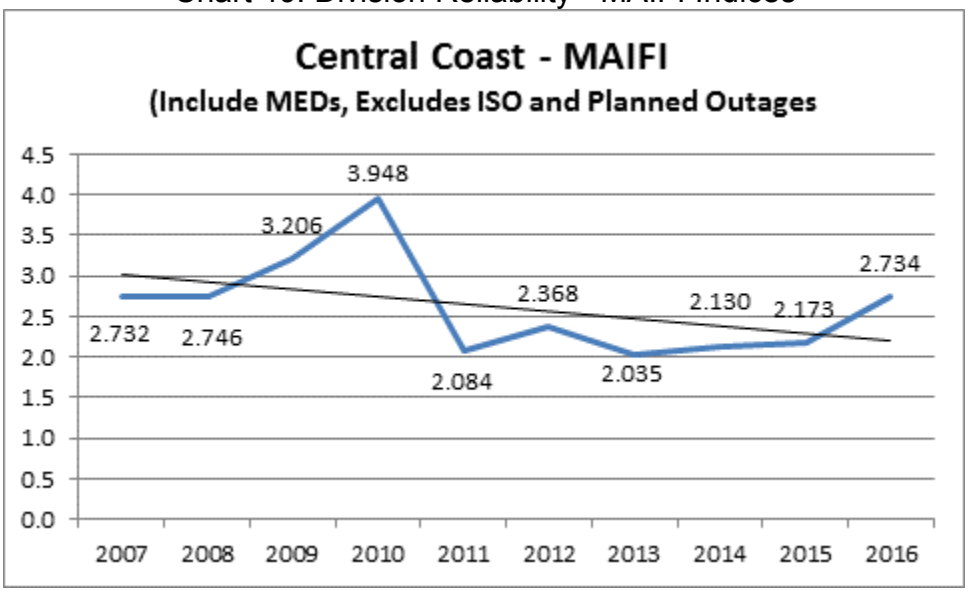


Chart 50: Division Reliability - MAIFI Indices

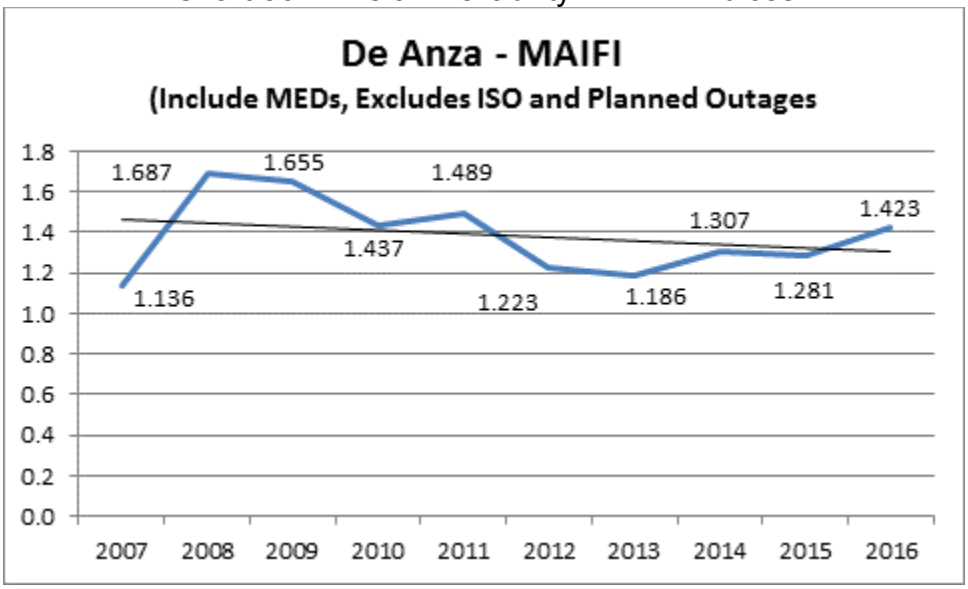


Chart 51: Division Reliability - MAIFI Indices

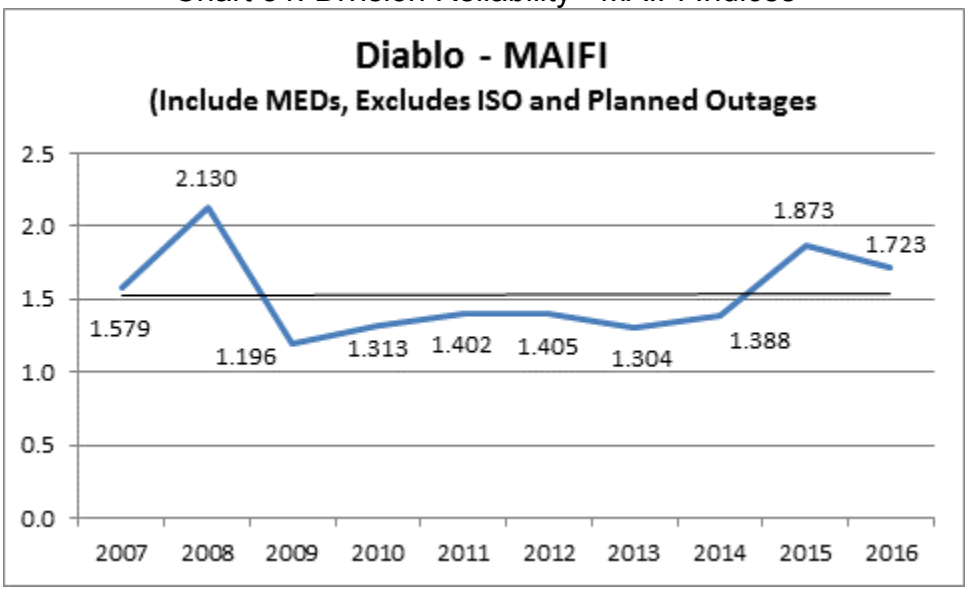


Chart 52: Division Reliability - MAIFI Indices

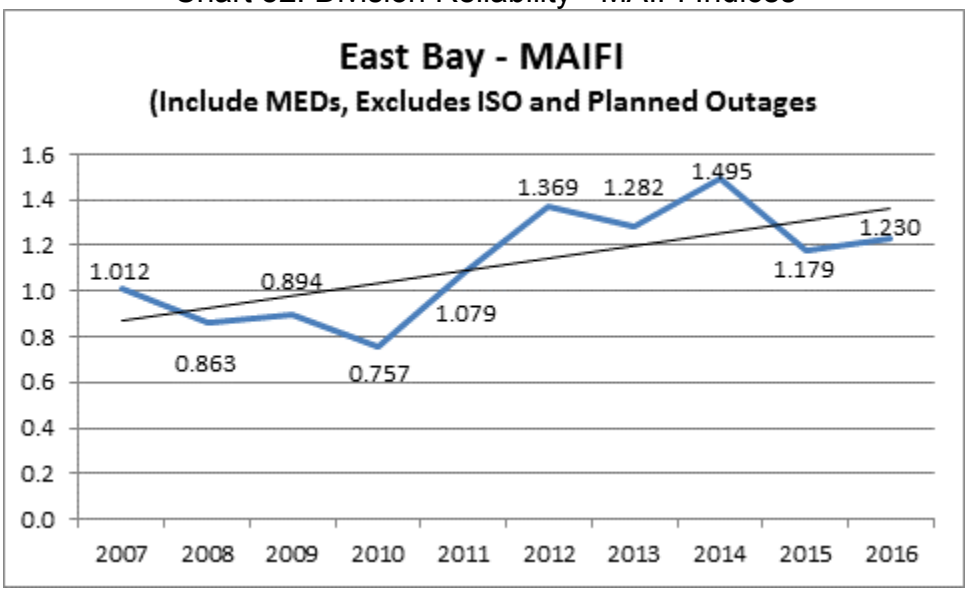


Chart 53: Division Reliability - MAIFI Indices

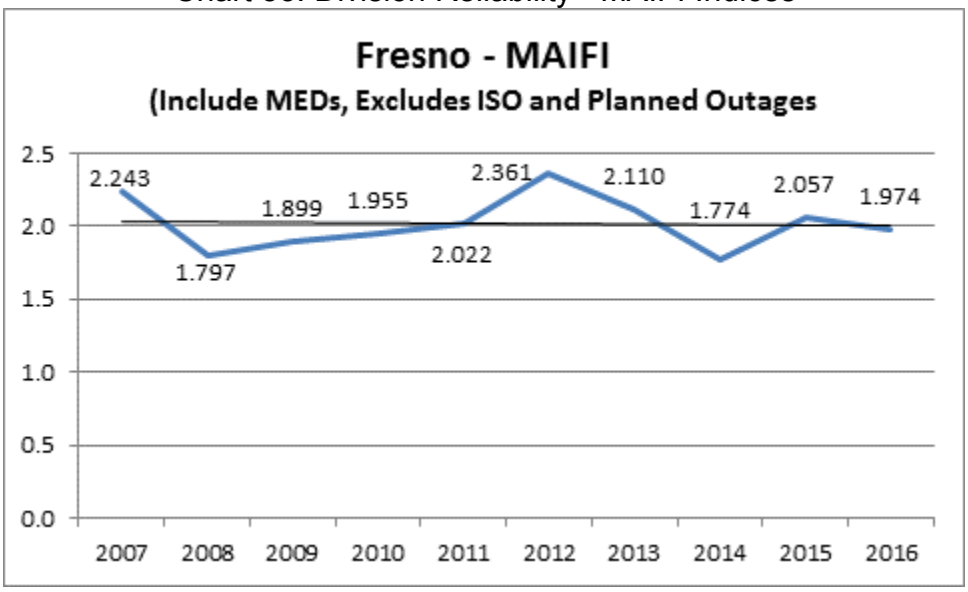


Chart 54: Division Reliability - MAIFI Indices

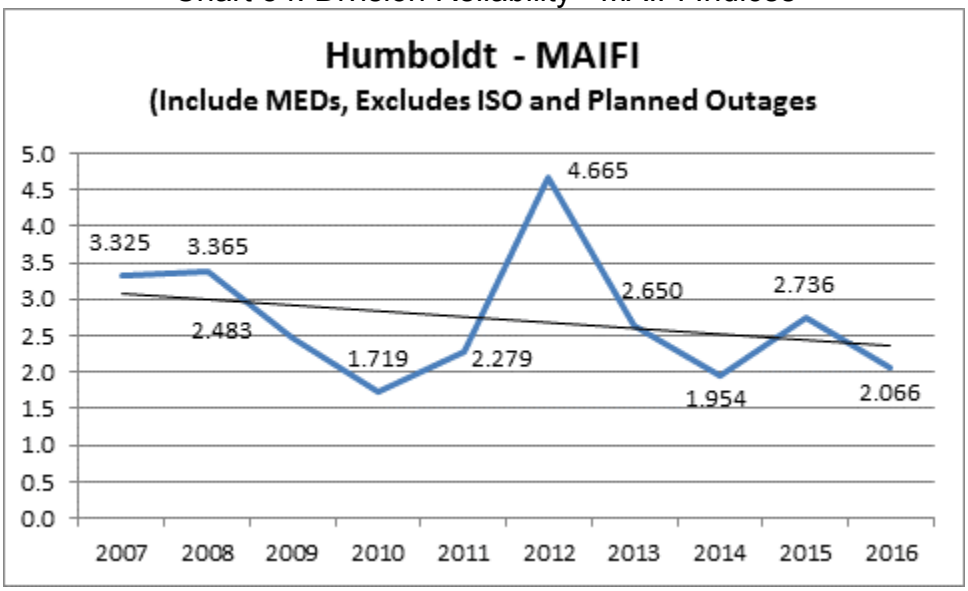


Chart 55: Division Reliability - MAIFI Indices

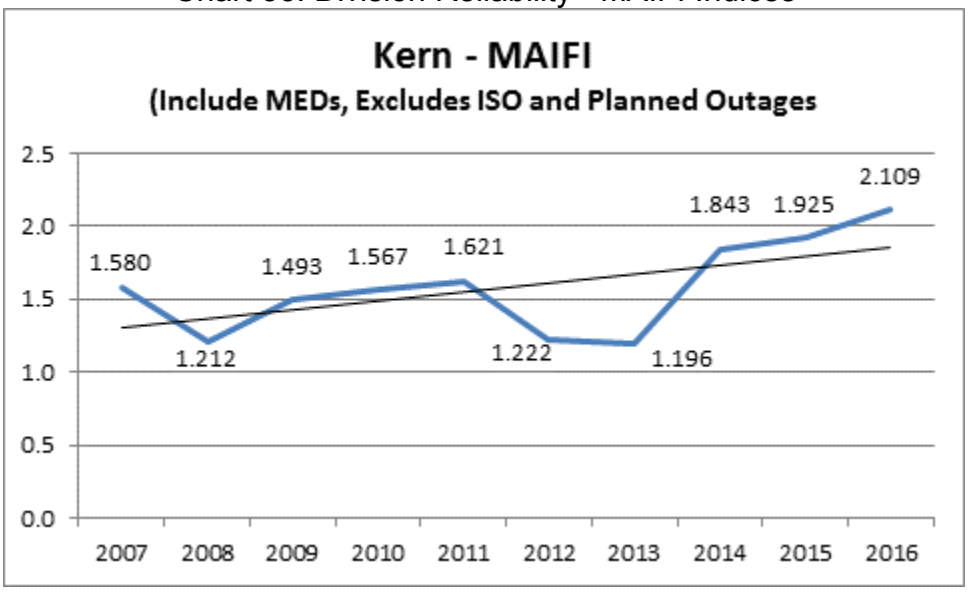


Chart 56: Division Reliability - MAIFI Indices

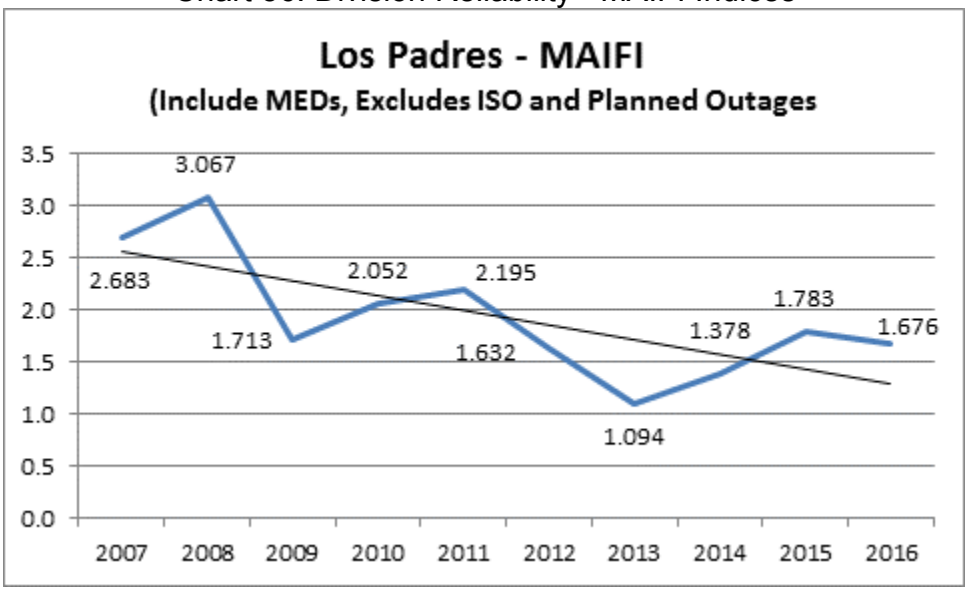
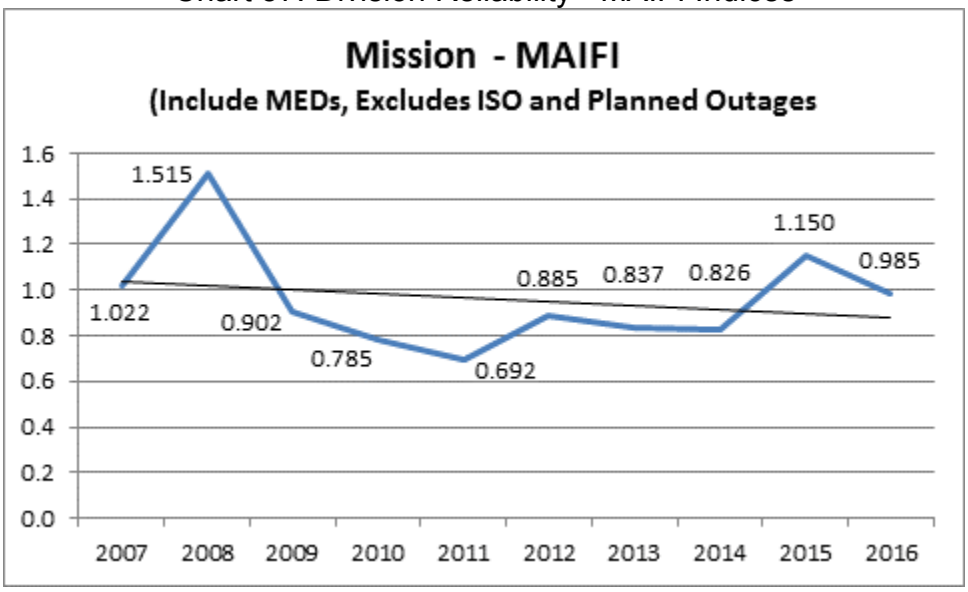


Chart 57: Division Reliability - MAIFI Indices



(Excludes ISO, and planned outages)

Chart 58: Division Reliability - MAIFI Indices

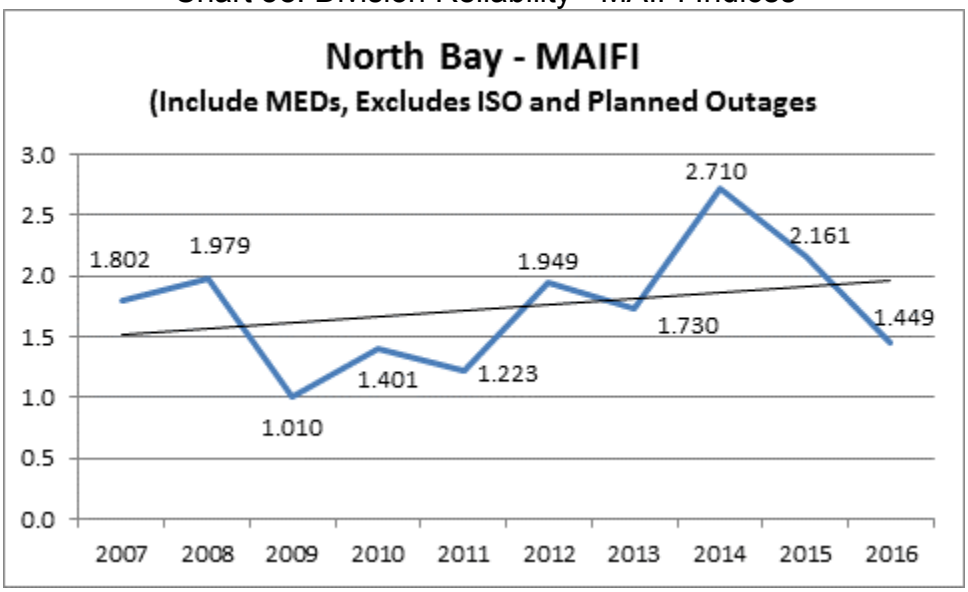


Chart 59: Division Reliability - MAIFI Indices

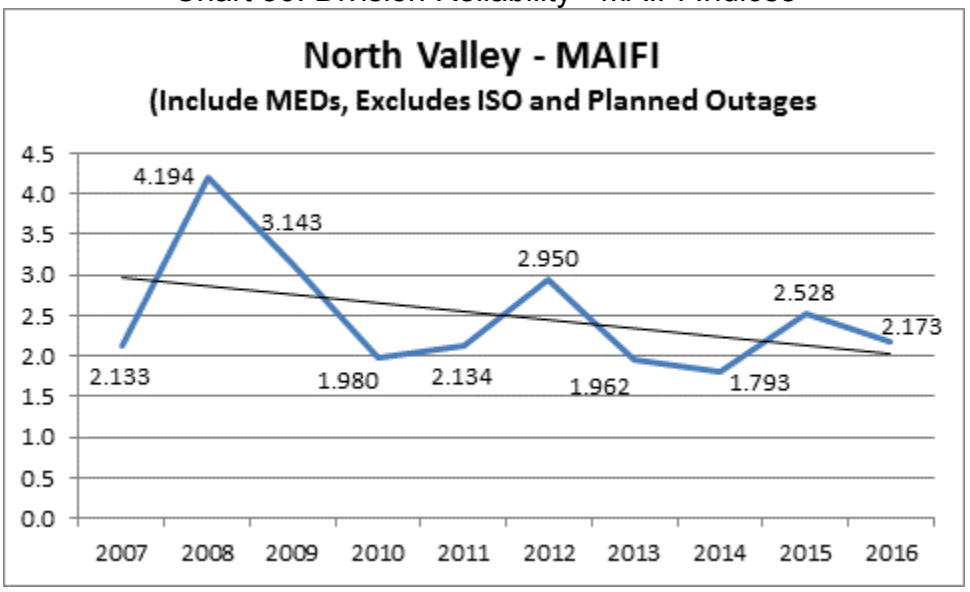


Chart 60: Division Reliability - MAIFI Indices

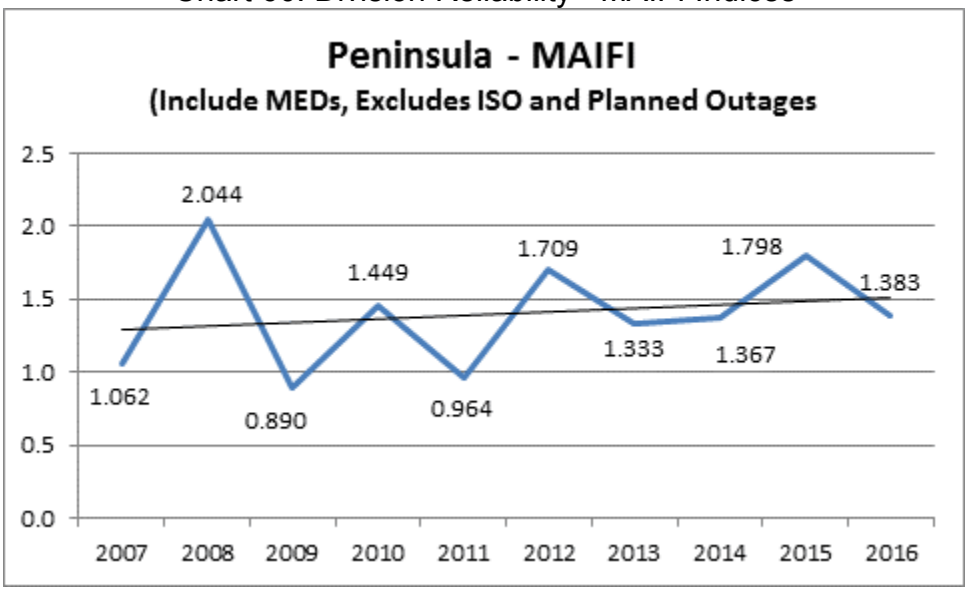


Chart 61: Division Reliability - MAIFI Indices

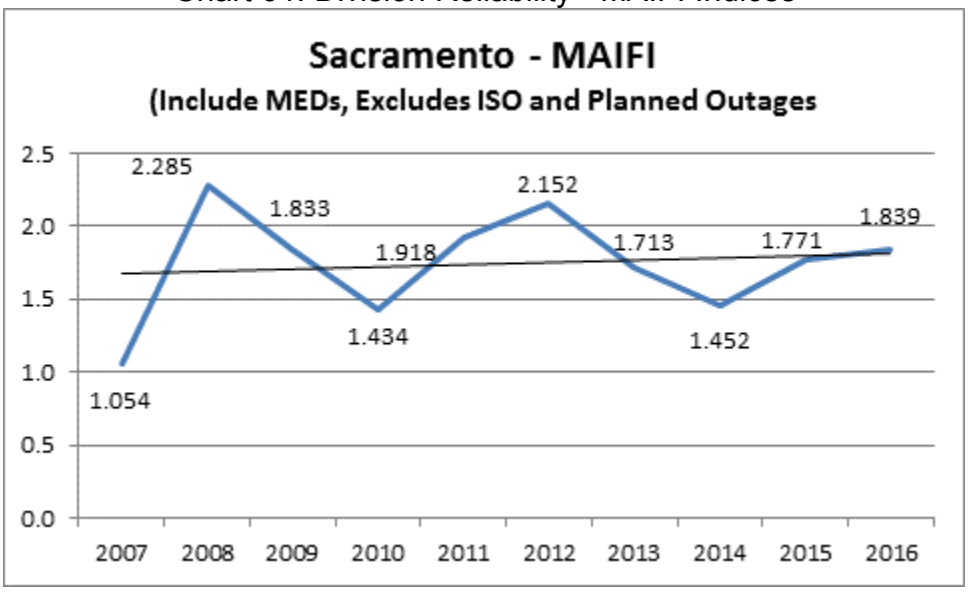


Chart 62: Division Reliability - MAIFI Indices

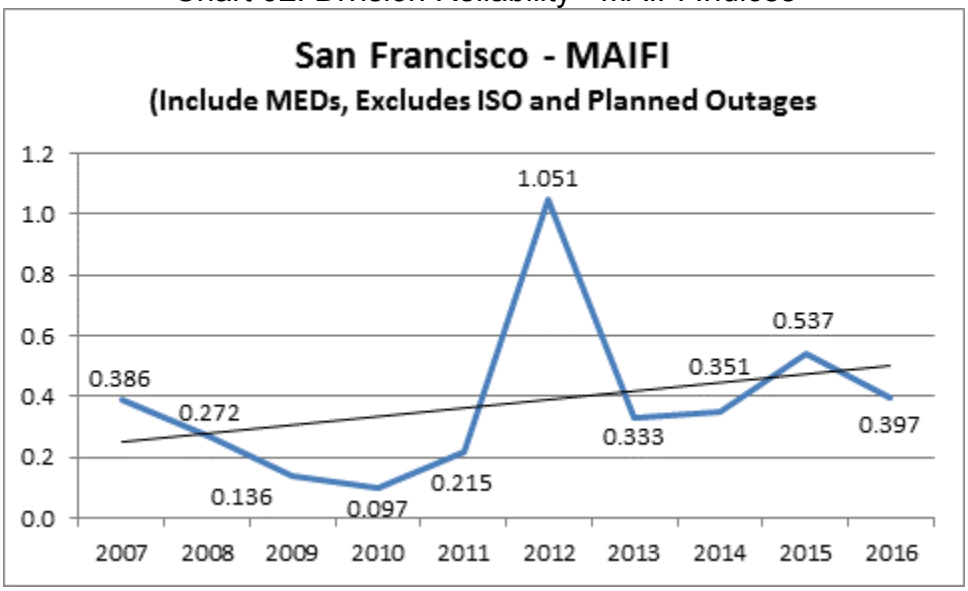


Chart 63: Division Reliability - MAIFI Indices

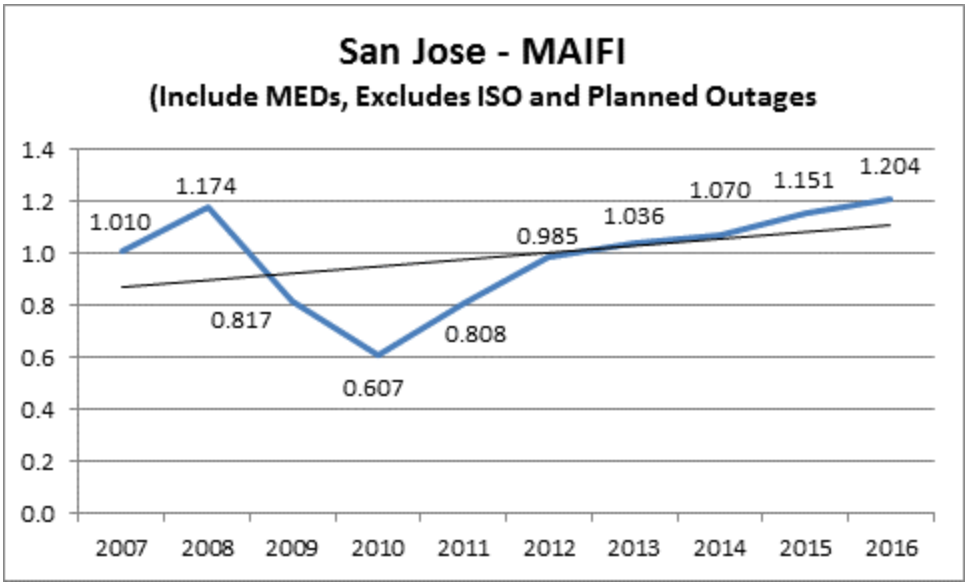


Chart 64: Division Reliability - MAIFI Indices

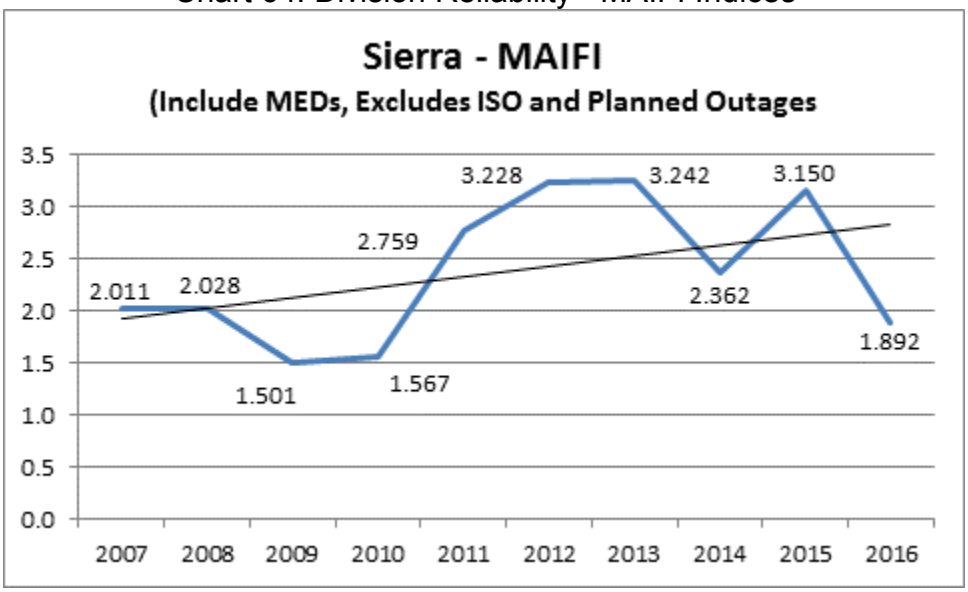


Chart 65: Division Reliability - MAIFI Indices

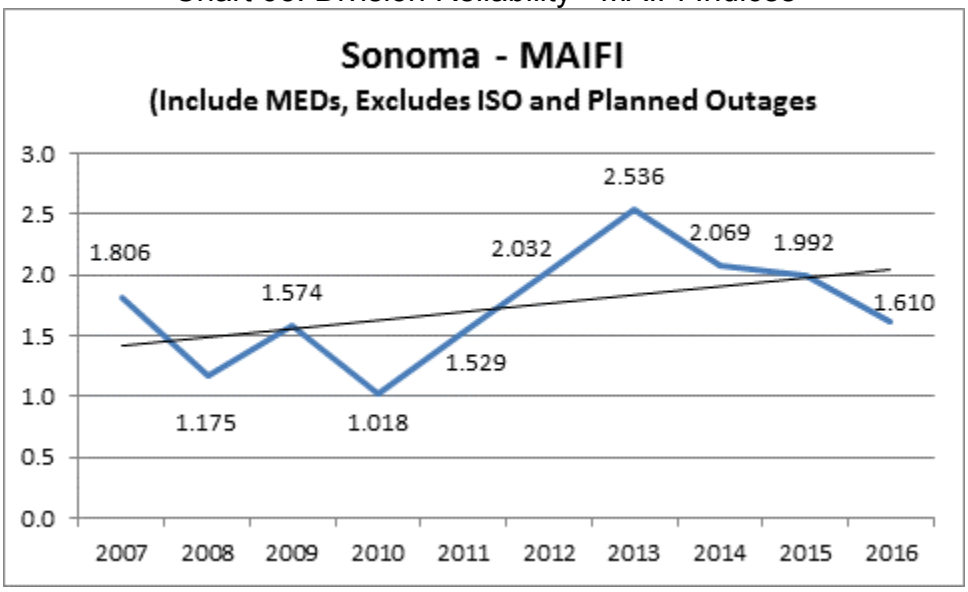


Chart 66: Division Reliability - MAIFI Indices

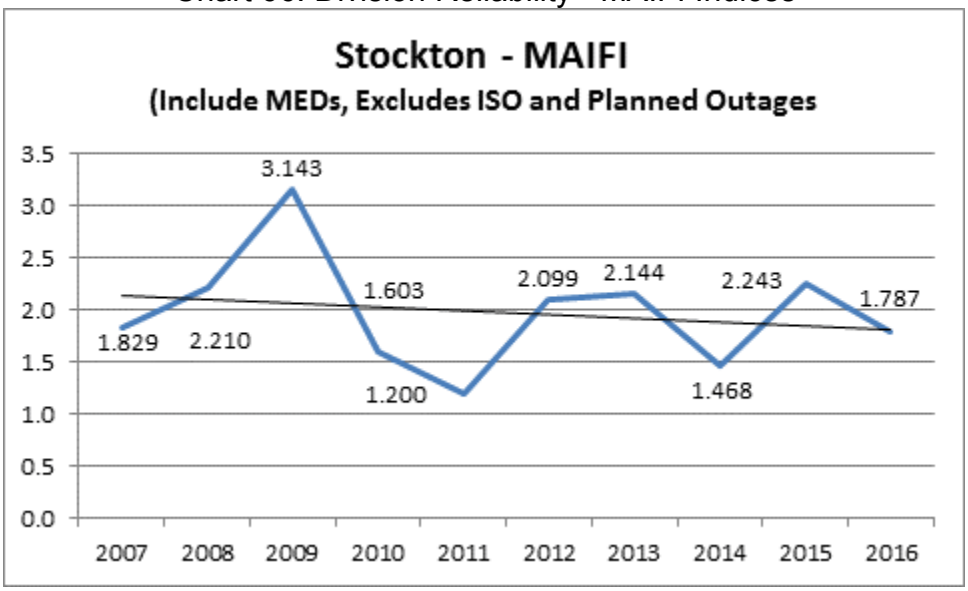
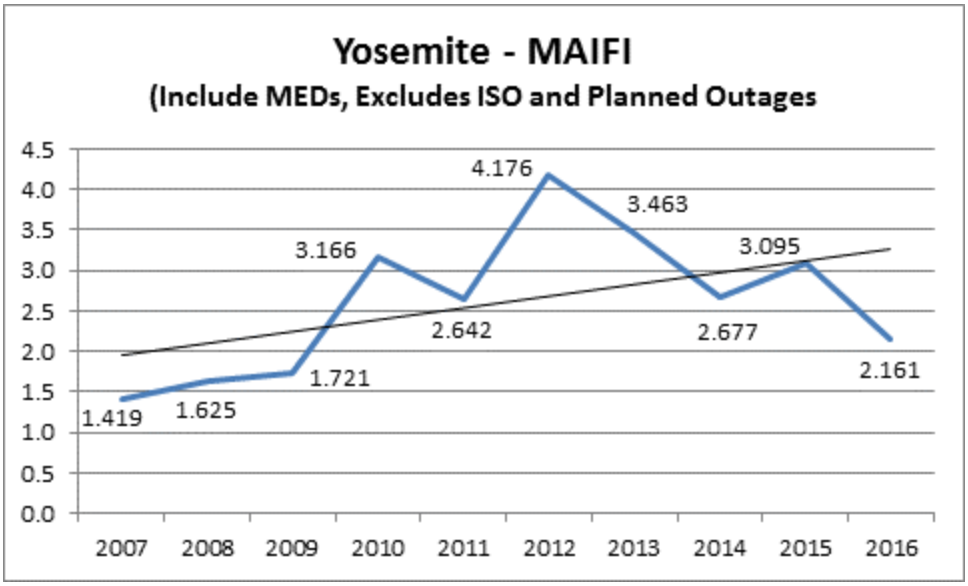


Chart 67: Division Reliability - MAIFI Indices



4. CAIDI Performance Results (MED Included)

Chart 68: Division Reliability - CAIDI Indices

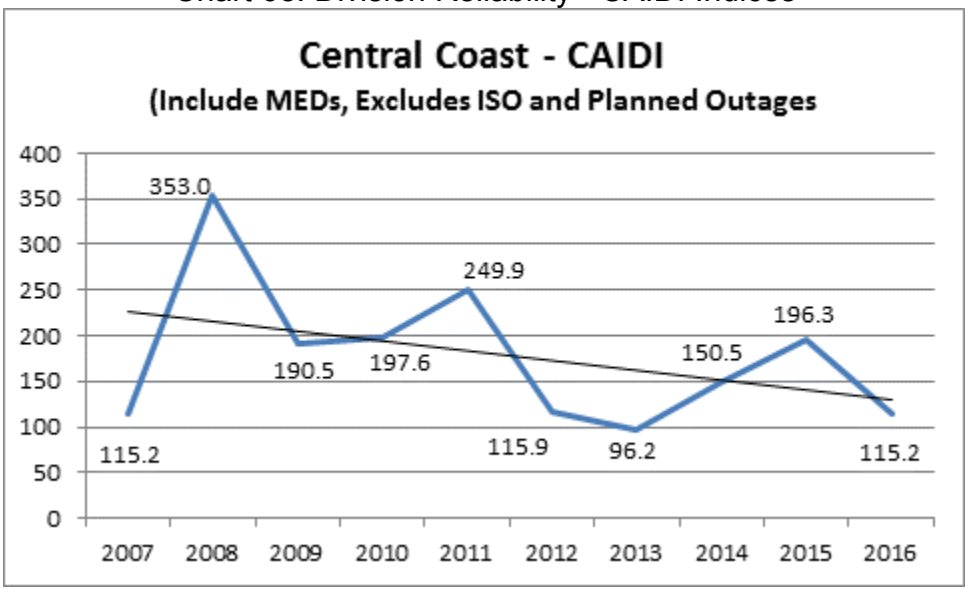


Chart 69: Division Reliability - CAIDI Indices

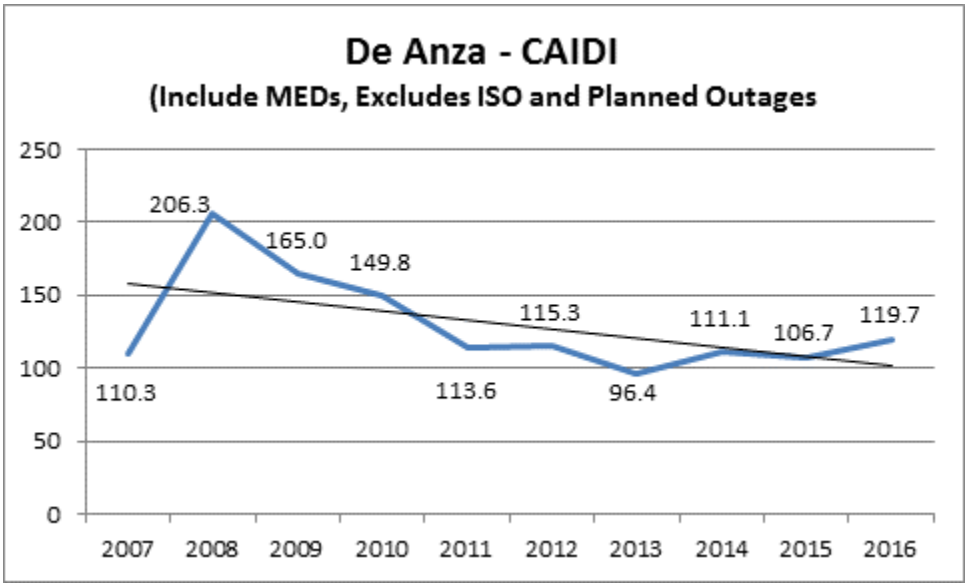


Chart 70: Division Reliability - CAIDI Indices

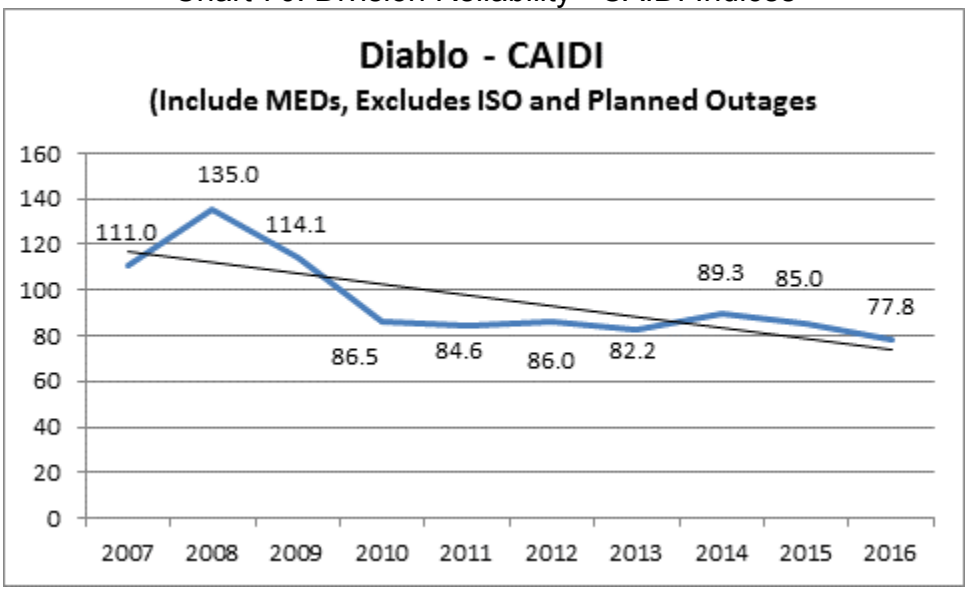


Chart 71: Division Reliability - CAIDI Indices

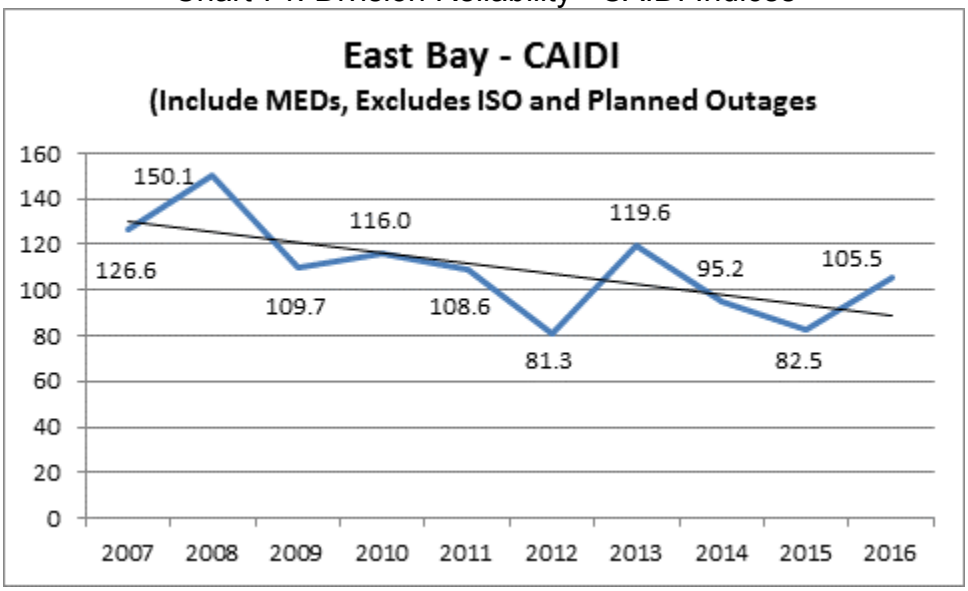


Chart 72: Division Reliability - CAIDI Indices

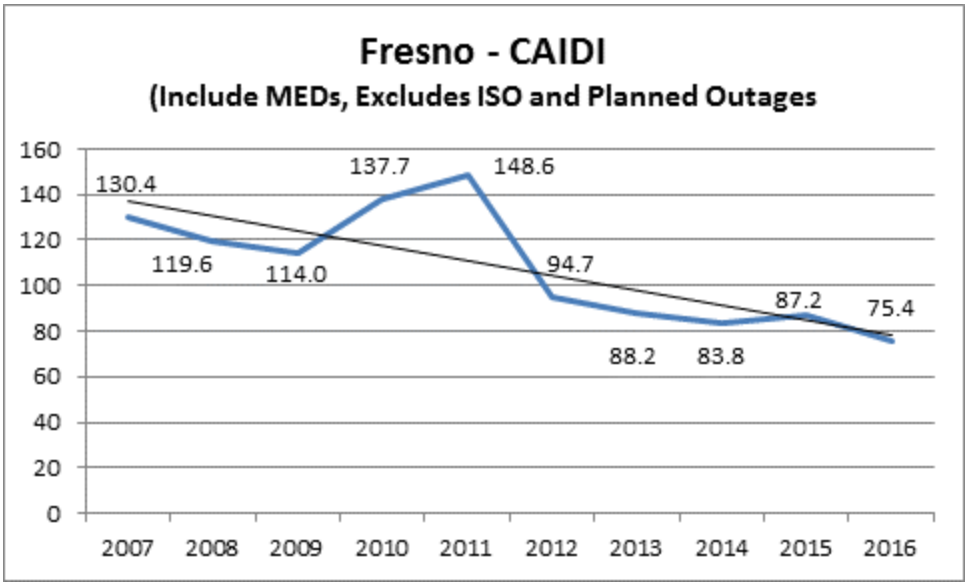


Chart 73: Division Reliability - CAIDI Indices

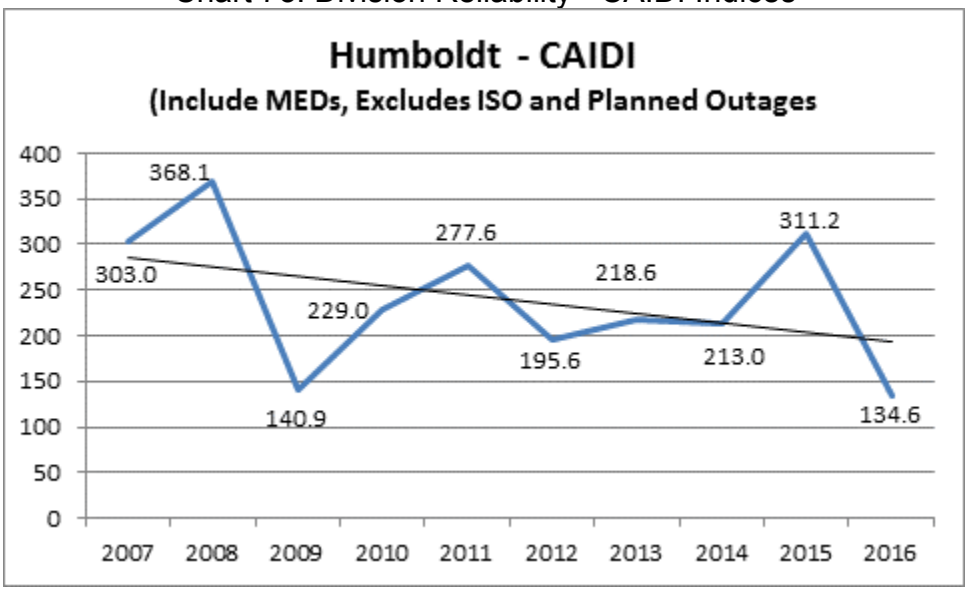


Chart 74: Division Reliability - CAIDI Indices

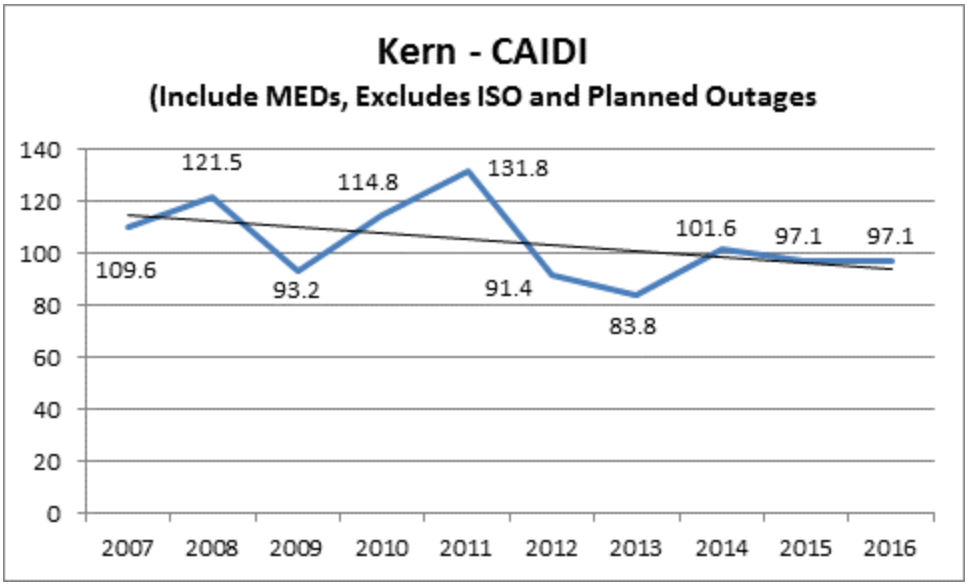


Chart 75: Division Reliability - CAIDI Indices

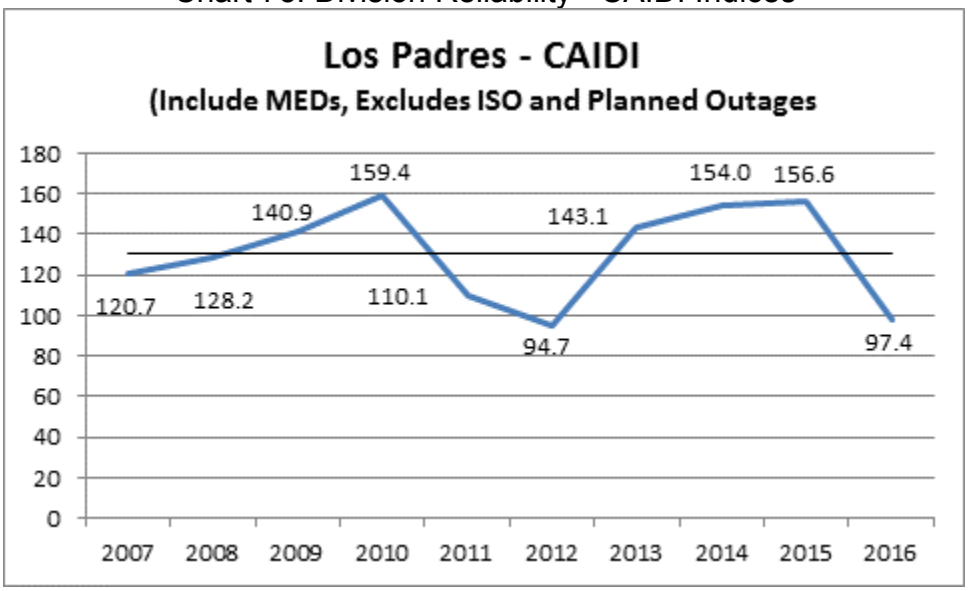


Chart 76: Division Reliability - CAIDI Indices

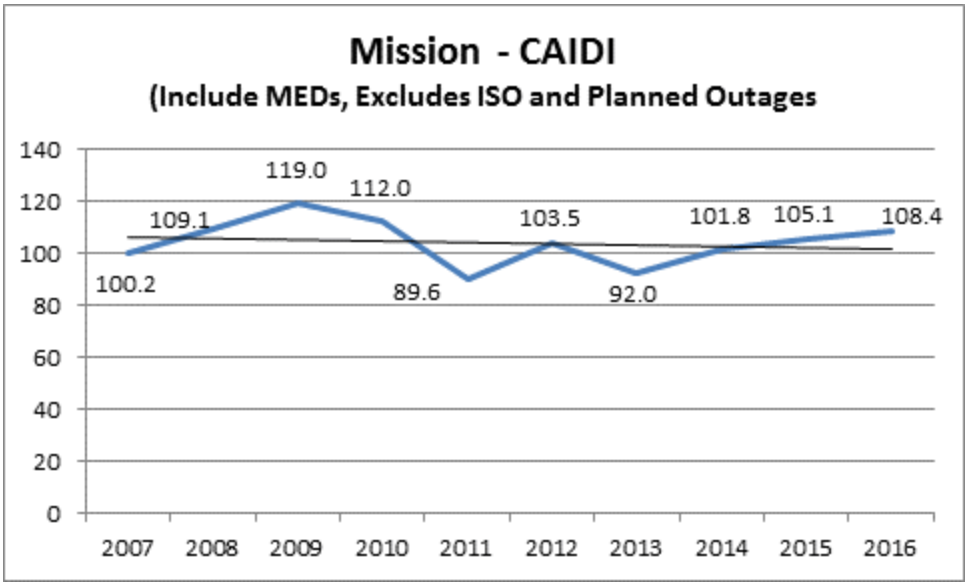


Chart 77: Division Reliability - CAIDI Indices

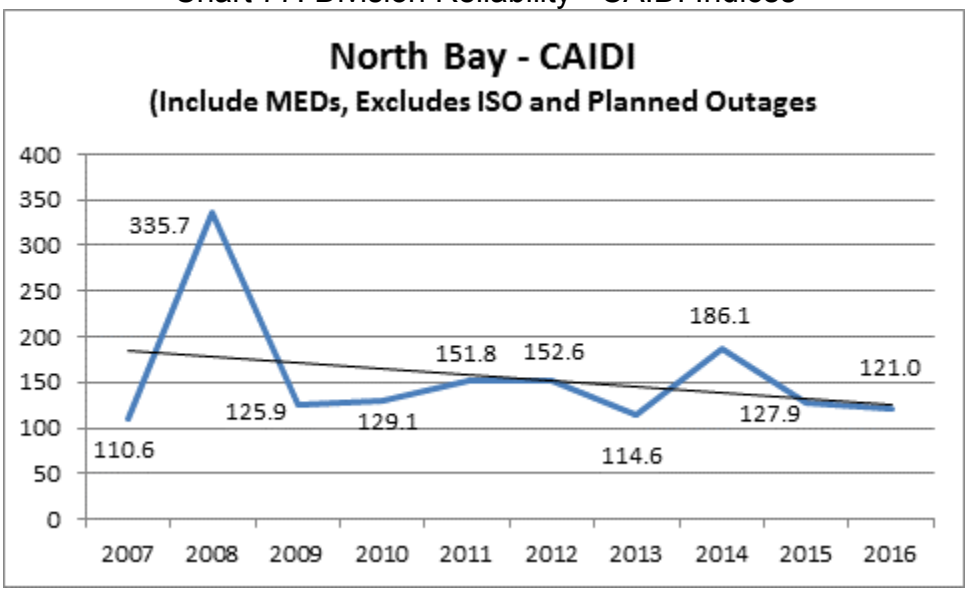


Chart 78: Division Reliability - CAIDI Indices

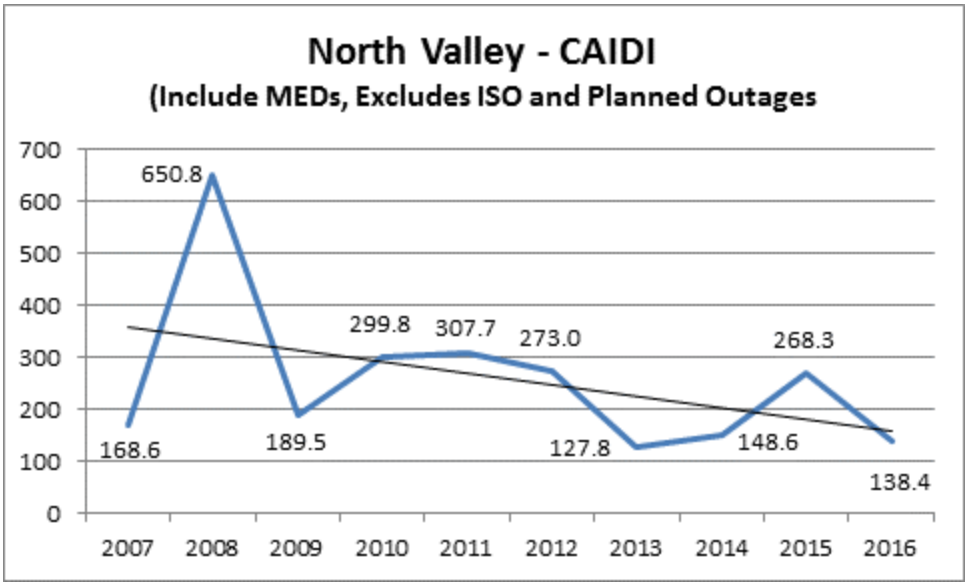


Chart 79: Division Reliability - CAIDI Indices

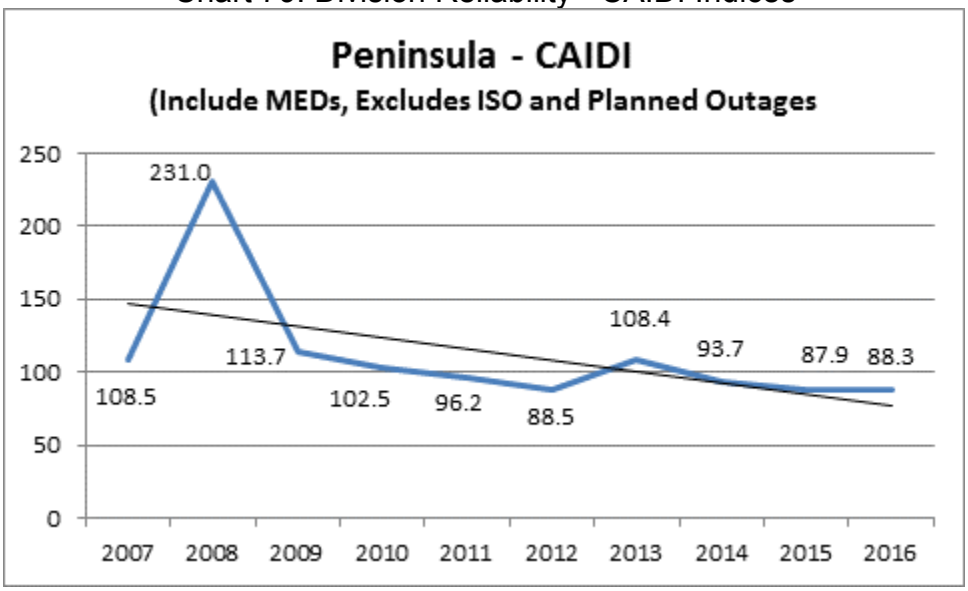


Chart 80: Division Reliability - CAIDI Indices

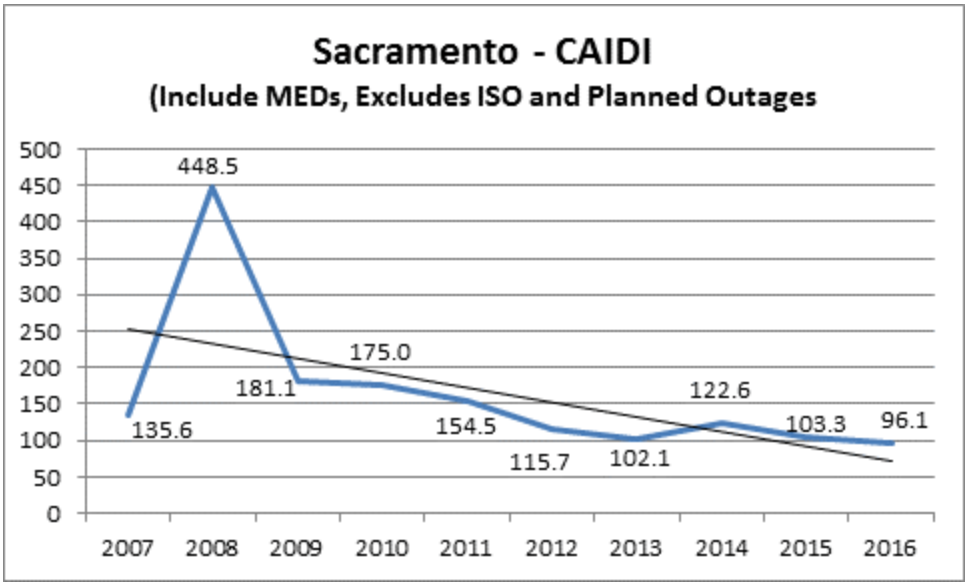


Chart 81: Division Reliability - CAIDI Indices

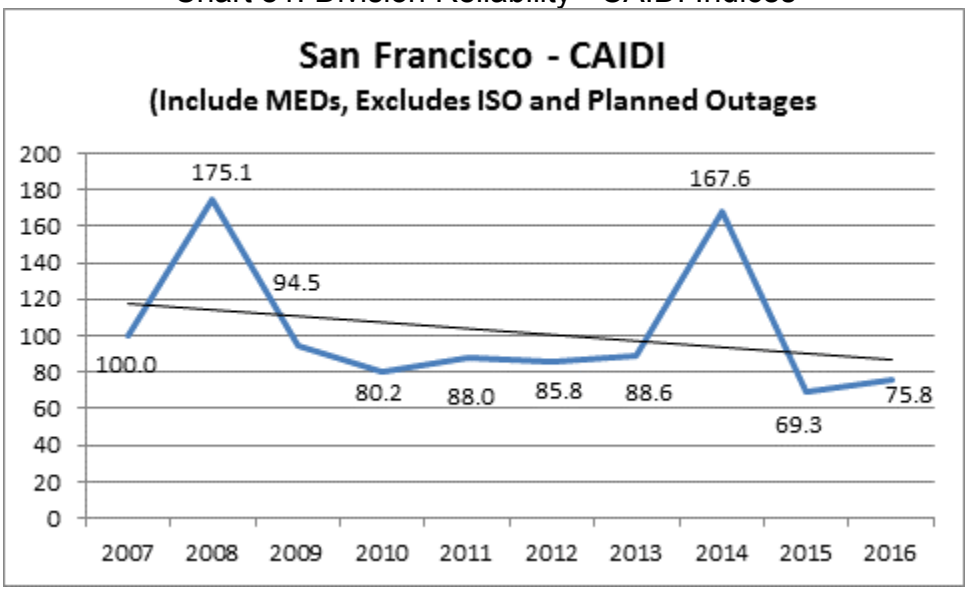


Chart 82: Division Reliability - CAIDI Indices

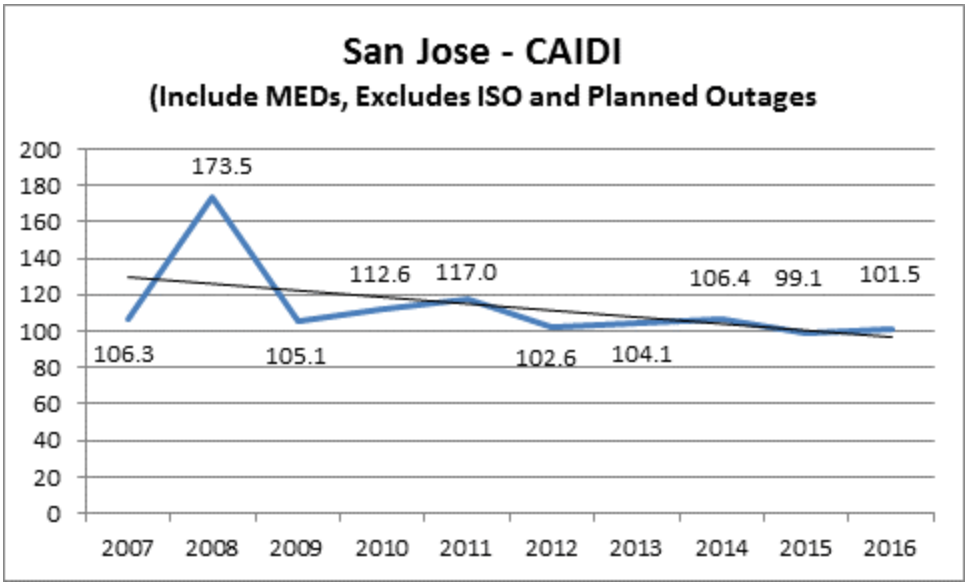


Chart 83: Division Reliability - CAIDI Indices

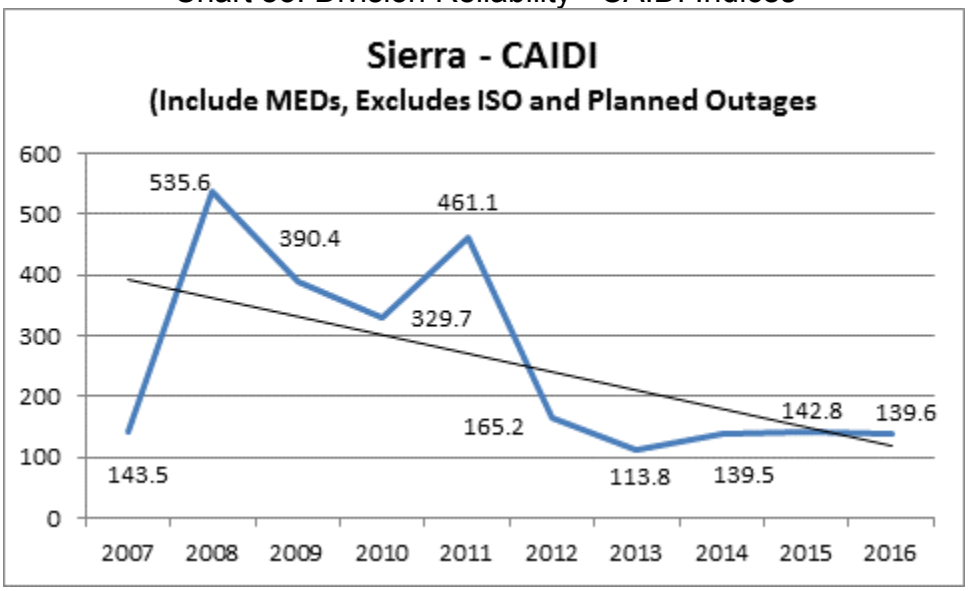


Chart 84: Division Reliability - CAIDI Indices

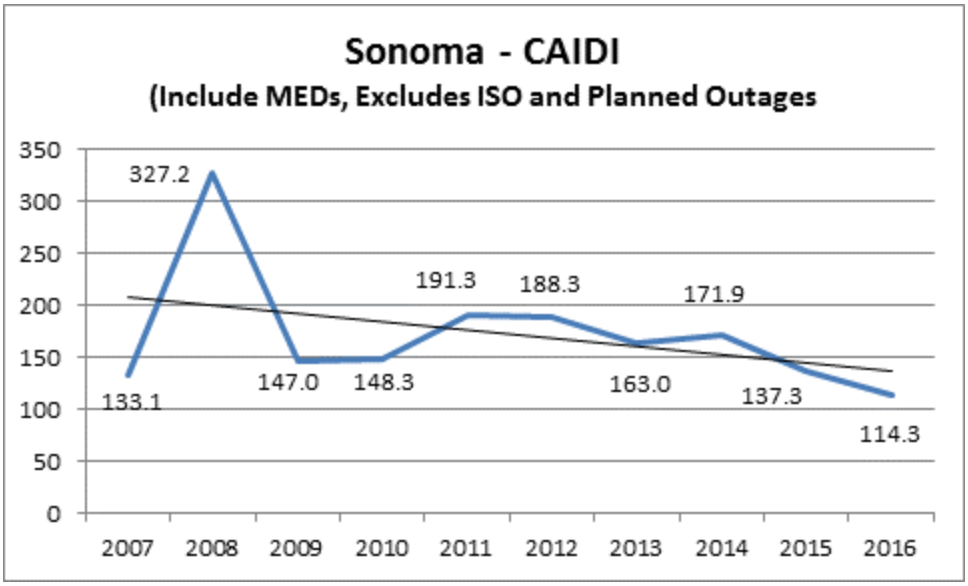


Chart 85: Division Reliability - CAIDI Indices

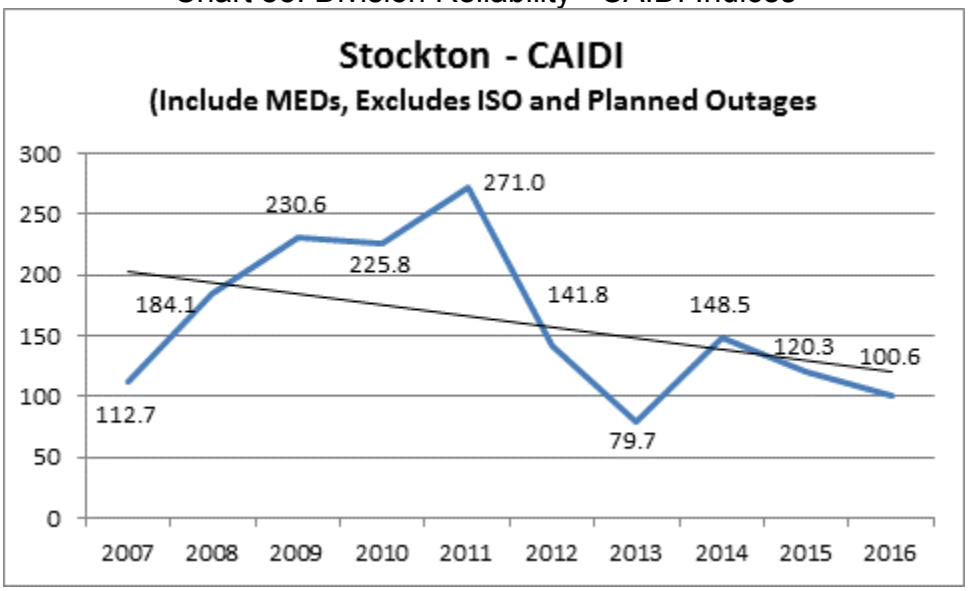
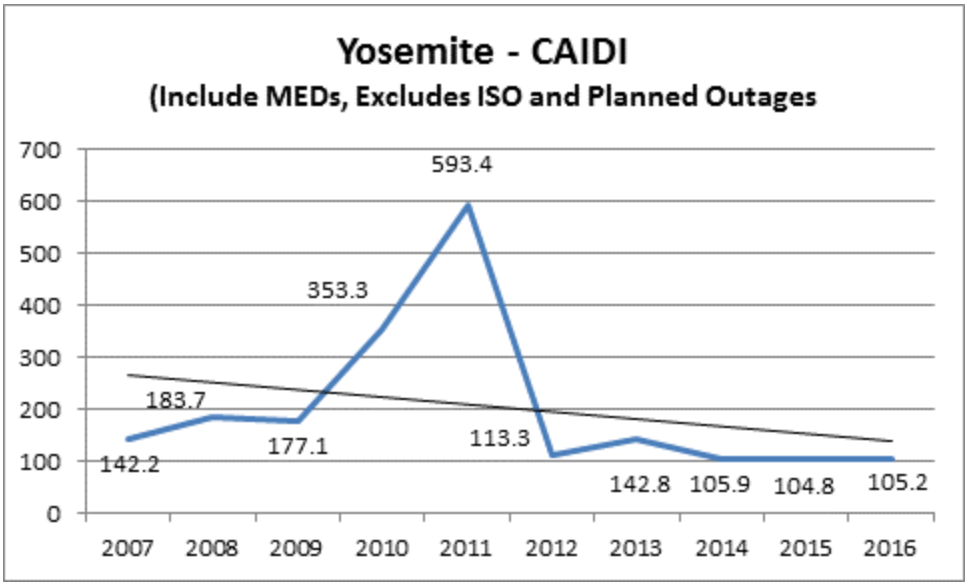


Chart 86: Division Reliability - CAIDI Indices



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

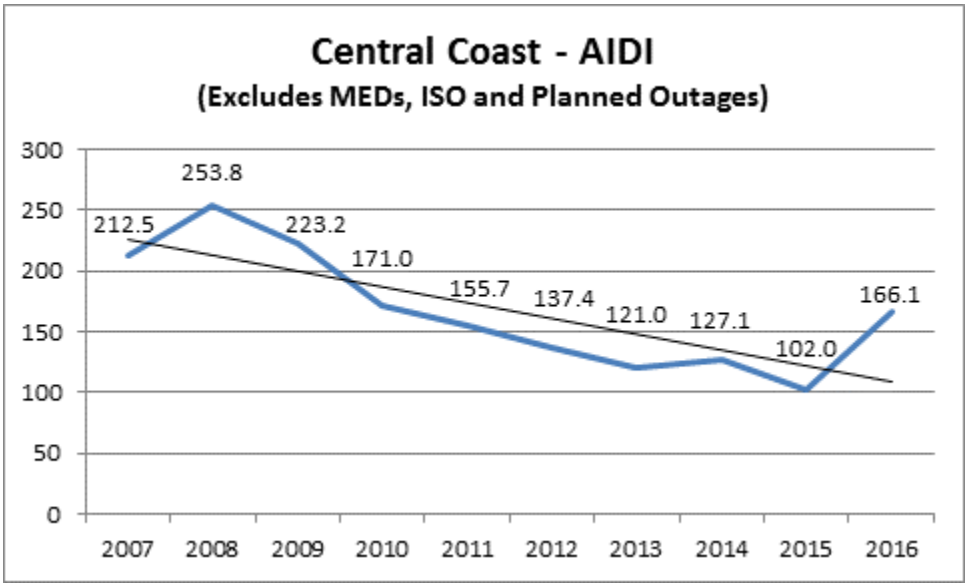


Chart 88: Division Reliability - AIDI Indices

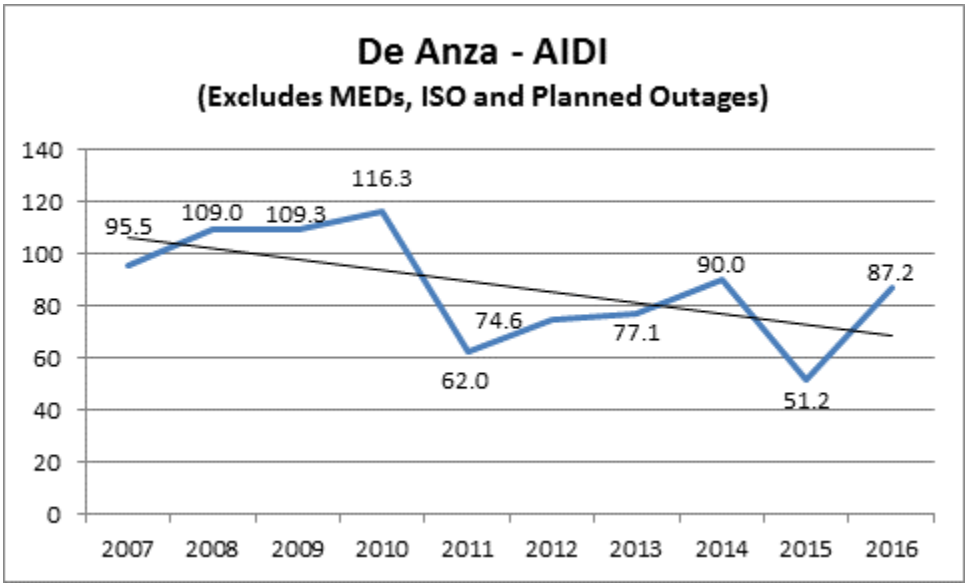


Chart 89: Division Reliability - AIDI Indices

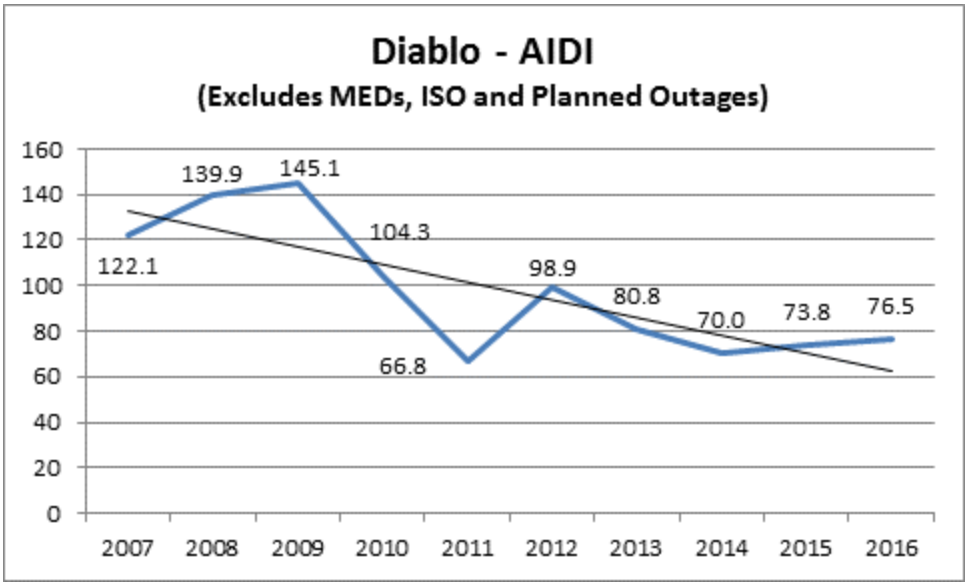


Chart 90: Division Reliability - AIDI Indices

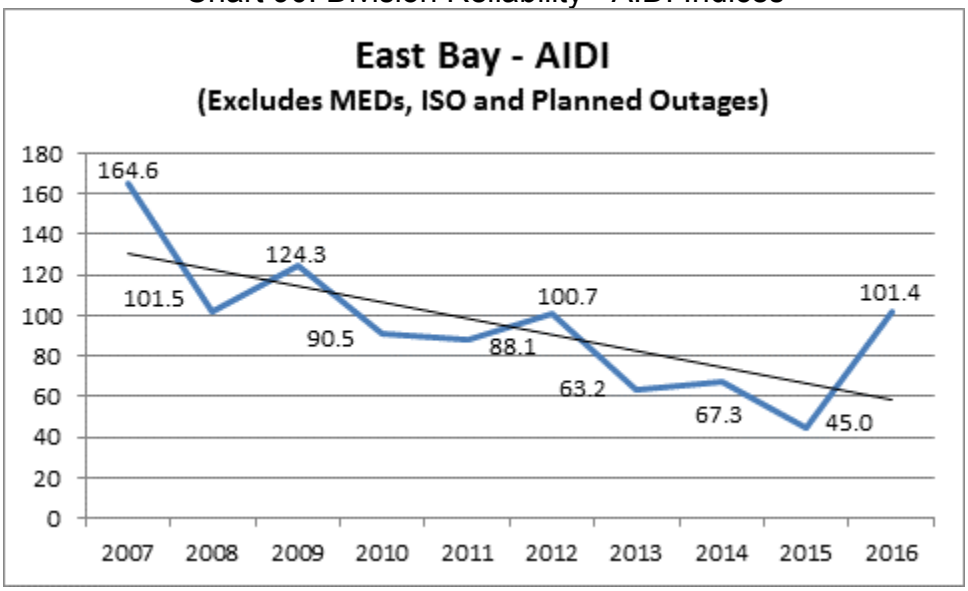


Chart 91: Division Reliability - AIDI Indices

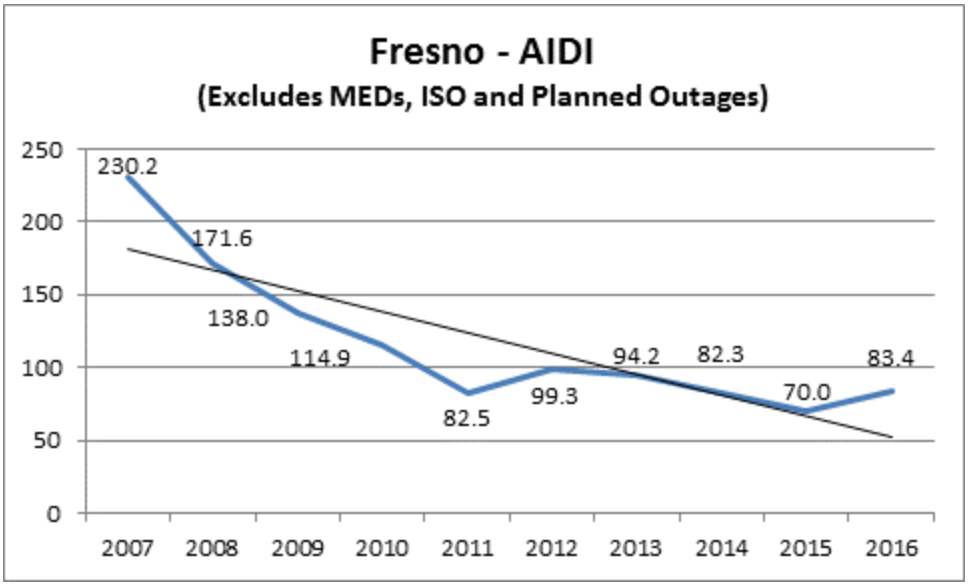


Chart 92: Division Reliability - AIDI Indices

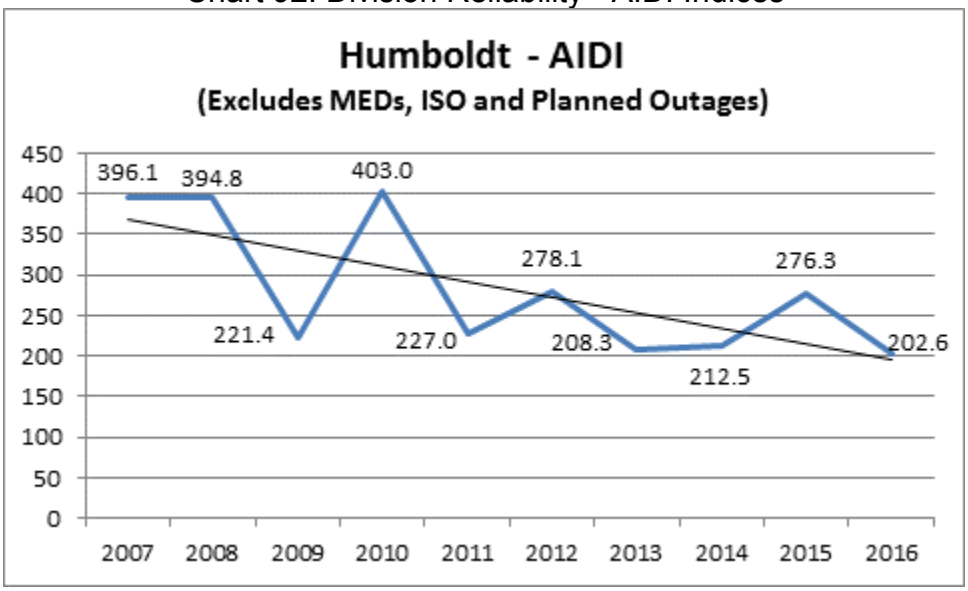


Chart 93: Division Reliability - AIDI Indices

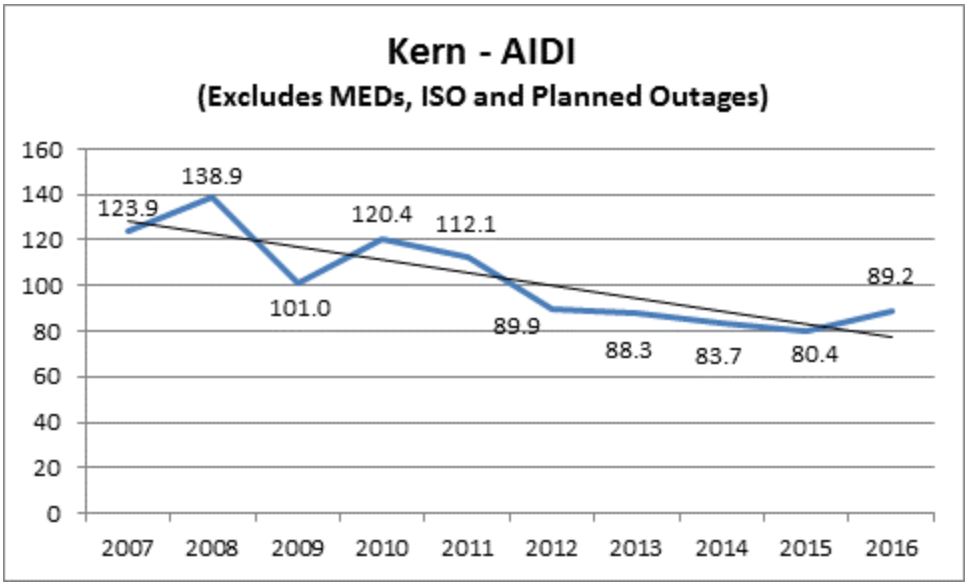


Chart 94: Division Reliability - AIDI Indices

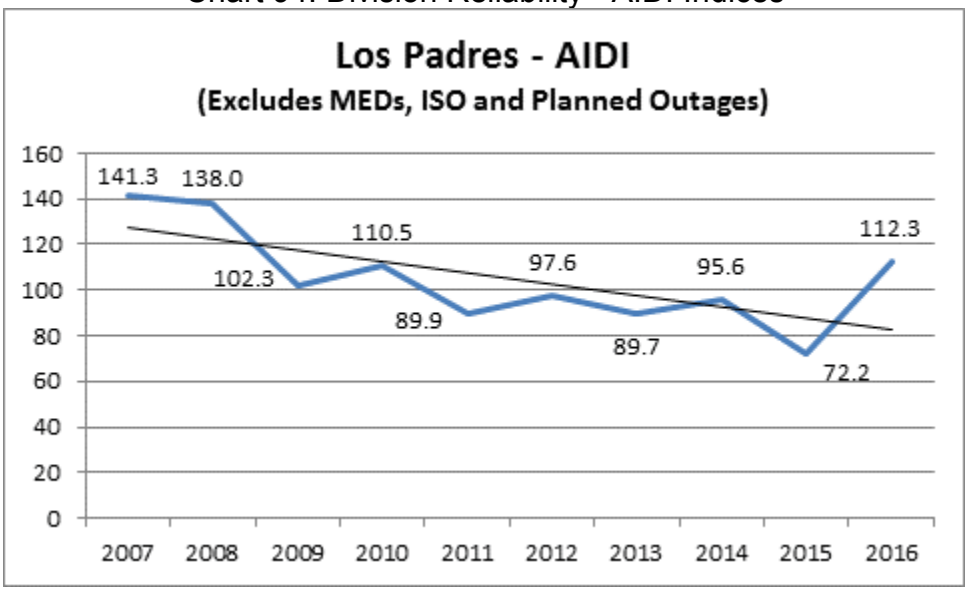


Chart 95: Division Reliability - AIDI Indices

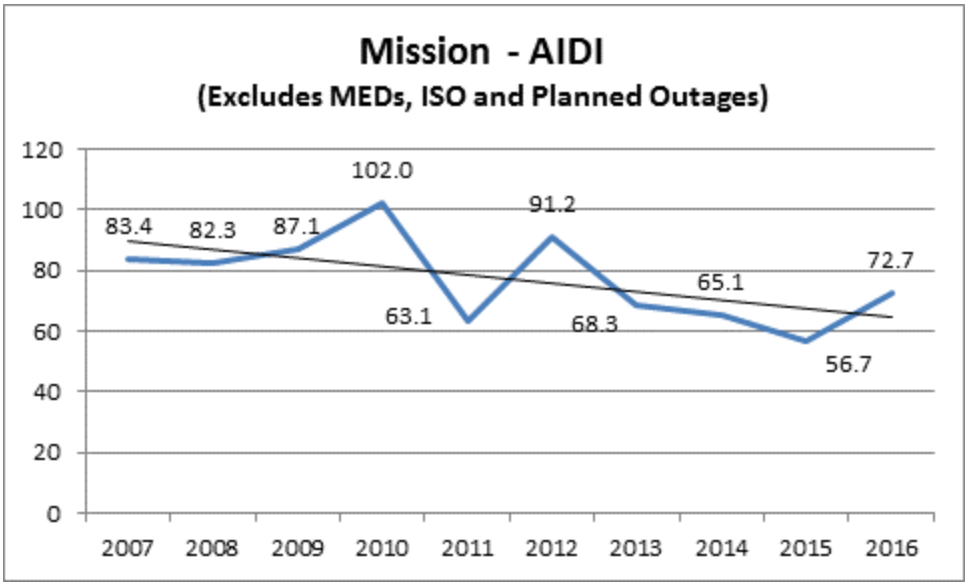


Chart 96: Division Reliability - AIDI Indices

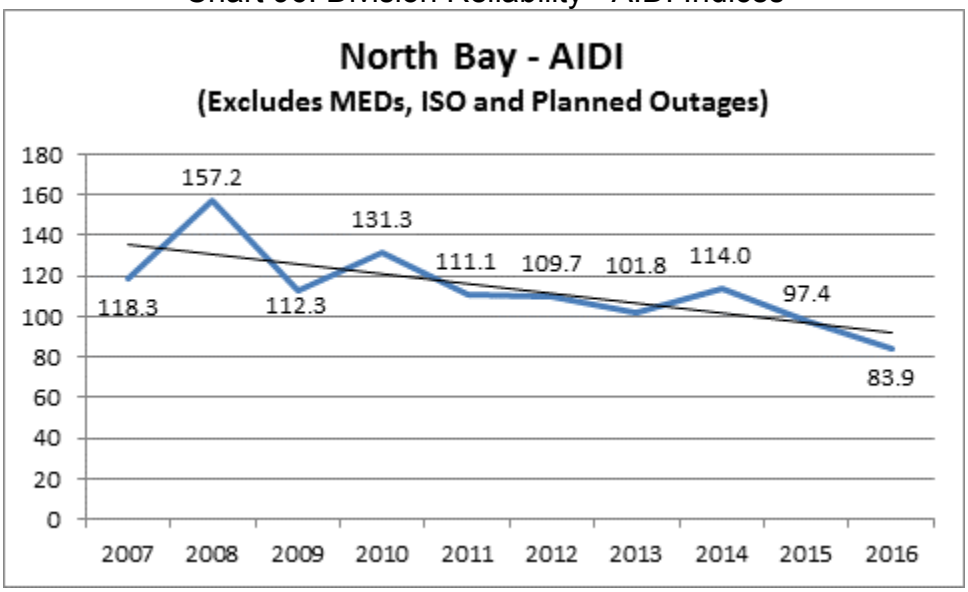


Chart 97: Division Reliability - AIDI Indices

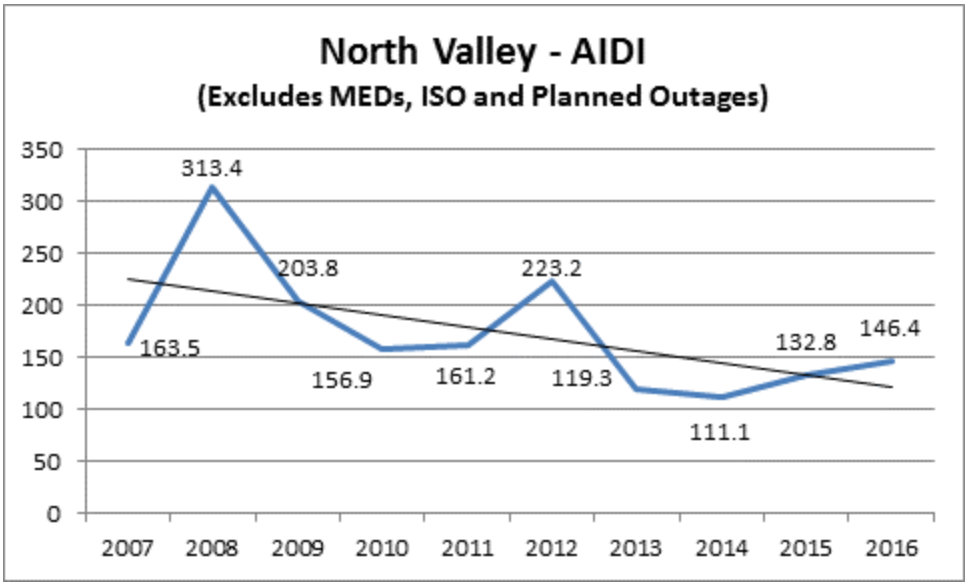


Chart 98: Division Reliability - AIDI Indices

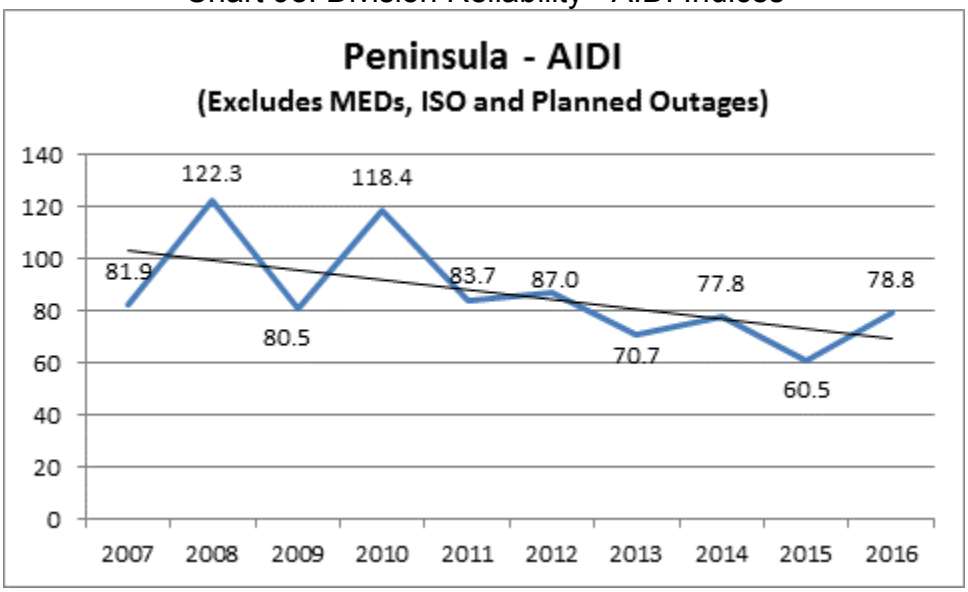


Chart 99: Division Reliability - AIDI Indices

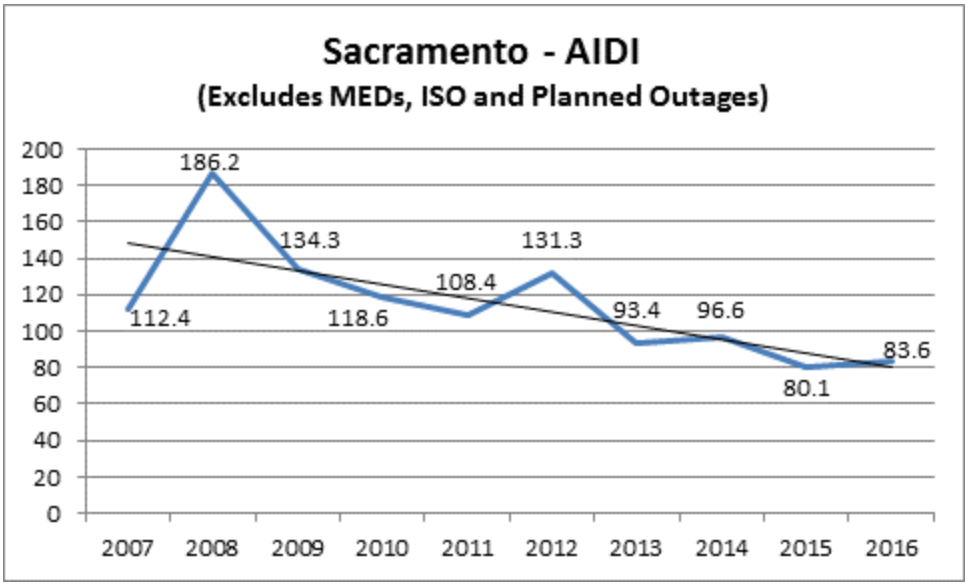


Chart 100: Division Reliability - AIDI Indices

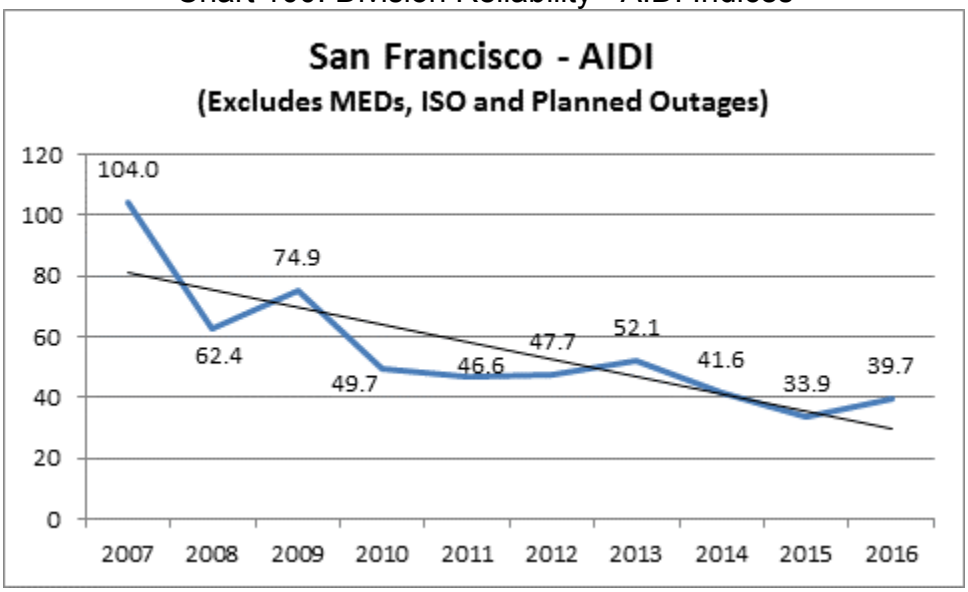


Chart 101: Division Reliability - AIDI Indices

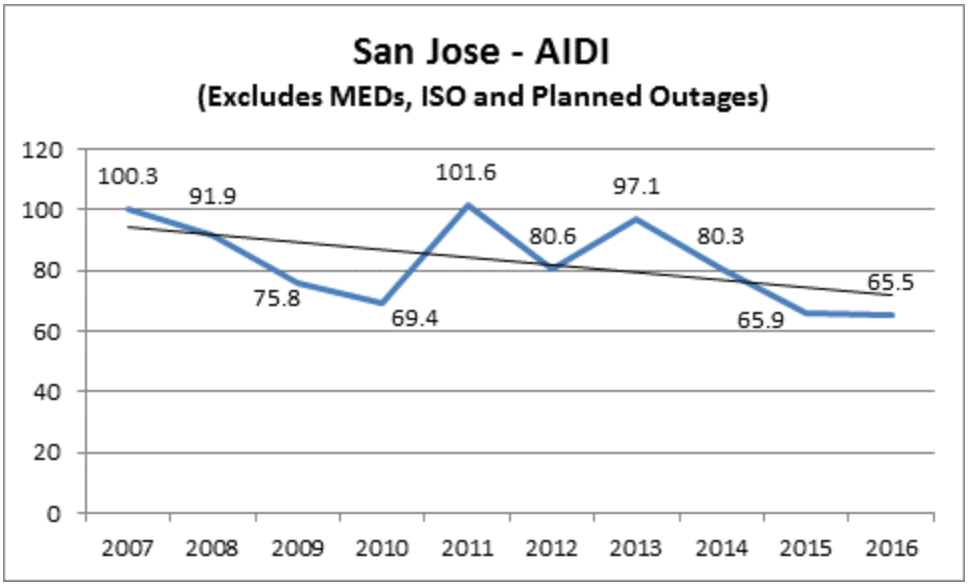


Chart 102: Division Reliability - AIDI Indices

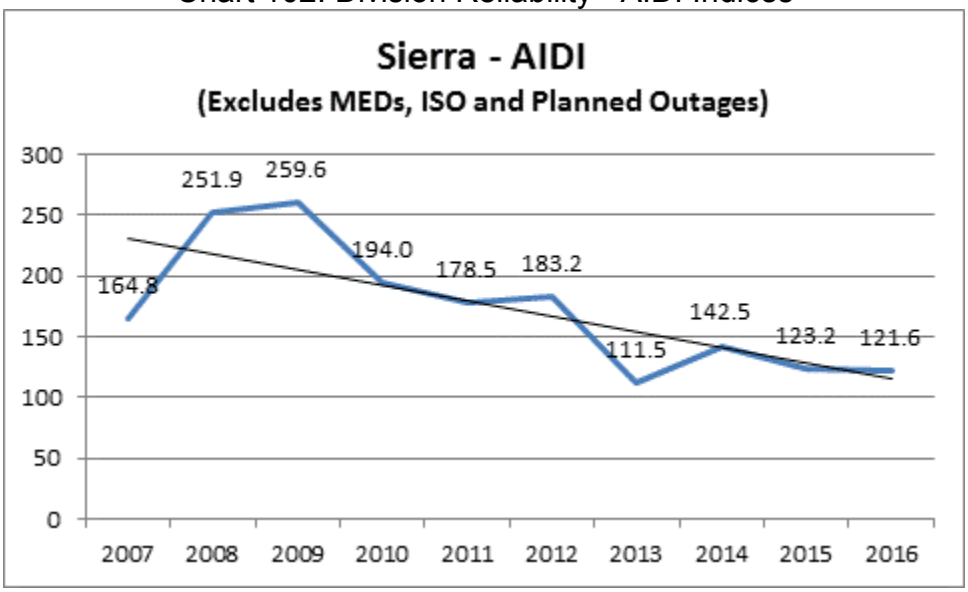


Chart 103: Division Reliability - AIDI Indices

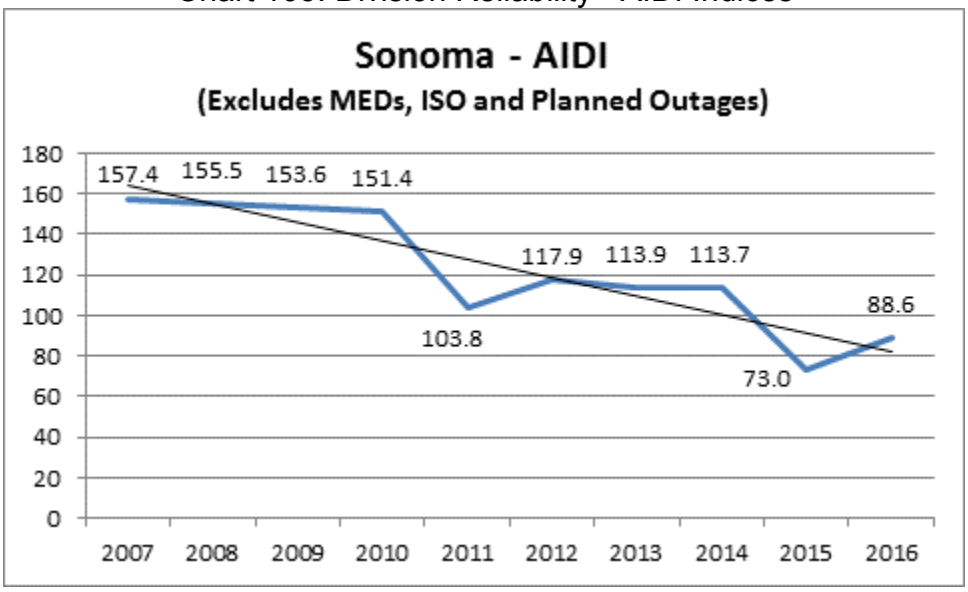


Chart 104: Division Reliability - AIDI Indices

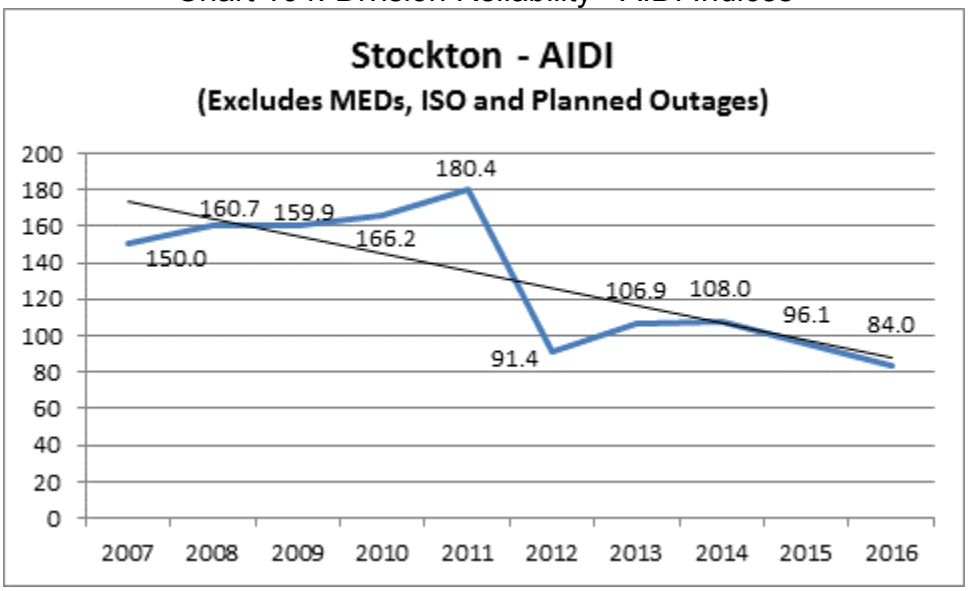
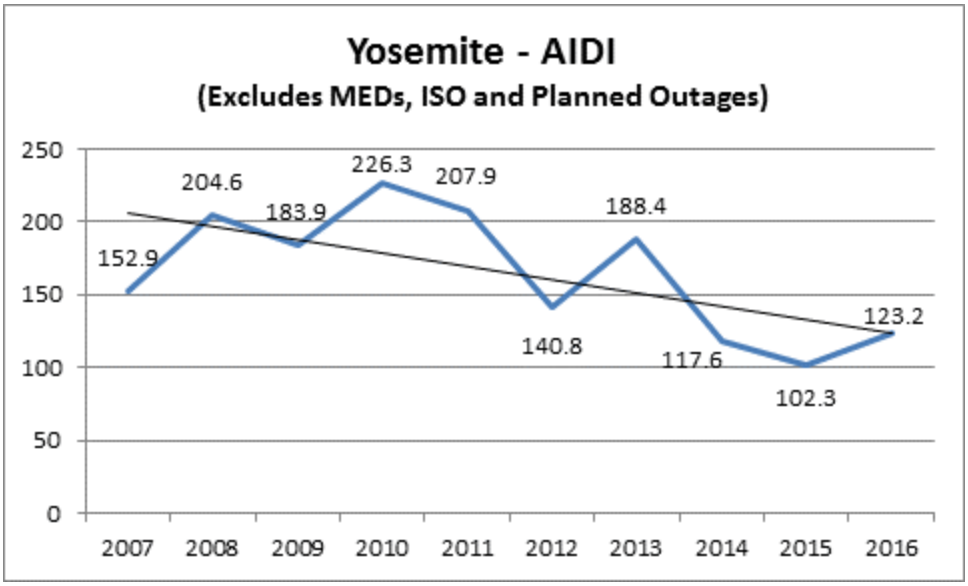


Chart 105: Division Reliability - AIDI Indices


Yosemite - AIDI
(Excludes MEDs, ISO and Planned Outages)
250
200
150
100
50
0
152.9
204.6
183.9
226.3
207.9
140.8
188.4
117.6
102.3
123.2
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016

2. AIFI Performance Results (MED Excluded)

Chart 106: Division Reliability - AIFI Indices

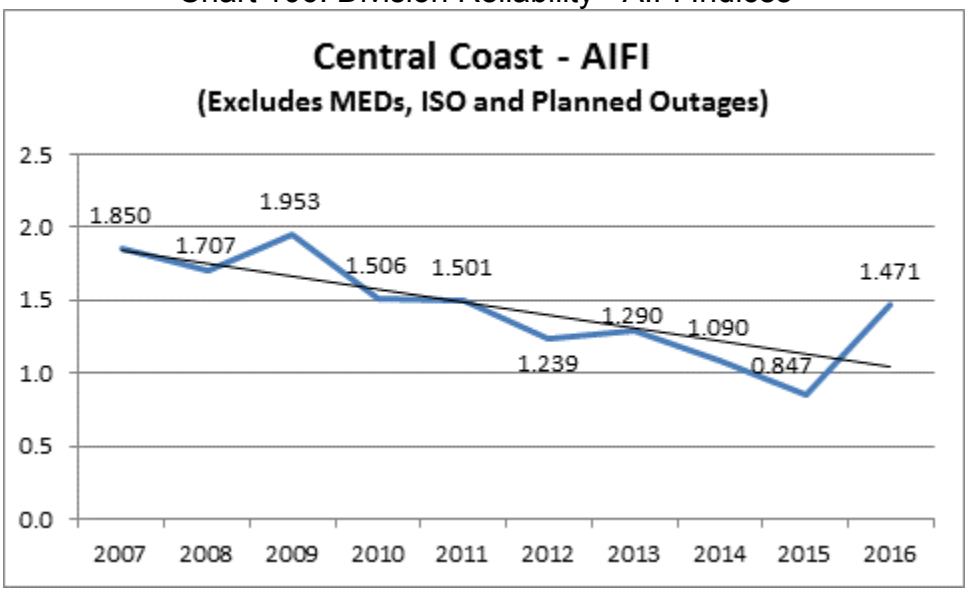


Chart 107: Division Reliability - AIFI Indices

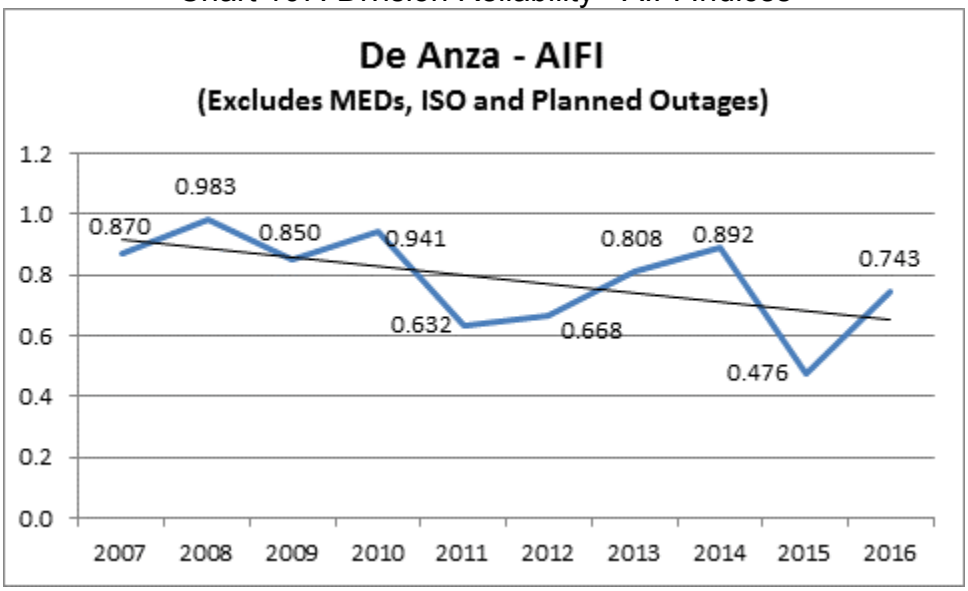


Chart 108: Division Reliability - AIFI Indices

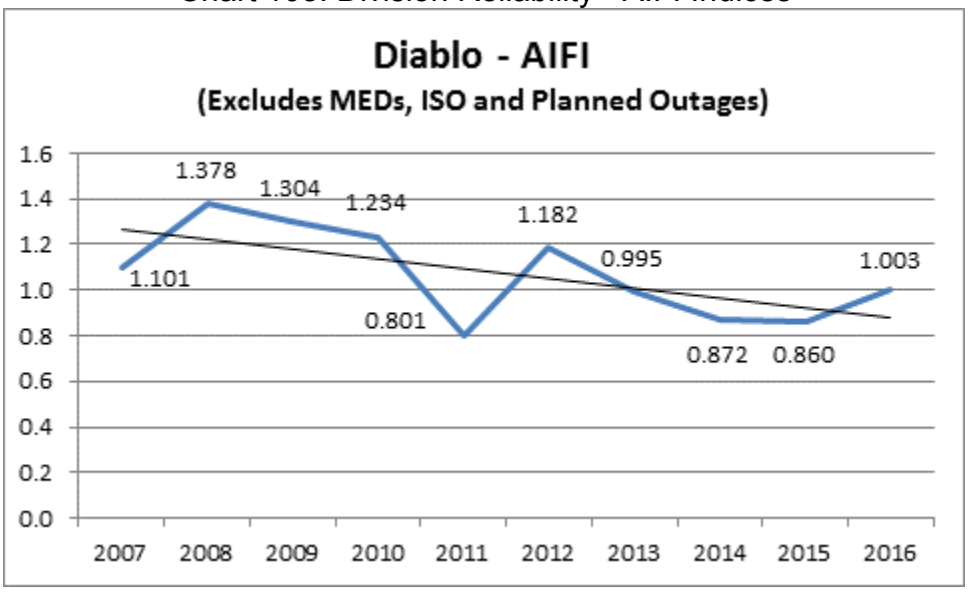


Chart 109: Division Reliability - AIFI Indices

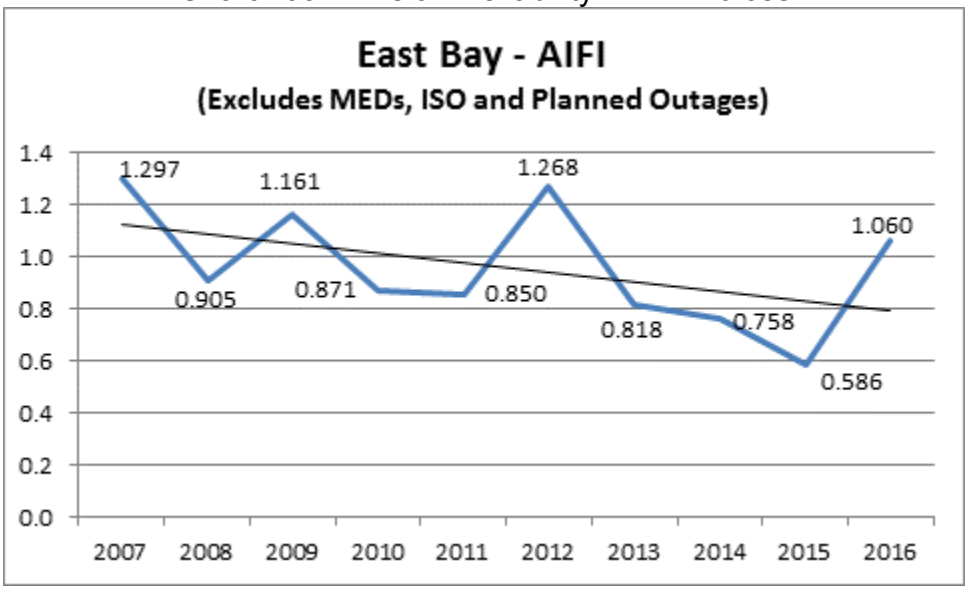


Chart 110: Division Reliability - AIFI Indices

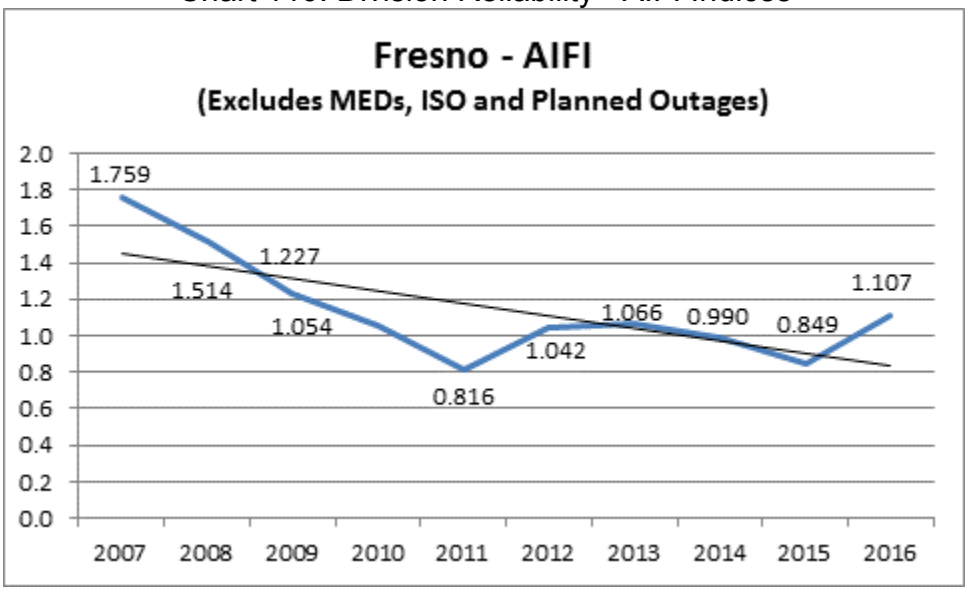


Chart 111: Division Reliability - AIFI Indices

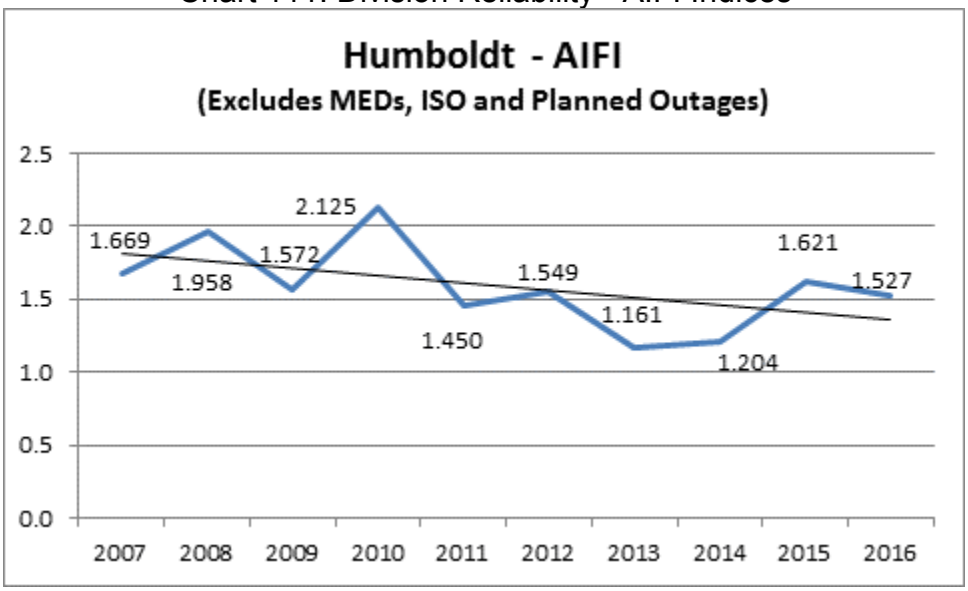


Chart 112: Division Reliability - AIFI Indices

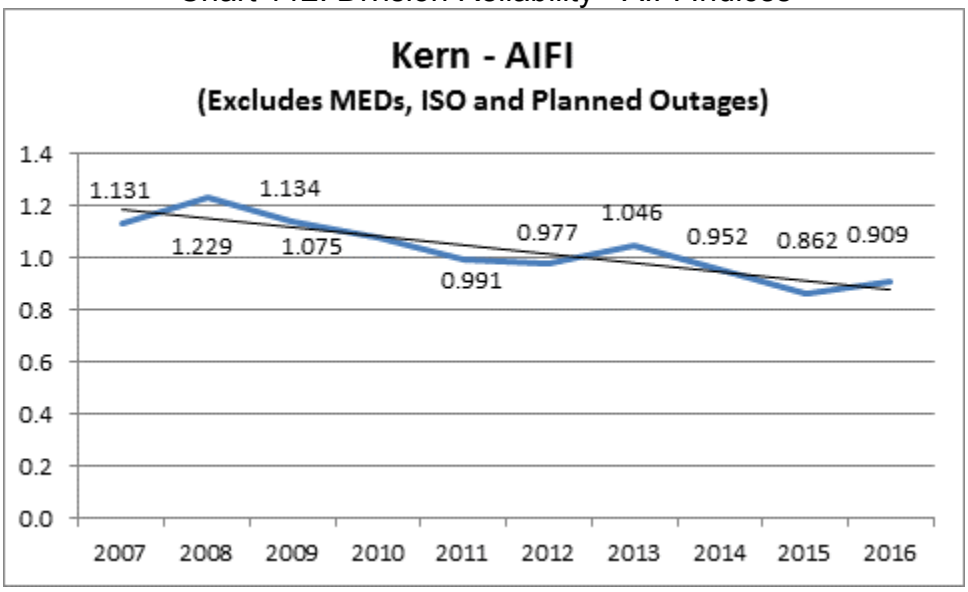


Chart 113: Division Reliability - AIFI Indices

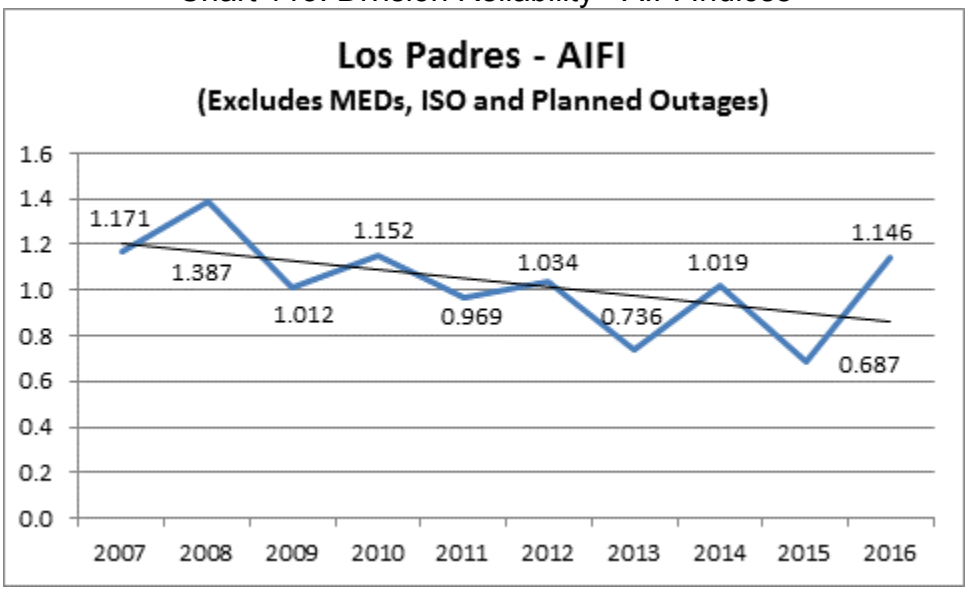


Chart 114: Division Reliability - AIFI Indices

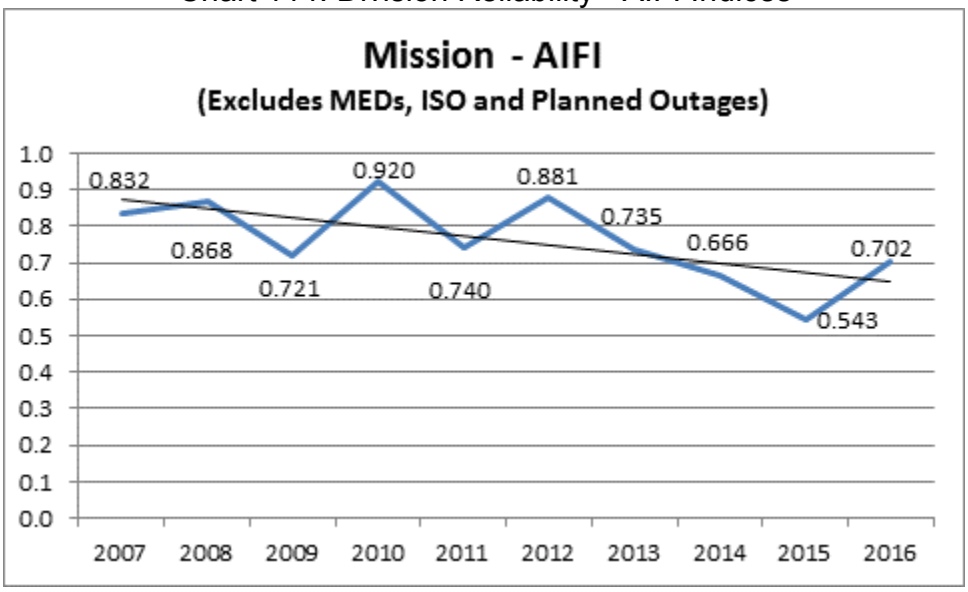


Chart 115: Division Reliability - AIFI Indices

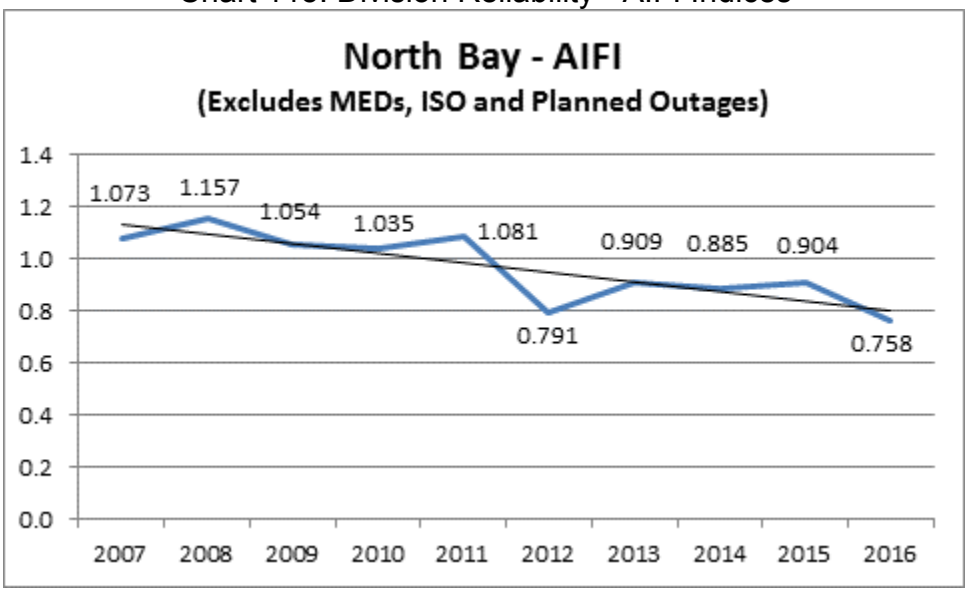


Chart 116: Division Reliability - AIFI Indices

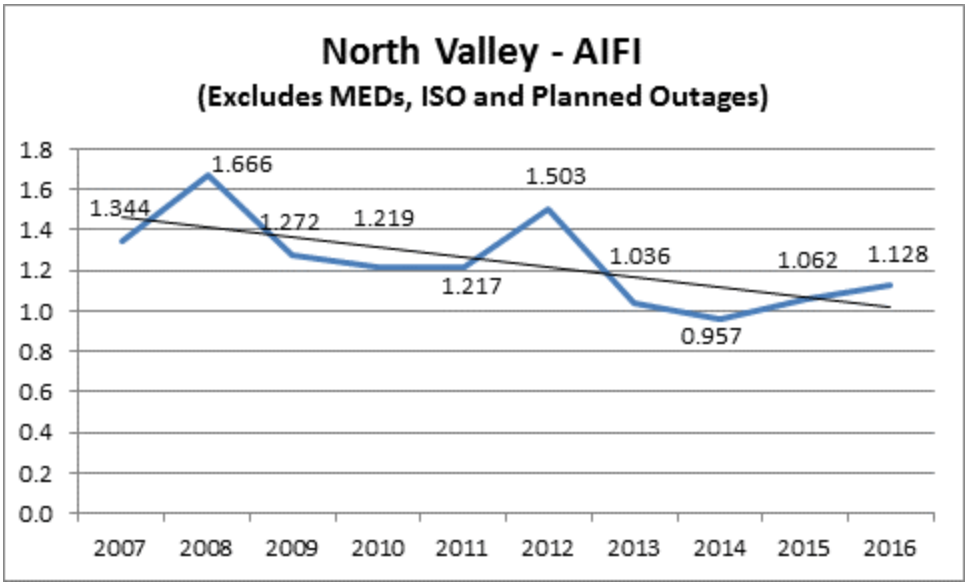


Chart 117: Division Reliability - AIFI Indices

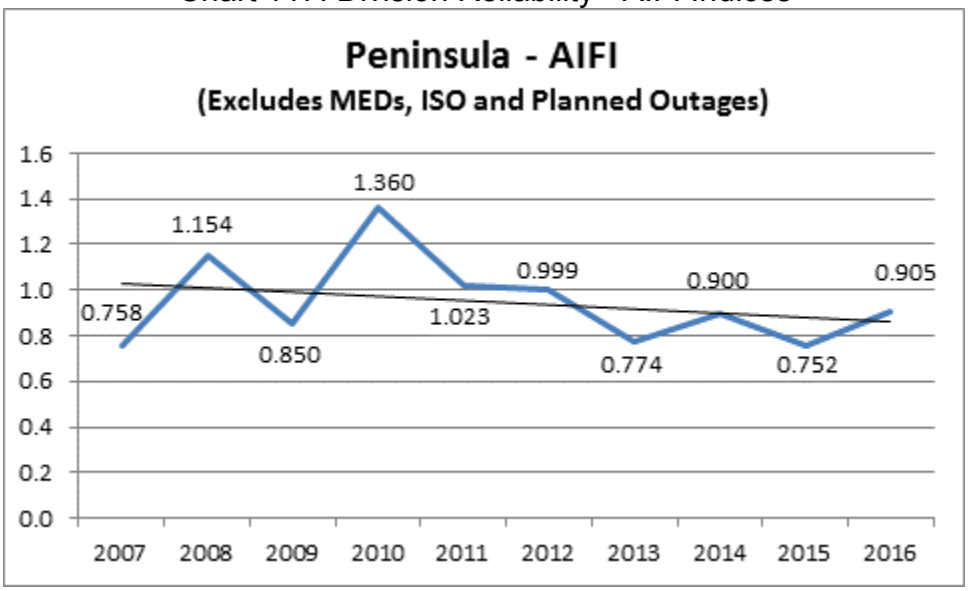


Chart 118: Division Reliability - AIFI Indices

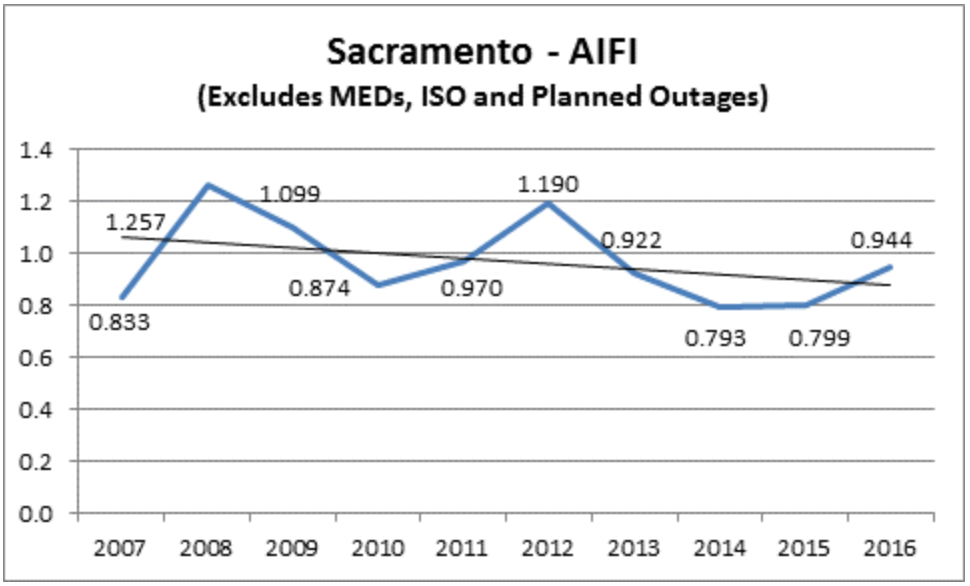


Chart 119: Division Reliability - AIFI Indices

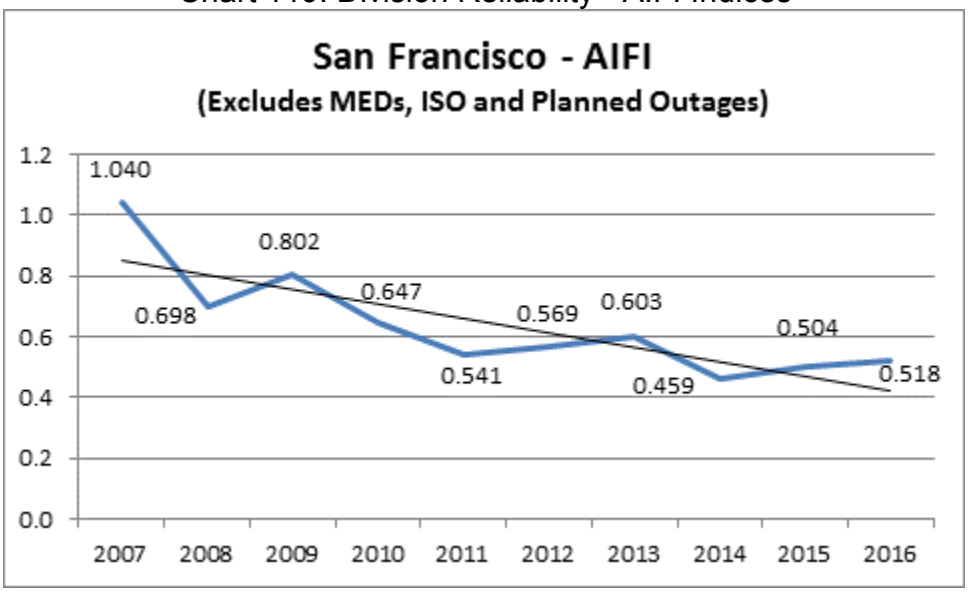


Chart 120: Division Reliability - AIFI Indices

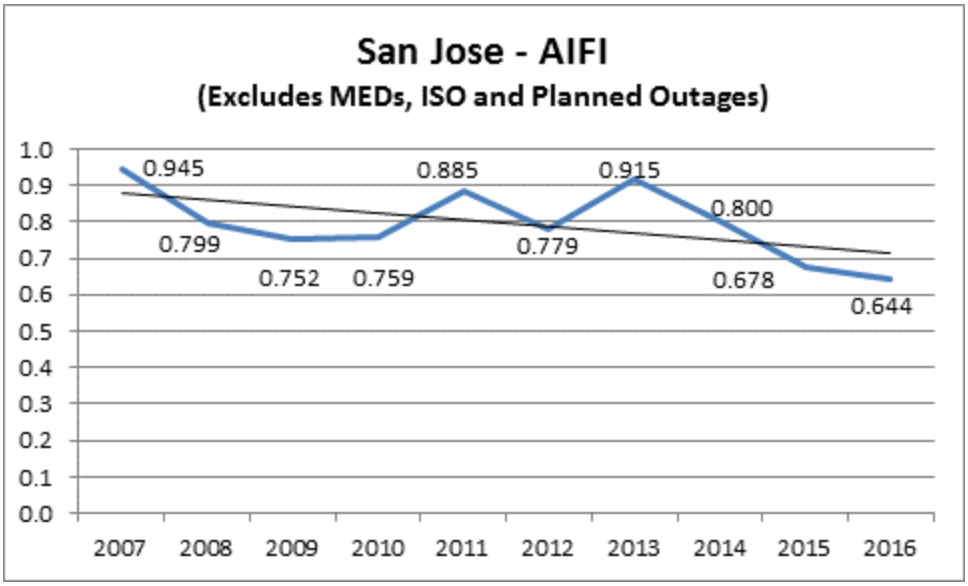


Chart 121: Division Reliability - AIFI Indices

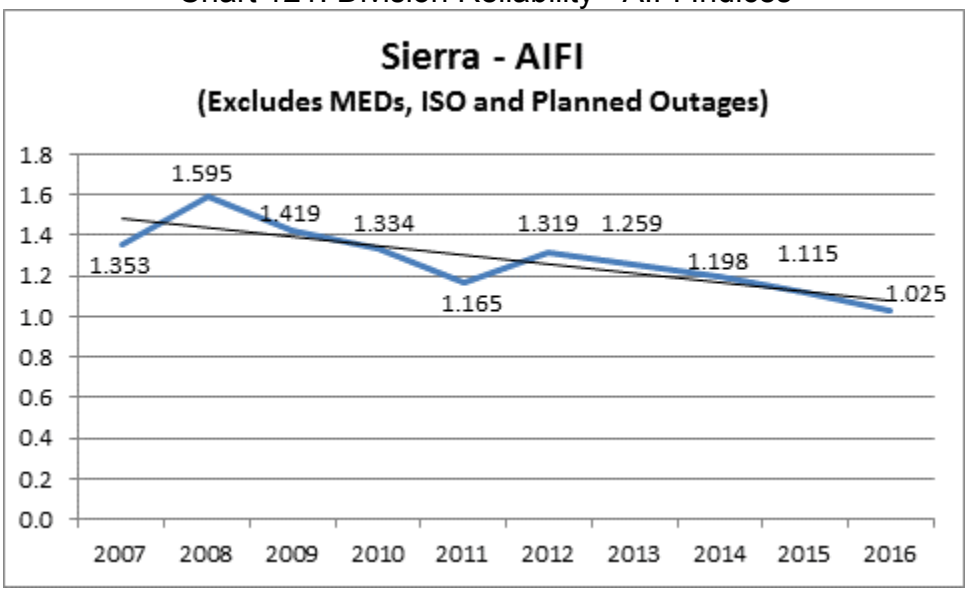


Chart 122: Division Reliability - AIFI Indices

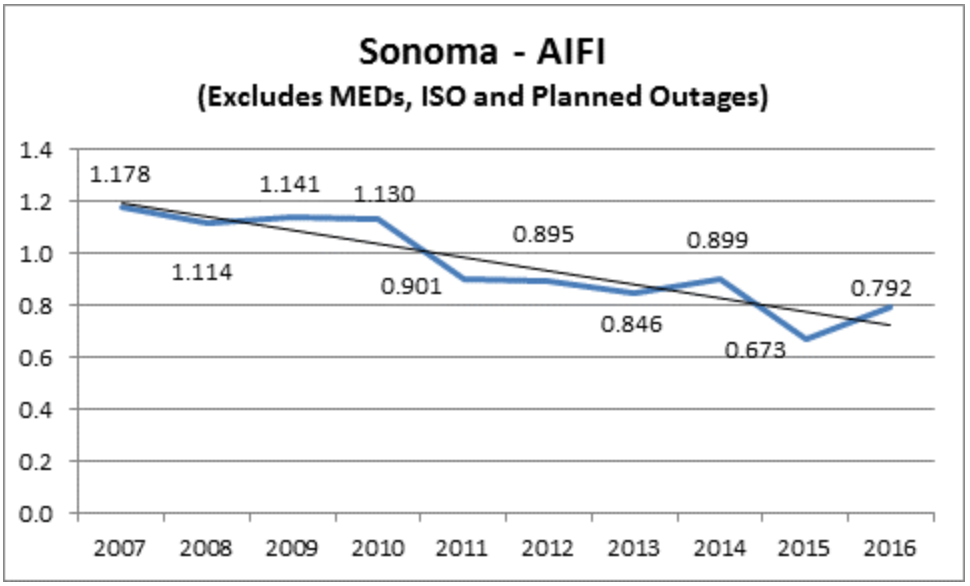


Chart 123: Division Reliability - AIFI Indices

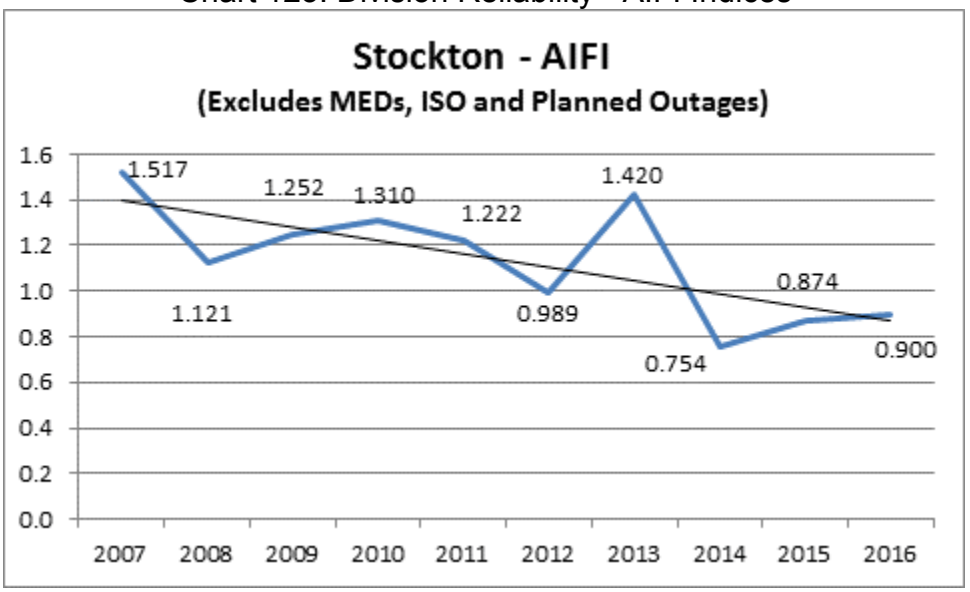
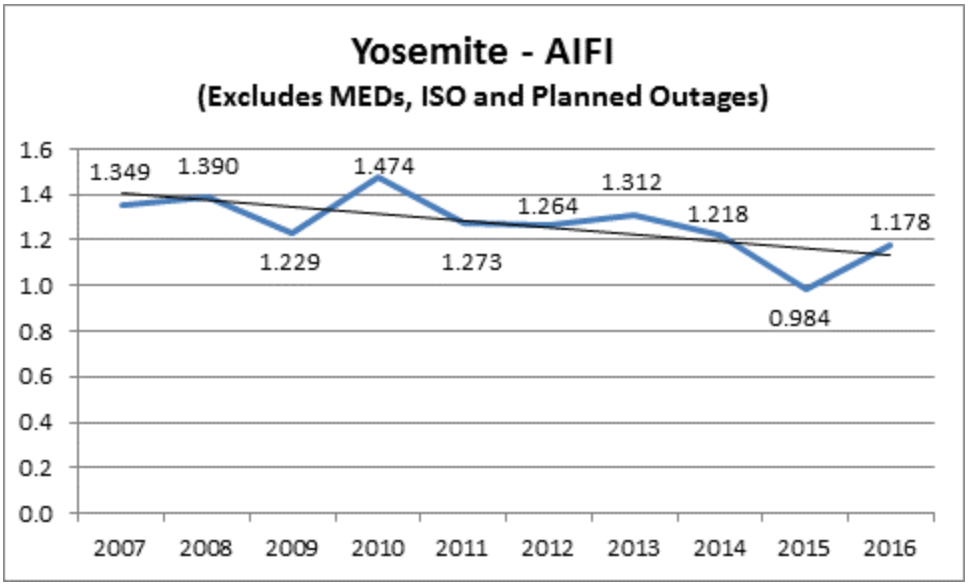


Chart 124: Division Reliability - AIFI Indices


Yosemite - AIFI
(Excludes MEDs, ISO and Planned Outages)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
1.349
1.390
1.229
1.474
1.273
1.264
1.312
1.218
0.984
1.178
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016

3. MAIFI Performance Results (MED Excluded)

Chart 125: Division Reliability - MAIFI Indices

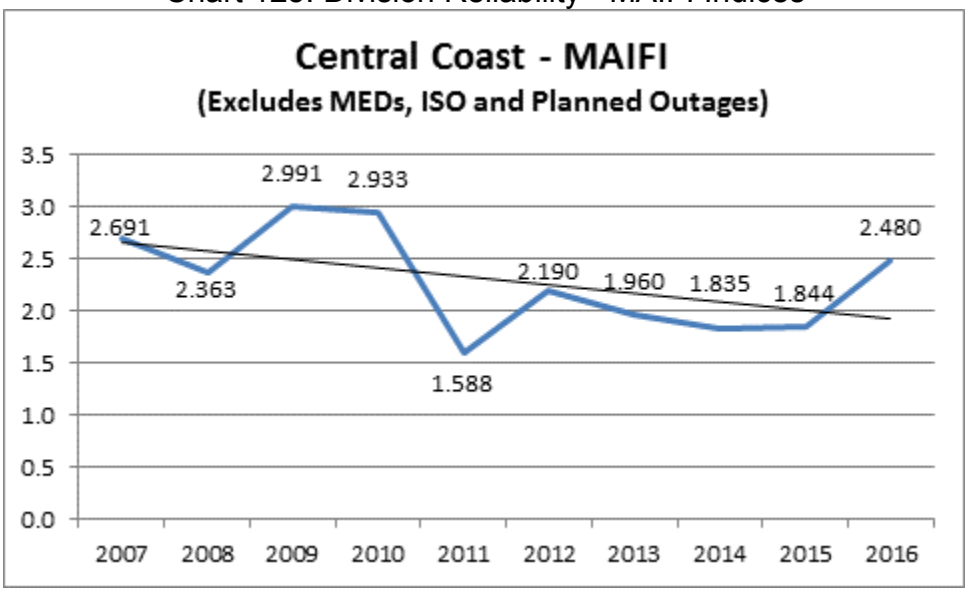


Chart 126: Division Reliability - MAIFI Indices

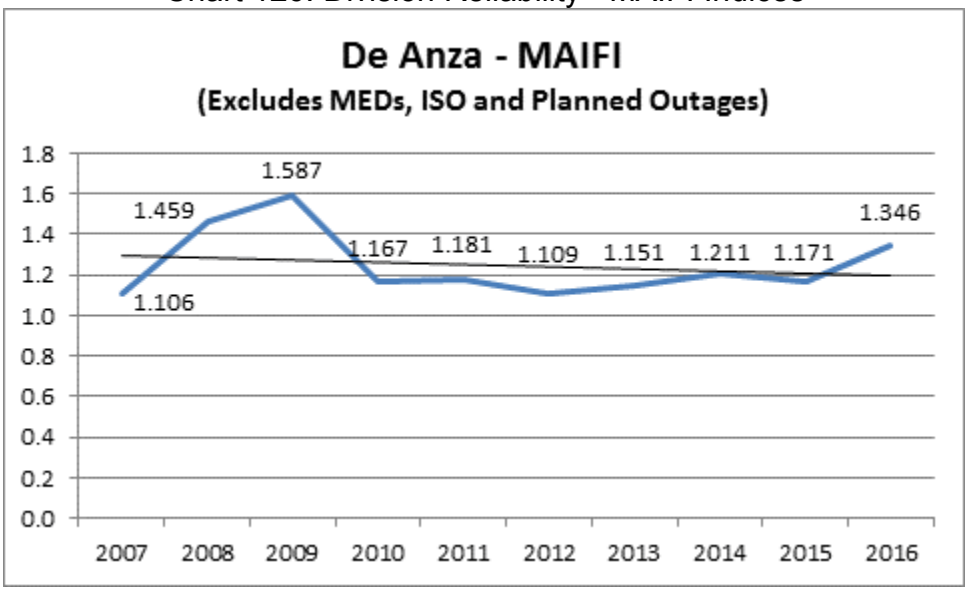


Chart 127: Division Reliability - MAIFI Indices

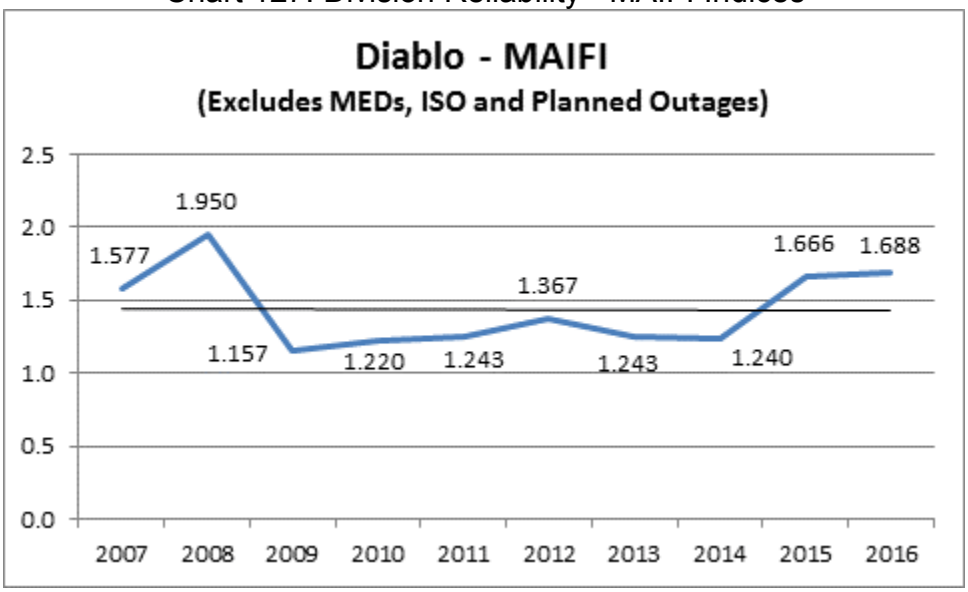


Chart 128: Division Reliability - MAIFI Indices

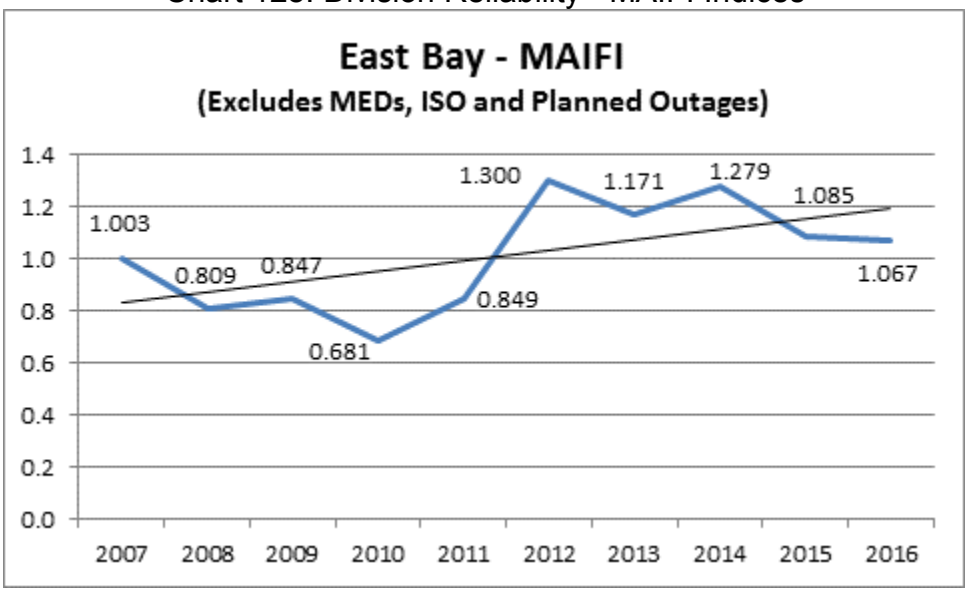


Chart 129: Division Reliability - MAIFI Indices

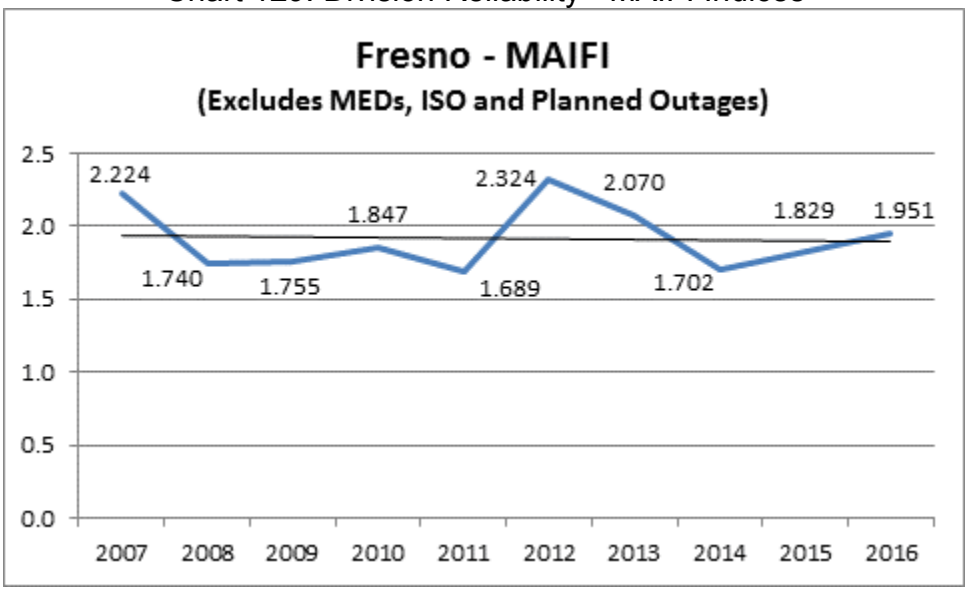


Chart 130: Division Reliability - MAIFI Indices

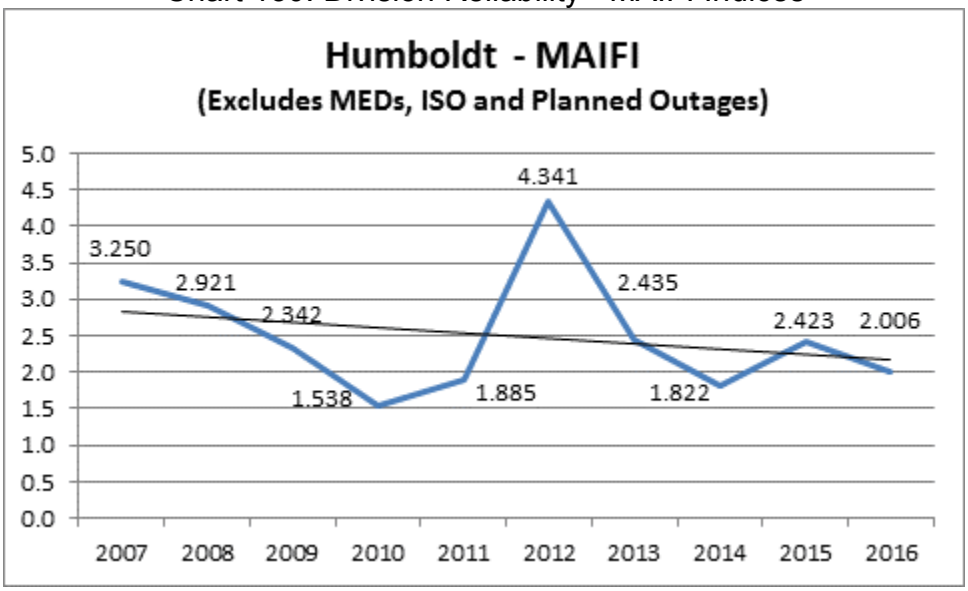


Chart 131: Division Reliability - MAIFI Indices

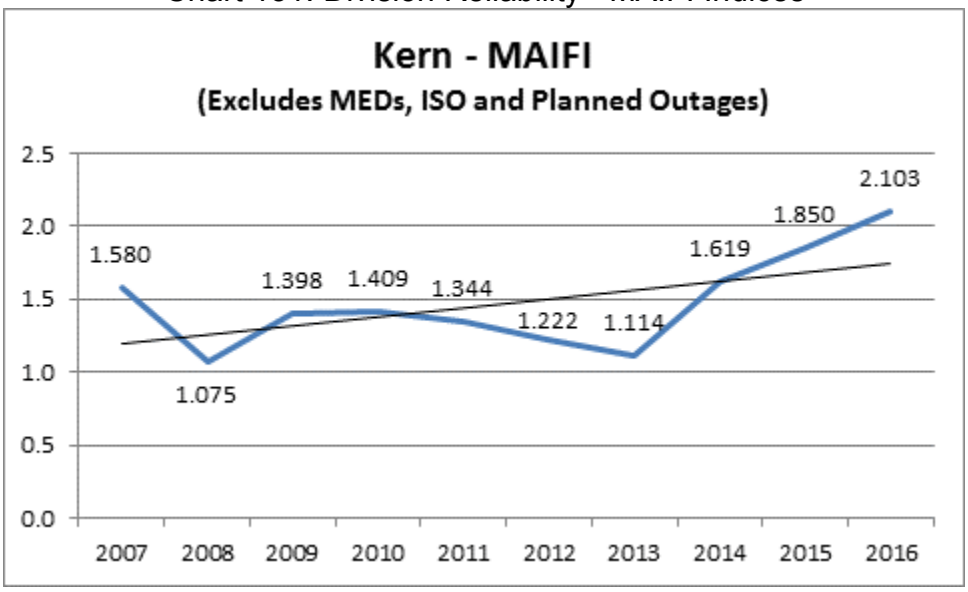


Chart 132: Division Reliability - MAIFI Indices

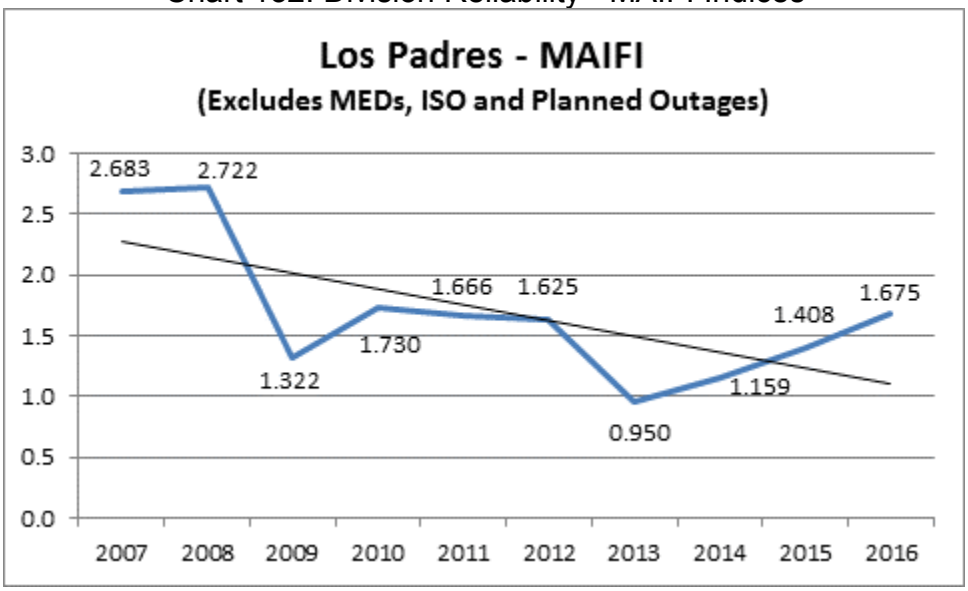


Chart 133: Division Reliability - MAIFI Indices

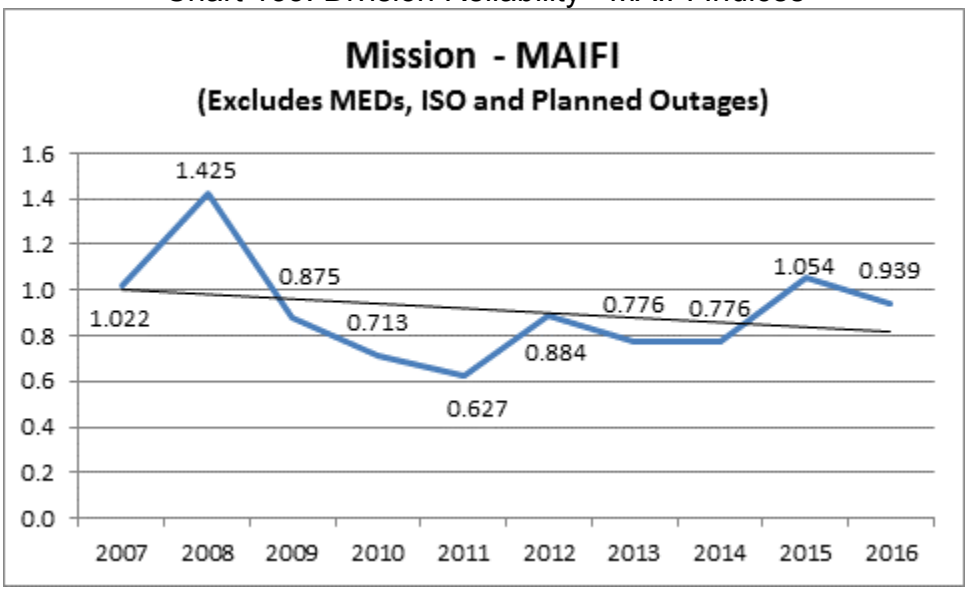


Chart 134: Division Reliability - MAIFI Indices

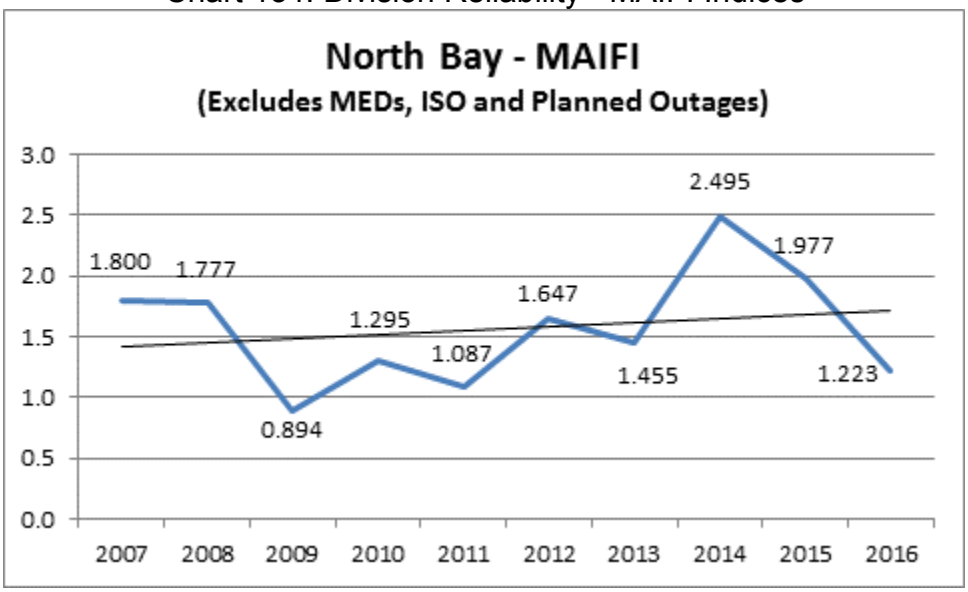


Chart 135: Division Reliability - MAIFI Indices

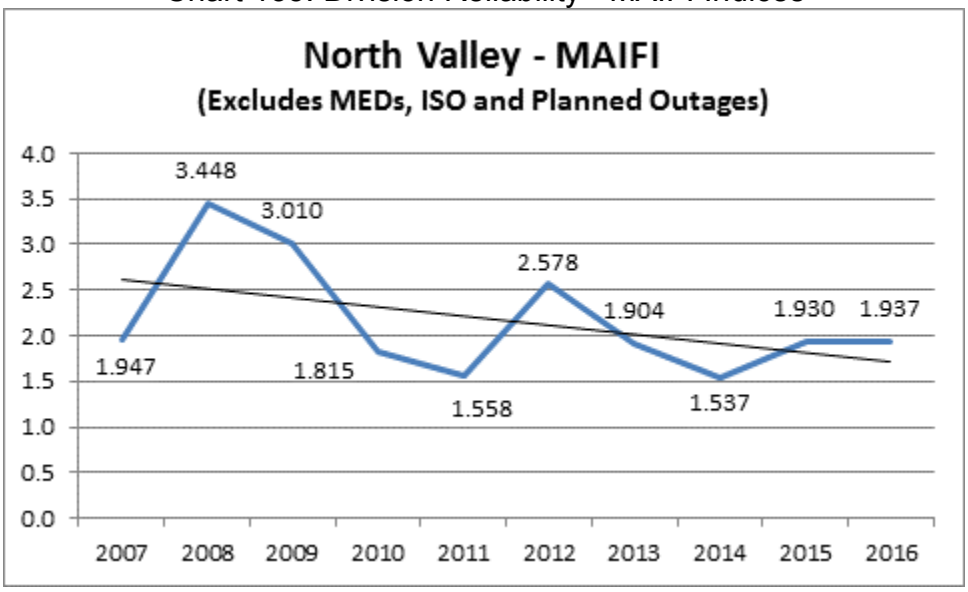


Chart 136: Division Reliability - MAIFI Indices

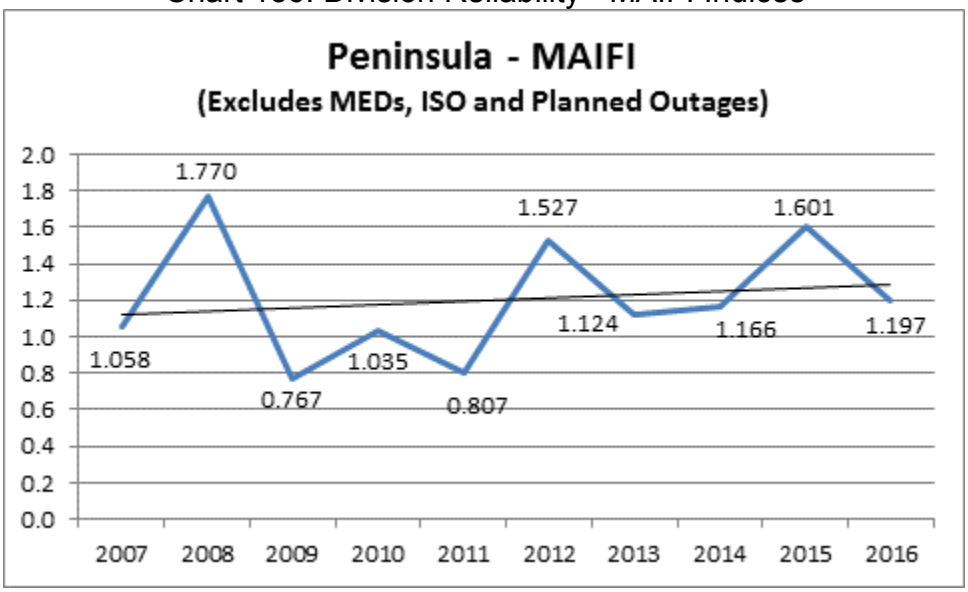


Chart 137: Division Reliability - MAIFI Indices

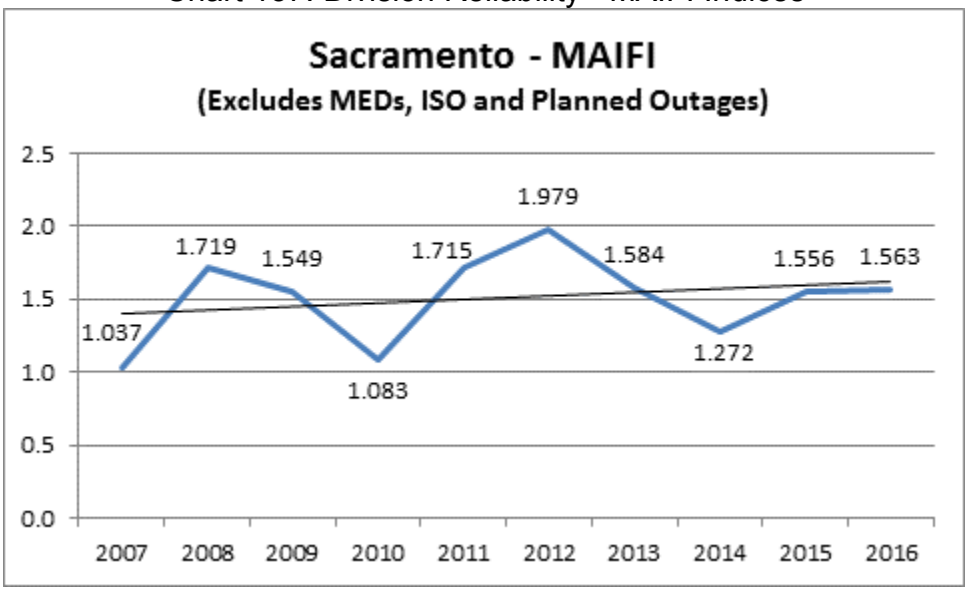


Chart 138: Division Reliability - MAIFI Indices

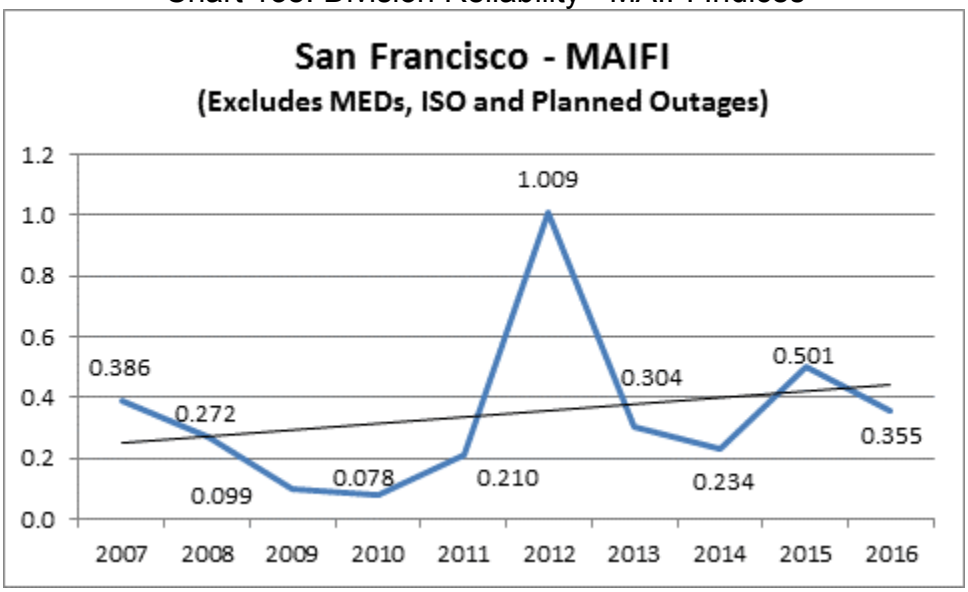


Chart 139: Division Reliability - MAIFI Indices

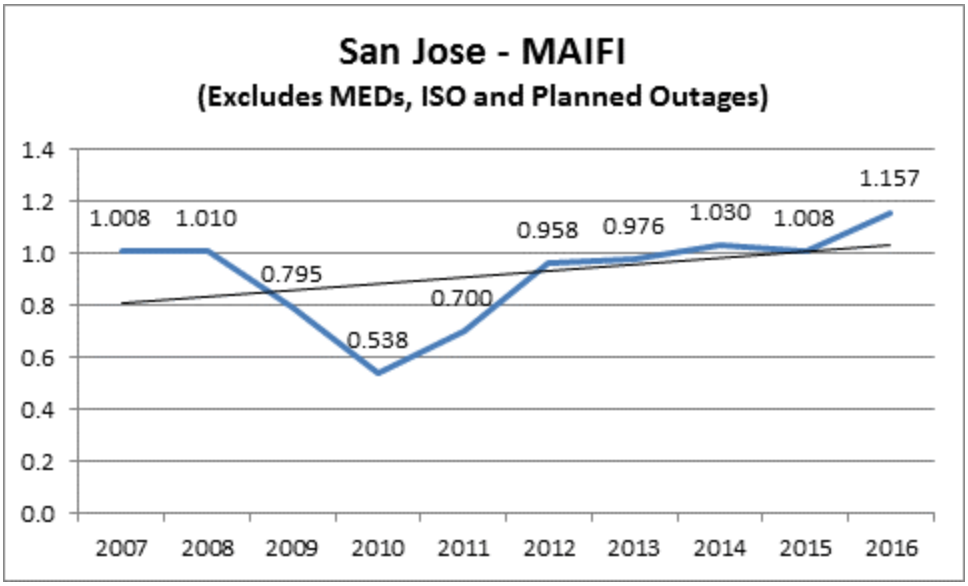


Chart 140: Division Reliability - MAIFI Indices

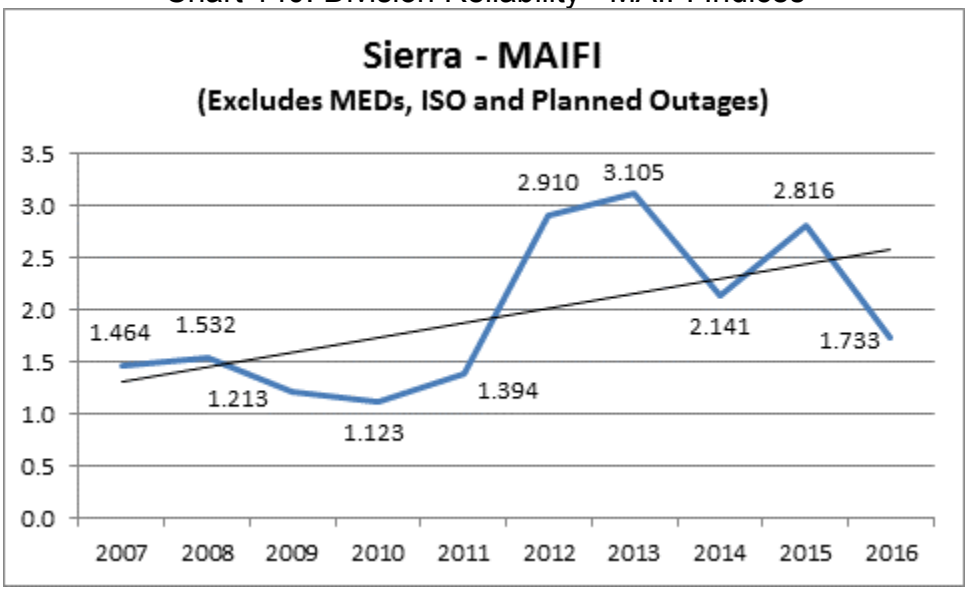


Chart 141: Division Reliability - MAIFI Indices

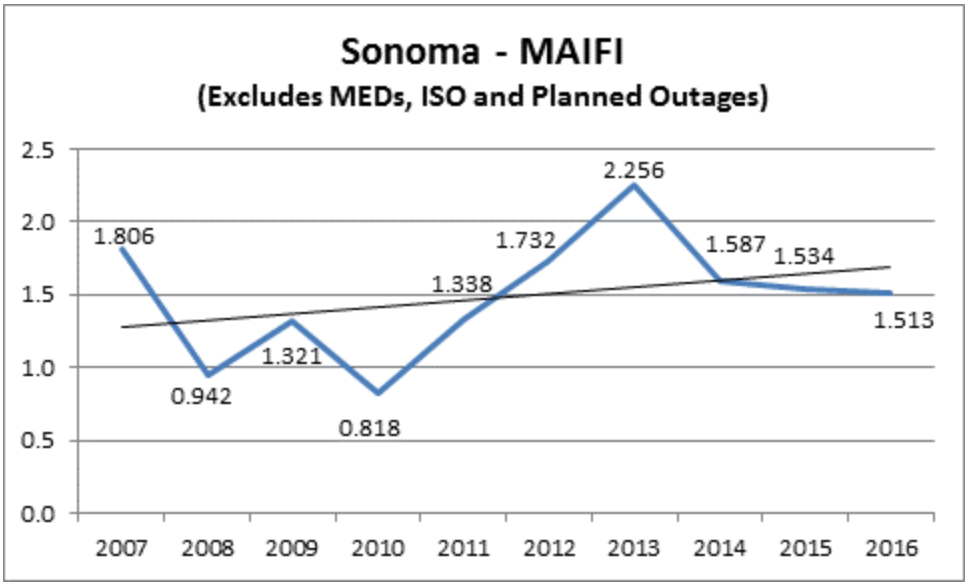


Chart 142: Division Reliability - MAIFI Indices

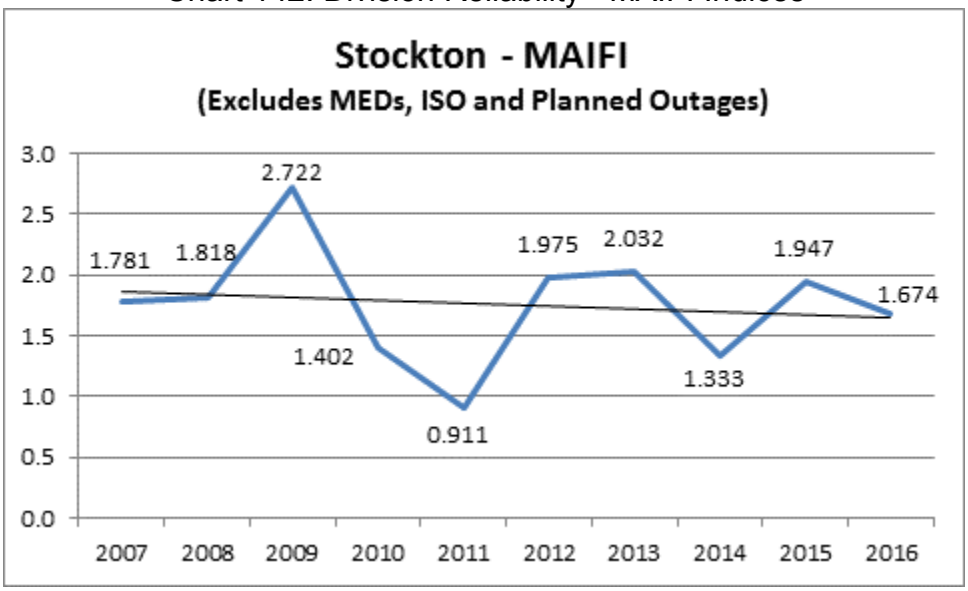
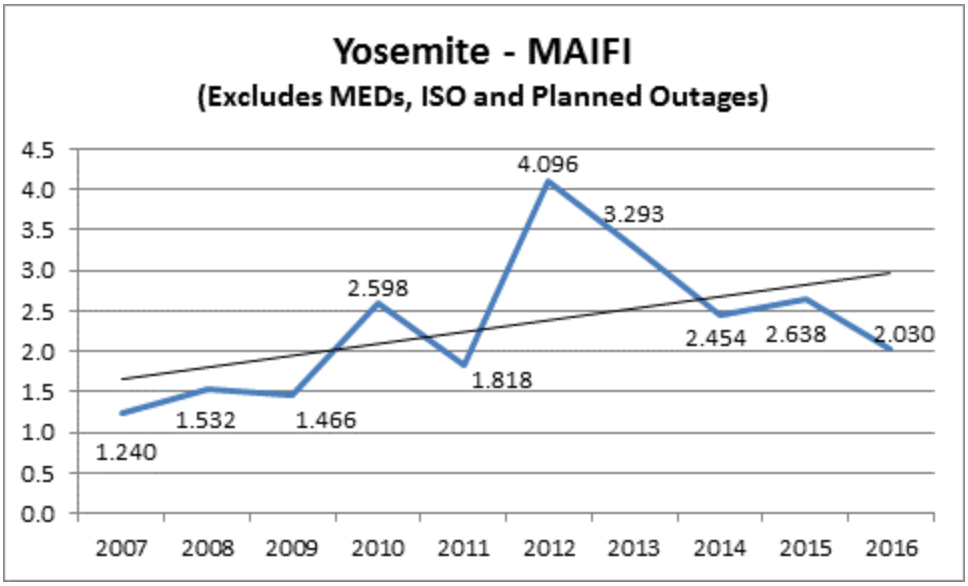


Chart 143: Division Reliability - MAIFI Indices



4. CAIDI Performance Results (MED Excluded)

Chart 144: Division Reliability - CAIDI Indices

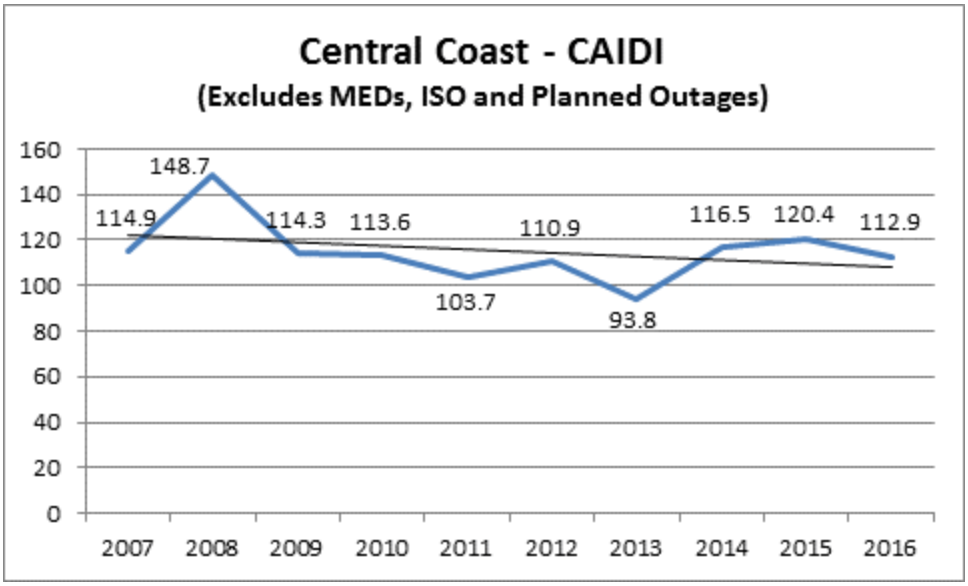


Chart 145: Division Reliability - CAIDI Indices

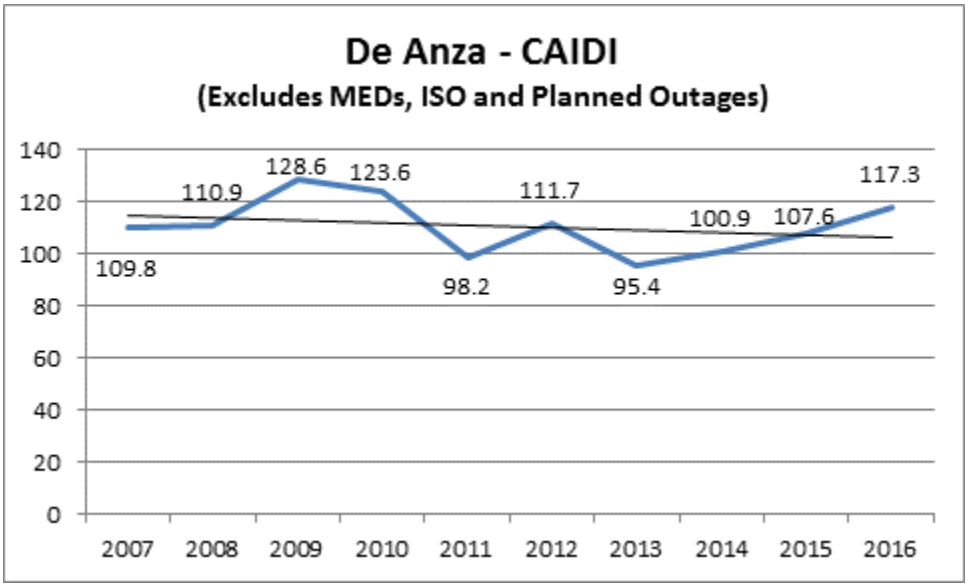


Chart 146: Division Reliability - CAIDI Indices

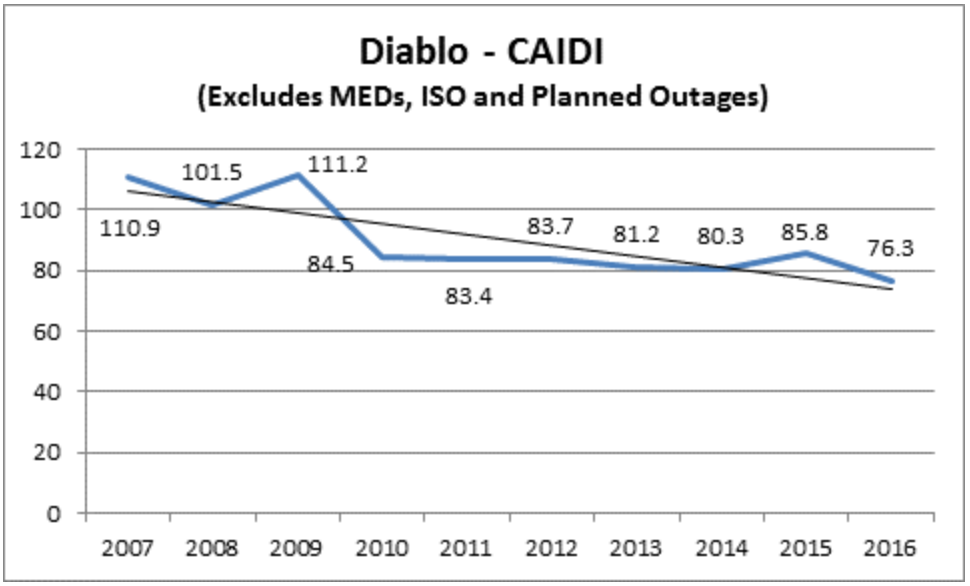


Chart 147: Division Reliability - CAIDI Indices

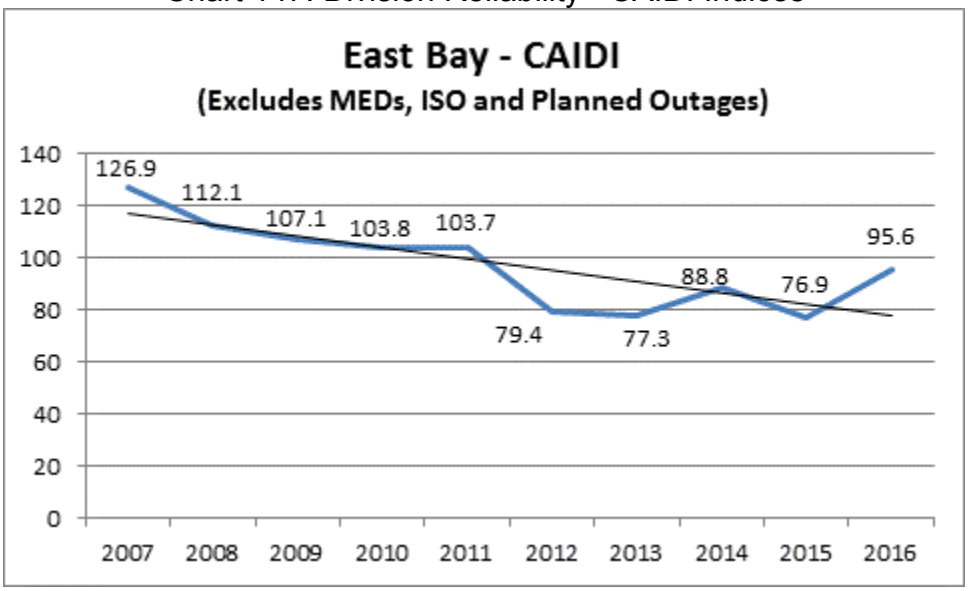


Chart 148: Division Reliability - CAIDI Indices

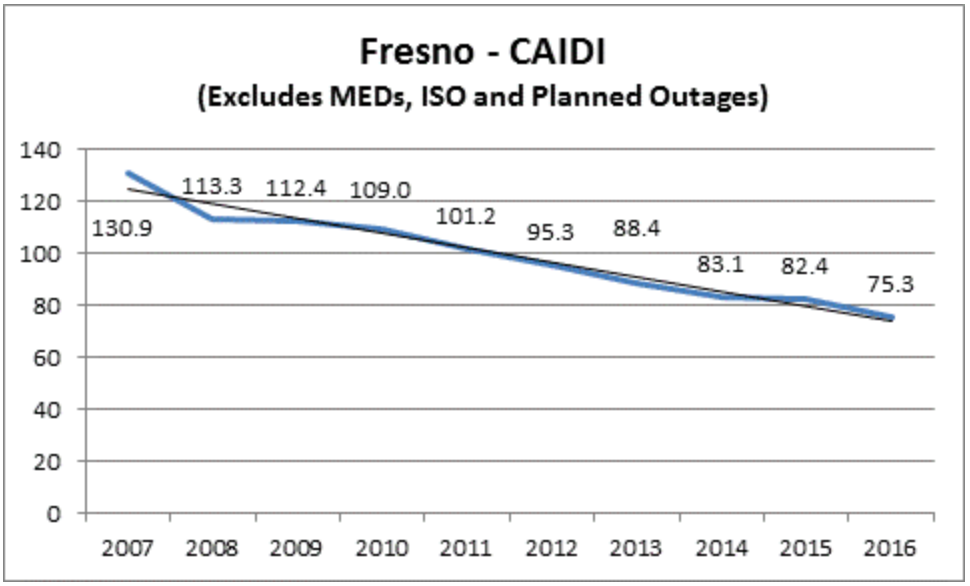


Chart 149: Division Reliability - CAIDI Indices

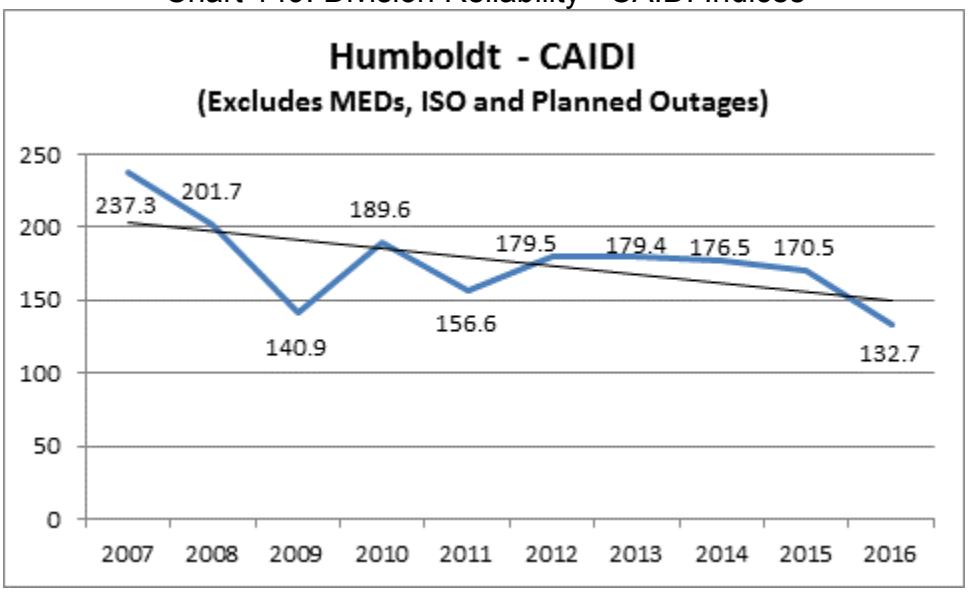


Chart 150: Division Reliability - CAIDI Indices

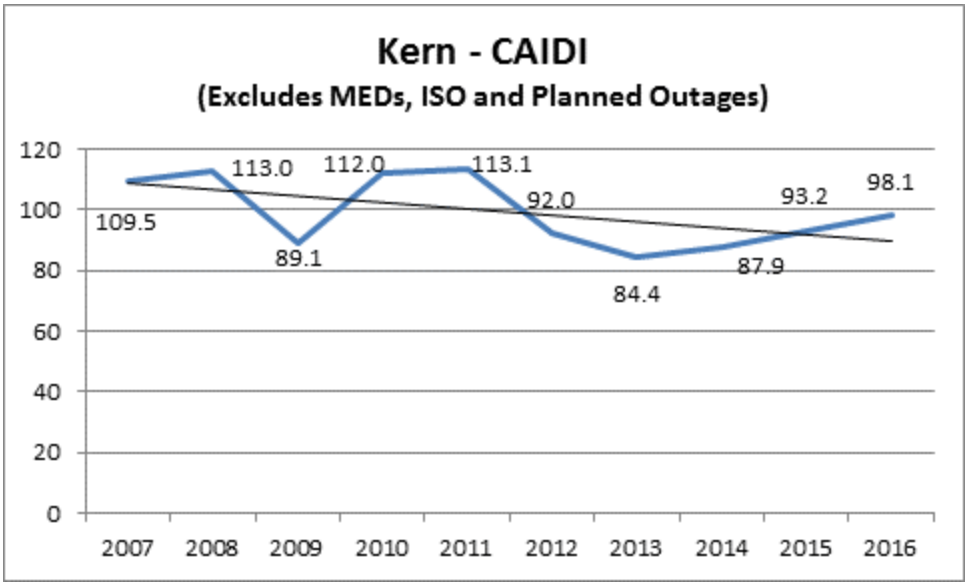


Chart 151: Division Reliability - CAIDI Indices

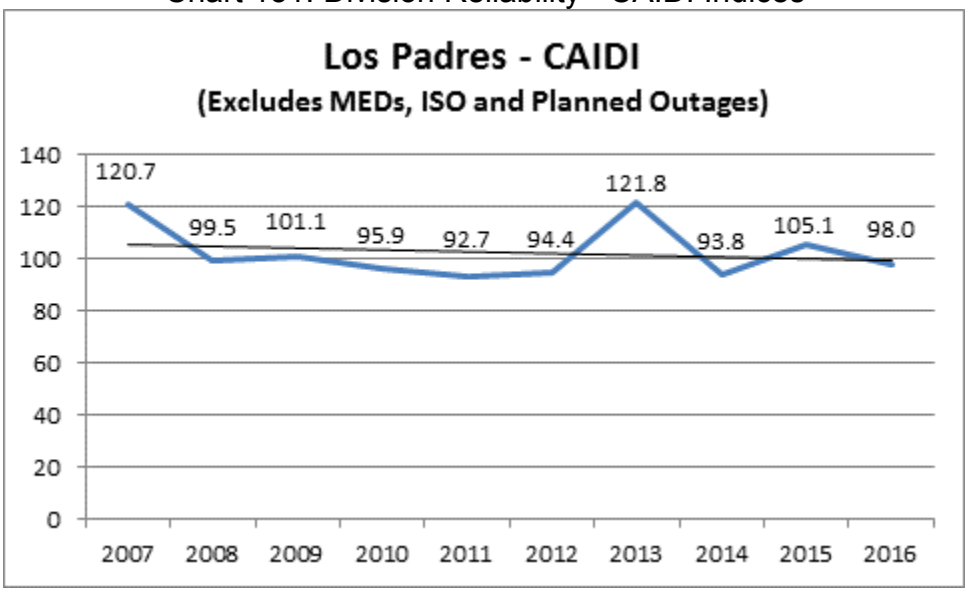


Chart 152: Division Reliability - CAIDI Indices

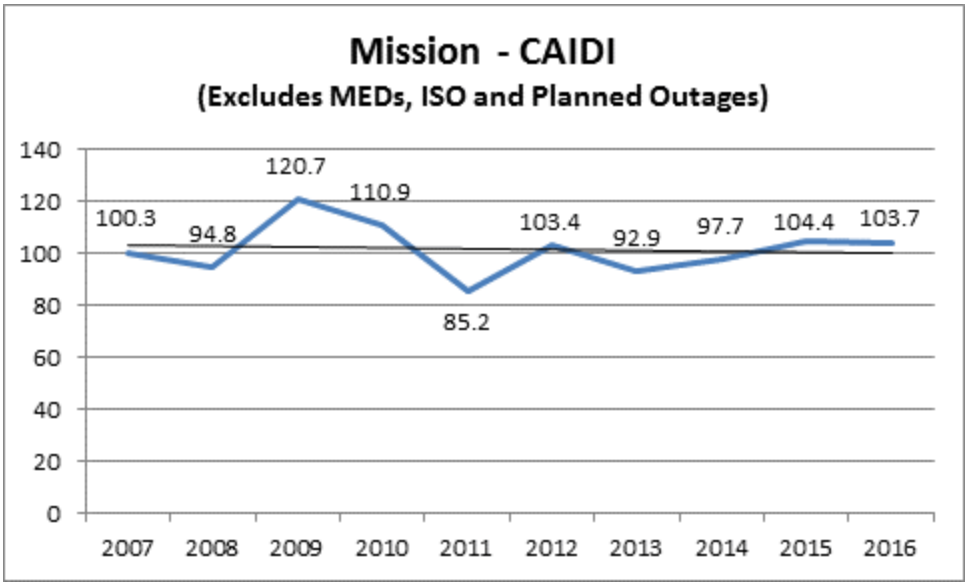


Chart 153: Division Reliability - CAIDI Indices

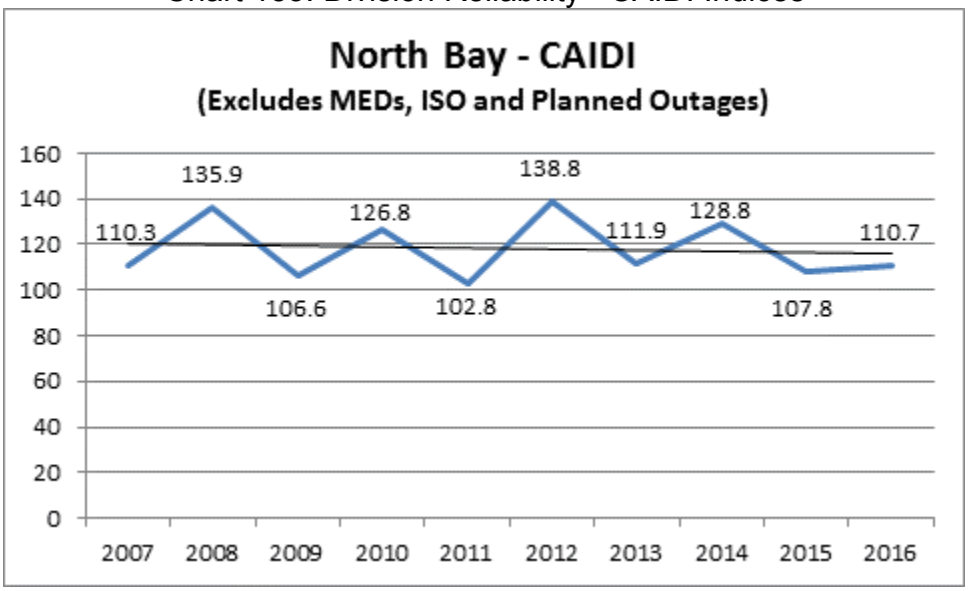


Chart 154: Division Reliability - CAIDI Indices

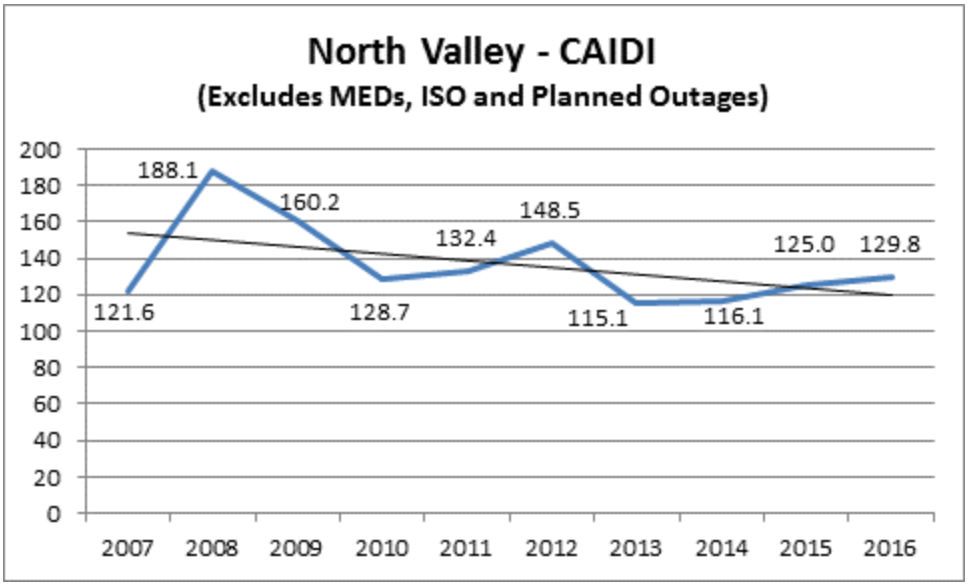


Chart 155: Division Reliability - CAIDI Indices

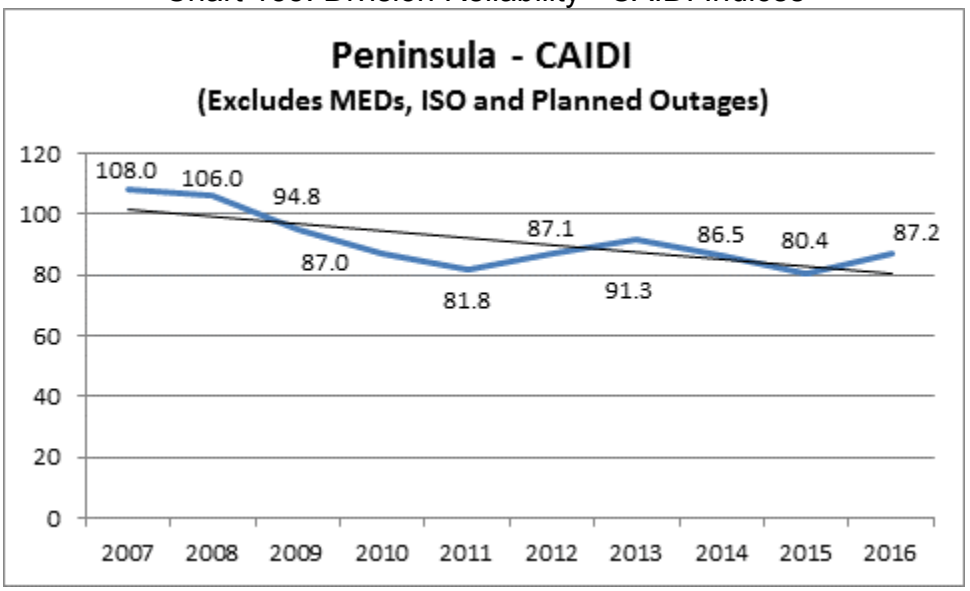


Chart 156: Division Reliability - CAIDI Indices

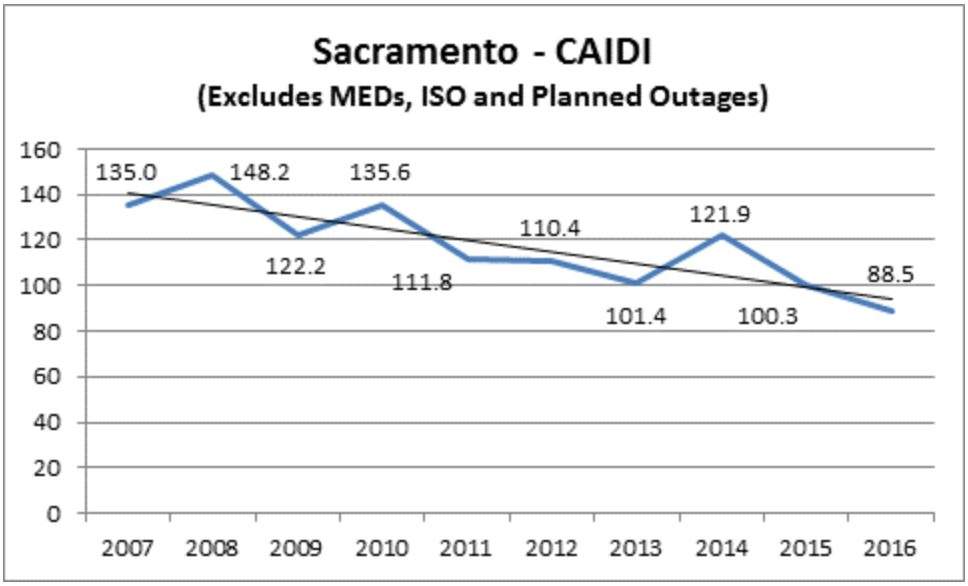


Chart 157: Division Reliability - CAIDI Indices

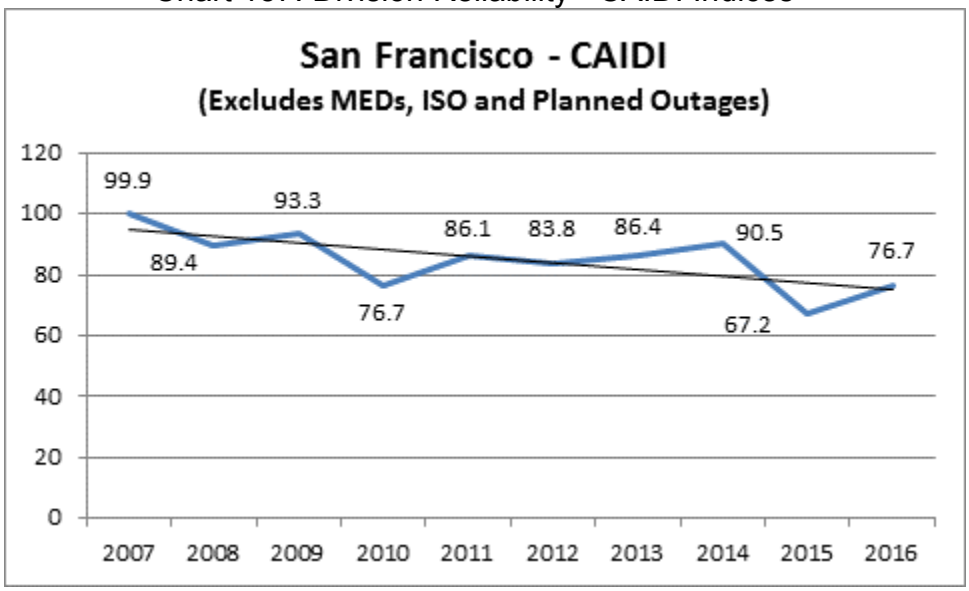


Chart 158: Division Reliability - CAIDI Indices

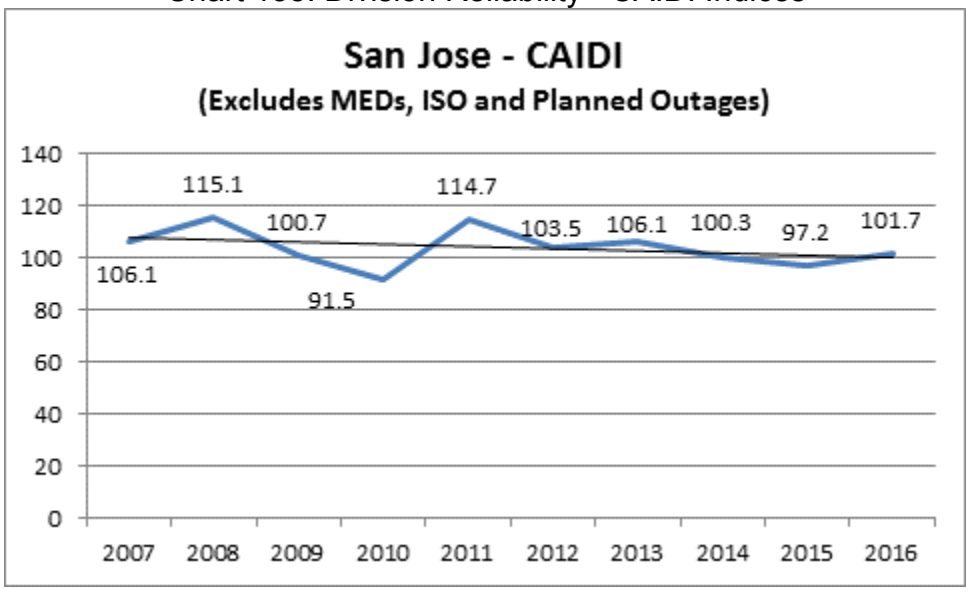


Chart 159: Division Reliability - CAIDI Indices

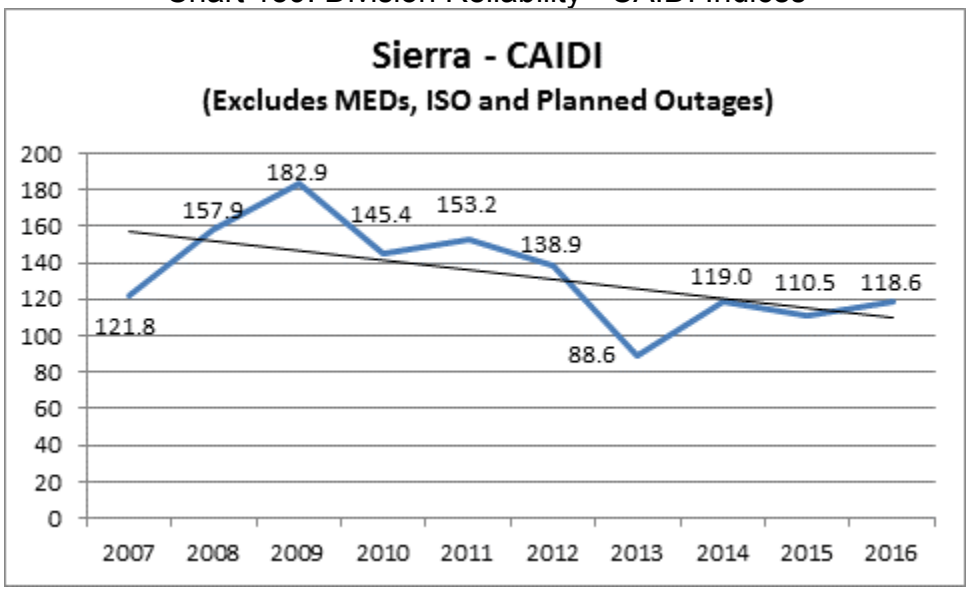


Chart 160: Division Reliability - CAIDI Indices

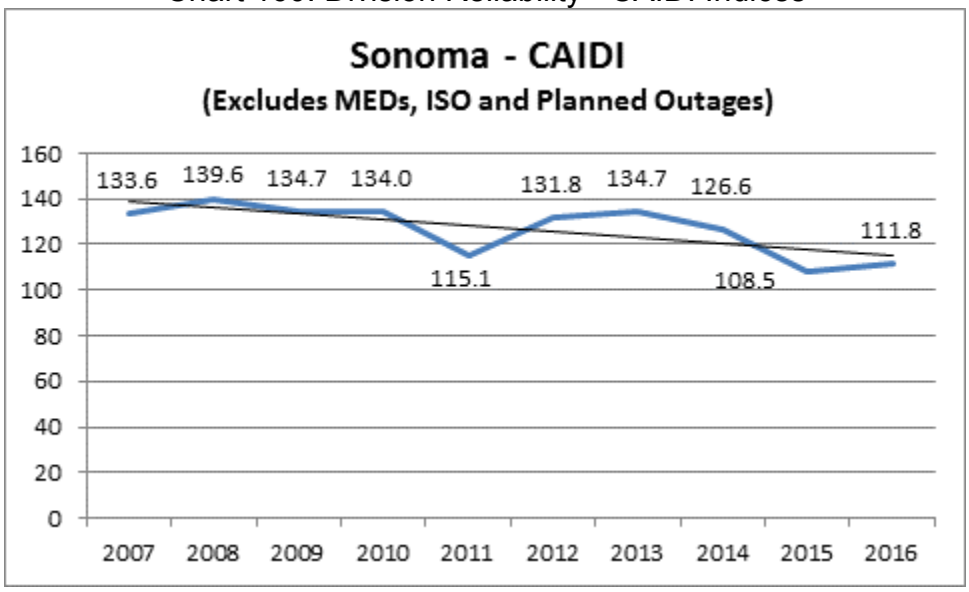


Chart 161: Division Reliability - CAIDI Indices

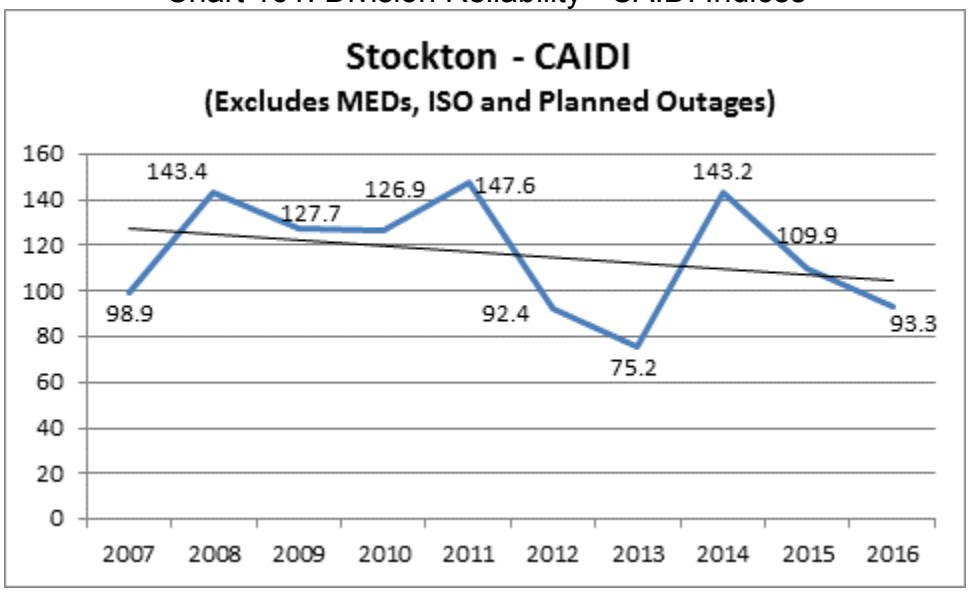
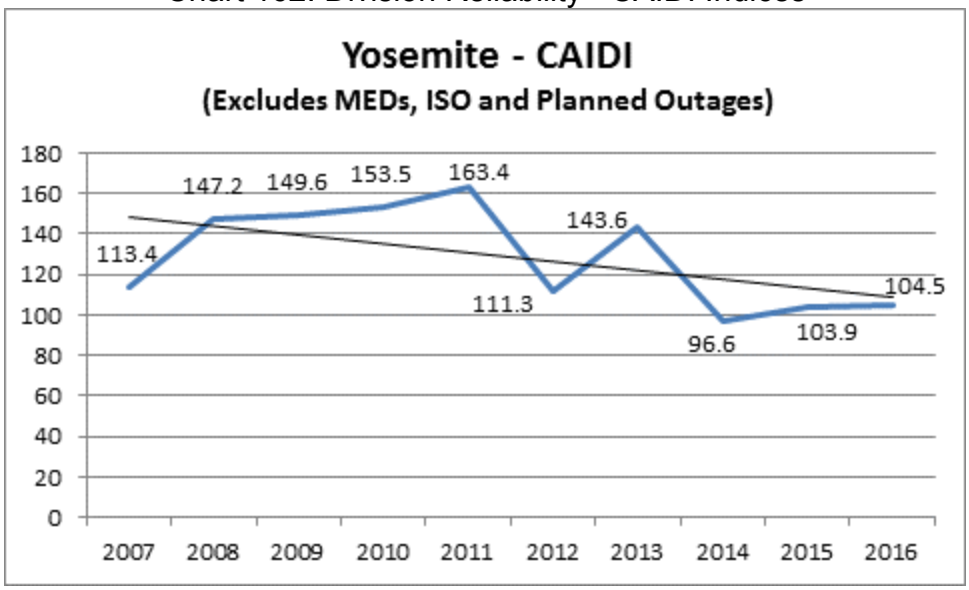


Chart 162: Division Reliability - CAIDI Indices



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 2016 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 2016 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 2016 reliability was better than the prior five-year average.

Table 7 – 2016 Indices excluding Major Events
(Meeting the Reporting Requirement Thresholds)

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

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

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SYSTEM	2011	109.7	0.966	1.172	113.6
SYSTEM	2012	111.2	1.031	1.802	107.8
SYSTEM	2013	96.4	0.964	1.529	100.0
SYSTEM	2014	92.8	0.879	1.393	105.6
SYSTEM	2015	80.7	0.787	1.585	102.5
5-Year Average	11-15 Avg	98.2	0.925	1.496	106.1
SYSTEM	2016	93.7	0.940	1.495	99.8
	%Difference	-4.5%	1.6%	-0.1%	-5.9%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
CENTRAL COAST	2011	155.7	1.501	1.588	103.7
CENTRAL COAST	2012	137.4	1.239	2.190	110.9
CENTRAL COAST	2013	121.0	1.290	1.960	93.8
CENTRAL COAST	2014	127.1	1.090	1.835	116.5
CENTRAL COAST	2015	102.0	0.847	1.844	120.4
5-Year Average	11-15 Avg	128.6	1.193	1.883	107.8
CENTRAL COAST	2016	166.1	1.471	2.480	112.9
	%Difference	29.1%	23.3%	31.7%	4.7%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
DE ANZA	2011	62.0	0.632	1.181	98.2
DE ANZA	2012	74.6	0.668	1.109	111.7
DE ANZA	2013	77.1	0.808	1.151	95.4
DE ANZA	2014	90.0	0.892	1.211	100.9
DE ANZA	2015	51.2	0.476	1.171	107.6
5-Year Average	11-15 Avg	71.0	0.695	1.165	102.1
DE ANZA	2016	87.2	0.743	1.346	117.3
	%Difference	22.8%	6.9%	15.6%	14.9%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
DIABLO	2011	66.8	0.801	1.243	83.4
DIABLO	2012	98.9	1.182	1.367	83.7
DIABLO	2013	80.8	0.995	1.243	81.2
DIABLO	2014	70.0	0.872	1.240	80.3
DIABLO	2015	73.8	0.860	1.666	85.8
5-Year Average	11-15 Avg	78.1	0.942	1.352	82.9
DIABLO	2016	76.5	1.003	1.688	76.3
	%Difference	-2.0%	6.5%	24.9%	-7.9%

Division Reliability Indices
2011-2016
(Excluding MED)

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
EAST BAY	2011	88.1	0.850	0.849	103.7
EAST BAY	2012	100.7	1.268	1.300	79.4
EAST BAY	2013	63.2	0.818	1.171	77.3
EAST BAY	2014	67.3	0.758	1.279	88.8
EAST BAY	2015	45.0	0.586	1.085	76.9
5-Year Average	11-15 Avg	72.9	0.856	1.137	85.1
EAST BAY	2016	101.4	1.060	1.067	95.6
	%Difference	39.1%	23.8%	-6.1%	12.3%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
FRESNO	2011	82.5	0.816	1.689	101.2
FRESNO	2012	99.3	1.042	2.324	95.3
FRESNO	2013	94.2	1.066	2.070	88.4
FRESNO	2014	82.3	0.990	1.702	83.1
FRESNO	2015	70.0	0.849	1.829	82.4
5-Year Average	11-15 Avg	85.7	0.953	1.923	89.9
FRESNO	2016	83.4	1.107	1.951	75.3
	%Difference	-2.7%	16.2%	1.4%	-16.3%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
HUMBOLDT	2011	227.0	1.450	1.885	156.6
HUMBOLDT	2012	278.1	1.549	4.341	179.5
HUMBOLDT	2013	208.3	1.161	2.435	179.4
HUMBOLDT	2014	212.5	1.204	1.822	176.5
HUMBOLDT	2015	276.3	1.621	2.423	170.5
5-Year Average	11-15 Avg	240.4	1.397	2.581	172.1
HUMBOLDT	2016	202.6	1.527	2.006	132.7
	%Difference	-15.7%	9.3%	-22.3%	-22.9%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
KERN	2011	112.1	0.991	1.344	113.1
KERN	2012	89.9	0.977	1.222	92.0
KERN	2013	88.3	1.046	1.114	84.4
KERN	2014	83.7	0.952	1.619	87.9
KERN	2015	80.4	0.862	1.850	93.2
5-Year Average	11-15 Avg	90.9	0.966	1.430	94.1
KERN	2016	89.2	0.909	2.103	98.1
	%Difference	-1.9%	-5.9%	47.1%	4.2%

2011-2016
(Excluding MED)

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
LOS PADRES	2011	89.9	0.969	1.666	92.7
LOS PADRES	2012	97.6	1.034	1.625	94.4
LOS PADRES	2013	89.7	0.736	0.950	121.8
LOS PADRES	2014	95.6	1.019	1.159	93.8
LOS PADRES	2015	72.2	0.687	1.408	105.1
5-Year Average	11-15 Avg	89.0	0.889	1.362	100.1
LOS PADRES	2016	112.3	1.146	1.675	98.0
	%Difference	26.2%	28.9%	23.0%	-2.1%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
MISSION	2011	63.1	0.740	0.627	85.2
MISSION	2012	91.2	0.881	0.884	103.4
MISSION	2013	68.3	0.735	0.776	92.9
MISSION	2014	65.1	0.666	0.776	97.7
MISSION	2015	56.7	0.543	1.054	104.4
5-Year Average	11-15 Avg	68.9	0.713	0.823	96.6
MISSION	2016	72.729	0.7016	0.9392	103.7
	%Difference	5.6%	-1.6%	14.1%	7.4%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
NORTH BAY	2011	111.1	1.081	1.087	102.8
NORTH BAY	2012	109.7	0.791	1.647	138.8
NORTH BAY	2013	101.8	0.909	1.455	111.9
NORTH BAY	2014	114.0	0.885	2.495	128.8
NORTH BAY	2015	97.4	0.904	1.977	107.8
5-Year Average	11-15 Avg	106.8	0.914	1.732	116.9
NORTH BAY	2016	83.9	0.758	1.223	110.7
	%Difference	-21.5%	-17.1%	-29.4%	-5.3%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
NORTH VALLEY	2011	161.2	1.217	1.558	132.4
NORTH VALLEY	2012	223.2	1.503	2.578	148.5
NORTH VALLEY	2013	119.3	1.036	1.904	115.1
NORTH VALLEY	2014	111.1	0.957	1.537	116.1
NORTH VALLEY	2015	132.8	1.062	1.930	125.0
5-Year Average	11-15 Avg	149.5	1.155	1.901	129.4
NORTH VALLEY	2016	146.4	1.128	1.937	129.8
	%Difference	-2.1%	-2.4%	1.9%	0.3%

Division Reliability Indices
2011-2016
(Excluding MED)

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
PENINSULA	2011	83.7	1.023	0.807	81.8
PENINSULA	2012	87.0	0.999	1.527	87.1
PENINSULA	2013	70.7	0.774	1.124	91.3
PENINSULA	2014	77.8	0.900	1.166	86.5
PENINSULA	2015	60.5	0.752	1.601	80.4
5-Year Average	11-15 Avg	75.9	0.890	1.245	85.4
PENINSULA	2016	78.8	0.905	1.197	87.2
	%Difference	3.8%	1.7%	-3.9%	2.2%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SACRAMENTO	2011	108.4	0.970	1.715	111.8
SACRAMENTO	2012	131.3	1.190	1.979	110.4
SACRAMENTO	2013	93.4	0.922	1.584	101.4
SACRAMENTO	2014	96.6	0.793	1.272	121.9
SACRAMENTO	2015	80.1	0.799	1.556	100.3
5-Year Average	11-15 Avg	102.0	0.935	1.621	109.1
SACRAMENTO	2016	83.6	0.944	1.563	88.5
	%Difference	-18.1%	1.0%	-3.6%	-18.9%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SAN FRANCISCO	2011	46.6	0.541	0.210	86.1
SAN FRANCISCO	2012	47.7	0.569	1.009	83.8
SAN FRANCISCO	2013	52.1	0.603	0.304	86.4
SAN FRANCISCO	2014	41.6	0.459	0.234	90.5
SAN FRANCISCO	2015	33.9	0.504	0.501	67.2
5-Year Average	11-15 Avg	44.4	0.535	0.452	82.9
SAN FRANCISCO	2016	39.7	0.518	0.355	76.7
	%Difference	-10.5%	-3.3%	-21.5%	-7.5%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SAN JOSE	2011	101.6	0.885	0.700	114.7
SAN JOSE	2012	80.6	0.779	0.958	103.5
SAN JOSE	2013	97.1	0.915	0.976	106.1
SAN JOSE	2014	80.3	0.800	1.030	100.3
SAN JOSE	2015	65.9	0.678	1.008	97.2
5-Year Average	11-15 Avg	85.1	0.811	0.934	104.9
SAN JOSE	2016	65.5	0.644	1.157	101.7
	%Difference	-23.0%	-20.6%	23.8%	-3.0%

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SIERRA	2011	178.5	1.165	1.394	153.2
SIERRA	2012	183.2	1.319	2.910	138.9
SIERRA	2013	111.5	1.259	3.105	88.6
SIERRA	2014	142.5	1.198	2.141	119.0
SIERRA	2015	123.2	1.115	2.816	110.5
5-Year Average	11-15 Avg	147.8	1.211	2.473	122.0
SIERRA	2016	121.6	1.025	1.733	118.6
	%Difference	-17.7%	-15.4%	-29.9%	-2.8%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SONOMA	2011	103.8	0.901	1.338	115.1
SONOMA	2012	117.9	0.895	1.732	131.8
SONOMA	2013	113.9	0.846	2.256	134.7
SONOMA	2014	113.7	0.899	1.587	126.6
SONOMA	2015	73.0	0.673	1.534	108.5
5-Year Average	11-15 Avg	104.5	0.843	1.689	124.0
SONOMA	2016	88.6	0.792	1.513	111.8
	%Difference	-15.2%	-6.0%	-10.4%	-9.8%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
STOCKTON	2011	180.4	1.222	0.911	147.6
STOCKTON	2012	91.4	0.989	1.975	92.4
STOCKTON	2013	106.9	1.420	2.032	75.2
STOCKTON	2014	108.0	0.754	1.333	143.2
STOCKTON	2015	96.1	0.874	1.947	109.9
5-Year Average	11-15 Avg	116.6	1.052	1.640	110.8
STOCKTON	2016	84.0	0.900	1.674	93.3
	%Difference	-27.9%	-14.4%	2.1%	-15.8%
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
YOSEMITE	2011	207.9	1.273	1.818	163.4
YOSEMITE	2012	140.8	1.264	4.096	111.3
YOSEMITE	2013	188.4	1.312	3.293	143.6
YOSEMITE	2014	117.6	1.218	2.454	96.6
YOSEMITE	2015	102.3	0.984	2.638	103.9
5-Year Average	11-15 Avg	151.4	1.210	2.860	125.1
YOSEMITE	2016	123.2	1.178	2.030	104.5
	%Difference	-18.6%	-2.6%	-29.0%	-16.5%

i. System and Division Performance Assessment

1. Central Coast Division Performance Assessment

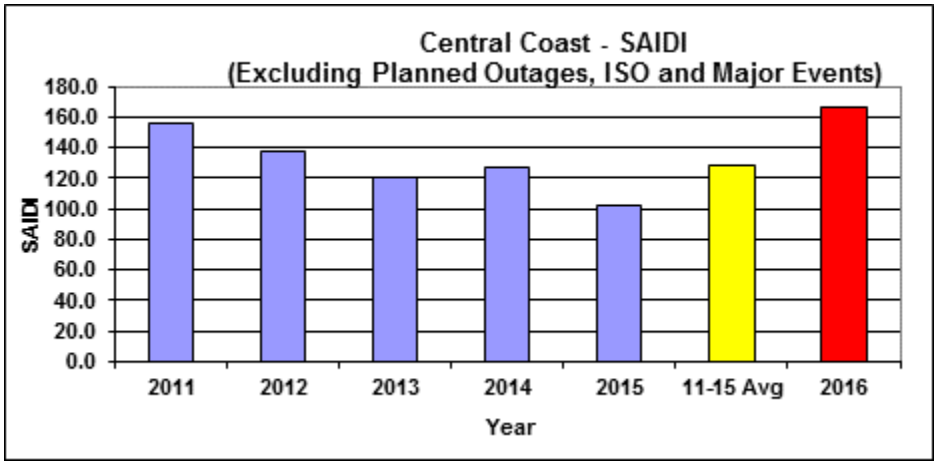
Table 9: Central Coast Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
CENTRAL COAST	2011	155.7	1.501	1.588	103.7
CENTRAL COAST	2012	137.4	1.239	2.190	110.9
CENTRAL COAST	2013	121.0	1.290	1.960	93.8
CENTRAL COAST	2014	127.1	1.090	1.835	116.5
CENTRAL COAST	2015	102.0	0.847	1.844	120.4
5-Year Average	11-15 Avg	128.6	1.193	1.883	107.8
CENTRAL COAST	2016	166.1	1.471	2.480	112.9
	%Difference	29.1%	23.3%	31.7%	4.7%

Central Coast SAIDI Performance

Central Coast's SAIDI performance of 166.1 was 37.5 customer-minutes (or 29.1%) higher than the previous 5-year average of 128.6 as shown in the table above and illustrated in the figure below.

Chart 163 – Central Coast SAIDI Performance



The higher than average 2016 Central Coast SAIDI was attributed to the following:

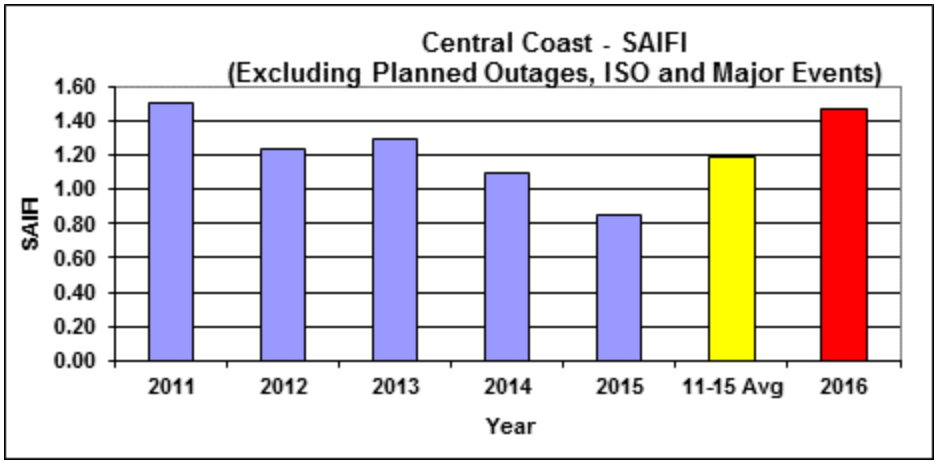
1. The January 5th and 6th storm brought heavy rain throughout the system and contributed 3.5 customer-minutes to the division's SAIDI.
2. The January 31, 2016 strong storm event brought heavy rain and wind across the southern portion of the territory and contributed 7.7 customer-minutes to the division's SAIDI.
3. March 6th and 7th saw a strong winter storm move across northern and central portions of the territory that contributed 7.4 customer-minutes to the division's SAIDI.
4. The March 11th storm event brought heavy rain wind throughout the area and contributed 5.8 customer-minutes to the division's SAIDI.

5. The strong weather system of April 24th and 25th contributed 3.1 customer-minutes to the division's SAIDI.
6. The storm on December 15, 2016 brought heavy rain and rain to the area and contributed 4.5 customer-minutes to the division's SAIDI.

Central Coast SAIFI Performance

Central Coast's SAIFI performance of 1.471 was 0.278 customer-interruptions (or 23.3%) higher than the previous 5-year average of 1.193 as shown in the table above and illustrated in the figure below.

Chart 164 – Central Coast SAIFI Performance



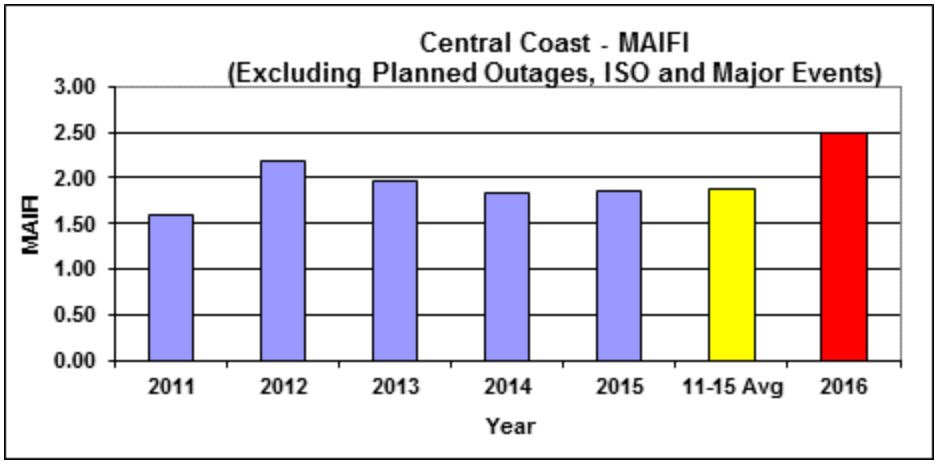
The higher than average 2016 Central Coast SAIFI was attributed to the following:

1. The January 5th and 6th storm brought heavy rain throughout the system and contributed 0.032 customer-interruptions to the division's SAIFI.
2. The January 31, 2016 strong storm event brought heavy rain and wind across the southern portion of the territory and contributed 0.032 customer-interruptions to the division's SAIFI.
3. March 6th and 7th saw a strong winter storm move across northern and central portions of the territory that contributed 0.037 customer-interruptions to the division's SAIFI.
4. The March 11th storm event brought heavy rain wind throughout the area and contributed 0.048 customer-interruptions to the division's SAIFI.
5. The strong weather system of April 24th and 25th contributed 0.033 customer-interruptions to the division's SAIFI.
6. The storm on December 15, 2016 brought heavy rain and rain to the area and contributed 0.030 customer-interruptions to the division's SAIFI.

Central Coast MAIFI Performance

Central Coast's MAIFI performance of 2.480 was 0.597 customer-interruptions (or 31.7%) higher than the previous 5-year average of 1.883 as shown in the table above and illustrated in the figure below.

Chart 165 – Central Coast MAIFI Performance



The higher than average 2016 Central Coast MAIFI was attributed to the following:

1. The January 5th and 6th storm brought heavy rain throughout the system and contributed 0.038 customer-interruptions to the division's MAIFI.
2. The January 31, 2016 strong storm event brought heavy rain and wind across the southern portion of the territory and contributed 0.012 customer-interruptions to the division's MAIFI.
3. March 6th and 7th saw a strong winter storm move across northern and central portions of the territory that contributed 0.313 customer-interruptions to the division's MAIFI.
4. The March 11th storm event brought heavy rain wind throughout the area and contributed 0.031 customer-interruptions to the division's MAIFI.
5. The strong weather system of April 24th and 25th contributed 0.065 to the division's MAIFI.
6. The storm on December 15, 2016 brought heavy rain and rain to the area and contributed 0.025 customer-interruptions to the division's MAIFI.

2. De Anza Division Performance Assessment

De Anza Division Performance

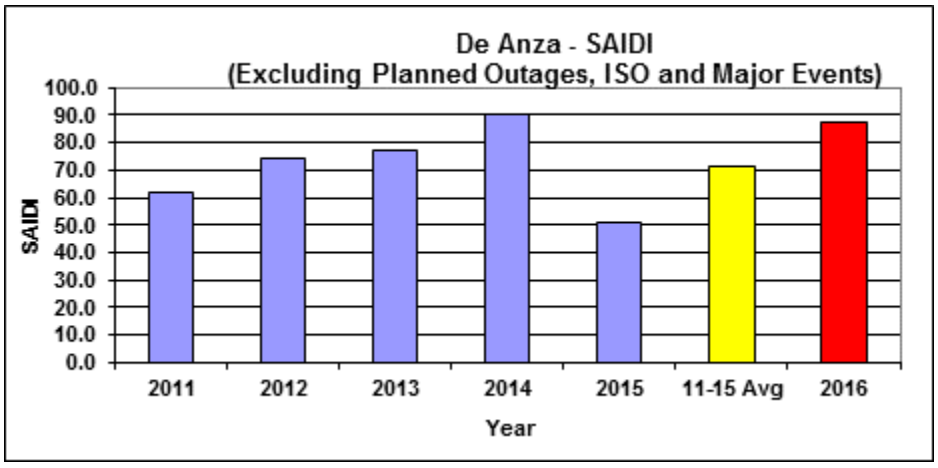
Table 10: Central Coast Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
DE ANZA	2011	62.0	0.632	1.181	98.2
DE ANZA	2012	74.6	0.668	1.109	111.7
DE ANZA	2013	77.1	0.808	1.151	95.4
DE ANZA	2014	90.0	0.892	1.211	100.9
DE ANZA	2015	51.2	0.476	1.171	107.6
5-Year Average	11-15 Avg	71.0	0.695	1.165	102.1
DE ANZA	2016	87.2	0.743	1.346	117.3
	%Difference	22.8%	6.9%	15.6%	14.9%

De Anza Division SAIDI Performance

De Anza Division's 2016 SAIDI performance of 87.2 minutes was 16.2 customer-minutes (or 22.8%) higher than the previous 5-year average of 71.0 as shown in the table above and illustrated in the figure below.

Chart 166 – De Anza Division SAIDI Performance



The higher than average 2016 De Anza SAIDI was attributed to the following:

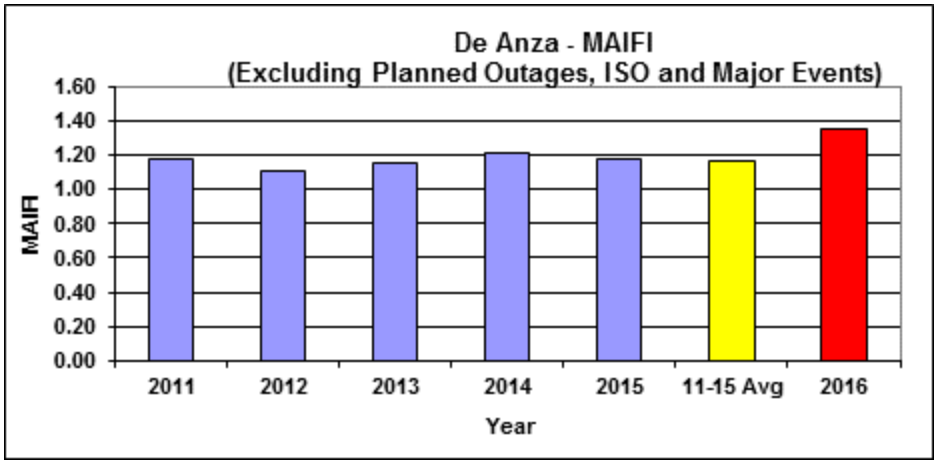
1. On January 18th the division experienced the following three outages that contributed 3.4 customer-minutes to the division's SAIDI:
    a. A metallic balloon on the Hicks 1113 circuit.
    b. A tree fell through the Camp Evers 2106 circuit.
    c. The Saratoga 1104 circuit experienced an underground slice failure.
2. On March 16th a failed underground elbow on the Stelling 1109 circuit contributed 3.8 customer-minutes to the division's SAIDI.
3. On May 30th, a failed overhead jumper on the Mountain View 1108 circuit contributed 4.7 customer-minutes to the division's SAIDI.

De Anza Division MAIFI Performance

De Anza Division's 2016 MAIFI performance of 1.346 was 0.181 customer-interruptions (or 15.6%) higher than the previous 5-year average of 1.165 as

shown in the table above and illustrated in the figure below.

Chart 167 – De Anza Division MAIFI Performance



The higher than average 2016 De Anza MAIFI was attributed to the following:

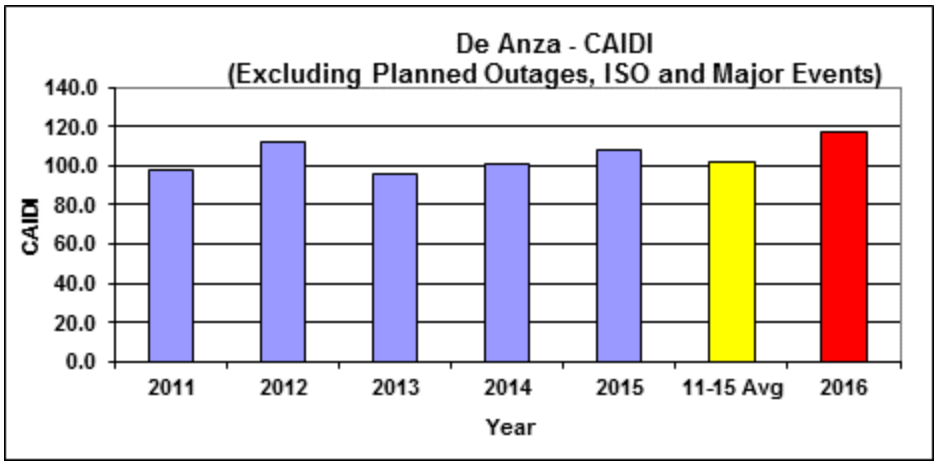
1. April 5th: Two momentary outages on the Mountain View 1105 circuit and one on the Los Gatos 1107 circuit contributed 0.062 customer-interruptions to the divisions MAIFI. The cause of the outages is unknown.
2. November 11th: Two momentary outages on the El Patio 1107 circuit and one on the Lawrence 1103 circuit contributed 0.055 customer-interruptions to the division's MAIFI.

   The cause of these outages is unknown.

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

De Anza Division's 2016 CAIDI performance of 117.3 minutes was 14.8 minutes (or 14.9%) higher than the previous 5-year average of 102.1 as shown in the table above and illustrated in the figure below.

Chart 168 – De Anza Division CAIDI Performance



The higher than average 2016 De Anza CAIDI was attributed to the following:

1. On January 18th the division experienced the following three outages:
    a. A metallic balloon on the Hicks 1113 circuit.
    b. A tree fell through the Camp Evers 2106 circuit.
    c. The Saratoga 1104 circuit experienced an underground slice failure.
2. On March 16th a failed underground elbow on the Stelling 1109 circuit.
3. On May 30th, a failed overhead jumper on the Mountain View 1108 circuit.

Without these outage events, De Anza division's overall CAIDI performance would have been 108.0 minutes.

3. Diablo Division Performance Assessment

Diablo Division Performance

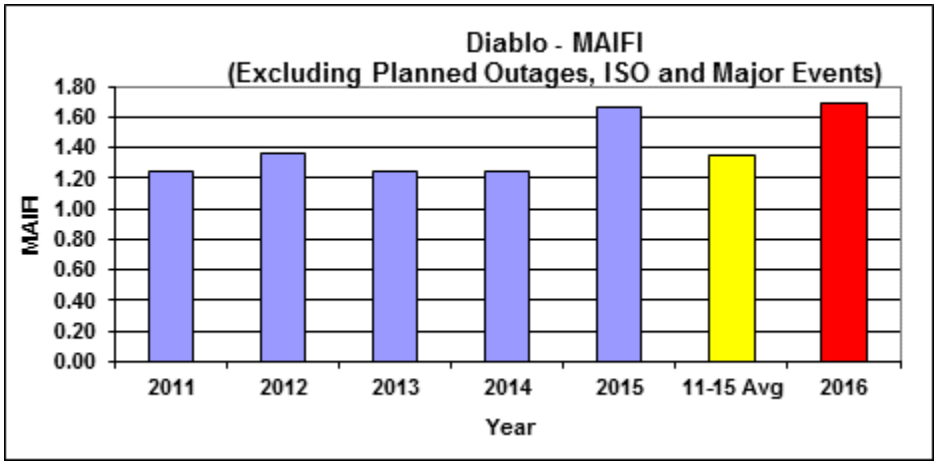
Table 11: Diablo Division MAIFI Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
DIABLO	2011	66.8	0.801	1.243	83.4
DIABLO	2012	98.9	1.182	1.367	83.7
DIABLO	2013	80.8	0.995	1.243	81.2
DIABLO	2014	70.0	0.872	1.240	80.3
DIABLO	2015	73.8	0.860	1.666	85.8
5-Year Average	11-15 Avg	78.1	0.942	1.352	82.9
DIABLO	2016	76.5	1.003	1.688	76.3
	%Difference	-2.0%	6.5%	24.9%	-7.9%

Diablo Division MAIFI Performance

Diablo Division's 2016 MAIFI performance of 1.688 was 0.336 (or 24.9%) customer-interruptions higher than the previous 5-year average of 1.352 as shown in the table above and illustrated in the figure below.

Chart 169 – Diablo Division MAIFI Performance



The higher than average 2016 Diablo Division MAIFI was attributed to the following:

1. On January 9, 2016 a momentary outage on the Contra Coast – Moraga #1 transmission line of unknown cause contributed 0.068 customer-interruptions to Diablo's MAIFI.
2. On January 24th, there two momentary outages on the Brentwood 2112 circuit. The first momentary outage was of unknown cause, while the second momentary was due to a car pole accident. These contributed 0.043 customer-interruptions to Diablo's MAIFI.
3. On July 2, 2016, the Tassajara 2103circuit experienced a momentary outage caused by a bird. On the same day, Meadow Lane 2108 experienced two momentary outages. One was of unknown cause and the other due to a third-

party dig-in. These contributed 0.025 customer-interruptions to Diablo's MAIFI.

4. On July 14, 2016 two feeders (Tidewater 210 and Clayton 2110) experienced momentary outages of unknown cause, contributing 0.031 customer-interruptions to Diablo's MAIFI.

4. East Bay Division Performance Assessment

East Bay Division Performance

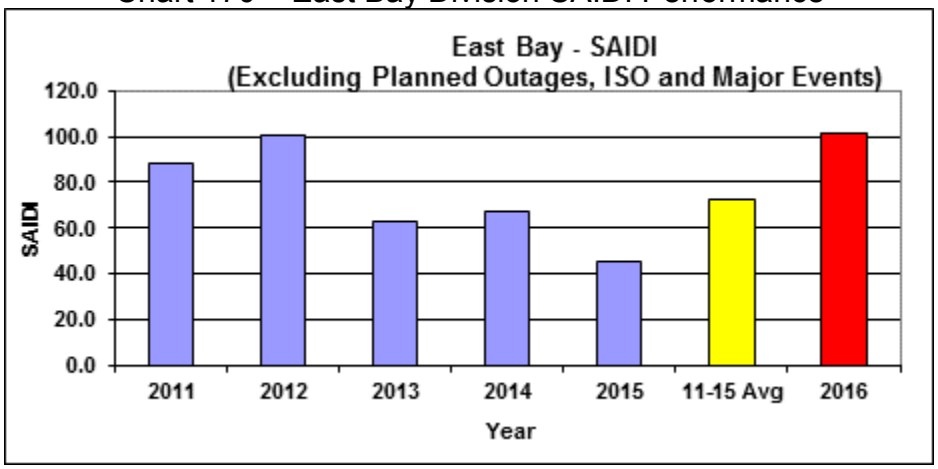
Table 12: East Bay Division Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
EAST BAY	2011	88.1	0.850	0.849	103.7
EAST BAY	2012	100.7	1.268	1.300	79.4
EAST BAY	2013	63.2	0.818	1.171	77.3
EAST BAY	2014	67.3	0.758	1.279	88.8
EAST BAY	2015	45.0	0.586	1.085	76.9
5-Year Average	11-15 Avg	72.9	0.856	1.137	85.1
EAST BAY	2016	101.4	1.060	1.067	95.6
	%Difference	39.1%	23.8%	-6.1%	12.3%

East Bay Division SAIDI Performance

East Bay Division's 2016 SAIDI performance of 101.4 was 28.5 customer-minutes (or 39.1%) higher than the previous 5-year average of 72.9 as shown in the table above and illustrated in the figure below.

Chart 170 – East Bay Division SAIDI Performance



The higher than average 2016 East Bay Division SAIDI was attributed to the following:

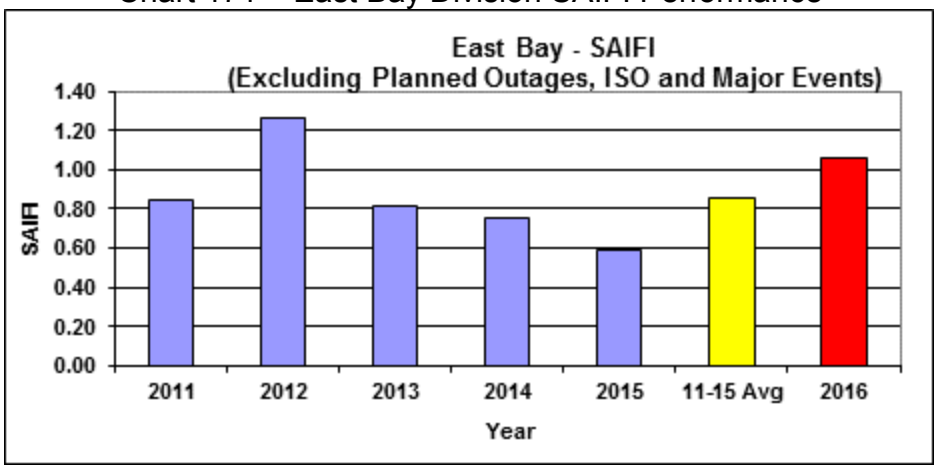
1. On April 25th a storm system brought heavy rain into the area which contributed 18.4 customer-minutes to East Bay division's SAIDI.
2. On December 10th, a very wet weather system across the central area which contributed 17.5 customer-minutes to East Bay division's SAIDI.

East Bay Division SAIFI Performance

East Bay Division's 2016 SAIFI performance of 1.060 was 0.204 customer-

interruptions (or 23.8%) higher than the previous 5-year average of 0.856 as shown in the table above and illustrated in the figure below.

Chart 171 – East Bay Division SAIFI Performance



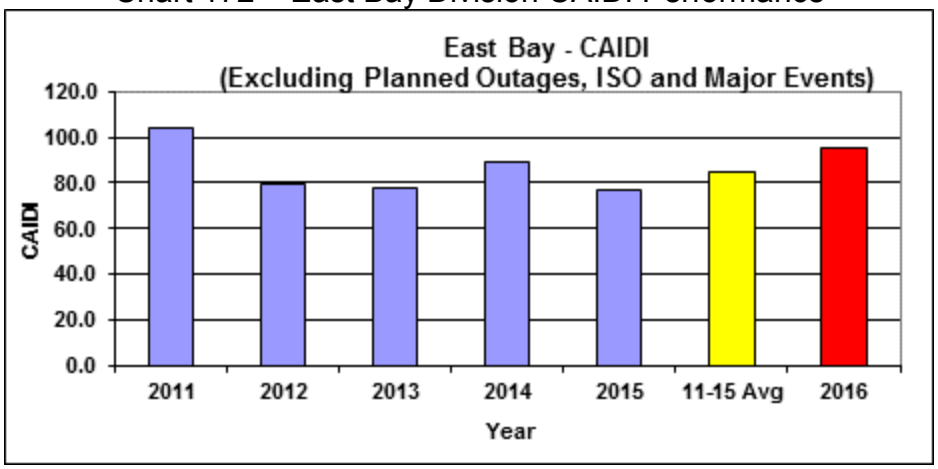
The higher than average 2016 East Bay Division SAIFI was attributed to the following:

1. On April 25th a storm system brought heavy rain into the area which contributed 0.112 customer-interruptions to East Bay division's SAIFI.
2. On December 10th, a very wet weather system across the central area which contributed 0.121 customer-interruptions to East Bay division's SAIFI.

East Bay Division CAIDI Performance

East Bay Division's 2016 CAIDI performance of 95.6 was 10.5 minutes (or 12.3%) higher than the previous 5-year average of 85.1 as shown in the table above and illustrated in the figure below.

Chart 172 – East Bay Division CAIDI Performance



The higher than average 2016 East Bay Division CAIDI was attributed to the following:

1. The April 25th and December 10th storm systems brought heavy rain into the area. Without these two storm events, East Bay division's CAIDI performance would have been 79.2 minutes.

5. Mission Division Performance Assessment

Mission Division MAIFI Performance

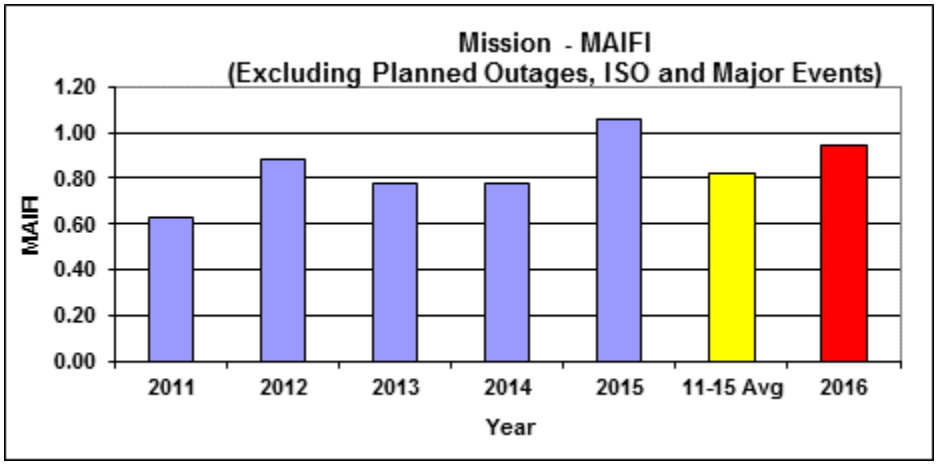
Table 13: Mission Division MAIFI Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
MISSION	2011	63.1	0.740	0.627	85.2
MISSION	2012	91.2	0.881	0.884	103.4
MISSION	2013	68.3	0.735	0.776	92.9
MISSION	2014	65.1	0.666	0.776	97.7
MISSION	2015	56.7	0.543	1.054	104.4
5-Year Average	11-15 Avg	68.9	0.713	0.823	96.6
MISSION	2016	72.7	0.702	0.939	103.7
	%Difference	5.6%	-1.6%	14.1%	7.4%

Mission Division MAIFI Performance

Mission Division's 2016 MAIFI performance of 0.939 was 0.116 customer-interruptions (or 14.1%) higher than the previous 5-year average of 0.823 as shown in the table above and illustrated in the figure below.

Chart 173 – Mission Division MAIFI Performance



The higher than average 2016 Mission Division MAIFI was attributed to the following:

1. On August 13, 2016 a metallic balloon was the cause of the momentary outages to the Mt. Eden 1112 circuit. On the same day, two other momentary outages of unknown cause impacted portions of the Mt. Eden 1112 and Las Positas 2108 circuits. These outages contributed 0.039 customer-interruptions to Mission division's MAIFI.
2. On August 24, 2016, a momentary outage of unknown cause impacted the San Leandro 1107 circuit. This outage contributed 0.016 customer-interruptions to

Mission's MAIFI.

6. San Jose Division Performance Assessment

San Jose Division MAIFI Performance

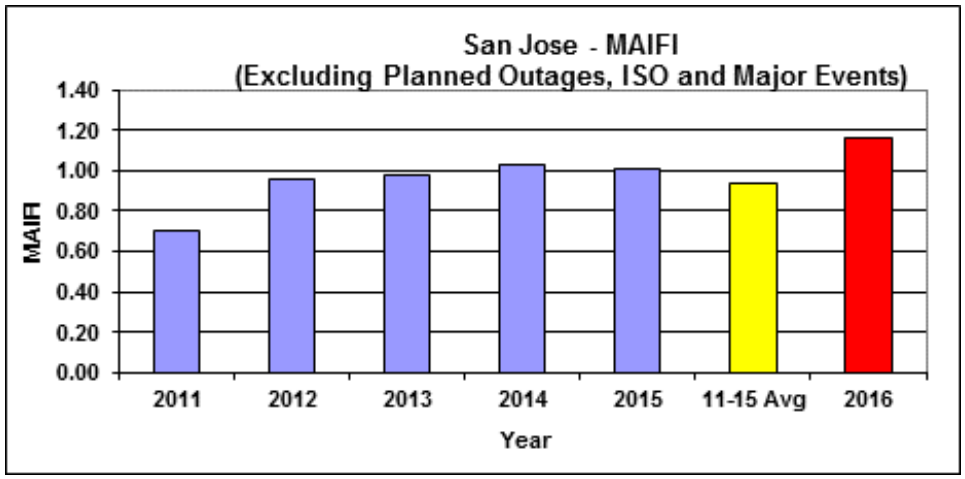
Table 14: San Jose Division MAIFI Performance

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SAN JOSE	2011	101.6	0.885	0.700	114.7
SAN JOSE	2012	80.6	0.779	0.958	103.5
SAN JOSE	2013	97.1	0.915	0.976	106.1
SAN JOSE	2014	80.3	0.800	1.030	100.3
SAN JOSE	2015	65.9	0.678	1.008	97.2
5-Year Average	11-15 Avg	85.1	0.811	0.934	104.9
SAN JOSE	2016	65.5	0.644	1.157	101.7
	%Difference	-23.0%	-20.6%	23.8%	-3.0%

San Jose Division MAIFI Performance

San Jose Division's 2016 MAIFI performance of 1.157 was 0.223 customer-interruptions (or 23.8%) higher than the previous 5-year average of 0.934 as shown in the table above and illustrated in the figure below.

Chart 174 – San Jose Division MAIFI Performance



The higher than average 2016 San Jose Division MAIFI was attributed to the following:

1. On June 12, 2016 a momentary outage of unknown cause on the transmission line impacted Stone substation contributing 0.046 customer-interruptions to San Jose Division's MAIFI. On the same day, another outage of unknown cause resulted in a momentary outage on the San Jose B 1110 circuit. This momentary outage contributed 0.011 customer-interruptions to the division's MAIFI.

2. On July 7, 2016 a momentary outage from a car-pole incident resulted in a momentary outage on the Hicks 1110 circuit. On the same day, the Evergreen 2103 and McKee 1106 circuits experienced momentary outages of unknown causes. These momentary outages contributed 0.041 customer-interruptions to San Jose's MAIFI.
3. On September 27, 2016 a pipe thrown by a 3rd party onto the Evergreen Substation bus resulted in a momentary outage at the substation. This momentary outage contributed 0.037 customer-interruptions to San Jose division's MAIFI.
4. On November 10th, 2015 a momentary outage at Station A of an "unknown cause" contributed 0.036 customer-interruptions to San Francisco's MAIFI.
5. On November 24th, 2015 storm related activities caused momentary outages to the Station Y-1119 feeder which contributed 0.029 customer-interruptions to the San Francisco's MAIFI.

ii. 2016 Excludable Major Event Day (MED) CAIDI Performance

Excludable Major Event Day (MED) In 2016

This section contains PG&E's report on weather related excludable major event day (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 such a report for the system, where 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 three major events, 3 Major Event Days in total, in 2016.

Table 15 – Summary MED days

2016 Major Event Days	MED
February 17, 2016	1
March 5, 2016	2
October 14, 2016	3

The first major event day of the year, February 17, 2016, involved a dynamic weather system that moved into PG&E's service territory producing heavy rain and strong south winds. South wind gusts above fifty mph were observed near the Sierra foothills, and wind gusts near forty mph were observed in the Sacramento and northern San Joaquin valley.

[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 based on the IEEE definition. 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.

Table 16 summarizes the system and division CAIDI performances during this event and the average of the prior ten weather related major events.

(February 17, 2016 vs. Prior 10 MED)

System / Division	Average CAIDI of Prior 10 System / Division Specific Excludable ME	February 17, 2016 / Division Specific CAIDI	Percent Difference From the Prior CAIDI Average	Exceeds the Investigation Threshold?
SYSTEM	255.2	144.6	56.7%	NO
CENTRAL COAST	200.8	97.6	48.6%	NO
DE ANZA	146.4	138.5	94.6%	NO
DIABLO	122.7	81.7	66.6%	NO
EAST BAY	196.1	57.5	29.3%	NO
FRESNO	100.9	83.8	83.1%	NO
HUMBOLDT	648.8	64.0	9.9%	NO
KERN	153.4	271.6	177.1%	Yes
LOS PADRES	436.8	214.3	49.1%	NO
MISSION	126.7	131.3	103.6%	NO
NORTH BAY	298.6	102.9	34.5%	NO
NORTH VALLEY	438.1	69.2	15.8%	NO
PENINSULA	136.5	104.2	76.3%	NO
SACRAMENTO	128.2	115.9	90.4%	NO
SAN FRANCISCO	257.6	21.6	8.4%	NO
SAN JOSE	129.0	79.3	61.5%	NO
SIERRA	310.1	280.6	90.5%	NO
SONOMA	259.4	55.9	21.5%	NO
STOCKTON	182.8	175.0	95.8%	NO
YOSEMITE	184.4	118.1	64.1%	NO

Table 16 – February 174, 2016 CAIDI Performance

1. February 17, 2016 Major Event Days

1.1 Kern Division CAIDI Assessment

System / Division	Major Event Day	CAIDI	SO / Day
KERN	August 24, 2014	183.4	2
KERN	December 3, 2014	129.9	3
KERN	December 11-12, 2014	163.2	61
KERN	December 30, 2014	20.0	6
KERN	February 6-8, 2015	67.9	4
KERN	April 6, 2015	66.9	3
KERN	June 8, 2015	325.4	8
KERN	July 18-19, 2015	163.9	44
KERN	December 13, 2015	144.1	5
KERN	December 24, 2015	119.0	1
	Average of 10 excludable major events	153.4	18
KERN	February 17, 2016	271.6	4
	% Difference	77.1%	-78%

Table 17 – Kern Division Historical Performance

As indicated in Table 17, the Kern division CAIDI value of 271.6 minutes for the February 17th major event was within the range of the prior ten excludable major events. However, this CAIDI value was 77.1% higher than the 153.4 minute average of the prior 10 weather-related excludable major events.

The high CAIDI value was attributed to the following four outages:

- Wheeler Ridge 1102 circuit – due to a tree falling into the line.
- Cuyama 1103 circuit – due to a failed overhead transformer.
- Carrizo Plains 1101 circuit – due to an outage of unknown cause. The line was patrolled, but nothing was found.
- Arvin 1101 circuit – due to an outage of unknown cause. The line was patrolled, but nothing was found.

2. March 5, 2016 Major Event Day

The second major event day was on March 5, 2016, where a strong winter-storm moved through the service area producing moderate to heavy rain showers, with strong gusty south winds from thirty to fifty mph at lower elevations and over sixty mph at higher elevations.

Table 18 summarizes the system and division CAIDI performances during this event and the average of the prior ten weather related major events.

(March 5, 2016 vs. Prior 10 MED)

System / Division	Average CAIDI of Prior 10 System / Division Specific Excludable ME	March 5, 2016 / Division Specific CAIDI	Percent Difference From the Prior CAIDI Average	Exceeds the Investigation Threshold?
SYSTEM	255.2	176.4	69.1%	NO
CENTRAL COAST	200.8	145.0	72.2%	NO
DE ANZA	146.4	141.4	96.6%	NO
DIABLO	122.7	247.2	201.5%	Yes
EAST BAY	196.1	94.7	48.3%	NO
FRESNO	100.9	60.9	60.4%	NO
HUMBOLDT	648.8	222.9	34.4%	NO
KERN	153.4	271.7	177.1%	Yes
LOS PADRES	436.8	135.2	31.0%	NO
MISSION	126.7	209.3	165.2%	Yes
NORTH BAY	298.6	224.6	75.2%	NO
NORTH VALLEY	438.1	289.6	66.1%	NO
PENINSULA	136.5	139.9	102.5%	NO
SACRAMENTO	128.2	217.5	169.7%	Yes
SAN FRANCISCO	257.6	331.1	128.6%	Yes
SAN JOSE	129.0	162.4	125.9%	Yes
SIERRA	310.1	187.8	60.6%	NO
SONOMA	259.4	168.2	64.8%	NO
STOCKTON	182.8	210.2	115.0%	NO
YOSEMITE	184.4	118.7	64.4%	NO

Table 18 – March 5, 2016 CAIDI Performance

2.1 Diablo Division CAIDI Assessment

System / Division	Major Event Day	CAIDI	SO / Day
DIABLO	November 21-22, 2013	117.8	12
DIABLO	August 24, 2014	115.7	2
DIABLO	December 3, 2014	142.1	6
DIABLO	December 11-12, 2014	199.1	20
DIABLO	December 30, 2014	183.0	47
DIABLO	February 6-8, 2015	87.5	16
DIABLO	April 6, 2015	112.0	1
DIABLO	June 8, 2015	104.5	23
DIABLO	July 18-19, 2015	144.8	3
DIABLO	December 13, 2015	31.6	7
	Average of 10 excludable major events	122.7	14
DIABLO	March 5, 2016	247.2	18
	% Difference	101.5%	33%

Table 19 – Diablo Division Historical Performance

As indicated in Table 19, the Diablo Division CAIDI value of 247.2 minutes for the March 5, 2016 major event day was 101.5% higher than the 122.7 minutes average of the prior 10 weather-related excludable major events.

This higher CAIDI value was due to the following top five outages:

- Moraga 1101 circuit – due to two separate tree related outages (tree falling into the line).
- Sobrante 1102 circuit – due to two separate tree related outages (one due to a tree falling into the line and the other for a tree branch falling into the line).
- Lakewood 2110 circuit – due to a tree branch falling into the line.

These five tree related outages contributed 123.3 minutes to the overall March 5th CAIDI performance.

2.2 Kern Division CAIDI Assessment

System / Division	Major Event Day	CAIDI	SO / Day
KERN	August 24, 2014	183.4	2
KERN	December 3, 2014	129.9	3
KERN	December 11-12, 2014	163.2	61
KERN	December 30, 2014	20.0	6
KERN	February 6-8, 2015	67.9	4
KERN	April 6, 2015	66.9	3
KERN	June 8, 2015	325.4	8
KERN	July 18-19, 2015	163.9	44
KERN	December 13, 2015	144.1	5
KERN	December 24, 2015	119.0	1
	Average of 10 excludable major events	153.4	18
KERN	March 5, 2016	271.7	4
	% Difference	77.1%	-78%

Table 20 – Kern Division Historical Performance

As indicated in Table 20, the Kern Division CAIDI value of 271.7 minutes for the March 5, 2016 major event day was within the range of the prior ten excludable major events. However, this CAIDI value was 77.1% higher than the 153.7 minutes average of the prior 10 weather-related excludable major events.

The higher CAIDI value was attributed to the following top two outages:

- Maricopa 1102 circuit – due to a failed overhead connector.
- Arvin 1103 circuit – due to a failed overhead splice.

These two outages contributed 136.3 minutes to the overall March 5, 2016 CAIDI performance.

2.3 Mission Division CAIDI Assessment

System / Division	Major Event Day	CAIDI	SO / Day
MISSION	August 24, 2014	87.1	3
MISSION	December 3, 2014	240.7	4
MISSION	December 11-12, 2014	140.7	8
MISSION	December 30, 2014	135.7	31
MISSION	February 6-8, 2015	51.5	4
MISSION	April 6, 2015	74.3	2
MISSION	June 8, 2015	159.7	12
MISSION	July 18-19, 2015	250.2	2
MISSION	December 13, 2015	176.0	6
MISSION	December 24, 2015	165.5	2
	Average of 10 excludable major events	126.7	7
MISSION	March 5, 2016	209.3	6
	% Difference	65.2%	-9%

Table 21 – Mission Division Historical Performance

As indicated in Table 21, the Mission Division CAIDI value of 209.3 minutes for the March 5, 2016 major event day was within the range of the prior ten excludable major events. However, this CAIDI value was 65.2% higher than the 126.7 minutes average of the prior 10 weather-related excludable major events.

The higher CAIDI value was attributed to the following top two outages:

- San Ramon 2111 circuit – due to a failed underground connector.
- San Leandro 1103 circuit – due to a failed overhead secondary wire.

These two outages contributed 97.8 minutes to the overall March 5, 2016 CAIDI performance.

2.4 Sacramento Division CAIDI Assessment

System / Division	Major Event Day	CAIDI	SO / Day
SACRAMENTO	August 24, 2014	40.3	9
SACRAMENTO	December 3, 2014	222.2	23
SACRAMENTO	December 11-12, 2014	150.7	19
SACRAMENTO	December 30, 2014	91.1	34
SACRAMENTO	February 6-8, 2015	132.0	19
SACRAMENTO	April 6, 2015	9.8	4
SACRAMENTO	June 8, 2015	178.9	18
SACRAMENTO	July 18, 2015	418.6	2
SACRAMENTO	December 13, 2015	142.3	58
SACRAMENTO	December 24, 2015	140.4	6
	Average of 10 excludable major events	128.2	19
SACRAMENTO	March 5, 2016	217.5	55
	% Difference	69.7%	188%

Table 22 – Sacramento Division Historical Performance

As indicated in Table 22, the Sacramento Division CAIDI value of 217.5 minutes for the March 5, 2016 major event day was within the range of the prior ten excludable major events. However, this CAIDI value was 69.7% higher than the 128.2 minutes average of the prior 10 weather-related excludable major events.

The average number of sustained outages per day for March 5, 2016 was 188% higher than the average of the corresponding prior 10 excludable major events.

The 55 sustained outages on March 5, 2015 are higher than the average of ten prior major events (sum of all days per event) and illustrate the intensity of the storm event in this division. The top outages on March 5, 2016 are:

- Plumas 2106 circuit – due to a failed elbow.
- Grand Island 2225 – due to flooding and erosion that caused a pole to fall into the river.
- Dixon 1103 circuit – due to a broken pole.
- East Marysville 1107 circuit – due to a failed underground splice.
- Pease 1103 circuit – due to a tree falling into the line.
- Zamora 1107 circuit – due to a broken pole.
- Bogue 1102 circuit – due to a tree falling into the line.

These outages contributed 67.8 minutes to the March 5, 2016 overall CAIDI performance.

2.5 San Francisco Division CAIDI Assessment

System / Division	Major Event Day	CAIDI	SO / Day
SAN FRANCISCO	June 23, 2013	109.0	6
SAN FRANCISCO	November 21, 2013	354.0	1
SAN FRANCISCO	August 24, 2014	164.0	1
SAN FRANCISCO	December 3, 2014	99.1	10
SAN FRANCISCO	December 11-12, 2014	309.5	11
SAN FRANCISCO	December 30, 2014	73.3	9
SAN FRANCISCO	February 6-8, 2015	135.1	1
SAN FRANCISCO	July 18-19, 2015	108.3	2
SAN FRANCISCO	December 13, 2015	144.6	8
SAN FRANCISCO	December 24, 2015	242.4	2
	Average of 10 excludable major events	257.6	6
SAN FRANCISCO	March 5, 2016	331.1	3
	% Difference	28.6%	-48%

Table 23 – San Francisco Division Historical Performance

As indicated in Table 23, the San Francisco Division CAIDI value of 331.1 minutes for the March 5, 2016 major event day was within the range of the prior ten excludable major events. However, this CAIDI value was 28.6% higher than the 257.6 minutes average of the prior 10 weather-related excludable major events.

The three outages associated with this event are as follows:

- Substation N 408 circuit – due to a failed overhead secondary wire.
- Hunters Point 1102 circuit – due to failed overhead transformer.
- Substation E 409 circuit – due to broken cross-arm.

2.5 San Jose Division CAIDI Assessment

System / Division	Major Event Day	CAIDI	SO / Day
SAN JOSE	August 24, 2014	627.8	1
SAN JOSE	December 3, 2014	64.7	15
SAN JOSE	December 11-12, 2014	116.7	14
SAN JOSE	December 30, 2014	161.1	41
SAN JOSE	February 6-8, 2015	123.5	8
SAN JOSE	April 6, 2015	94.8	1
SAN JOSE	June 8, 2015	139.2	15
SAN JOSE	July 18-19, 2015	12.4	3
SAN JOSE	December 13, 2015	77.2	21
SAN JOSE	December 24, 2015	100.0	3
	Average of 10 excludable major events	129.0	11
SAN JOSE	March 5, 2016	162.4	10
	% Difference	25.9%	-11%

Table 24 – San Jose Division Historical Performance

As indicated in Table 24, the San Jose Division CAIDI value of 162.4 minutes for the March 5, 2016 major event day was within the range of the prior ten excludable major events. However, this CAIDI value was 25.9% higher than the 129.0 minutes average of the prior 10 weather-related excludable major events.

The top three outages associated with this event are as follows:

- Almaden 1102 circuit – due to a palm frond going into the line.
- Almaden 1111 circuit – due to arcing on the overhead conductor.
- Saratoga 1110 circuit – due to failed overhead conductor.

These three outages contributed 50.6 minutes to the March 5, 2016 overall CAIDI performance.

3. October 14, 2016 Major Event Day

The third major event day was on October 14, 2016 caused by a series of storms impacting northern and central California. These storms brought moderate to heavy rain and gusty south winds reaching over fifty mph in some locations. Table 25 summarizes the system and division CAIDI performances during this event and the average of the prior ten weather related major events.

(October 14, 2016 vs. Prior 10 MED)

System / Division	Average CAIDI of Prior 10 System / Division Specific Excludable ME	October 14, 2016 / Division Specific CAIDI	Percent Difference From the Prior CAIDI Average	Exceeds the Investigation Threshold?
SYSTEM	255.2	152.3	59.7%	NO
CENTRAL COAST	200.8	76.1	37.9%	NO
DE ANZA	146.4	73.9	50.5%	NO
DIABLO	122.7	176.3	143.7%	Yes
EAST BAY	196.1	218.2	111.3%	NO
FRESNO	100.9	116.7	115.7%	NO
HUMBOLDT	648.8	113.9	17.6%	NO
KERN	153.4	18.4	12.0%	NO
LOS PADRES	436.8	32.6	7.5%	NO
MISSION	126.7	174.5	137.7%	Yes
NORTH BAY	298.6	180.7	60.5%	NO
NORTH VALLEY	438.1	203.1	46.4%	NO
PENINSULA	136.5	67.8	49.7%	NO
SACRAMENTO	128.2	126.4	98.6%	NO
SAN FRANCISCO	257.6	48.1	18.7%	NO
SAN JOSE	129.0	124.3	96.3%	NO
SIERRA	310.1	113.3	36.5%	NO
SONOMA	259.4	140.1	54.0%	NO
STOCKTON	182.8	132.1	72.3%	NO
YOSEMITE	184.4	118.7	64.4%	NO

Table 25 – October 14, 2016 CAIDI Performance

3.1 Diablo Division CAIDI Assessment

System / Division	Major Event Day	CAIDI	SO / Day
DIABLO	November 21-22, 2013	117.8	12
DIABLO	August 24, 2014	115.7	2
DIABLO	December 3, 2014	142.1	6
DIABLO	December 11-12, 2014	199.1	20
DIABLO	December 30, 2014	183.0	47
DIABLO	February 6-8, 2015	87.5	16
DIABLO	April 6, 2015	112.0	1
DIABLO	June 8, 2015	104.5	23
DIABLO	July 18-19, 2015	144.8	3
DIABLO	December 13, 2015	31.6	7
	Average of 10 excludable major events	122.7	14
DIABLO	October 14, 2016	176.3	12
	% Difference	43.7%	-11%

Table 26 – Diablo Division Historical Performance

As indicated in Table 26, the Diablo Division CAIDI value of 176.3 minutes for the October 14, 2016 major event day was within the range of the prior ten excludable major events. However, this CAIDI value was 43.7% higher than the 122.7 minutes average of the prior 10 weather-related excludable major events.

The top three outage events associated on October 14, 2016 are as follows:

- Brentwood 2105 circuit – due to a broken cross-arm.
- Willow Pass 2108 circuit – due to a failed overhead conductor.
- Meadow Lane 2103 circuit – due to a broken cross-arm.

These three outages contributed 52.6 minutes to the October 14, 2016 overall CAIDI performance.

3.2 Mission Division CAIDI Assessment

System / Division	Major Event Day	CAIDI	SO / Day
MISSION	August 24, 2014	87.1	3
MISSION	December 3, 2014	240.7	4
MISSION	December 11-12, 2014	140.7	8
MISSION	December 30, 2014	135.7	31
MISSION	February 6-8, 2015	51.5	4
MISSION	April 6, 2015	74.3	2
MISSION	June 8, 2015	159.7	12
MISSION	July 18-19, 2015	250.2	2
MISSION	December 13, 2015	176.0	6
MISSION	December 24, 2015	165.5	2
	Average of 10 excludable major events	126.7	7
MISSION	October 14, 2016	174.5	29
	% Difference	37.7%	341%

Table 27 – Mission Division Historical Performance

As indicated in Table 27, the Mission Division CAIDI value of 174.5 minutes for the October 14, 2016 major event day was within the range of the prior ten excludable major events. However, this CAIDI value was 37.7% higher than the 126.7 minutes average of the prior 10 weather-related excludable major events.

The average number of sustained outages per day for October 14, 2016 was 341% higher than the average of the corresponding prior 10 excludable major events.

The 29 sustained outages on October 14, 2016 are higher than the average of ten prior major events (sum of all days per event) and illustrate the intensity of the storm event in this division. The top outages on October 14, 2016 are:

- Newark 1107 circuit – due to a broken cross-arm.
- Grant 1106 circuit – due to lightning striking a cross-arm.
- Mt. Eden 1109 – rain and wind brought down an overhead conductor.
- Grant 1106 circuit – due to a broken cross-arm.
- San Ramon 2119 circuit – due to a pole-top fire.

These outages contributed 36.1 minutes to the October 14, 2016 overall CAIDI performance.

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

The eight year trend (2008-2015) of continuous improved reliability did not continue in 2016 in terms of the total duration of sustained outages per customer for the entire year (including planned outages but excluding major events). Since 2007, however, PG&E has consistently reduced the total duration of power outages per customer from 167.0 minutes to 108.9 minutes, a 35 percent improvement, as shown in Table 28 below.

Table 28: Combine Transmission and Distribution System Indices with Planned Outages

Year	Major Events Included				Major Events Excluded			
	SAIDI	SAIFI	MAIFI	CAIDI	SAIDI	SAIFI	MAIFI	CAIDI
2007	184.6	1.357	1.575	136.1	167.0	1.306	1.526	127.9
2008	448.7	1.666	1.835	269.3	181.5	1.299	1.597	139.7
2009	235.2	1.404	1.547	167.5	157.5	1.206	1.398	130.6
2010	276.6	1.496	1.492	185.0	157.2	1.207	1.257	130.2
2011	311.8	1.392	1.490	223.9	141.8	1.087	1.180	130.5
2012	161.8	1.219	1.927	132.7	131.5	1.125	1.805	116.9
2013	138.3	1.167	1.643	118.5	116.8	1.065	1.533	109.7
2014	151.3	1.131	1.571	133.8	110.2	0.965	1.400	114.2
2015	147.2	1.052	1.820	139.9	95.9	0.871	1.594	110.1
2016	121.9	1.102	1.612	110.6	108.9	1.021	1.502	106.7

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 29:

Division	Year	SAIDI	SAIFI	MAIFI	CAIDI
CENTRAL COAST	2007	228.8	1.988	2.739	115.1
CENTRAL COAST	2008	850.4	2.468	2.757	344.5
CENTRAL COAST	2009	471.9	2.462	3.224	191.7
CENTRAL COAST	2010	429.9	2.143	3.952	200.6
CENTRAL COAST	2011	538.7	2.143	2.098	251.4
CENTRAL COAST	2012	174.4	1.411	2.385	123.6
CENTRAL COAST	2013	153.7	1.476	2.048	104.1
CENTRAL COAST	2014	219.2	1.438	2.130	152.4
CENTRAL COAST	2015	269.6	1.376	2.176	195.9
CENTRAL COAST	2016	202.8	1.714	2.746	118.3
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
DE ANZA	2007	119.4	0.959	1.136	124.5
DE ANZA	2008	282.0	1.362	1.687	207.1
DE ANZA	2009	175.7	1.042	1.655	168.6
DE ANZA	2010	192.1	1.233	1.437	155.9
DE ANZA	2011	100.7	0.805	1.489	125.2
DE ANZA	2012	100.2	0.792	1.224	126.5
DE ANZA	2013	100.9	0.919	1.190	109.7
DE ANZA	2014	135.5	1.124	1.307	120.5
DE ANZA	2015	80.7	0.680	1.291	118.7
DE ANZA	2016	119.2	0.968	1.424	123.2
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
DIABLO	2007	144.0	1.203	1.580	119.7
DIABLO	2008	222.7	1.597	2.132	139.5
DIABLO	2009	185.1	1.496	1.196	123.7
DIABLO	2010	143.1	1.488	1.314	96.2
DIABLO	2011	110.1	1.064	1.404	103.5
DIABLO	2012	127.7	1.334	1.407	95.7
DIABLO	2013	100.4	1.103	1.307	90.9
DIABLO	2014	101.0	1.046	1.389	96.5
DIABLO	2015	97.6	1.066	1.878	91.6
DIABLO	2016	97.8	1.129	1.731	86.7
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
EAST BAY	2007	178.2	1.365	1.014	130.6
EAST BAY	2008	174.1	1.131	0.864	153.9
EAST BAY	2009	143.5	1.278	0.894	112.3
EAST BAY	2010	134.6	1.120	0.757	120.2
EAST BAY	2011	123.3	1.020	1.079	120.9
EAST BAY	2012	119.1	1.397	1.369	85.2
EAST BAY	2013	132.6	1.048	1.283	126.4
EAST BAY	2014	91.8	0.915	1.499	100.3
EAST BAY	2015	65.9	0.749	1.179	87.9
EAST BAY	2016	137.0	1.257	1.231	109.0

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
FRESNO	2007	257.9	1.890	2.256	136.5
FRESNO	2008	227.4	1.754	1.798	129.7
FRESNO	2009	185.0	1.461	1.902	126.6
FRESNO	2010	204.0	1.377	1.957	148.1
FRESNO	2011	187.0	1.215	2.023	153.9
FRESNO	2012	122.1	1.158	2.361	105.4
FRESNO	2013	121.5	1.225	2.115	99.2
FRESNO	2014	104.0	1.095	1.775	95.0
FRESNO	2015	115.2	1.238	2.060	93.1
FRESNO	2016	99.4	1.207	1.977	82.3
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
HUMBOLDT	2007	619.9	2.055	3.326	301.7
HUMBOLDT	2008	1,136.5	3.027	3.366	375.5
HUMBOLDT	2009	356.1	2.041	2.489	174.5
HUMBOLDT	2010	737.8	2.860	1.719	258.0
HUMBOLDT	2011	762.1	2.439	2.280	312.5
HUMBOLDT	2012	388.7	1.904	4.673	204.2
HUMBOLDT	2013	342.4	1.518	2.650	225.5
HUMBOLDT	2014	350.5	1.514	1.955	231.5
HUMBOLDT	2015	738.9	2.388	2.739	309.4
HUMBOLDT	2016	250.6	1.747	2.111	143.4
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
KERN	2007	146.1	1.237	1.603	118.1
KERN	2008	192.0	1.509	1.216	127.3
KERN	2009	126.9	1.258	1.493	100.8
KERN	2010	152.4	1.264	1.583	120.6
KERN	2011	189.8	1.367	1.622	138.8
KERN	2012	107.7	1.066	1.229	101.0
KERN	2013	103.2	1.168	1.202	88.3
KERN	2014	131.4	1.204	1.847	109.2
KERN	2015	104.5	1.022	1.929	102.2
KERN	2016	101.9	0.991	2.115	102.9
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
LOS PADRES	2007	154.4	1.247	2.686	123.8
LOS PADRES	2008	262.0	1.931	3.067	135.7
LOS PADRES	2009	200.3	1.367	1.714	146.5
LOS PADRES	2010	293.1	1.818	2.055	161.2
LOS PADRES	2011	159.1	1.333	2.195	119.4
LOS PADRES	2012	124.0	1.142	1.633	108.6
LOS PADRES	2013	242.3	1.618	1.095	149.7
LOS PADRES	2014	202.2	1.298	1.378	155.8
LOS PADRES	2015	148.2	0.931	1.814	159.1
LOS PADRES	2016	130.1	1.254	1.677	103.8

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
MISSION	2007	100.1	0.907	1.024	110.3
MISSION	2008	119.9	1.054	1.516	113.7
MISSION	2009	103.2	0.826	0.902	124.9
MISSION	2010	123.6	1.053	0.785	117.4
MISSION	2011	88.9	0.900	0.693	98.7
MISSION	2012	106.2	0.967	0.886	109.8
MISSION	2013	89.9	0.877	0.838	102.6
MISSION	2014	84.8	0.805	0.826	105.4
MISSION	2015	71.7	0.654	1.152	109.6
MISSION	2016	95.2	0.828	0.996	114.9
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
NORTH BAY	2007	150.5	1.203	1.803	125.1
NORTH BAY	2008	589.1	1.782	1.979	330.6
NORTH BAY	2009	186.2	1.354	1.011	137.5
NORTH BAY	2010	179.8	1.320	1.402	136.2
NORTH BAY	2011	244.3	1.508	1.224	162.0
NORTH BAY	2012	164.5	1.046	1.950	157.3
NORTH BAY	2013	146.4	1.144	1.731	128.0
NORTH BAY	2014	253.2	1.362	2.714	185.9
NORTH BAY	2015	156.3	1.171	2.162	133.5
NORTH BAY	2016	133.6	1.031	1.451	129.5
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
NORTH VALLEY	2007	304.6	1.708	2.141	178.3
NORTH VALLEY	2008	1,625.4	2.527	4.194	643.3
NORTH VALLEY	2009	335.0	1.651	3.143	203.0
NORTH VALLEY	2010	609.0	2.007	2.002	303.5
NORTH VALLEY	2011	703.6	2.331	2.141	301.8
NORTH VALLEY	2012	543.4	2.003	2.952	271.4
NORTH VALLEY	2013	179.2	1.251	1.974	143.2
NORTH VALLEY	2014	212.1	1.285	1.837	165.1
NORTH VALLEY	2015	505.6	1.920	2.536	263.4
NORTH VALLEY	2016	194.4	1.357	2.195	143.3
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
PENINSULA	2007	93.9	0.818	1.062	114.9
PENINSULA	2008	438.6	1.908	2.060	229.9
PENINSULA	2009	140.8	1.162	0.893	121.1
PENINSULA	2010	185.2	1.670	1.450	110.9
PENINSULA	2011	131.5	1.254	0.965	104.9
PENINSULA	2012	115.0	1.200	1.709	95.8
PENINSULA	2013	107.3	0.934	1.333	114.8
PENINSULA	2014	111.6	1.127	1.368	99.0
PENINSULA	2015	90.5	0.941	1.798	96.2
PENINSULA	2016	102.6	1.064	1.385	96.4

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SACRAMENTO	2007	136.5	0.961	1.055	142.1
SACRAMENTO	2008	894.5	2.030	2.300	440.6
SACRAMENTO	2009	266.9	1.471	1.836	181.5
SACRAMENTO	2010	215.9	1.210	1.439	178.3
SACRAMENTO	2011	210.1	1.306	1.922	160.9
SACRAMENTO	2012	182.2	1.478	2.157	123.3
SACRAMENTO	2013	123.1	1.106	1.716	111.3
SACRAMENTO	2014	128.4	1.006	1.452	127.7
SACRAMENTO	2015	113.0	1.009	1.776	112.0
SACRAMENTO	2016	118.5	1.133	1.846	104.6
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SAN FRANCISCO	2007	113.6	1.098	0.387	103.5
SAN FRANCISCO	2008	164.6	0.927	0.272	177.6
SAN FRANCISCO	2009	81.9	0.854	0.136	95.9
SAN FRANCISCO	2010	67.6	0.765	0.098	88.4
SAN FRANCISCO	2011	60.0	0.622	0.216	96.6
SAN FRANCISCO	2012	62.3	0.673	1.052	92.5
SAN FRANCISCO	2013	64.8	0.706	0.334	91.8
SAN FRANCISCO	2014	141.7	0.860	0.351	164.8
SAN FRANCISCO	2015	44.2	0.569	0.553	77.7
SAN FRANCISCO	2016	49.7	0.597	0.398	83.3
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SAN JOSE	2007	122.4	1.070	1.011	114.5
SAN JOSE	2008	192.0	1.105	1.175	173.8
SAN JOSE	2009	102.5	0.920	0.818	111.4
SAN JOSE	2010	125.3	1.036	0.608	121.0
SAN JOSE	2011	131.6	1.065	0.808	123.6
SAN JOSE	2012	102.9	0.932	0.993	110.3
SAN JOSE	2013	122.1	1.089	1.038	112.1
SAN JOSE	2014	124.6	1.101	1.075	113.1
SAN JOSE	2015	90.2	0.873	1.164	103.4
SAN JOSE	2016	80.8	0.753	1.208	107.2
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SIERRA	2007	276.4	1.808	2.056	152.9
SIERRA	2008	1,221.3	2.354	2.051	518.8
SIERRA	2009	851.6	2.219	1.535	383.8
SIERRA	2010	788.5	2.415	1.608	326.6
SIERRA	2011	1,066.3	2.404	2.900	443.5
SIERRA	2012	269.9	1.582	3.229	170.6
SIERRA	2013	175.3	1.483	3.276	118.2
SIERRA	2014	208.9	1.467	2.431	142.5
SIERRA	2015	197.3	1.378	3.224	143.2
SIERRA	2016	188.4	1.337	1.915	140.8

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SONOMA	2007	196.9	1.362	1.808	144.6
SONOMA	2008	485.6	1.511	1.175	321.3
SONOMA	2009	216.1	1.374	1.574	157.3
SONOMA	2010	244.0	1.523	1.018	160.2
SONOMA	2011	286.9	1.438	1.529	199.5
SONOMA	2012	234.6	1.235	2.032	189.9
SONOMA	2013	210.8	1.260	2.537	167.3
SONOMA	2014	239.3	1.374	2.071	174.2
SONOMA	2015	140.7	0.985	1.993	142.8
SONOMA	2016	114.5	0.931	1.611	123.0
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
STOCKTON	2007	199.7	1.719	1.829	116.2
STOCKTON	2008	304.6	1.637	2.212	186.1
STOCKTON	2009	445.1	1.897	3.146	234.6
STOCKTON	2010	408.9	1.806	1.604	226.5
STOCKTON	2011	502.1	1.862	1.202	269.7
STOCKTON	2012	192.4	1.286	2.105	149.6
STOCKTON	2013	135.0	1.552	2.145	87.0
STOCKTON	2014	138.5	0.923	1.471	150.0
STOCKTON	2015	135.0	1.105	2.249	122.1
STOCKTON	2016	118.1	1.087	1.788	108.7
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
YOSEMITE	2007	252.8	1.725	1.420	146.5
YOSEMITE	2008	344.7	1.831	1.626	188.2
YOSEMITE	2009	287.5	1.570	1.722	183.2
YOSEMITE	2010	737.9	2.109	3.166	349.8
YOSEMITE	2011	1,201.5	2.098	2.642	572.7
YOSEMITE	2012	166.1	1.392	4.181	119.3
YOSEMITE	2013	204.7	1.403	3.466	145.9
YOSEMITE	2014	147.6	1.342	2.683	110.0
YOSEMITE	2015	130.6	1.162	3.098	112.4
YOSEMITE	2016	147.9	1.333	2.169	111.0
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SYSTEM	2007	184.6	1.357	1.575	136.1
SYSTEM	2008	448.7	1.666	1.835	269.3
SYSTEM	2009	235.2	1.404	1.547	167.5
SYSTEM	2010	276.6	1.496	1.492	185.0
SYSTEM	2011	311.8	1.392	1.490	223.9
SYSTEM	2012	161.8	1.219	1.927	132.7
SYSTEM	2013	138.3	1.167	1.643	118.5
SYSTEM	2014	151.3	1.131	1.571	133.8
SYSTEM	2015	147.2	1.052	1.820	139.9
SYSTEM	2016	121.9	1.102	1.612	110.6

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

Table 30:

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
CENTRAL COAST	2007	226.9	1.978	2.699	114.8
CENTRAL COAST	2008	272.9	1.820	2.373	150.0
CENTRAL COAST	2009	243.3	2.043	3.008	119.1
CENTRAL COAST	2010	210.2	1.672	2.937	125.8
CENTRAL COAST	2011	197.8	1.658	1.603	119.3
CENTRAL COAST	2012	159.7	1.339	2.206	119.3
CENTRAL COAST	2013	147.2	1.444	1.973	102.0
CENTRAL COAST	2014	141.8	1.171	1.835	121.2
CENTRAL COAST	2015	118.6	0.934	1.847	126.9
CENTRAL COAST	2016	180.2	1.548	2.492	116.4
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
DE ANZA	2007	118.6	0.955	1.106	124.1
DE ANZA	2008	120.4	1.033	1.459	116.6
DE ANZA	2009	121.3	0.900	1.587	134.8
DE ANZA	2010	135.6	1.019	1.167	133.0
DE ANZA	2011	80.9	0.718	1.181	112.7
DE ANZA	2012	92.1	0.742	1.110	124.1
DE ANZA	2013	98.9	0.909	1.155	108.8
DE ANZA	2014	111.2	0.987	1.211	112.6
DE ANZA	2015	68.2	0.561	1.182	121.7
DE ANZA	2016	96.7	0.796	1.347	121.4
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
DIABLO	2007	143.6	1.201	1.578	119.6
DIABLO	2008	160.1	1.475	1.952	108.6
DIABLO	2009	170.6	1.401	1.157	121.8
DIABLO	2010	127.5	1.336	1.221	95.4
DIABLO	2011	98.0	0.934	1.245	104.9
DIABLO	2012	121.2	1.291	1.369	93.9
DIABLO	2013	97.4	1.081	1.246	90.0
DIABLO	2014	84.8	0.953	1.240	89.0
DIABLO	2015	87.5	0.939	1.671	93.2
DIABLO	2016	95.2	1.115	1.696	85.4
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
EAST BAY	2007	175.8	1.344	1.006	130.8
EAST BAY	2008	114.0	0.959	0.810	118.8
EAST BAY	2009	129.8	1.181	0.847	109.9
EAST BAY	2010	98.7	0.902	0.682	109.4
EAST BAY	2011	106.5	0.906	0.850	117.5
EAST BAY	2012	108.9	1.301	1.300	83.7
EAST BAY	2013	76.3	0.867	1.172	88.0
EAST BAY	2014	75.5	0.795	1.283	95.0
EAST BAY	2015	51.1	0.611	1.085	83.6
EAST BAY	2016	110.2	1.101	1.068	100.1

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
FRESNO	2007	256.0	1.870	2.237	136.9
FRESNO	2008	202.6	1.626	1.741	124.6
FRESNO	2009	168.2	1.331	1.758	126.4
FRESNO	2010	143.5	1.157	1.848	124.0
FRESNO	2011	98.3	0.894	1.689	110.0
FRESNO	2012	120.5	1.135	2.325	106.2
FRESNO	2013	118.8	1.192	2.074	99.7
FRESNO	2014	101.6	1.076	1.704	94.5
FRESNO	2015	84.8	0.935	1.832	90.7
FRESNO	2016	97.5	1.185	1.954	82.3
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
HUMBOLDT	2007	459.1	1.886	3.250	243.4
HUMBOLDT	2008	526.2	2.254	2.922	233.4
HUMBOLDT	2009	336.6	1.904	2.348	176.8
HUMBOLDT	2010	564.6	2.472	1.539	228.4
HUMBOLDT	2011	439.7	1.914	1.886	229.7
HUMBOLDT	2012	327.1	1.717	4.349	190.6
HUMBOLDT	2013	248.4	1.296	2.435	191.7
HUMBOLDT	2014	274.4	1.363	1.823	201.3
HUMBOLDT	2015	319.8	1.774	2.426	180.2
HUMBOLDT	2016	234.1	1.647	2.051	142.2
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
KERN	2007	145.7	1.236	1.603	117.9
KERN	2008	155.0	1.290	1.079	120.1
KERN	2009	115.4	1.186	1.398	97.3
KERN	2010	135.1	1.142	1.423	118.3
KERN	2011	132.3	1.072	1.345	123.4
KERN	2012	106.5	1.048	1.229	101.6
KERN	2013	98.9	1.110	1.120	89.1
KERN	2014	101.8	1.041	1.623	97.8
KERN	2015	92.8	0.938	1.855	99.0
KERN	2016	101.2	0.974	2.108	103.9
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
LOS PADRES	2007	154.3	1.246	2.686	123.8
LOS PADRES	2008	163.2	1.469	2.722	111.1
LOS PADRES	2009	122.6	1.102	1.324	111.2
LOS PADRES	2010	126.6	1.232	1.732	102.7
LOS PADRES	2011	113.5	1.072	1.666	105.8
LOS PADRES	2012	123.3	1.139	1.626	108.2
LOS PADRES	2013	116.3	0.848	0.950	137.2
LOS PADRES	2014	110.5	1.101	1.159	100.3
LOS PADRES	2015	88.1	0.773	1.438	113.9
LOS PADRES	2016	128.3	1.228	1.676	104.5

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
MISSION	2007	99.9	0.906	1.024	110.3
MISSION	2008	92.9	0.922	1.425	100.7
MISSION	2009	96.6	0.761	0.876	126.9
MISSION	2010	113.8	0.974	0.714	116.8
MISSION	2011	77.1	0.806	0.627	95.6
MISSION	2012	103.5	0.941	0.885	109.9
MISSION	2013	84.2	0.808	0.776	104.3
MISSION	2014	74.0	0.726	0.777	102.0
MISSION	2015	65.6	0.601	1.055	109.3
MISSION	2016	85.1	0.766	0.950	111.1
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
NORTH BAY	2007	149.7	1.200	1.801	124.8
NORTH BAY	2008	181.8	1.258	1.777	144.5
NORTH BAY	2009	143.3	1.175	0.896	122.0
NORTH BAY	2010	151.9	1.122	1.295	135.3
NORTH BAY	2011	151.0	1.246	1.088	121.2
NORTH BAY	2012	133.8	0.916	1.647	146.0
NORTH BAY	2013	133.8	1.057	1.456	126.6
NORTH BAY	2014	132.3	0.984	2.499	134.5
NORTH BAY	2015	117.9	1.014	1.978	116.2
NORTH BAY	2016	107.2	0.878	1.225	122.1
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
NORTH VALLEY	2007	200.6	1.466	1.954	136.9
NORTH VALLEY	2008	385.7	1.804	3.448	213.8
NORTH VALLEY	2009	257.1	1.436	3.010	179.1
NORTH VALLEY	2010	213.6	1.383	1.837	154.4
NORTH VALLEY	2011	239.2	1.515	1.565	157.9
NORTH VALLEY	2012	252.2	1.622	2.580	155.5
NORTH VALLEY	2013	158.6	1.193	1.916	132.9
NORTH VALLEY	2014	150.0	1.076	1.580	139.4
NORTH VALLEY	2015	158.7	1.195	1.938	132.9
NORTH VALLEY	2016	165.7	1.220	1.960	135.9
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
PENINSULA	2007	92.8	0.811	1.058	114.5
PENINSULA	2008	136.0	1.222	1.786	111.3
PENINSULA	2009	97.4	0.922	0.769	105.6
PENINSULA	2010	139.4	1.430	1.036	97.5
PENINSULA	2011	102.5	1.106	0.807	92.7
PENINSULA	2012	100.6	1.054	1.528	95.4
PENINSULA	2013	83.0	0.834	1.125	99.6
PENINSULA	2014	90.1	0.967	1.166	93.2
PENINSULA	2015	74.8	0.826	1.602	90.6
PENINSULA	2016	94.4	0.982	1.199	96.1

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SACRAMENTO	2007	133.4	0.941	1.039	141.7
SACRAMENTO	2008	218.9	1.365	1.734	160.4
SACRAMENTO	2009	150.0	1.183	1.552	126.8
SACRAMENTO	2010	141.3	0.981	1.087	144.0
SACRAMENTO	2011	135.7	1.092	1.719	124.3
SACRAMENTO	2012	159.6	1.338	1.984	119.3
SACRAMENTO	2013	117.6	1.059	1.587	111.0
SACRAMENTO	2014	114.6	0.898	1.273	127.5
SACRAMENTO	2015	100.7	0.913	1.561	110.3
SACRAMENTO	2016	102.6	1.042	1.570	98.5
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SAN FRANCISCO	2007	112.7	1.089	0.387	103.5
SAN FRANCISCO	2008	71.1	0.734	0.272	96.8
SAN FRANCISCO	2009	78.9	0.832	0.100	94.8
SAN FRANCISCO	2010	60.7	0.708	0.078	85.8
SAN FRANCISCO	2011	56.2	0.591	0.211	95.2
SAN FRANCISCO	2012	57.6	0.632	1.009	91.2
SAN FRANCISCO	2013	58.8	0.653	0.304	90.0
SAN FRANCISCO	2014	52.2	0.537	0.234	97.3
SAN FRANCISCO	2015	41.8	0.551	0.516	75.8
SAN FRANCISCO	2016	48.7	0.577	0.356	84.4
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SAN JOSE	2007	121.8	1.065	1.009	114.3
SAN JOSE	2008	105.0	0.872	1.011	120.4
SAN JOSE	2009	88.6	0.819	0.797	108.1
SAN JOSE	2010	91.0	0.874	0.539	104.1
SAN JOSE	2011	119.2	0.975	0.701	122.2
SAN JOSE	2012	98.3	0.882	0.966	111.5
SAN JOSE	2013	118.8	1.040	0.978	114.2
SAN JOSE	2014	101.4	0.929	1.035	109.1
SAN JOSE	2015	80.4	0.787	1.020	102.3
SAN JOSE	2016	77.4	0.719	1.161	107.6
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SIERRA	2007	206.4	1.525	1.508	135.4
SIERRA	2008	274.0	1.710	1.555	160.2
SIERRA	2009	291.4	1.538	1.247	189.5
SIERRA	2010	227.8	1.460	1.164	156.1
SIERRA	2011	232.1	1.371	1.534	169.3
SIERRA	2012	209.0	1.423	2.911	146.8
SIERRA	2013	128.2	1.350	3.139	94.9
SIERRA	2014	156.2	1.266	2.210	123.5
SIERRA	2015	138.4	1.218	2.887	113.6
SIERRA	2016	135.7	1.114	1.756	121.8

Division/System	Year	SAIDI	SAIFI	MAIFI	CAIDI
SONOMA	2007	195.3	1.346	1.808	145.1
SONOMA	2008	187.5	1.239	0.942	151.3
SONOMA	2009	185.8	1.264	1.321	146.9
SONOMA	2010	190.2	1.270	0.818	149.8
SONOMA	2011	143.6	1.049	1.338	137.0
SONOMA	2012	143.6	1.022	1.733	140.5
SONOMA	2013	141.0	0.979	2.257	144.0
SONOMA	2014	138.2	1.023	1.589	135.2
SONOMA	2015	94.3	0.790	1.535	119.5
SONOMA	2016	107.7	0.887	1.514	121.3
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
STOCKTON	2007	164.8	1.596	1.781	103.3
STOCKTON	2008	180.6	1.211	1.819	149.2
STOCKTON	2009	194.2	1.368	2.725	142.0
STOCKTON	2010	188.8	1.405	1.403	134.4
STOCKTON	2011	208.9	1.336	0.912	156.4
STOCKTON	2012	118.6	1.109	1.981	106.9
STOCKTON	2013	125.7	1.516	2.033	82.9
STOCKTON	2014	120.4	0.829	1.336	145.3
STOCKTON	2015	106.5	0.944	1.952	112.8
STOCKTON	2016	102.1	0.994	1.675	102.7
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
YOSEMITE	2007	177.3	1.468	1.241	120.8
YOSEMITE	2008	231.0	1.489	1.533	155.2
YOSEMITE	2009	209.5	1.321	1.467	158.5
YOSEMITE	2010	252.8	1.570	2.598	161.1
YOSEMITE	2011	237.2	1.394	1.819	170.1
YOSEMITE	2012	159.2	1.352	4.101	117.7
YOSEMITE	2013	203.2	1.385	3.296	146.7
YOSEMITE	2014	129.6	1.278	2.460	101.4
YOSEMITE	2015	120.4	1.073	2.641	112.2
YOSEMITE	2016	141.3	1.277	2.036	110.6
Division/System	**Year**	**SAIDI**	**SAIFI**	**MAIFI**	**CAIDI**
SYSTEM	2007	167.0	1.306	1.526	127.9
SYSTEM	2008	181.5	1.299	1.597	139.7
SYSTEM	2009	157.5	1.206	1.398	130.6
SYSTEM	2010	157.2	1.207	1.257	130.2
SYSTEM	2011	141.8	1.087	1.180	130.5
SYSTEM	2012	131.5	1.125	1.805	116.9
SYSTEM	2013	116.8	1.065	1.533	109.7
SYSTEM	2014	110.2	0.965	1.400	114.2
SYSTEM	2015	95.9	0.871	1.594	110.1
SYSTEM	2016	108.9	1.021	1.502	106.7

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 174: Division Reliability – AIDI Indices

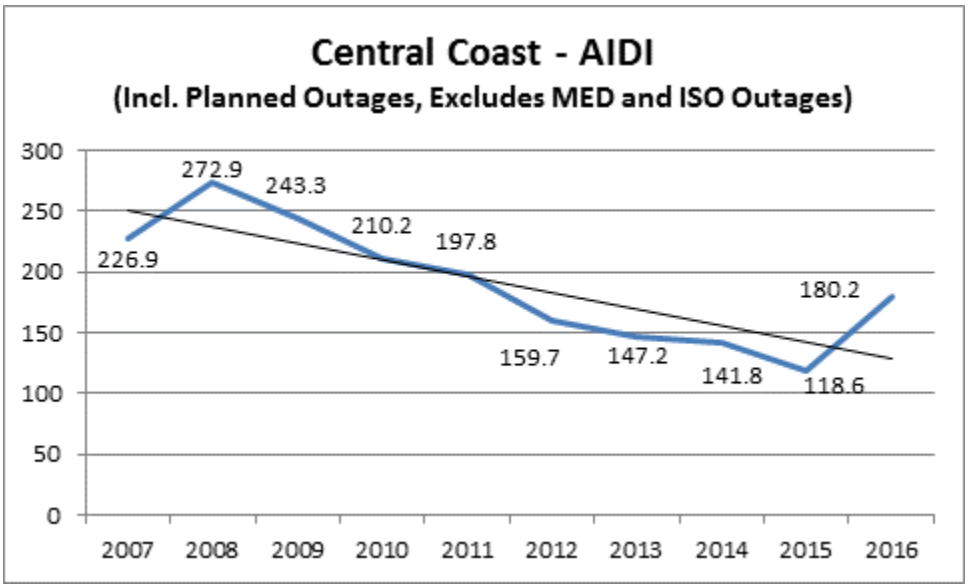


Chart 175: Division Reliability – AIDI Indices

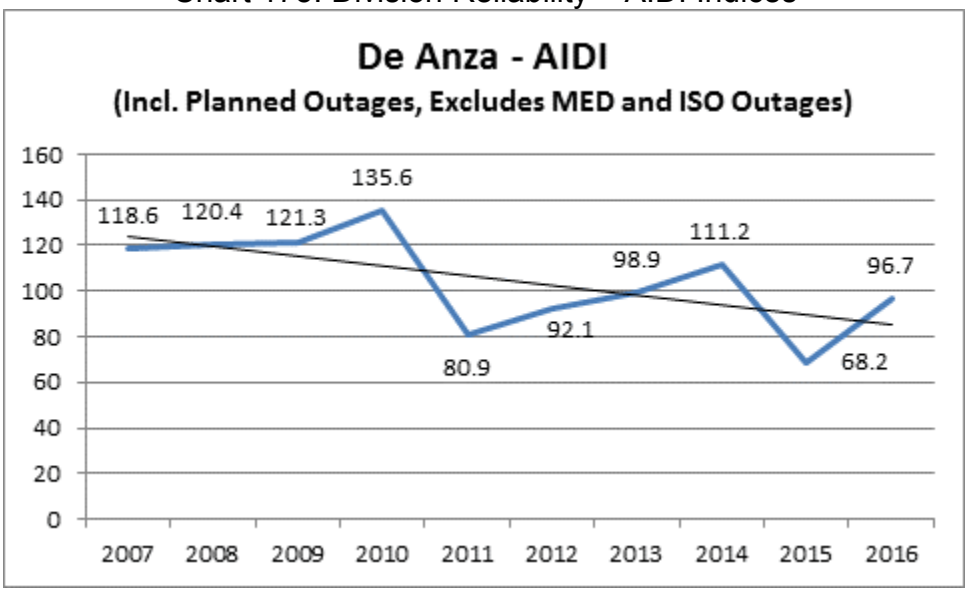


Chart 176: Division Reliability – AIDI Indices

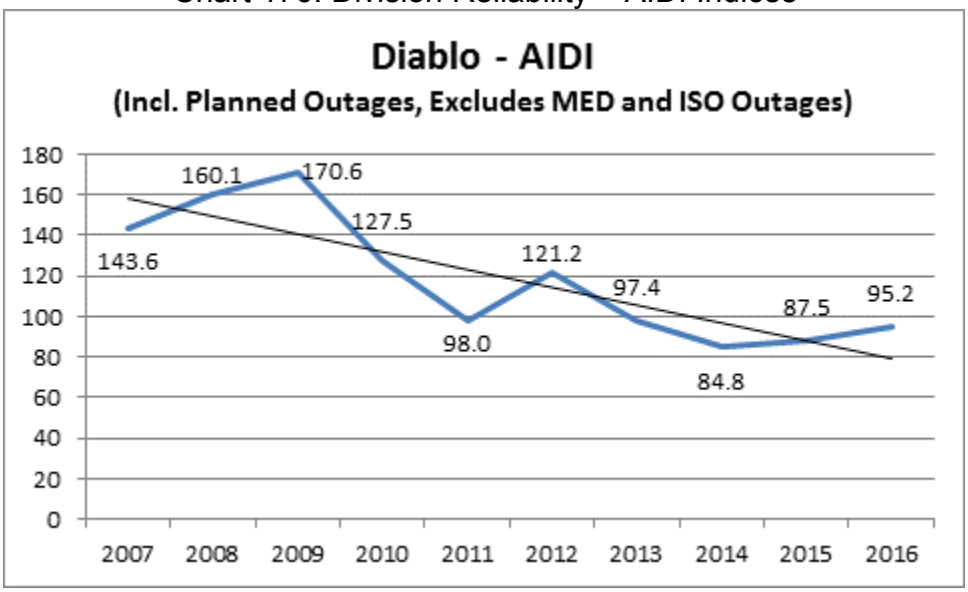


Chart 177: Division Reliability – AIDI Indices

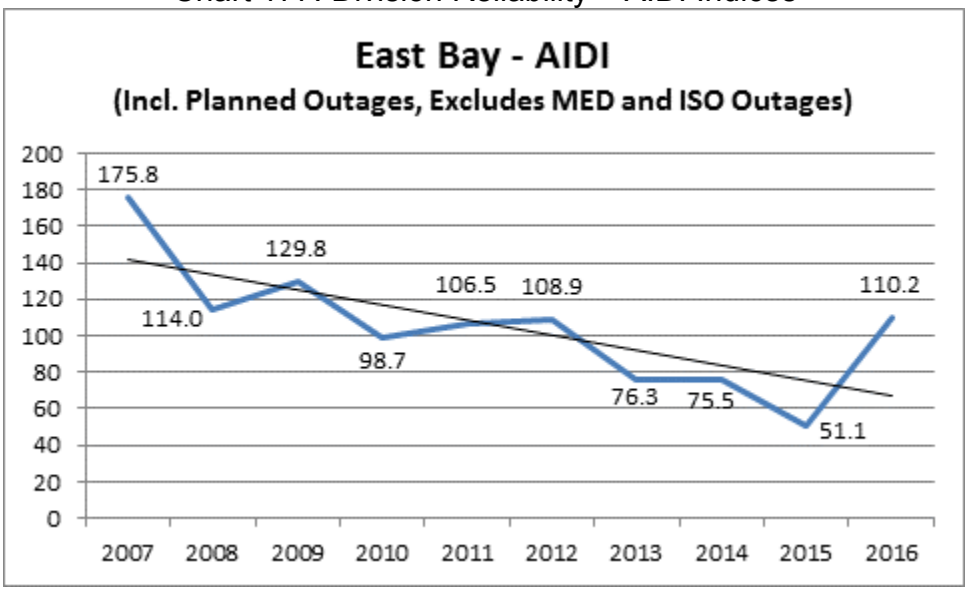


Chart 178: Division Reliability – AIDI Indices

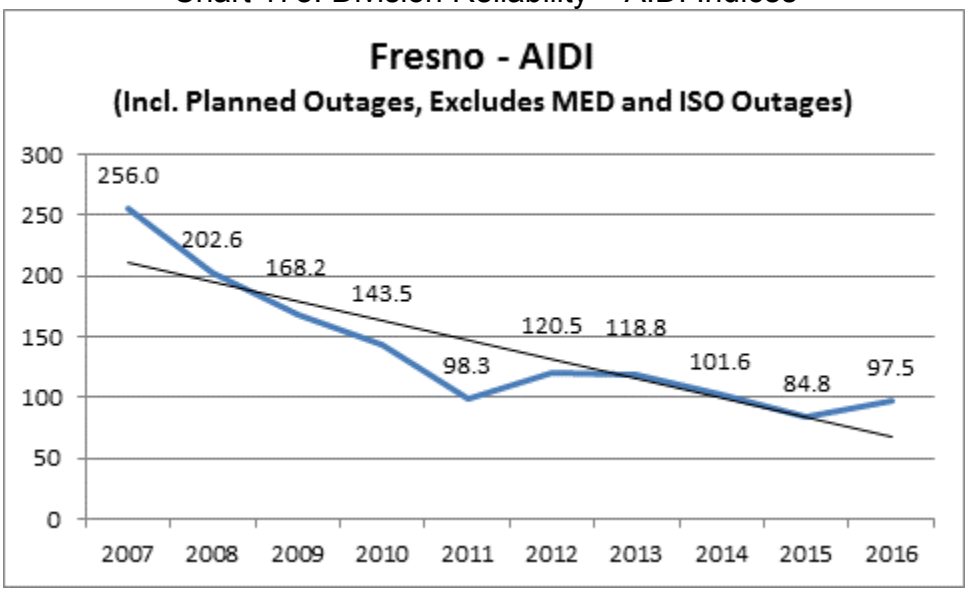


Chart 179: Division Reliability – AIDI Indices

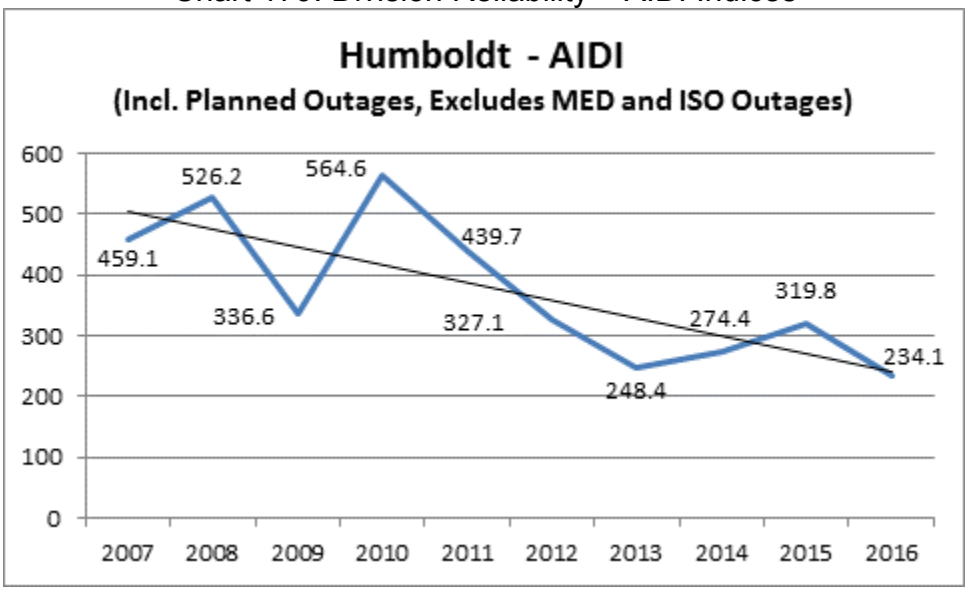


Chart 180: Division Reliability – AIDI Indices

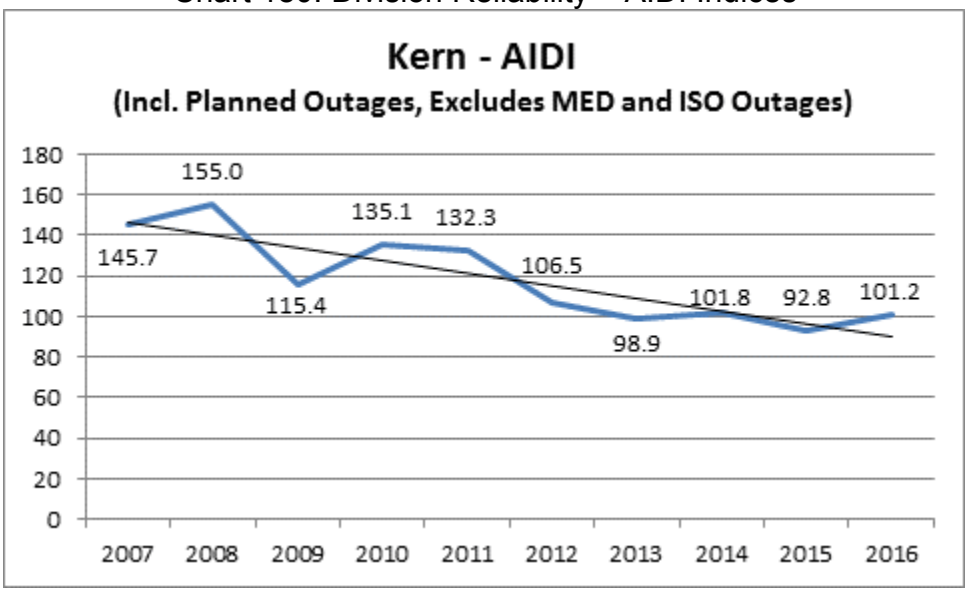


Chart 181: Division Reliability – AIDI Indices

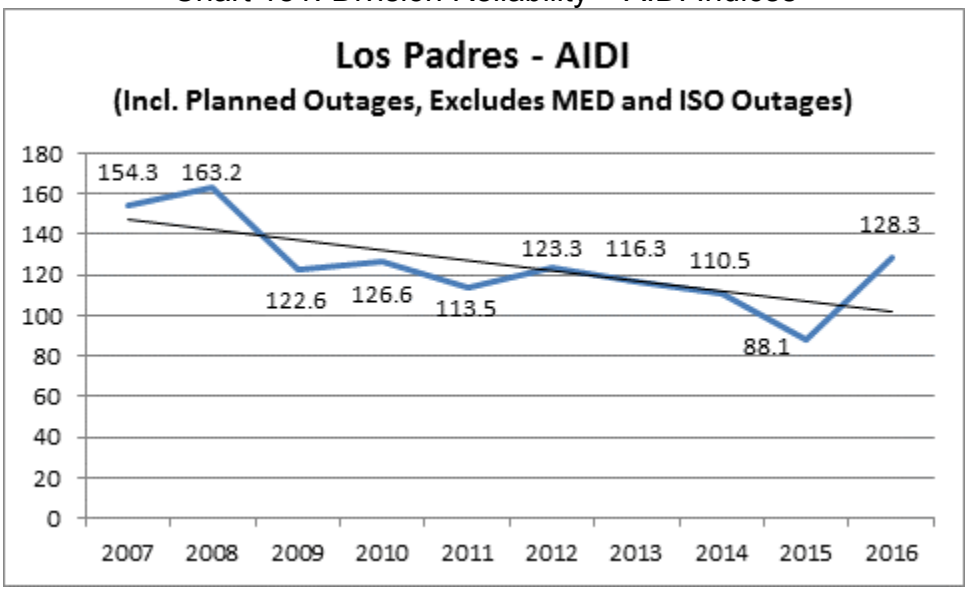


Chart 182: Division Reliability – AIDI Indices

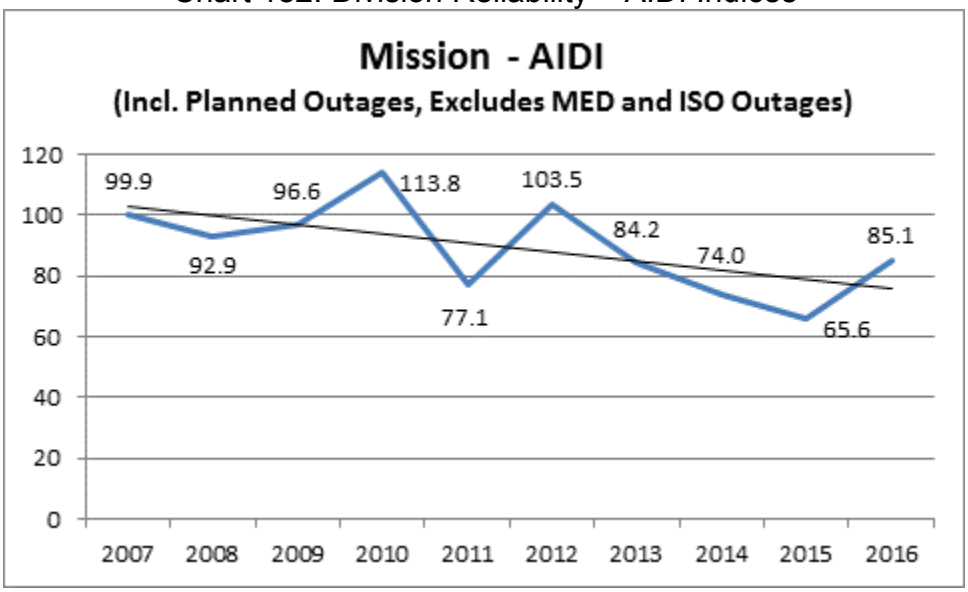


Chart 183: Division Reliability – AIDI Indices

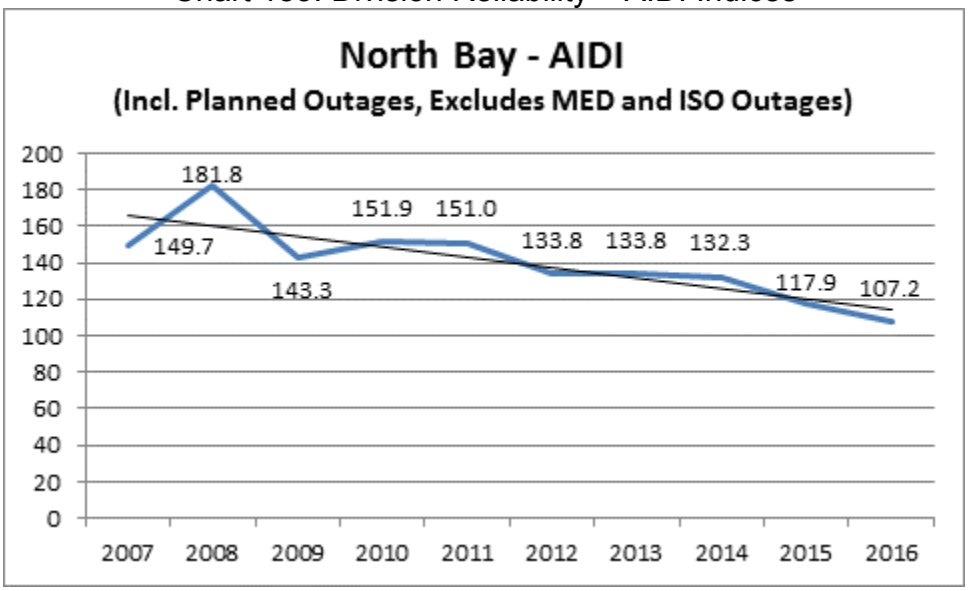


Chart 184: Division Reliability – AIDI Indices

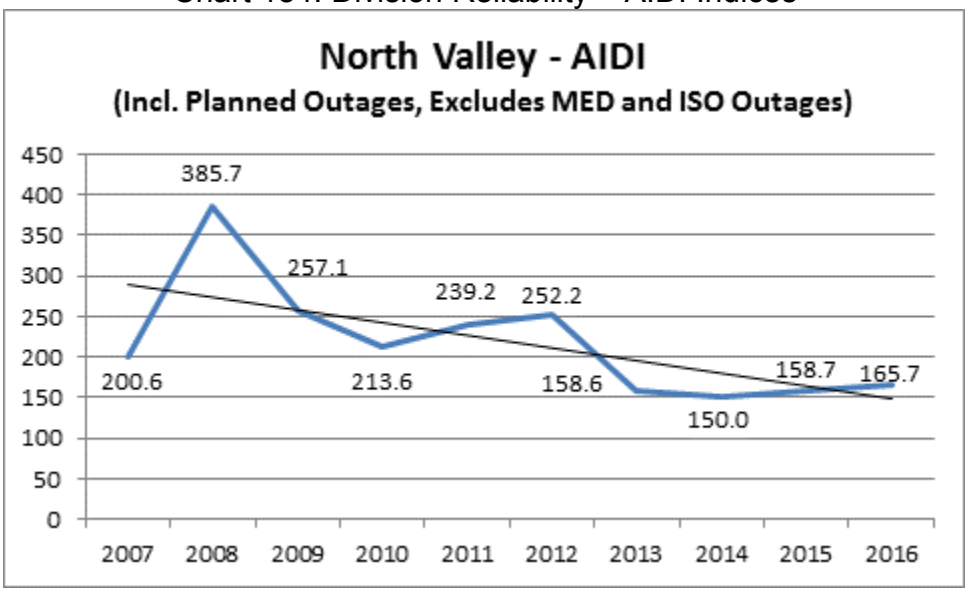


Chart 185: Division Reliability – AIDI Indices

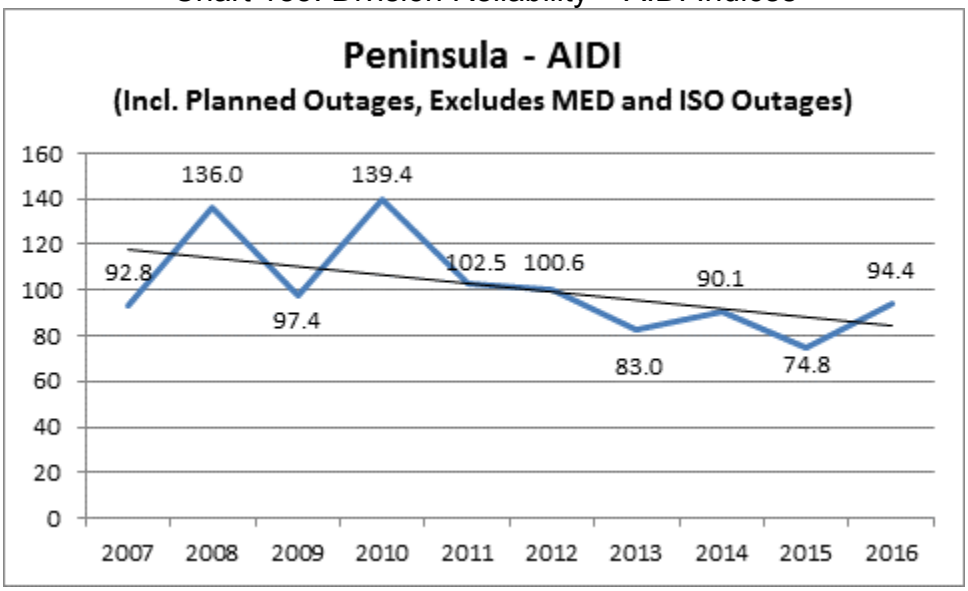


Chart 186: Division Reliability – AIDI Indices

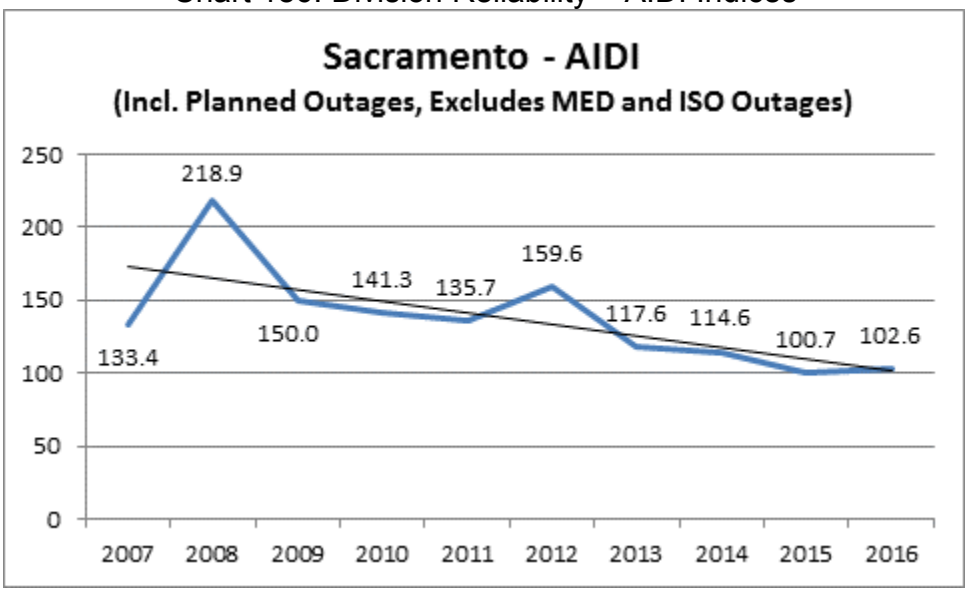


Chart 187: Division Reliability – AIDI Indices

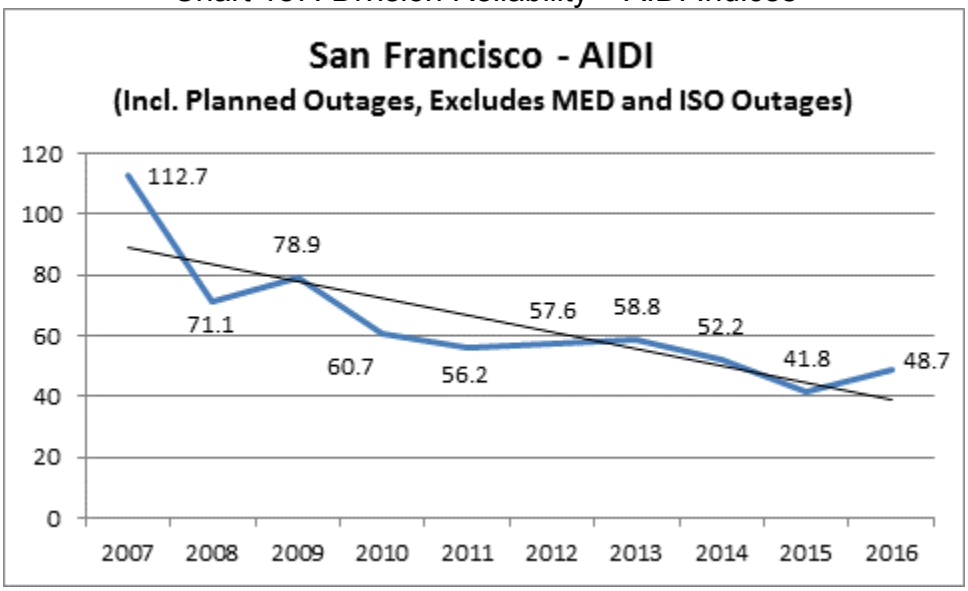


Chart 188: Division Reliability – AIDI Indices

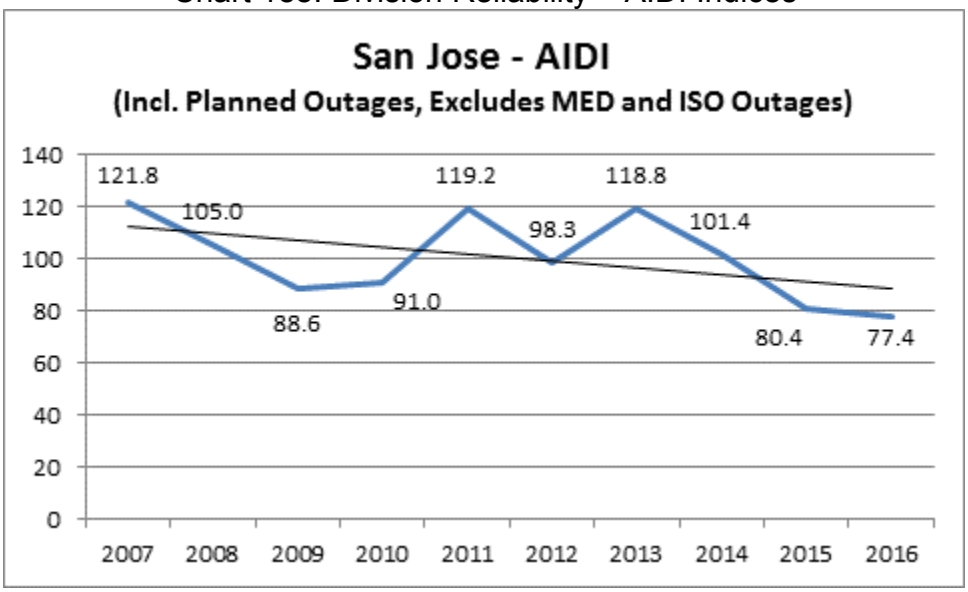


Chart 189: Division Reliability – AIDI Indices

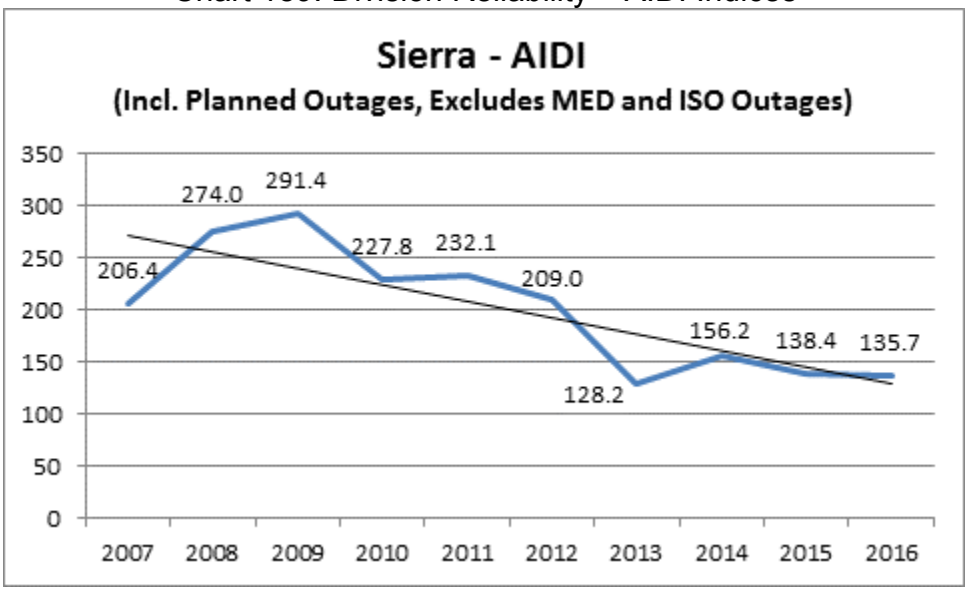


Chart 190: Division Reliability – AIDI Indices

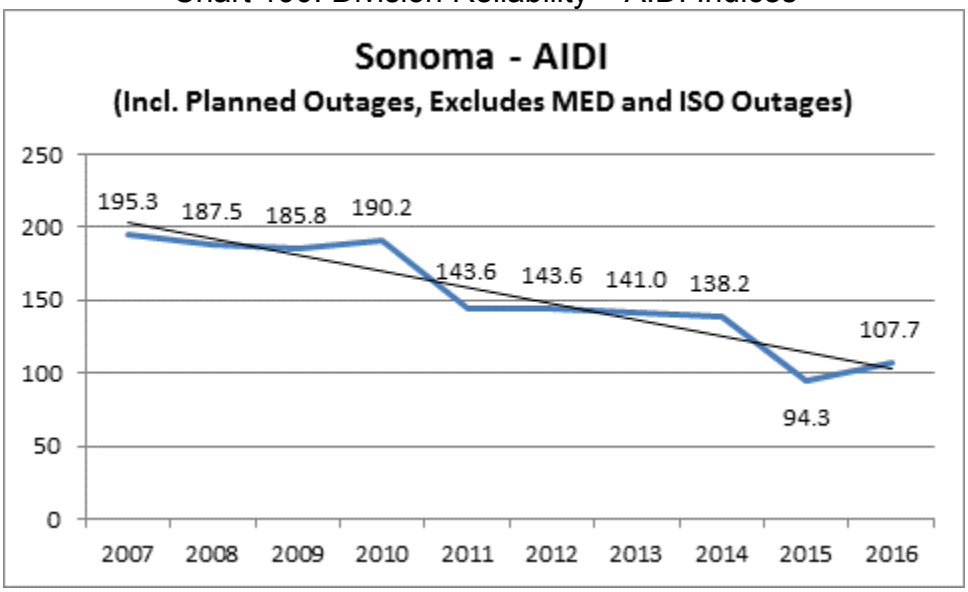


Chart 191: Division Reliability – AIDI Indices

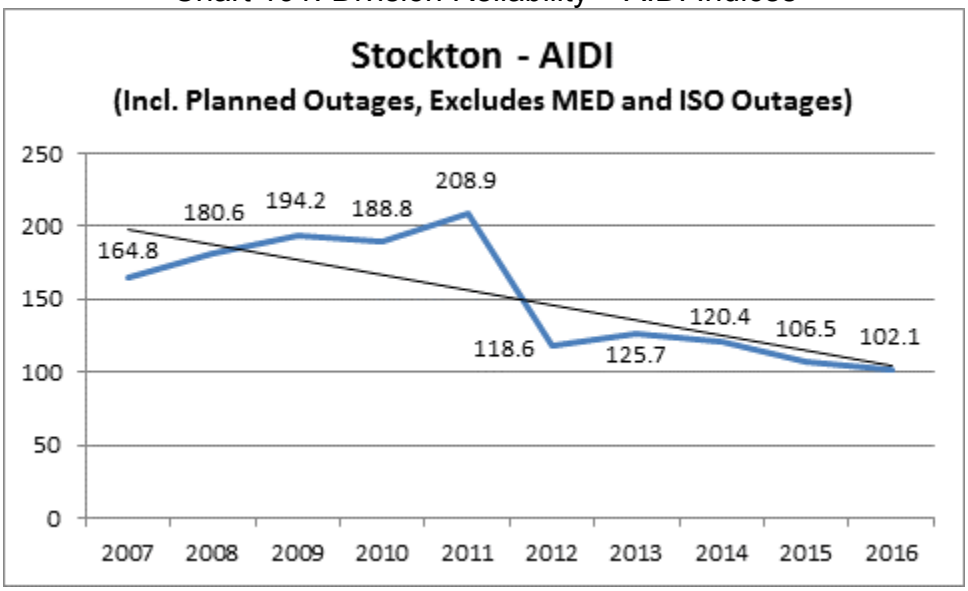


Chart 192: Division Reliability – AIDI Indices

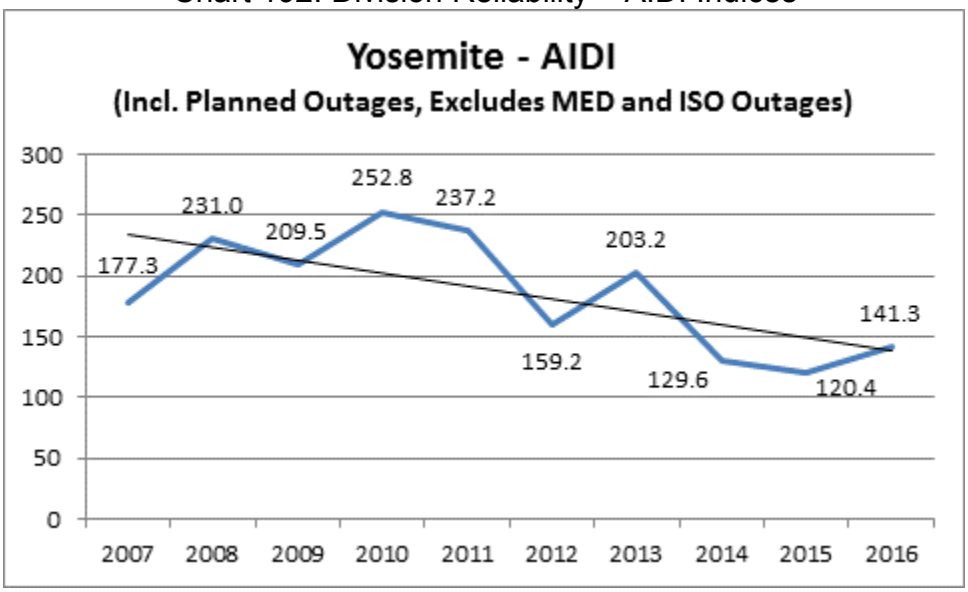
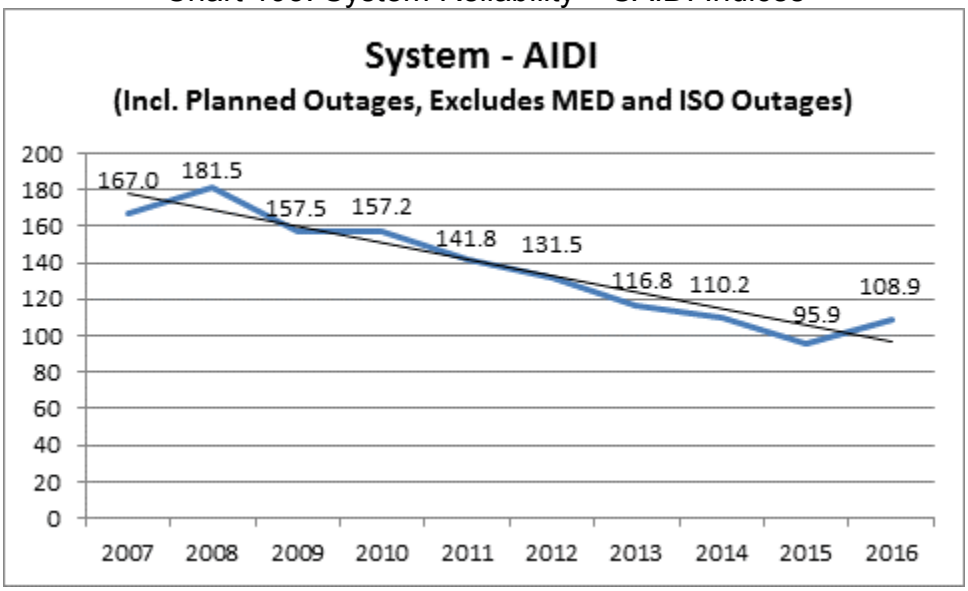


Chart 193: System Reliability – SAIDI Indices



2. SAIFI Performance Results (MED Excluded)

Chart 194: Division Reliability – AIFI Indices

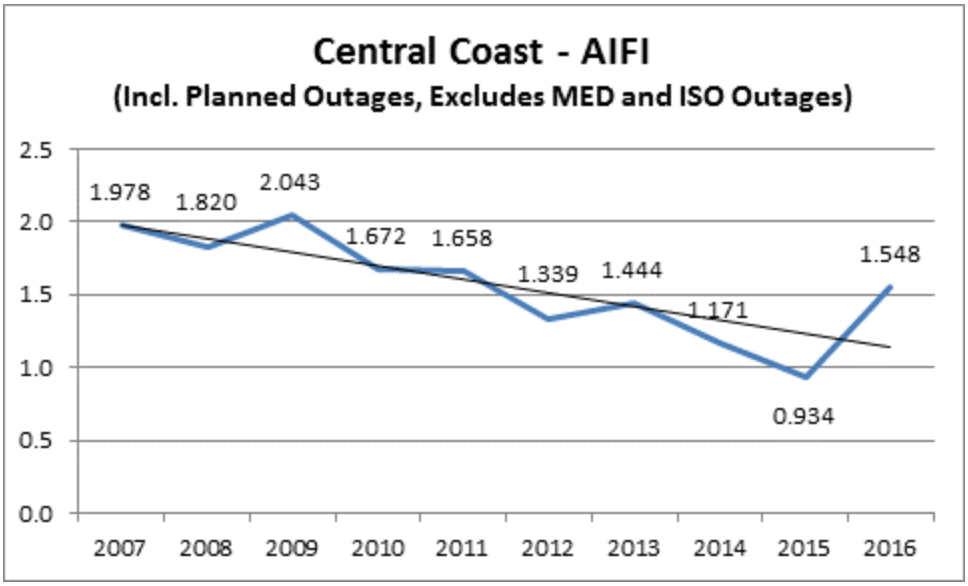


Chart 195: Division Reliability – AIFI Indices

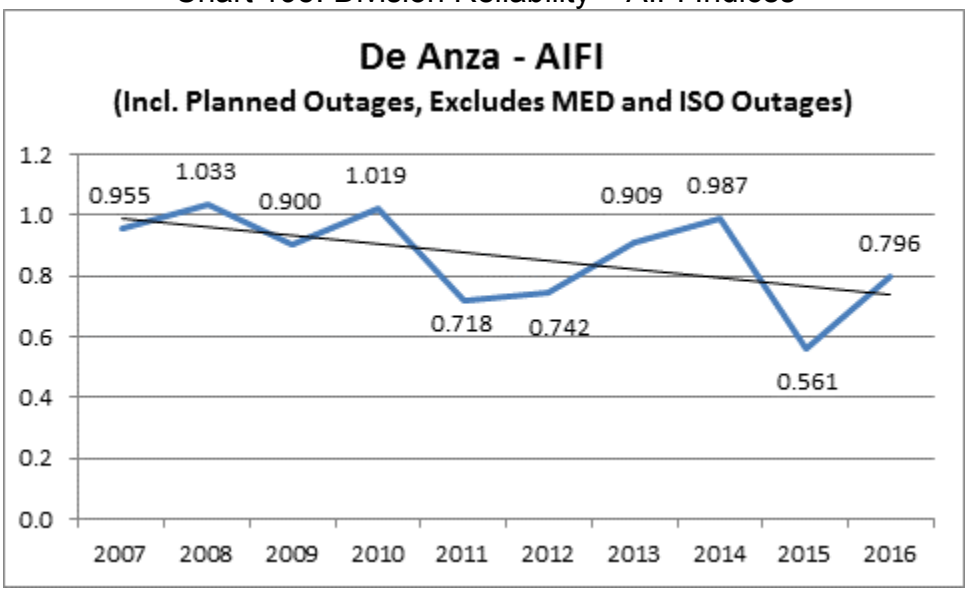


Chart 196: Division Reliability – AIFI Indices

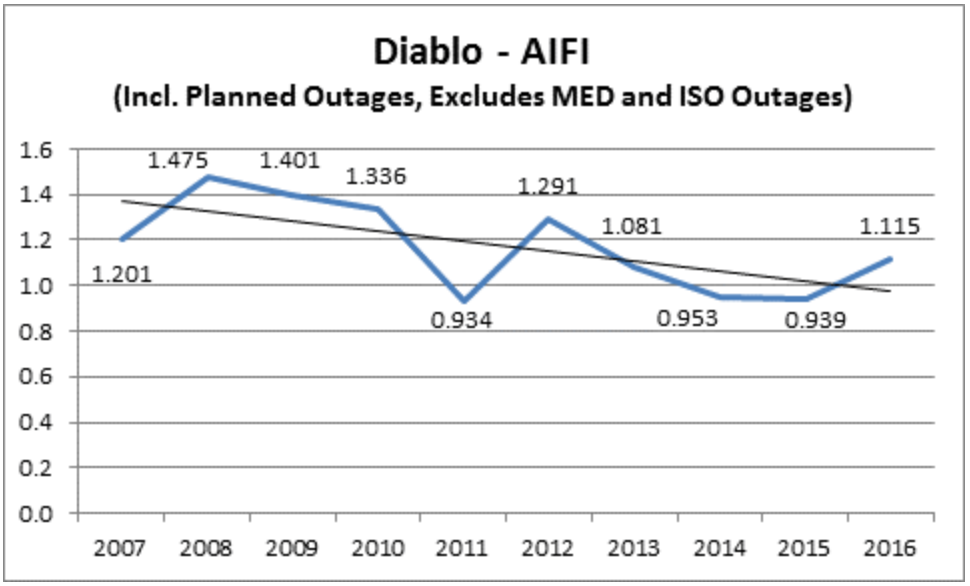


Chart 197: Division Reliability – AIFI Indices

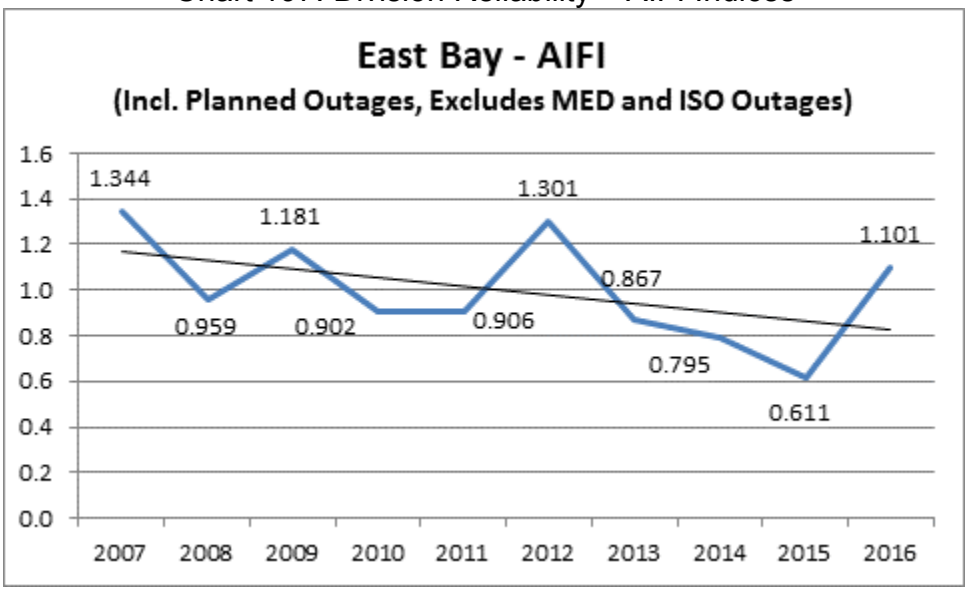


Chart 198: Division Reliability – AIFI Indices

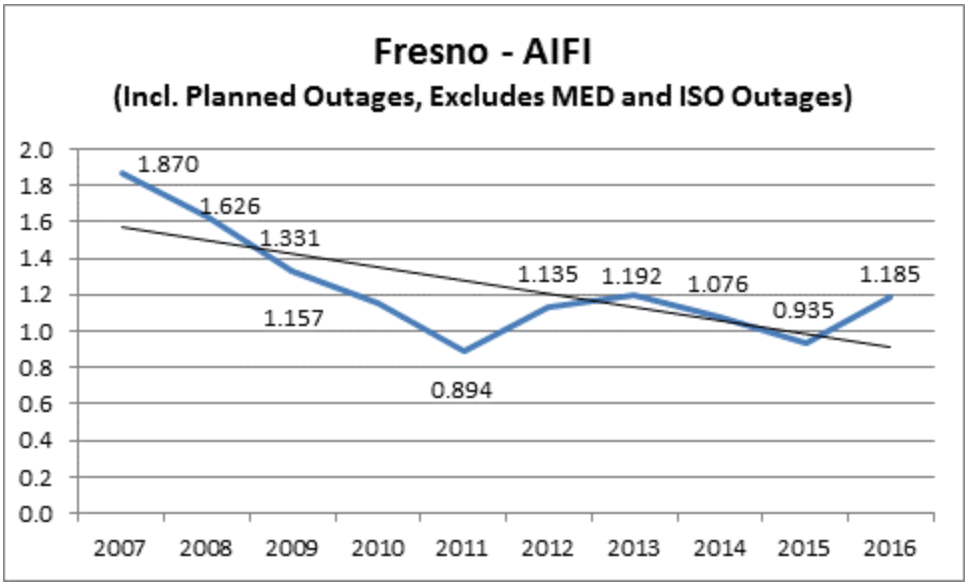


Chart 199: Division Reliability – AIFI Indices

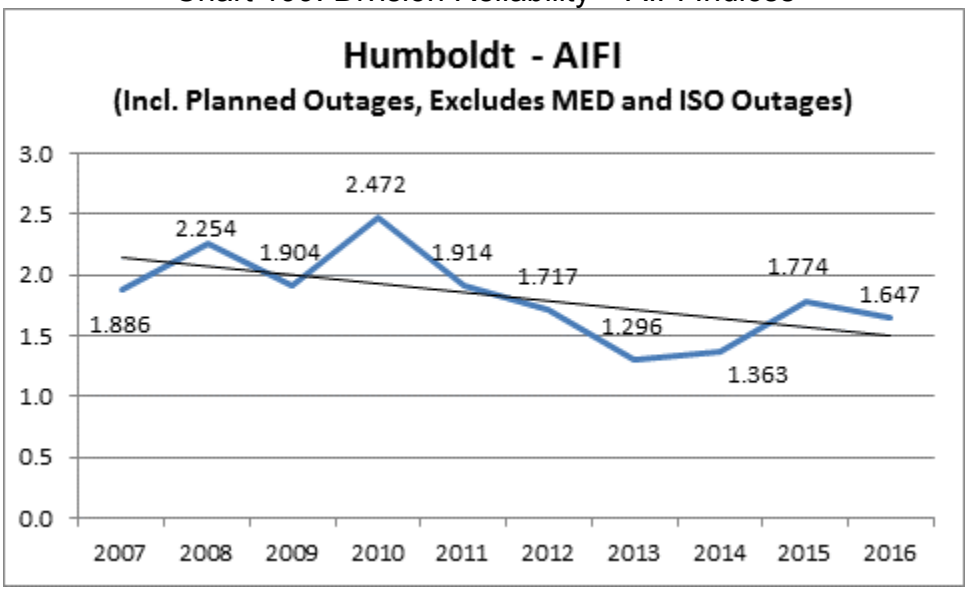


Chart 200: Division Reliability – AIFI Indices

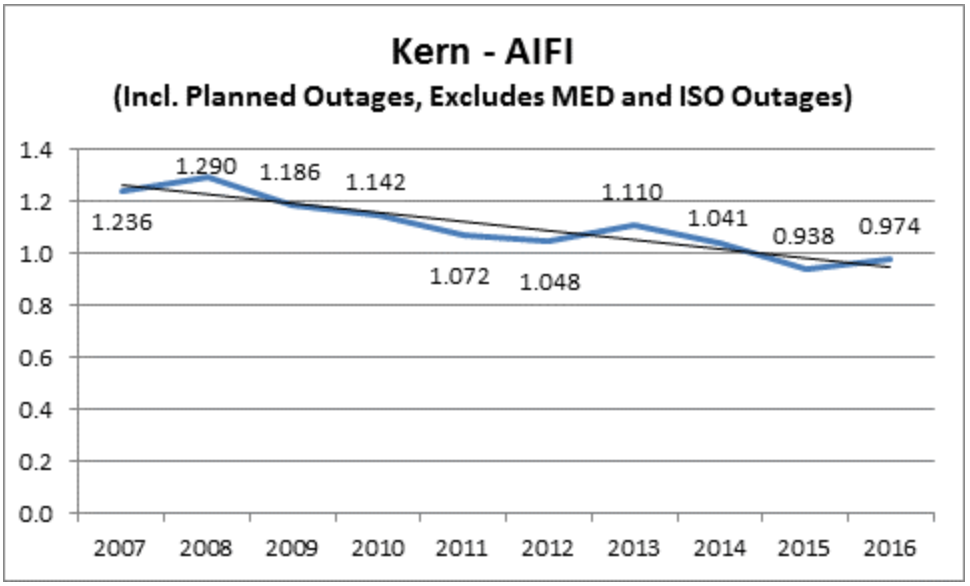


Chart 201: Division Reliability – AIFI Indices

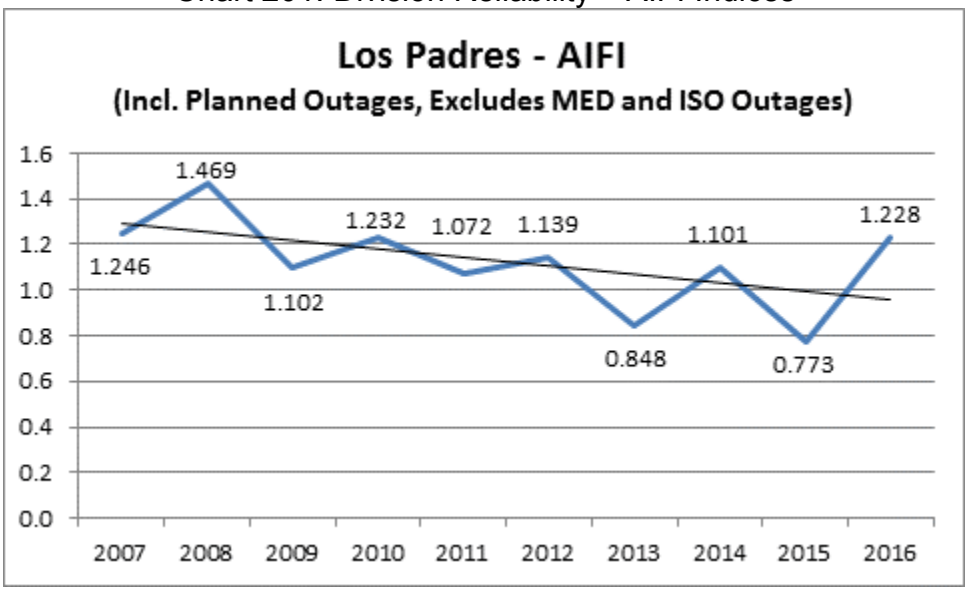


Chart 202: Division Reliability – AIFI Indices

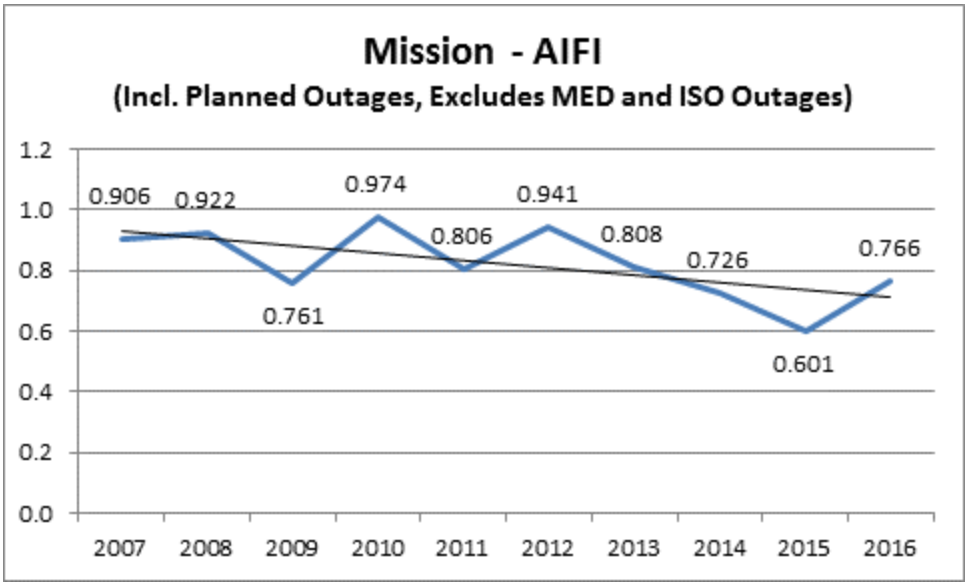


Chart 203: Division Reliability – AIFI Indices

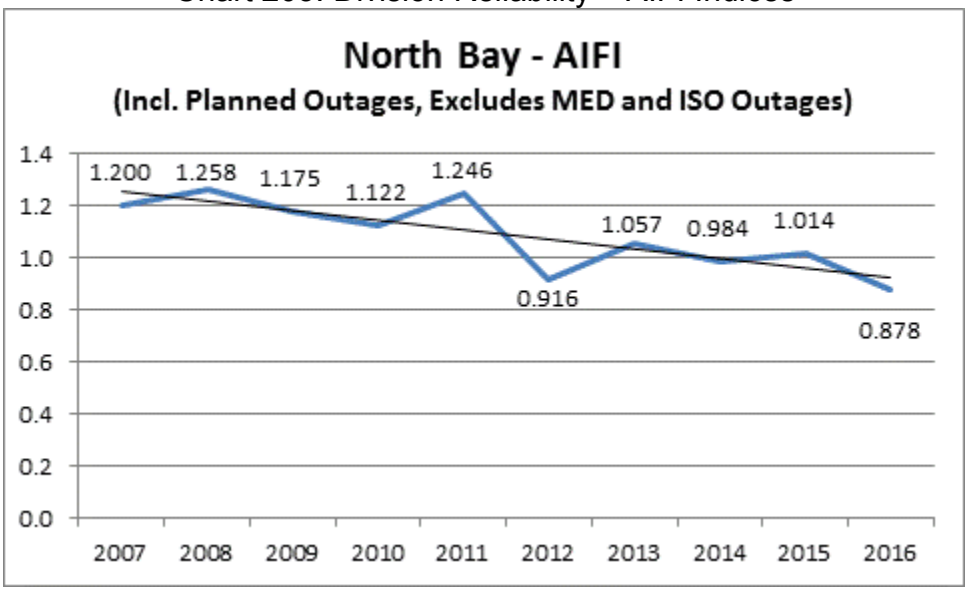


Chart 204: Division Reliability – AIFI Indices

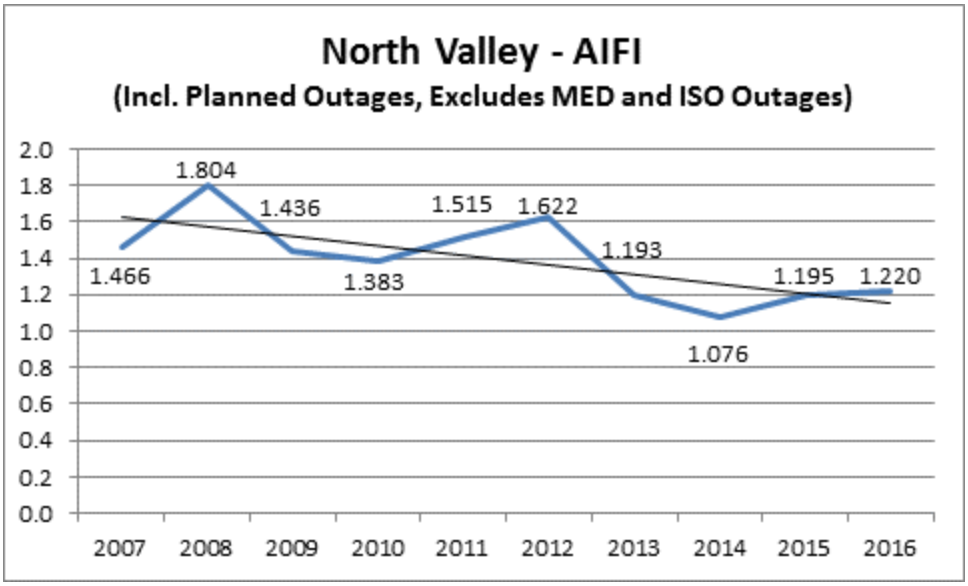


Chart 205: Division Reliability – AIFI Indices

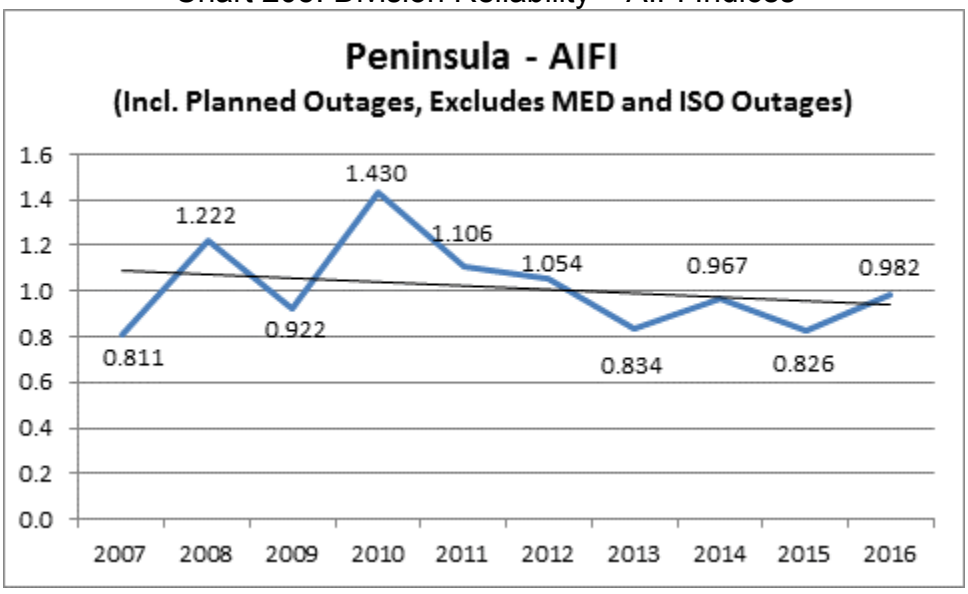


Chart 206: Division Reliability – AIFI Indices

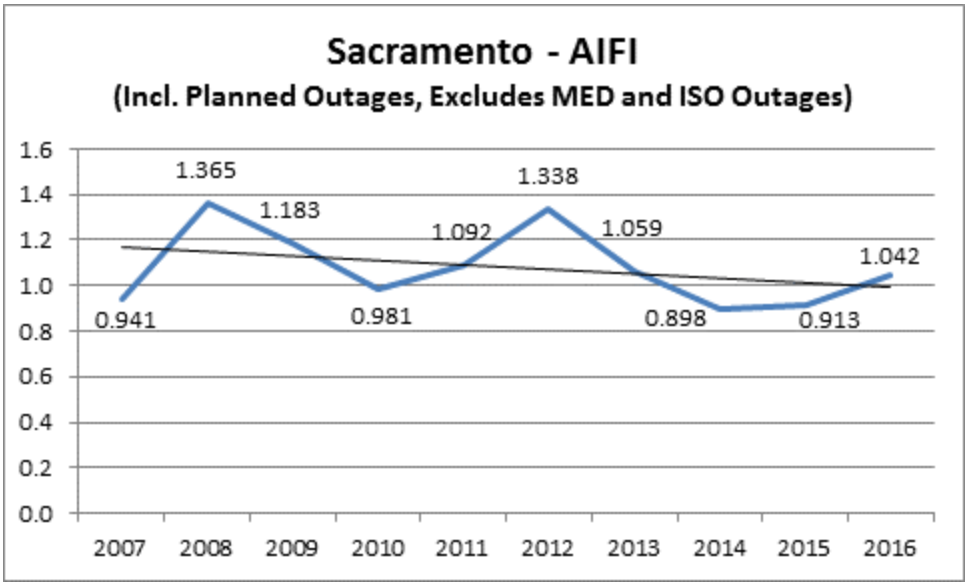


Chart 207: Division Reliability – AIFI Indices

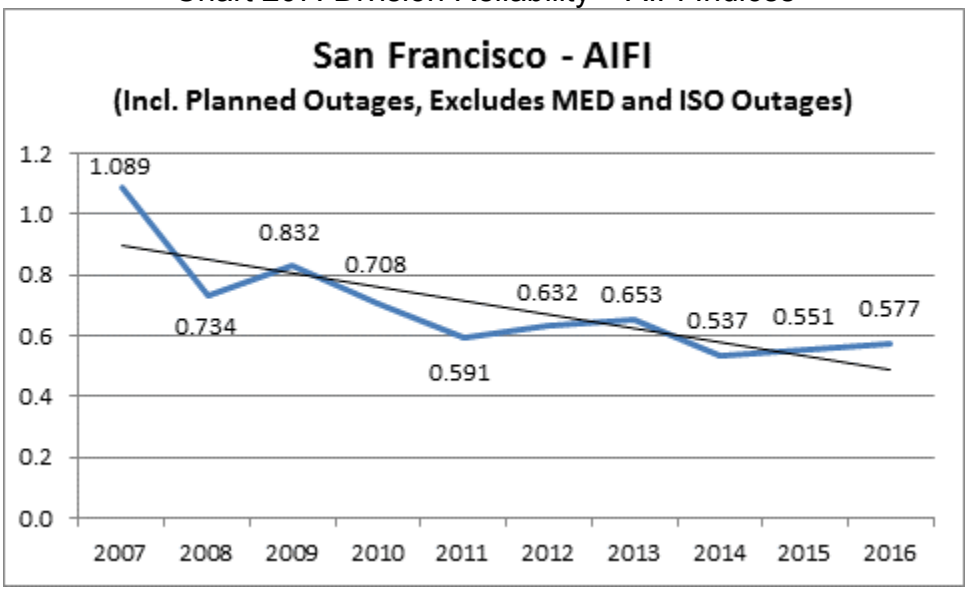


Chart 208: Division Reliability – AIFI Indices

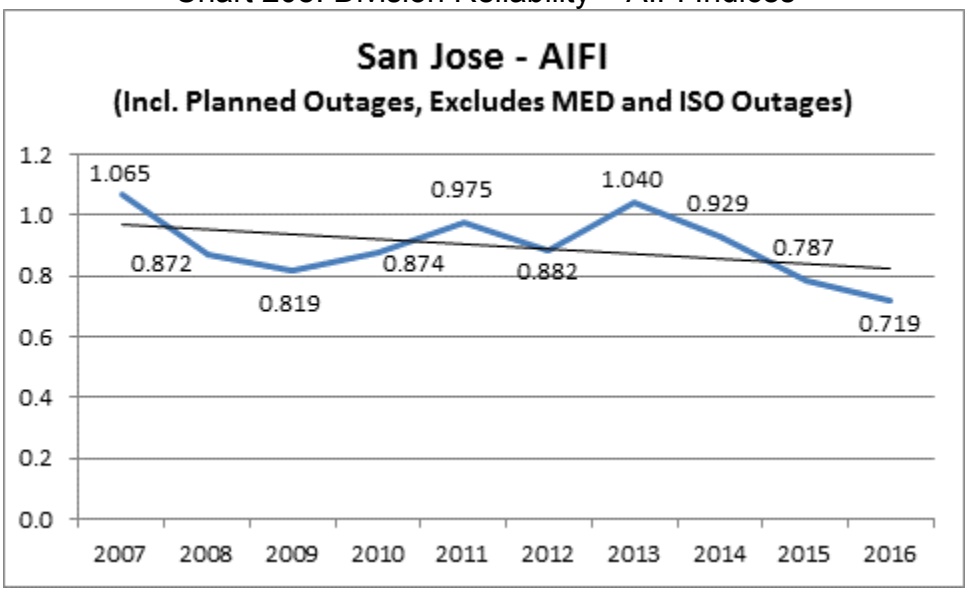


Chart 209: Division Reliability – AIFI Indices

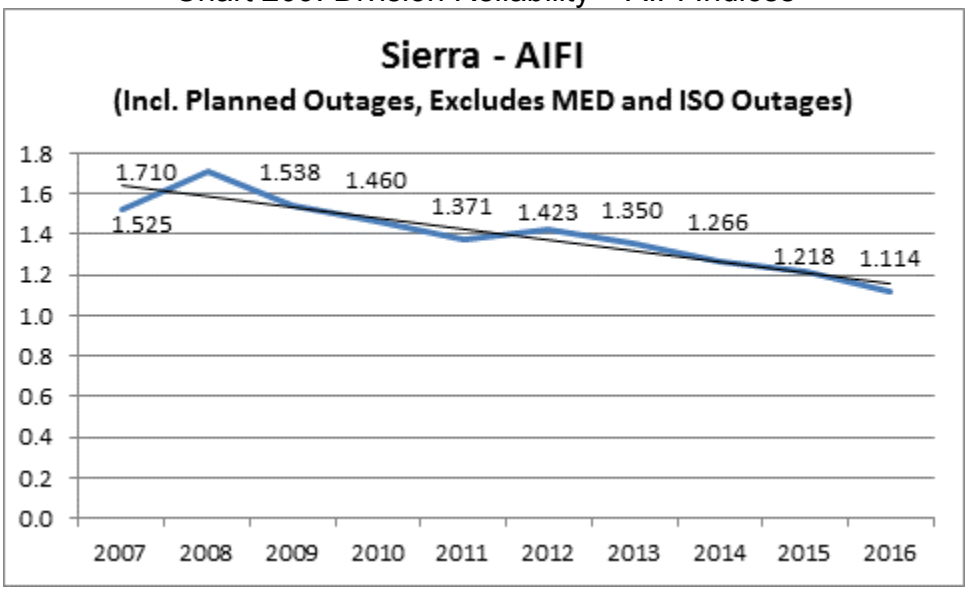


Chart 210: Division Reliability – AIFI Indices

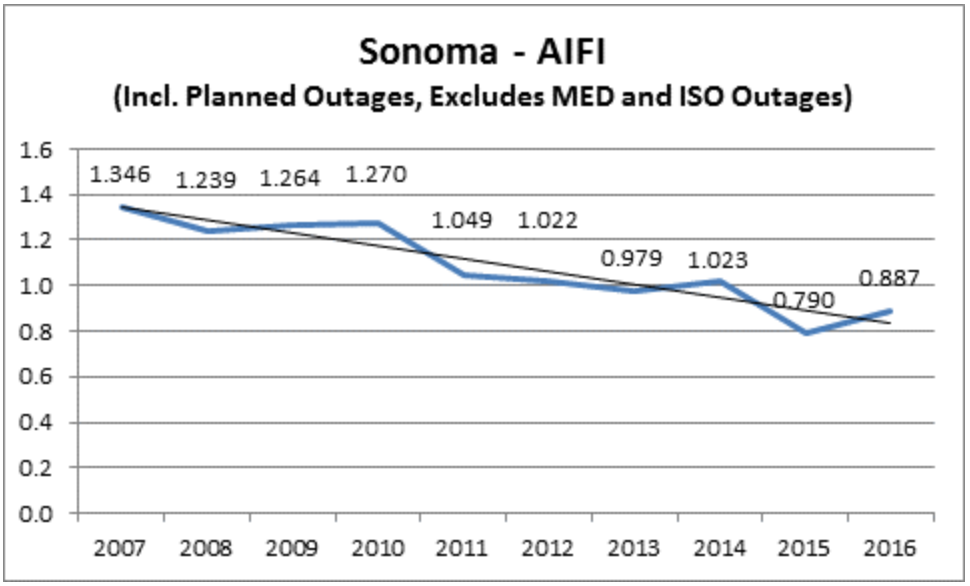


Chart 211: Division Reliability – AIFI Indices

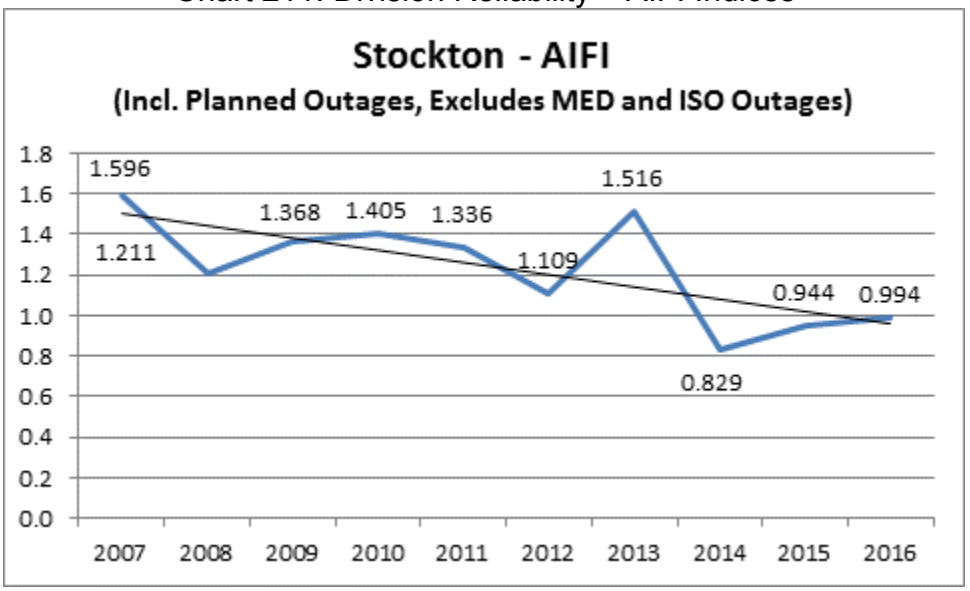


Chart 212: Division Reliability – AIFI Indices

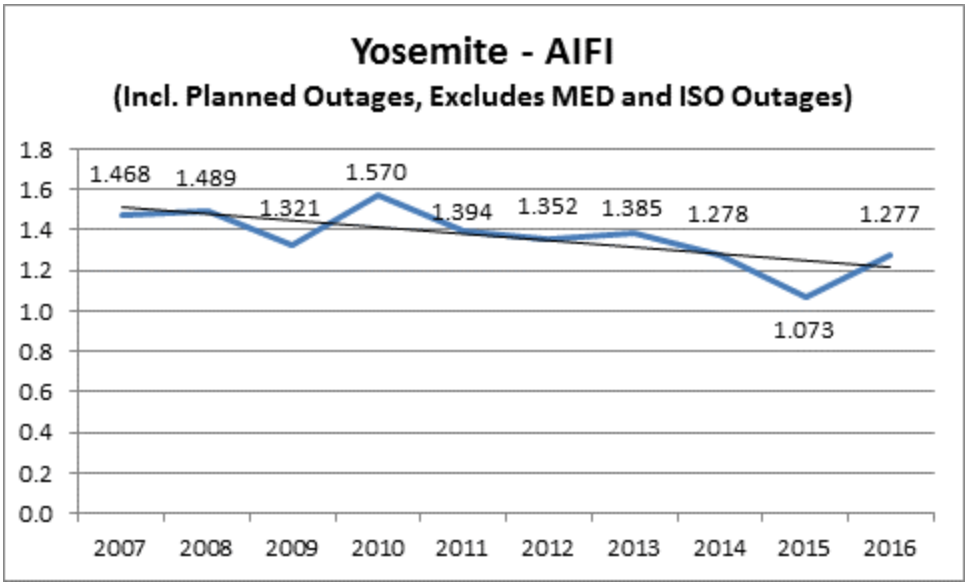
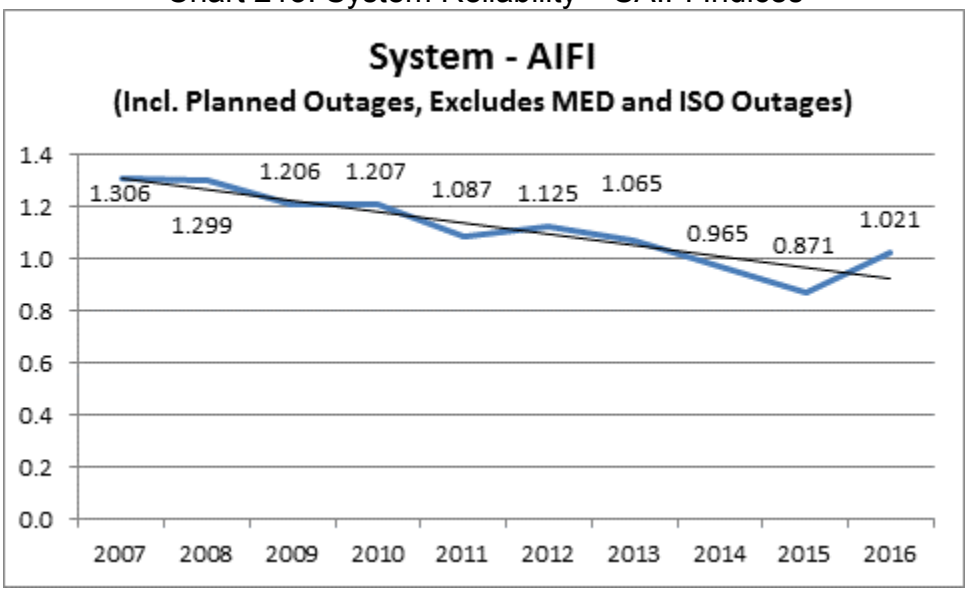


Chart 213: System Reliability – SAIFI Indices



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

Chart 214: Division Reliability – MAIFI Indices

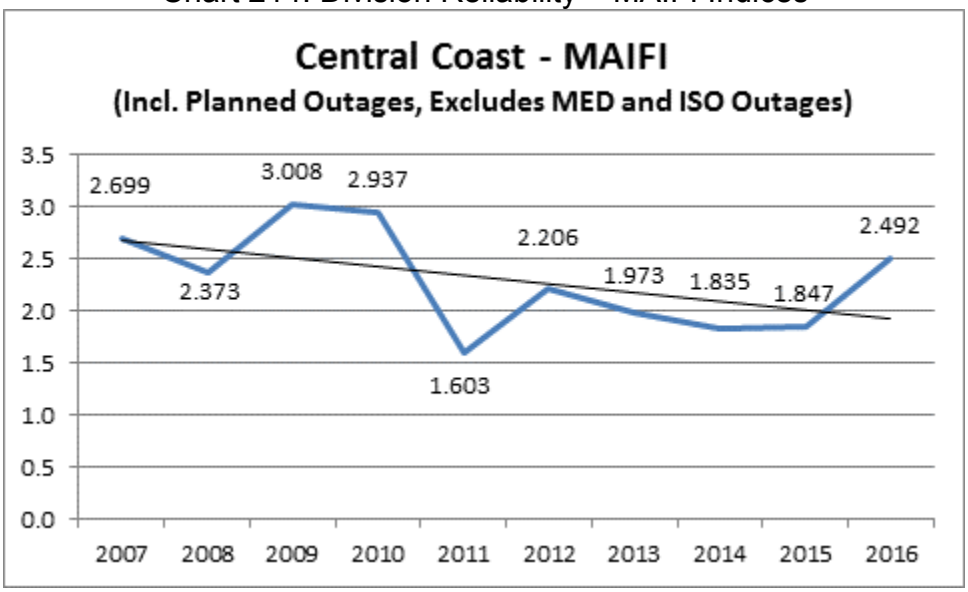
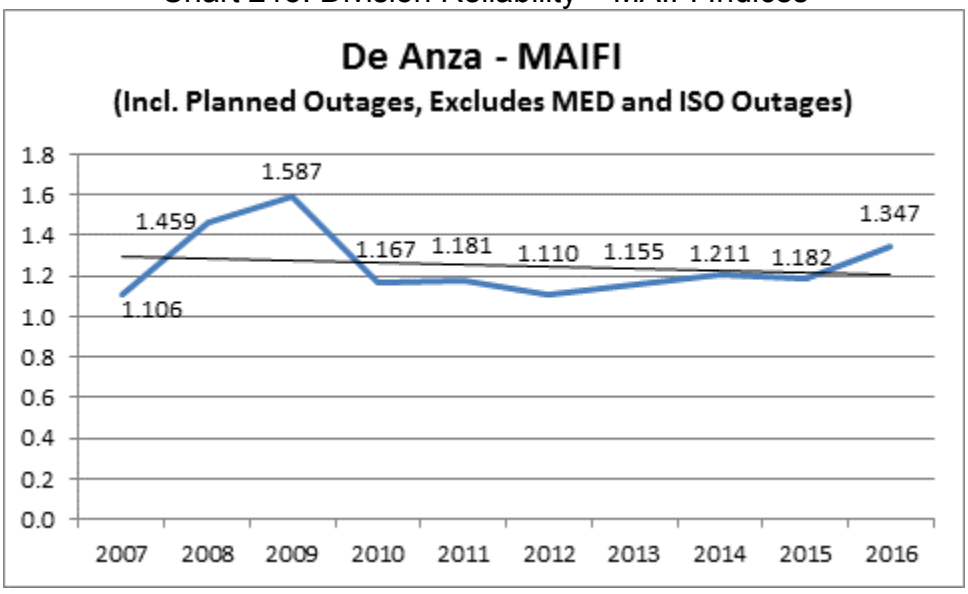


Chart 215: Division Reliability – MAIFI Indices



[10] As discussed in footnote 4 above, on November 18, 2011 the EON recording system was removed from service. Momentary outage data is now being collected from SCADA devices and through the use of Smart Meters. Data collection from the Smart Meters is more effective than the previous EON system since Smart Meters don't rely on customer volunteers having EON devices connected inside their buildings. The increased frequency of momentary outages recorded in 2012 and following years does not necessarily indicate an actual increase in momentary outages in 2012 and after as compared to prior years, but is a result of this improved method for recording momentary outages.

Chart 216: Division Reliability – MAIFI Indices

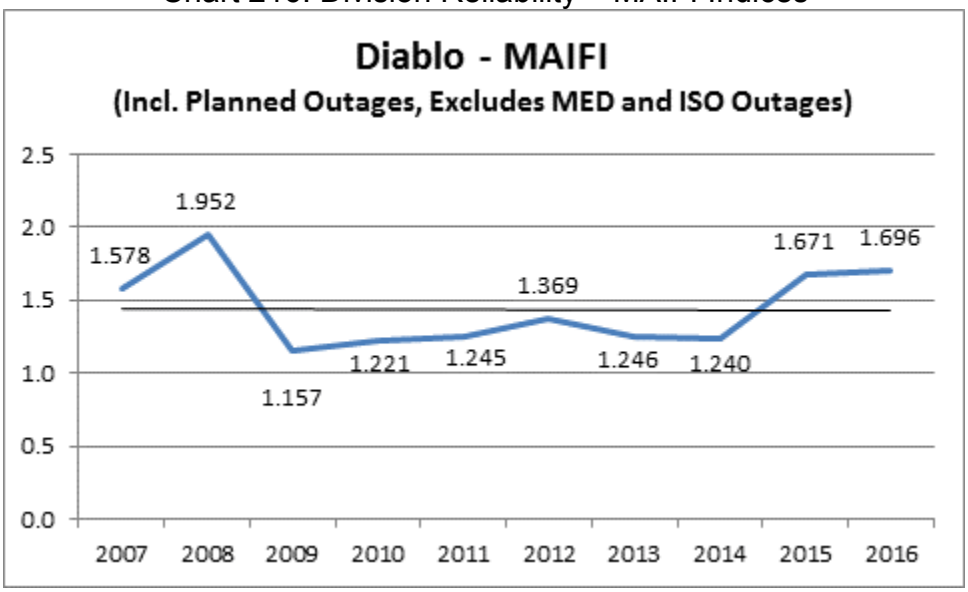


Chart 217: Division Reliability – MAIFI Indices

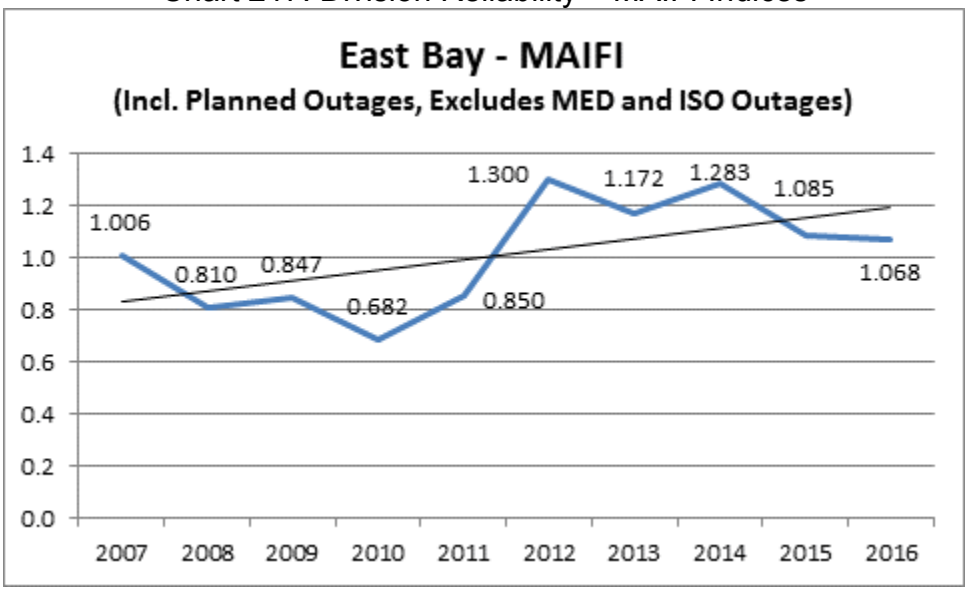


Chart 218: Division Reliability – MAIFI Indices

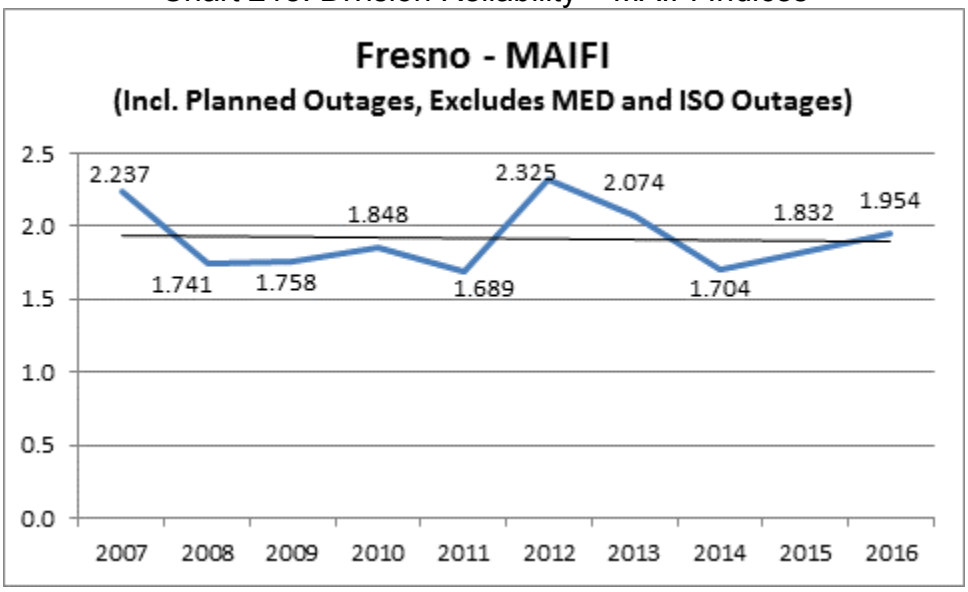


Chart 219: Division Reliability – MAIFI Indices

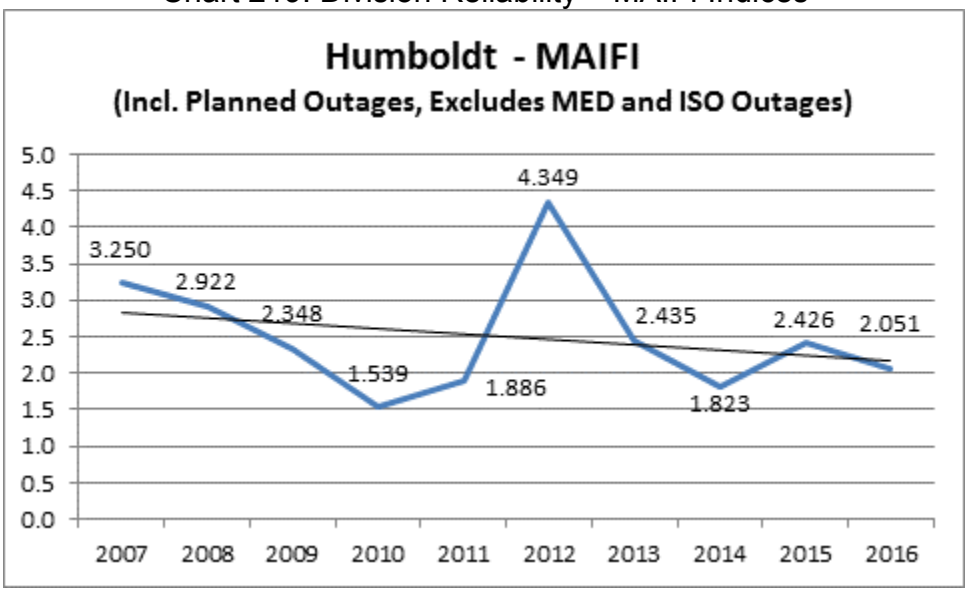


Chart 220: Division Reliability – MAIFI Indices

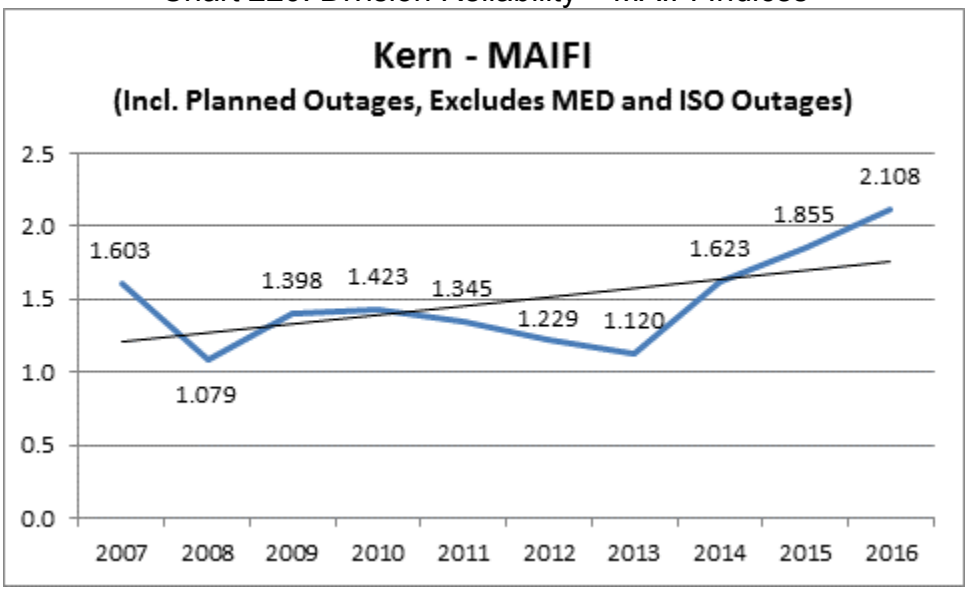


Chart 221: Division Reliability – MAIFI Indices

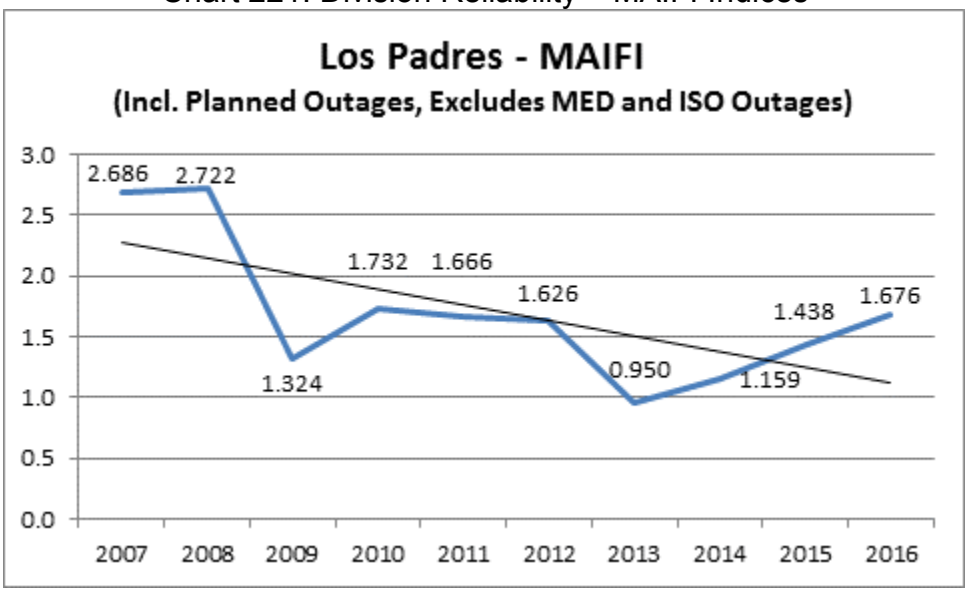


Chart 222: Division Reliability – MAIFI Indices

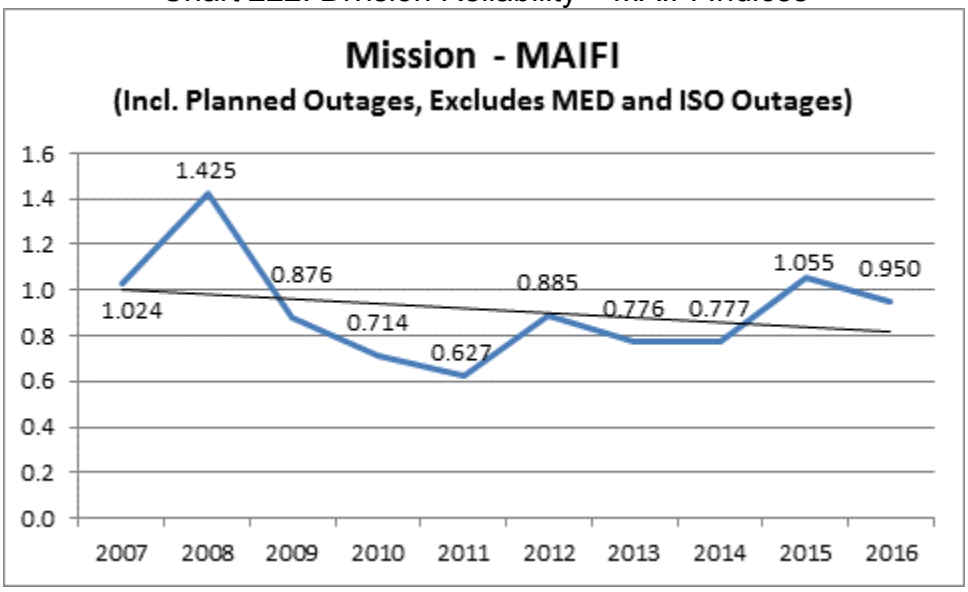


Chart 223: Division Reliability – MAIFI Indices

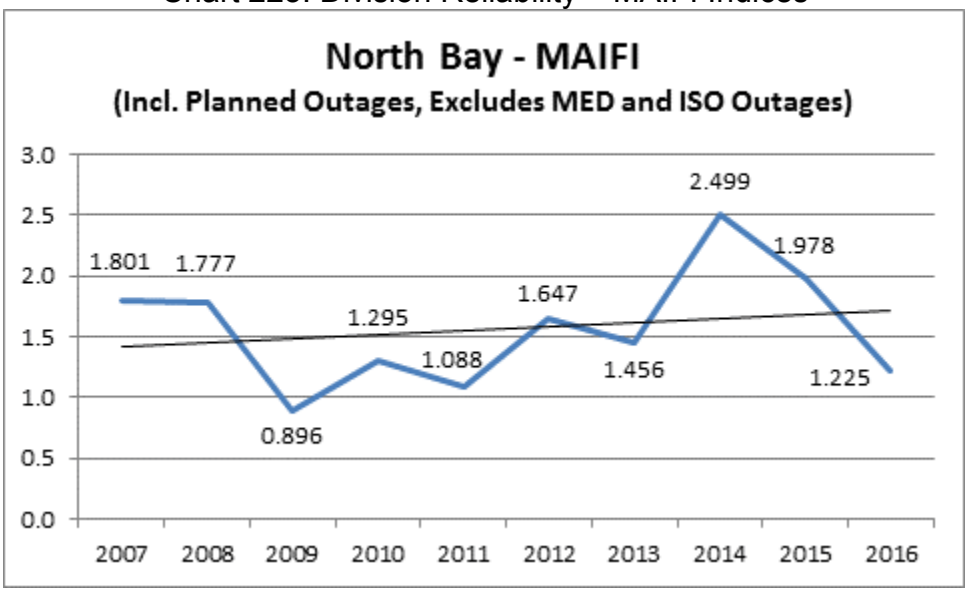


Chart 224: Division Reliability – MAIFI Indices

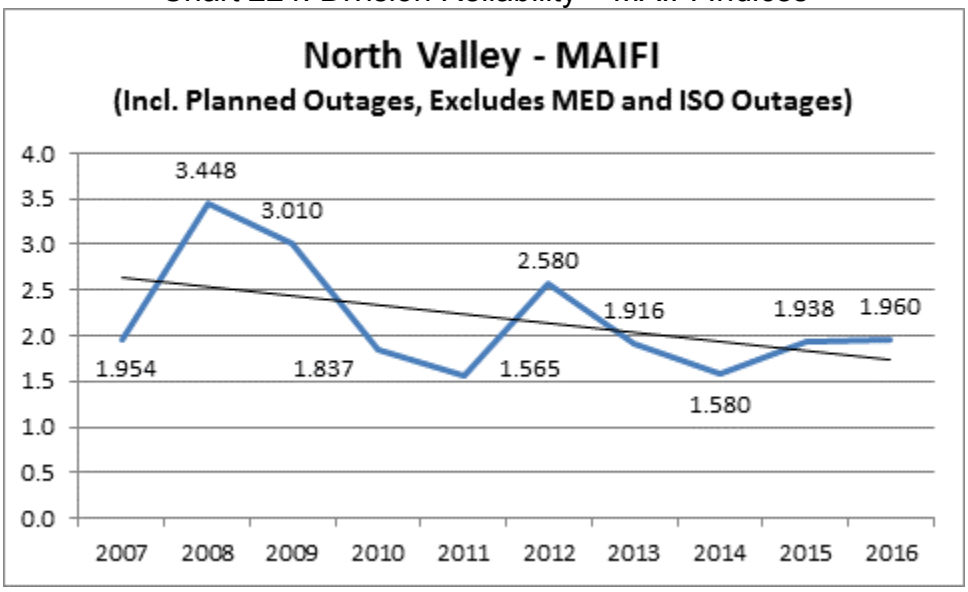


Chart 225: Division Reliability – MAIFI Indices

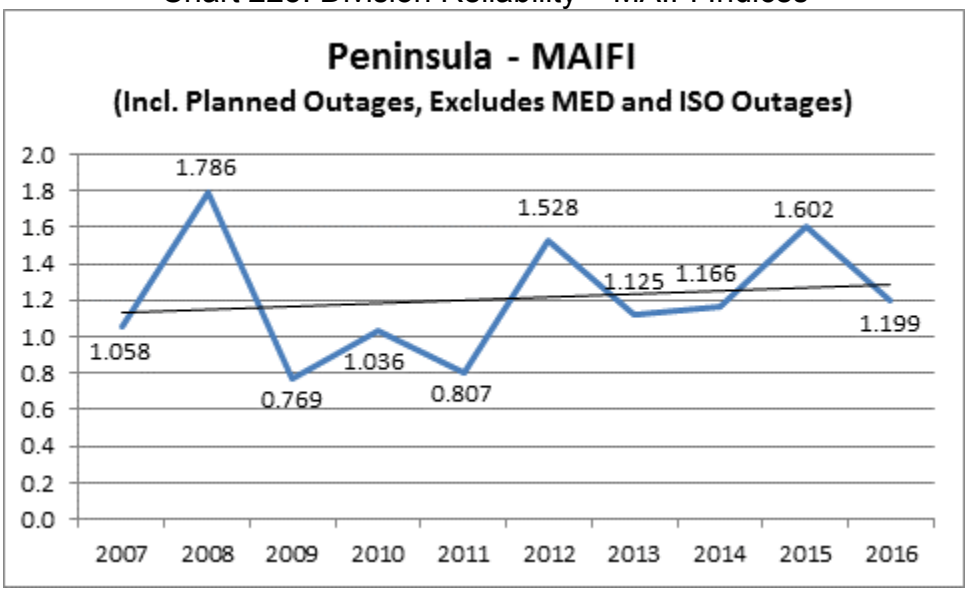


Chart 226: Division Reliability – MAIFI Indices

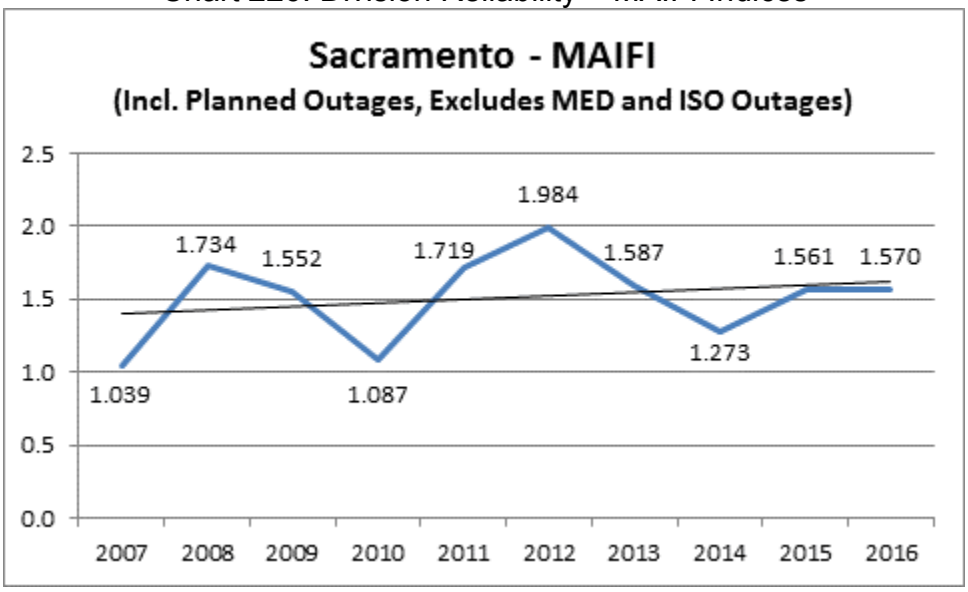


Chart 227: Division Reliability – MAIFI Indices

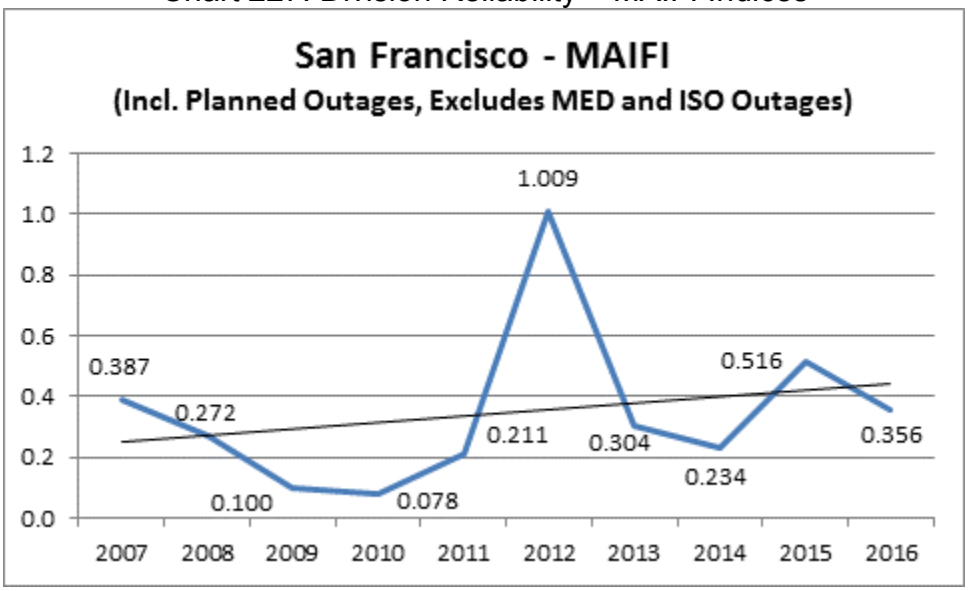


Chart 228: Division Reliability – MAIFI Indices

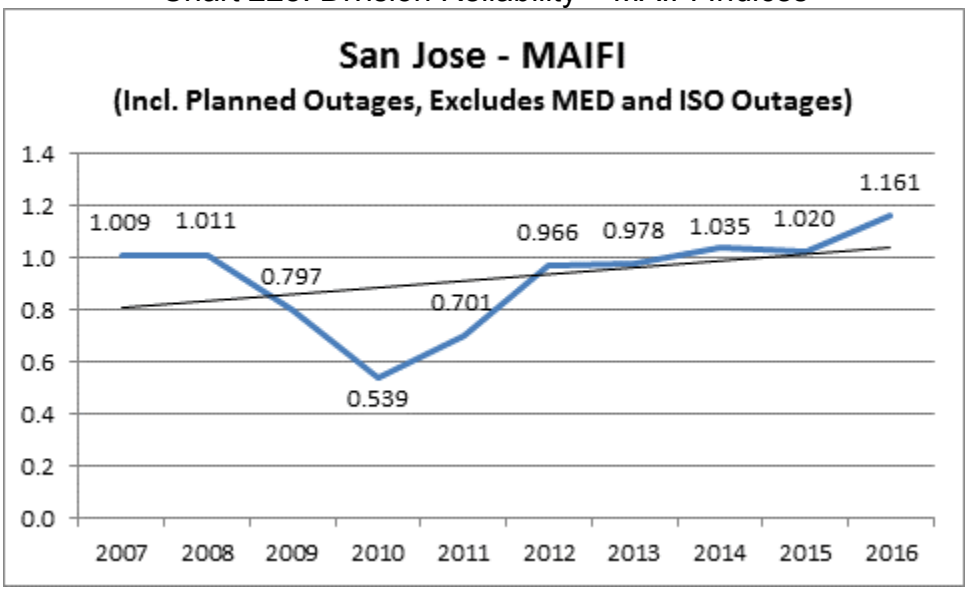


Chart 229: Division Reliability – MAIFI Indices

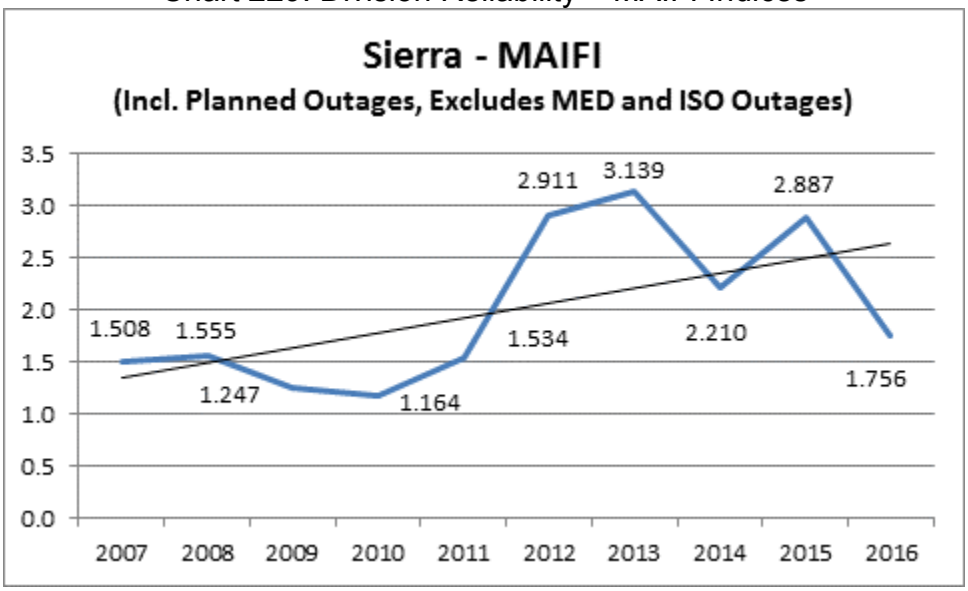


Chart 230: Division Reliability – MAIFI Indices

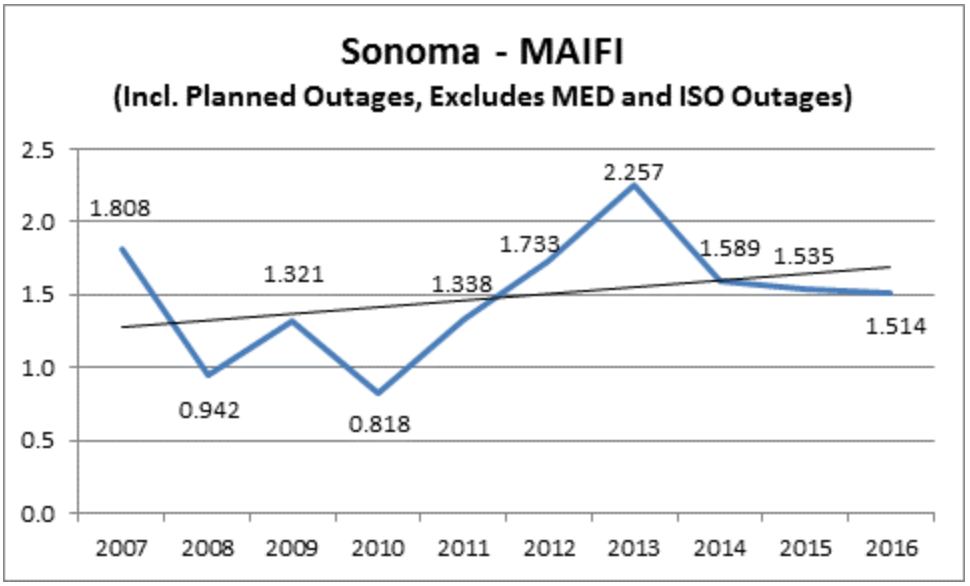


Chart 231: Division Reliability – MAIFI Indices

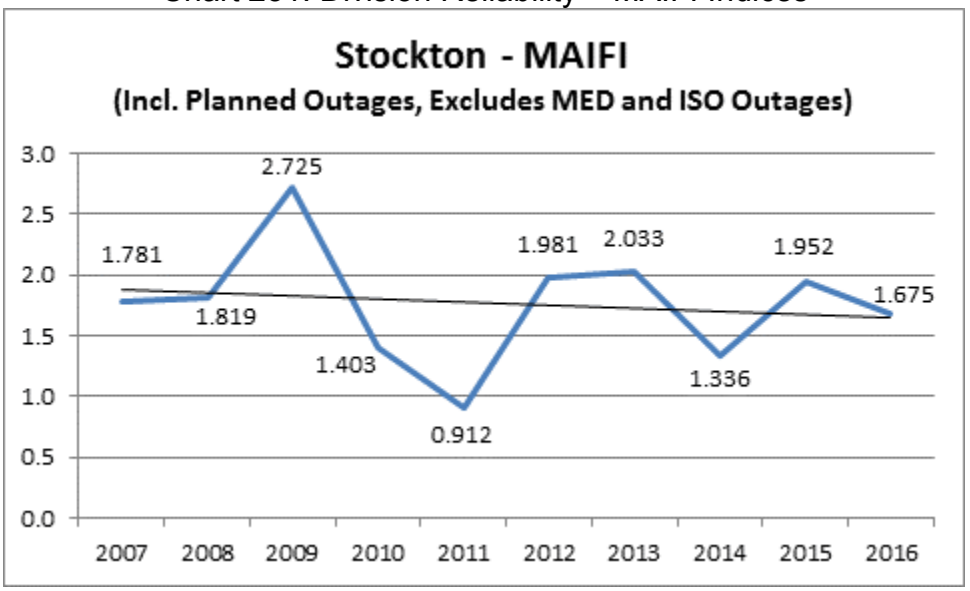


Chart 232: Division Reliability – MAIFI Indices

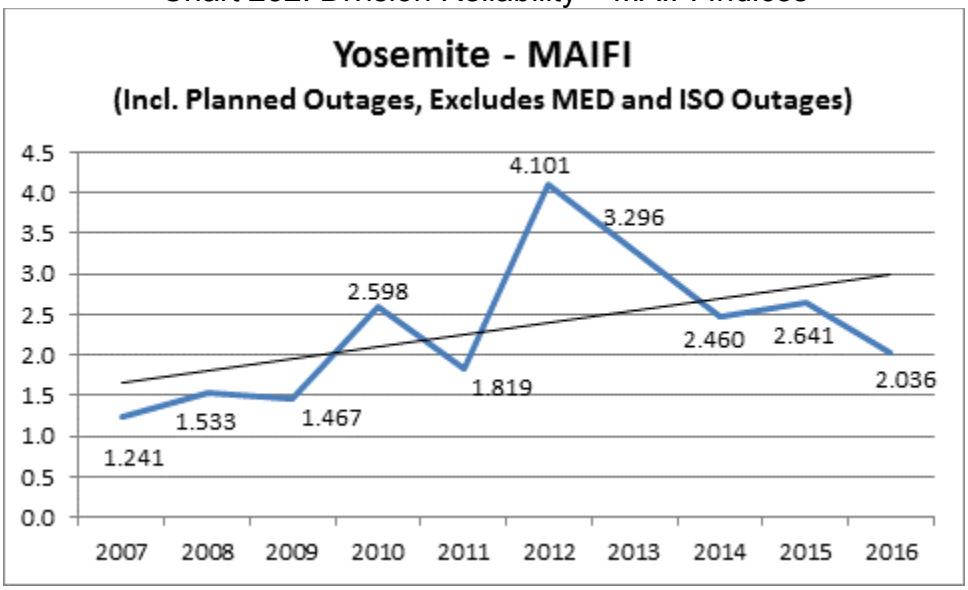
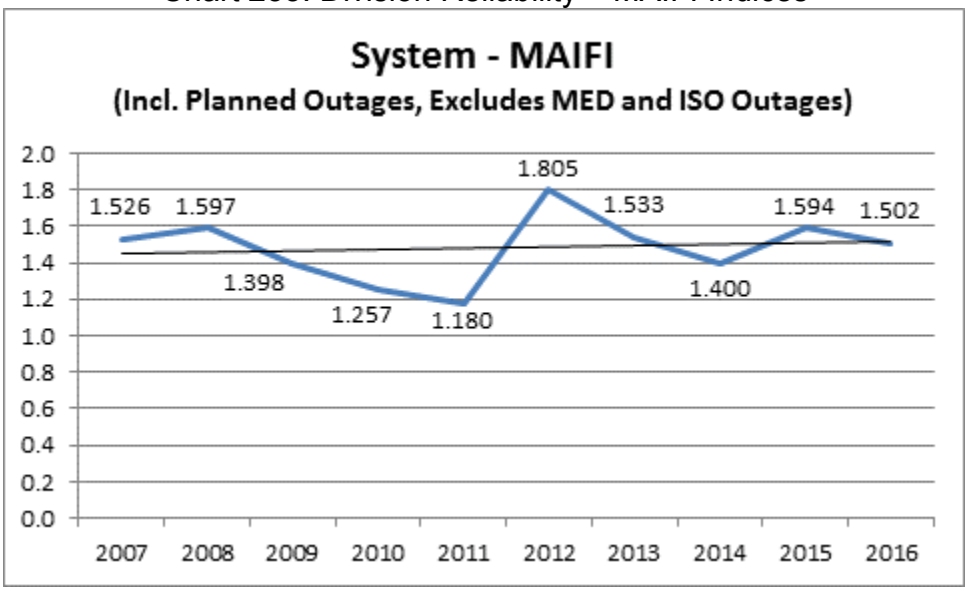


Chart 233: Division Reliability – MAIFI Indices



4. CAIDI Performance Results (MED Excluded)

Chart 234: Division Reliability – CAIDI Indices

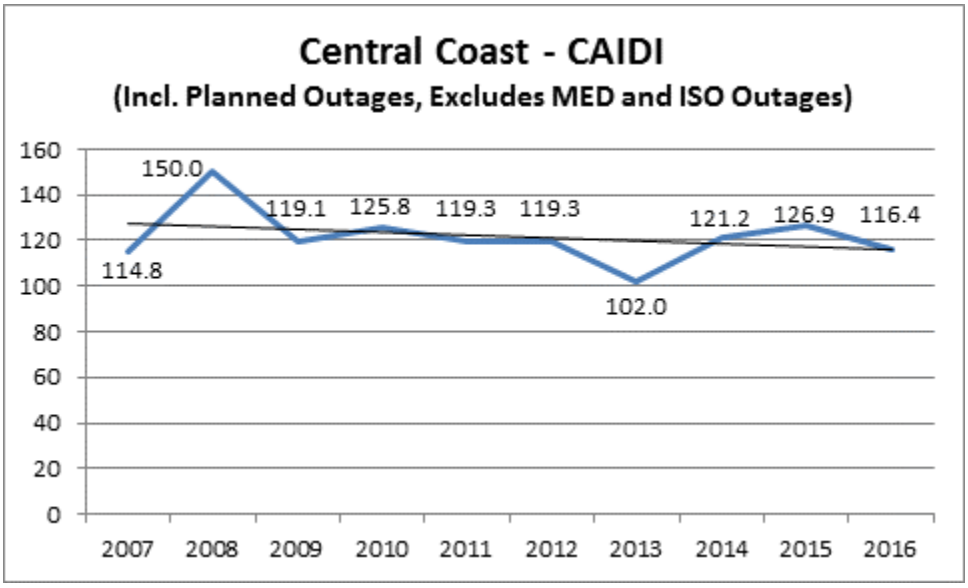


Chart 235: Division Reliability – CAIDI Indices

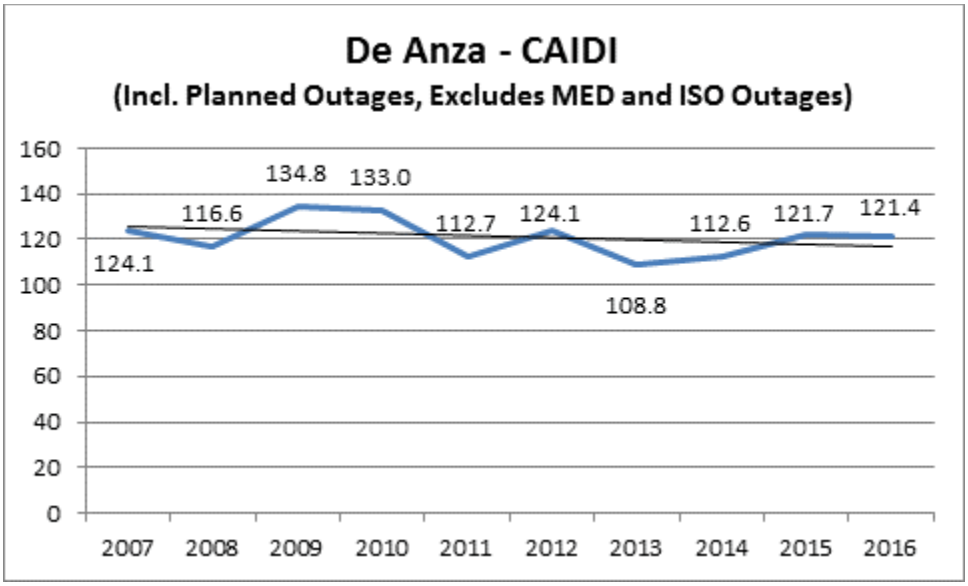


Chart 236: Division Reliability – CAIDI Indices

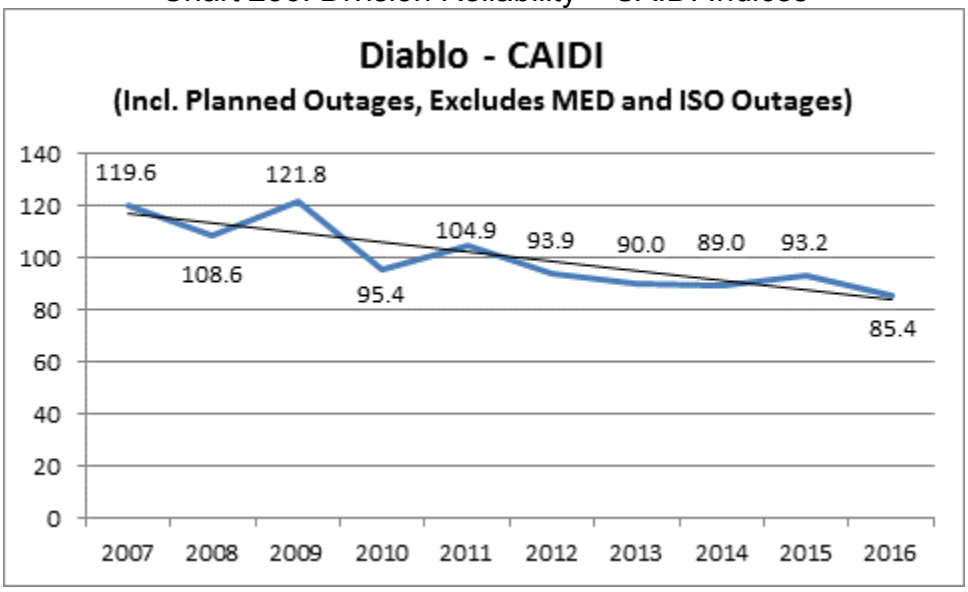


Chart 237: Division Reliability – CAIDI Indices

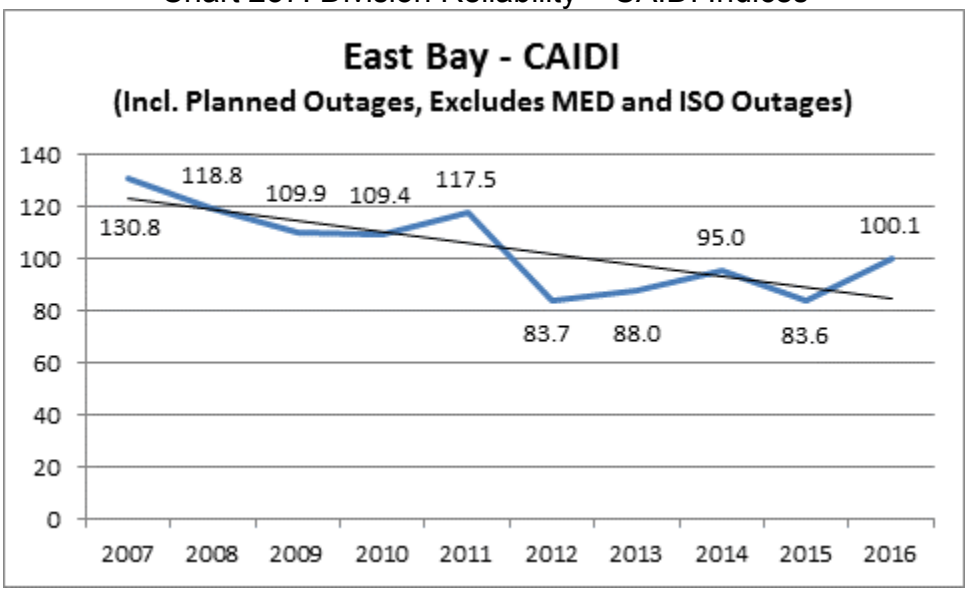


Chart 238: Division Reliability – CAIDI Indices

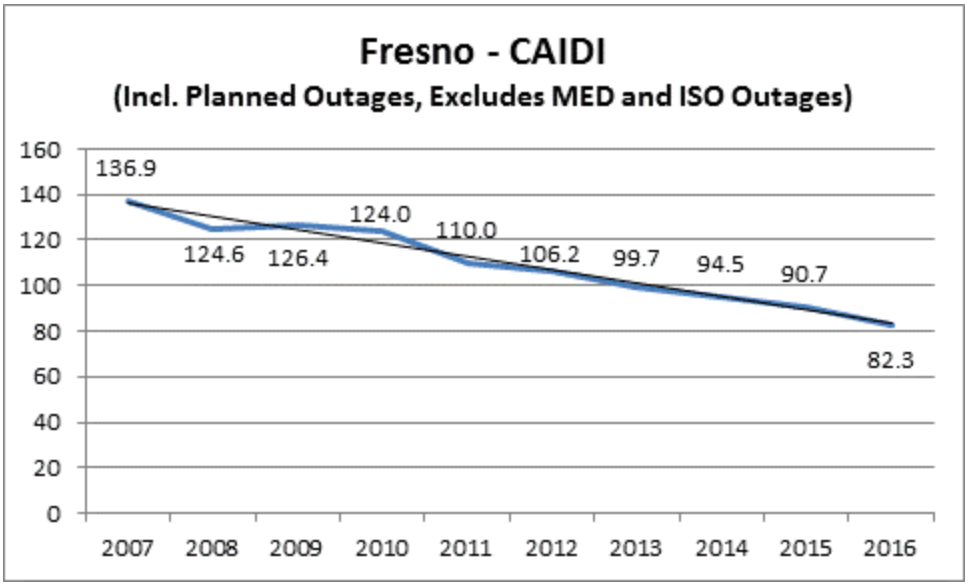


Chart 239: Division Reliability – CAIDI Indices

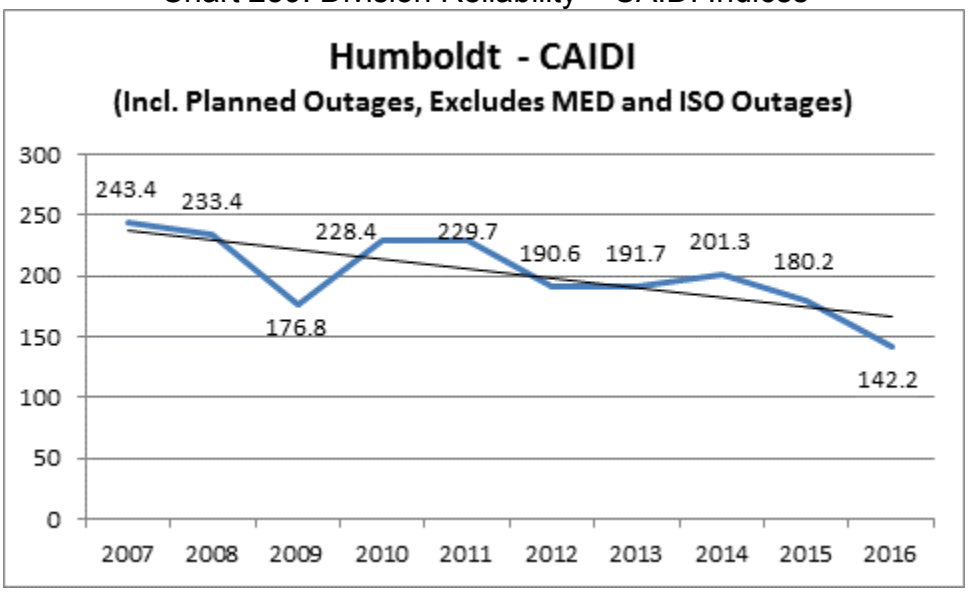


Chart 240: Division Reliability – CAIDI Indices

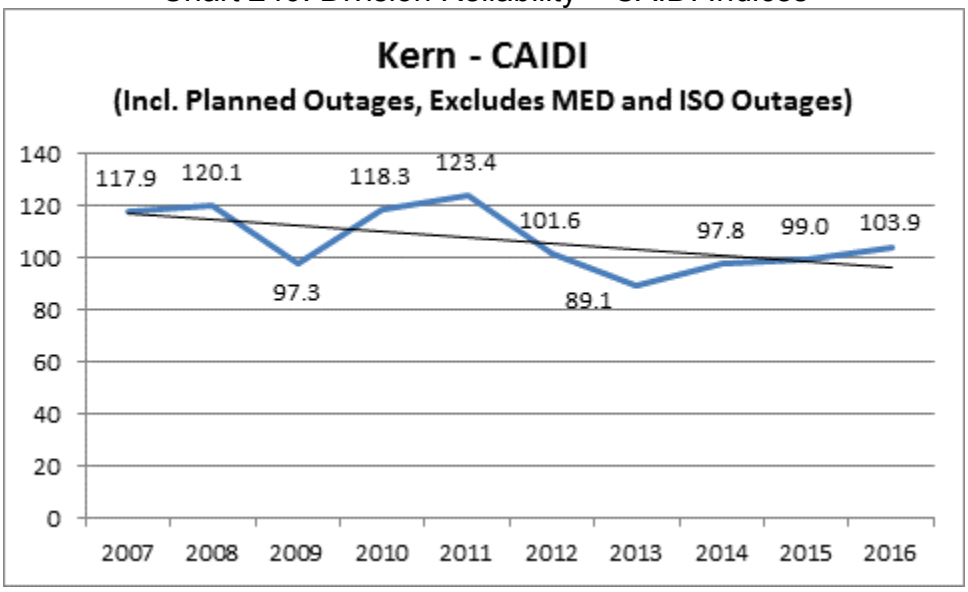


Chart 241: Division Reliability – CAIDI Indices

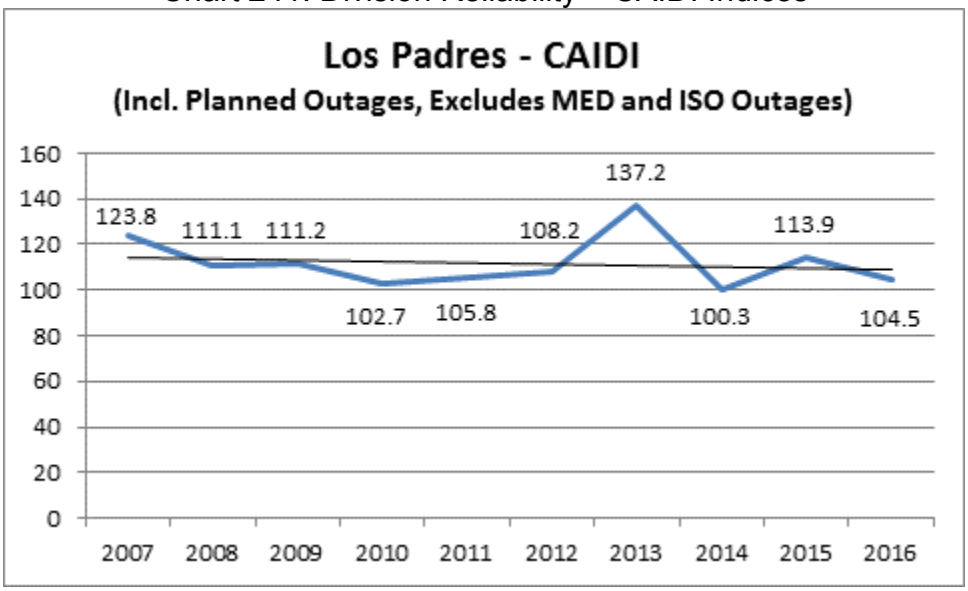


Chart 242: Division Reliability – CAIDI Indices

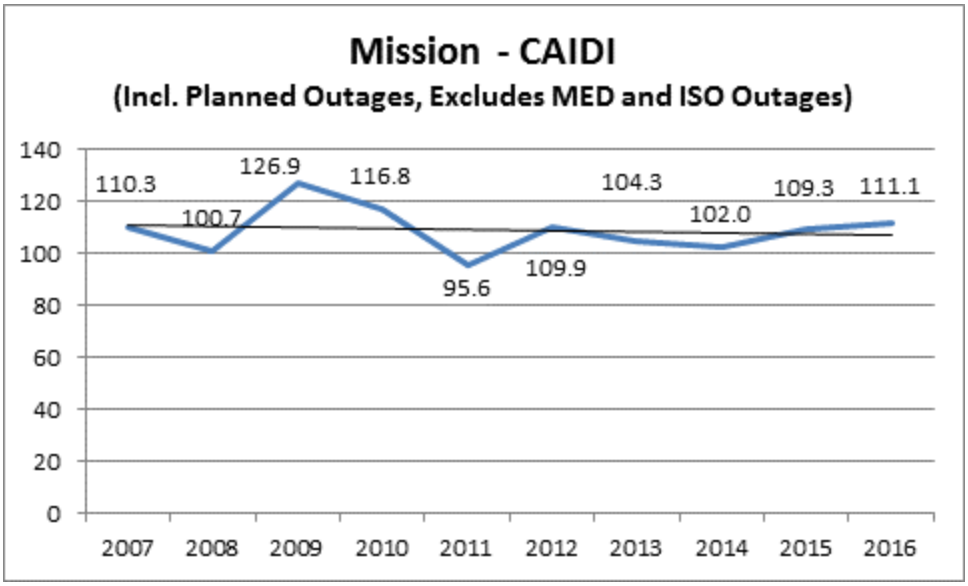


Chart 243: Division Reliability – CAIDI Indices

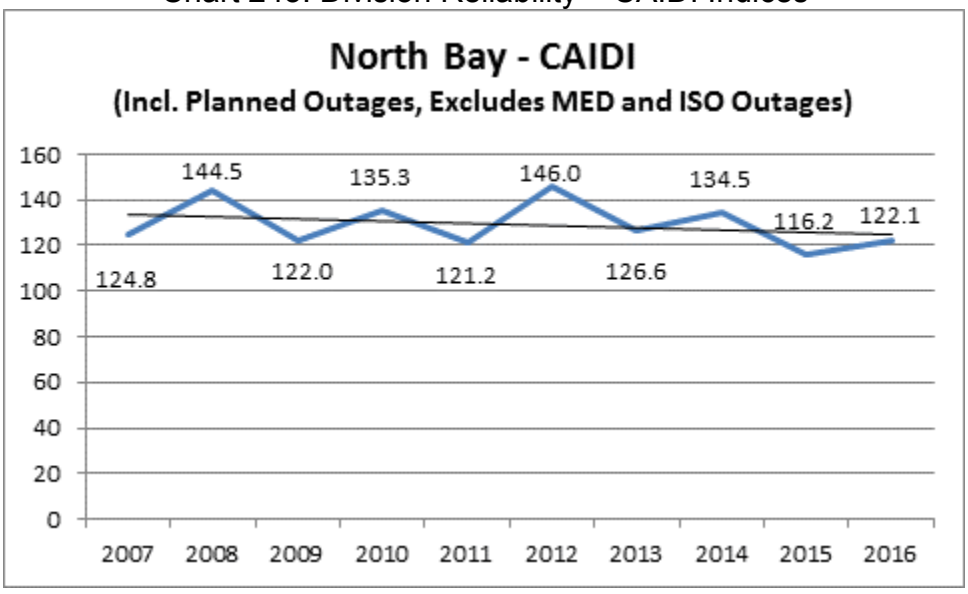


Chart 244: Division Reliability – CAIDI Indices

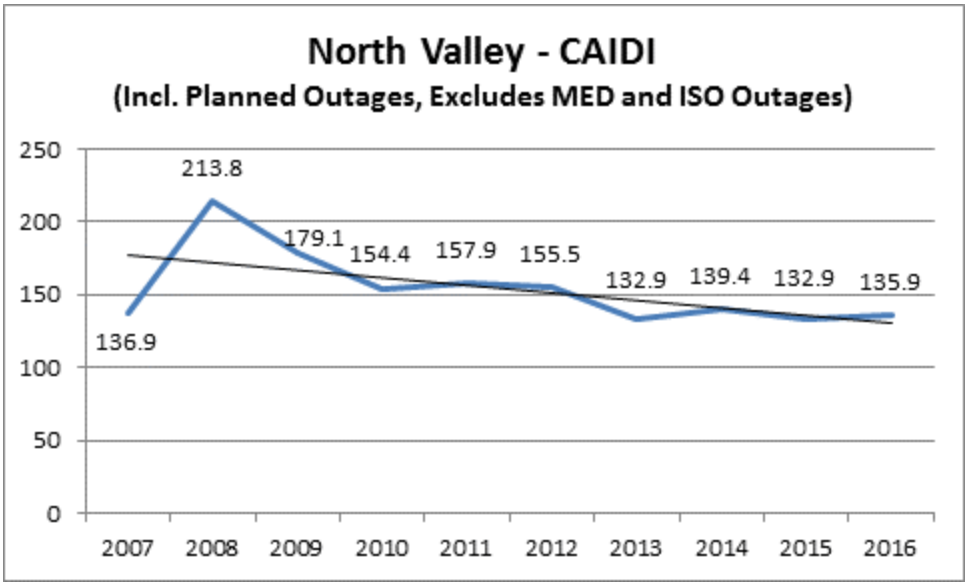


Chart 245: Division Reliability – CAIDI Indices

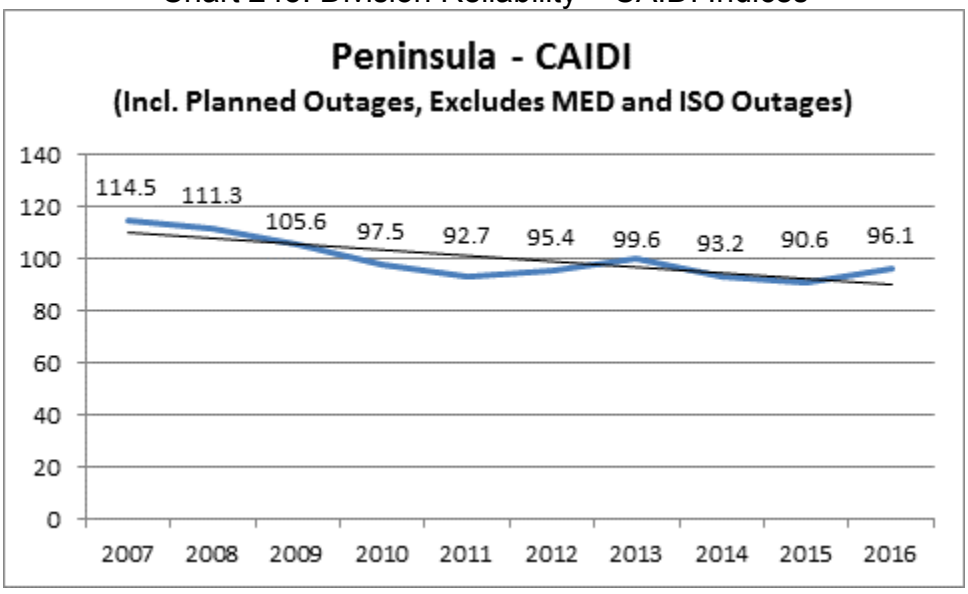


Chart 246: Division Reliability – CAIDI Indices

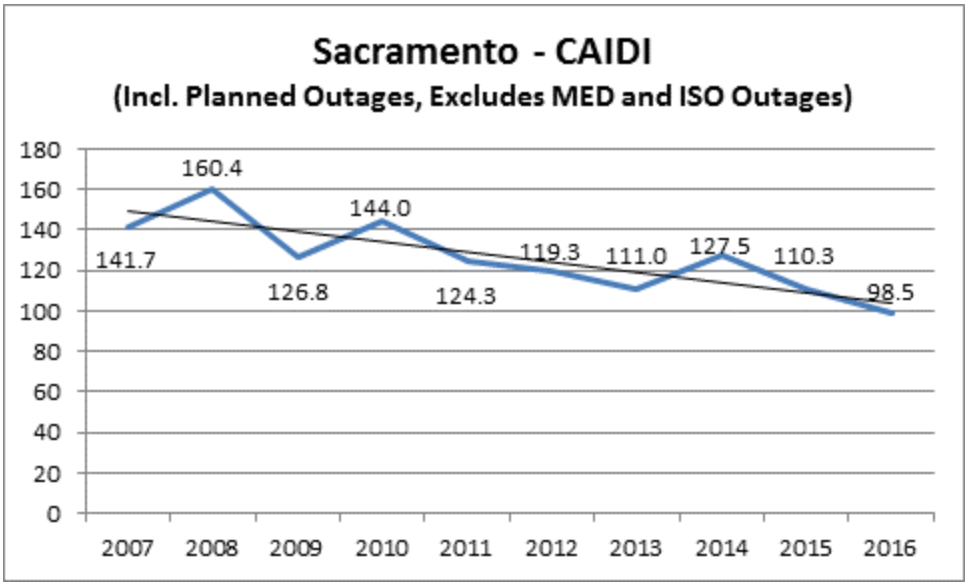


Chart 247: Division Reliability – CAIDI Indices

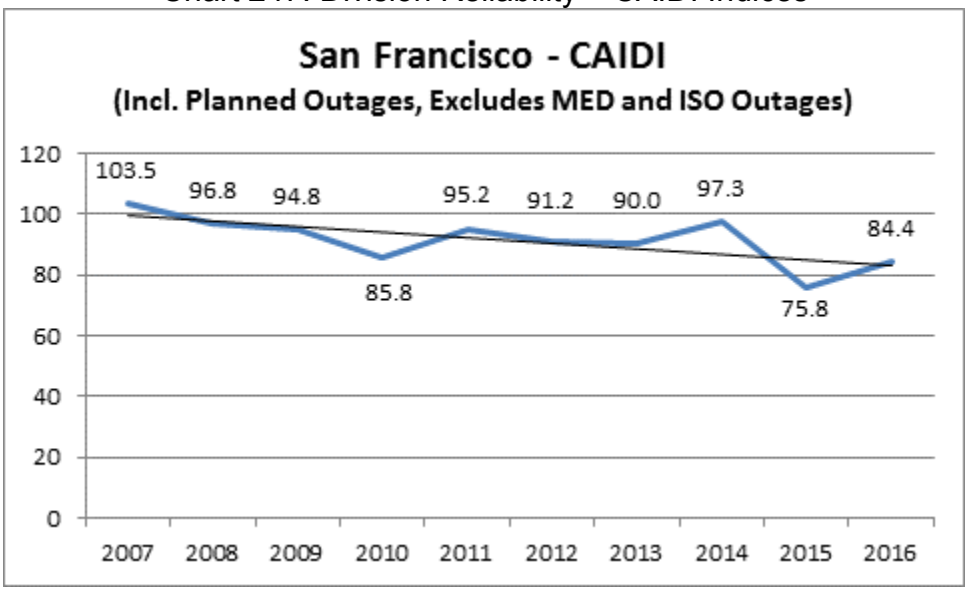


Chart 248: Division Reliability – CAIDI Indices

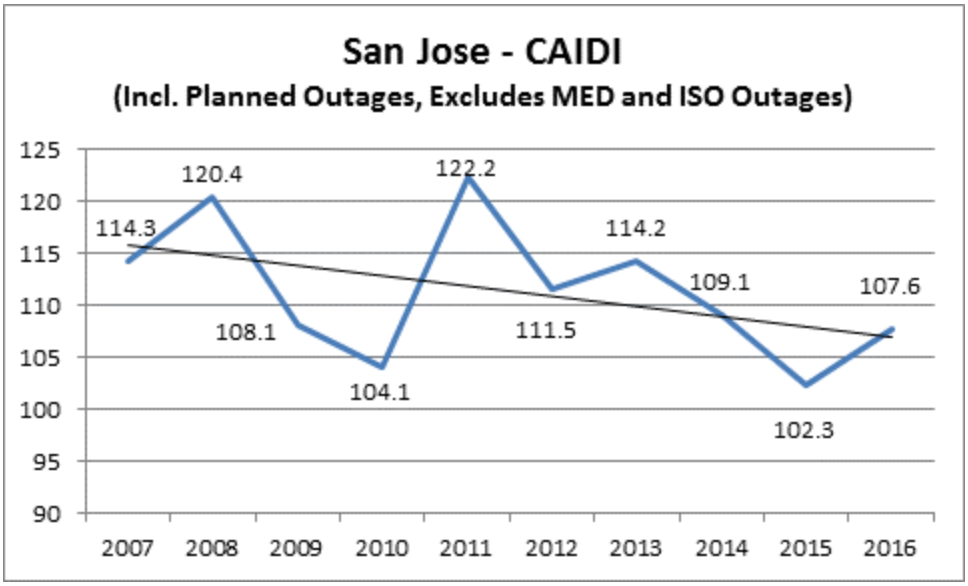


Chart 249: Division Reliability – CAIDI Indices

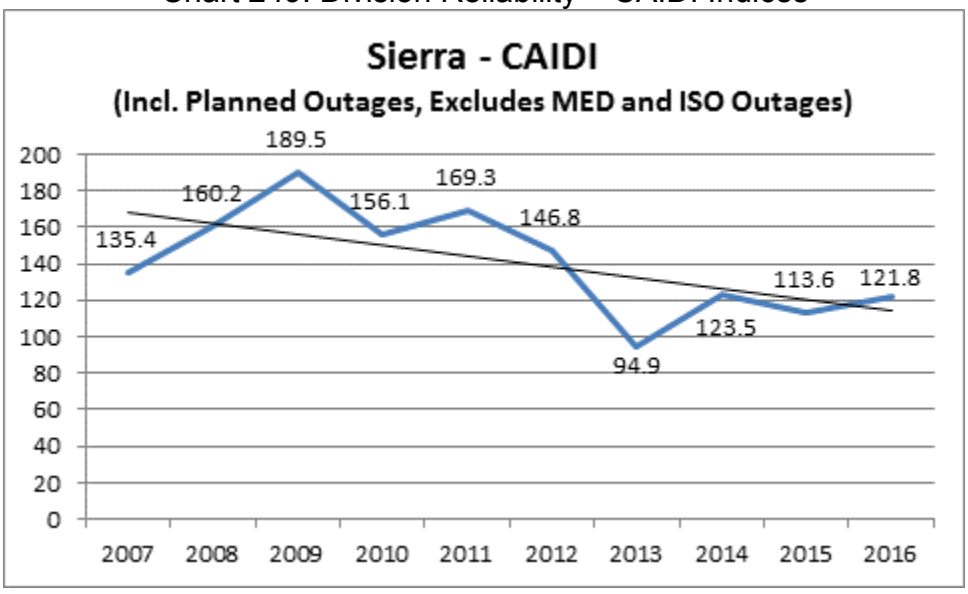


Chart 250: Division Reliability – CAIDI Indices

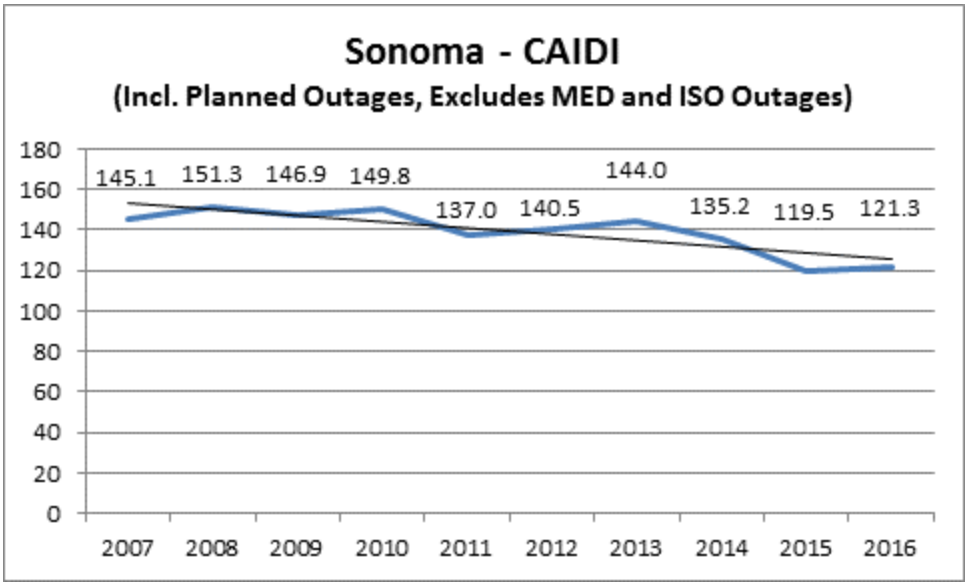


Chart 251: Division Reliability – CAIDI Indices

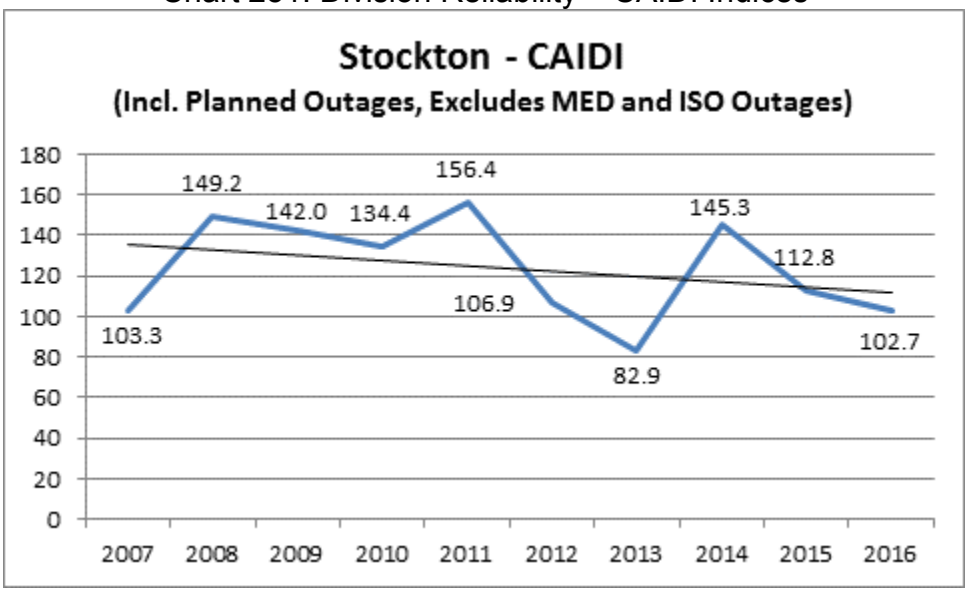


Chart 252: Division Reliability – CAIDI Indices

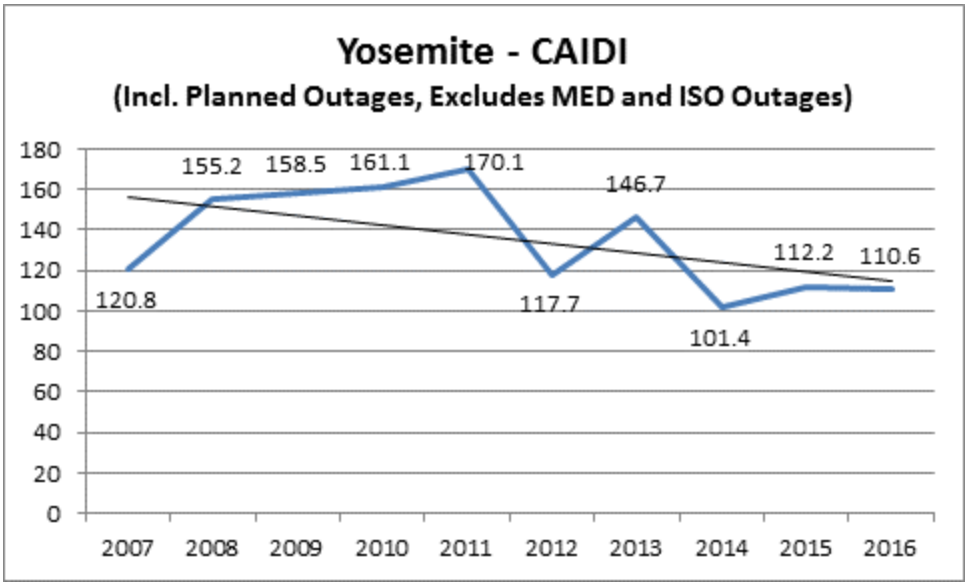
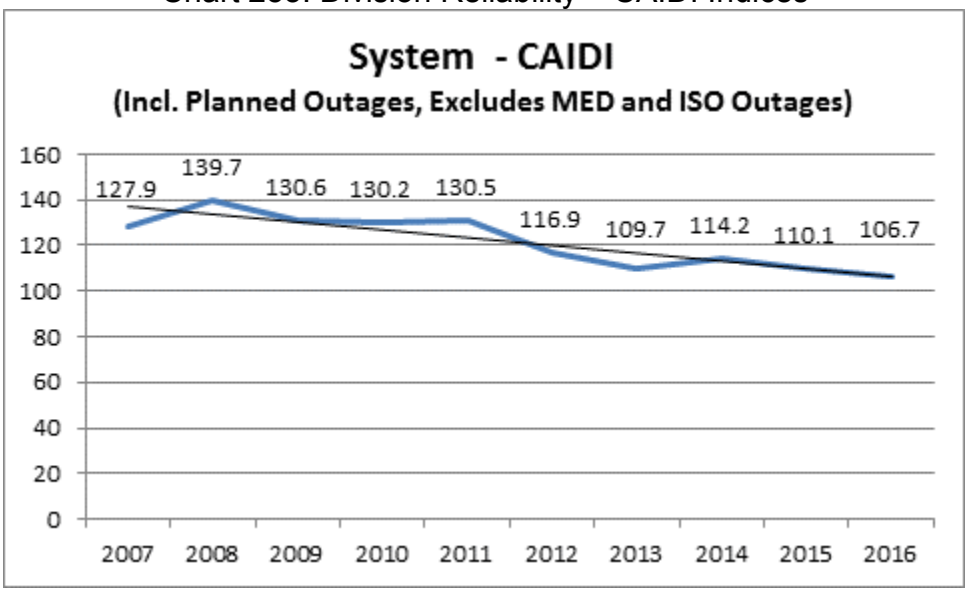


Chart 253: Division Reliability – CAIDI Indices



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 254: Division Reliability – AIDI Indices

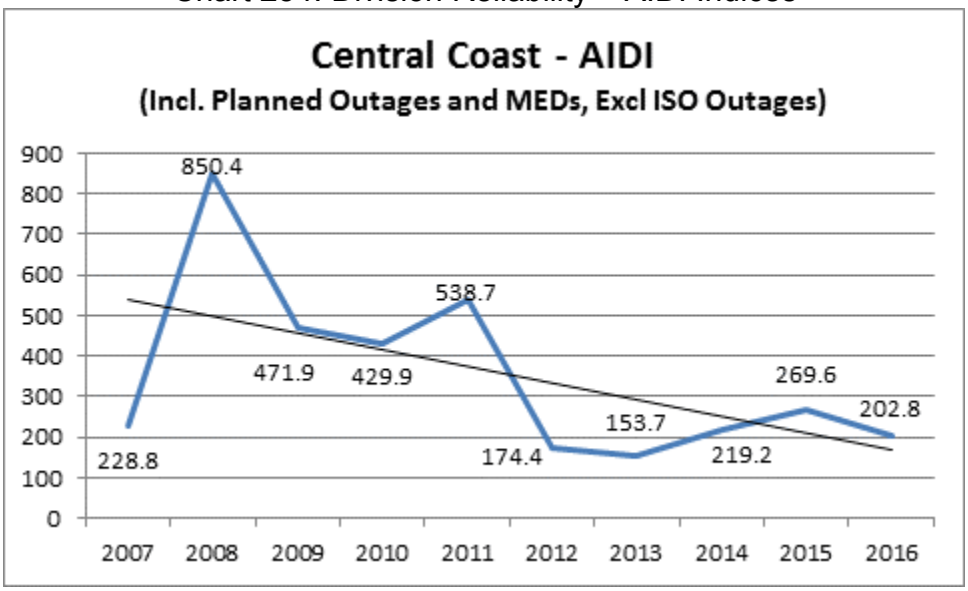


Chart 255: Division Reliability – AIDI Indices

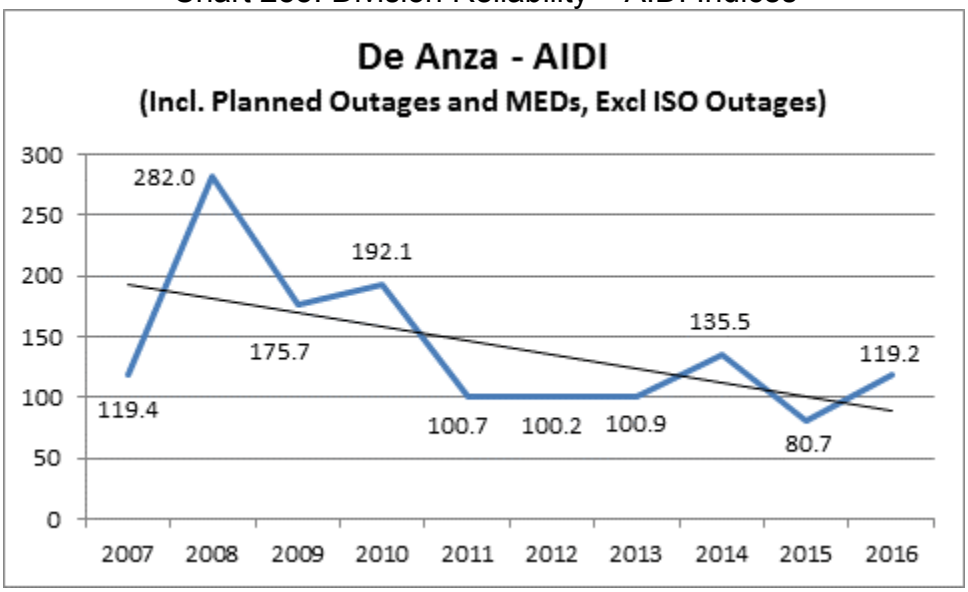


Chart 256: Division Reliability – AIDI Indices

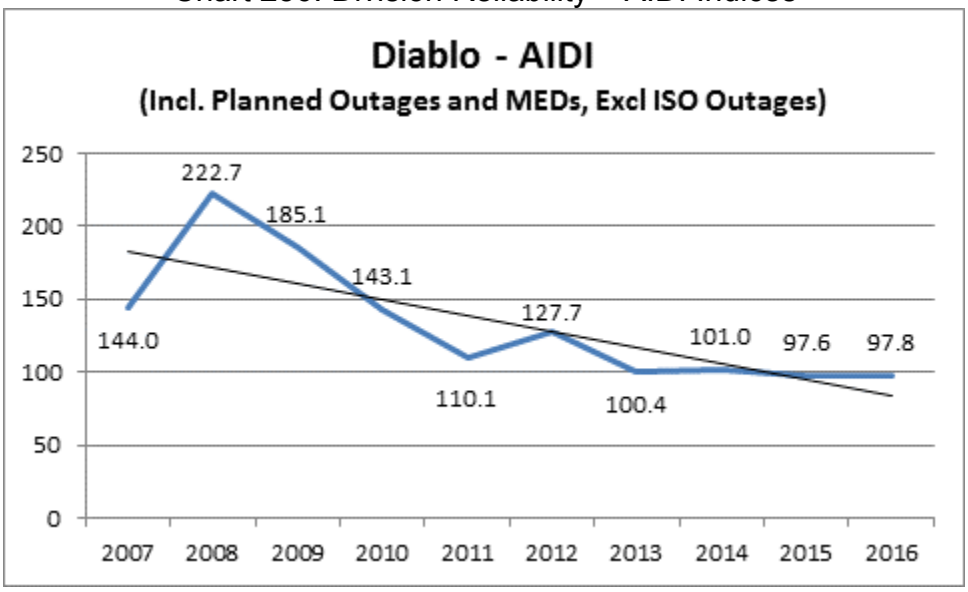


Chart 257: Division Reliability – AIDI Indices

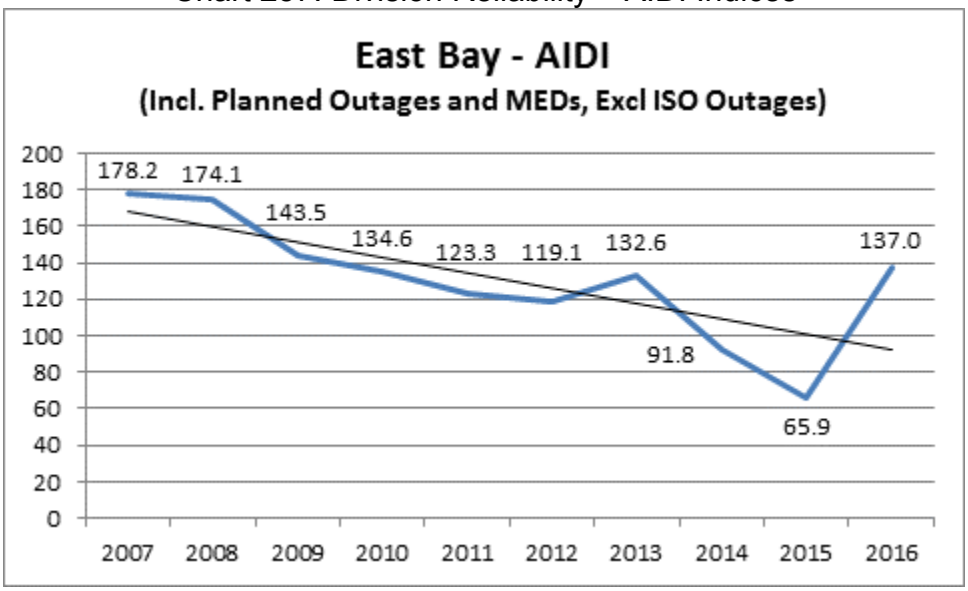


Chart 258: Division Reliability – AIDI Indices

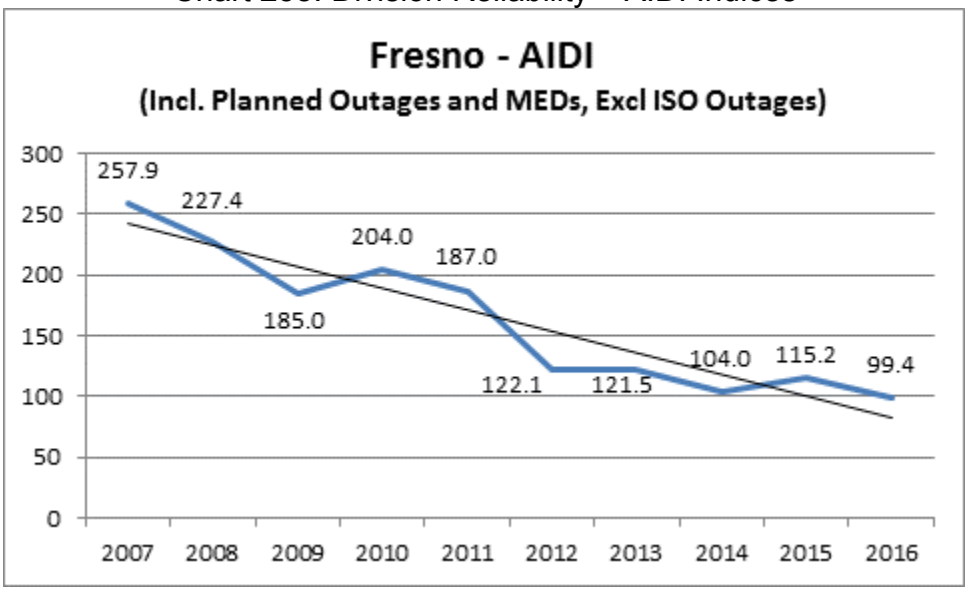


Chart 259: Division Reliability – AIDI Indices

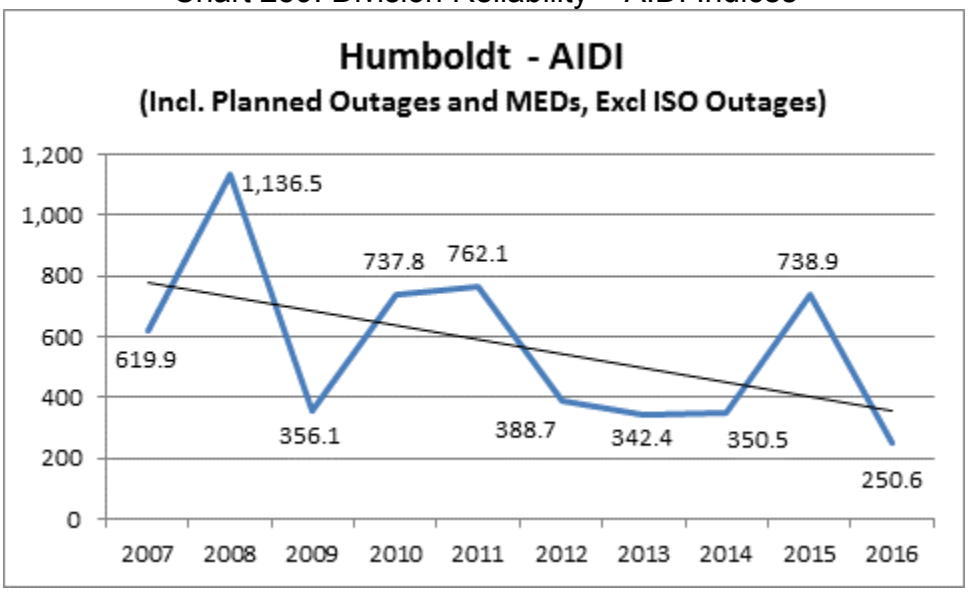


Chart 260: Division Reliability – AIDI Indices

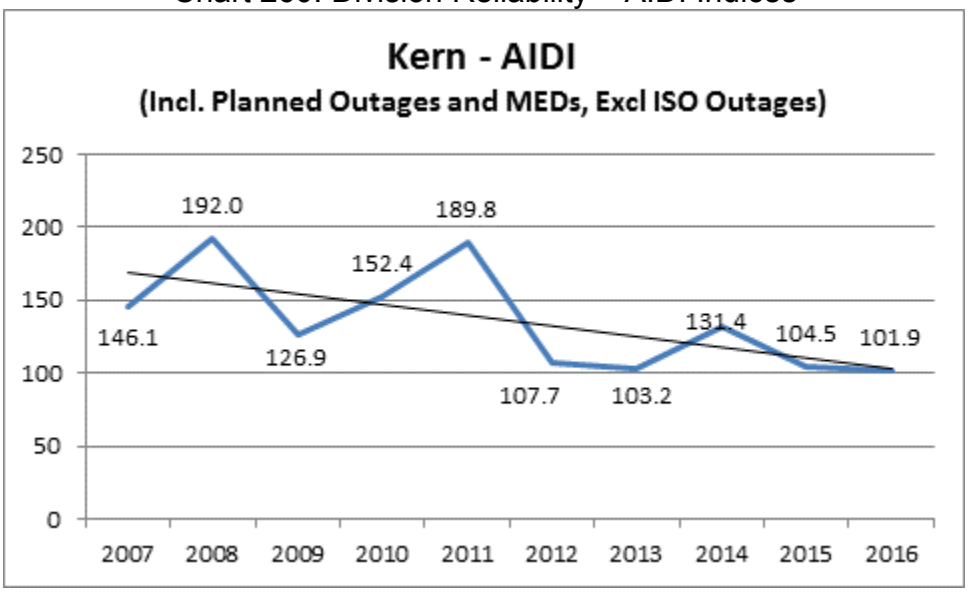


Chart 261: Division Reliability – AIDI Indices

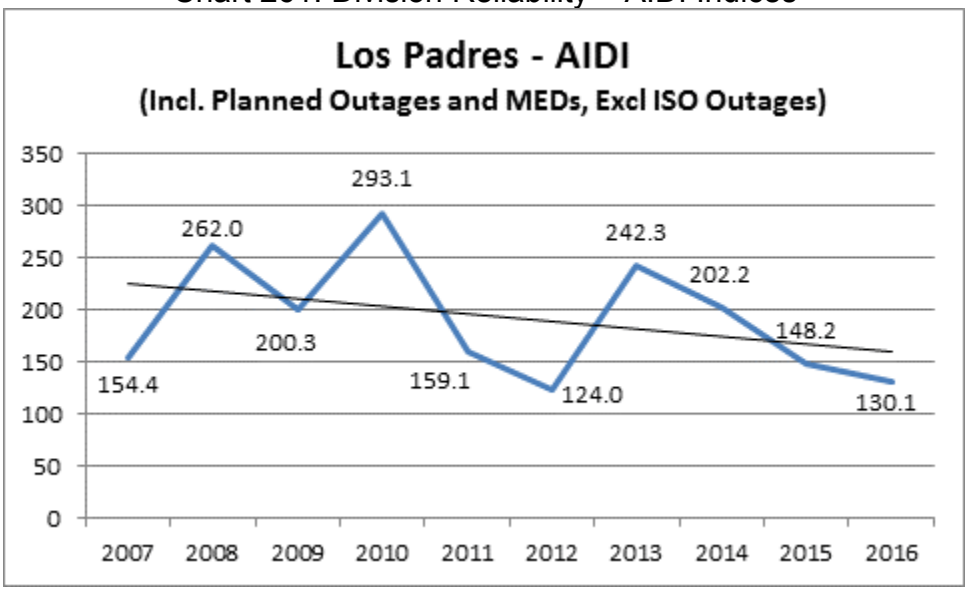


Chart 262: Division Reliability – AIDI Indices

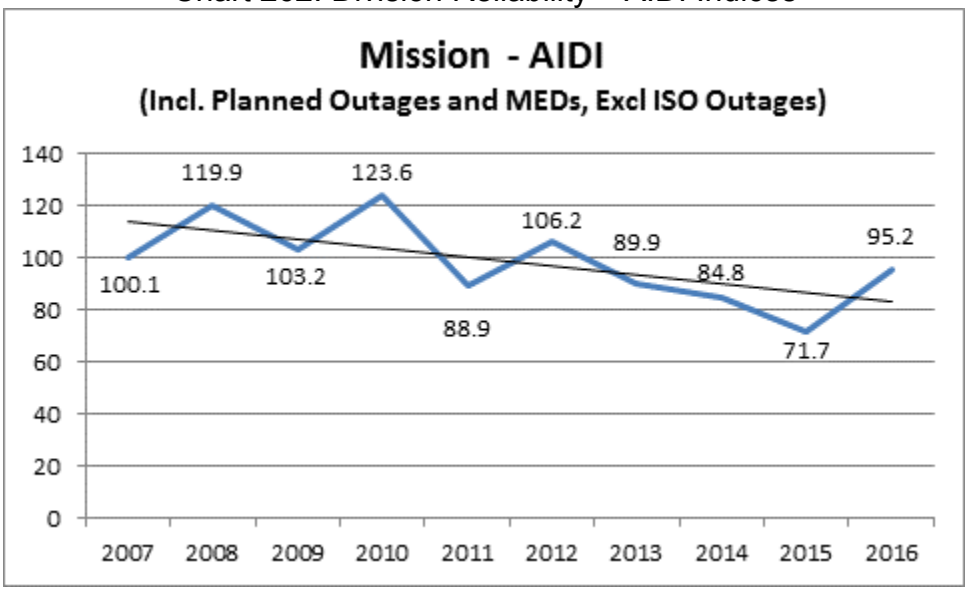


Chart 263: Division Reliability – AIDI Indices

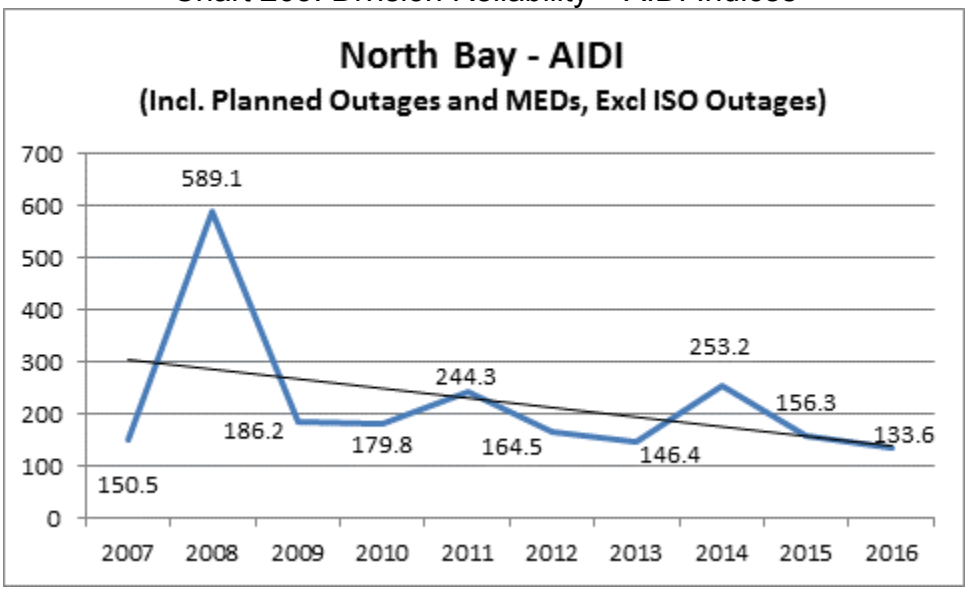


Chart 264: Division Reliability – AIDI Indices

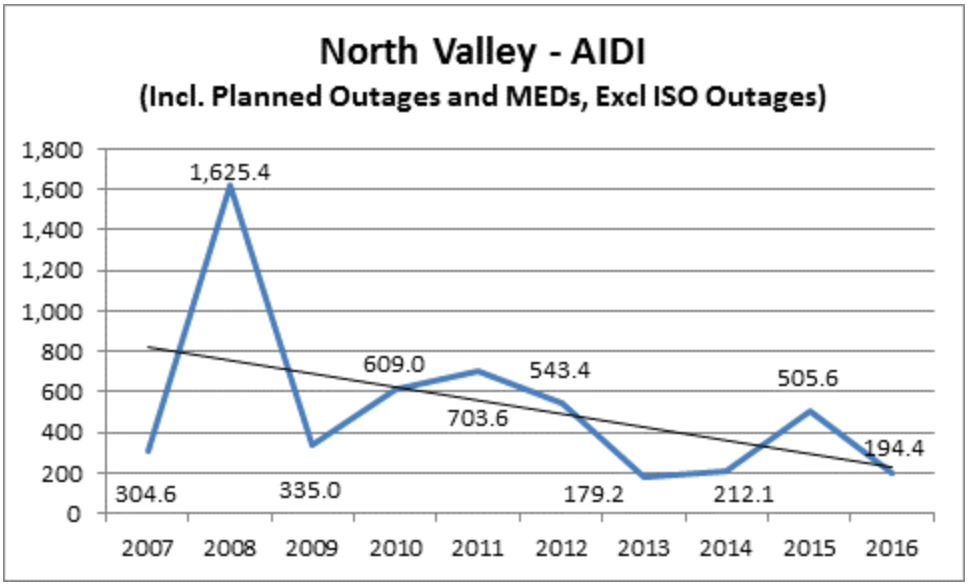


Chart 265: Division Reliability – AIDI Indices

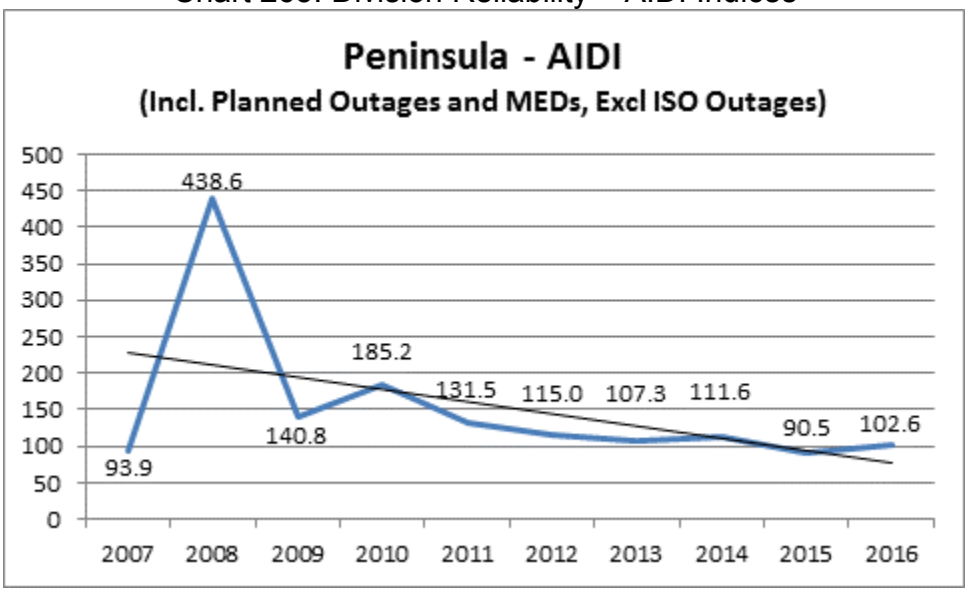


Chart 266: Division Reliability – AIDI Indices

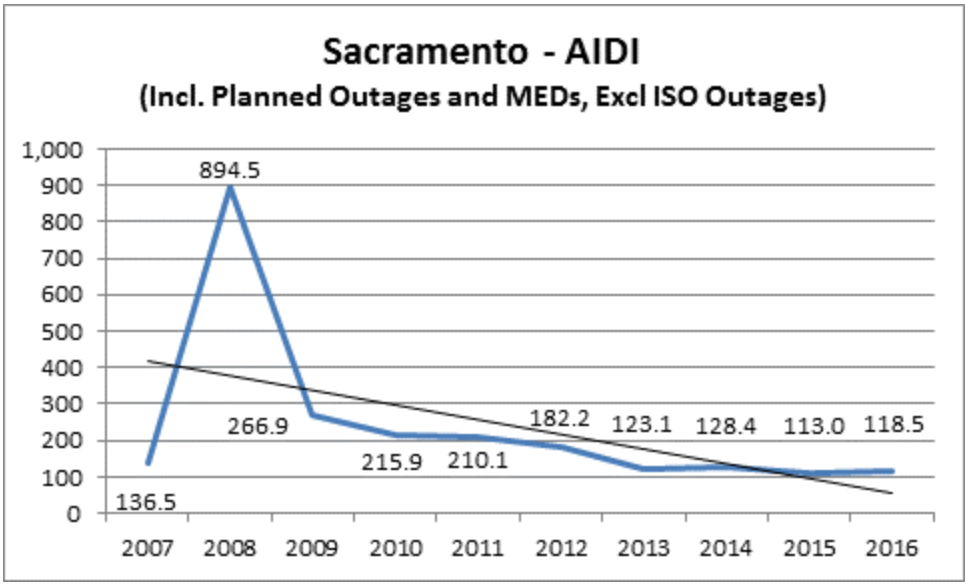


Chart 267: Division Reliability – AIDI Indices

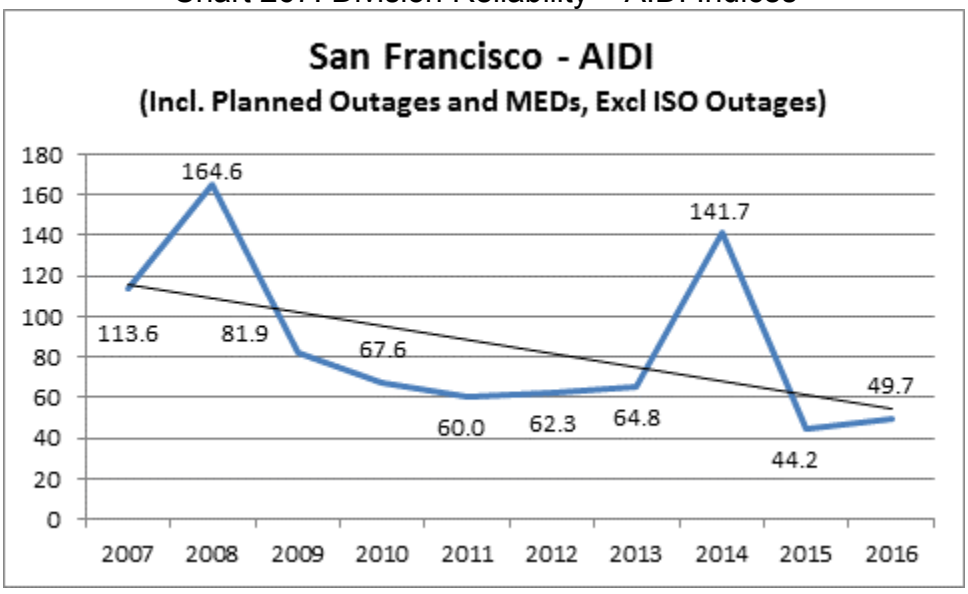


Chart 268: Division Reliability – AIDI Indices

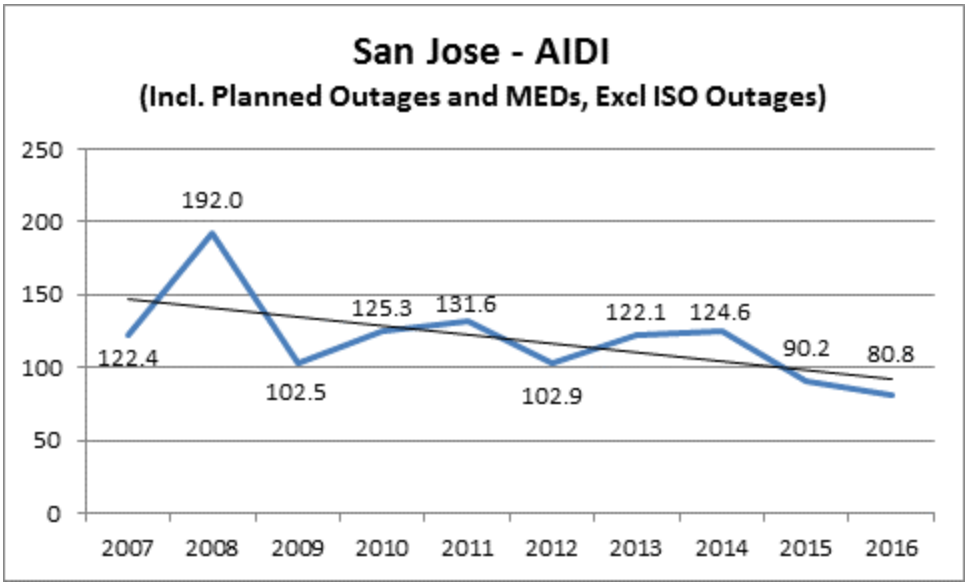


Chart 269: Division Reliability – AIDI Indices

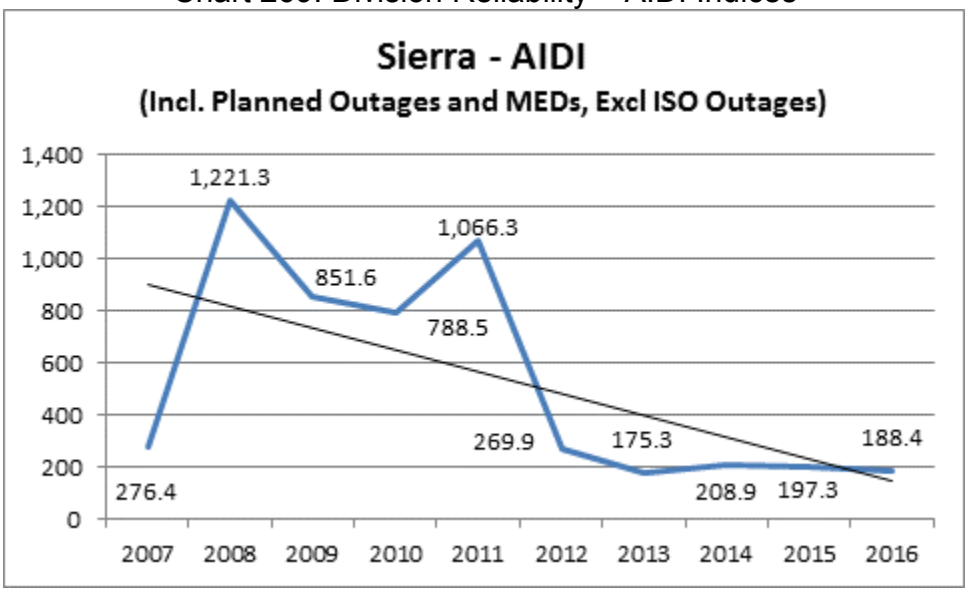


Chart 270: Division Reliability – AIDI Indices

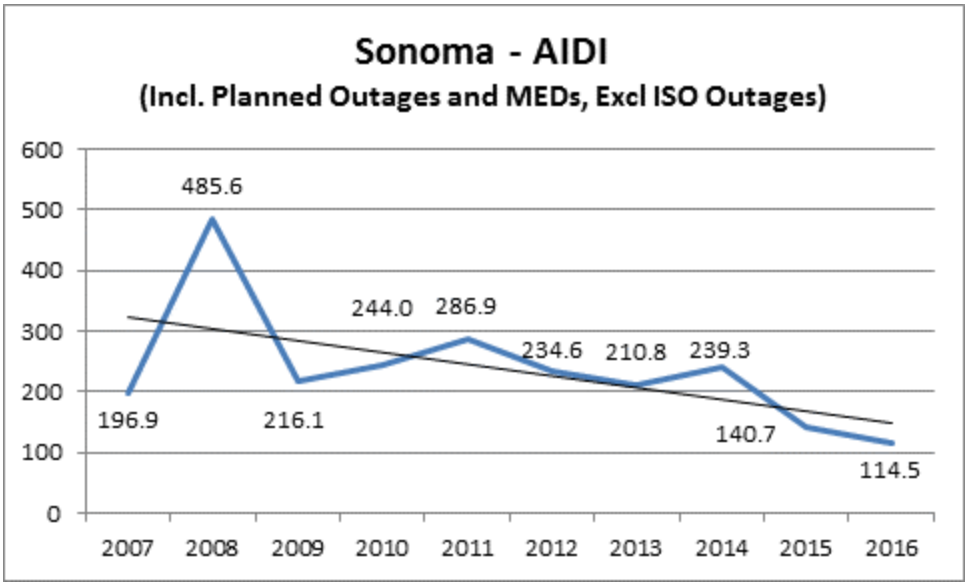


Chart 271: Division Reliability – AIDI Indices

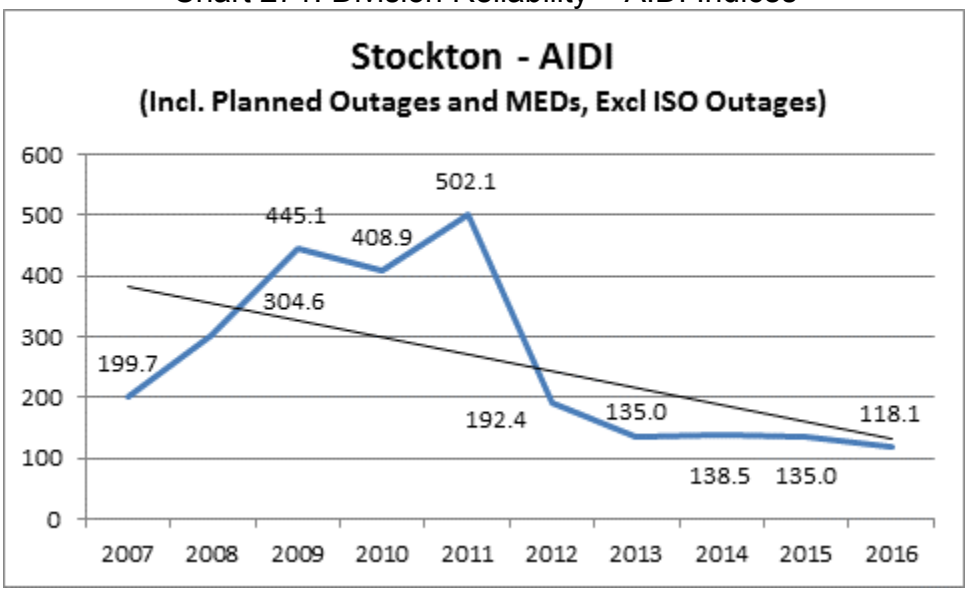


Chart 272: Division Reliability – AIDI Indices

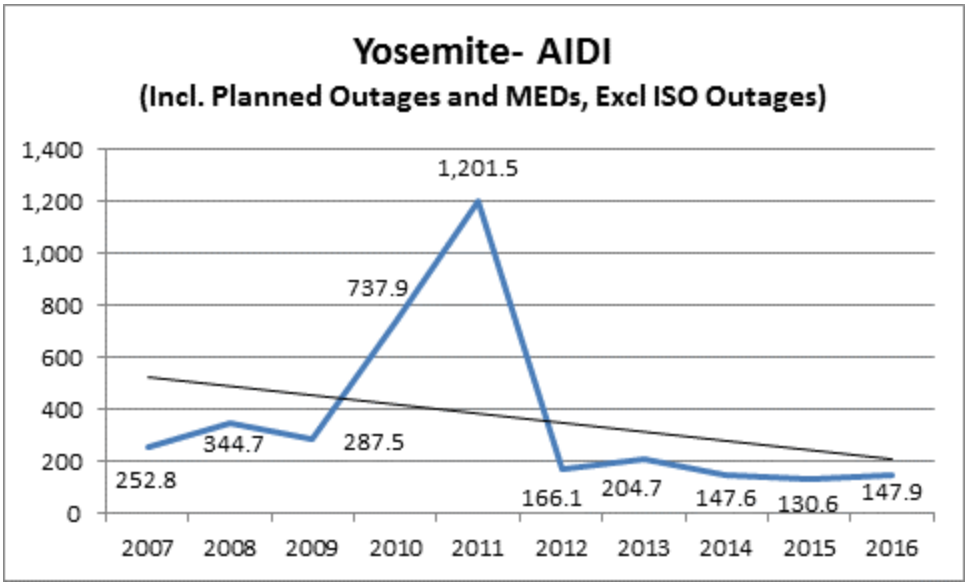
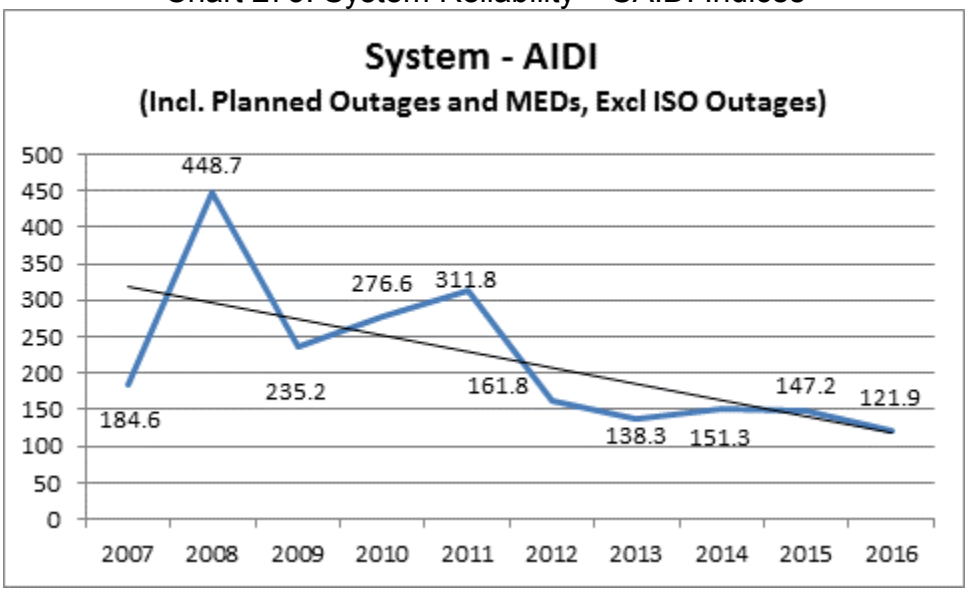


Chart 273: System Reliability – SAIDI Indices



2. SAIFI Performance Results (MED Included)

Chart 274: Division Reliability – AIFI Indices

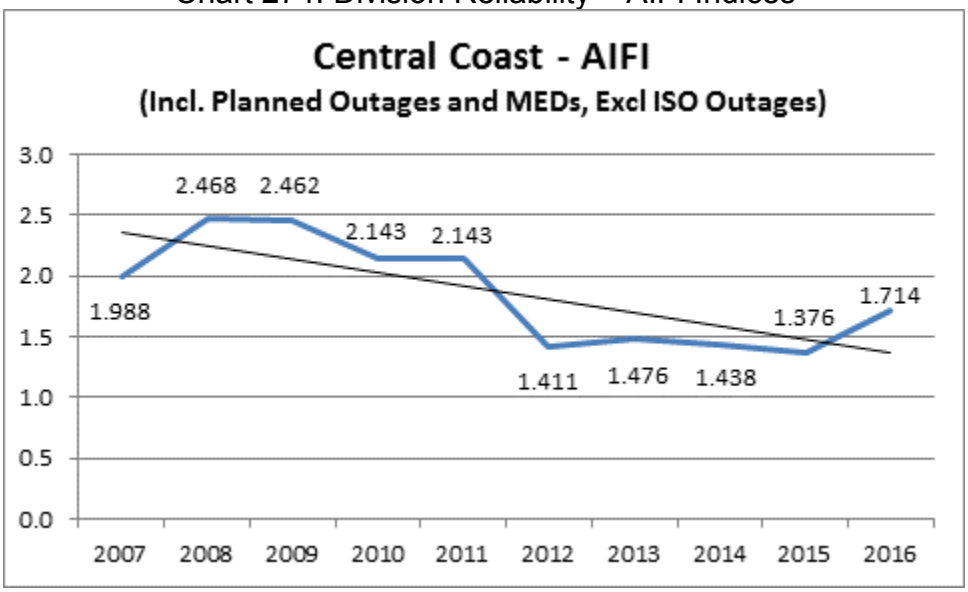


Chart 275: Division Reliability – AIFI Indices

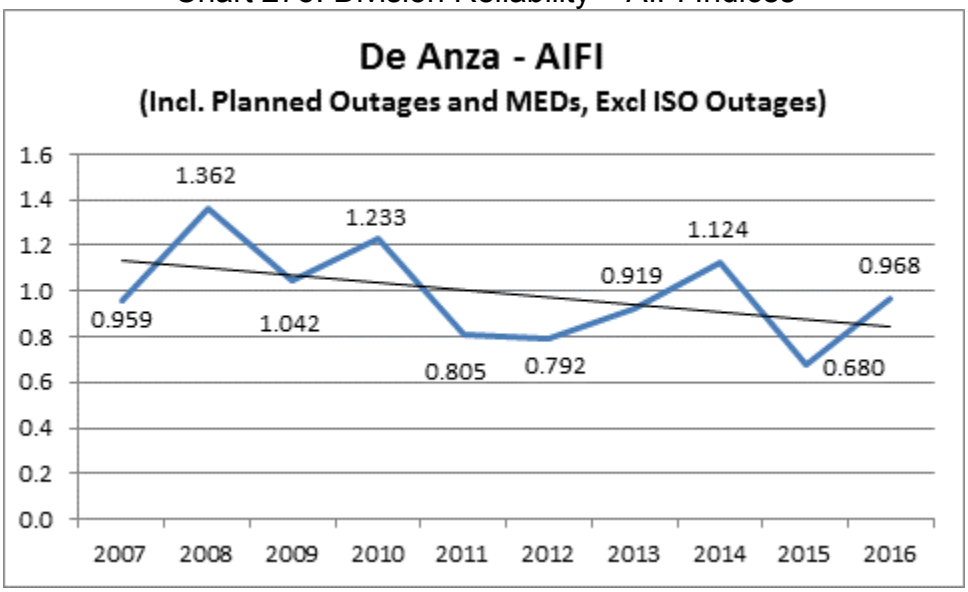


Chart 276: Division Reliability – AIFI Indices

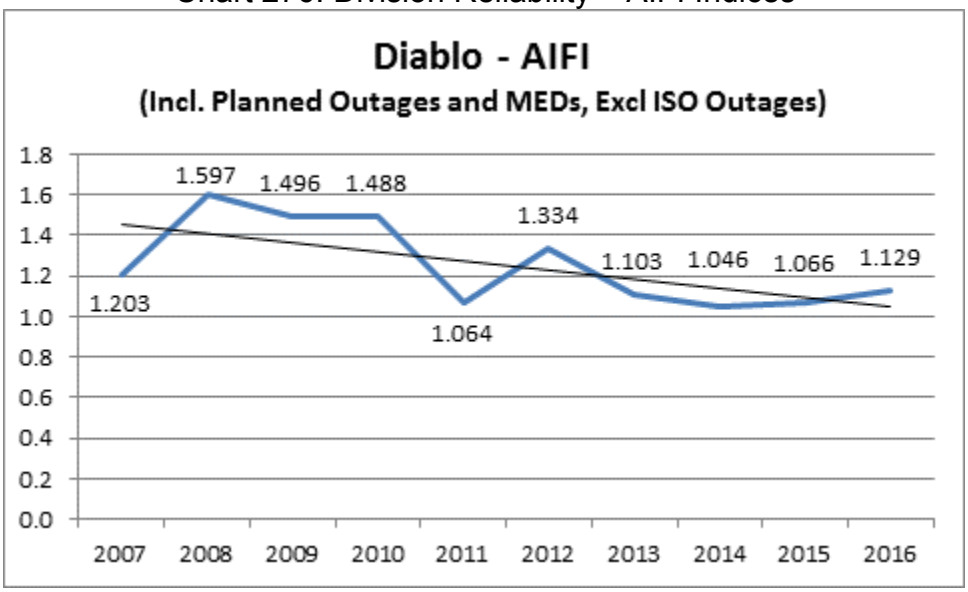


Chart 277: Division Reliability – AIFI Indices

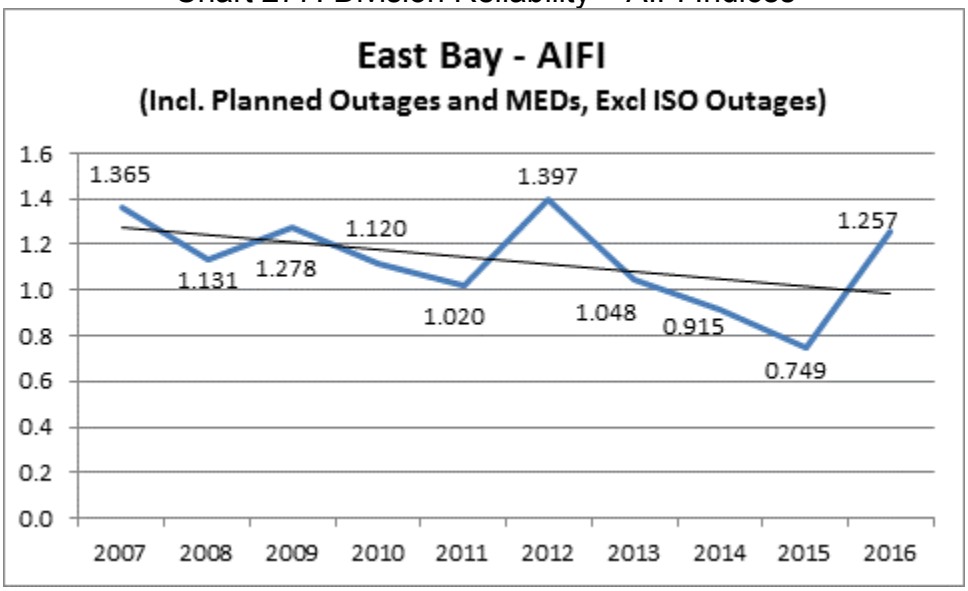


Chart 278: Division Reliability – AIFI Indices

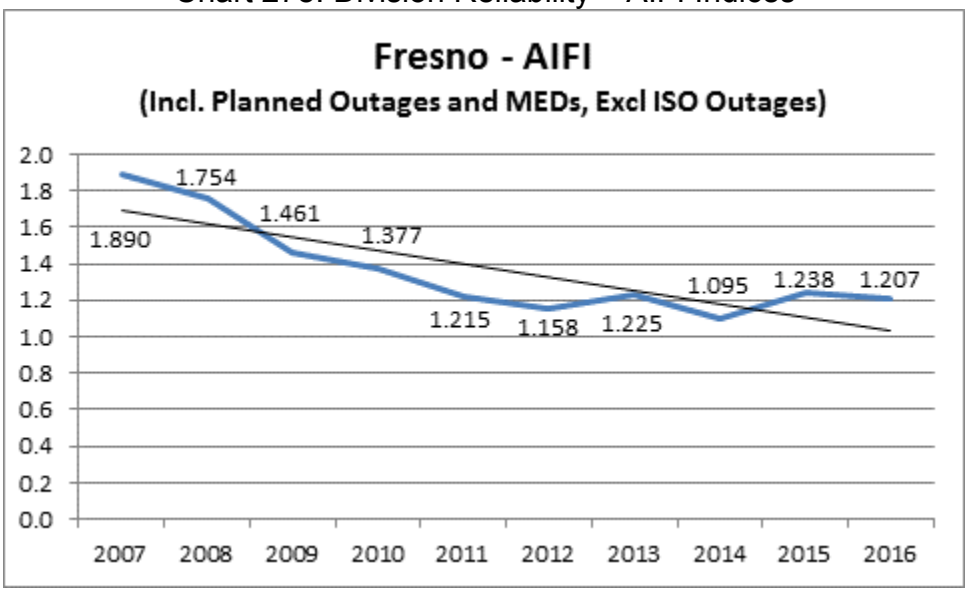


Chart 279: Division Reliability – AIFI Indices

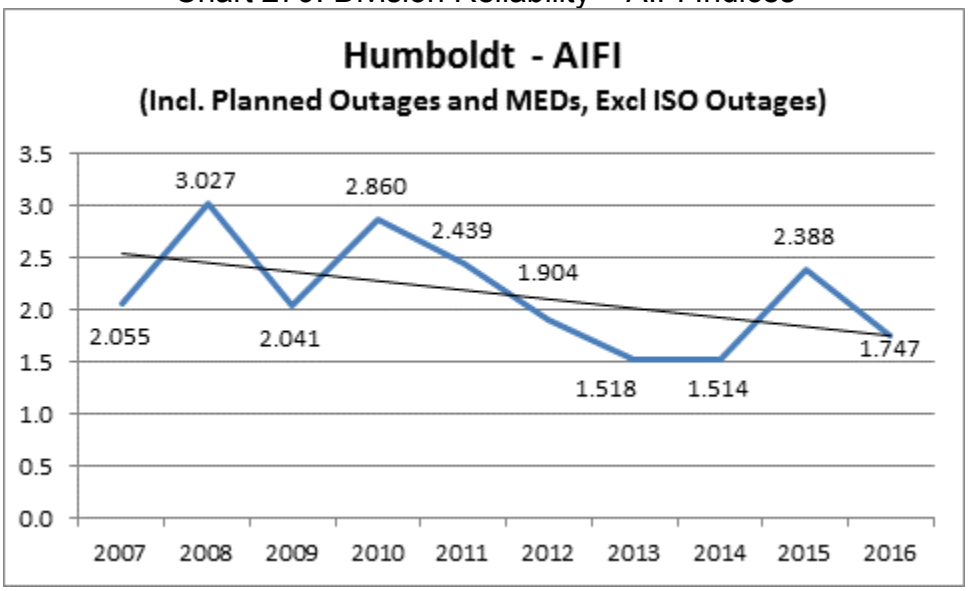


Chart 280: Division Reliability – AIFI Indices

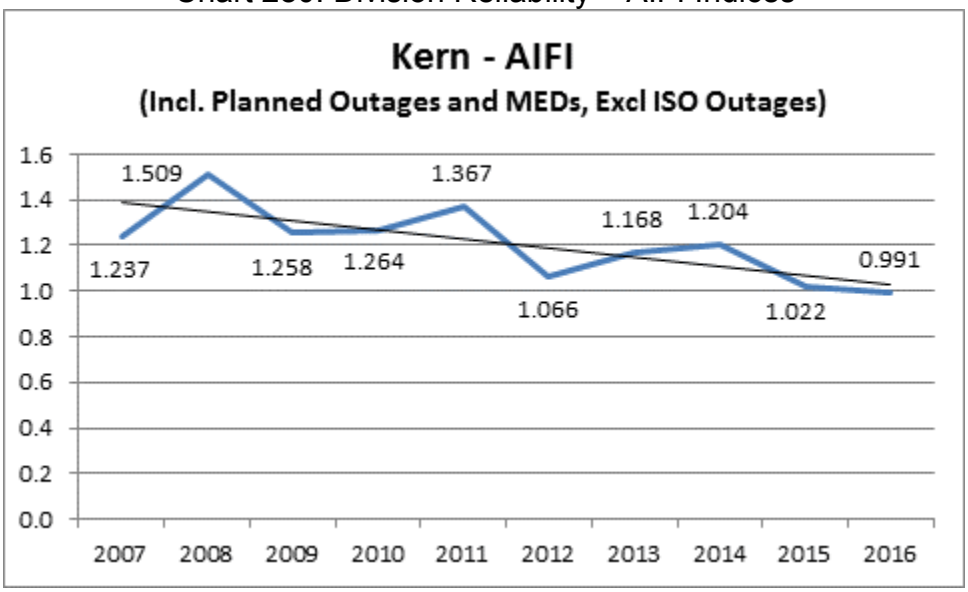


Chart 281: Division Reliability – AIFI Indices

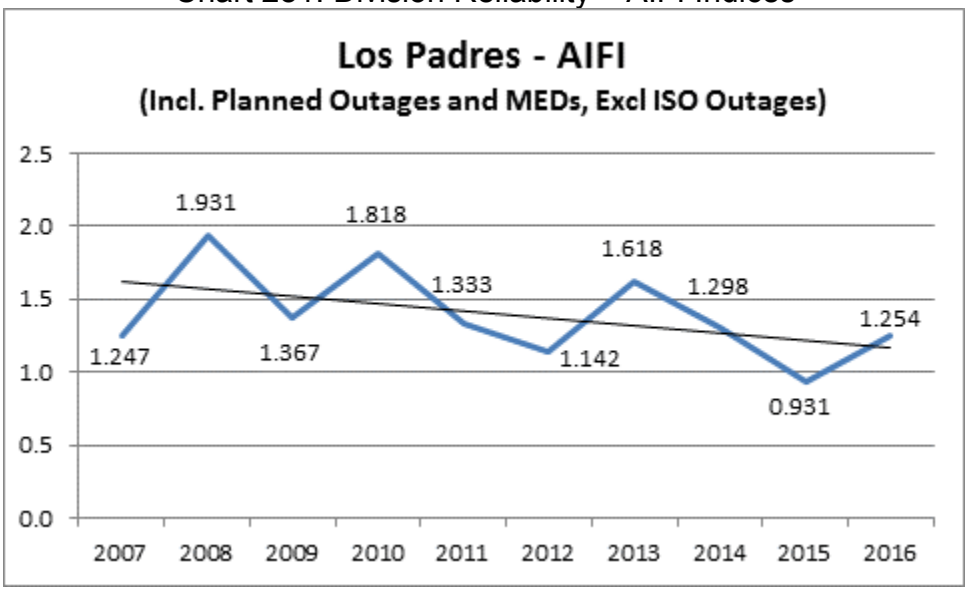


Chart 282: Division Reliability – AIFI Indices

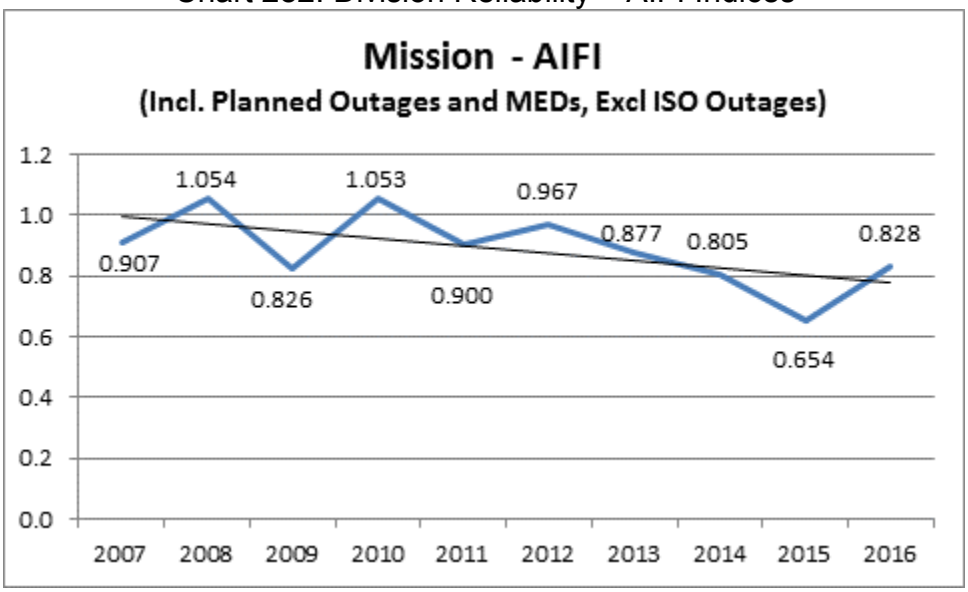


Chart 283: Division Reliability – AIFI Indices

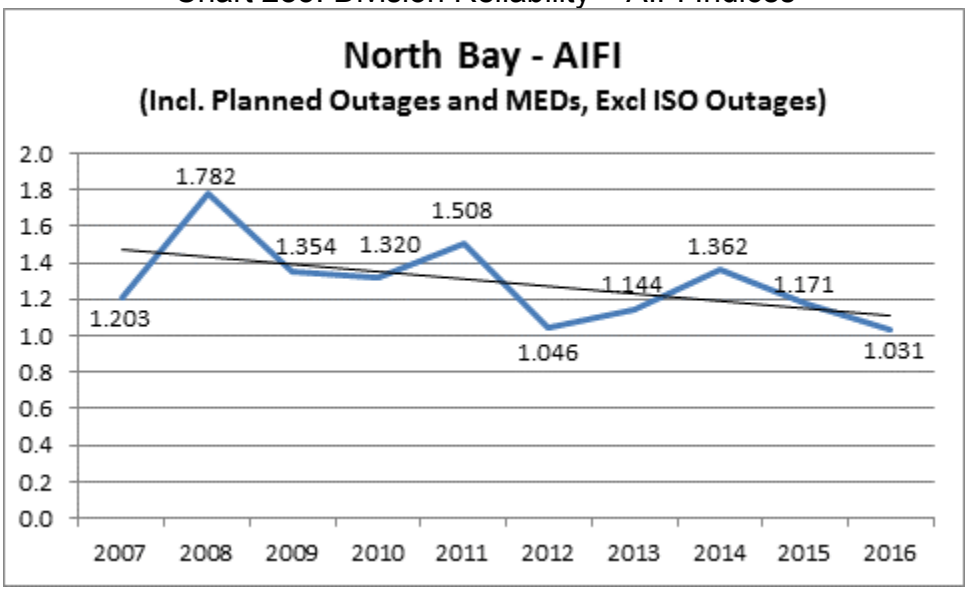


Chart 284: Division Reliability – AIFI Indices

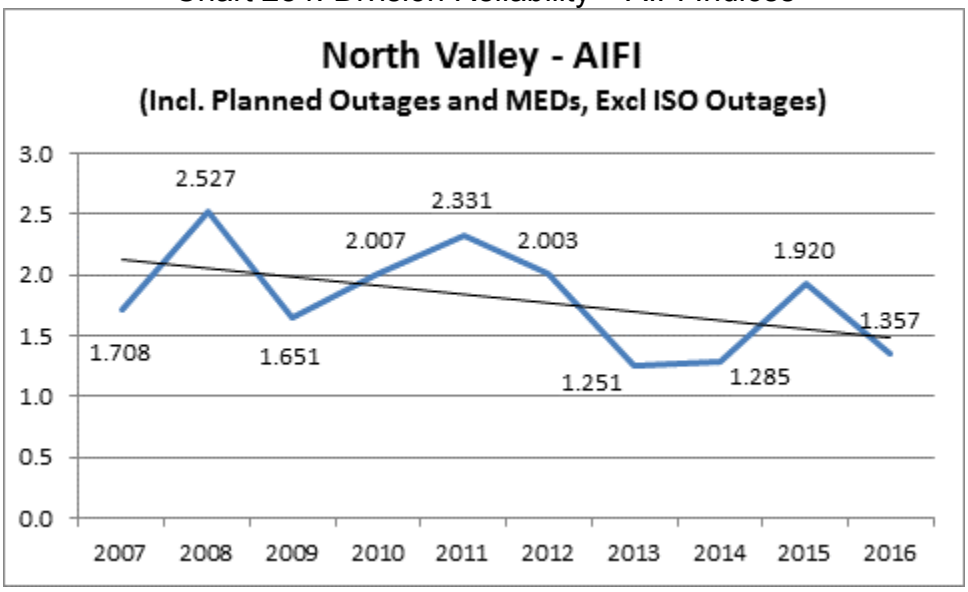


Chart 285: Division Reliability – AIFI Indices

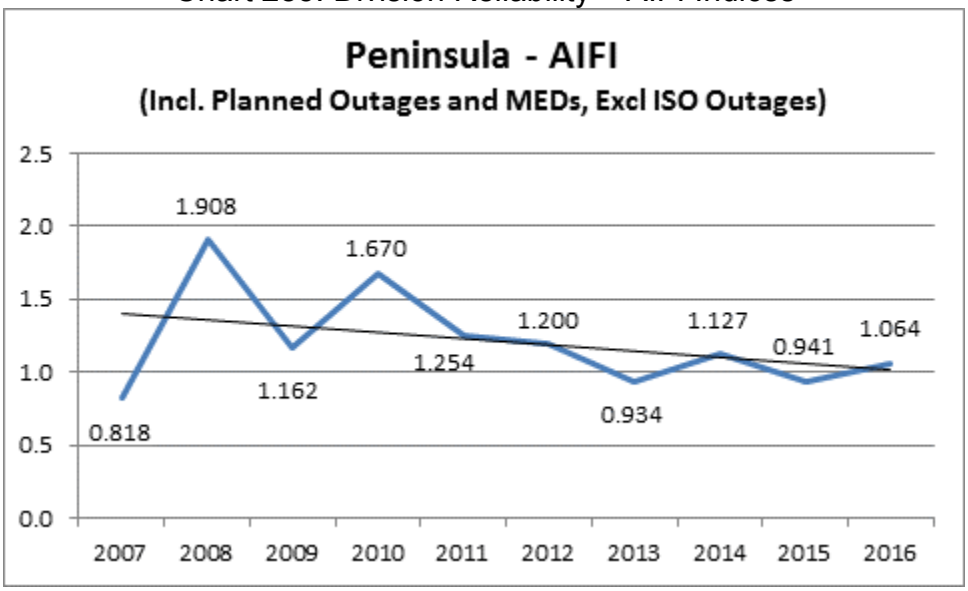


Chart 286: Division Reliability – AIFI Indices

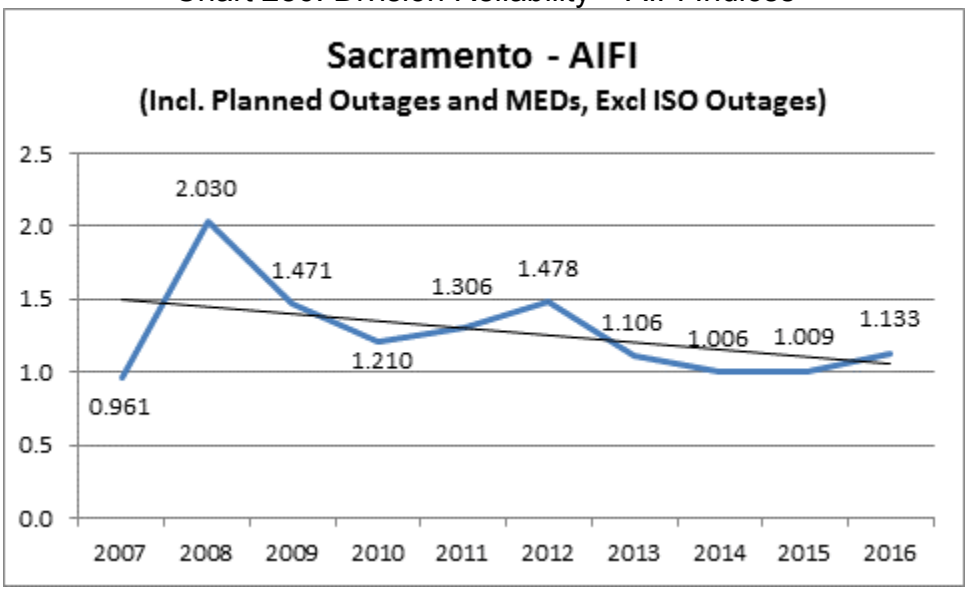


Chart 287: Division Reliability – AIFI Indices

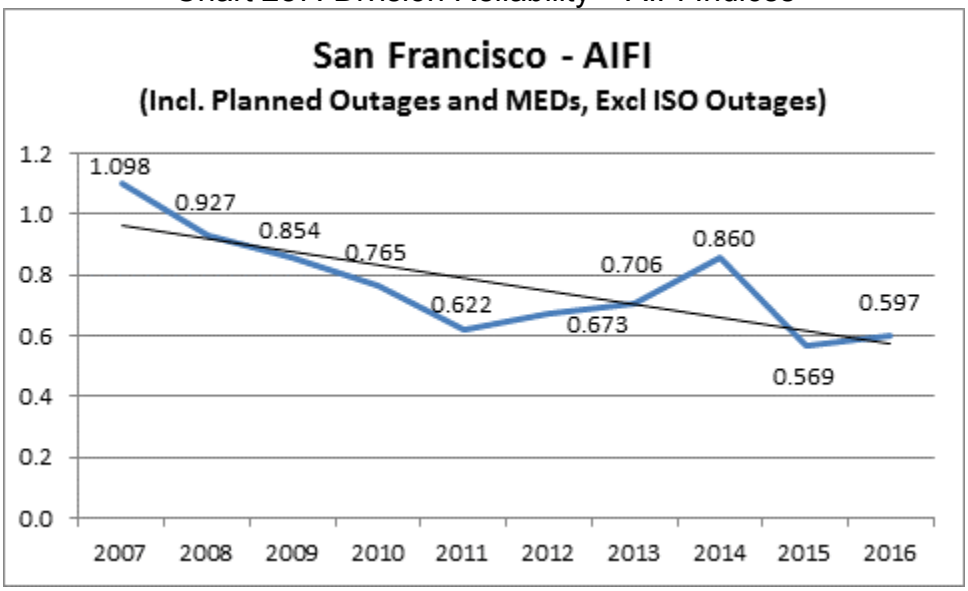


Chart 288: Division Reliability – AIFI Indices

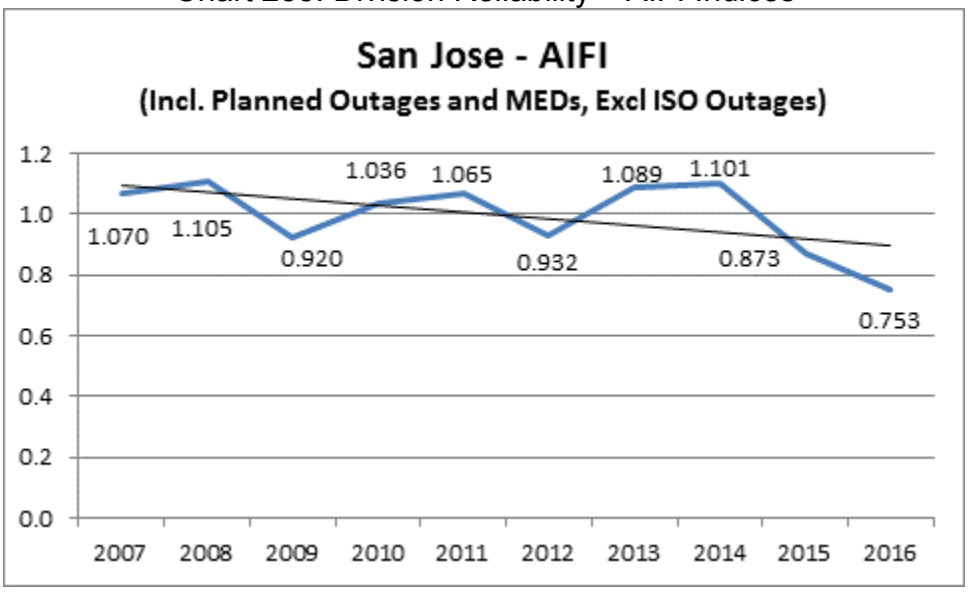


Chart 289: Division Reliability – AIFI Indices

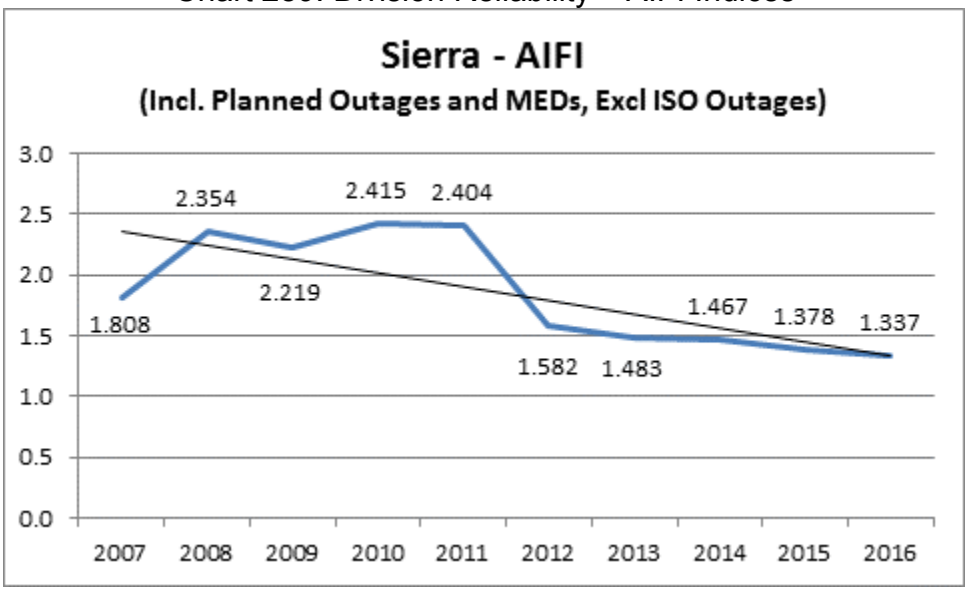


Chart 290: Division Reliability – AIFI Indices

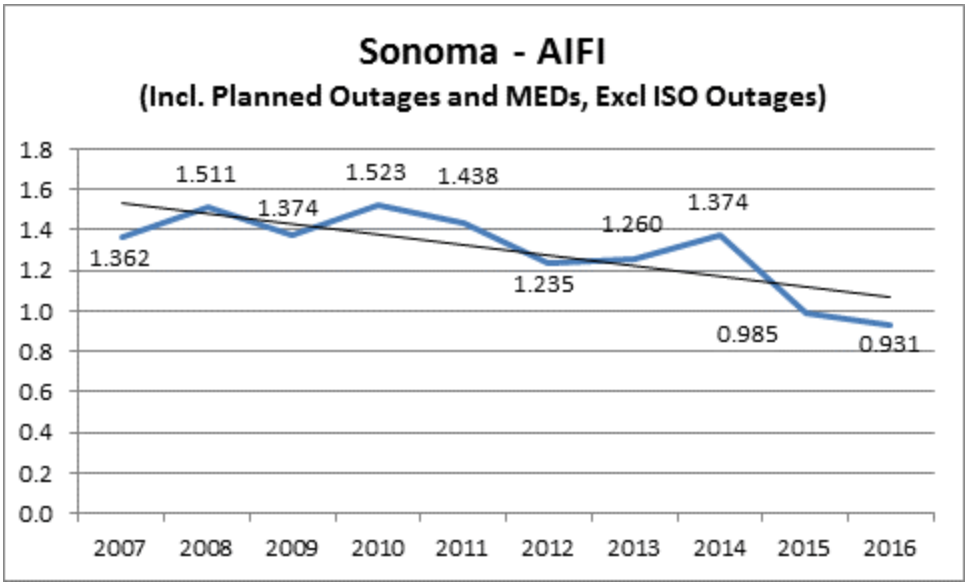


Chart 291: Division Reliability – AIFI Indices

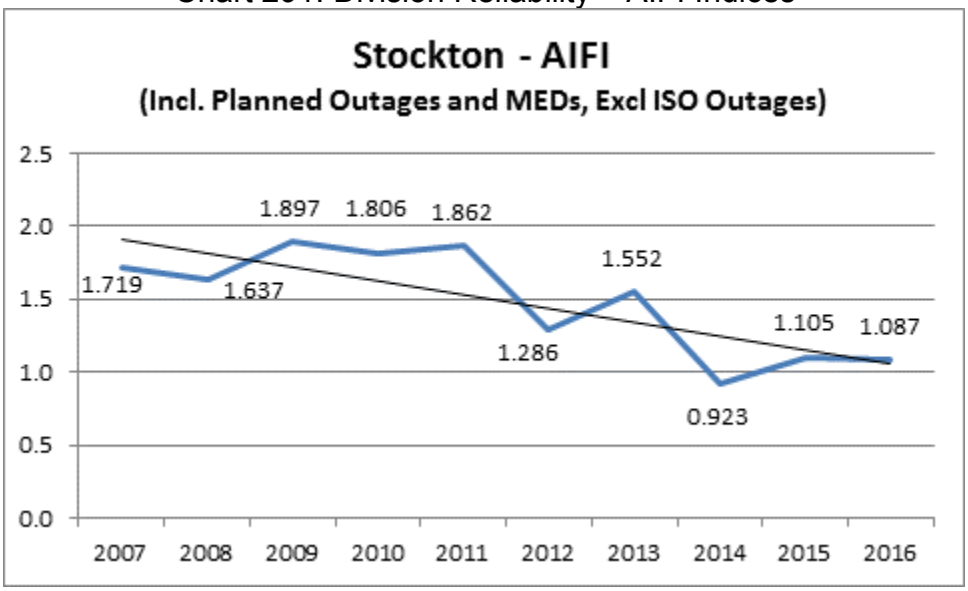


Chart 292: Division Reliability – AIFI Indices

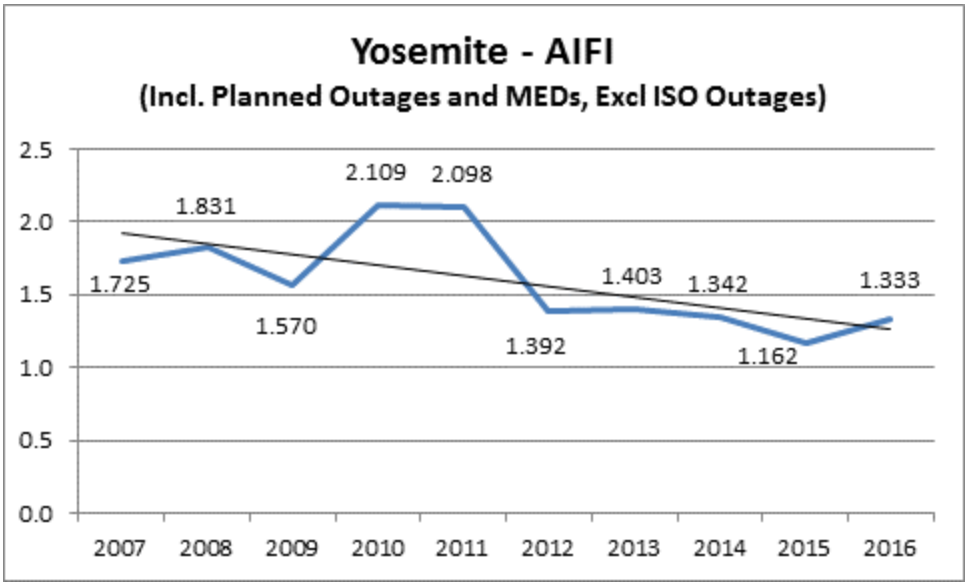
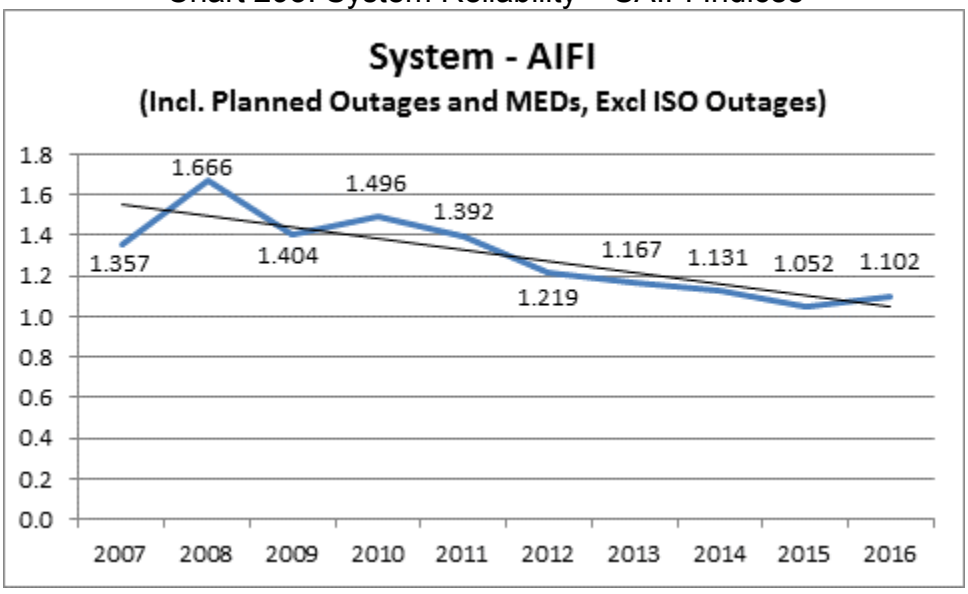


Chart 293: System Reliability – SAIFI Indices



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

Chart 294: Division Reliability – MAIFI Indices

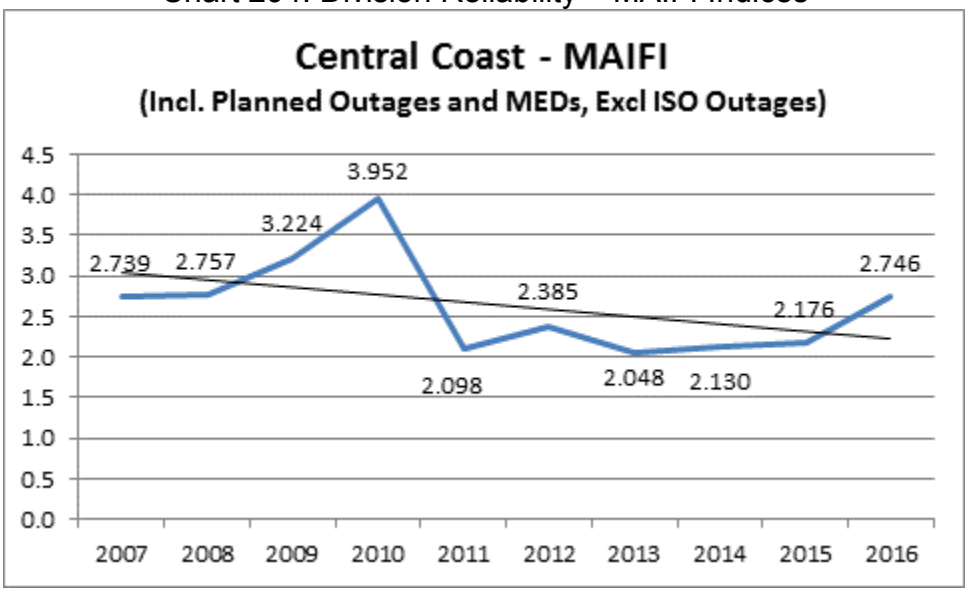


Chart 295: Division Reliability – MAIFI Indices

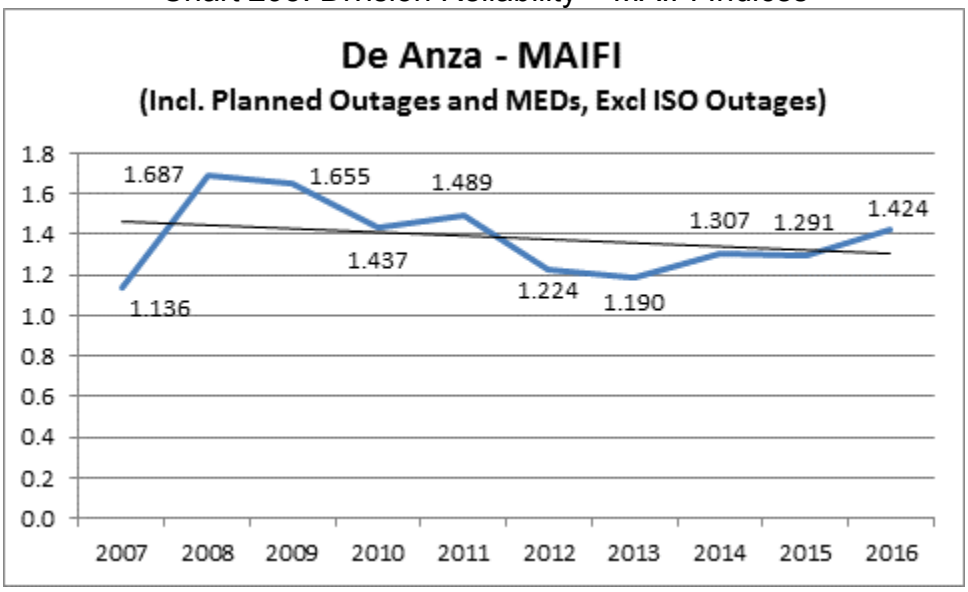


Chart 296: Division Reliability – MAIFI Indices

[11] See footnote 4 above.

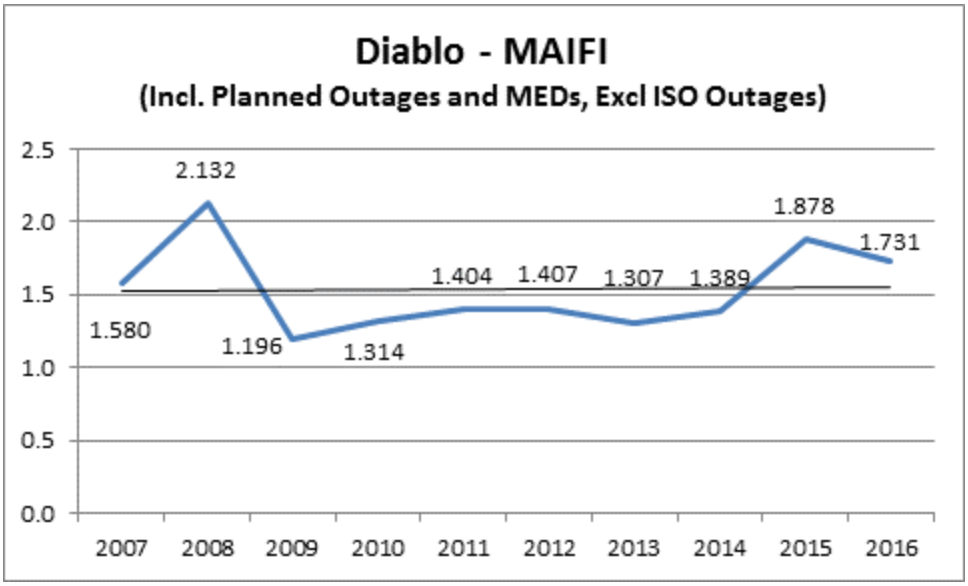


Chart 297: Division Reliability – MAIFI Indices

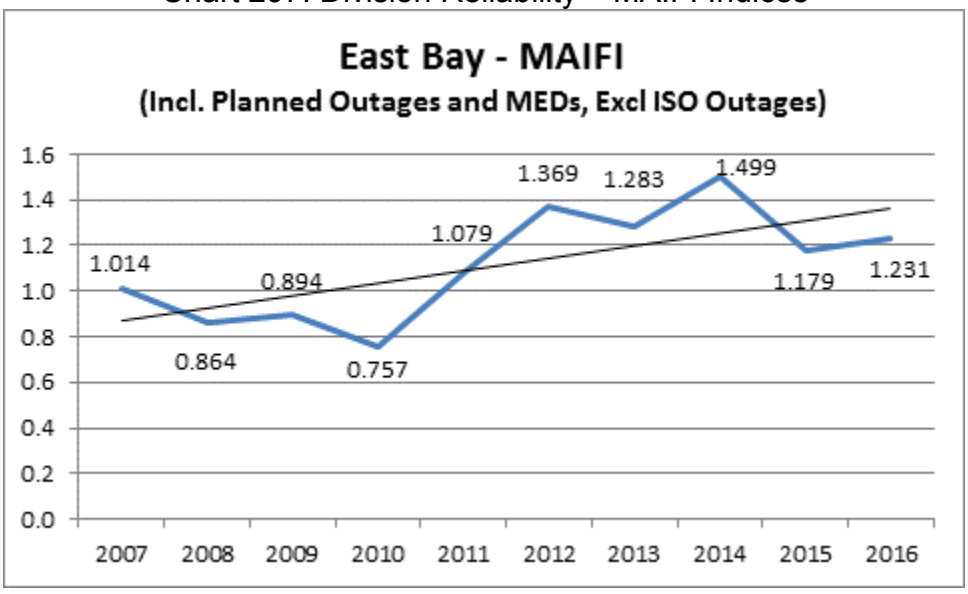


Chart 298: Division Reliability – MAIFI Indices

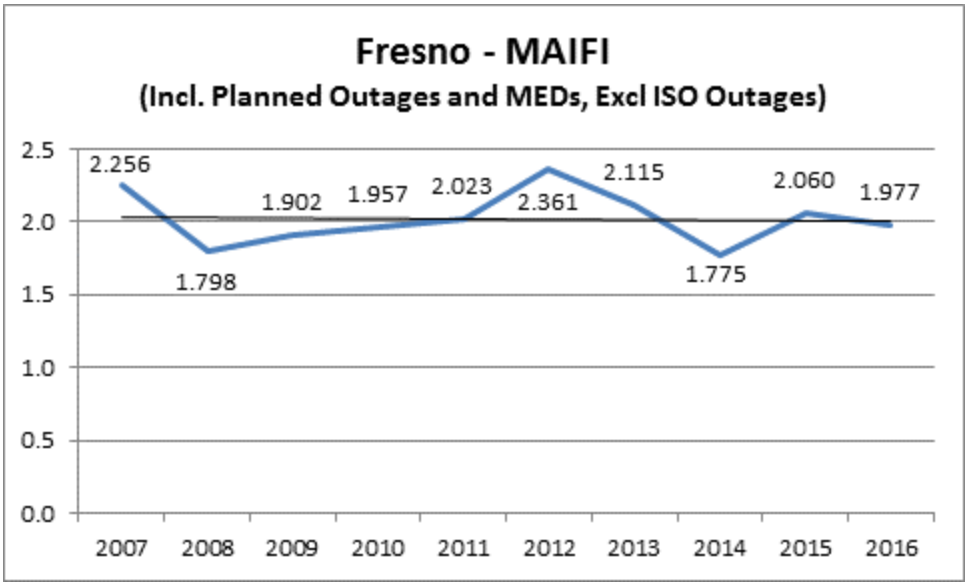


Chart 299: Division Reliability – MAIFI Indices

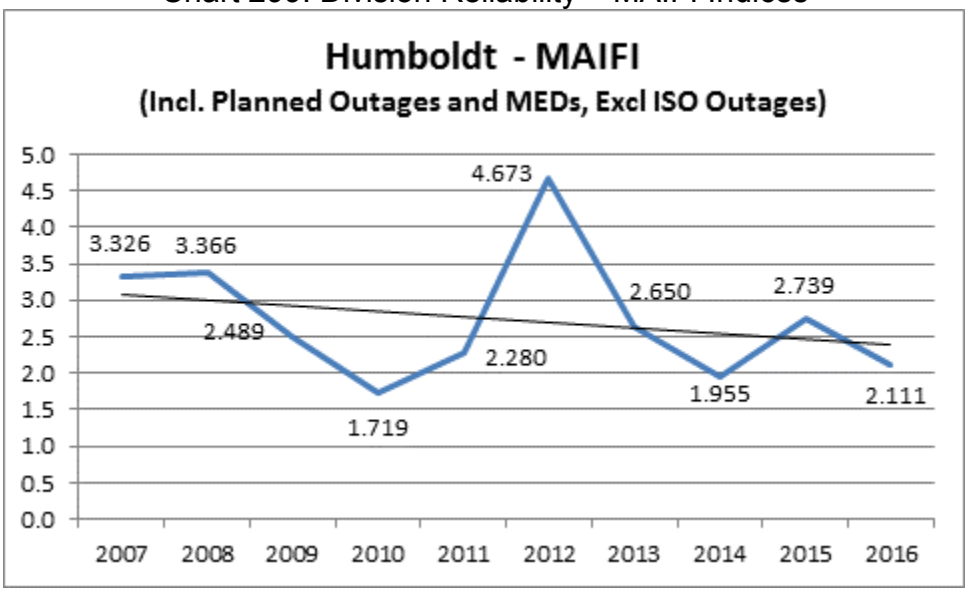


Chart 300: Division Reliability – MAIFI Indices

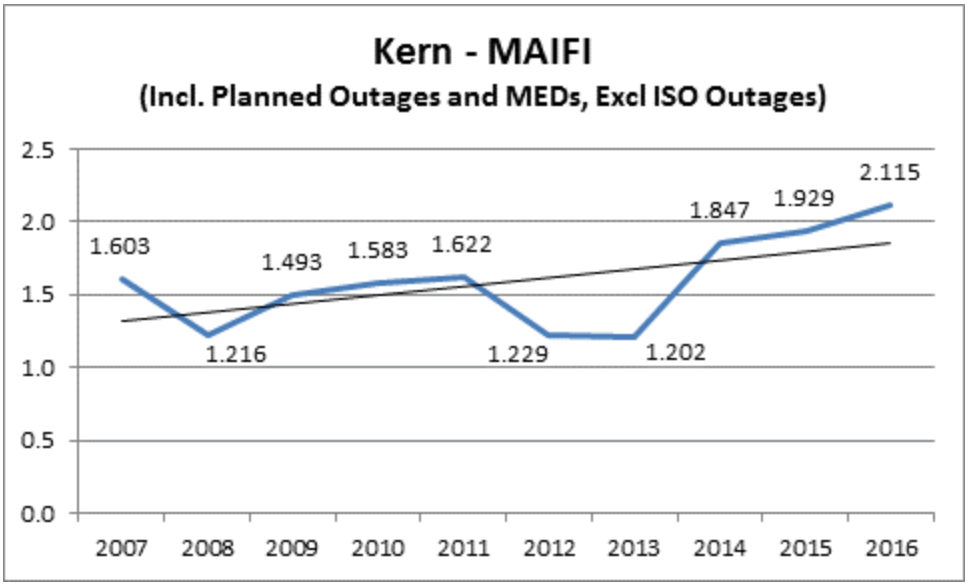


Chart 301: Division Reliability – MAIFI Indices

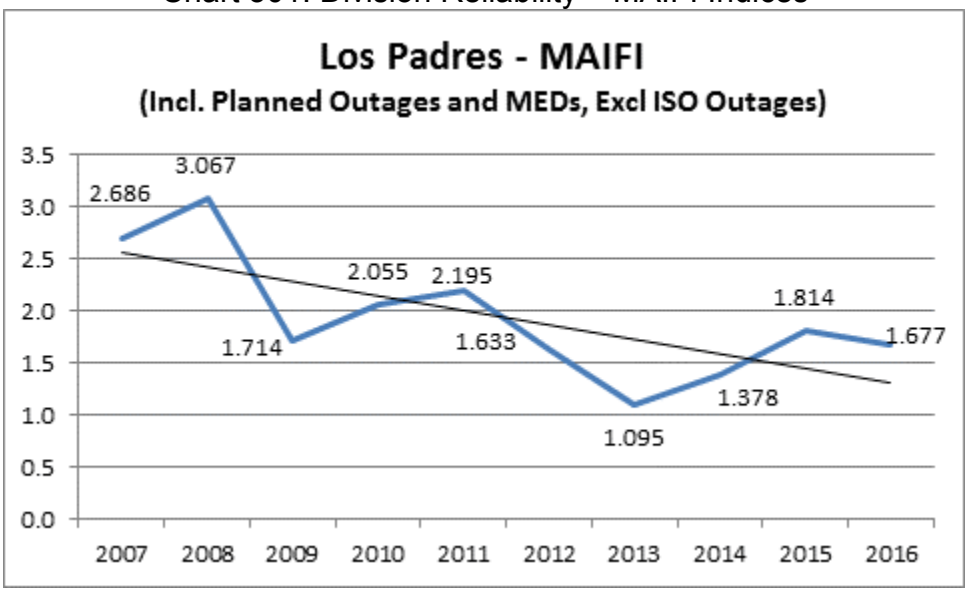


Chart 302: Division Reliability – MAIFI Indices

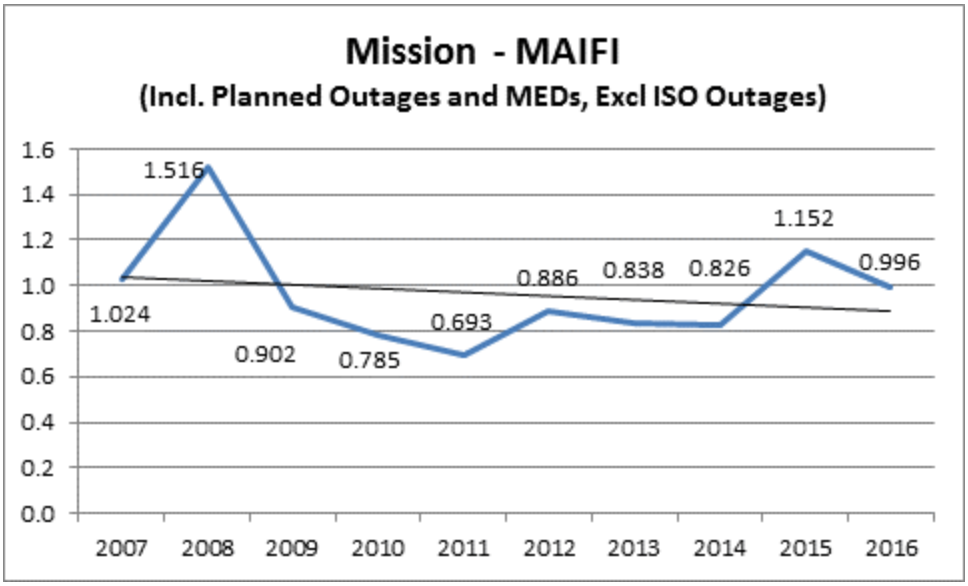


Chart 303: Division Reliability – MAIFI Indices

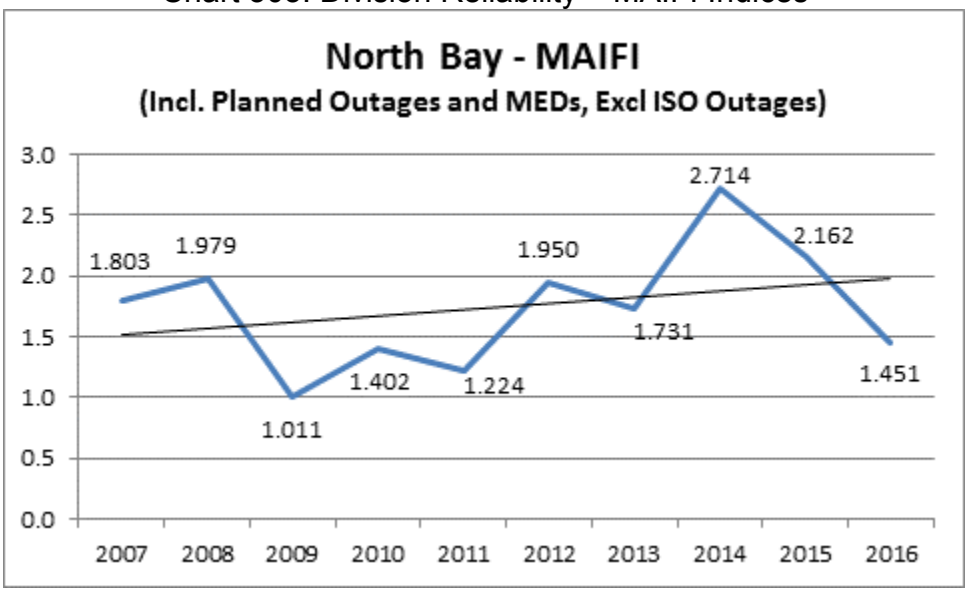


Chart 304: Division Reliability – MAIFI Indices

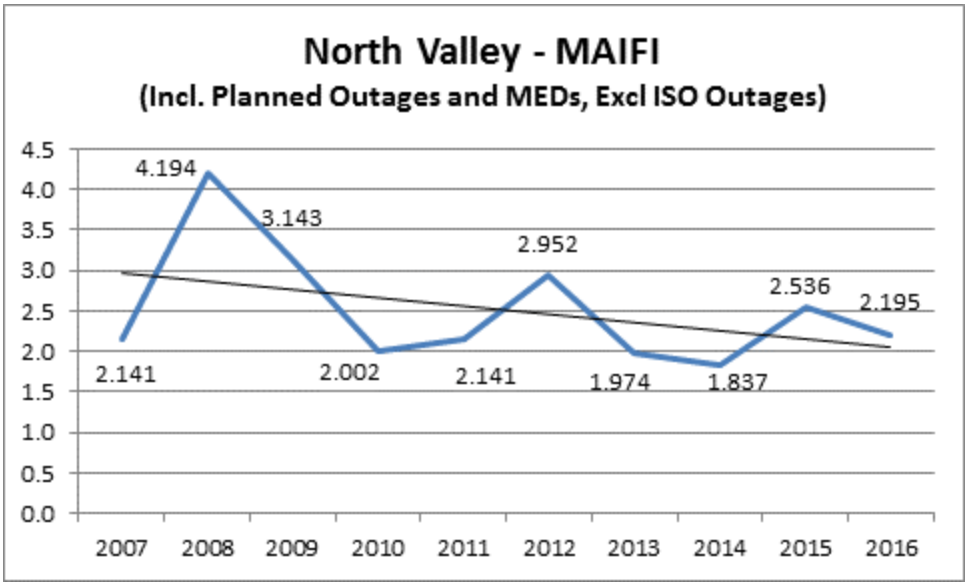


Chart 305: Division Reliability – MAIFI Indices

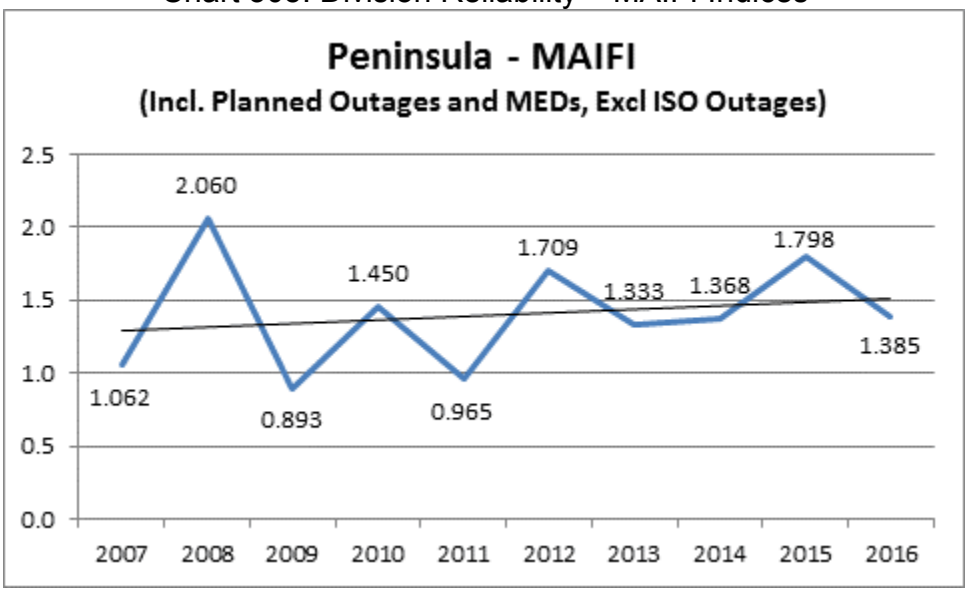


Chart 306: Division Reliability – MAIFI Indices

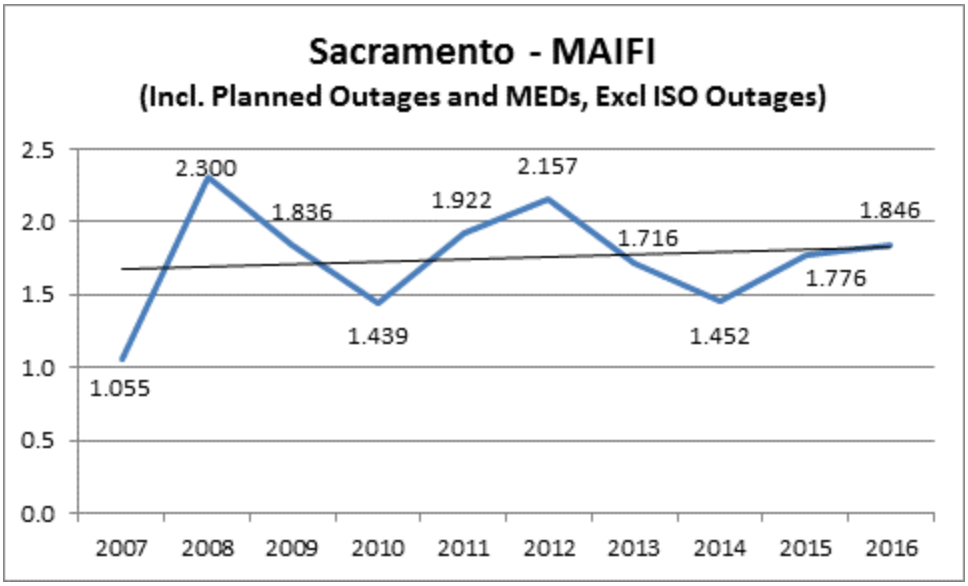


Chart 307: Division Reliability – MAIFI Indices

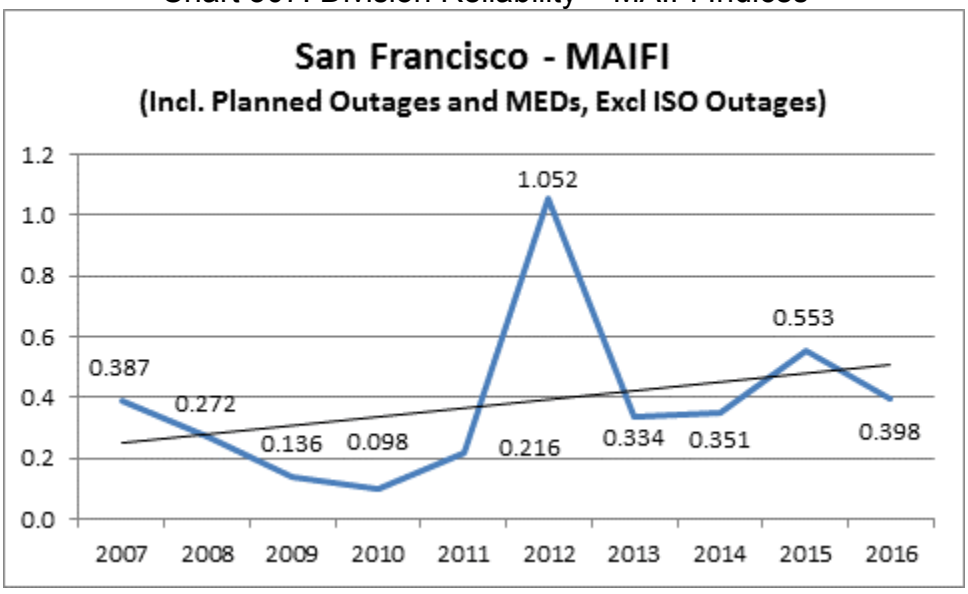


Chart 308: Division Reliability – MAIFI Indices

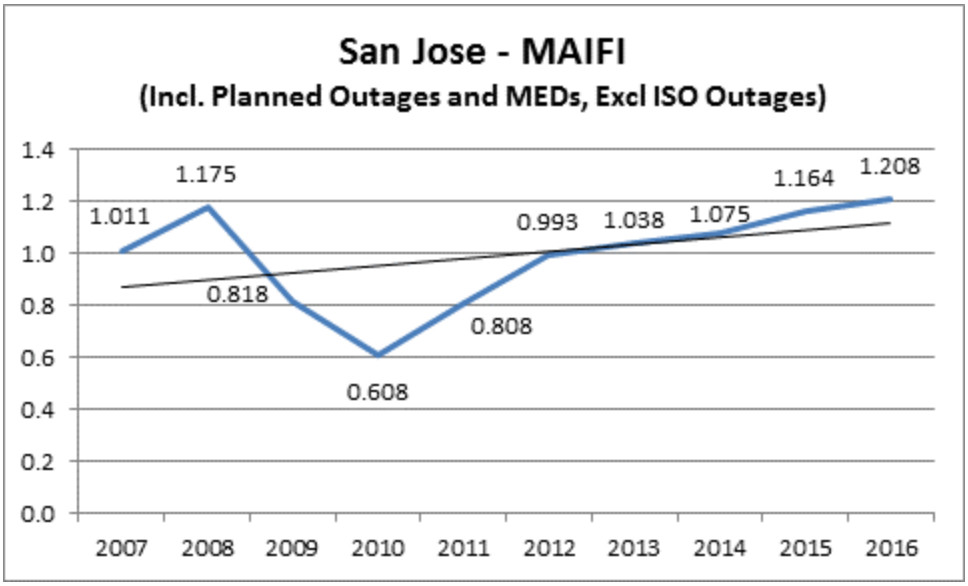


Chart 309: Division Reliability – MAIFI Indices

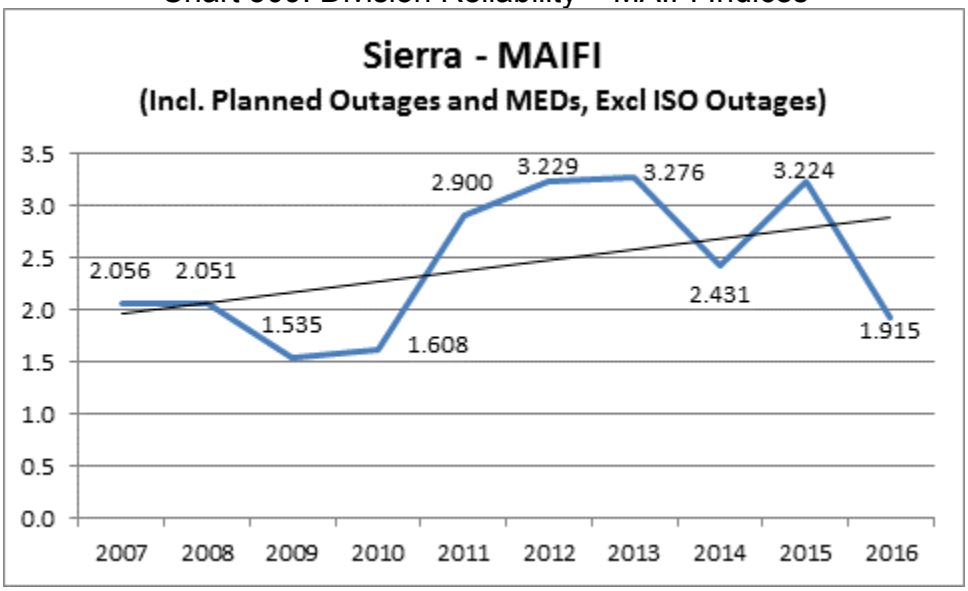


Chart 310: Division Reliability – MAIFI Indices

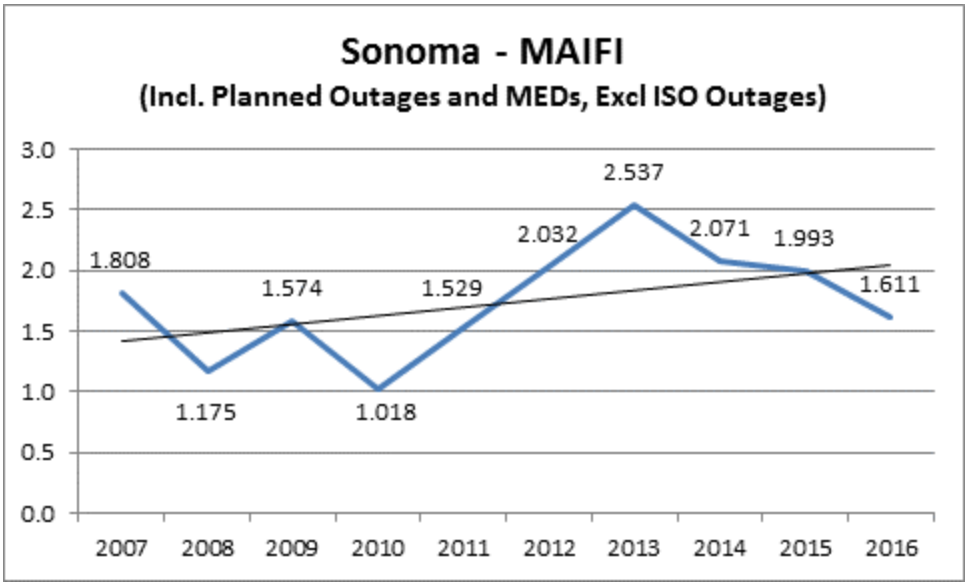


Chart 311: Division Reliability – MAIFI Indices

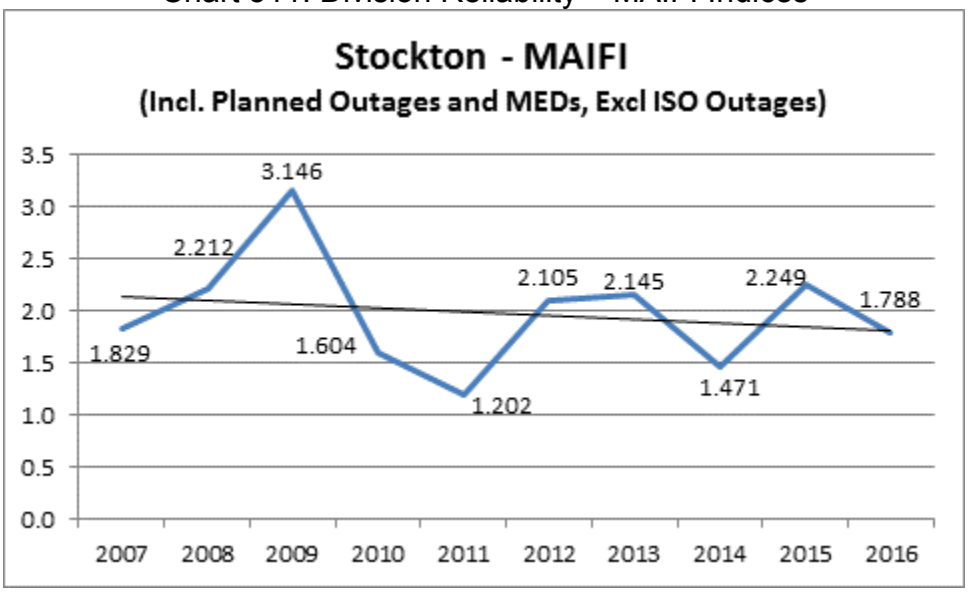


Chart 312: Division Reliability – MAIFI Indices

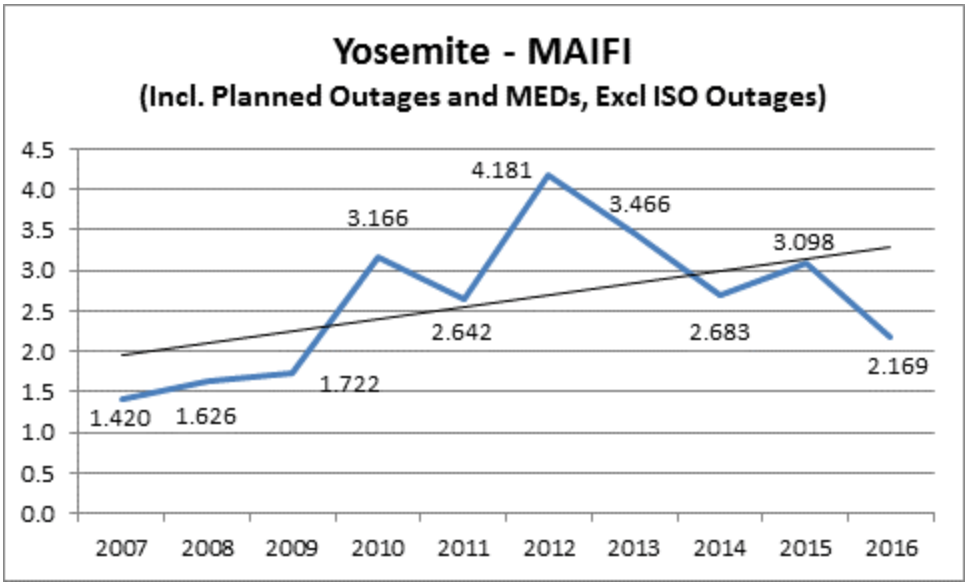
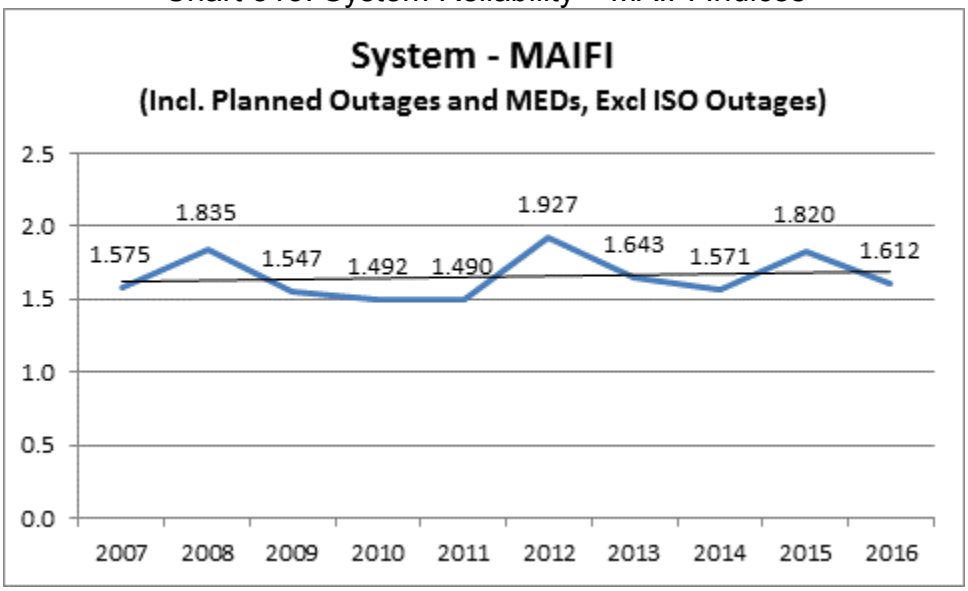


Chart 313: System Reliability – MAIFI Indices



4. CAIDI Performance Results (MED Included)

Chart 314: Division Reliability – CAIDI Indices

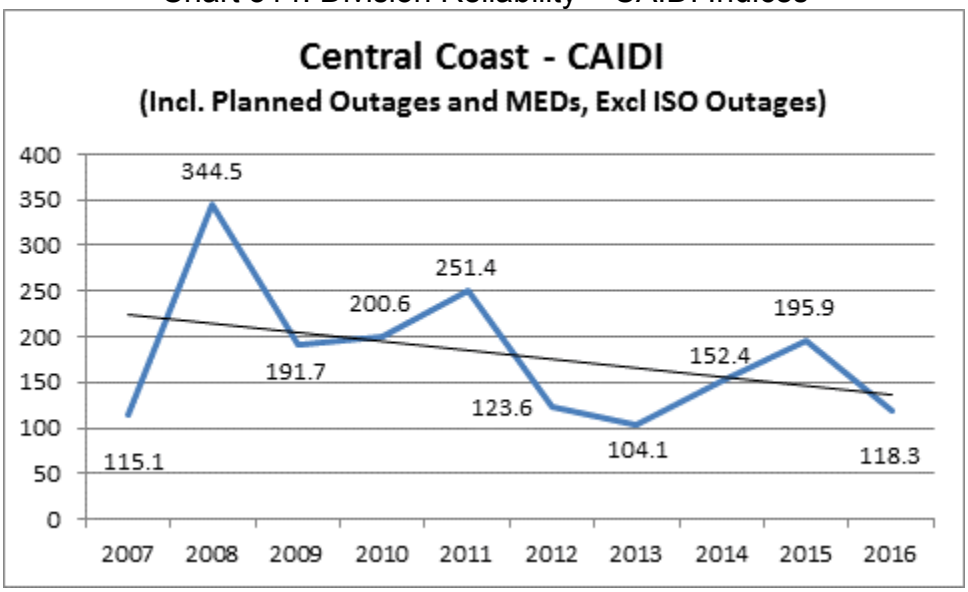


Chart 315: Division Reliability – CAIDI Indices

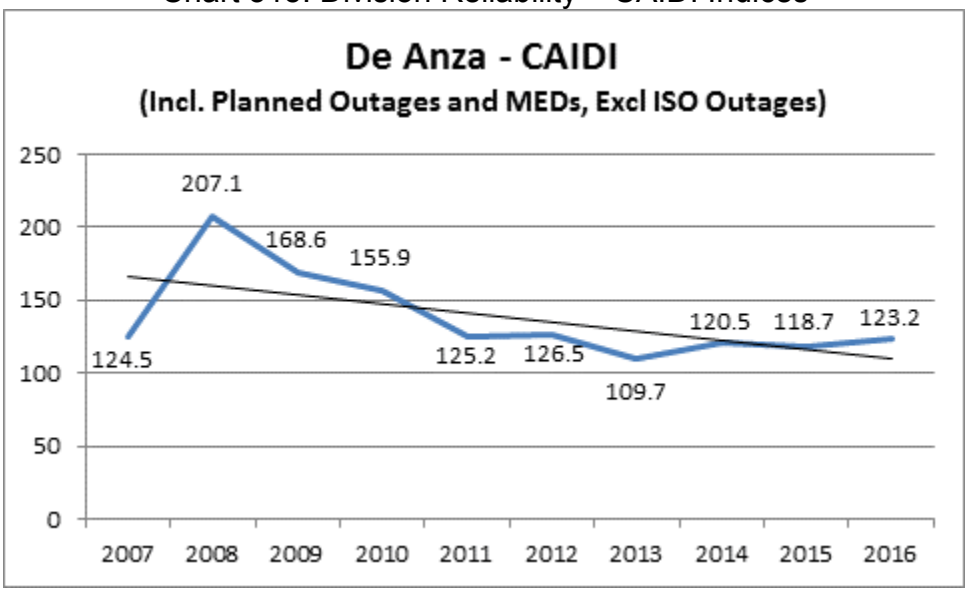


Chart 316: Division Reliability – CAIDI Indices

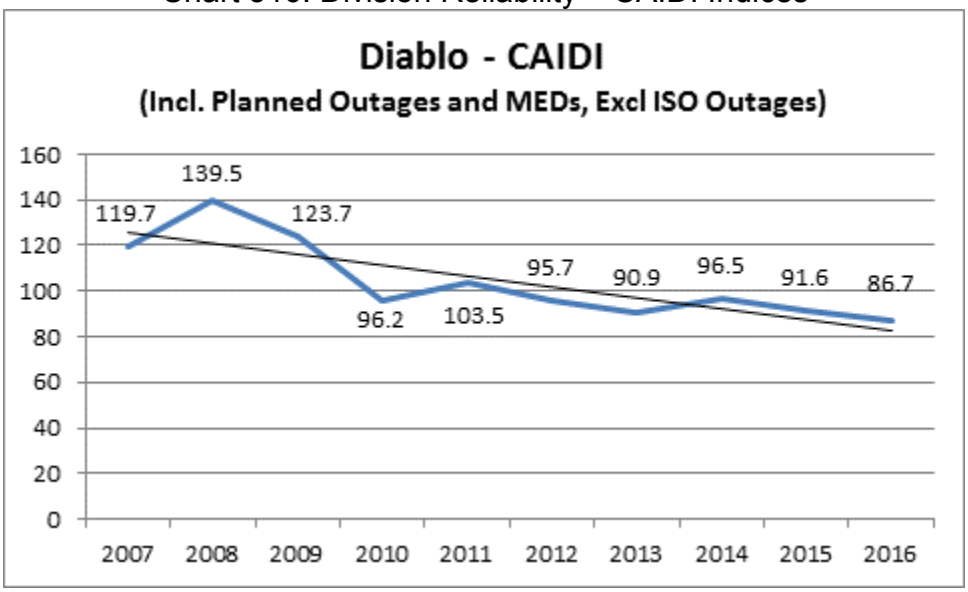


Chart 317: Division Reliability – CAIDI Indices

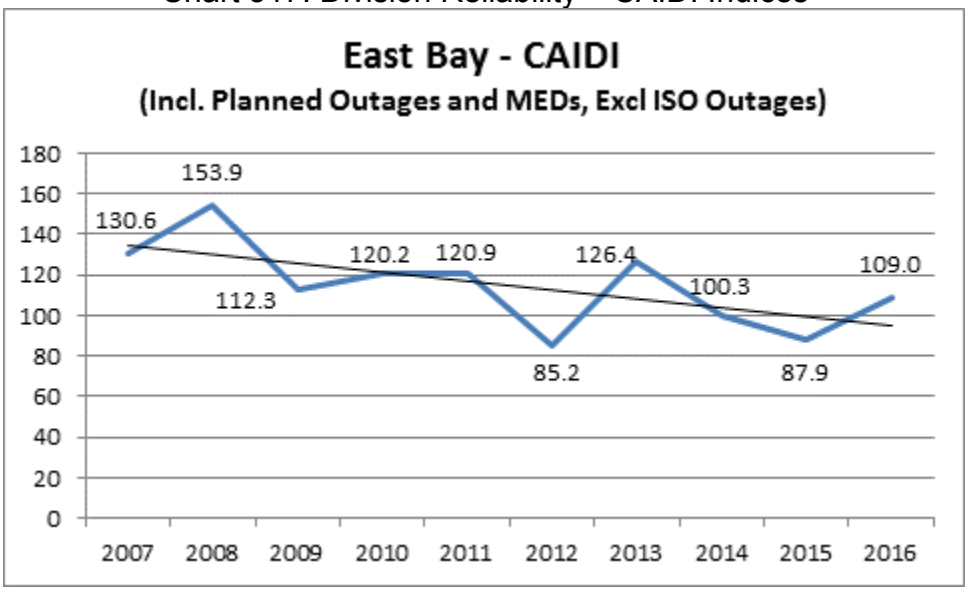


Chart 318: Division Reliability – CAIDI Indices

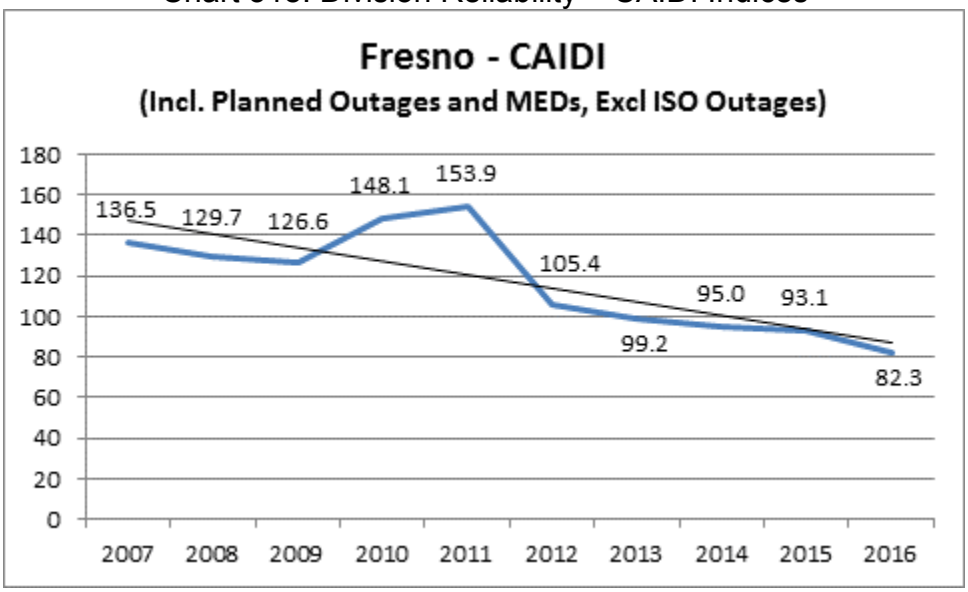


Chart 319: Division Reliability – CAIDI Indices

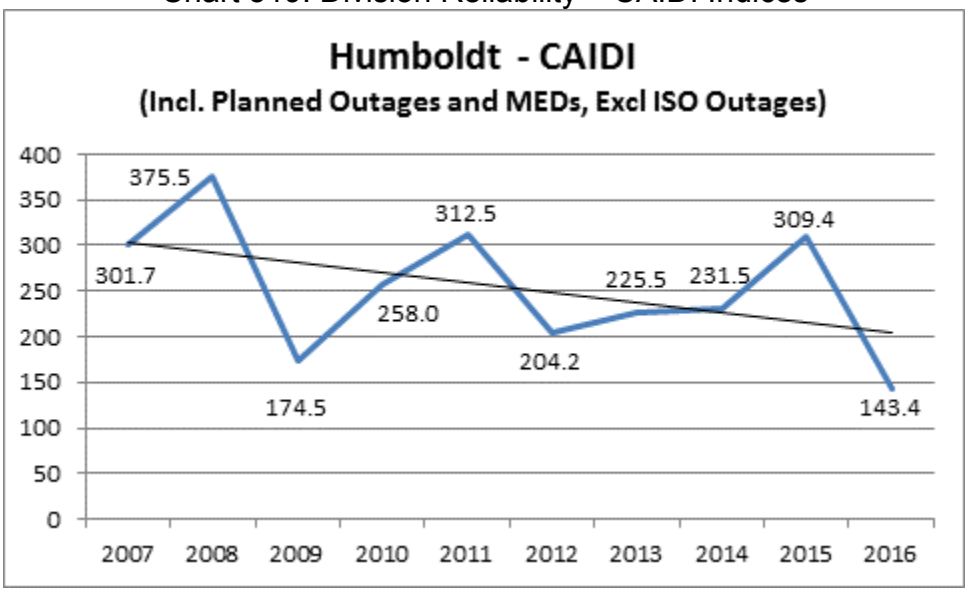


Chart 320: Division Reliability – CAIDI Indices

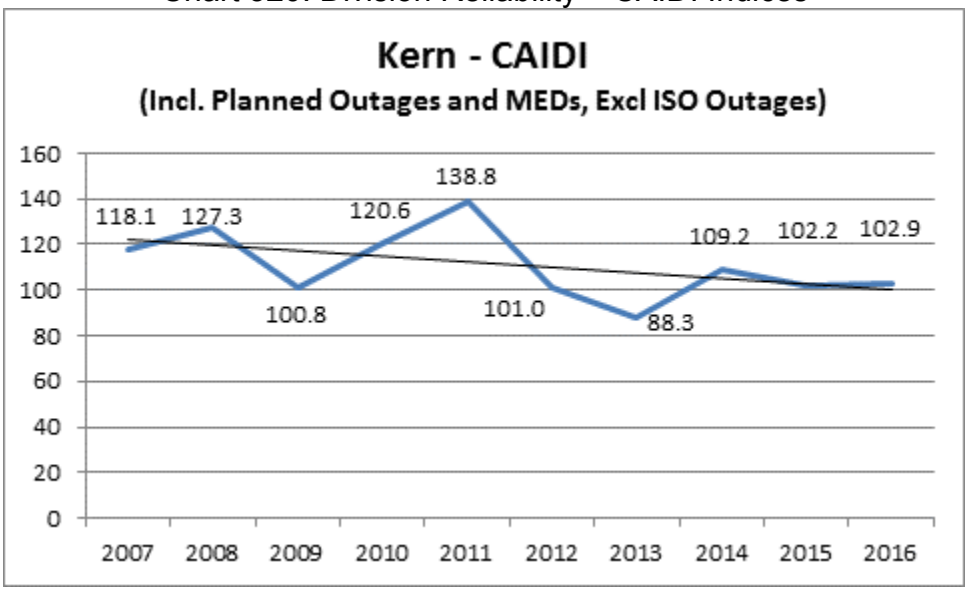


Chart 321: Division Reliability – CAIDI Indices

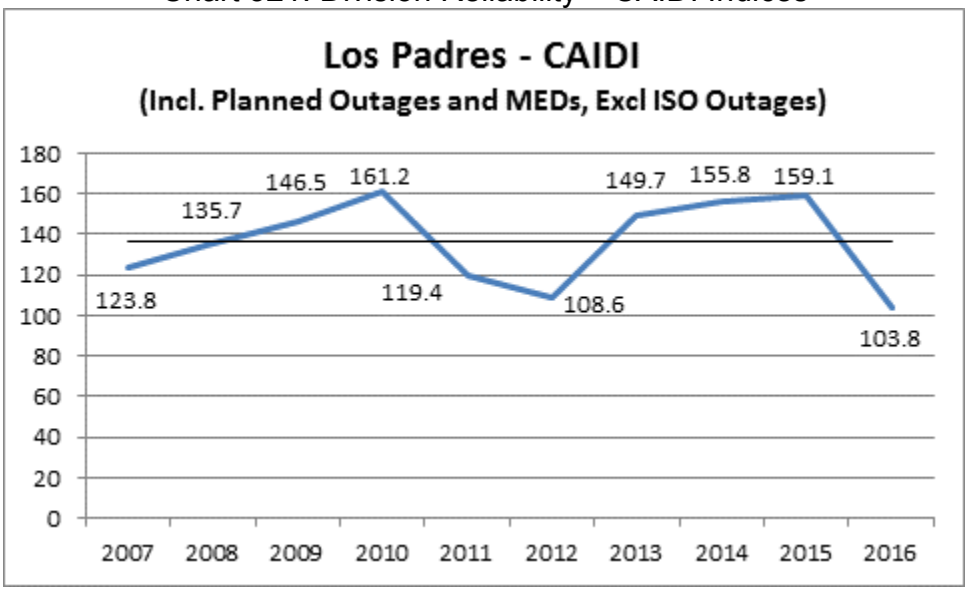


Chart 322: Division Reliability – CAIDI Indices

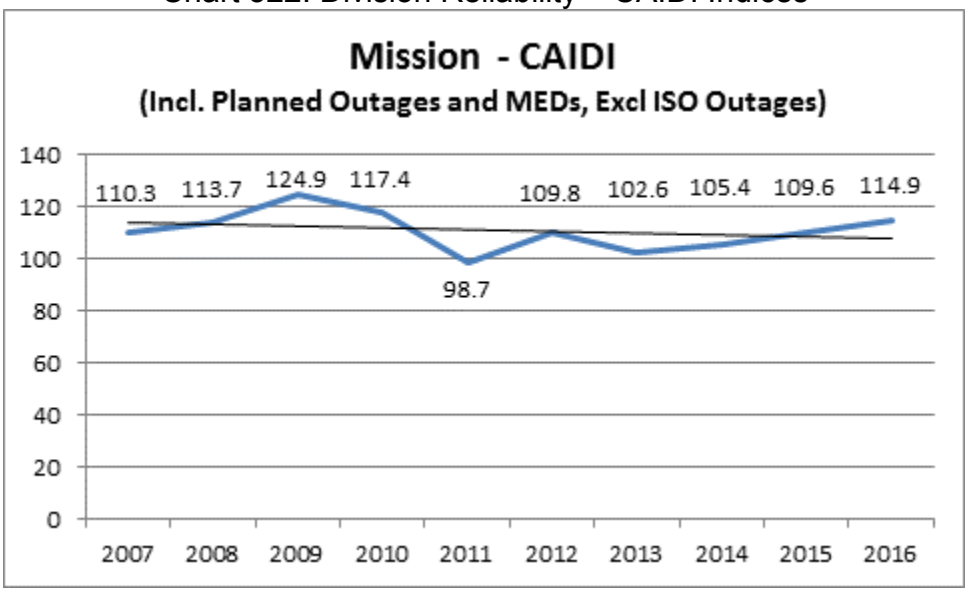


Chart 323: Division Reliability – CAIDI Indices

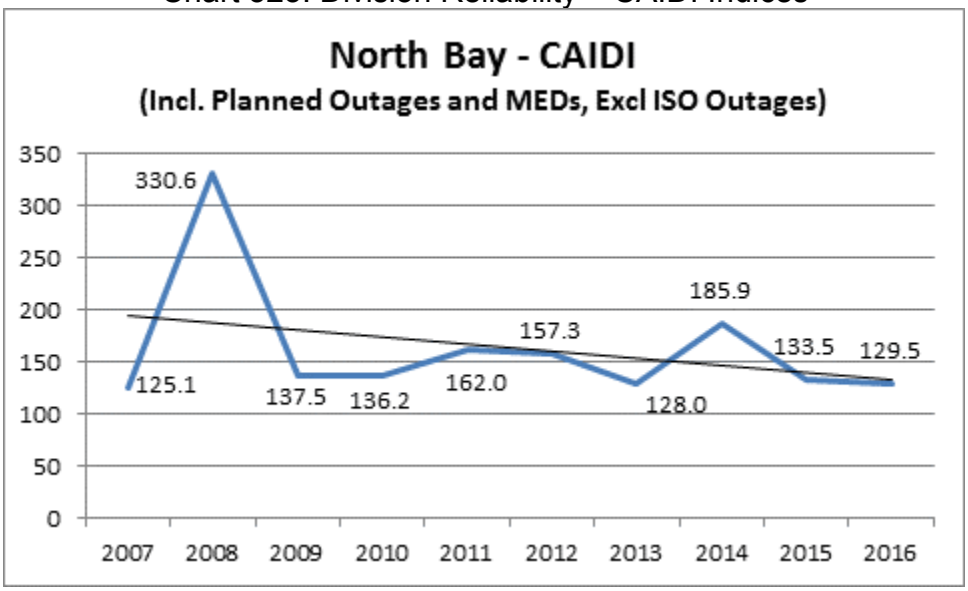


Chart 324: Division Reliability – CAIDI Indices

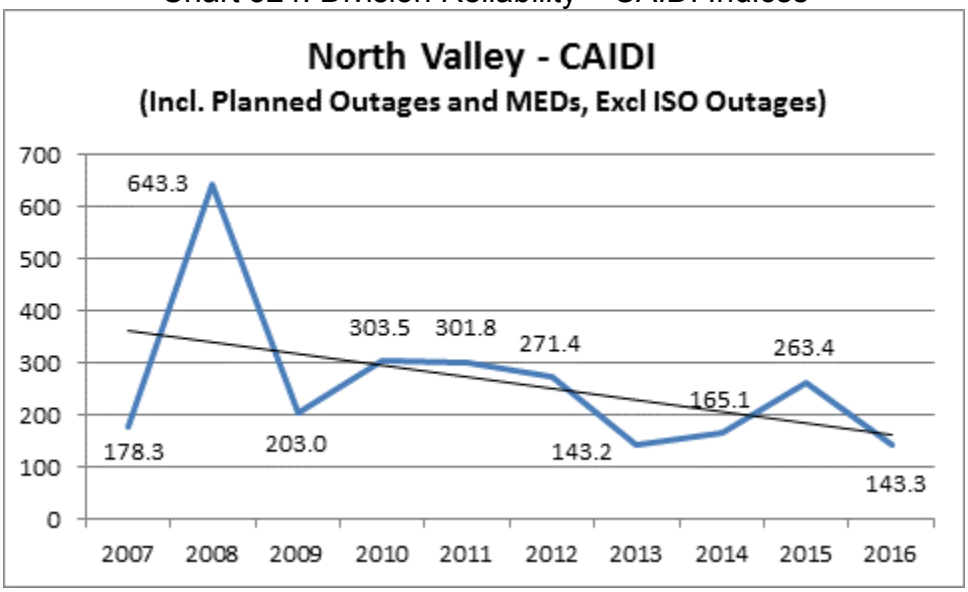


Chart 325: Division Reliability – CAIDI Indices

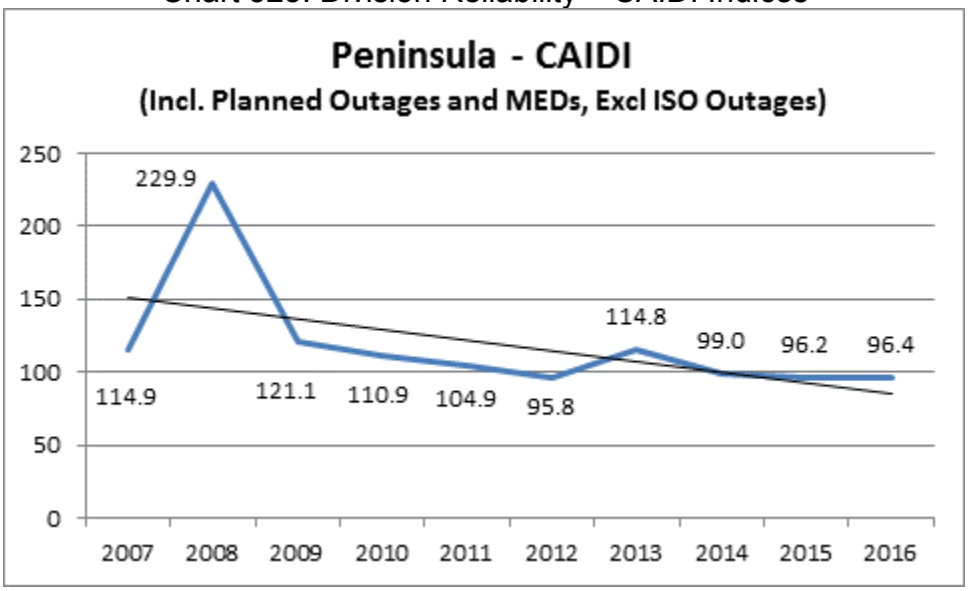


Chart 326: Division Reliability – CAIDI Indices

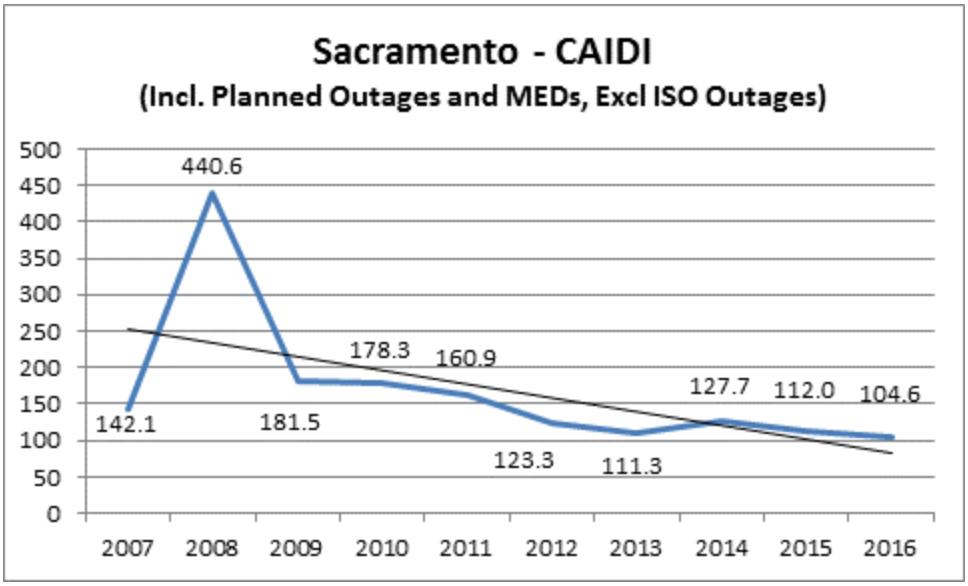


Chart 327: Division Reliability – CAIDI Indices

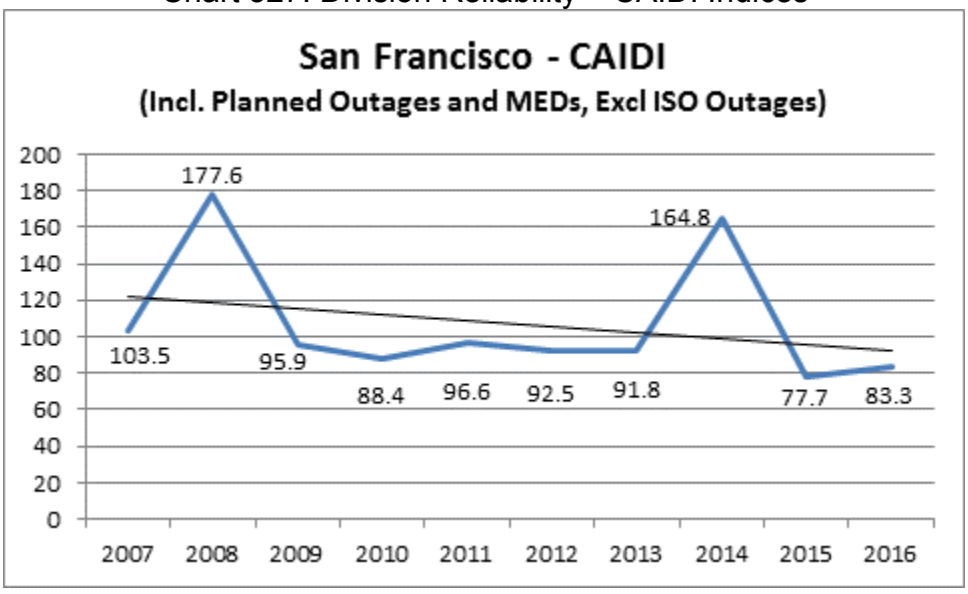


Chart 328: Division Reliability – CAIDI Indices

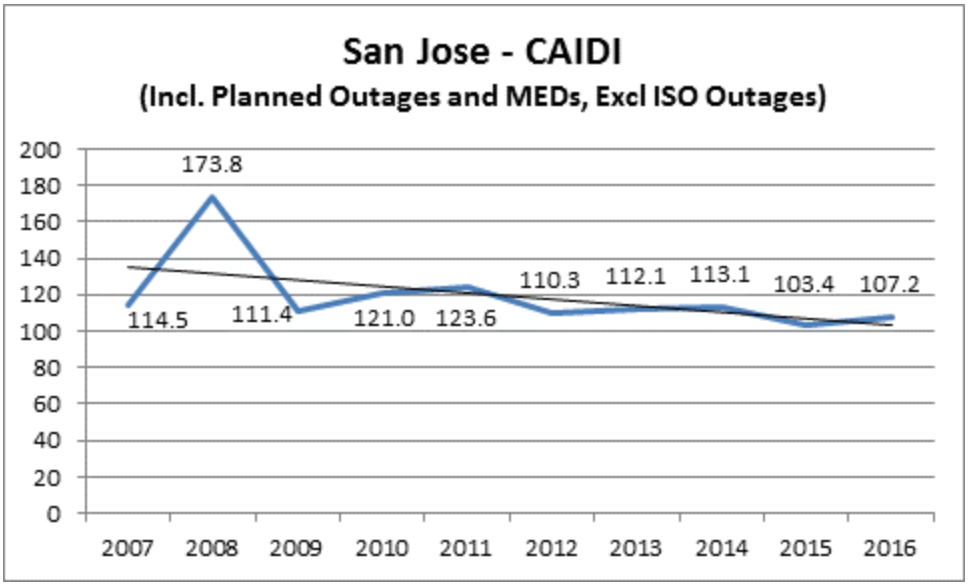


Chart 329: Division Reliability – CAIDI Indices

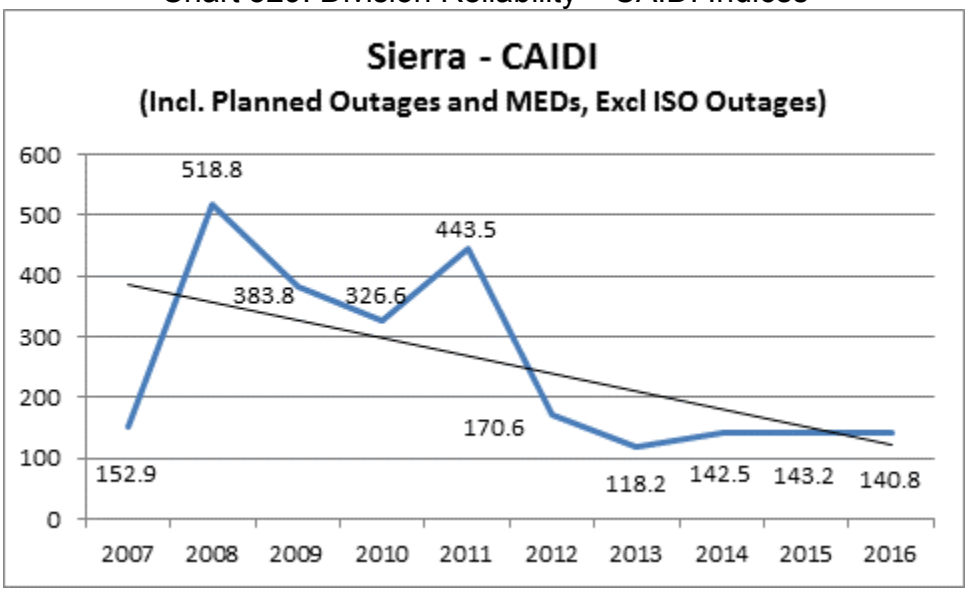


Chart 330: Division Reliability – CAIDI Indices

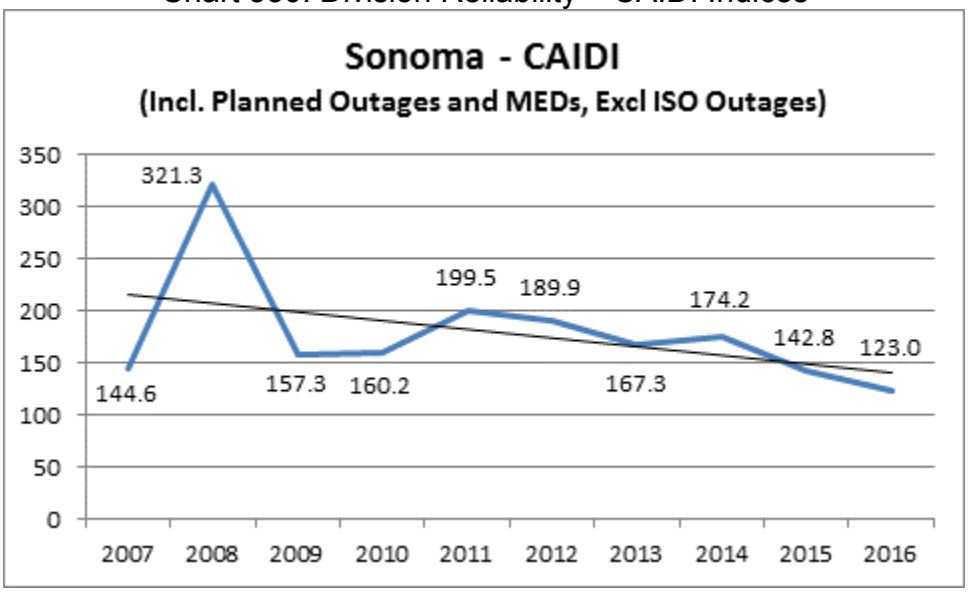


Chart 331: Division Reliability – CAIDI Indices

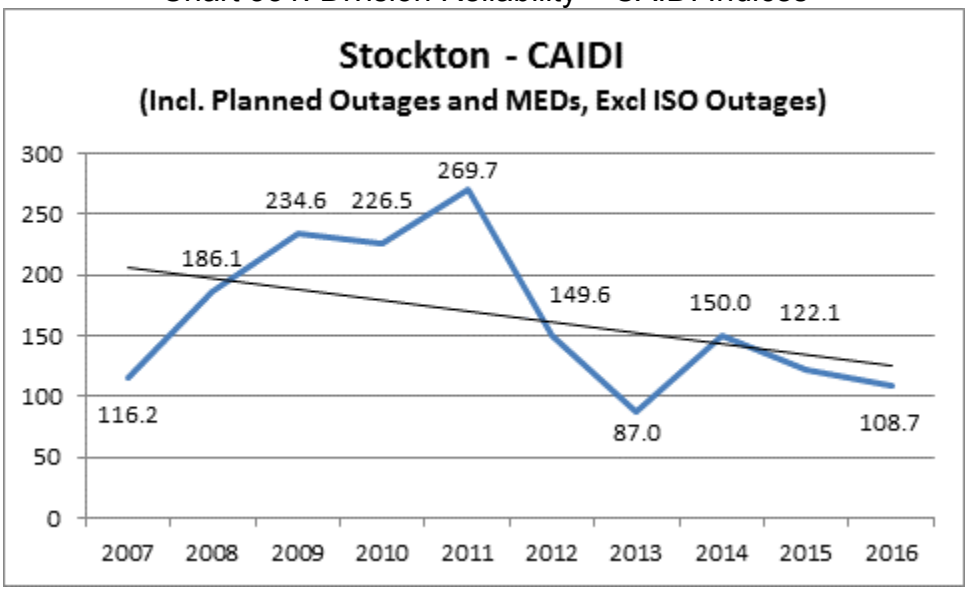


Chart 332: Division Reliability – CAIDI Indices

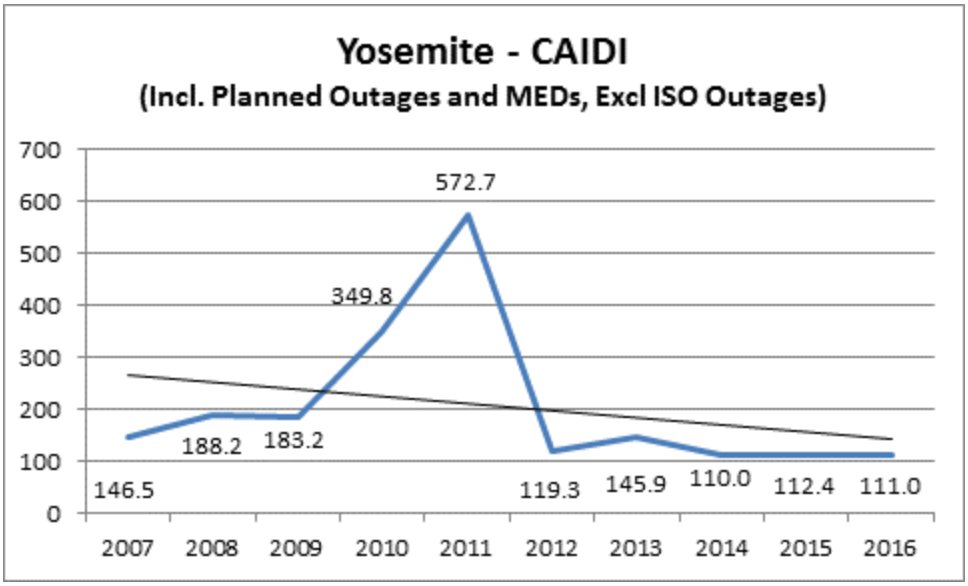
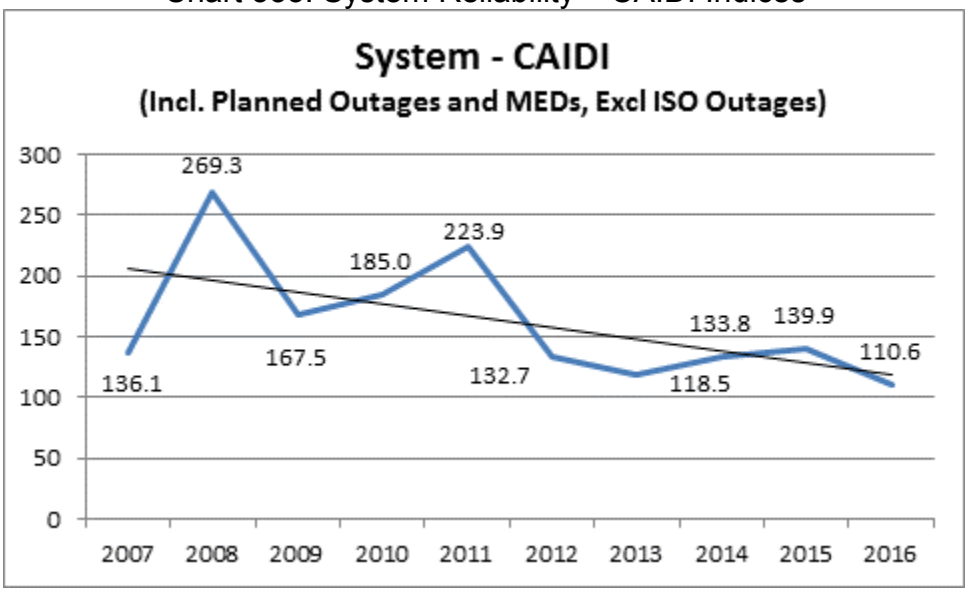


Chart 333: System Reliability – CAIDI Indices



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

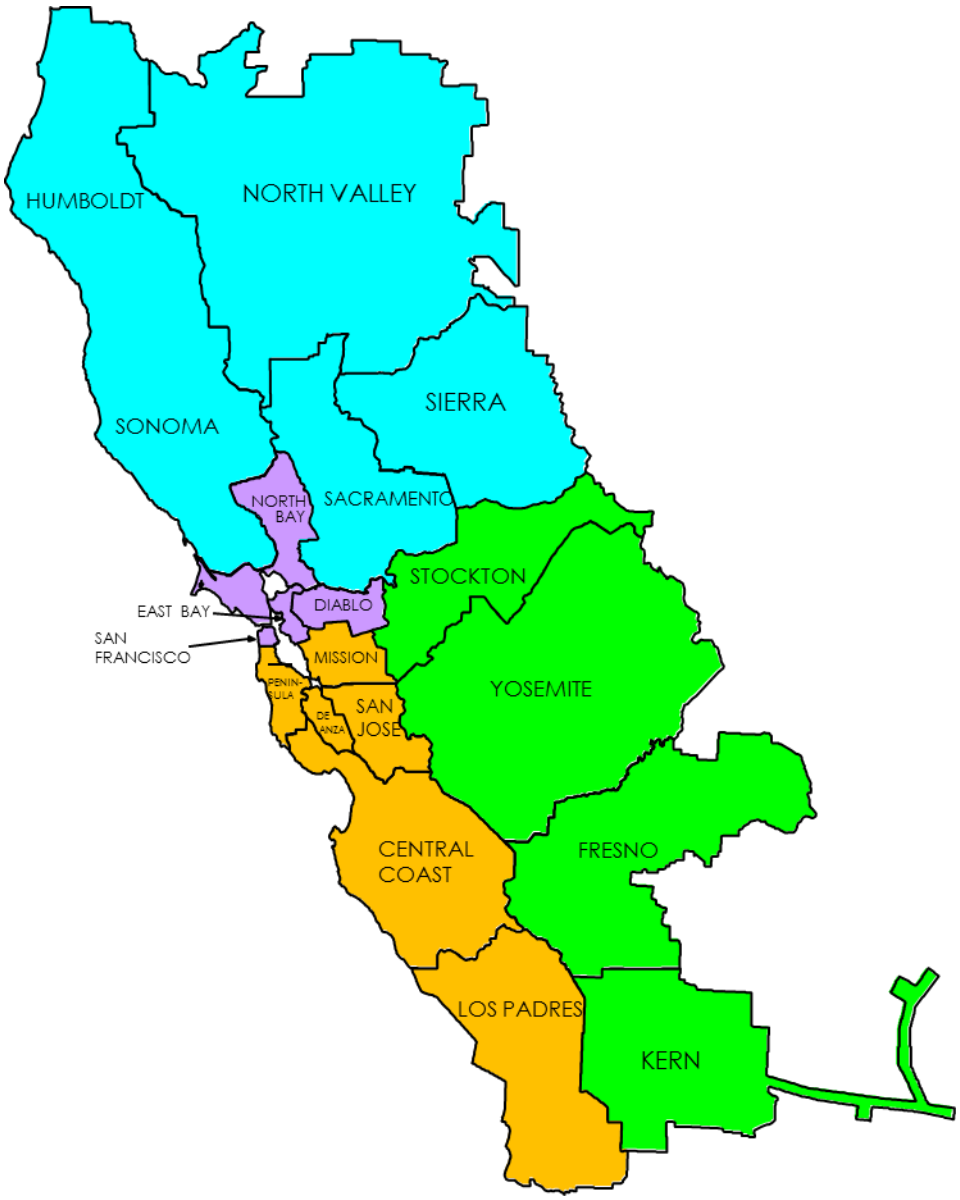
PG&E is submitting detailed planned outage information on a confidential basis under seal as required by Appendix B of Decision 16-01-008, at footnote 7. Listed below is a summary of planned outages by year from 2007 through 2016:

Table 31: Ten Years Planned Outage Summary (2007-2016)

Year	Total Planned Outages
2007	11912
2008	11085
2009	11315
2010	12373
2011	17244
2012	17006
2013	21982
2014	18026
2015	18891
2016	20253

4. Service Territory Map

PG&E Service Territory



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 32 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 33 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 recognized that a given circuit could appear on both the AIDI and AIFI lists of worst performing circuits. In consideration of this overlap, in order to include one percent of its total number of circuits (32 circuits), PG&E identified 21 circuits on each list, ten of which are on both lists, for a net of 32 individual circuits.

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 customer count of 250 sustained 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 customer count of 3,000 sustained 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 of outage data (2014 – 2016) in developing the worst performing circuit lists. PG&E has excluded outage data involving planned outages, ISO 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 (CB), a recloser, or an interrupter). Finally, PG&E has excluded outages in which the circuit was in an abnormal configuration. An abnormal circuit configuration occurs when additional customers are temporarily added to a circuit in order 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 its approach best defines a worst performing circuit.

Turning to Table 32, the list of the worst performing circuits by outage frequency, the worst circuit was the Garberville 1101 circuit. The average customer on the Garberville 1101 circuit experienced 4.98 sustained mainline outages (resulting in the operation of a circuit breaker or an automatic recloser) per year from 2014-2016.

Table 33 focuses on the duration of the sustained outages. Here, the Otter 1102 circuit was the worst performing circuit. For this circuit, the average customer on the circuit experienced 1,224 sustained mainline outage minutes (resulting in the operation of a circuit breaker or an automatic recloser) per year from 2014-2016.

Ten circuits, Garberville 1101, Garberville 1102, Otter 1102, Alpine 1102, El Dorado PH 2101, Tulare Lake 2108, Trinidad 1102, Challenge 1101, Devils Den 1101, and Poso Mountain 2101, appear on both lists. These ten circuits are highlighted in Tables 32 and 33. Additionally, nineteen circuits are marked with an asterisk (*) which indicate they are "deficient" since they were also on last year's WPC list (see the *"Deficient" Worst Performing Section* below for further details). [12]

Table 32: AIFI Worst Performing Circuit for 2016[13]

#	DIVISION	SUBSTATION	CIRCUIT NAME	TOTAL CUSTOMERS	CIRCUIT MILES	% OH	%UG	3 YR AVG MAINLINE OUTAGES	3 YR AVG AIFI
1	HUMBOLDT	GARBERVILLE	GARBERVILLE 1101*	1,239	170	98%	2%	12.3	4.98
2	STOCKTON	ALPINE	ALPINE 1102*	309	3	0%	100%	4.3	4.33
3	CENTRAL COAST	OTTER	OTTER 1102*	530	66	85%	15%	7.0	4.29
4	STOCKTON	ALPINE	ALPINE 1101	278	7	12%	88%	3.7	3.61
5	SIERRA	EL DORADO PH	EL DORADO PH 2101*	4,611	161	99%	1%	12.0	3.61
6	HUMBOLDT	GARBERVILLE	GARBERVILLE 1102*	1,787	157	95%	5%	12.7	3.34
7	FRESNO	TULARE LAKE	TULARE LAKE 2108	105	57	99%	1%	4.0	3.15
8	STOCKTON	SALT SPRINGS	SALT SPRINGS 2101	393	45	48%	52%	4.7	3.01
9	HUMBOLDT	TRINIDAD	TRINIDAD 1102	761	25	86%	14%	5.7	2.98
10	KERN	LAMONT	LAMONT 1104*	354	55	99%	1%	3.7	2.68
11	DIABLO	ROSSMOOR	ROSSMOOR 1108*	2,865	44	48%	52%	3.7	2.67
12	CENTRAL COAST	CAMP EVERS	CAMP EVERS 2105	3,805	98	97%	3%	10.3	2.63
13	DE ANZA	LOS GATOS	LOS GATOS 1106	1,597	78	97%	3%	6.3	2.62
14	PENINSULA	HALF MOON BAY	HALF MOON BAY 1101	2,538	59	83%	17%	5.3	2.58
15	YOSEMITE	RIVERBANK	RIVERBANK 1711*	1,454	45	81%	19%	3.7	2.55
16	CENTRAL COAST	ROB ROY	ROB ROY 2105	7,027	105	74%	26%	6.7	2.54
17	KERN	POSO MOUNTAIN	POSO MOUNTAIN 2101	146	61	100%	0%	4.7	2.52
18	STOCKTON	EIGHT MILE	EIGHT MILE 2106	189	34	98%	2%	3.0	2.50
19	STOCKTON	SALT SPRINGS	SALT SPRINGS 2102*	2,000	71	75%	25%	3.0	2.47
20	NORTH VALLEY	CHALLENGE	CHALLENGE 1101*	690	51	99%	1%	3.3	2.45
21	FRESNO	DEVILS DEN	DEVILS DEN 1101	64	53	99%	1%	3.7	2.43

[12] The three year AIFI values are determined by the three year average of the customers that experienced a sustained outage divided by the three year average of the total customers served by that circuit. The three year AIDI values are determined by the three year average of the customer-outage minutes divided by the three year average of the total customers served by that circuit. These calculations are slightly different than determining the three year average of just the actual recorded metric values for each of the three years.

[13] The circuit mileage data in this report is determined through the use of PG&E's Electric Distribution Geographic Information System (EDGIS). PG&E recently expanded the use of its EDGIS technology to map and analyze assets across its system and provide more accurate information about the expanse of its system and the mileage of particular circuits. As a result of using this more accurate technology, mileages for particular circuits may vary from prior reports.

Table 33: AIDI Worst Performing Circuit for 2016

#	DIVISION	SUBSTATION	CIRCUIT NAME	TOTAL CUSTOMERS	CIRCUIT MILES	% OH	% UG	3 YR AVG MAINLINE OUTAGES	3 YR AVG AIDI
1	CENTRAL COAST	OTTER	OTTER 1102*	530	66	85%	15%	7.0	1224.11
2	KERN	POSO MOUNTAIN	POSO MOUNTAIN 2101*	146	61	100%	0%	4.7	1078.85
3	NORTH VALLEY	CHALLENGE	CHALLENGE 1101*	690	51	99%	1%	3.3	1017.29
4	HUMBOLDT	HOOPA	HOOPA 1101*	1,985	150	93%	7%	5.7	828.29
5	FRESNO	TULARE LAKE	TULARE LAKE 2108*	105	57	99%	1%	4.0	823.53
6	NORTH VALLEY	RISING RIVER	RISING RIVER 1101*	728	60	98%	2%	3.7	785.51
7	HUMBOLDT	FRUITLAND	FRUITLAND 1141*	374	29	100%	0%	4.3	771.58
8	NORTH VALLEY	BUCKS CREEK	BUCKS CREEK 1103	321	26	52%	48%	1.0	744.04
9	HUMBOLDT	GARBERVILLE	GARBERVILLE 1102*	1,787	157	95%	5%	12.7	726.68
10	SIERRA	ALLEGHANY	ALLEGHANY 1101*	1,074	81	98%	2%	4.0	711.83
11	YOSEMITE	INDIAN FLAT	INDIAN FLAT 1104*	602	34	50%	50%	1.3	692.00
12	HUMBOLDT	ORICK	ORICK 1101*	90	10	92%	8%	1.0	657.23
13	HUMBOLDT	WILLOW CREEK	WILLOW CREEK 1103*	1,529	92	99%	1%	4.7	558.79
14	STOCKTON	ALPINE	ALPINE 1102*	309	3	0%	100%	4.3	541.11
15	HUMBOLDT	GARBERVILLE	GARBERVILLE 1101	1,239	170	98%	2%	12.3	533.28
16	HUMBOLDT	TRINIDAD	TRINIDAD 1102	761	25	86%	14%	5.7	507.83
17	FRESNO	DEVILS DEN	DEVILS DEN 1101	64	53	99%	1%	3.7	421.77
18	CENTRAL COAST	LAURELES	LAURELES 1111	1,599	120	91%	9%	2.3	419.37
19	SIERRA	EL DORADO PH	EL DORADO PH 2101	4,611	161	99%	1%	12.0	391.71
20	CENTRAL COAST	COAST RD.	COAST RD. 0401	8	3	100%	0%	1.0	383.50
21	FRESNO	TULARE LAKE	TULARE LAKE 1106	131	54	99%	1%	3.0	380.49

Cost Effective Reliability Remediation:

For purposes of this reliability report, PG&E has identified circuits with the worst AIDI and AIFI performance based on the sustained outage impacts to the average customer on that circuit. However, PG&E generally focuses on circuits with larger numbers of customers to maximize the cost effectiveness of remediating poor reliability performing circuits. Specifically, PG&E identifies the worst performing circuits for cost effective remediation based on the highest total number of customers experiencing sustained outages (CESO) on a circuit. The reliability remediation of these worst performing circuits is addressed in PG&E's Targeted Circuit Program. In addition to the Targeted Circuit Program, internal reviews of unplanned outages are performed on a regular basis. The objective of the outage review process is to identify and minimize chronic reliability issues that affect smaller number of customers. Cost effective remediation work that addresses those circuits identified from the outage review process are incorporated into PG&E's base reliability work.

In the Targeted Circuit Program, PG&E's distribution engineers analyze the causes and characteristics of historical outages as well as review the current circuit design in order to identify targeted work that will improve the circuit's reliability performance. The typical targeted circuit work includes, as appropriate for the circuit, installing new fuses and line reclosers, 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. It typically takes two to three years for a targeted circuit project to be initiated, engineered, and constructed. As forecasted in PG&E's 2017 General Rate Case (GRC), PG&E expects to complete an average of 37 circuits in the Targeted Circuit Program per year through 2019, at a cost of $26.0 million per year.

The anticipated goal of the Targeted Circuit Program is to achieve a 25 percent reliability performance improvement per circuit. The actual historical results for the Targeted Circuit Program have seen a range of 5 to 75 percent reliability performance improvement per circuit since 2009. As reported in the 2017 GRC, the Targeted Circuit Program had a benefit to cost ratio of 2.75 to 1 based on the Values of Service analysis.

Most of the listed worst performing circuits have high CESO values. As a result, most of the worst performing circuits have been or will be incorporated into the Targeted Circuit Program. For those worst performing circuits not incorporated into the Targeted Circuit Program, PG&E will evaluate what remedial action, if any, is appropriate. This includes determining whether any remediation action has been or will be performed through PG&E's base reliability work.

“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. GARBERVILLE 1101

i. An explanation of why it was ranked as a "deficient" circuit:
- Three year (2013-2015) average AIFI score of 2.37
- Three year (2014-2016) average AIFI score of 4.98

ii. A historical record of the metric:
- AIFI 2013 = 0.93
- AIFI 2014 = 3.90
- AIFI 2015 = 2.27
- AIFI 2016 = 8.76

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

The Garberville 1101 circuit provides electric service to approximately 1,239 customers in Southern Humboldt and Northern Mendocino Counties through 170 circuit-miles of primarily overhead conductor. The Garberville 1101 circuit is comprised of three main branches. The eastern branch serves approximately 272 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 171 customers through a 12 circuit-mile line section that traverses through coastal mountains to the community of Whitethorn. The southern branch serves approximately 745 customers through a 28 circuit-mile line section that follows the Hwy 101 corridor between Garberville and Leggett. The southern branch runs along the South Fork of the Eel River and crosses several State Parks including Richardson’s Grove, Smithe Redwoods, and Standish Hickey Recreation Area. The major factors driving the Garberville 1101 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.

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

This circuit was part of the 2012 Targeted Circuit program. Specifically, the 2012 targeted circuit project upgraded 700 feet of overhead conductor, installed two overhead switches, and performed miscellaneous reliability work like pole reframing and self-protecting (SP) transformer replacement. Four traditional fused locations are targeted to be replaced with single phase reclosing devices (Trip Savers) in 2017. An additional 7,000 feet of mainline conductor is targeted for replacement in 2017 as part of the deteriorated conductor program.

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

Incremental reliability improvement is anticipated after completion of the Trip Saver installation and OH reconductor work in 2017. PG&E has not identified any additional cost effective reliability improvements at this time, so we do not anticipate a significant change in the performance of this circuit except for changes due to the weather. We will continue to explore cost effective reliability improvement opportunities such as installing additional remotely operable devices or performing tree trimming in targeted line sections.

2. GARBERVILLE 1102

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

- Three year (2013-2015) average AIFI score of 2.62 and AIDI score of 546.46.
- Three year (2014-2016) average AIFI score of 3.34 and AIDI score of 726.28.

ii. A historical record of the metric:

- AIFI 2013 = 1.70
- AIFI 2014 = 3.50
- AIFI 2015 = 2.66
- AIFI 2016 = 3.87

- AIDI 2013 = 191.92
- AIDI 2014 = 936.09
- AIDI 2015 = 510.19
- AIDI 2016 = 732.82

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

The Garberville 1102 circuit provides electric service to approximately 1,239 customers in Humboldt County through 157 circuit-miles of primarily overhead conductor. The primary mainline section of Garberville 1102 circuit travels through a 50 mile stretch of mountainous terrain along the northern coast of California. The primary mainline section crosses an area known in the outdoor/hiking community as “The Lost Coast” and portions of the Humboldt Redwoods State Park. The primarily mainline section splits near the town of Briceland, approximately 10 circuit miles northwest of Garberville. The north branch extends 37 miles to Petrolia while the south branch extends 14 miles to the community of Whitethorn. The major factors driving the Garberville 1102 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.

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

This circuit was part of the 2011 Targeted Circuit program. Specifically, the 2011 targeted circuit project installed twelve fuses, three reclosers and performed miscellaneous reliability improvement

work like pole reframing and self-protecting (SP) transformer replacement. A 2013 reconductor project successfully replaced over one mile of OH conductor with a larger conductor. A distribution generation interconnection project is targeted for installation in 2017-18 as part of pilot program to improve outage restoration time.

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

A 12% and 53% percent improvement in 2016 AIFI and AIDI reliability performance was observed after the completion of the 2012 targeted circuit project respectively. Although additional reliability improvement is anticipated after completion of the 2017-18 distribution generation interconnection project, forecasting reliability benefits is difficult to quantify for this pilot program. We will continue to explore cost effective reliability improvement opportunities such as installing additional remotely operable devices or performing tree trimming in targeted line sections.

3. RIVERBANK 1711

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

- Three year (2013-2015) average AIFI score of 2.45
- Three year (2014-2016) average AIFI score of 2.55

ii. A historical record of the metric:

- AIFI 2013 = 2.38
- AIFI 2014 = 2.75
- AIFI 2015 = 2.25
- AIFI 2016 = 2.67

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

The Riverbank 1711 circuit provides electric service to approximately 1,453 customers in Stanislaus County through 45 circuit-miles of primarily overhead conductor. The Riverbank 1711 circuit is comprised of several branches that travel through agriculture communities and support the cities of Oakdale and Riverbank. The major factors driving the Riverbank 1711 reliability performance are equipment failure and 3rd party vehicle caused outages.

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

This circuit was part of the 2016 Targeted Circuit program. Specifically, the 2016 targeted circuit project installed eleven fuses, one recloser and performed miscellaneous reliability improvement work like connector replacement and bird guard installation. A project is targeted for 2018 completion that will add self-healing (FLISR) technology to the circuit.

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

Based on results shown by other, similar circuits after targeted circuit work, PG&E anticipates that the recently completed work will improve reliability performance by 25 percent or more. Additional reliability

performance improvement is anticipated when the automated self-healing FLISR technology is programmed on this circuit in 2018.

4. HOOPA 1101

i. An explanation of why it was ranked as a "deficient" circuit:
   - Three year (2013-2015) average AIDI score of 758.57
   - Three year (2014-2016) average AIDI score of 828.29

ii. A historical record of the metric:
   - AIDI 2013 = 894.20
   - AIDI 2014 = 222.77
   - AIDI 2015 = 1152.69
   - AIDI 2016 = 1105.67

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

The Hoopa 1101 circuit provides electric service to approximately 1,985 customers in Humboldt County through 150 circuit-miles of primarily overhead conductor. The Hoopa 1101 circuit is comprised of two main branches that travel through remote, mountainous terrain including the Six Rivers and Klamath National Forests. The major factors driving the Hoopa 1101 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.

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

As of the date of this report, a Targeted Circuit project has not been identified for the Hoopa 1101 circuit. A distribution generation interconnection project is targeted for installation in 2017-18 as part of pilot program to improve outage restoration time.

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

Although reliability improvement is anticipated after completion of the 2017-18 distribution generation interconnection project, forecasting reliability benefits is difficult to quantify for this pilot program. We will continue to explore cost effective reliability improvement opportunities such as installing additional remotely operable devices or performing tree trimming in targeted line sections.

5. CHALLENGE 1101

i. An explanation of why it was ranked as a "deficient" circuit:
   - Three year (2013-2015) average AIFI score of 2.25 and AIDI score of 791.00.
   - Three year (2014-2016) average AIFI score of 2.45 and AIDI score of 1017.29.

ii. A historical record of the metric:
   - AIFI 2013 = 0.65
   - AIFI 2014 = 2.93

- AIFI 2015 = 3.16
- AIFI 2016 = 1.26

- AIDI 2013 = 337.00
- AIDI 2014 = 1087.45
- AIDI 2015 = 942.24
- AIDI 2016 = 1022.44

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

The Challenge 1101 circuit provides electric service to approximately 690 customers in Yuba, Butte and Plumas Counties through 51 circuit-miles of primarily overhead conductor. 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 mountainous service territory with increased vegetation caused outage risks, overhead conductor exposure, and minimal ties to adjacent circuits for outage restoration support. Seventy-one (71) % of the 2016 AIDI performance was driven by a single vegetation caused outage with wire down occurrences in multiple locations.

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

This circuit was part of the 2013 Targeted Circuit program. Specifically, the 2013 targeted circuit project installed 13 fuses, 1 recloser, 2 switches, and performed miscellaneous reliability work like pole reframing and pole replacement.

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

An 8% percent improvement in 2016 reliability performance was observed after the completion of the 2013 targeted circuit project compared to the three year outage history from 2008-2010. PG&E has not identified any additional cost effective reliability improvements at this time, so we do not anticipate a significant change in the performance of this circuit except for changes due to the weather. We will continue to explore cost effective reliability improvement opportunities such as installing additional remotely operable devices or performing tree trimming in targeted line sections.

6. RISING RIVER 1101

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

- Three year (2013-2015) average AIDI score of 821.19.
- Three year (2014-2016) average AIDI score of 785.51.

ii. A historical record of the metric:

- AIDI 2013 = 438.74
- AIDI 2014 = 875.42
- AIDI 2015 = 1152.85

- AIDI 2016 = 328.04

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

The Rising River 1101 circuit provides electric service to approximately 728 customers in Shasta County through 60 circuit-miles of primarily overhead conductor. The Rising River 1101 circuit is comprised of one main branch that travels south through remote, mountainous terrain including the Lassen National Forest. The major factors driving the Rising River 1101 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.

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

This circuit is part of the 2018 Targeted Circuit program. Specifically, the 2018 targeted circuit project proposes to install 17 fuses, 1 recloser, and 1 Trip Saver. Miscellaneous reliability work like pole reframing and fault indicator installation is also anticipated.

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

Based on results shown by other, similar circuits after targeted circuit work, PG&E anticipates that the work proposed will improve reliability performance by 25 percent or more.

7. ALLEGHANY 1101

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

- Three year (2013-2015) average AIDI score of 613.67
- Three year (2014-2016) average AIDI score of 711.83

ii. A historical record of the metric:

- AIDI 2013 = 295.72
- AIDI 2014 = 1340.92
- AIDI 2015 = 205.44
- AIDI 2016 = 590.76

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

The Alleghany 1101 circuit provides electric service to approximately 1,074 customers in Sierra County through 81 circuit-miles of primarily overhead conductor. 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. In a specific instance, 2014 performance was driven by two outages that resulted in over one million customer minutes. Restoration in those outages was delayed due to severe weather and the remote location.

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

This circuit was part of PG&E's 2013 Targeted Circuit program. Specifically, the 2013 targeted circuit project replaced 2,700 feet of OH Conductor with larger wire in order to be more resilient to snow loading conditions. The project also upgraded 2 reclosers to provide remote operation capability. This circuit will also be part of the 2019 Targeted Circuit program. Although the scope of work has not yet been finalized, we plan to increase remote operation capability by installing new line reclosers and adding SCADA to existing line reclosers.

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

A 32% percent improvement in 2016 reliability performance was observed after the completion of the 2013 targeted circuit project. PG&E also anticipates that the 2019 targeted circuit work proposed will further improve reliability performance by 15 percent or more.

8. WILLOW CREEK 1103

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

- Three year (2013-2015) average AIDI score of 628.13.
- Three year (2014-2016) average AIDI score of 558.79

ii. A historical record of the metric:

- AIDI 2013 = 512.16
- AIDI 2014 = 797.36
- AIDI 2015 = 576.19
- AIDI 2016 = 303.62

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

The Willow Creek 1103 circuit provides electric service to approximately 1,529 customers in Humboldt and Trinity Counties through 92 circuit-miles of primarily overhead conductor. The Willow Creek 1103 circuit is comprised of two main branches that travel south and southeast through remote, mountainous terrain including the Six Rivers and Trinity National Forests. The major factors driving the Willow Creek 1103 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.

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

This circuit was part of the 2014 Targeted Circuit program. Specifically, the 2014 targeted circuit project replaced over 900 feet of conductor, installed 5 fuses, 6 switches, and performed miscellaneous reliability work like pole reframing and pole replacement.

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

A 40% percent improvement in 2016 reliability performance was observed after the completion of the 2014 targeted circuit project. PG&E has not identified any additional cost effective reliability improvement at this time, so we do not anticipate a significant change in the performance of this circuit except for changes due to the weather. We will continue to explore cost effective reliability improvement opportunities such as installing additional remotely operable devices.

9. INDIAN FLAT 1104

i. An explanation of why it was ranked as a "deficient" circuit:
- Three year (2013-2015) average AIDI score of 556.32
- Three year (2014-2016) average AIDI score of 692.00

ii. A historical record of the metric:
- AIDI 2013 = 119.65
- AIDI 2014 = 1413.99
- AIDI 2015 = 136.64
- AIDI 2016 = 533.41

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

The Indian Flat 1104 circuit provides electric service to approximately 602 customers in Mariposa County through 34 circuit-miles of primarily overhead conductor. The Indian Flat 1104 circuit is comprised of three main branches that travel west, east, and northeast through remote, mountainous terrain including the Yosemite National Park. The major factors driving the Indian Flat 1104 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.

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

This circuit is part of the 2019 Targeted Circuit program. Although the scope of work has not yet been developed, the typical installation of mainline protective devices and performing miscellaneous reliability improvement work is anticipated.

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

Based on results shown by other, similar circuits after targeted circuit work, PG&E anticipates that the work proposed will improve reliability performance by 25 percent or more.

10. OTTER 1102

i. An explanation of why it was ranked as a "deficient" circuit:
- Three year (2013-2015) average AIFI score of 2.27 and AIDI score of 853.19.
- Three year (2014-2016) average AIFI score of 4.29 and AIDI score of 1224.11.

ii. A historical record of the metric:
- AIFI 2013 = 0
- AIFI 2014 = 5.54
- AIFI 2015 = 1.44
- AIFI 2016 = 5.90

- AIDI 2013 = 0
- AIDI 2014 = 1714.66
- AIDI 2015 = 844.87
- AIDI 2016 = 1110.52

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

The Otter 1102 circuit provides electric service to approximately 530 customers in Monterey County through 66 circuit-miles of primarily overhead conductor. 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 mountainous service territory with increased vegetation caused outage risks, overhead conductor exposure with elevated corrosion conditions, and minimal ties to adjacent circuits for outage restoration support.

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

This circuit was part of the 2014 Targeted Circuit program. Specifically, the targeted circuit project reconductored 1,000 feet, installed seven fuses, 7 pole replacements, reframed 14 cross arms, and installed 9 animal guards. An additional 19,100 feet of reconductor work has been completed from 2015-2016 with another 10,100 feet of reconductor work planned for 2017.

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

The reconductor work should improve the circuit's reliability as it will reduce wire down occurrences from deteriorated conductor. We will continue to explore cost effective reliability improvement opportunities such as installing additional remotely operable devices or performing tree trimming in targeted line sections.

11. EL DORADO PH 2101

i. An explanation of why it was ranked as a "deficient" circuit:
- Three year (2013-2015) average AIFI score of 3.18
- Three year (2014-2016) average AIFI score of 3.61

ii. A historical record of the metric:
- AIFI 2013 = 1.98
- AIFI 2014 = 3.09
- AIFI 2015 = 4.29
- AIFI 2016 = 3.36

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

The El Dorado PH 2101 circuit provides electric service to approximately 4,611 customers in Humboldt County through 161 circuit-miles of primarily overhead conductor. The primary mainline section of El Dorado PH 2101 circuit travels east along Highway 50 through a 30 mile stretch of mountainous terrain including El Dorado National Forest. The primarily mainline section splits near the town of Polluck Pines, approximately 4 miles southeast of El Dorado PH. 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 mountainous service territory with increased vegetation caused outage risks, overhead conductor exposure, and minimal ties to adjacent circuits for outage restoration support.

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

This circuit was part of the 2011 Targeted Circuit program. As part of the emergent reliability program there is a project to install additional line reclosers, add remote operating capabilities to existing line reclosers, reconductoring to increase capacity, and installing automated self-healing FLISR technology in 2017-2018.

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

Based on results shown by other, similar circuits automated self-healing FLISR technology we expect the circuit performance to improve by 15%.

12. TULARE LAKE 2108

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

- Three year (2013-2015) average AIDI score of 582.38
- Three year (2014-2016) average AIDI score of 823.53

ii. A historical record of the metric:

- AIDI 2013 = 0
- AIDI 2014 = 1506.03
- AIDI 2015 = 712.13
- AIDI 2016 = 473.42

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

The Tulare Lake 2108 circuit provides electric service to approximately 105 customers in Kings County through 57 circuit-miles of primarily overhead conductor. The Tulare 2108 circuit is comprised of several branches that supports a predominately agriculture community. The major factors driving the Tulare Lake 2108 reliability performance are equipment failure and animal caused outages.

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

This circuit is part of the 2019 Targeted Circuit program. Although the scope of work has not yet been developed, the typical installation of mainline protective devices and performing miscellaneous reliability improvement work is anticipated.

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

Based on results shown by other, similar circuits after targeted circuit work, PG&E anticipates that the work proposed will improve reliability performance by 25 percent or more.

13. Alpine 1102

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

- Three year (2013-2015) average AIFI score of 2.66 and AIDI score of 618.70.
- Three year (2014-2016) average AIFI score of 4.33 and AIDI score of 541.11.

ii. A historical record of the metric:

- AIFI 2013 = 1.00
- AIFI 2014 = 3.00
- AIFI 2015 = 5.99
- AIFI 2016 = 4.00

- AIDI 2013 = 455.00
- AIDI 2014 = 416.65
- AIDI 2015 = 1019.26
- AIDI 2016 = 187.00

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

The Alpine 1102 circuit provides electric service to approximately 309 customers in Alpine County through 3 circuit-miles of entirely underground conductor. Specifically, the Alpine 1102 circuit supports the Bear Valley community. The Salt Springs 2101 circuit provides the primary service to the Alpine 1102 circuit through 21/12 kV voltage step down transformers. The major factor driving the Alpine 1102 reliability performance is the reliability performance of the Salt Springs 2101 circuit.

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

The Salt Springs 2101 circuit will be part of the 2018 Targeted Circuit program. The improvement work on the Salt Springs 2101 circuit will improve the Alpine 1102 circuit because it is the source.

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

Based on results shown by other, similar Targeted Circuit projects we expect the circuit performance to improve by 15%.

14. Lamont 1104

i. An explanation of why it was ranked as a "deficient" circuit:
   - Three year (2013-2015) average AIFI score of 2.53
   - Three year (2014-2016) average AIFI score of 2.68

ii. A historical record of the metric:
   - AIFI 2013 = 0.16
   - AIFI 2014 = 5.20
   - AIFI 2015 = 2.25
   - AIFI 2016 = 0.55

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

The Lamont 1104 circuit provides electric service to approximately 354 customers in Kern County through 55 circuit-miles of primarily overhead conductor. The Lamont 1104 circuit is comprised of several branches that supports a predominately agriculture community west of Bakersfield. Poor 2014 performance is the driver for the Lamont 1104 circuit making the deficient circuit list The major factors driving the Lamont 1104 poor 2014 performance was equipment failure and 3rd party caused outages.

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

With continued improvement in 2015 and 2016 circuit AIFI, we do not anticipate this circuit will appear on the 2017 report.

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

As discussed above, this is on the list due to poor performance in 2014. We would anticipate that 2017 performance will be closer to 2015 and 2016, which were much better than 2014.

15. Rossmoor 1108

i. An explanation of why it was ranked as a "deficient" circuit:
   - Three year (2013-2015) average AIFI score of 3.02
   - Three year (2014-2016) average AIFI score of 2.67

ii. A historical record of the metric:
   - AIFI 2013 = 2.00
   - AIFI 2014 = 4.17
   - AIFI 2015 = 2.90
   - AIFI 2016 = 0.95

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

The Rossmoor 1108 circuit provides electric service to approximately 2,865 customers in Contra Costa County through 44 circuit-miles of primarily underground conductor. The Rossmoor 1108 circuit is comprised of several branches that support the communities of Moraga, Rheem Valley, and Lafayette including Saint Mary's College of California. Poor 2014 performance is the driver for the Rossmoor 1108 circuit making the deficient circuit list. The major factors driving

the Rossmoor 1108 reliability performance are equipment failure, 3rd party, and vegetation caused outages.

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

This circuit was part of the 2012 Targeted Circuit program and 2013 automated self-healing FLISR technology. Specifically, the 2012 targeted circuit project reconductored 800 feet of OH line, installed 11 fuses, 1 recloser, and performed miscellaneous reliability work like pole reframing, transformer and pole replacement. With continued improvement in 2015 and 2016 circuit AIFI, we do not anticipate this circuit will appear on the 2017 report.

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

A 10% percent improvement in 2016 reliability performance was observed after the completion of the 2012 targeted circuit project. Additional reliability performance improvement was observed after the completion of the 2013 automated self-healing FLISR project. Performance in 2015 and 2016 was much better than 2014, and we anticipate that future performance will be closer to 2015 and 2016 than 2014.

16. Salt Springs 2102

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

- Three year (2013-2015) average AIFI score of 2.31
- Three year (2014-2016) average AIFI score of 2.47

ii. A historical record of the metric:

- AIFI 2013 = 0.53
- AIFI 2014 = 5.39
- AIFI 2015 = 1.00
- AIFI 2016 = 1.03

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

The Salt Springs 2102 circuit provides electric service to approximately 2,000 customers in Tuolumne County through 71 circuit-miles of primarily overhead conductor. The primary mainline section of the Salt Springs 2102 circuit travels south along Highway 4 through a 22 mile stretch of mountainous terrain including El Dorado and Stanislaus National Forests. Poor 2014 performance is the driver for the Salt Springs 2102 circuit making the deficient circuit list. The major factors driving the Salt Springs 2102 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.

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

This circuit was part of the 2013 Targeted Circuit program installing 3 new fuses, reframing over 100 poles, and additional maintenance work like transformer and pole replacement. With continued

improvement in 2015 and 2016 circuit AIFI, we do not anticipate this circuit will appear on the 2017 report.

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

A 15% percent improvement in 2016 reliability performance was observed after the completion of the 2013 targeted circuit project. Performance in 2015 and 2016 was much better than 2014, and we anticipate that future performance will be closer to 2015 and 2016 than 2014.

17. Poso Mountain 2101

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

- Three year (2013-2015) average AIDI score of 590.28
- Three year (2014-2016) average AIDI score of 1078.85

ii. A historical record of the metric:

- AIDI 2013 = 17.90
- AIDI 2014 = 245.24
- AIDI 2015 = 1691.95
- AIDI 2016 = 1379.30

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

The Poso Mountain 2101 circuit provides electric service to approximately 146 customers in Kern County through 61 circuit-miles of entirely overhead conductor. The Poso Mountain 2101 circuit is comprised of several branches that support a predominately unincorporated community north of Bakersfield. The major factors driving the Poso Mountain 2101 reliability performance are overhead conductor exposure and minimal ties to adjacent circuits for outage restoration support.

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

Bird nests at automatic line reclosers are the primary driver behind the poor performance in 2016. These devices have been subsequently replaced and bird guarded to minimize future bird contacts.

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

As discussed above, the replaced line reclosers with added bird protection should minimize bird contract outages resulting in an anticipated 25% improvement to the reliability performance. There have been no reported outages related to birds this year since the devices were replaced.

18. Fruitland 1141

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

- Three year (2013-2015) average AIDI score of 760.02
- Three year (2014-2016) average AIDI score of 771.58

ii. A historical record of the metric:

- AIDI 2013 = 143.97
- AIDI 2014 = 2136.48
- AIDI 2015 = 0.00
- AIDI 2016 = 183.51

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

The Fruitland 1141 circuit provides electric service to approximately 374 customers in Humboldt County through 29 circuit-miles of primarily overhead conductor. The primary mainline section of the Fruitland 1141 circuit travels north along the Highway 101 corridor through a 12 mile stretch of mountainous terrain including Humboldt Redwoods State Park. Major factors driving the Fruitland 1141 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. This outages associated with this circuit will be investigated and will be covered in the final report.

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

With continued improvement in 2015 and 2016 circuit AIDI, we do not anticipate this circuit will appear on the 2017 report.

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

Performance in 2015 and 2016 was much better than 2014, and we anticipate that future performance will be closer to 2015 and 2016 than 2014.

19. Orick 1101

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

- Three year (2013-2015) average AIDI score of 502.81
- Three year (2014-2016) average AIDI score of 657.23

ii. A historical record of the metric:

- AIDI 2013 = 0.00
- AIDI 2014 = 1497.51
- AIDI 2015 = 0.00
- AIDI 2016 = 455.51

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

The Orick 1101 circuit provides electric service to approximately 90 customers in Humboldt County through 10 circuit-miles of primarily overhead conductor. The primary mainline section of the Orick 1101 circuit travels north along the Highway 101 corridor through a 5 mile stretch of mountainous terrain including Redwood National and State Parks. Poor 2014 performance is the driver for the Orick 1101 circuit making the deficient circuit list. The major factors driving the Orick 1101 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.

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

With continued improvement in 2015 and 2016 circuit AIDI, we do not anticipate this circuit will appear on the 2017 report.

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

Performance in 2015 and 2016 was much better than 2014, and we anticipate that future performance will be closer to 2015 and 2016 than 2014.

6. Top 10 major unplanned power outage events of 2016

Significant Outage Events Of 2016

Table below lists the ten largest outage events experienced during 2016. 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 34 - 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 single distribution line transformer and planned outages

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

Major Event Day

IEEE Standard 1366 defines MED as follows:

> IEEE Standard 1366-2003 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:
>
> $T_{MED} \equiv e^{\text{average over 5 yrs. of Ln (daily SAIDI) + 2.5 * STD DEV of 5 yrs. of Ln (daily SAIDI)}}$
>
> The IEEE 1366 Standard includes outage resulting from the failure of a single line transformer.

Table 35 – 2016 Major Event Day

Date	Description	Reason
2/17/2016	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.	IEEE MED*
3/5/2016	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.	IEEE MED*
10/14/2016	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.	IEEE MED*

*MED is defined as Major Events Day

7.1 Major Event Day (MED) Discussions:

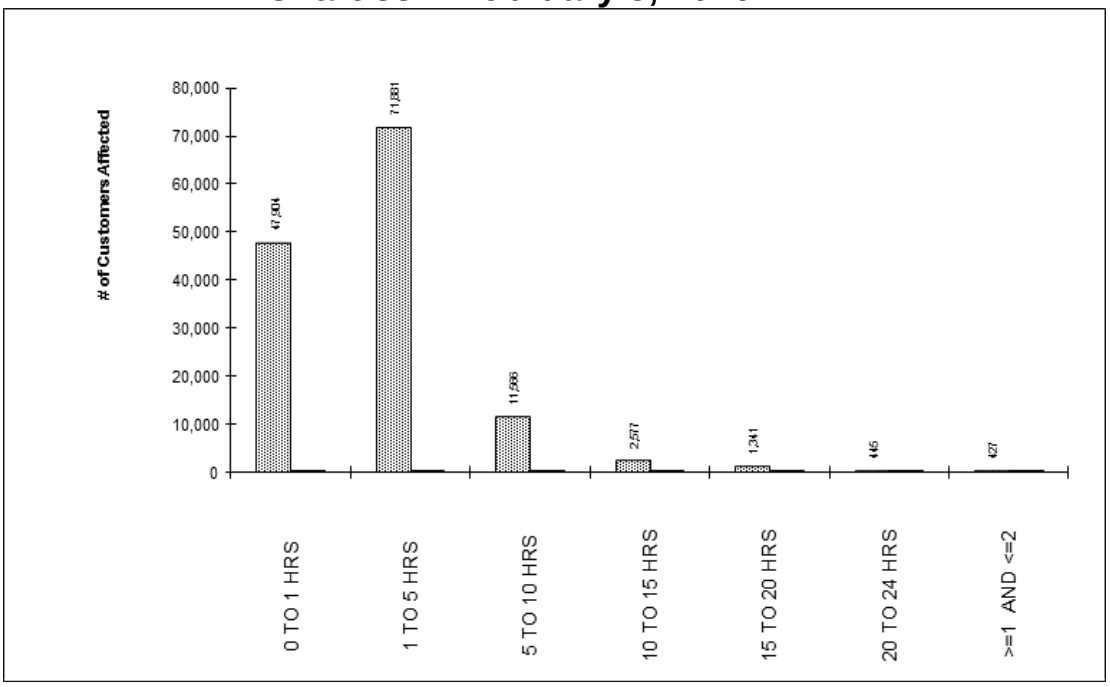
February 5, 2016 Major Event Day

Table 36 below indicates the number of customers without service at periodic intervals for this event (02/05/2016). The numbers of customers noted in the table are for only those divisions identified in Table 55, which represents the excludable portion of these events.

Table 36 – February 5

Outage Duration	Customers Affected	Cumulative %
0 TO 1 HRS	47,904	35.19%
1 TO 5 HRS	71,881	87.99%
5 TO 10 HRS	11,566	96.48%
10 TO 15 HRS	2,577	98.37%
15 TO 20 HRS	1,341	99.36%
20 TO 24 HRS	445	99.69%
>=1 AND <=2	427	100.00%
Total	136,141	

Chart 334: February 5, 2016 MED



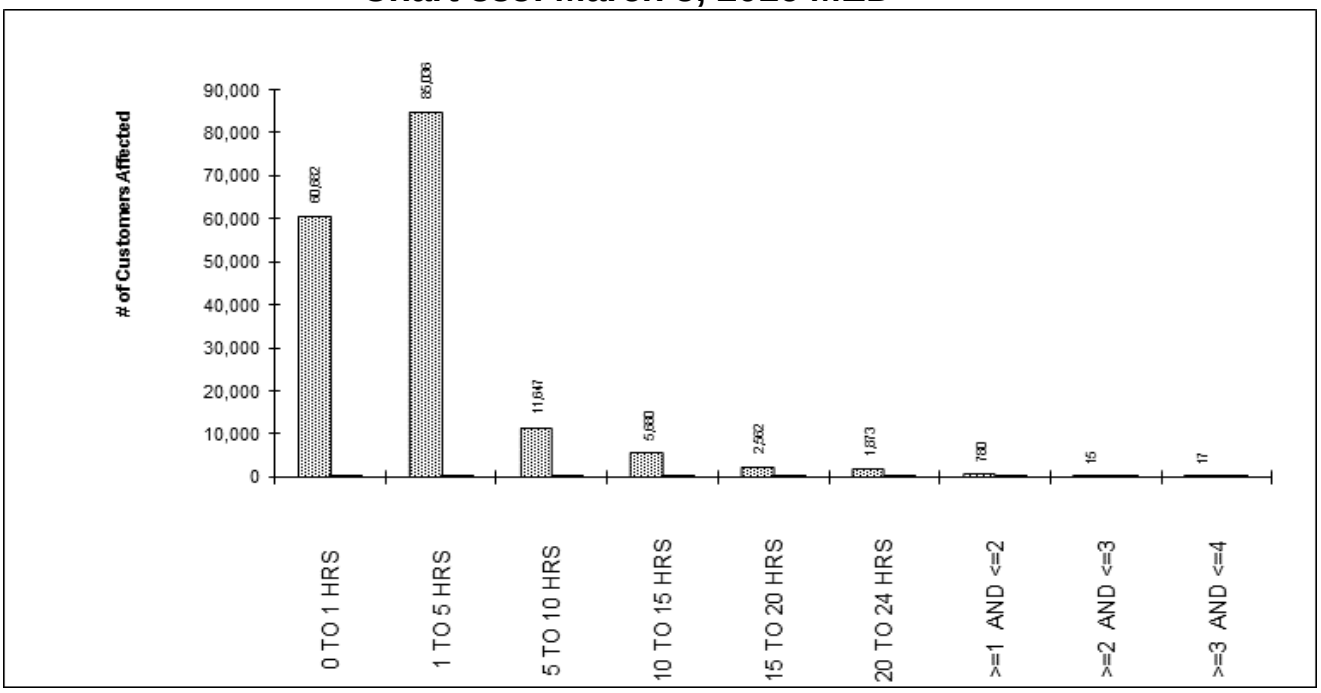
Note: The number of customer outages segmented by hourly restoration periods requires a level of detail not normally maintained by PG&E in its central computerized records. The information shown here is what PG&E has been able to reconstruct from several databases and may have a margin of error of up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

Table 37 below indicates the number of customers without service at periodic intervals for this event (03/05/2016). The numbers of customers noted in the table are for only those divisions identified in Table 56, which represents the excludable portion of these events.

Table 37 – March 5

Outage Duration	Customers Affected	Cumulative %
0 TO 1 HRS	60,682	36.06%
1 TO 5 HRS	85,036	86.59%
5 TO 10 HRS	11,647	93.51%
10 TO 15 HRS	5,680	96.88%
15 TO 20 HRS	2,562	98.40%
20 TO 24 HRS	1,873	99.52%
>=1 AND <=2	780	99.98%
>=2 AND <=3	15	99.99%
>=3 AND <=4	17	100.00%
Total	168,292	

Chart 335: March 5, 2016 MED



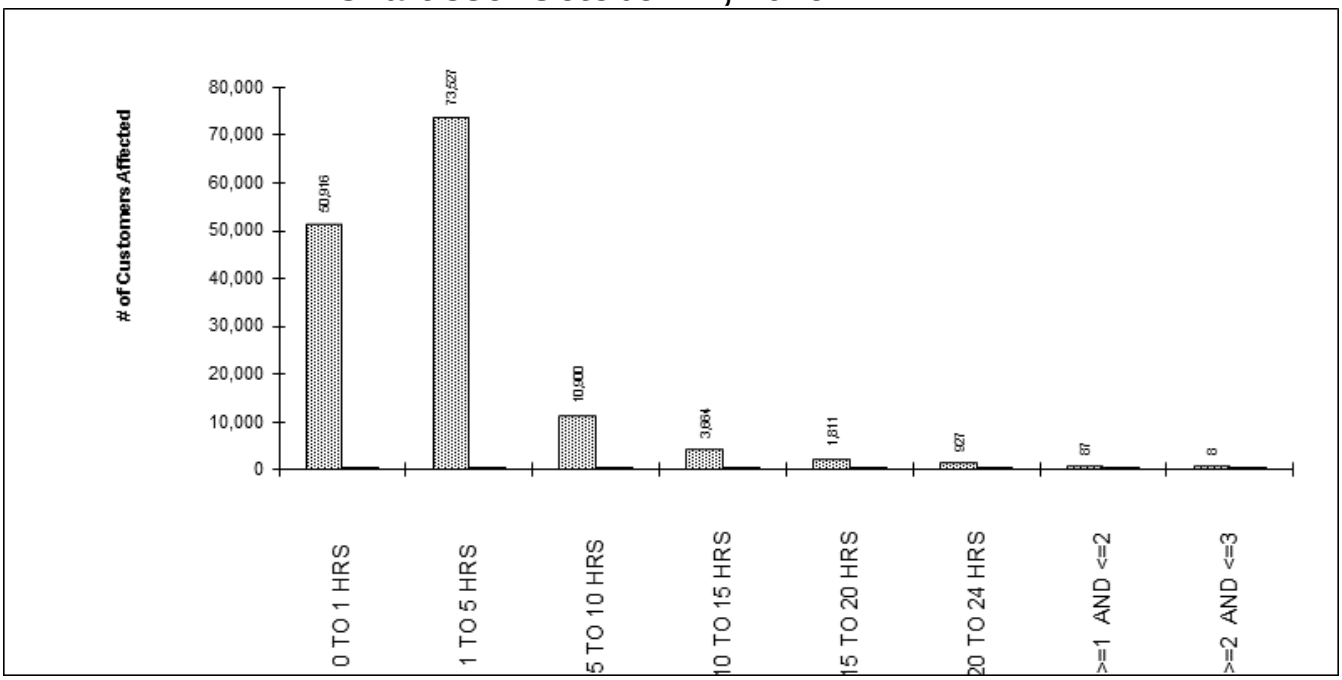
Note: The number of customer outages segmented by hourly restoration periods requires a level of detail not normally maintained by PG&E in its central computerized records. The information shown here is what PG&E has been able to reconstruct from several databases and may have a margin of error of up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

Table 38 below indicates the number of customers without service at periodic intervals for this event (10/14/2016). The numbers of customers noted in the table are for only those divisions identified in Table 57, which represents the excludable portion of these events.

Table 38 – October 14

Outage Duration	Customers Affected	Cumulative %
0 TO 1 HRS	50,916	35.90%
1 TO 5 HRS	73,527	87.73%
5 TO 10 HRS	10,900	95.42%
10 TO 15 HRS	3,664	98.00%
15 TO 20 HRS	1,811	99.28%
20 TO 24 HRS	927	99.93%
>=1 AND <=2	87	99.99%
>=2 AND <=3	8	100.00%
Total	141,840	

Chart 336: October 14, 2016 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 2006-2015

Table 39 - 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		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		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		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		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		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		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		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		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		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		1740	No

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

Table 40 - 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/egarchives/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 single distribution line transformer and planned outages.
** Note: This data is requested only for Major Event days.

Table 41 - 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 rain storm 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 single distribution line transformer and planned outages.
** Note: This data is requested only for Major Event days.

Table 42 - 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 single distribution line transformer and planned outages. ** Note: This data is requested only for Major Event days.

Table 43 - Ten Largest 2011 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	A series of cold and powerful storms moved through the Service Area with the majority of outages resulting from low snow and gusty winds. The bulk of outage activity occurred overnight Sat 19th to Sun 20th as strong southeasterly wind gusts were observed in many locations (SF Apt 45 mph, Stockton 44 mph, Redding 45 mph, Bakersfield 40 mph). Excessive low elevation snowfall caused significant outage activity. Yosemite Division was hard hit with low snow (snow totals - 38" reported at 4200' above Oakhurst)	Mar 17 -22	581,949	256	1,839***	Y-Partial (See Table 4)
2	After a short respite from inclement weather, another strong and cold storm moved into the Service Area on March 24th. Once again, strong southerly wind gusts were observed (SF Apt 38 mph, Oakland 37 mph). Low elevation snow was the main adverse weather issue with Sierra, North Valley, Stockton, and Yosemite Divisions hard hit with low snow. (snow totals - 13" in Shingletown, 25" at 3700' along Highway 88, 34" at the 4200' above Oakhurst)	Mar 24 – 27	464,767	504	1,839***	Y-Partial (See Table 4)
3	A series of cold storms moved across the Service Area starting Valentine's day until Feb 19. On the 17th very cold air filtered into the region lowering snow levels enough to create low snow related outages across the Coast Ranges of Humboldt Divisions, and down the entire Sierra Nevada foothills. The hardest hit divisions were Humboldt, Yosemite, and Sierra. (Snow totals - 14" in Shingletown, 38" at 3700' on Highway 88, 12" at 2600' in Humboldt County). Snow recorded down to 500 feet in Humboldt.	Feb 15 – 19	357,802	151		N
4	High pressure in the Great Basin and low pressure off the southern California coast set the stage for strongest northeast wind event to hit the Service Area in the last 20 years. Gusts up to 50 mph were common in the Sierra with the highest gust of 94 mph recorded on Mt. Elizabeth in the Yosemite division. Winds were quite strong in the Valley as well (Stockton 52 mph, Redding 40 mph, Fresno 36 mph)	Nov 30 – Dec 1	325,942	131		N
5	A strong and cold storm affected the entire Service Area with low snow falling in the Northern Region and gusty southerly winds and heavy rains further east and south. The hardest hit divisions were Humboldt, North Valley, and Sierra. (Snow totals – 18" in Shingletown, 20" in Susanville, 19" in Grass Valley). Snow recorded down to 500 feet in Humboldt.	Feb 24 - 25	187,851	152		N
6	An early season storm moved through the Service Area bringing moderate southerly winds and heavy precipitation rates. In Ukiah, more than a half inch of rain fell within one hour in the early morning. The Central Valley Region experienced the most outages. These were mainly pole fires/flashover caused by the first rain to fall in the area after months of prolonged dry weather.	Oct 5	100,357	24		N
7	Widespread thunderstorm activity broke out across the southern part of the Service Area early in the morning with the biggest impacts in Fresno and Kern divisions. The Bakersfield area in Kern was hit particularly hard by lightning, with Kern Division recording 3833 lightning strikes for the day.	Sept 10	77,443	69		N
8	A late season cold storm moved through the Service Area with low snow outage conditions across divisions in the Sierra Nevada, especially the Sierra Division. (8" of snow at 3700' along Highway 88) Thunderstorms and associated lightning also broke out across the Central Valley. Impacts were minimal in the Bay Area and Central Coast Regions.	May 15	62,863	30		N
9	A non-weather related outage day with maximum temperatures along the Central Valley in the mid-80s. The outage count was only slightly above average for a June day; however, a large number of customers in the East Bay were affected by two distribution substation outages.	Jun 12	50,028	15		N
10	The first warm day of the spring was observed in many areas. San Jose had a high of 84. This could have contributed to the above average outage total. No other adverse weather was reported. The largest impacts were recorded in the San Francisco and San Jose Divisions.	Apr 1	44,177	6		N

***** Note: Values exclude single distribution line transformer and planned outages. ** Note: This data is requested only for Major Event days.

*** Note: During the course of the March 17-27, 2011 storms, approximately 1,839 PG&E Operations, Maintenance and Construction (OM&C) employees responded. These employees included electric and gas construction crews, troublemen, meter technicians, clerical staff, gas and electric estimators and meter readers. Resources were dispatched and moved from lesser impacted areas to the more heavily impacted areas. In addition to PG&E personnel, 110 vegetation crews, 10 contract crews (approximately 200 individuals), and 36 mutual aid crews (approximately 175 individuals) were utilized to supplement existing resources.

Table 44 - Ten Largest 2010 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	A strong jet stream developed over the Eastern Pacific, which spawned a series of outage producing weather events that included: - Three impulses of strong winds; gust above 50 mph each day (Jan 18, 19, 20) - Periods of moderate to heavy rainfall (Jan 18, 19, 20, 21) - Bands of thundershower activity (several thousand strikes Jan 18-21) - Heavy snowfall at low elevations of the Sierra Nevada (Jan 21, 22)	Jan 18-24	1,169,513	497	3,830 ***	Y
2	A strong storm system with several impulses moved through the entire Service Area during the Dec 17 – 20 period bringing gusty winds and heavy rain. Wind gusts during the period: 43 mph at Stockton, 43 mph at Salinas, 46 mph at SFO, 43 at Red Bluff.	Dec 17-20	215,116	120		N
3	A series of cold storms brought significant snow to low elevations in the Sierra Nevada foothills. The snow came early in the season, when deciduous trees still retained most of their leaves. Excessive snow loading occurred on trees causing large limbs to break off and fall onto power lines. Snowfall amounts ranged from near 1 foot at the 3000' elevation, to several feet above 5000'. This storm produced the most low elevations snow in November in the last 15 years.	Nov 20-21	215,245	186		N
4	Storm system with strong south winds on Dec 28 (gusts to 47 mph at Marysville, 41mph at Stockton, 46 mph SFO) followed by strong northwest winds on Dec 29 (gusts to 46 mph at San Jose, 41 mph at Stockton, 43 at Bakersfield, 46 mph at SFO).	Dec 28-29	180,370	47		N
5	A late season storm brought rain, thunderstorms, and wind. Over 500 lightning strikes were recorded. The storm was particularly strong along the Central Coast and in the southern San Joaquin Valley. Reported wind gusts: 45 mph at Salinas, 46 mph at Santa Maria, 46 mph at Bakersfield 46.	Apr 11-12	122,050	73		N
6	Early season storm brought thunderstorms to Northern Region (over 1000 strikes recorded) along with rain to other parts of the Service Area. In many cases, this was the first rain of the season causing flashover outages.	Sep 8-10	114,402	60		N
7	An early season storm brought high winds and heavy rain to primarily the Northern Region. Redding recorded a peak wind gust of 49 mph. Santa Rosa recorded 4.75" of rainfall.	Oct 24	111,522	43		N
8	Storm system swept across the Service Area bringing rain and gusty winds. Reported wind gusts: 41 mph at Salinas, 41 mph at Bakersfield.	Dec 4-5	98,041	21		N
9	Heat wave conditions resulted in the hottest two days of the summer. Maximum temperatures exceeded 110 in portions of the Central Valley (111 at Bakersfield on 8/25). Maximum temperatures between 100 and 110 were reported both days at many coastal valley areas (109 at Ukiah on 8/25, 107 at Santa Rosa on 8/24, 105 at Livermore on 8/25).	Aug 24-25	97,616	82		N
10	Heat wave affected the service area, on both days Central Valley maximum temperatures ranged between 100 and 110; maximum temperatures above 100 were reported in coastal valleys on 6/27.	Jun 27-28	87,751	38		N

* Note: Values exclude single distribution line transformer and planned outages.
*** Note: This data is requested only for Major Event days.
*** Note: During the course of the January 18, 2010 Storm approximately 3,830 PG&E Operations, Maintenance and Construction (OM&C) employees responded. These employees included electric and gas construction crews, troublemen, gas service representatives, meter technicians, clerical staff, gas and electric estimators and meter readers. Resources were dispatched and moved from lesser areas to the more heavily impacted areas. In addition to PG&E personnel, 1000 vegetation workers and 60 contract crews (approximately 360 individuals) were utilized to supplement existing resources.
impacted areas to the more heavily impacted areas. In addition to PG&E personnel, 1000 vegetation workers and 60 contract crews (approximately 360 individuals) were utilized to supplement existing resources.

Table 45 - Ten Largest 2009 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	A strong early season storm affected the entire service area with many stations reporting wind gusts over 50 mph (57 mph at Ft. Funston (SF), 56 mph at Fairfield, 55 mph at Oroville, 51 mph at Monterey). Single day rainfall totals ranged between two and five inches at many locations (4.54 in. at Watsonville, 4.27 in. at Fairfield, and 3.66 in. at Napa). National Weather Service records indicate this storm was the strongest October rain and wind event since 1962.	10/13–10/14	617,589	244***	4,400 ****	Y
2	A strong cold front produced significant snowfall on Feb. 13 in the 1500-3000 ft. range of the northern and central Sierra foothills (up to 2 feet of snow at 3000 ft. and @ 1 foot at 2000 ft.). A second storm followed on Feb.15 producing widespread heavy rain and strong wind gusts to the entire Service Area (67 mph at Valley Ford, 59 mph at Oroville, 50 mph at Redding, and Ft. Funston (SF), 47 mph at Salinas, 43 mph at San Luis Obispo. A third storm on Feb 16 delivered additional rainfall and wind gusts in the 30 to 40 mph range at several locations.	2/13-2/17	340,582	107		N
3	A large cluster of thunderstorms produced widespread lightning activity in the Bay Area and Sacramento Valley on Sep. 12. The lightning activity was followed by a weak weather front the next day that produced the first light rain of the season over much Northern California resulting in flashover related outages.	9/12-9/14	190,671	92		N
4	A strong cold front produced significant snowfall at the 1000-3000 ft. range of the Sierra foothills (up to 2 feet of snow was observed at 3000 ft., @ 1 foot at 1500 ft.) Light snow was reported at locations in the Central Valley.	12/7	147,630	113		N
5	Strong northerly winds developed across the entire Service Area with the gusts in the 45 to 55 mph range in the Bay Area and Sacramento Valley (52 mph at Fairfield, 49 mph at Sacramento, 45 mph at Red Bluff)	11/28	119,504	84		N
6	Strong north to northwest winds in the 40 to 60 mph range followed the passage of a weak weather front through the service area (58 mph at Ft. Funston (SF), 58 mph at SF Airport, 50 mph at San Carlos, 46 mph at Stockton)	4/14	116,406	45		N
7	An area of low pressure produced a large outbreak of thunderstorms with widespread lightning overnight on Jun. 3, continuing into the morning of June 4.	6/3-6/4	98.187	38		N
8	Strong north to northwest winds in the 45 to 55 mph range were recorded throughout the Sacramento and San Joaquin Valleys following the passage of a weak weather front (52 mph at Merced, 49 mph at Stockton, 47 mph at Modesto and Madera, 46 mph at Red Bluff, 45 mph at Fresno).	10/27	70,901	20		N
9	A winter storm accompanied by periods of moderate to heavy rainfall and scattered thundershower activity crossed the service area. Rainfall totals of up to 2 inches were reported.	12/12	54,111	41		N
10	Widespread thunderstorm activity resulted in several hundred lightning strikes in Areas 4, 5, 6 and 7.	5/28	52,705	22		N

* Note: Values exclude single distribution line transformer and planned outages.
** Note: This data is requested only for Major Event days.
*** Note: This duration was due to the lack of access caused by flooding in the Stockton area. Access was granted after waters receded. Work was the completed and service was restored to the six customers remaining out of service.
**** Note: Approximately 4,400 PG&E Operations, Maintenance & Construction (OM&C) employees responded. In addition to PG&E personnel, 400 vegetation workers and 42 contract crews (approximately 210 individuals) were utilized to supplement existing resources.

Table 46 - Ten Largest 2008 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	Strongest storm system since December 1995 affected the entire service area on Jan 4. Wind gusts exceeded 65 mph at many low elevation sites throughout the service area (Redding 70 mph, Beale AFB 69 mph, Sacramento Apt. 66 mph, Pt. San Pablo 83 mph), with some coastal hills and foothill sites gusting to over 80 mph (Los Gatos, elev. 2000 ft. 105 mph, Big Rock , Marin Co. elev. 1500 ft. 83 mph). Rainfall totals on Jan 4 ranged up to 4 inches with storm totals above 6 inches in the North Bay counties. Multiple lightning strikes were reported on Jan 4 and 5.	1/3 – 1/6	1,631,765	290	7,130 ***	Y
2	A series of cold winter storms crossed the state. The first system (Jan 24-25) delivered gusty winds (generally in the 30 to 50 mph range), up to 2 inches of rain and snow below 2000 ft. A second system focused on the southern half of the service territory brought additional rain and thundershower activity along with even gustier winds (Santa Maria 67 mph, Bakersfield 49 mph).	1/24 – 1/27	303,168	172		N
3	A storm system with wind gusts in the 25 to 40 mph range crossed the state. Most locations reported under one inch of rain with a few coastal stations reaching two inches total.	10/31 – 11/1	189,811	50		N
4	The first rains of the winter season were accompanied by winds generally gusting from 25 to 35 mph (Red Bluff 44 mph). A large number of flashover incidents were likely triggered by the combination of light rain and power lines heavily sooted after the widespread summer season wildfires.	10/3 – 10/4	147,703	65		N
5	Gusty winds with periods of moderate rain accompanied a weather system that crossed the state. Wind gusts were generally in the 30 to 50 mph range (SF Airport 47 mph, Stockton 47 mph, Merced 45 mph).	2/2 – 2/3	121,865	65		N
6	Gusty winds from this storm were strongest in the southern half of the service area. Gusts between 50 and 55 mph were reported at SF Airport, Salinas, Santa Maria, Red Bluff and Bakersfield.	2/23 – 2/24	113,086	101		N
7	A weather front brought gusty winds and periods of moderate to heavy rain to the state. Post-frontal west to northwest wind gusts were strongest in the Bay Area (SF Apt 54 mph, Hayward 63 mph, Oakland 47 mph, Salinas 51 mph)	12/25	111,134	102		N
8	Gusty north winds generally in the 25 to 35 mph range were reported in the north. San Joaquin and Central Coast winds gusted from 30 to over 50 mph (Santa Maria 41 mph, Stockton 45 mph, Madera 52 mph, Merced 47 mph)	5/22	105, 635	102		N
9	Gusty north winds developed on the evening of Feb 13 and continued through Feb 14. Winds were generally in the 30 to 45 mph range, with strongest gusts in the Central Valley (Redding 48 mph, Marysville 48 mph, Sacramento 47 mph)	2/13 – 2/14	98,788	47		N
10	Gusty north winds between 20 and 35 mph resulted in a record breaking early season heat wave. Bay Area and Central Valley temperatures ranged from 100 to 105F	5/15	84,659	28		N

* Note: Values exclude single distribution line transformer and planned outages.
** Note: This data is requested only for Major Event days.
*** Note: Approximately 6,000 PG&E Operations, Maintenance & Construction (OM&C) employees responded. In addition to PG&E personnel, 300-350 vegetation crews (approximately 700 individuals), 70 contract crews (approximately 450 individuals) and 28 mutual assistance crews (approximately 170 individuals) from Southern California Edison (SCE), San Diego Gas and Electric (SDG&E), City of Gridley, City of Redding, and Sierra Pacific Power were utilized to supplement existing resources

Table 47 - Ten Largest 2007 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	Gusty winds and rain Feb 26 and 27. Peak wind speeds of 30-45 mph Bay Area (Oakland 40 mph, SF approximately 43 mph). Interior valley reported 25-40 mph gusts, strongest in the San Joaquin Valley (Fresno 38 mph). Rainfall generally below one inch. Snow levels lowered to 2000 ft. as far south as the San Joaquin Valley on Feb 27.	2/26 - 2/28	266,764	214 ***		N
2	Heat wave centered around July 5. Maximums between 105-115 degrees in the interior valleys, 95-110 degrees in the coastal valleys.	7/4 - 7/7	172,778	20		N
3	Widespread lightning with subtropical rain. Lightning all three days but extensive strikes on Aug 30 over Areas 3 and 4	8/29 - 8/31	149,883	75		N
4	Early summer hot temperatures in the interior; maximums 100-105 degrees in the Central Valley, upper 80's to low 100's in the coastal valleys. North winds 20-25 mph	6/14 - 6/16	137,977	27		N
5	Light rain across Central and North Areas. Winds generally below 25 mph. Lightning on Sep 21 in the evening continuing through Sep 22 mainly in San Joaquin Valley and foothills. Many outages reported due to insulator flashover resulting from light rain.	9/22	100,606	33		N
6	Rain, gusty winds and scattered thundershowers Feb 22. Peak winds at Redding - 51 mph on the Feb 21 and 44 mph on Feb 22nd. Bay Area gusts from 25-35 mph (Oakland 37 mph) on the Feb 22nd. Over 2 inches of rain in Eureka, less than one inch most other locations	2/22 - 2/23	96,420	79		N
7	Light rain far north, winds below 25 mph. Cold morning temperatures.	1/16	91,695	24		N
8	Thunderstorms / lightning in the Sierra foothills of Area 4 and 5. Afternoon temperatures between 95-100 degrees in the Central Valley	7/24	70,602	29		N
9	Light rain across the Service Area. Many outages reported due to insulator flashover resulting from light rain.	10/10	62,434	34		N
10	Moderately strong winds occurred across the Central and Northern Service Areas with gusts up to 50 mph.	12/27	59,594	20		N

* Note: Values exclude single distribution line transformer and planned outages.
** Note: This data is requested only for Major Event days.
*** Note: Reflects an outage at two customer locations in a remote area that experiences deep snow with limited access.

Table 48 - Ten Largest 2006 Outage Events

Rank	Description	Date	Number of Customers Affected	Longest Customer Interruption (Hours)	# of People Used To Restore Service (Major Event)**	CPUC Major Event?
1	A severe and long lasting heat wave affected the service area. In many locations three day average temperatures were the highest recorded in over 50 years. Consecutive days with maximum temperatures over 110 F were recorded throughout the Central Valley, and many coastal valleys reported consecutive days with maximum temperatures over 105 F. Sacramento set an all-time record of 11 days in a row with maximum temperatures over 100 F. An unusual feature of this heat wave was high nighttime temperatures. Sacramento, San Jose and Fresno set records for the highest minimum temperatures ever recorded.	7/21 - 7/27	651,217	119		Y See Table 4
2	A strong storm moved across the service area on Dec 26. Strong post-frontal winds occurred Dec 27-28. Southerly winds gusted from 45 to 55 mph in the Sacramento Valley and Bay Area on Dec 26th, accompanied by rainfall totals ranging from ½ to 3 inches. Gusty west to northwest winds were recorded after the front passed on Dec 27th. Bay Area wind gusts generally ranged from 45-60 mph, and gusts in the 35 to 50 mph range were reported in both northern and southern portions of the service area. North to northwesterly wind gusts in the 25 to 40 mph range continued into the afternoon of Dec 28th	12/26-12/28	528,496	125	2460	Y See Table 4
3	The storm of Jan 1-2 was a continuation of a series of storms that began at the end of the 2005. Gusts from 45 to over 60 mph were common in the Sacramento Valley and Bay Area; 35 to 55 mph along the Central Coast, and 30 to 45 mph in the San Joaquin Valley. Rainfall amounts ranging from ½ to 2 inches fell on grounds that had been saturated by a series of late December storms.	1/1 – 1/5 (12/30/05-1/5/06)*	504,072 (1,101,718)	129 (155)	3522***	Y See Table 4
4	A strong storm occurred on February 27-28. Bay Area wind gusts generally ranged from 45 to 70 mph; SF Airport reported a wind gust of 71 mph. Gusts to 50 mph were reported in many other parts of the service area. Moderate to heavy rain accompanied the strong winds with up to four inches of rain reported along the north coast and in the northern interior. Bands of thunderstorms rolled through the service area on Feb 28.	2/26 – 2/28	331,813	45		Y See Table 4
5	Strong high pressure resulted in heat wave conditions over most of the service area. On June 22, temperatures ranged from 100 to 110 throughout the Central Valley, Bay Area and coastal valley temperatures ranged from 95 to 105. On Jun 23, a weak sea breeze cooled off the Bay Area slightly, but interior valley temperatures continued to climb resulting in readings generally between 105 and 115 through June 25 (117 @ Red Bluff on Jun 25)	6/22 – 6/25	164,582	31		N
6	The first significant wind and rain storm of the winter occurred during the Dec 8-10 period. Wind gusts generally ranged from 30 to 40 mph on Dec 8 and 9 (45 mph @ SF Apt, 45 mph @ Hanford); and from 25-35 mph on Dec 10 (38 mph @ Oakland, 37 mph @ Redding). Rainfall totals were generally under ½ inch on Dec 8 (0,58 at Santa Rosa), between ¼ and ¾ inch on Dec 9 (0.99 inches at Sacramento); and under ¼ inch on Dec 10. Thunderstorms were reported in the Sacramento Valley on Dec 9.	12/8 – 12/10	146,770	39		N
7	A cold air mass brought periods of rain, wind, thundershowers and low elevation snow to the service area. On Mar 9, winds gusts ranged from 25 to 45 mph through most of the service area (46 mph @ SF Apt). Lightning mainly confined to coast areas on Mar 10, and coastal areas and San Joaquin Valley on Mar 11. Large accumulations of low elevation snow were reported in the foothills of the Central (10 inches at Angels Camp) and Southern Sierra (14 inches at 1500 ft.). In the coastal mountains between six and 12 inches was reported.	3/9 – 3/14	138,997	94		Y See Table 4
8	During this four day period, several storms crossed through the service territory. Strong winds, rain and thunderstorms occurred on March 3, especially affecting the San Joaquin Valley. Fresno reported a wind gust of 41 mph. Wind gusts above 40 mph were recorded in Humboldt County on March 4. The final weather front of this series occurred on Mar 5. Peak winds gusted to 55 mph along the north coast, and an additional one to three inches of rain was reported in parts of the Bay Area, North Coast and Sacramento Valley	3/02 – 3/05	113,235	66		Y See Table 4
9	A surge of subtropical moisture moved over the service area resulting in periods of heavy rainfall (1.14 inches at Sacramento, 1.02 inches at Stockton) and moderately gusty winds in the 20-35 mph range. Lightning activity was strong in the northern and central San Joaquin Valley.	4/04 – 4/05	102,052	31		Y See Table 4

10	A weather front produced 40-45 mph wind gusts in the northern Sacramento Valley, 10 mph gusts elsewhere. Rainfall totals ranged from ¼ to one inch along the north coast and northern Sacramento Valley, less than ¼ inch elsewhere.	1/28	85,089	73		N

Note: Values exclude single distribution line transformer and planned outages. The events listed as CPUC Major Events only include the outages for excludable counties. Otherwise the events include the system values. * Note: The values in parenthesis reflect the totals for the entire event from Dec 30, 2005 to Jan 5, 2006 as noted in Section 1.
** Note: This data is requested only for Major Event Days.
*** Note: Approximately 3,300 PG&E Operations, Maintenance & Construction (OM&C) employees responded. In addition to PG&E personnel, a total of 27 Contract Crews (approximately 142 individuals) and 20 Mutual Assistance Crews (approximately 80 individuals) from Southern California Edison (SCE) were utilized to supplement existing resources.

9. The Number of Customer Inquiries on Reliability Data 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 2016.

	YTD 2016 ESR CLOSED CASES						
	Total Cases	Closed 0-7 Days	Closed 8-14 Days	Closed > 14 Days	% Closed 0-7 Days	% Closed 8-14 Days	% Closed > 14 Days
BAY AREA REGION	**213**	**212**	**1**	**0**	**100%**	**0%**	**0%**
Diablo	68	67	1	0	99%	1%	0%
East Bay	40	40	0	0	100%	0%	0%
North Bay	54	54	0	0	100%	0%	0%
San Francisco	51	51	0	0	100%	0%	0%
CENTRAL COAST REGION	**464**	**463**	**1**	**0**	**100%**	**0%**	**0%**
Central Coast	50	50	0	0	100%	0%	0%
De Anza	33	33	0	0	100%	0%	0%
Los Padres	31	31	0	0	100%	0%	0%
Mission	153	153	0	0	100%	0%	0%
Peninsula	91	91	0	0	100%	0%	0%
San Jose	106	105	1	0	99%	1%	0%
CENTRAL VALLEY REGION	**156**	**156**	**0**	**0**	**100%**	**0%**	**0%**
Fresno	47	47	0	0	100%	0%	0%
Kern	29	29	0	0	100%	0%	0%
Stockton	45	45	0	0	100%	0%	0%
Yosemite	35	35	0	0	100%	0%	0%
NORTHERN REGION	**230**	**223**	**7**	**0**	**97%**	**3%**	**0%**
Humboldt	8	7	1	0	88%	13%	0%
North Valley	34	33	1	0	97%	3%	0%
Sacramento	63	61	2	0	97%	3%	0%
Sierra	90	88	2	0	98%	2%	0%
Sonoma	35	34	1	0	97%	3%	0%
GRAND TOTAL	**1063**	**1054**	**9**	**0**	**99%**	**1%**	**0%**

Note: ESR = Electric Service Reliability (Recurring Outages). This Includes ESR cases created on or after January 1, 2016 and closed as of December 31, 2016.

10. Appendix A – Definitions, Acronyms & Abbreviations

AIDI – Average Interruption Duration Indices

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.

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 50 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.

EON: EON stands for Enhanced Outage Notification, now retired, that was used to identify and record momentary outages. Customers agreed to put EON devices in their homes and the device would send PG&E information when the customer experienced and outages. The EON project was used prior to the availability of Smart Meter data.

IEEE – Institute of Electrical and Electronics Engineers, Inc.

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 are 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**.** Two circuit breaker or recloser operations (each operation being an open followed by a close) that briefly interrupt service to one or more customers are included as two momentary interruptions**.**

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 period of time. 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 period of time.

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.