APPENDIX A

Deficiencies and Conditions

No conditions are placed upon Horizon West Transmission, LLC for approval of its 2020 Wildfire Mitigation Plan.

No conditions are placed upon Trans Bay Cable, LLC for approval of its 2020 Wildfire Mitigation Plan.

(End of Appendix A)

APPENDIX B

Detailed Figures & Charts

0. Description of Data Sources

All figures reference the latest submitted versions of 2020 WMPs as of April 10th, 2020. Data is pulled from Tables 1-31 of Utility WMPs unless stated otherwise.

By utility, the WMPs referenced in this document are:

PG&E	Update to WMP submitted March 17th, 2020
SCE	Revision 02 to WMP
SDG&E	Update to WMP submitted March 10th, 2020
Liberty CalPeco	Update to WMP submitted February 28th, 2020
PacifiCorp	Update to WMP submitted February 26th, 2020
Bear Valley Electric Service	Update to WMP submitted February 26th, 2020
Horizon West Transmission	Update to WMP submitted February 28th, 2020
Trans Bay Cable	Update to WMP submitted February 28th, 2020

All are available at cpuc.ca.gov/wildfiremitigationplans.

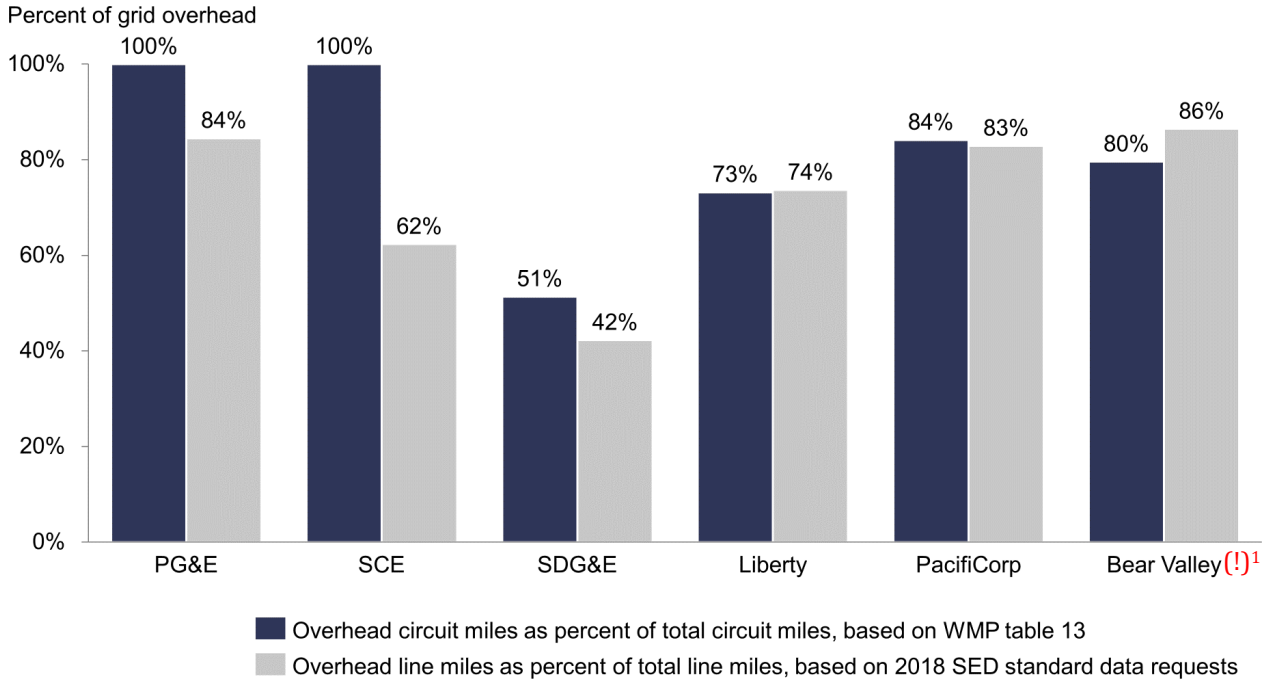
All the analysis and corresponding figures presented in this appendix rely upon data that is self-reported by the utilities. By utilizing and presenting this self-reported data in this appendix, the WSD is not independently validating that all data elements submitted by utilities are accurate. The WSD will continue to evaluate utility data, conduct data requests, and conduct additional compliance activities to ensure that data provided is accurate.

1. Figures

CONTENTS

1.1 Wildfire Risk Exposure

Figure 1.1a: Comparison of data sources for circuit typologies

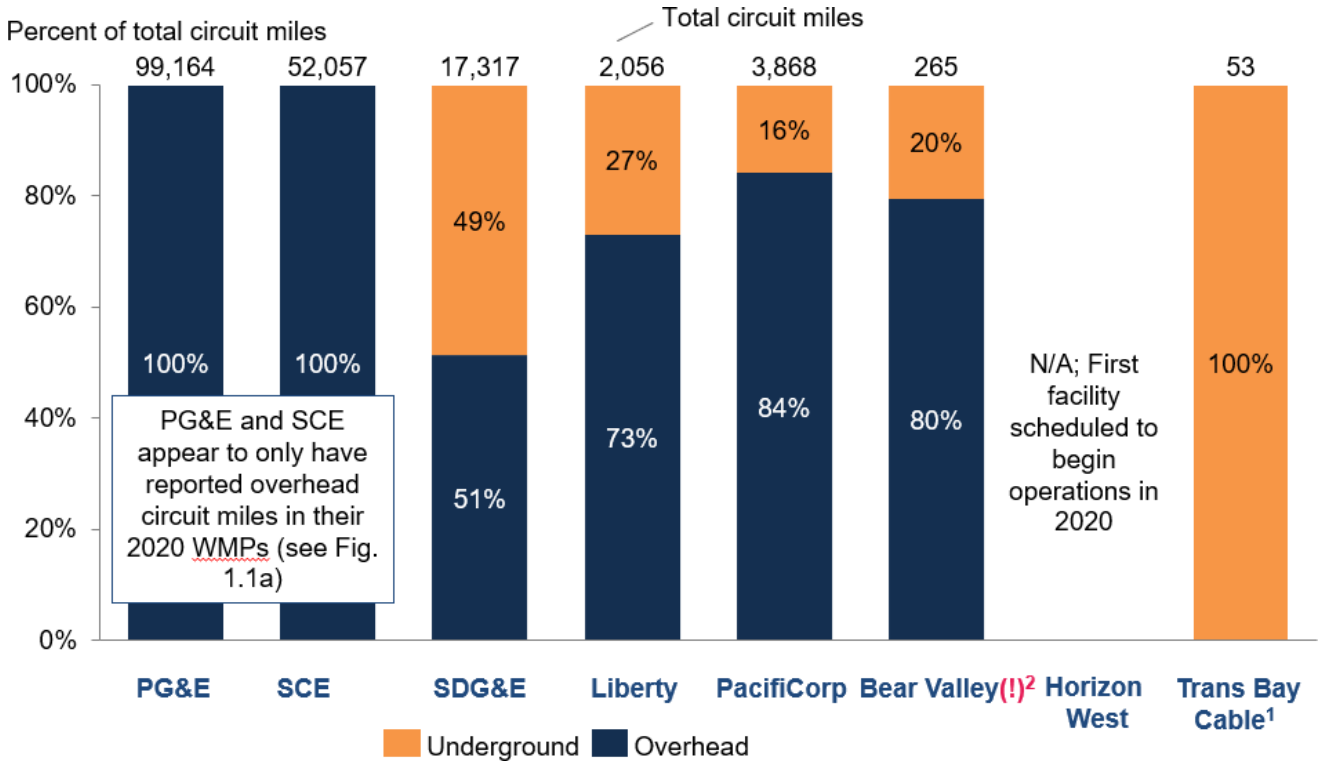


Note: In their 2020 WMPs, PG&E and SCE only reported circuit mileage data for overhead facilities. Based on the best available historical data on circuit mileage and grid topology in the Comission's possession, PG&E is reported to have 84% of its total line miles overhead, and SCE is reported to have 62% of its total line miles overhead. While the 2020 WMP Guidelines directed the utilities to report their grid topology breakdown by circuit miles, rather than line miles, the percentages overhead and underground are expected to be similar. The WSD will issue a data request to confirm accurate underground circuit mileage numbers.

1. BVES submitted errata on 5/20/2020 that changed their WMP. Those updates are not reflected here (WSD analysis forthcoming).

Source: SED standard data requests for annual grid data (reflect values as of December 2018), WMP Table 13

Figure 1.1b: Circuit topology breakdown by overhead and underground circuit miles

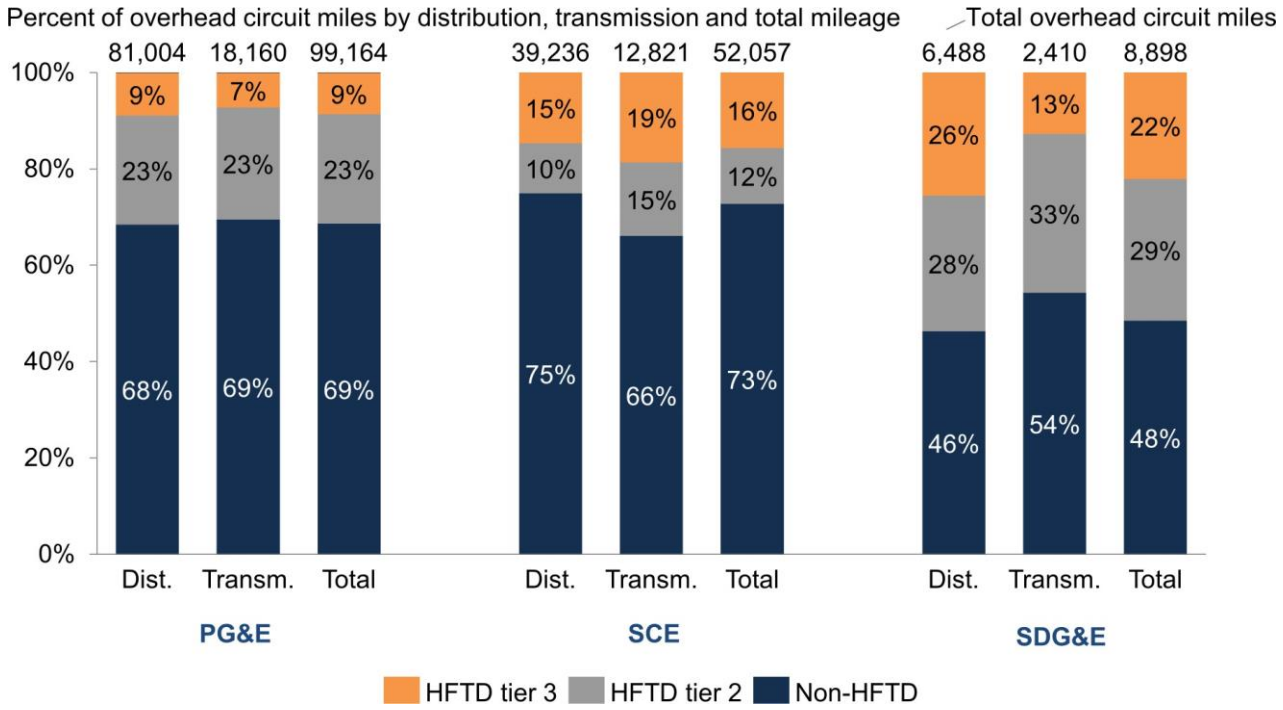


1. Trans Bay Cable did not report underground circuit miles in Table 13 of the WMP, but mentioned on page 8 of its WMP that it had 53 circuit miles of underground submarine cable, which is reflected in this chart.

2. BVES submitted errata on 5/20/2020 that changed their WMP. Those updates are not reflected here (WSD analysis forthcoming).

Source: WMP Table 13

Figure 1.2a: Overhead circuit miles by HFTD Tier (Large Utilities)
Broken out by distribution (dist.) and transmission (transm.)

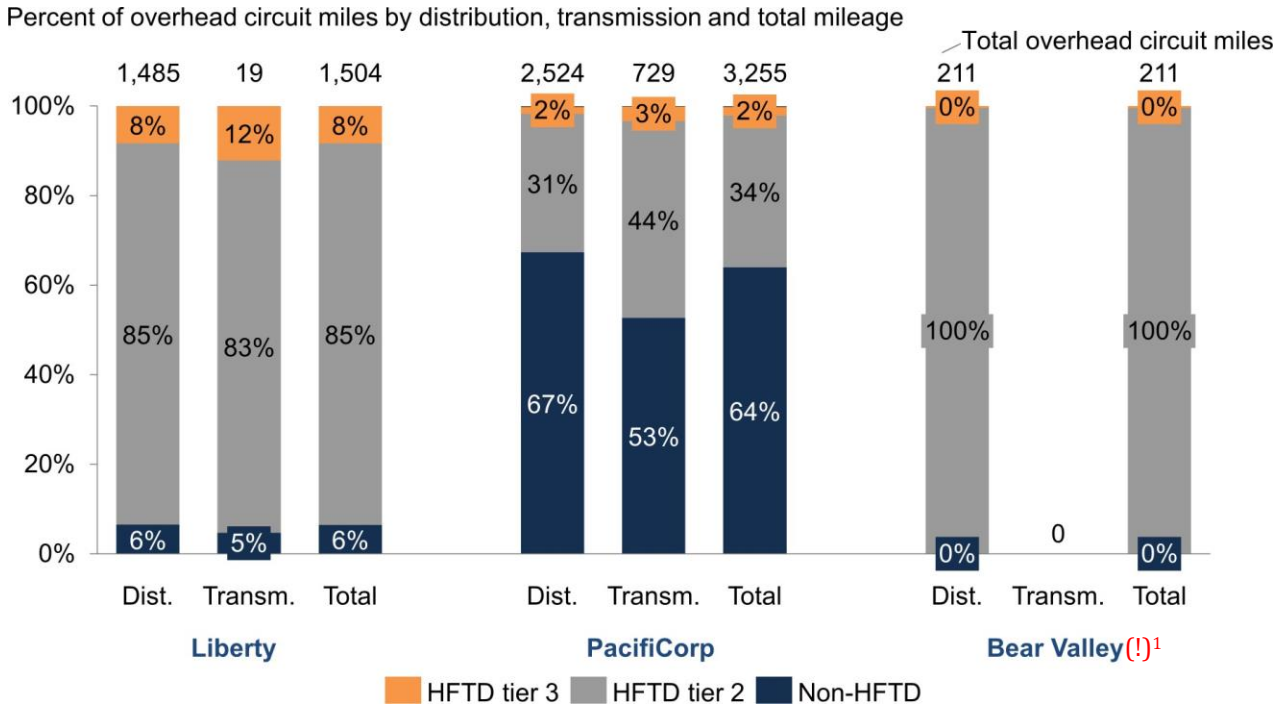


Note: Zone 1 not shown as subtotal.

Source: WMP Table 13

Figure 1.2b: Overhead circuit miles by HFTD Tier (Small Utilities)

Broken out by distribution (dist.) and transmission (transm.)

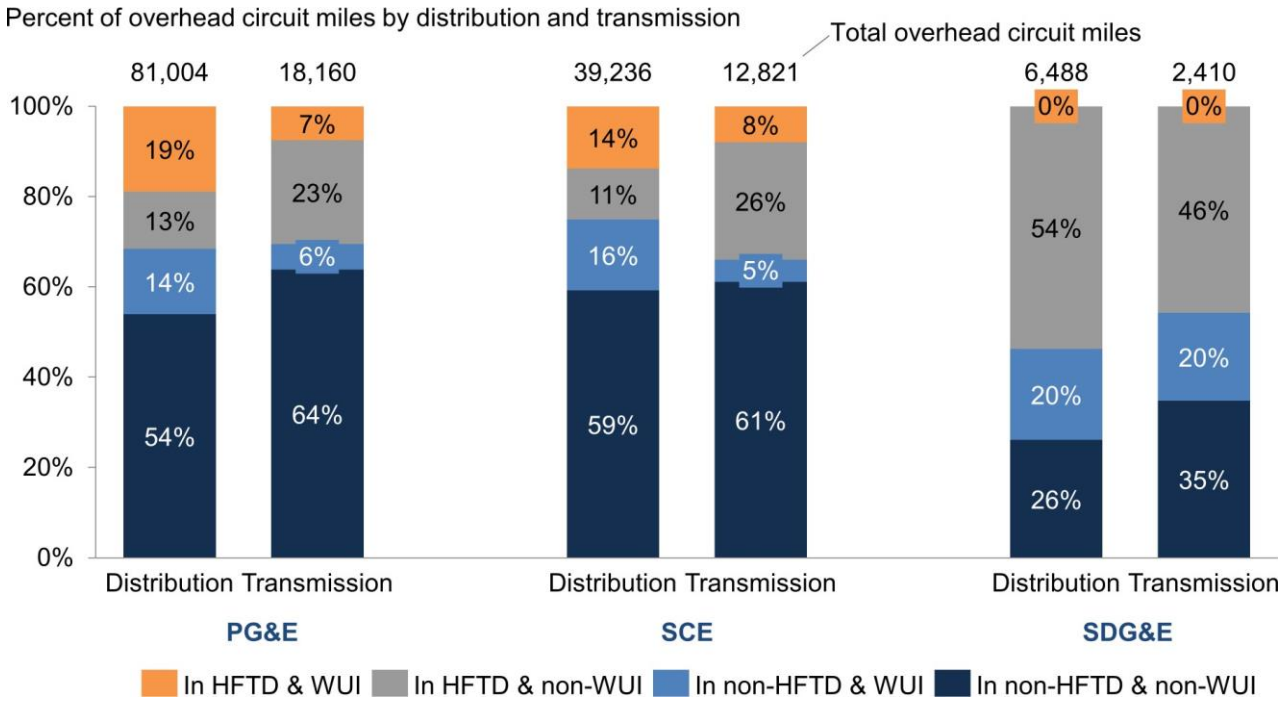


Note: Zone 1 not shown as subtotal.

1. BVES submitted errata on 5/20/2020 that changed their WMP. Those updates are not reflected here (WSD analysis forthcoming).

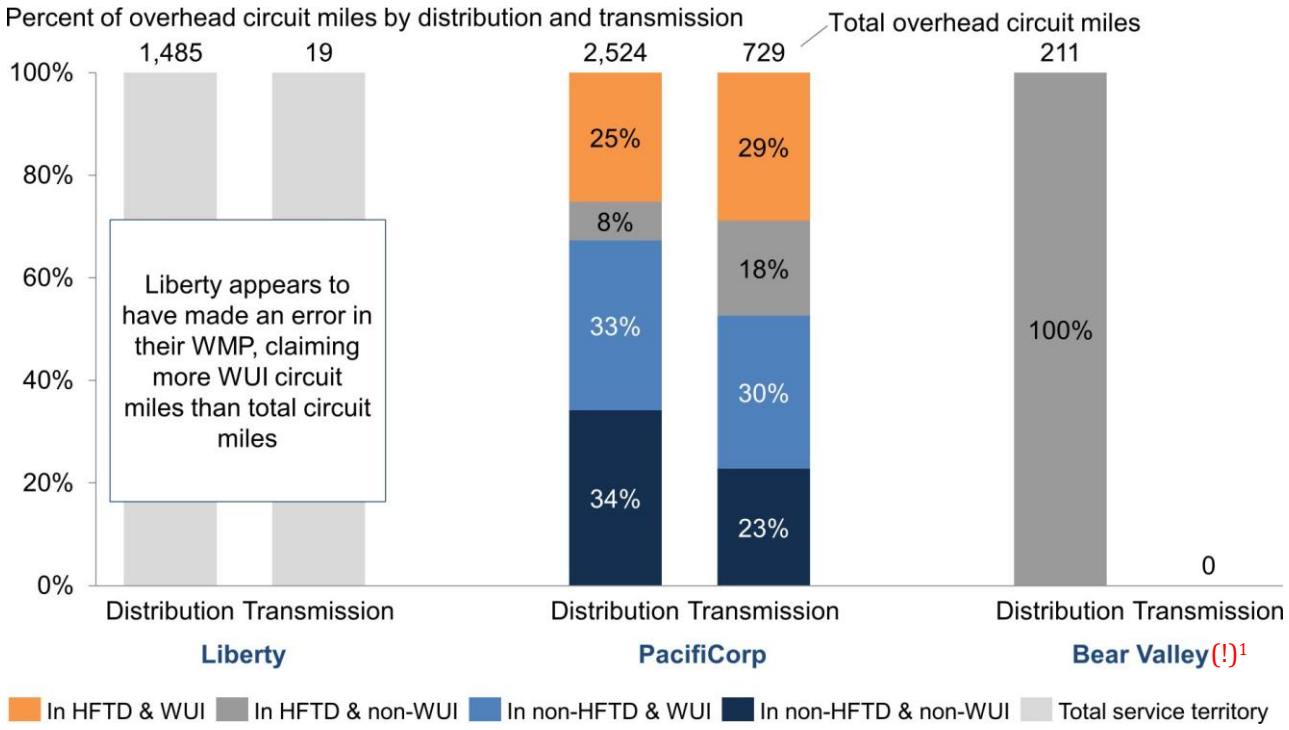
Source: WMP Table 13

Figure 1.3a: Breakdown of overhead transmission and distribution circuit miles by HFTD and WUI location (Large utilities)



Source: WMP Table 13

Figure 1.3b: Breakdown of overhead transmission and distribution circuit miles by HFTD and WUI location (Small utilities)

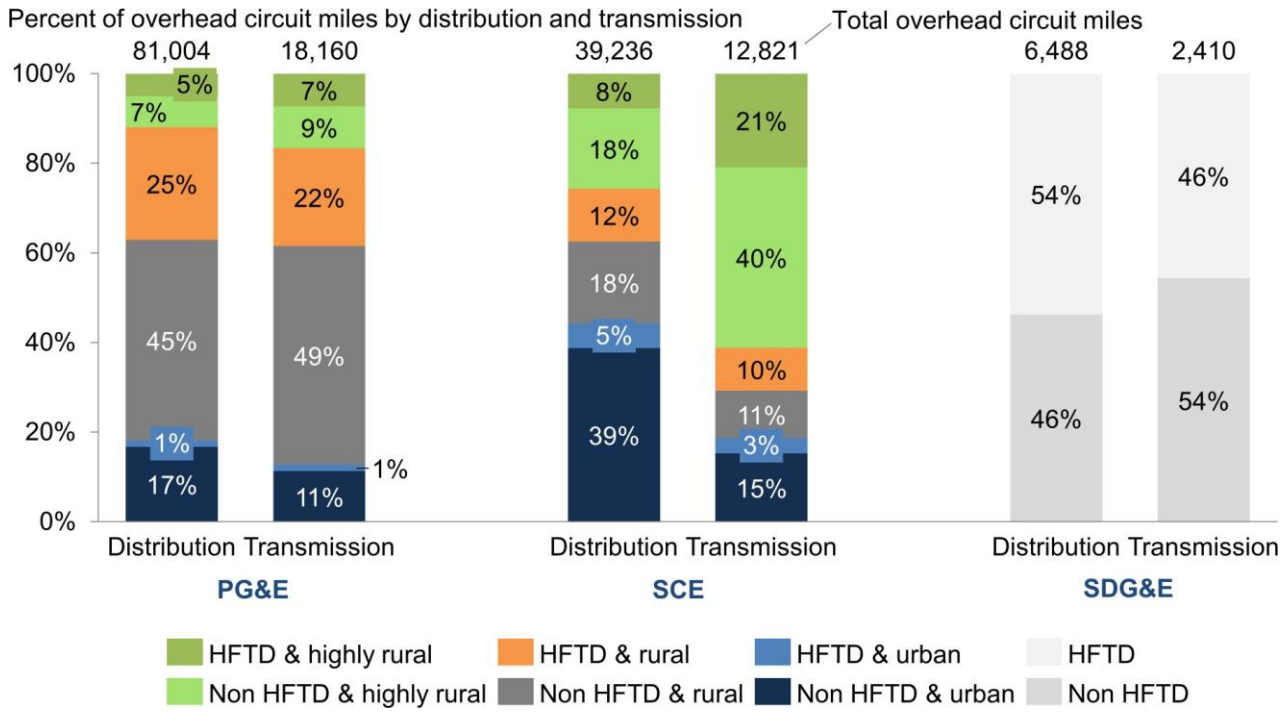


Note: Trans Bay Cable and Horizon West Transmission are not shown. Trans Bay Cable is almost entirely undergroud and submarine, and Horizon West Transmission did not yet have operational facilities at the time it submitted its 2020 WMP.

1. BVES submitted errata on 5/20/2020 that changed their WMP. Those updates are not reflected here (WSD analysis forthcoming).

Source: WMP Table 13

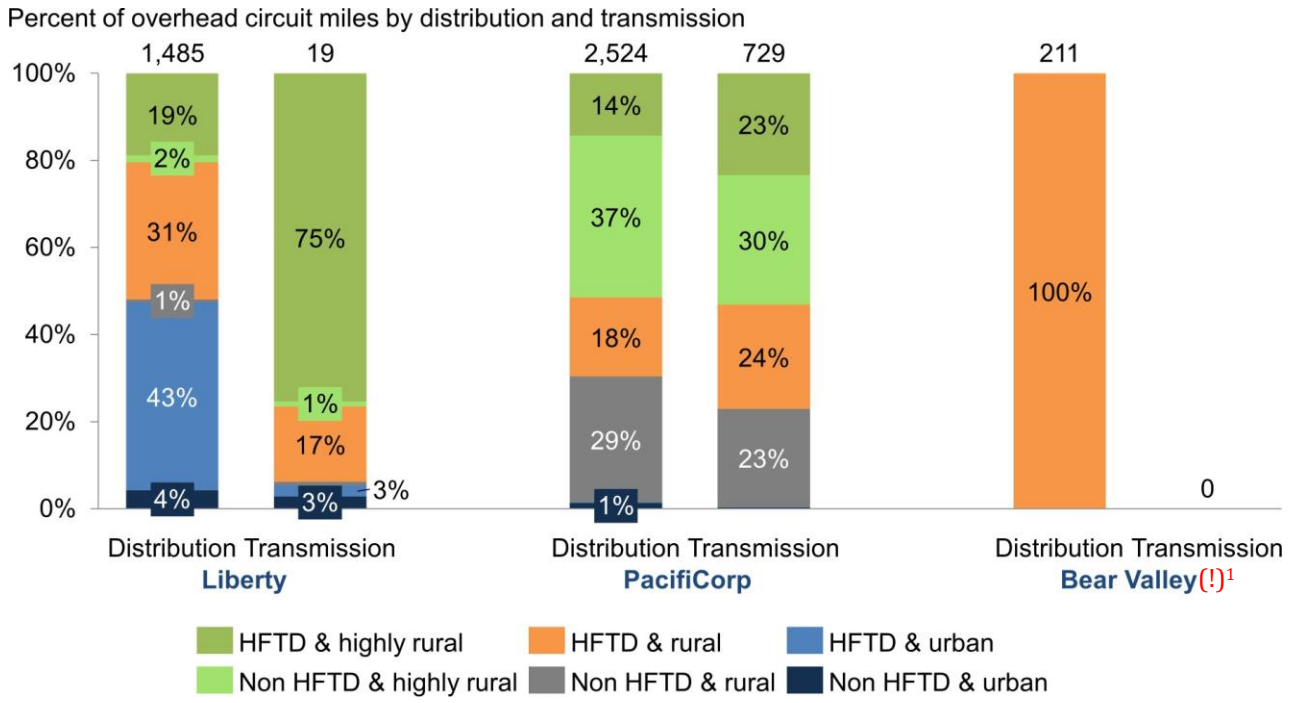
Figure 1.4a: Breakdown of overhead transmission and distribution circuit miles by HFTD and population density (Large utilities)



Note: SDG&E did not report breakdown of circuit mileage between areas of different population densities.

Source: WMP Table 13

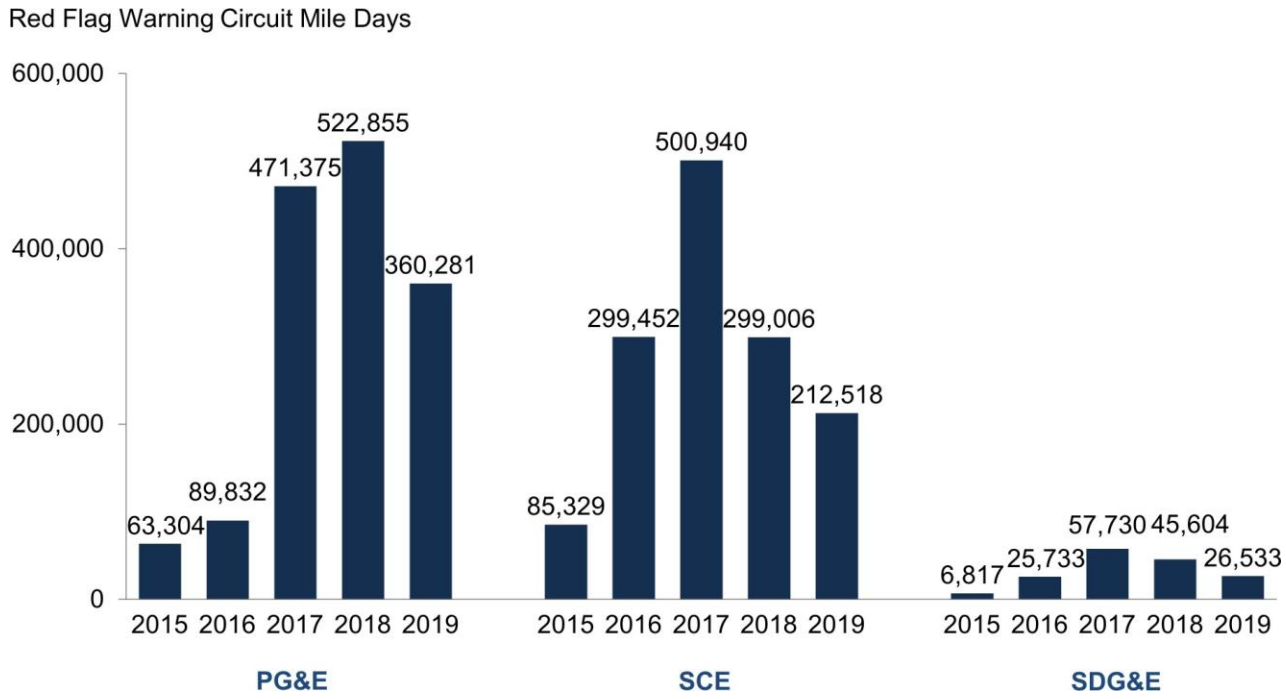
Figure 1.4b: Breakdown of overhead transmission and distribution circuit miles by HFTD and population density (Small utilities)



1. BVES submitted errata on 5/20/2020 that changed their WMP. Those updates are not reflected here (WSD analysis forthcoming).

Source: WMP Table 13

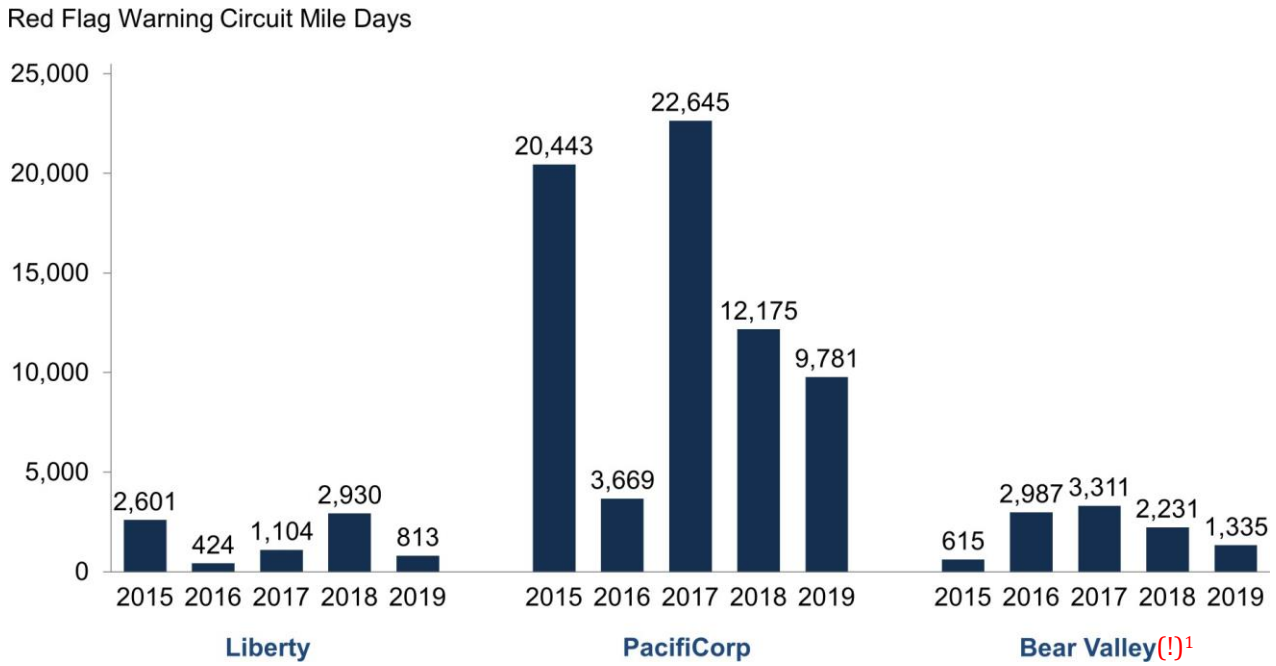
Figure 1.5a: Red flag warning circuit mile days per year by utility (Large utilities)



Note: A "Red Flag Warning (RFW) Circuit Mile Day" is intended to capture the duration and scope of the fire weather that year. It is defined on page 5 of the 2020 WMP Guidelines to be calculated as the number of circuit miles that were under a RFW multiplied by the number of days those miles were under said RFW. For example, if 100 circuit miles were under a RFW for 1 day, and 10 of those miles were under RFW for an additional day, then the total RFW circuit mile days would be 110.

Source: WMP Table 10

Figure 1.5b: Red flag warning circuit mile days per year by utility (Small utilities)

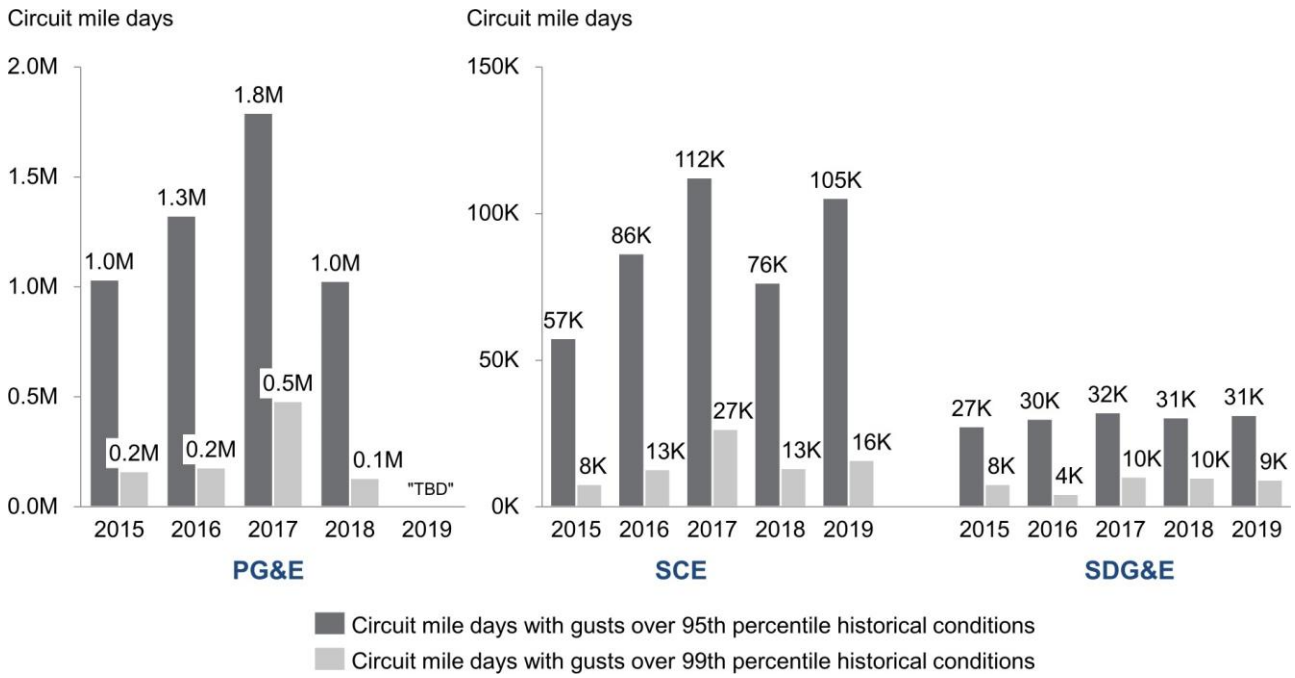


Note: A "Red Flag Warning (RFW) Circuit Mile Day" is intended to capture the duration and scope of the fire weather that year. It is defined on page 5 of the 2020 WMP Guidelines to be calculated as the number of circuit miles that were under a RFW multiplied by the number of days those miles were under said RFW. For example, if 100 circuit miles were under a RFW for 1 day, and 10 of those miles were under RFW for an additional day, then the total RFW circuit mile days would be 110.

1. BVES submitted errata on 5/20/2020 that changed their WMP. Those updates are not reflected here (WSD analysis forthcoming).

Source: WMP Table 10

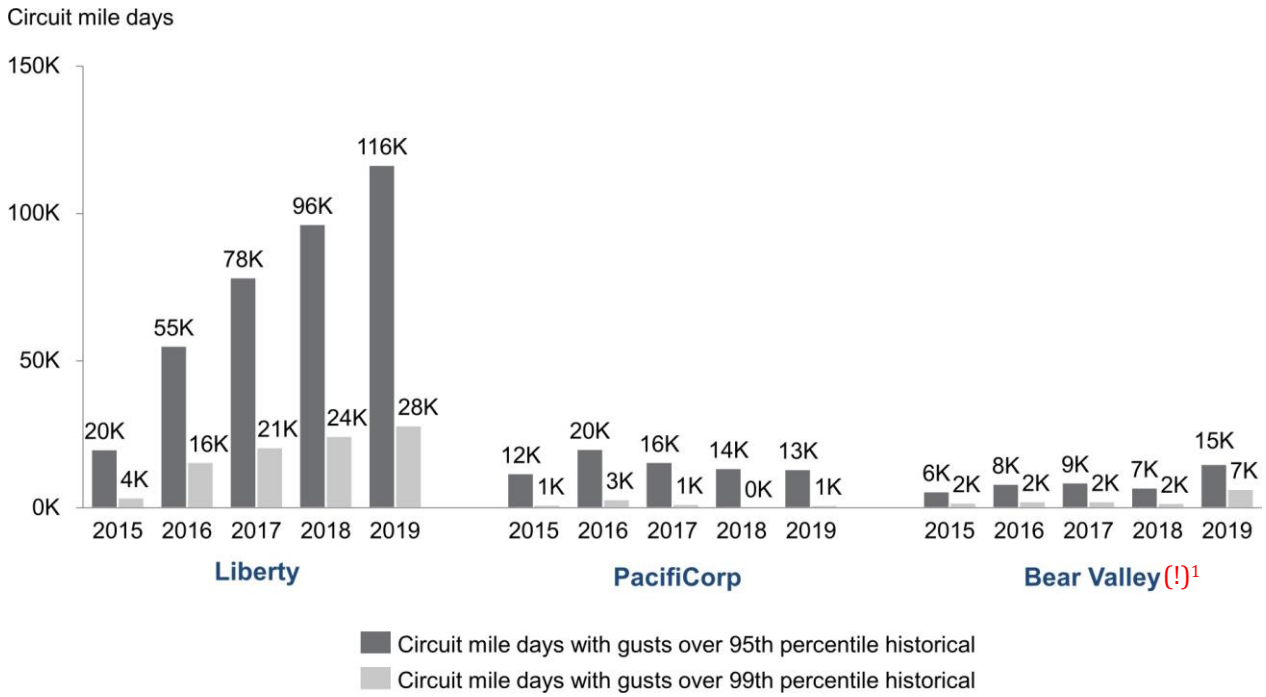
Figure 1.5c: 95th and 99th percentile wind conditions (Large utilities)



Note: Utilities were directed to report historical conditions as conditions over 10 prior years, 2005-2014. SCE appears to have instead reported historical conditions over the 5 prior years, 2009-2014, thus using a different baseline to calculate 95th and 99th percentile wind speeds. More information is needed to fully address potential inconsistencies between utilities. PG&E stated that 2019 data would not be available until late Q2 2020.

Source: WMP Table 10

Figure 1.5d: 95th and 99th percentile wind conditions (Small utilities)



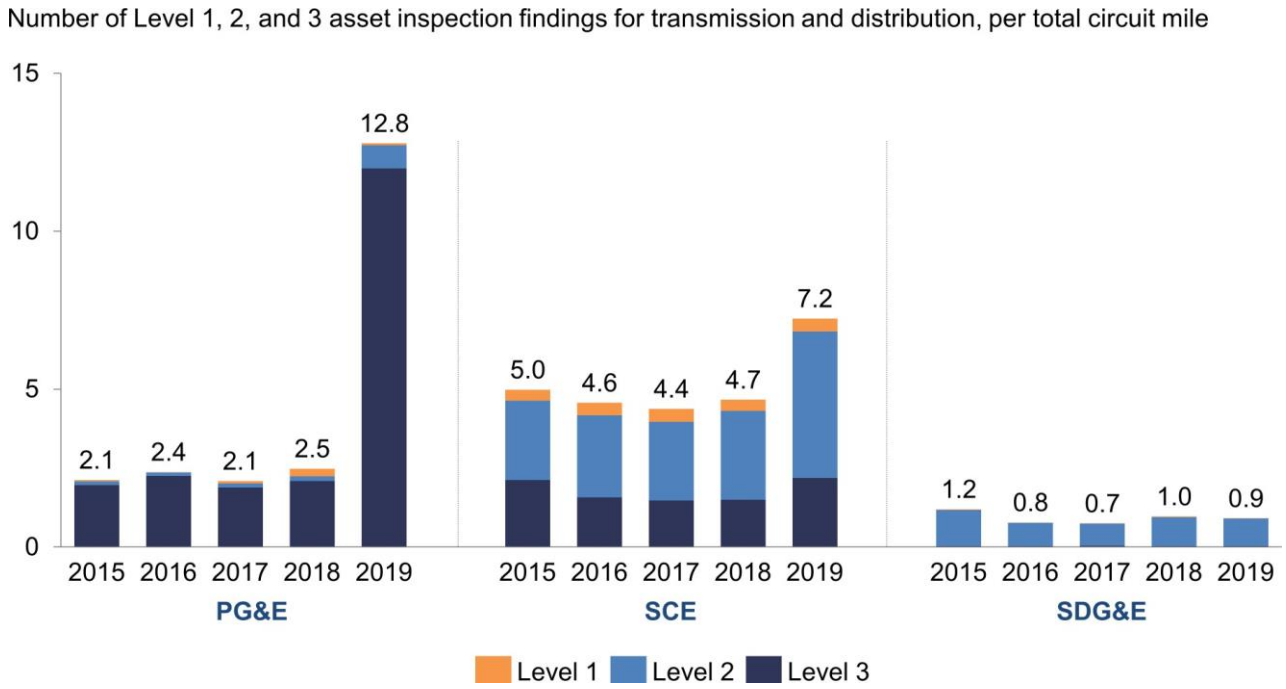
Note: Historical conditions refer to conditions over 10 prior years, 2005-2014.

1. BVES submitted errata on 5/20/2020 that changed their WMP. Those updates are not reflected here (WSD analysis forthcoming).

Source: WMP Table 10

1.2 Outcome Metrics

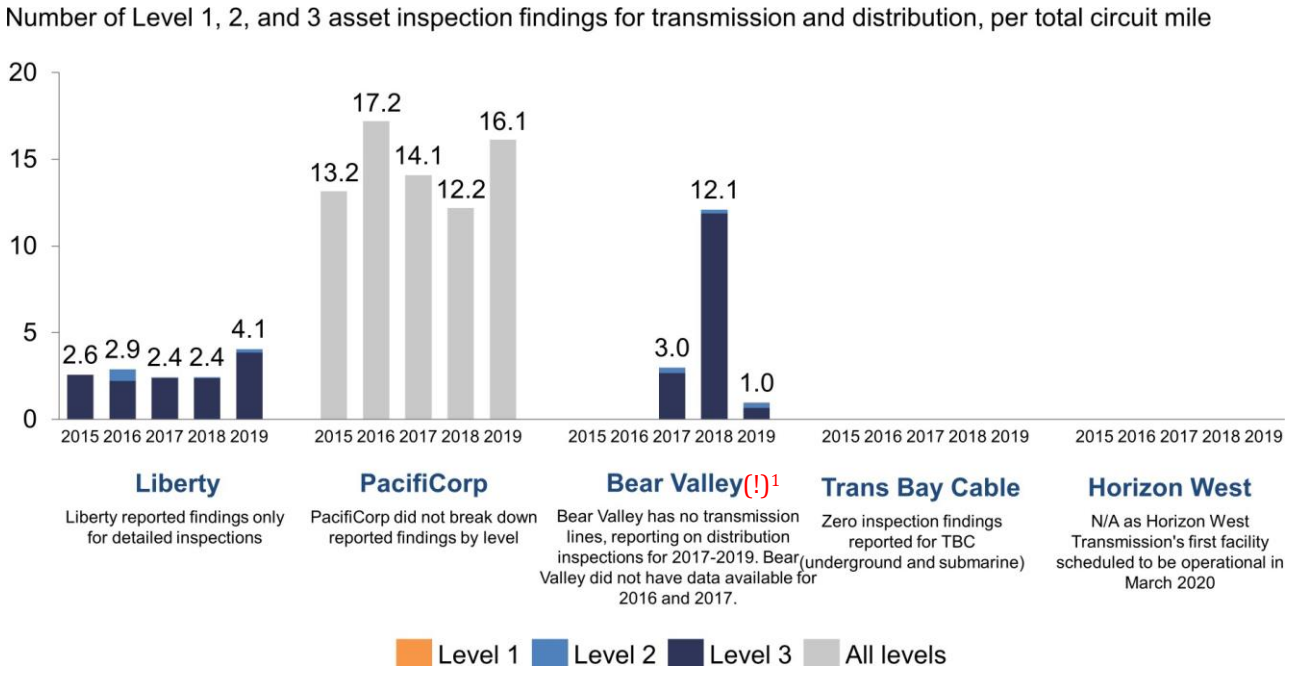
Figure 2.1a: Asset inspection findings normalized by total circuit mileage (Large utilities)



Note: Utilities reported their inspection findings as normalized by total circuit miles in Table 1 of their WMPs.

Source: WMP Table 1

Figure 2.1b: Asset inspection findings normalized by total circuit mileage (Small utilities)

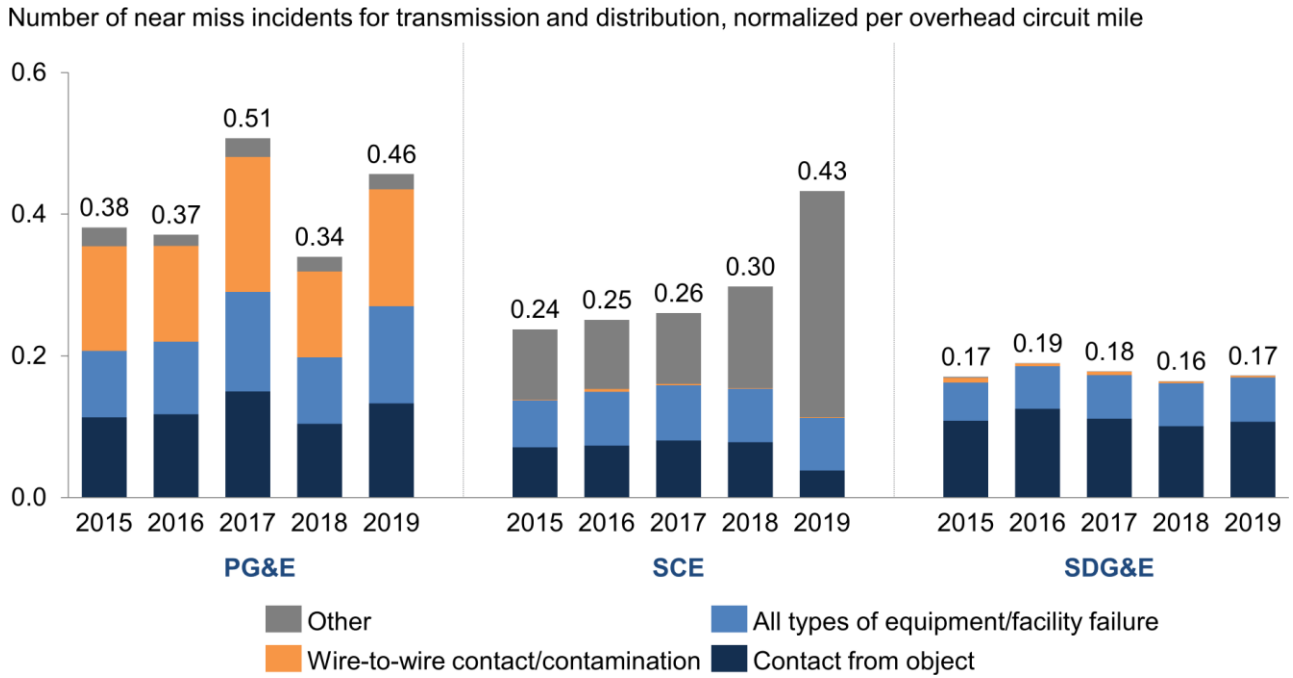


Note: Utilities reported their inspection findings as normalized by total circuit miles in Table 1 of their WMPs. In Table 1, Liberty reported inspection findings in miles between findings rather than in findings per circuit mile as the 2020 WMP Guidelines directed. To represent inspection findings in a way consistent with the reporting of other utilities, the WSD inverted the metric reported by Liberty to show inspection findings in findings per circuit mile in this chart. Bear Valley reported inspecton findings normalized per overhead cirucit mile rather than per total cirucit mile as instructed. For consistency, the WSD re-normalized these findings per total circuit mile using data from Table 13.

1. BVES submitted errata on 5/20/2020 that changed their WMP. Those updates are not reflected here (WSD analysis forthcoming).

Source: WMP Table 1

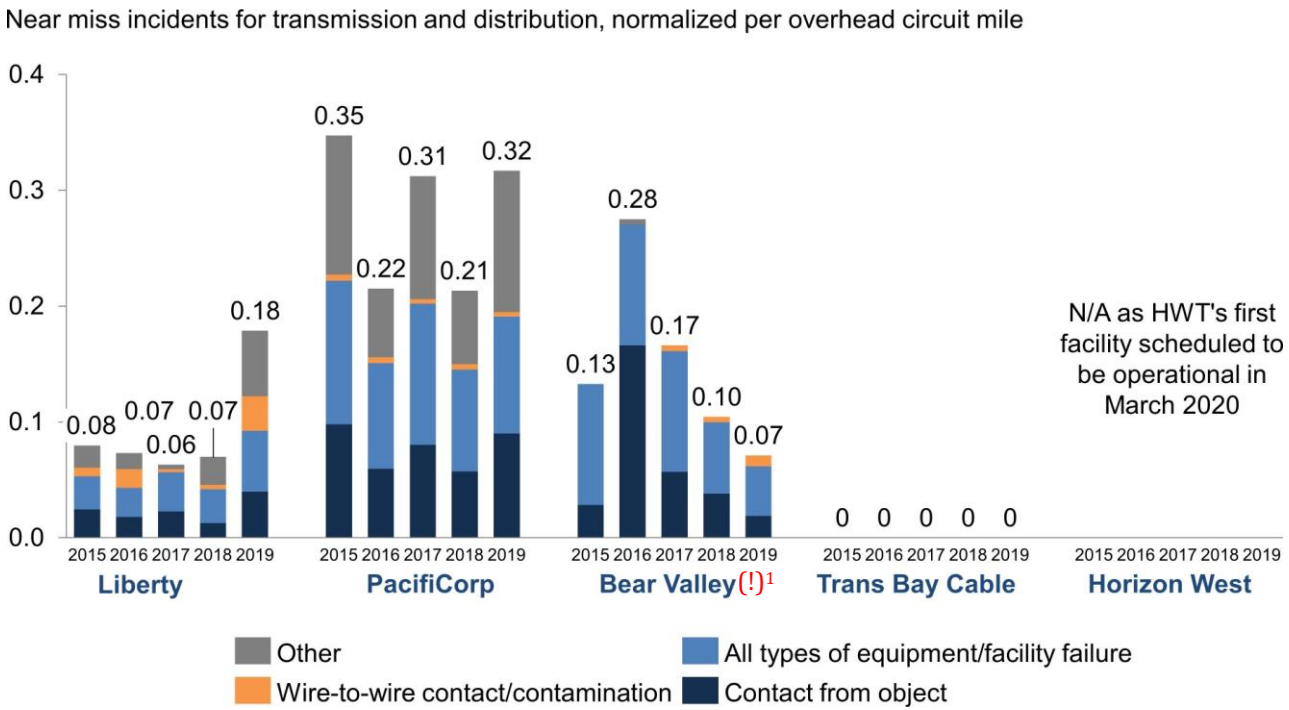
Figure 2.2a: Near miss incidents normalized by overhead circuit mileage (Large utilities)



Note: The measurement of each 'near miss' is not yet perfectly standardized across utilities. The WSD will work toward a more standardized approach for tracking and classifying near miss data for 2021 WMPs. A near miss was defined in the 2020 WMP Guidelines as "An event with significant probability of ignition, including wires down, contacts with objects, line slap, events with evidence of significant heat generation, and other events that cause sparking or have the potential to cause ignition."

Source: Tables 11a and 11b from utility WMPs and data requests, normalized by data from Table 13 of utility WMPs; SDG&E equipment failure numbers adjusted to address inconsistencies in subtotal calculations provided by SDG&E.

Figure 2.2b: Near miss incidents normalized by overhead circuit mileage (Small utilities)



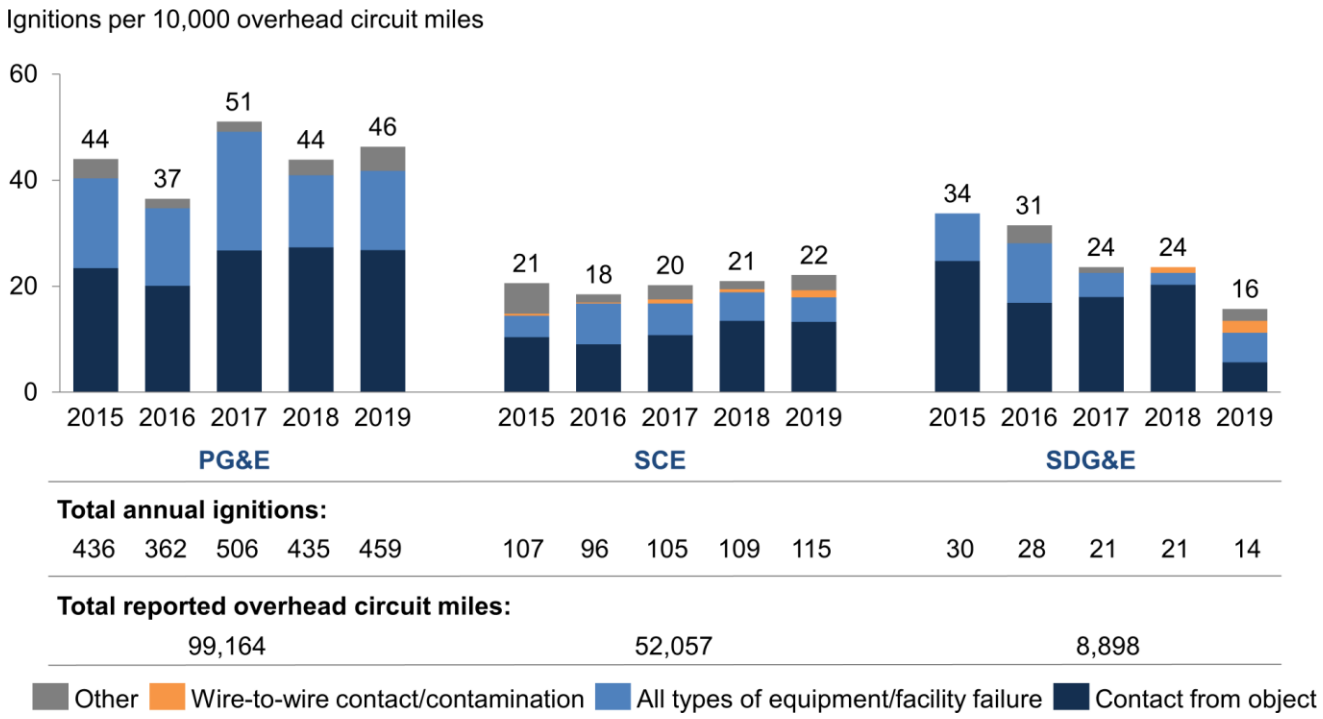
Note: The measurement of each 'near miss' is not yet perfectly standardized across utilities. The WSD will work toward a more standardized approach for tracking and classifying near miss data for 2021 WMPs. A near miss was defined in the 2020 WMP Guidelines as "An event with significant probability of ignition, including wires down, contacts with objects, line slap, events with evidence of significant heat generation, and other events that cause sparking or have the potential to cause ignition."

For PacifiCorp, the largest drivers of "Other" near misses were "Other" (50% on average over the 5 year period) and "Unknown" (42% on average over the 5 year period).

1. BVES submitted errata on 5/20/2020 that changed their WMP. Those updates are not reflected here (WSD analysis forthcoming).

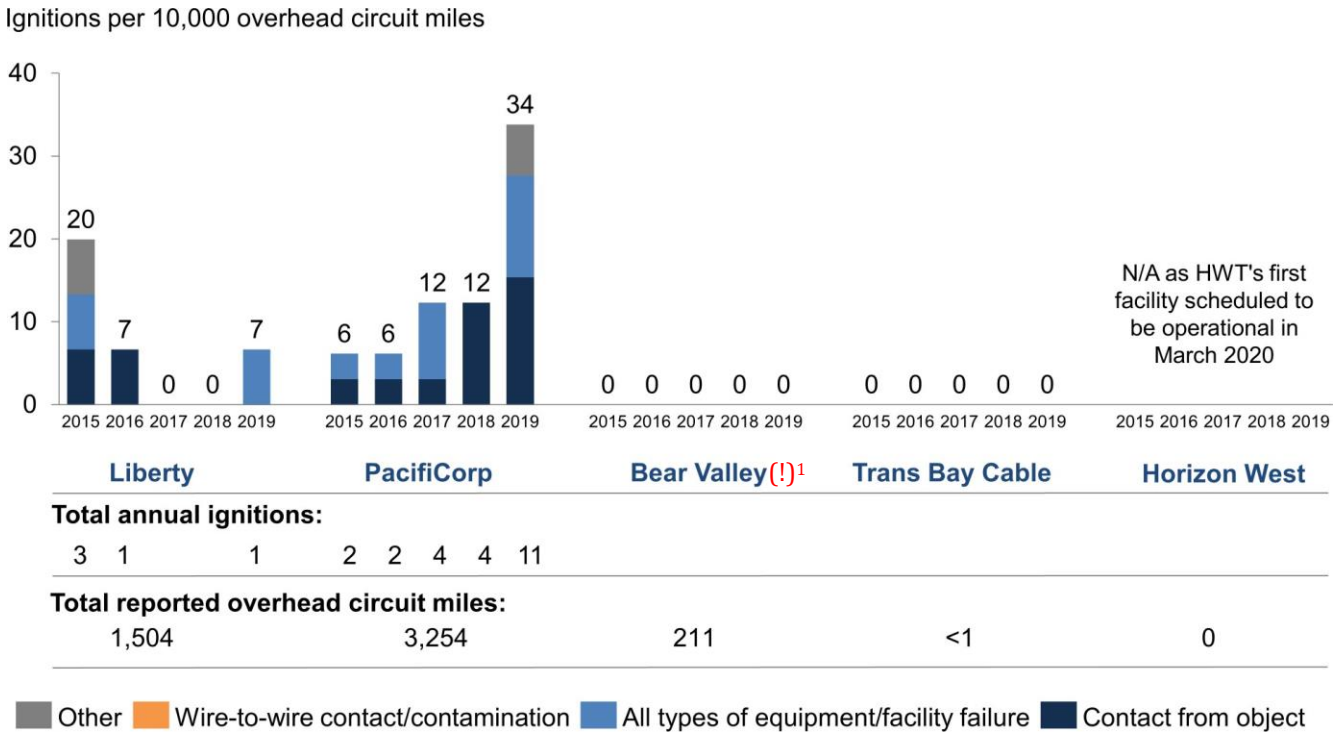
Source: Tables 11a and 11b from utility WMPs and data requests, normalized by data from Table 13 of utility WMPs; BVES numbers adjusted to address inconsistencies in subtotal calculations provided.

Figure 2.3a: Number of ignitions, normalized by overhead circuit mileage (Large utilities)



Source: Tables 11a and 11b from utility WMPs and data requests normalized by data from Table 13 of utility WMPs; SDG&E equipment failure numbers adjusted to address inconsistencies in subtotal calculations provided.

Figure 2.3b: Number of ignitions, normalized by overhead circuit mileage (Small utilities)

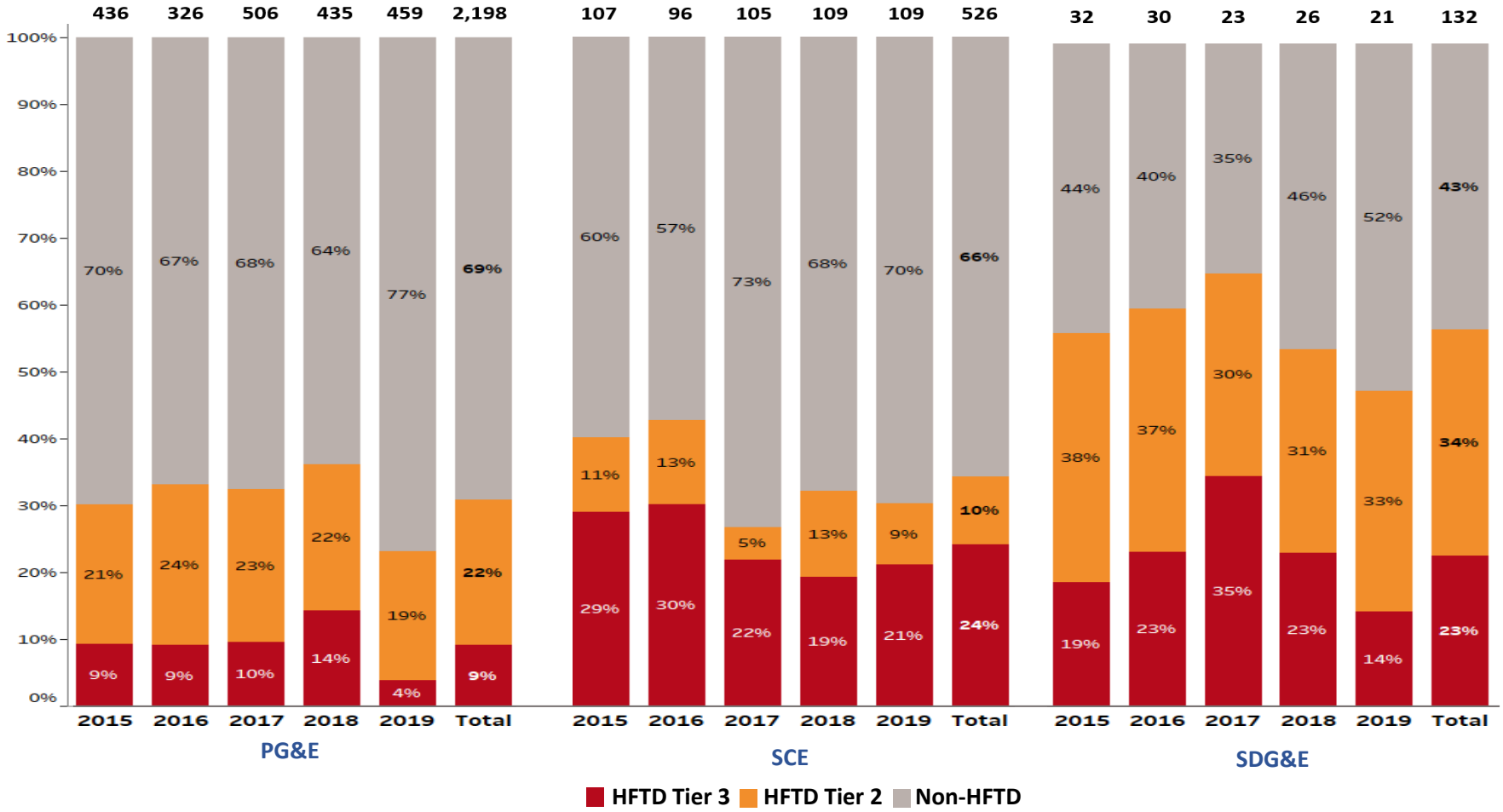


Note: Total number of ignititions only shown for utilities and years where ignitions were greater than zero.

1. BVES submitted errata on 5/20/2020 that changed their WMP. Those updates are not reflected here (WSD analysis forthcoming).

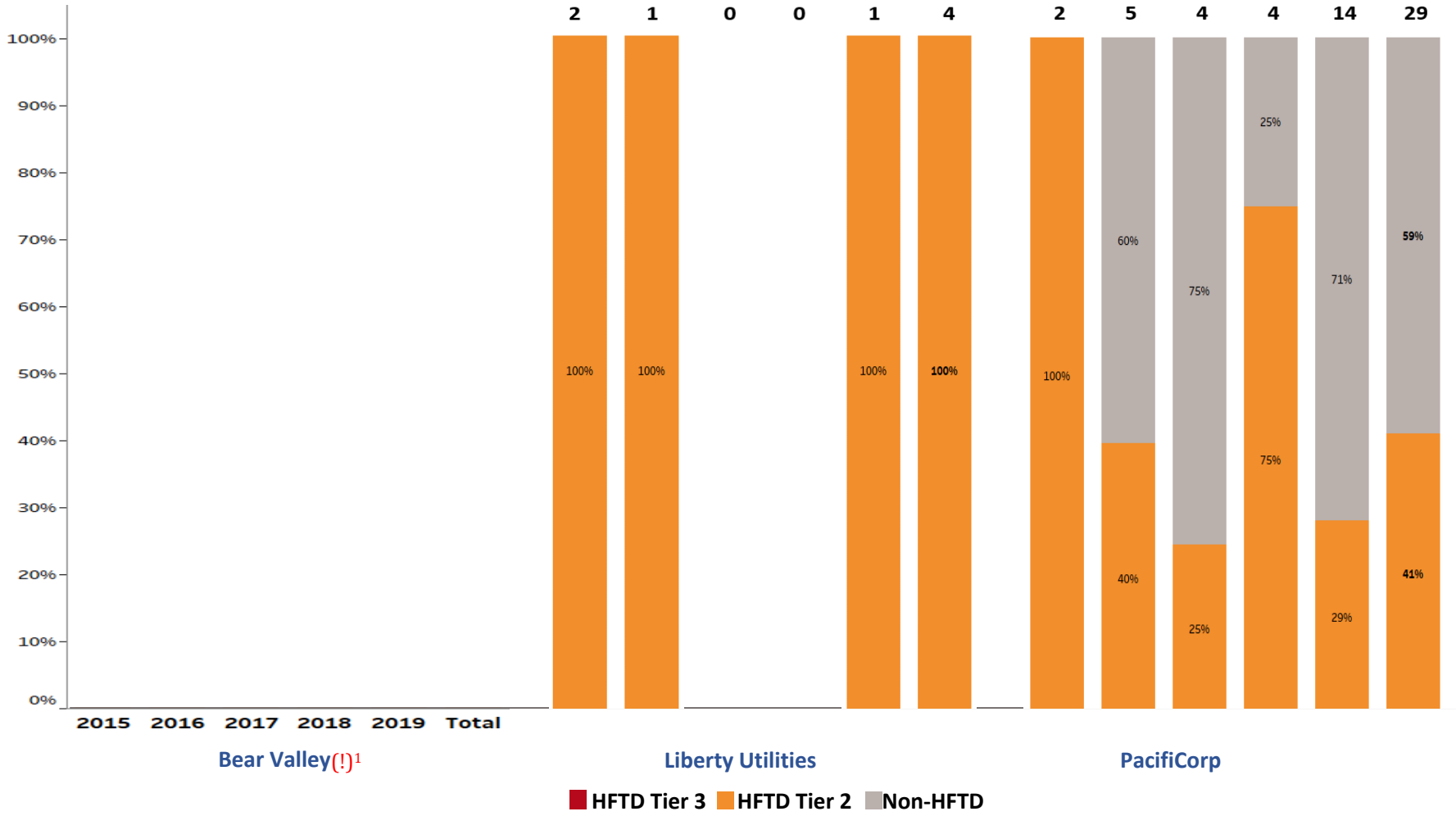
Source: Tables 11a and 11b from utility WMPs and data requests normalized by data from Table 13 of utility WMPs; PacifiCorp numbers adjusted to account for Tables 11c and 11d.

Figure 2.4a: Total ignitions by HFTD location (Large utilities)



Note: Ignitions in Zone 1 HFTD areas make up less than 1% of total ignitions.
Source: Table 2 from utility WMPs

Figure 2.4b: Total ignitions by HFTD location (Small utilities)

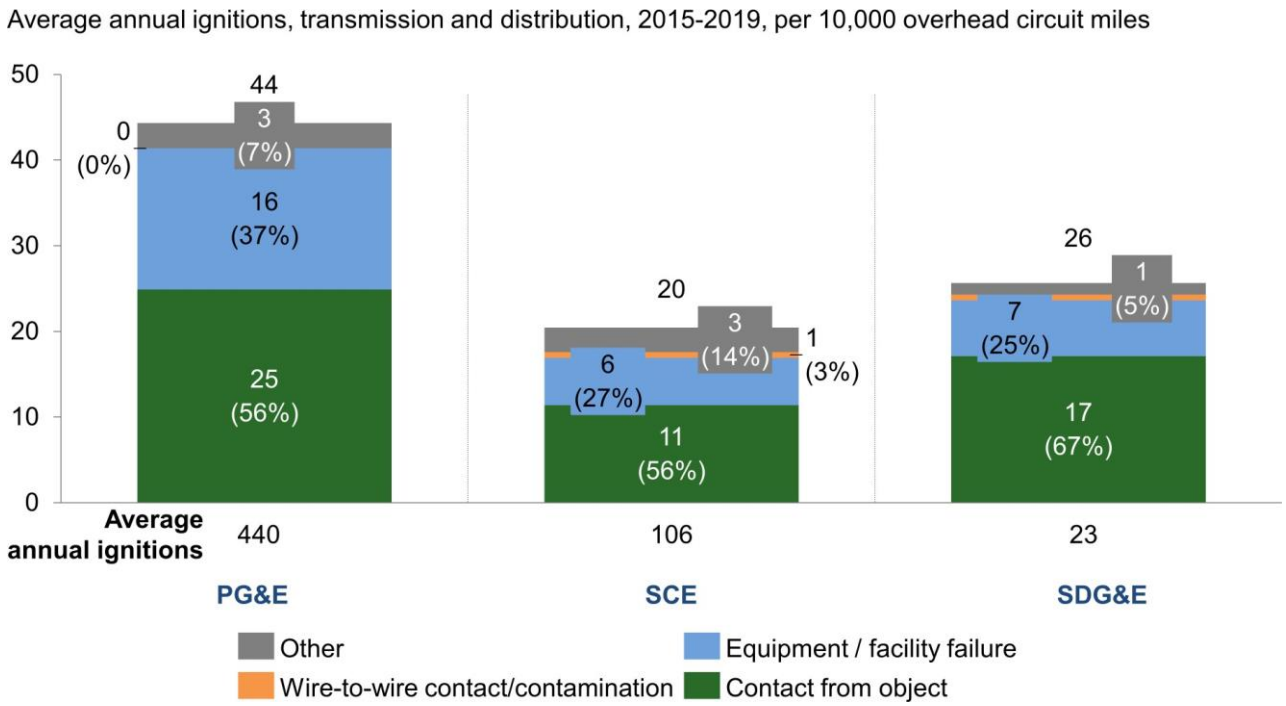


Note: Ignitions in Zone 1 HFTD areas make up less than 1% of total ignitions.

1. BVES submitted errata on 5/20/2020 that changed their WMP. Those updates are not reflected here (WSD analysis forthcoming).

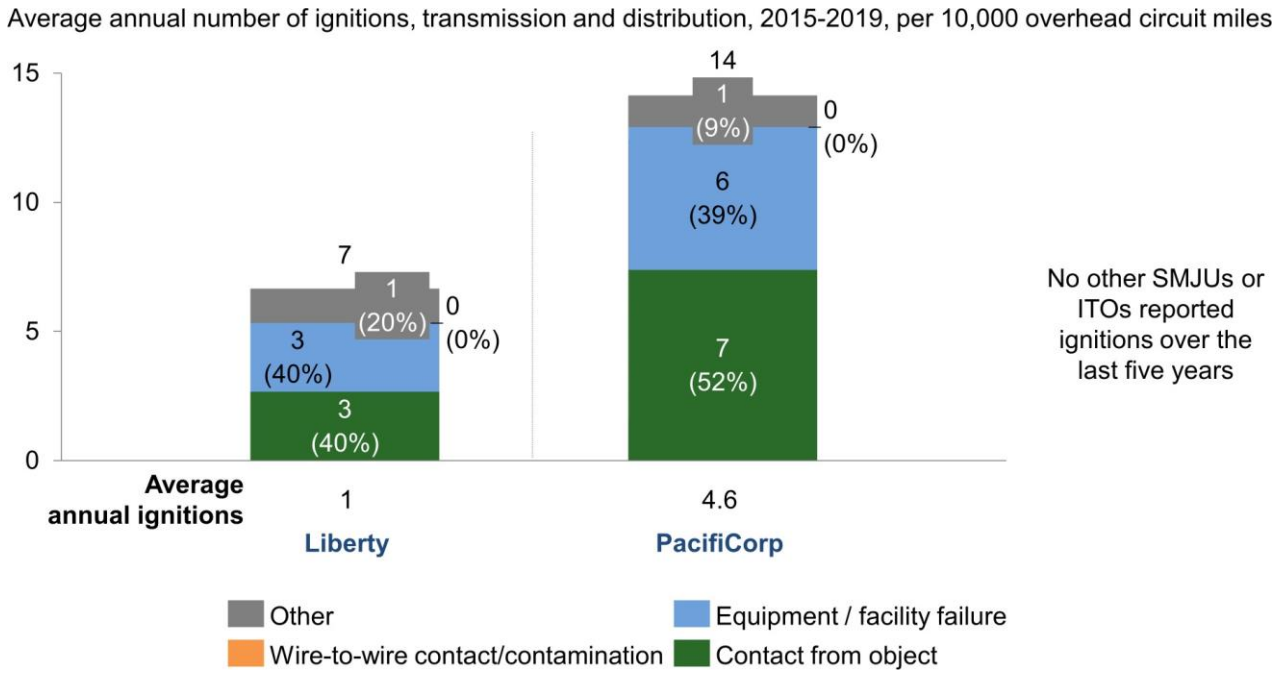
Source: Table 2 from utility WMPs

Figure 2.5a: Ignitions by ignition probability driver type (Large utilities)



Source: Tables 11a and 11b from utility WMPs and data requests normalized by data from Table 13 of utility WMPs; SDG&E equipment failure numbers adjusted to address inconsistencies in subtotal calculations provided.

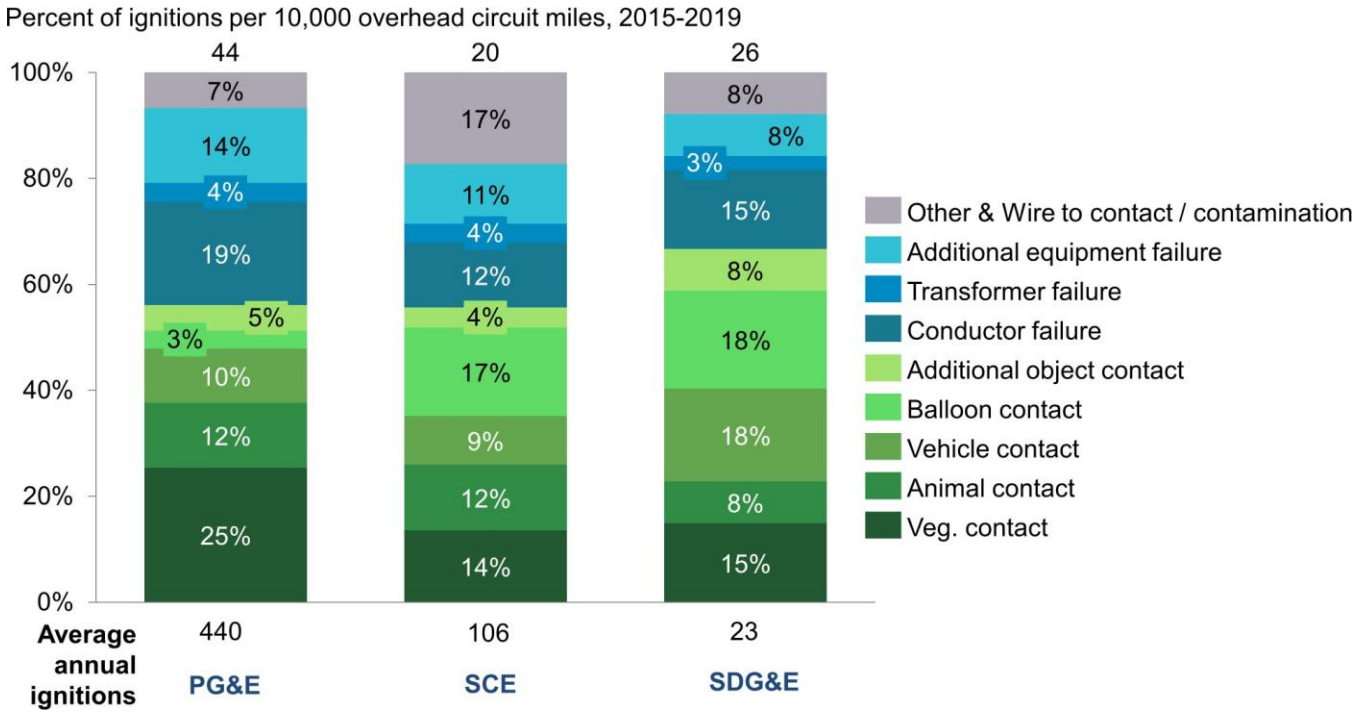
Figure 2.5b: Ignitions by ignition probability driver type (Small utilities)



Note: Since Liberty and PacifiCorp have less than 10,000 overhead circuit miles, their average number of total annual ignitions per 10,000 circuit miles is greater than their average number of total annual ignitions.

Source: Tables 11a and 11b from utility WMPs and data requests, normalized by data from Table 13 of utility WMPs; PacifiCorp numbers adjusted to account for Tables 11c and 11d.

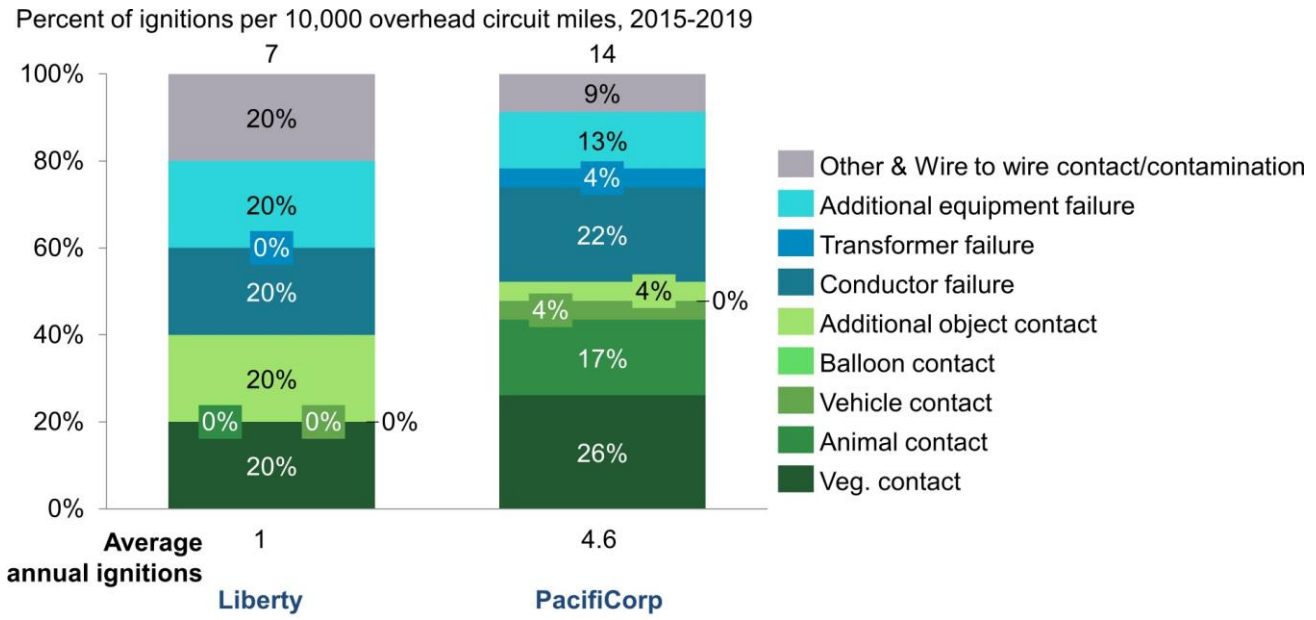
Figure 2.6a: Detail: Share of ignitions due to each ignition probability driver (Large utilities)



Note: Conductor failure includes conductor failure (as reported), splice, clamp and connector. Other includes wire to wire contact / contamination.

Source: Tables 11a and 11b from utility WMPs and data request normalized by data from Table 13 of utility WMPs; SDG&E equipment failure numbers adjusted to address inconsistencies in subtotal calculations provided. Since SDG&E has less than 10,000 overhead circuit miles, its average number of total annual ignitions per 10,000 circuit miles is greater than its average number of total annual ignitions.

Figure 2.6b: Detail: Share of ignitions due to each ignition probability driver (Small utilities)

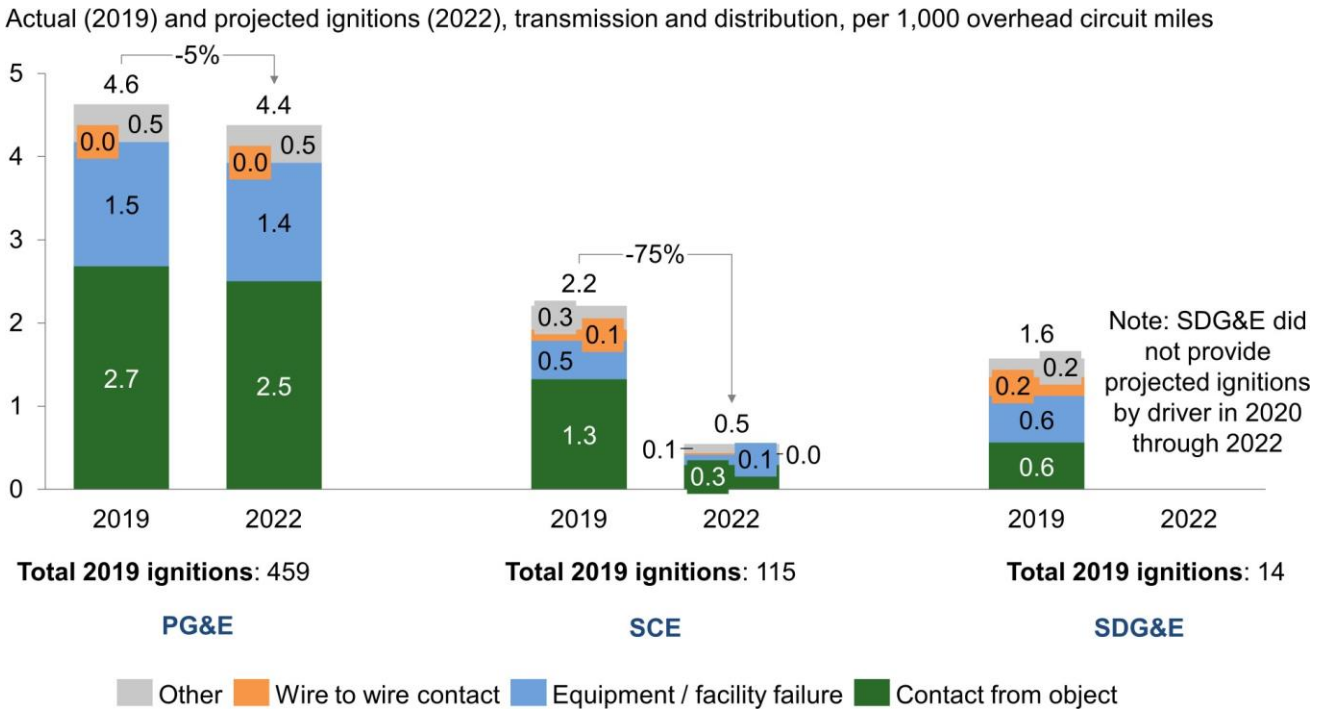


No other small utilities reported ignitions over the last five years

Note: Conductor failure includes conductor failure (as reported), splice, clamp and connector. Other includes wire-to-wire contact / contamination. Since Liberty and PacifiCorp have less than 10,000 overhead circuit miles, their average number of total annual ignitions per 10,000 circuit miles is greater than their average number of total annual ignitions.

Source: Tables 11a and 11b from utility WMPs and data requests, normalized by data from Table 13 of utility WMPs; PacifiCorp numbers adjusted to account for Tables 11c and 11d.

Figure 2.7a: Actual and projected ignitions for top ignition drivers, 2019 and 2022



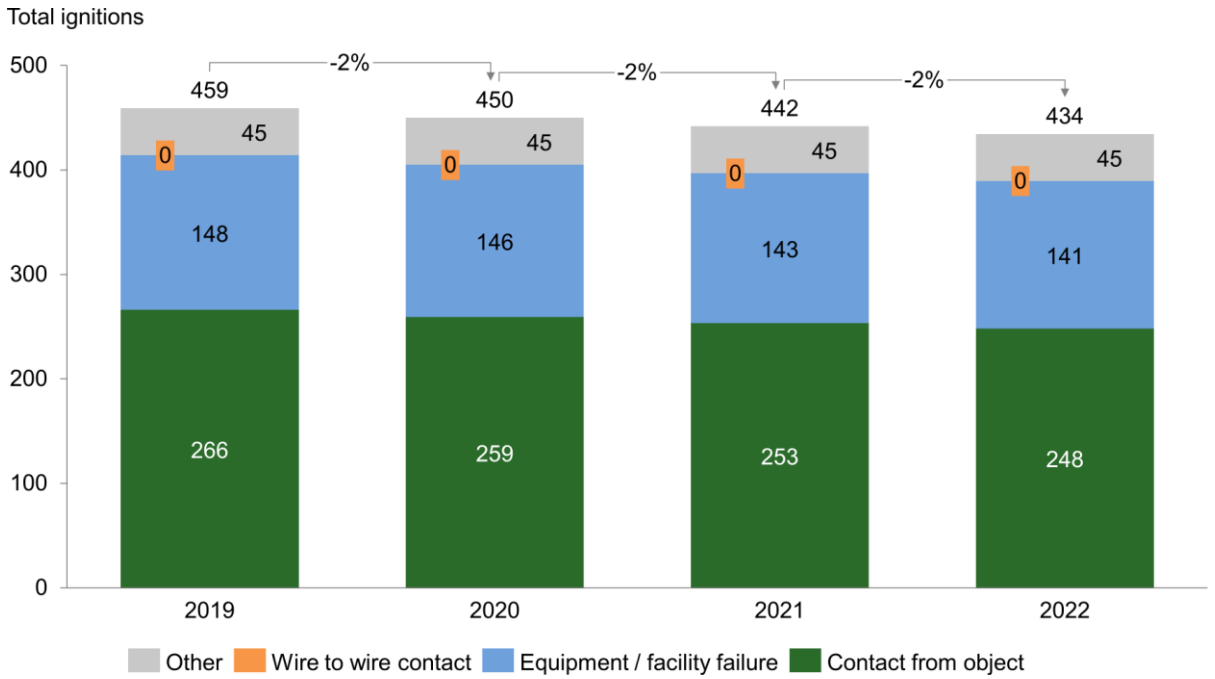
Note: Projections assume WMP implementation acording to plan and weather pattens consistent with 5 year historical average. See the 2020 WMP Guidelines for further detail.

Small utilities populated Table 31 either not at all or with all zeroes. Specifically: Horizon West Transmission left it blank as it did not yet have operational facilities when it submitted its 2020 WMP; Trans Bay Cable and Bear Valley Electric Service reported anticipating no ignitions (having seen no ignitions in the past 5 years); Liberty did not populate Table 31; PacifiCorp reported only a general reducing trend anticipated with no discrete data available.

Source: Tables 11a, 11b, 31a, and 31b from utility WMPs and data requests; SDG&E equipment failure numbers adjusted to address inconsistencies in subtotal calculations provided by SDG&E.

Figure 2.7b: PG&E Detail: Actual and projected ignitions for top ignition drivers, 2019 and 2022

Figure shows reported 2019 ignitions and projected future ignitions by driver category, for transmission and distribution

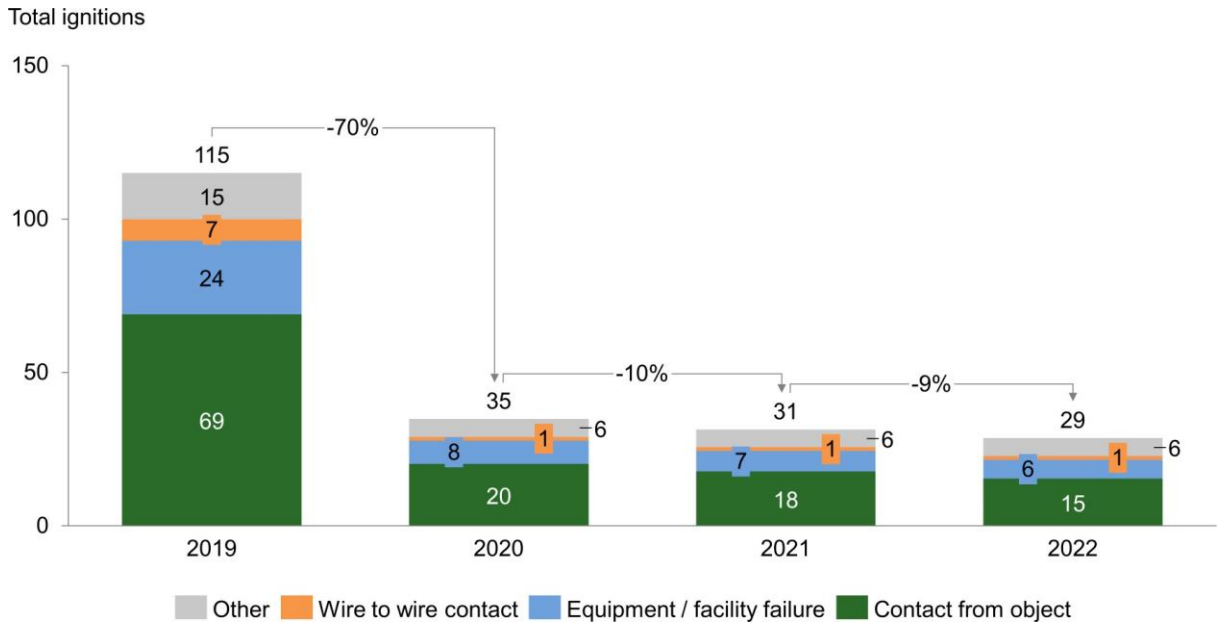


Note: Projections assume WMP implementation according to plan and weather patterns consistent with 5 year historical average. See the 2020 WMP Guidelines for more information on assumptions made.

Source: Tables 11a, 11b, 31a, and 31b from PG&E WMP and data requests

Figure 2.7c: SCE Detail: Actual and projected ignitions for top ignition drivers, 2019 and 2022

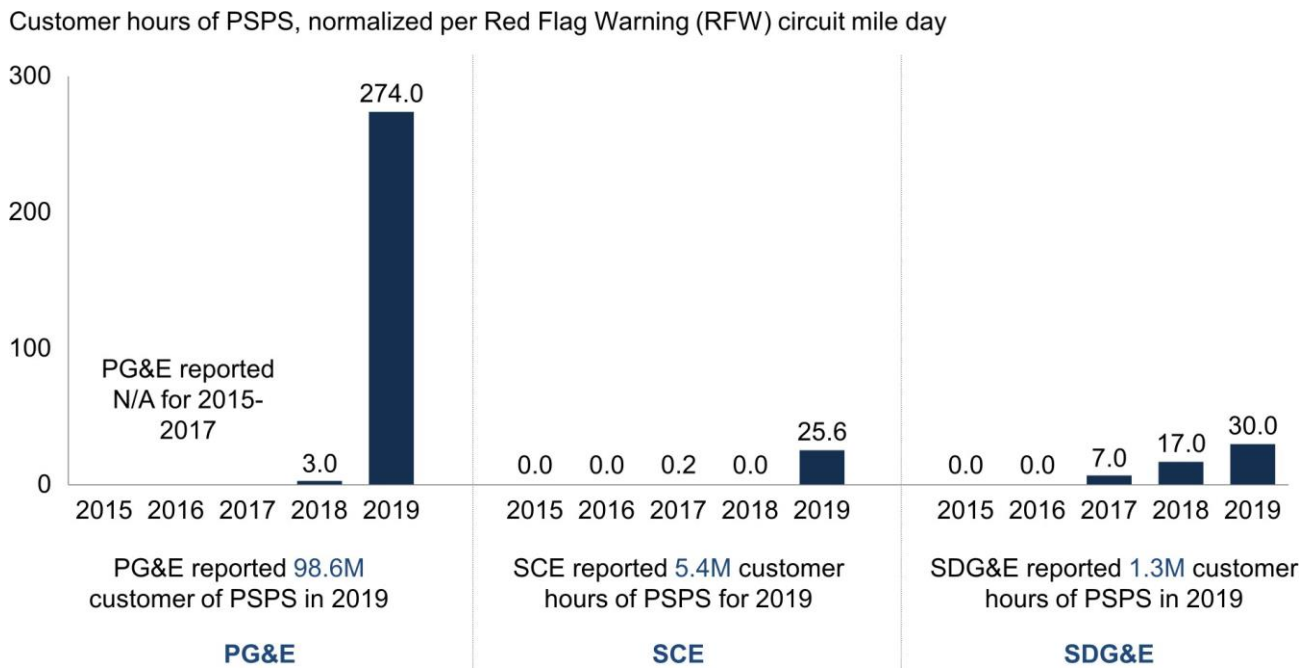
Figure shows reported 2019 ignitions and projected future ignitions by driver category, for transmission and distribution



Source: Tables 11a, 11b, 31a, and 31b from SCE WMP and data requests

Note: Projections assume WMP implementation according to plan and weather patterns consistent with 5 year historical average. See the 2020 WMP Guidelines for more information on assumptions made.

Figure 2.8a: Normalized PSPS duration in customer hours (Large utilities)

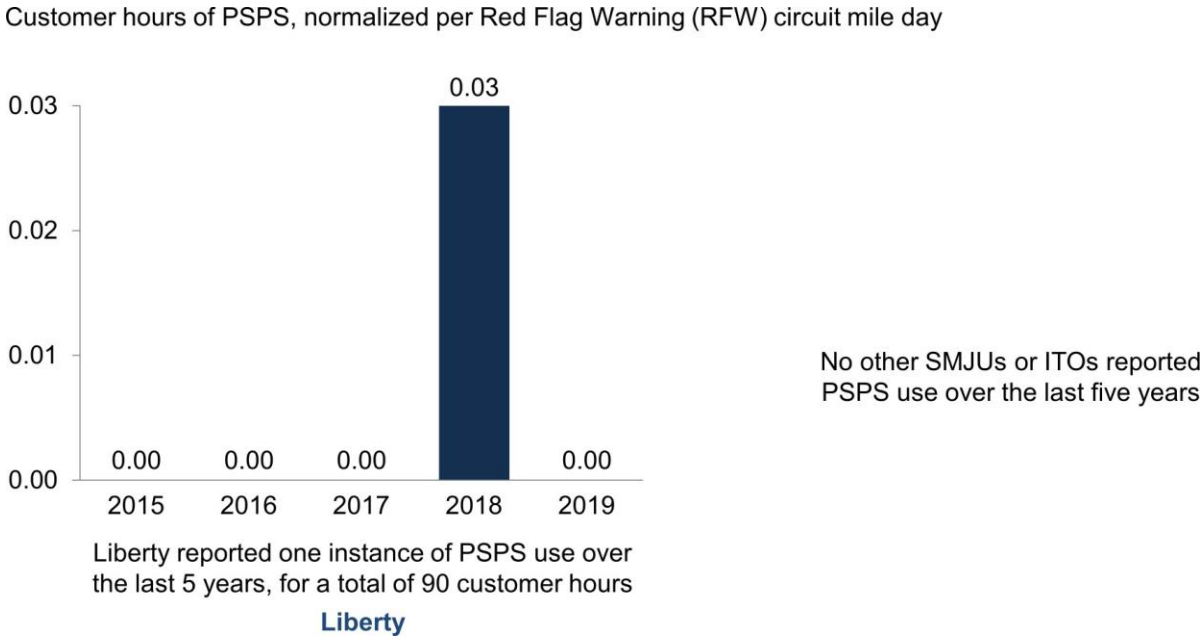


Note: Normalization using RFW circuit mile days helps take into account fire weather conditions based on a commonly used metric; more detail is necessary to address potential inconsistencies in how each utility calculates this figure. A "Red Flag Warning (RFW) Circuit Mile Day" is intended to capture the duration and scope of the fire weather that year and is calculated as the number of circuit miles that were under a RFW multiplied by the number of days those miles were under said RFW (per page 5 of the 2020 WMP Guidelines). For example, if 100 circuit miles were under a RFW for 1 day, and 10 of those miles were under RFW for an additional day, then the total RFW circuit mile days would be 110.

Utilities' ability to implement PSPS (including accurate predictions and customer communication) is captured in the Utility Wildfire Mitigation Maturity Model's "PSPS operating model and consequence mitigation" capability.

Source: Table 12 of utility WMPs.

Figure 2.8b: Normalized PSPS duration in customer hours (Small utilities)

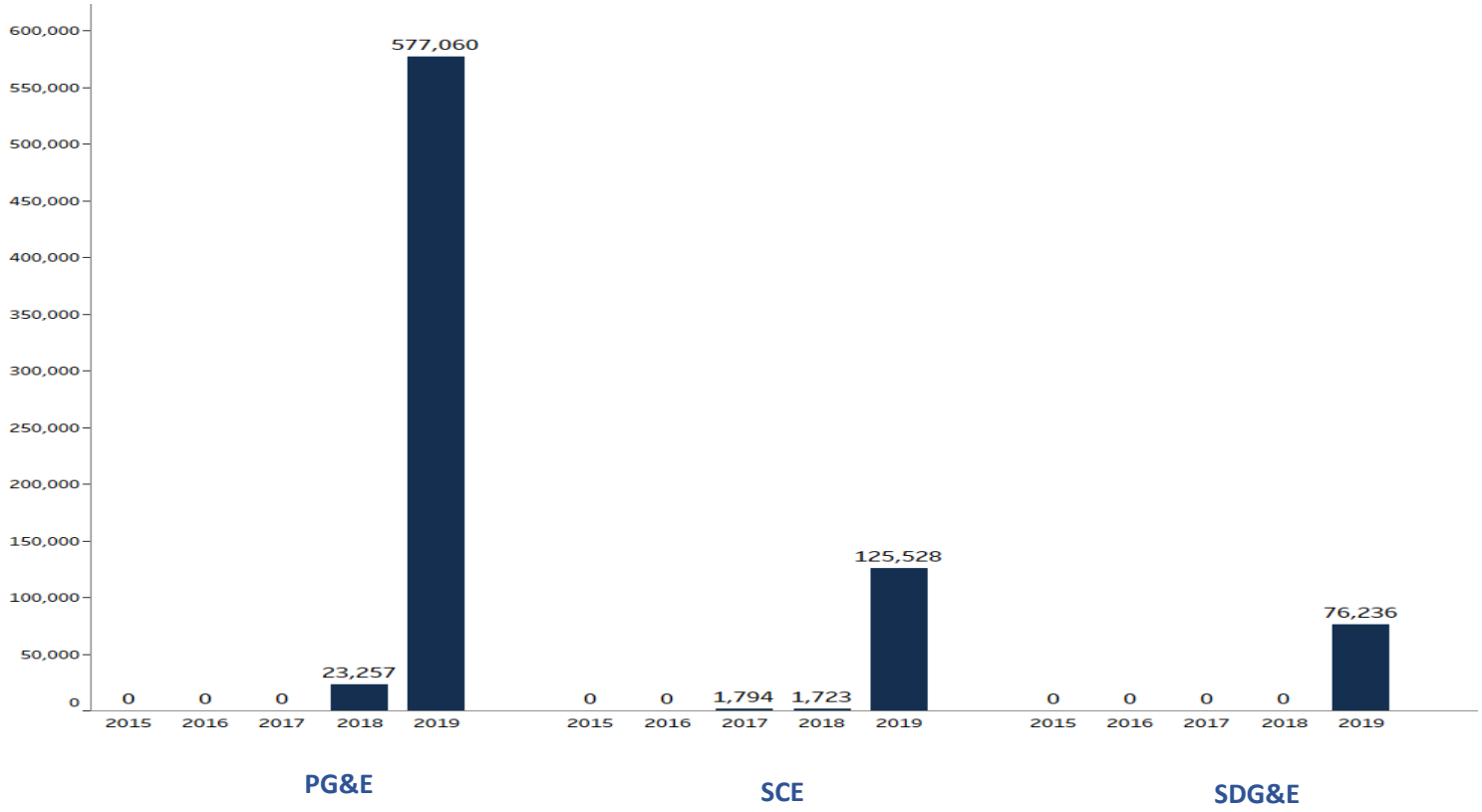


Note: Normalization using RFW circuit mile days helps take into account fire weather conditions based on a commonly used metric; more detail is necessary to address potential inconsistencies in how each utility calculates this figure. A "Red Flag Warning (RFW) Circuit Mile Day" is intended to capture the duration and scope of the fire weather that year and is calculated as the number of circuit miles that were under a RFW multiplied by the number of days those miles were under said RFW (per page 5 of the 2020 WMP Guidelines). For example, if 100 circuit miles were under a RFW for 1 day, and 10 of those miles were under RFW for an additional day, then the total RFW circuit mile days would be 110.

Utilities' ability to implement PSPS (including accurate predictions and customer communication) is captured in the Utility Wildfire Mitigation Maturity Model's "PSPS operating model and consequence mitigation" capability.

Source: Table 12 of utility WMPs.

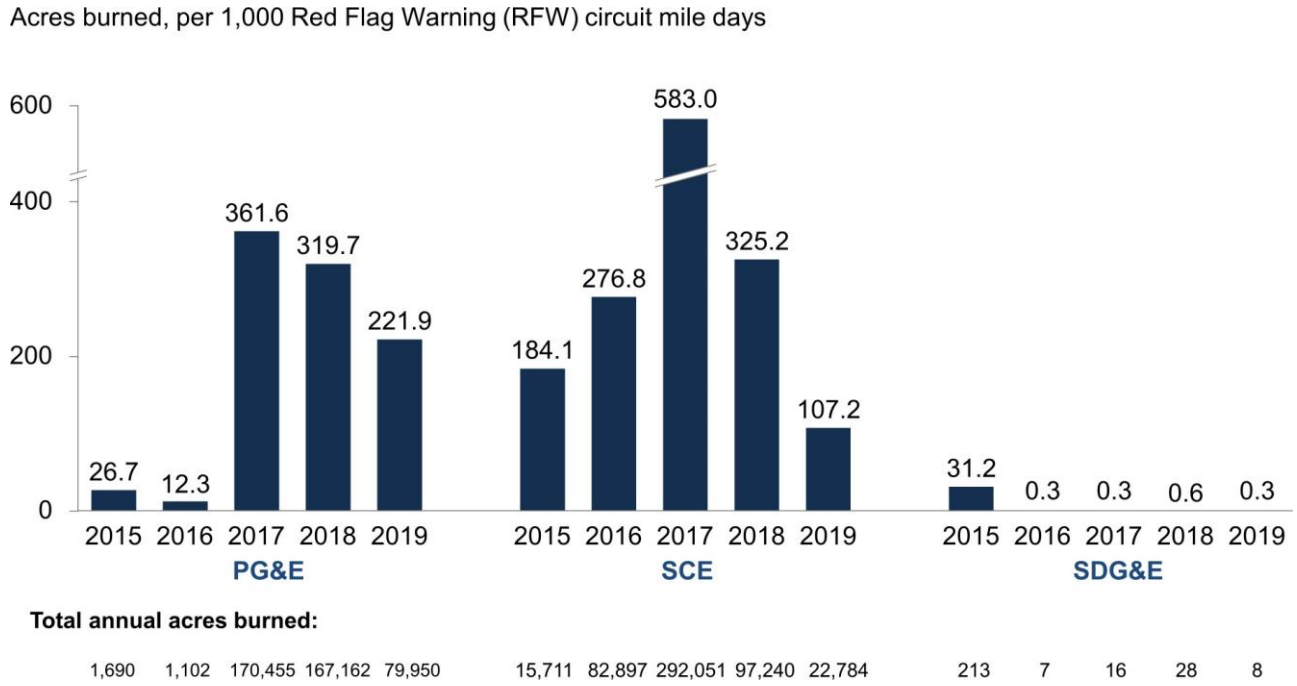
Figure 2.8c: PSPS impacts on critical infrastructure



Note: Count is based on number of critical infrastructure locations impacted per hour multiplied by hours offline per year

Source: Table 2 of utility WMPs

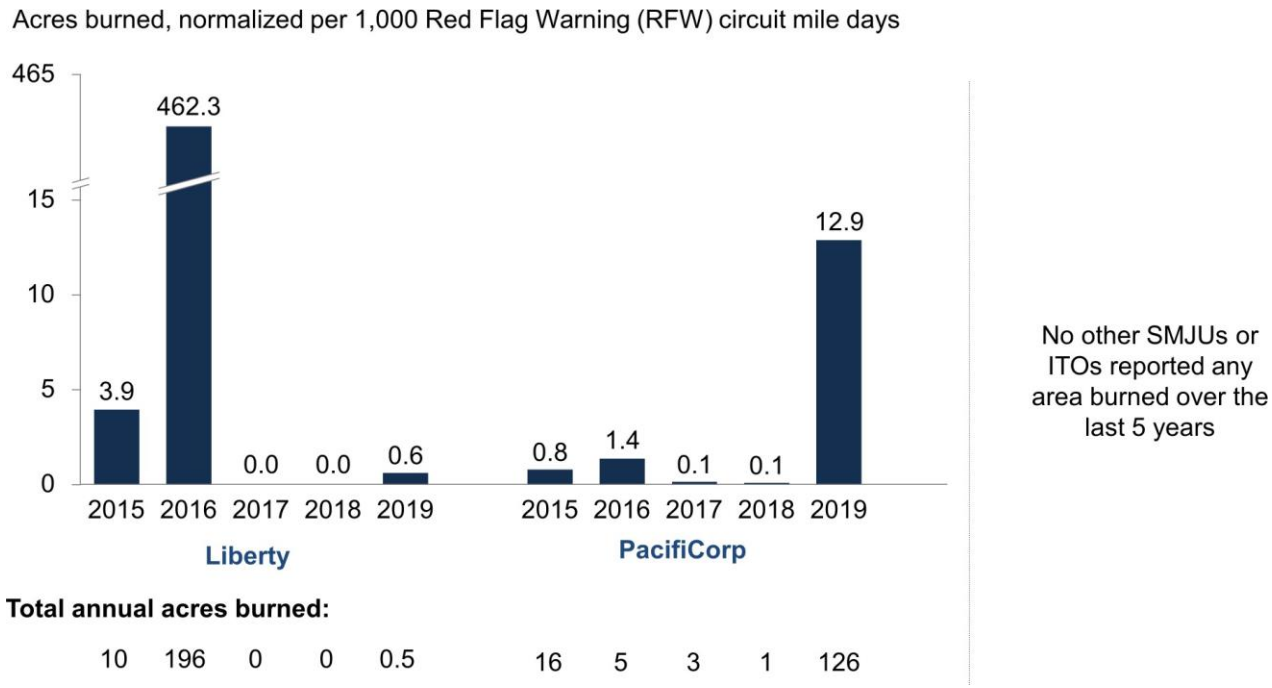
Figure 2.9a: Normalized area burned by utility ignited wildfire (Large utilities)



Note: Normalization using RFW circuit mile days helps take into account fire weather conditions based on a commonly used metric. A "Red Flag Warning (RFW) Circuit Mile Day" is intended to capture the duration and scope of the fire weather that year. It is defined on page 5 of the 2020 WMP Guidelines to be calculated as the number of circuit miles that were under a RFW multiplied by the number of days those miles were under said RFW. For example, if 100 circuit miles were under a RFW for 1 day, and 10 of those miles were under RFW for an additional day, then the total RFW circuit mile days would be 110. To address inconsistencies in how utilities normalized this metric in Table 2 of their WMPs, this table shows number of acres burned as reported in Table 2 normalized by RFW Circuit Mile Days as reported in Table 10.

Source: Table 2 and Table 10 of utility WMPs.

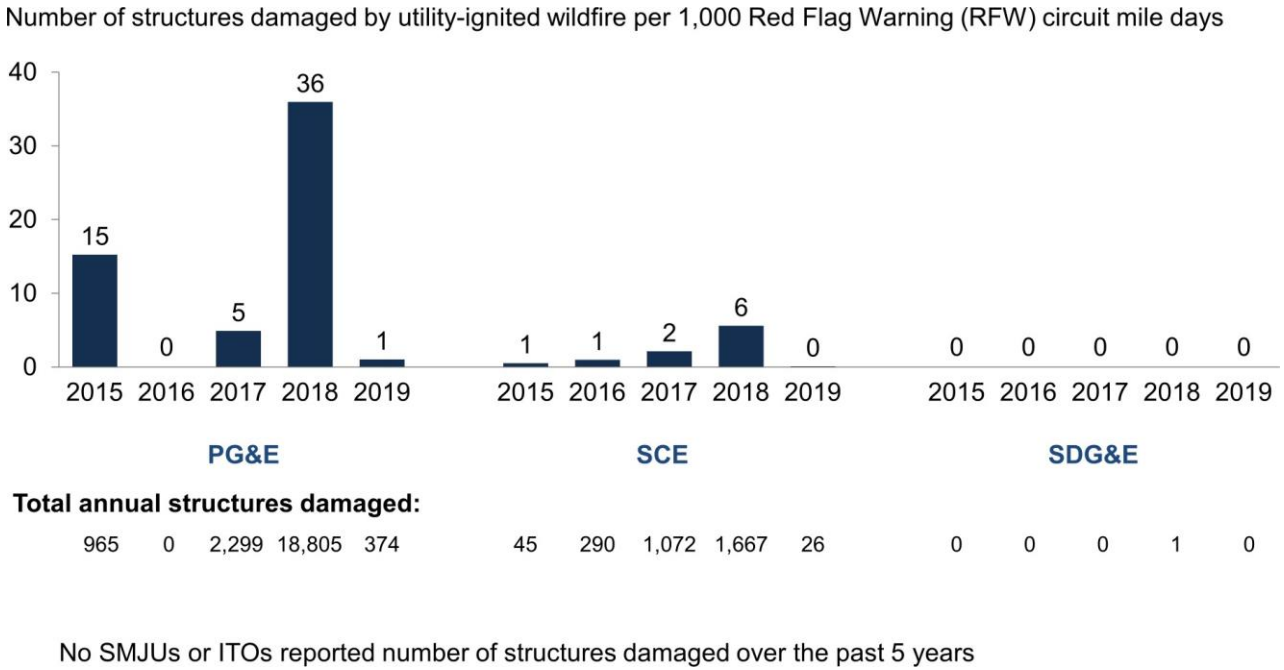
Figure 2.9b: Normalized area burned by utility ignited wildfire (Small utilities)



Note: Normalization using RFW circuit mile days helps take into account fire weather conditions based on a commonly used metric. A "Red Flag Warning (RFW) Circuit Mile Day" is intended to capture the duration and scope of the fire weather that year. It is defined on page 5 of the 2020 WMP Guidelines to be calculated as the number of circuit miles that were under a RFW multiplied by the number of days those miles were under said RFW. For example, if 100 circuit miles were under a RFW for 1 day, and 10 of those miles were under RFW for an additional day, then the total RFW circuit mile days would be 110. To address inconsistencies in how utilities normalized this metric in Table 2 of their WMPs, this table shows number of acres burned as reported in Table 2 normalized by RFW Circuit Mile Days as reported in Table 10.

Source: Table 2 and Table 10 of utility WMPs.

Figure 2.10: Number of structures damaged by utility ignited wildfire



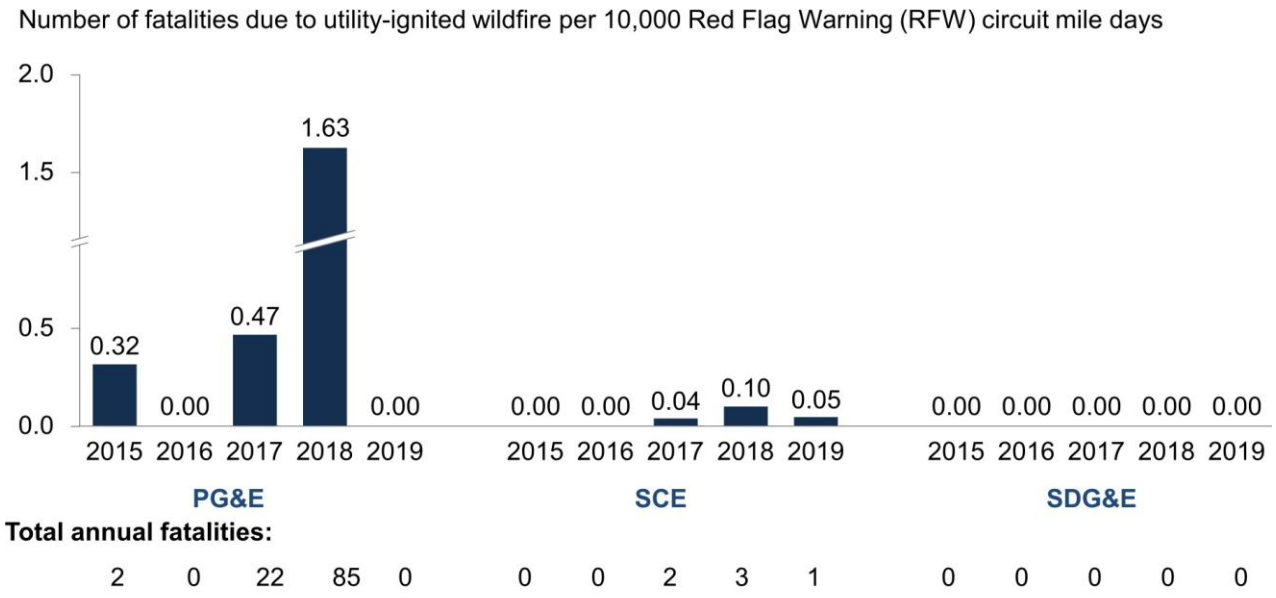
No SMJUs or ITOs reported number of structures damaged over the past 5 years

Note: Normalization using RFW circuit mile days helps take into account fire weather conditions based on a commonly used metric. A "Red Flag Warning (RFW) Circuit Mile Day" is intended to capture the duration and scope of the fire weather that year. It is defined on page 5 of the 2020 WMP Guidelines to be calculated as the number of circuit miles that were under a RFW multiplied by the number of days those miles were under said RFW. For example, if 100 circuit miles were under a RFW for 1 day, and 10 of those miles were under RFW for an additional day, then the total RFW circuit mile days would be 110.

This figure is shown for IOUs only because the smaller utilities did not report structures damaged in a comparable way. PacifiCorp reported the value of assets desroyed, rather than number of structures damaged; Liberty reported no homes destroyed, only 18 utility poles; and no other SMJUs or ITOs reported any structures damaged.

Source: Table 2 of utility WMPs.

Figure 2.11: Fatalities due to utility ignited wildfire



No SMJUs or ITOs reported fatalities due to utility ignited wildfire over the past 5 years

Note: Normalization using RFW circuit mile days helps take into account fire weather conditions based on a commonly used metric. A "Red Flag Warning (RFW) Circuit Mile Day" is intended to capture the duration and scope of the fire weather that year. It is defined on page 5 of the 2020 WMP Guidelines to be calculated as the number of circuit miles that were under a RFW multiplied by the number of days those miles were under said RFW. For example, if 100 circuit miles were under a RFW for 1 day, and 10 of those miles were under RFW for an additional day, then the total RFW circuit mile days would be 110.

Source: Table 2 of utility WMPs.

1.3 Resource Allocation

Figure 3.1a: Overview of total plan spend across utilities (Large utilities)

		PG&E	SCE	SDG&E
Total spend	2019 planned spend	$2,296M	$671M	$255M
	2019 actual spend	$2,999M	$1,557M	$307M
	2020 planned spend	$3,171M	$1,606M	$444M
	2021 planned spend	$3,130M	$1,404M	$445M
	2022 planned spend	$3,247M	$1,501M	$448M
	Total planned spend as for 2020, 2021 and 2022, as reported by utility	**$9,548M**	**$4,511M**	**$1,336M**[1]
Normalized spend	Total planned spend for 2020, 2021 and 2022 per overhead HFTD circuit mile	$307K	$318K	$291K

1. Totals for SDG&E include a calculation error on the part of SDG&E in which the sum of the reported spend for 2020, 2021, and 2022 is not equal to the reported total 2020-2022 planned spend. This error has not been corrected by the WSD in this table.

Note: "M" stands for millions, "K" stands for thousands.

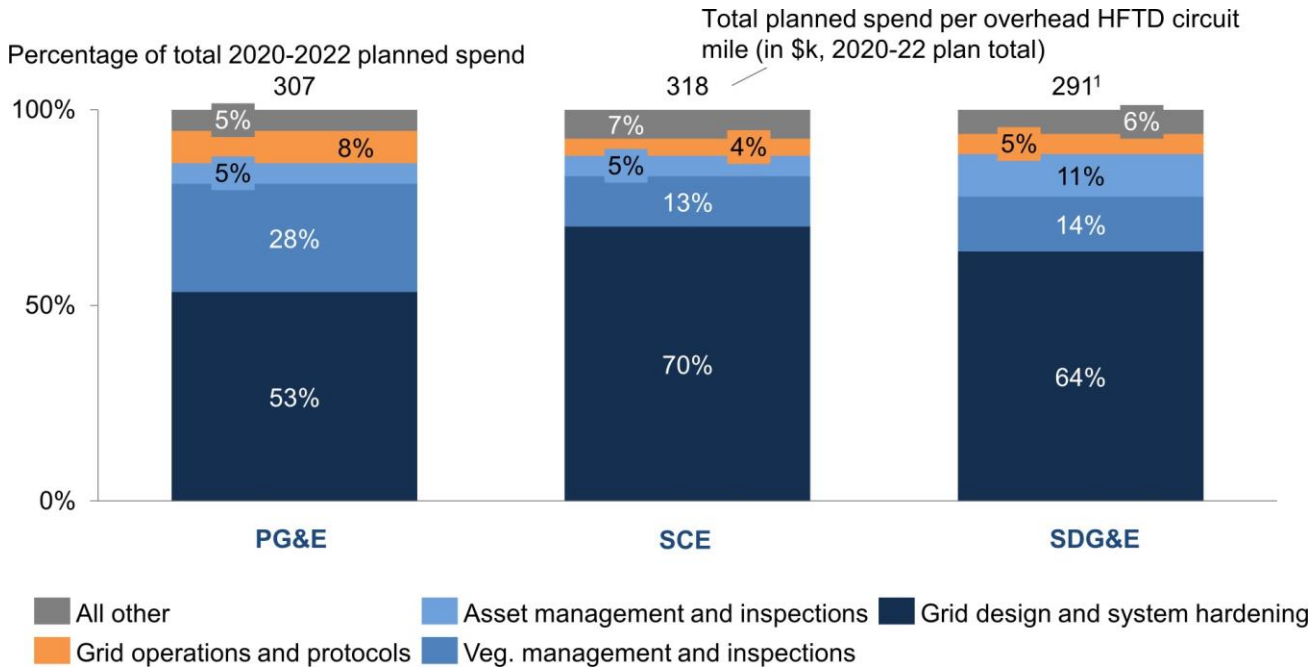
Source: Tables 21-30 from utility WMPs and data requests, normalized by data from Table 13 of utility WMPs

Figure 3.1b: Overview of total plan spend across utilities (Small utilities)

		Liberty	PacifiCorp	Bear Valley(!)[2]	Horizon West	Trans Bay Cable
Total spend	2019 planned spend	$4M	$1M	$12M	$0M	$0M
	2019 actual spend	$7M	$13M	$12M	$0M	$0M
	2020 planned spend	$30M	$26M	$84M	$4M	$0M
	2021 planned spend	$32M	$38M	$79M	$4M	$0M
	2022 planned spend	$27M	$37M	$79M	$0M	$0M
	Total planned spend as for 2020, 2021 and 2022, as reported by utility	**$88K[1]**	**$101M[1]**	**$247M[1]**	**$8M**	**$0M**
Normalized spend	Total planned spend for 2020, 2021 and 2022 per overhead HFTD circuit mile	$63K	$86K	$1,168K	NA – no operational facilities as of WMP submission	$0K

1. Totals for Liberty, PacifiCorp, and Bear Valley include calculation errors on the part of utilities in which the reported sum of the spend for 2020, 2021, and 2022 is not equal to the total reported 2020-2022 planned spend. This error has not been corrected by theWSD in this table.
2. BVES submitted errata on 5/20/2020 that changed their WMP. Those updates are not reflected here (WSD analysis forthcoming).
Note: "M" stands for millions, "K" stands for thousands.
Source: Tables 21-30 from utility WMPs and data requests, normalized by data from Table 13 of utility WMPs

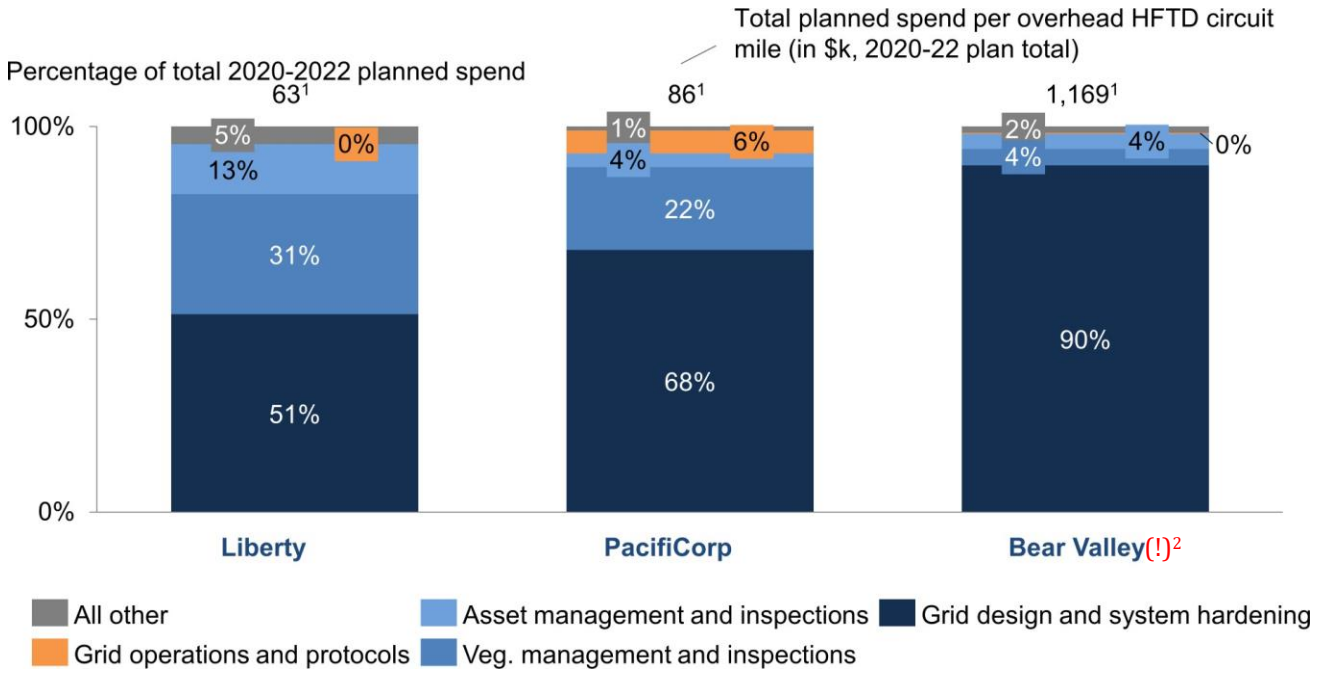
Figure 3.2a: Overview of total plan spend across utilities (Large utilities)



1. Totals for SDG&E include a calculation error on the part of SDG&E which has not been corrected by the WSD in this chart. Specifically, the sum of the reported spend for 2020, 2021, and 2022 is not equal to the reported total 2020-2022 spend as reported by SDG&E.

Source: Tables 21-30 from utility WMPs and data requests, normalized by data from Table 13 of utility WMPs

Figure 3.2b: Overview of total plan spend across utilities (Small utilities)



1. Totals for Liberty, PacifiCorp and Bear Valley include calculation errors on the part of those utilities which have not been corrected by the WSD in this chart. Specifically, the sum of the spend for 2020, 2021, and 2022 is not equal to the total 2020-2022 spend as reported by those utilities.

2. BVES submitted errata on 5/20/2020 that changed their WMP. Those updates are not reflected here (WSD analysis forthcoming).

Note: Spending for ITOs not shown here. Trans Bay Cable reports no planned spend. Horizon West Transmission (HWT) does not yet have operational facilities but reports up to $8M in planned spending, shown in HWT detailed appendix.

Source: Tables 21-30 from utility WMPs and data requests, normalized by data from Table 13 of utility WMPs

Figure 3.3a: Breakdown of planned spend by category (Large utilities)

Total plan spend is shown for 2020-2022 plan period as calculated by utility

	PG&E		SCE		SDG&E	
Category	**Total plan spend, $M**	**% of total**	**Total plan spend, $M**	**% of total**	**Total plan spend, $M**	**% of total**
Grid design / system hardening	5,102	53%	3,162	70%	853	64%
Vegetation mgt. and inspections	2,645	28%	583	13%	187	14%
Asset mgt. and inspections	499	5%	232	5%	146	11%
Grid operations and protocols	788	8%	198	4%	68[1]	5%
Data governance	177	2%	39	1%	1	0%
Situational awareness and forecasting	140	2%	90	2%	24	2%
Emergency planning and preparedness	114	1%	72	2%	18	1%
Stakeholder cooperation & community engagement	84	1%	0	0%	0	0%
Resource allocation methodology	0	0%	133	3%	26	2%
Risk assessment and mapping	0	0%	0	0%	14	1%
Total plan, 2020-2022	**9,548**	**100%**	**4,511**	**100%**	**1,336**	**100%**

1. SDG&E has reported an incorrect total (reported 2020-2022 total plan spend is not equal to the sum of planned 2020, 2021, and 2022 spend). This error has not been corrected by the WSD in this table.

Source: Tables 21-30 of utility WMPs

Figure 3.3b: Breakdown of planned spend by category (Small utilities)

Total plan spend is shown for 2020-2022 plan period as calculated by utility

	Liberty		PacifiCorp		Bear Valley(!)[2]	
Category	**Total plan spend, $M**	**% of total**	**Total plan spend, $M**	**% of total**	**Total plan spend, $M**	**% of total**
Grid design / system hardening	45	51%	68	68%	222[1]	90%
Vegetation mgt. and inspections	28	31%	22	22%	10	4%
Asset mgt. and inspections	11[1]	13%	4[1]	4%	10	4%
Grid operations and protocols	0	0%	6	6%	1	0%
Data governance	1	2%		0%	0	0%
Situational awareness and forecasting	2	2%	1	1%	4	2%
Emergency planning and preparedness	1	1%	0	0%	0	0%
Stakeholder cooperation & community engagement	0	0%	0	0%	0	0%
Resource allocation methodology	0	0%	0	0%	0	0%
Risk assessment and mapping	0	0%	0	0%	0	0%
Total plan, 2020-2022	**88**	**100%**	**101**	**100%**	**247**	**100%**

1. Totals for Liberty, PacifiCorp, and BVES include calculation errors on the part of utilities where reported 2020-2022 plan total spend is different from the sum of reported spend for 2020, 2021 and 2022. These errors have not been corrected by the WSD in this table.
2. BVES submitted errata on 5/20/2020 that changed their WMP. Those updates are not reflected here (WSD analysis forthcoming).

Source: Tables 21-30 of utility WMPs

Figure 3.4a: PG&E resource allocation detail for top 5 initiatives by planned spend

Total plan spend is shown for 2020-2022 plan period as calculated by utility

	Initiative	Category	Planned spend, $M						Initiative spend as percent of total planned spend
			2019 plan	2019 actual	2020 plan	2021 plan	2022 plan	2020-2022 plan total	
1	17-1. Updates to grid topology to minimize risk of ignition in HFTDs - System Hardening, Distribution	Grid design and system hardening	229	287	367	566	698	1,631	17%
2	15. Remediation of at-risk species - Enhanced Vegetation Management	Vegetation management and inspections	295	424	449	463	477	1,388	15%
3	15. Transmission tower maintenance and replacement	Grid design and system hardening	444	750	297	305	312	914	10%
4	6. Distribution pole replacement and reinforcement, including with composite poles	Grid design and system hardening	255	109	212	218	223	654	7%
5	12-4. Other corrective action - Distribution	Grid design and system hardening	322	167	200	205	210	614	6%
Total spend for top 5 initiatives by planned spend			**1,545**	**1,738**	**1,525**	**1,756**	**1,920**	**5,201**	**54%**

Source: Tables 21-30 of utility WMP

Figure 3.4b: PG&E resource allocation detail for top 4 categories by planned spend

Total plan spend is shown for 2020-2022 plan period as calculated by utility

Category	Total Category Planned Spend	Category spend as percent of total planned spend	Top 3 initiatives by planned spend in category Initiative names as reported in WMP	Initiative spend as percent of total planned spend
Grid design and system hardening	$5.1B	53%	17-1. System Hardening, Distribution	17%
			15. Transmission tower maintenance and replacement	10%
			6. Distribution pole replacement and reinforcement, including with composite poles	7%
Vegetation management and inspections	$2.6B	28%	15. Remediation of at-risk species-Enhanced Veg Mgt.	15%
			2. Detailed inspections of vegetation-Distribution	6%
			9. Other discretionary inspection of veg. around distribution lines and equipment, beyond those required by regulations	3%
Asset management of inspections	$499M	5%	1. Detailed inspections of distribution electric lines/equip.	3%
			2. Detailed inspections of transmission electric lines/equip.	2%
			15-1 Substation inspections - Transmission Substation	0%
Grid operations and protocols	$788M	8%	5-1. PSPS events and mitigation of PSPS impacts-Distribution	4%
			5-3. PSPS events and mitigation of PSPS impacts - Additional PSPS Mitigation Initiatives, Distribution	2%
			2. Crew-accompanying ignition prevention and suppression resources and services	1%

Note: "M" stands for millions, "B" stands for billions.

Source: Tables 21-30 of utility WMP

Figure 3.5a: SCE resource allocation detail for top 5 initiatives by planned spend

Total plan spend is shown for 2020-2022 plan period as calculated by utility

	Initiative	Category	Planned spend, $M						Initiative spend as percent of total planned spend
			2019 plan	2019 actual	2020 plan	2021 plan	2022 plan	2020-2022 plan total	
1	3.1. Covered conductor installation: covered conductor (SH-1)	Grid design and system hardening	42	240	454	656	772	1,883	42%
2	12.1. Other corrective action: distribution remediation (SH-12.1)	Grid design and system hardening	192	395	328	125	85	538	12%
3	20. Vegetation management to achieve clearances around electric lines and equipment	Vegetation management and inspections	76	247	76	64	61	201	4%
4	6.1. Distribution pole replacement and reinforcement, including with composite poles: composite poles and crossarms (SH-3)	Grid design and system hardening	5	Reported as "NA" - part of 3.1	57	64	74	194	4%
5	16.1. Removal and remediation of trees with strike potential to electric lines and equipment: hazard tree (VM-1)	Vegetation management and inspections	57	15	54	59	72	186	4%
Total spend for top 5 initiatives by planned spend			**372**	**897**	**969**	**969**	**1063**	**3002**	**67%**

Source: Tables 21-30 of utility WMP

Figure 3.5b: SCE resource allocation detail for top 4 categories by planned spend

Total plan spend is shown for 2020-2022 plan period as calculated by utility

Category	Total Category Planned Spend	Category spend as percent of total planned spend	Top 3 initiatives by planned spend Initiative names in some cases abbreviated to fit in this table	Initiative spend as percent of total plan spend
Grid design and system hardening	$3.1B	70%	3.1. Covered conductor installation: covered conductor	42%
			12.1. Other corrective action: Distribution remediation	12%
			6.1. Distribution pole replacement and reinforcement, including with composite poles: Composite poles and crossarms	4%
Vegetation management and inspections	$583M	13%	20. Vegetation management to achieve clearances around electric lines and equipment	4%
			16.1. Removal and remediation of trees with strike potential to electric lines and equipment: Hazard tree	4%
			16.2. Removal and remediation of trees with strike potential to electric lines and equipment: DRI quarterly inspections and tree removals	2%
Asset management of inspections	$232M	5%	9.2. Distribution aerial inspections	2%
			15. Substation inspections	1%
			10.2. Transmission aerial inspections	1%
Grid operations and protocols	$198M	4%	5.8. PSPS events and mitigation of PSPS impacts: SGIP resiliency	3%
			5. PSPS events and mitigation of PSPS impacts	0%
			5.3. PSPS events and mitigation of PSPS impacts: income qualified critical care (IQCC) customer battery backup incentive program	0%

Source: Tables 21-30 of utility WMP

Figure 3.6a: SDG&E resource allocation detail for top 5 initiatives by planned spend

Total plan spend is shown for 2020-2022 plan period as calculated by utility

	Initiative	Category	Planned spend, $M						Initiative spend as percent of total plan spend
			2019 plan	2019 actual	2020 plan	2021 plan	2022 plan	2020-2022 plan total	
1	Undergrounding of Electric Lines and/or Equipment	Grid design and system hardening	2	5	31	157	188	376	28%
2	Distribution Overhead Fire Hardening (OH)	Grid design and system hardening	75	121	87	12	7	106	8%
3	LTE Communication Network	Grid design and system hardening	11	7	32	32	42	105	8%
4	Tree Trimming	Vegetation management and inspections	Not provided[1]	34	28	28	28	83	6%
5	Drone Inspections (O&M) – Engr and construction	Asset management and inspections	Listed "NA"	Listed "NA"	27	24	20	71	5%
Total spend for top 5 initiatives by planned spend			**88**	**166**	**204**	**253**	**284**	**741**	**55%**

1. Incorporated into 2019 base costs.

Source: Tables 21-30 of utility WMP

Figure 3.6b: SDG&E resource allocation detail for top 4 categories by planned spend

Total plan spend is shown for 2020-2022 plan period as calculated by utility

Category	Total Category Planned Spend	Category spend as percent of total planned spend	Top 3 initiatives by planned spend Initiative names as reported in WMP	Initiative spend as percent of total planned spend
Grid design and system hardening	$853M	64%	Undergrounding of Electric Lines and/or Equipment	28%
			Distribution Overhead Fire Hardening (OH)	8%
			LTE Communication Network	8%
Vegetation management and inspections	$187M	14%	Tree Trimming	6%
			Enhanced Inspections Patrols and Trimming	5%
			Pole Brushing	1%
Asset management of inspections	$146M	11%	Drone Inspections (O&M) *Engineering & Construction	5%
			Drone Inspections (O&M) *Flights & Assessments	4%
			Drone Inspections (capital)	1%
Grid operations and protocols	$68M	5%	Aviation Firefighting Program (O&M)	2%
			Aviation Firefighting Program (Capital)	2%
			Communication Practices (O&M)[1]	1%

1. Totals for SDG&E include a calculation error on the part of SDG&E in which the sum of the reported spend for 2020, 2021, and 2022 is not equal to the reported total 2020-2022 planned spend. This error has not been corrected by the WSD in this table.

Note: "M" stands for millions

Source: Tables 21-30 of utility WMP

Figure 3.7: Liberty resource allocation detail for top 5 initiatives by planned spend

Total plan spend is shown for 2020-2022 plan period as calculated by utility

	Initiative	Category	Planned spend, $M						Initiative spend as percent of total plan spend
			2019 plan	2019 actual	2020 plan	2021 plan	2022 plan	2020-2022 plan total	
1	Covered Conductor Installation	Grid design and system hardening	1	1	3	8	10	21	24%
2	Remediation of at-risk-species	Vegetation management and inspections	0	5	5	5	5	14	16%
3	13. Pole loading infrastructure hardening and replacement program based on pole loading assessment program	Grid design and system hardening	1	1	2	3	4	8	9%
4	Undergrounding electric lines and/or equipment	Grid design and system hardening	0	0	2	6	0	8	9%
5	Fuel management and reduction of "slash" from vegetation management activities	Vegetation management and inspections	0	0	2	3	3	7	8%
Total spend for top 5 initiatives by planned spend			**2**	**6**	**13**	**24**	**21**	**58**	**66%**

Note: "M" stands for millions.

Source: Tables 21-30 of utility WMP

Figure 3.8: PacifiCorp resource allocation detail for top 5 initiatives by planned spend

Total plan spend is shown for 2020-2022 plan period as calculated by utility

	Initiative	Category	Planned spend, $M						Initiative spend as percent of total plan spend
			2019 plan	2019 actual	2020 plan	2021 plan	2022 plan	2020-2022 plan total	
1	3b. Covered conductor installation - distribution	Grid design and system hardening	0	0	8	11	12	31	31%
2	6b. Transmission pole replacement and reinforcement, including with composite poles	Grid design and system hardening	0	0	4	4	4	12	12%
3	3. Covered conductor installation - transmission	Grid design and system hardening	0	0	0	6	6	12	12%
4	20. Vegetation management to achieve clearances around electric lines and equipment	Vegetation management and inspections	0	4	3	3	3	10	10%
5	6. Distribution pole replacement and reinforcement, including with composite poles	Grid design and system hardening	0	0	0	3	3	5	5%
Total spend for top 5 initiatives by planned spend			**0**	**4**	**15**	**27**	**28**	**70**	**70%**

Note: "M" stands for millions.

Source: Tables 21-30 of utility WMP

Figure 3.9: Bear Valley resource allocation detail for top 5 initiatives by planned spend(!)[1]

Total plan spend is shown for 2020-2022 plan period as calculated by utility

	Initiative	Category	Planned spend, $M						Initiative spend as percent of total plan spend
			2019 plan	2019 actual	2020 plan	2021 plan	2022 plan	2020-2022 plan total	
1	16. Undergrounding of electric lines and/or equipment (35 kV system)	Grid design and system hardening	0	0	39	39	39	118	27%
2	16. Undergrounding of electric lines and/or equipment (4 kV system)	Grid design and system hardening	0	0	13	13	13	40	9%
3	18. Other / not listed (Covering overhead conductor)	Grid design and system hardening	0	0	4	4	4	11	2%
4	2. Detailed inspections of vegetation around distribution electric lines and equipment	Vegetation management and inspections	3	3	3	3	3	10	2%
5	20. Other / not listed (energy storage facility)	Grid design and system hardening	0	0	0	5	5	9	2%
Total spend for top 5 initiatives by planned spend			**3**	**3**	**59**	**64**	**64**	**187**	**43%**

1. BVES submitted errata on 5/20/2020 that changed their WMP. Those updates are not reflected here (WSD analysis forthcoming).

Note: "M" stands for millions.

Source: Tables 21-30 of utility WMP

Figure 3.10: Horizon West Transmission allocation detail for all planned initiatives

Total plan spend is shown for 2020-2022 plan period as calculated by utility. Horizon West reported only four initiatives with allocated spend

	Upper range[1] of planned spend, $M						
Initiative	2019 plan	2019 actual	2020 plan	2021 plan	2022 plan	2020-2022 plan total	**Initiative spend as percent of total plan spend**
SVC Site Hardening	0.00	0.00	2.20	4.30	0.00	6.50	77%
Underground of 115 feet of overhead line	0.00	0.00	1.70	0.00	0.00	1.70	20%
Advanced weather monitoring, weather stations and OH line/pole cameras	0.00	0.00	0.15	0.00	0.00	0.15	2%
Inspections (Training, facility, vegetation, and fuel modification)	0.00	0.00	0.04	0.04	0.04	0.11	1%
Total 2020-2022 planned spend	**0.00**	**0.00**	**4.09**	**4.34**	**0.04**	**8.46**	**100%**

1. For some initiatives, Horizon West reported a range of possible future spend. The higher number in that reported range is displayed in this table.

Note: "M" stands for millions.

Source: Tables 21-30 of utility WMP

(End of Appendix B)

APPENDIX C-HWT

Horizon West Transmission Maturity Model Summary

0. HWT: Description of data sources

Data related to the Maturity Model is based on the latest submitted versions of 2020 Utility Wildfire Mitigation Maturity Survey ("Survey") as of April 10th, 2020. Data for the Maturity Model is pulled from Survey responses unless stated otherwise.

All source data (the WMP and the Survey responses) are available at cpuc.ca.gov/wildfiremitigationplans

All the analysis and corresponding tables presented in this appendix rely upon data that is self-reported by the utilities. By utilizing and presenting this self-reported data in this appendix, the WSD is not independently validating that all data elements submitted by utilities are accurate. The WSD will continue to evaluate utility data, conduct data requests, and conduct additional compliance activities to ensure that data provided is accurate.

1. HWT: Maturity Model Summary

Contents

1.1 HWT: Maturity Summary by Category

Maturity Model Category	Summary of Maturity Assessment Focused on areas where utility plans to grow over the 2020-2022 WMP period
A. Risk assessment and mapping Median automated maturity levels: 2020: 0 2023: 2	• HWT plans to increase its maturity level by 2023 in three of five capabilities. Specifically, by capability: • **1. Climate Scenario Modeling**: HWT's survey responses indicate an increased maturity level in 2023. Currently, HWT can reliably categorize wildfire risk by level of risk using a non-automated tool. By 2023, HWT plans to be able to reliably estimate risk for various weather scenarios using a partially automated tool. • **2. Ignition Risk Estimation:** HWT's survey responses indicate an increased maturity level in 2023. Currently, HWT estimates ignition risk using a partially automated tool, and estimates are confirmed by experts. By 2023, HWT plans to estimate risk using a mostly automated tool, and to confirm estimates with historical data as well as experts. • **3. Estimation of Wildfire Consequences for Communities:** HWT's survey responses do not indicate an increased maturity level in 2023. However, HWT projects some growth within the capability: currently, the ignition risk estimation process is not automated, but by 2023 HWT plans to use a partially automated tool in this process. • **4. Estimation of wildfire and PSPS risk-reduction impact:** HWT's survey responses do not indicate an increased maturity level in 2023. However, HWT projects some growth within the capability: currently, ignition risk reduction estimates are assessed by independent experts, but by 2023 HWT plans to use historical data and near misses to support estimates as well. • **5. Risk maps and simulation algorithms**: HWT's survey responses indicate an increased maturity level in 2023. Currently, decisions to update risk mapping algorithms are evaluated independently by experts. By 2023, HWT plans to also use historical data to evaluate these decisions.
B. Situational awareness and forecasting Median automated maturity levels: 2020: 1 2023: 2	• HWT plans to increase its maturity level by 2023 in four of five capabilities. Specifically, by capability: • **6. Weather variables collected:** HWT's survey responses indicate an increased maturity level in 2023. Currently, measurement of weather variables is not validated. By 2023 HWT plans to validate measurements through automatic field calibration. • **7. Weather data resolution:** HWT's survey responses indicate an increased maturity level in 2023. Currently, weather data resolution is region based. By 2023, HWT plans to have asset-based data resolution.

Maturity Model Category	Summary of Maturity Assessment Focused on areas where utility plans to grow over the 2020-2022 WMP period
	• **8. Weather forecasting ability:** HWT's survey responses indicate an increased maturity level in 2023. Currently, HWT forecasts weather with regional granularity. By 2023, HWT plans to forecast weather with asset-level granularity. • **9. External sources used in weather forecasting:** HWT's survey responses indicate an increased maturity level in 2023. Currently, weather station data is not checked for errors. By 2023, HWT plans to use a mostly automated process to error check weather stations with external data sources. • **10. Wildfire detection processes and capabilities:** HWT's survey responses do not indicate an increased maturity level in 2023. However, HWT projects some growth within the capability: currently, HWT notifies suppression forces and key stakeholders of ignitions, and by 2023 HWT plans to have an automatic process to engage these groups.
C. Grid design and system hardening Median automated maturity levels: 2020: 1 2023: 2	• HWT plans to increase its maturity level by 2023 in one of five capabilities. Specifically, by capability: • **11. Approach to prioritizing initiatives across territory:** HWT's survey responses project no growth in this capability. HWT prioritizes risk reduction initiatives based on local geography and conditions within HFTD areas. • **12. Grid design for minimizing ignition risk:** HWT's survey responses indicate an increased maturity level in 2023. Currently, HWT's grid design meets minimum G095 requirements and loading standards in HFTD areas. By 2023, HWT's grid topology is planned to exceed design requirements, and to be designed based on an accurate understanding of utility ignition risk. • **13. Grid design for resiliency and minimizing PSPS:** HWT's survey responses project no growth in this capability. HWT's grid design has many single points of failure. • **14. Risk based hardening and cost efficiency:** HWT's survey responses do not indicate an increased maturity level in 2023. However, HWT projects some growth within the capability: currently, only some grid hardening initiatives are included within HWT's evaluation, but by 2023 HWT plans to include most grid hardening initiatives in its evaluation. • **15. Grid design and asset innovation:** HWT's survey responses project no growth in this capability. New grid hardening initiatives are evaluated based on installation into the grid and the measurement of direct reduction in ignition events.
D. Asset management and inspections	• HWT plans to increase its maturity level by 2023 in one of five capabilities. Specifically, by capability: • **16. Asset inventory and condition assessments:** HWT's survey responses indicate an increased maturity level in 2023. Currently, HWT has an accurate inventory of equipment that may contribute to wildfire risk. By 2023, HWT plans to include records of all inspections and repairs in this inventory.

Maturity Model Category	Summary of Maturity Assessment Focused on areas where utility plans to grow over the 2020-2022 WMP period
Median automated maturity levels: 2020: 2 2023: 2	• **17. Asset inspection cycle:** HWT's survey responses do not indicate an increased maturity level in 2023. However, HWT projects some growth within the capability: currently, scheduling of inspections is based on static maps of equipment types and environment, but by 2023 HWT plans to schedule inspections based on risk, as determined by predictive modeling. • **18. Asset inspection effectiveness:** HWT's survey responses project no growth in this capability. HWT's inspection procedures and checklists include all items required by statute and regulations and include lines and equipment typically responsible for ignitions and near misses. • **19. Asset maintenance and repair:** HWT's survey responses project no growth in this capability. HWT maintains equipment as required by regulation and does additional maintenance in areas of grid with the highest wildfire risk. • **20. QA/QC for asset management:** HWT's survey responses project no growth in this capability. HWT audits contractor activity, leveraging semi-automated technology capable of sampling the contractor's work to manage and confirm work completed.
E. Vegetation management and inspections Median automated maturity levels: 2020: 1.5 2023: 2.5	• HWT plans to increase its maturity level by 2023 in one of six capabilities. Specifically, by capability: • **21. Vegetation inventory and condition assessments:** HWT's survey responses indicate an increased maturity level in 2023. Currently, HWT has a centralized inventory of vegetation clearances that includes predominant vegetation species and high-risk trees. By 2023, HWT plans to include growth rates of vegetation species in this inventory. • **22. Vegetation inspection cycle**: HWT's survey responses do not indicate an increased maturity level in 2023. However, HWT projects some growth within the capability: currently, annually updated maps of vegetation and the environment are used to determine inspection scheduling, but by 2023, HWT also plans to use annual growing conditions in its scheduling. • **23. Vegetation inspection effectiveness**: HWT's survey responses project no growth in this capability. HWT's inspection procedures and checklists include all items required by statute and regulations and vegetation types typically responsible for ignitions. • **24. Vegetation grow-in mitigation**: HWT's survey responses project no growth in this capability. HWT meets all statutory and regulatory clearances around all lines and equipment. • **25. Vegetation fall-in mitigation**: HWT's survey responses project no growth in this capability. HWT does not remove vegetation outside its right of way. • **26. QA/QC for vegetation management**: HWT's survey responses project no growth in this capability. HWT audits contractor activity, leveraging semi-automated technology capable of sampling the contractor's work to manage and confirm work completed.

Maturity Model Category	Summary of Maturity Assessment Focused on areas where utility plans to grow over the 2020-2022 WMP period
F. Grid operations and protocols Median automated maturity levels: 2020: 2 2023: 2	• HWT plans to increase its maturity level by 2023 in one of six capabilities. Specifically, by capability: • **27. Protective equipment and device settings**: HWT's survey responses project no growth in this capability. HWT does not make changes to adjustable equipment in response to high wildfire threat conditions. • **28**. **Incorporating ignition risk factors in grid control:** HWT's survey responses project no growth in this capability. HWT has a clearly explained process for determining whether to operate the grid beyond current or voltage designs. • **29. PSPS op. model and consequence mitigation:** HWT's survey responses project no growth in this capability. HWT effectively communicates PSPS events to customers. • **30. Protocols for PSPS initiation:** HWT's survey responses project no growth in this capability. HWT has explicit policies and explanation for the thresholds above which PSPS is activated as a measure of last resort. • **31. Protocols for PSPS re-energization:** HWT's survey responses indicate an increased maturity level in 2023. Currently there are no estimates of post-PSPS event ignitions. By 2023 HWT plans to have an accurate quantitative understanding of ignition risk following re-energization. • **32. Ignition prevention and suppression:** HWT's survey responses do not indicate an increased maturity level in 2023. However, HWT projects some growth within the capability: currently no training is provided to workers at other utilities, but by 2023, HWT plans to provide training to other utilities.
G. Data Governance Median automated maturity levels: 2020: 0 2023: 1.5	• HWT plans to increase its maturity level by 2023 in three of four capabilities. Specifically, by capability: • **33. Data collection and curation**: HWT's survey responses indicate an increased maturity level in 2023. Currently there is no centralized database of situational, operational, and risk data. By 2023 HWT plans to have this type of database. • **34. Data transparency and analytics:** HWT's survey responses indicate an increased maturity level in 2023. Currently HWT does not have a single document cataloguing all fire-related data and algorithms, analyses, and data processes. By 2023, HWT plans to have this document. • **35. Near-miss tracking:** HWT's survey responses indicate an increased maturity level in 2023. Currently, HWT does not track near miss data for all near misses with wildfire ignition potential. By 2023, HWT plans to track this data. • **36. Data sharing with research community:** HWT's survey responses do not indicate an increased maturity level in 2023. However, HWT projects some growth within the capability: currently HWT does not make data disclosures beyond what is required, but by 2023 it will.

Maturity Model Category	Summary of Maturity Assessment Focused on areas where utility plans to grow over the 2020-2022 WMP period
H. Resource allocation methodology Median automated maturity levels: 2020: 0 2023: 0	• HWT plans to increase its maturity level by 2023 in zero of six capabilities. Specifically, by capability: • **37. Scenario analysis across different risk levels**: HWT's survey responses do not indicate an increased maturity level in 2023. However, HWT projects some growth within the capability: currently, HWT does not provide an estimate of impact on reliability factors in its scenarios, but by 2023 HWT plans to do so. • **38. Presentation of relative risk spend efficiency (RSE) for portfolio of initiatives:** HWT's survey responses project no growth in this capability. HWT does not present accurate qualitative rankings for its initiatives by risk spend efficiency. • **39. Process for determining risk spend efficiency of vegetation management initiatives:** HWT's survey responses project no growth in this capability. HWT has no clear understanding of the relative RSE of various clearances and types of vegetation management initiatives. • **40. Process for determining risk spend efficiency of system hardening initiatives:** HWT's survey responses project no growth in this capability. HWT has no clear understanding of the relative RSE of various clearances and types of grid hardening initiatives. • **41. Portfolio-wide initiative allocation methodology:** HWT's survey responses project no growth in this capability. HWT does not base capital allocation on RSE. • **42. Portfolio-wide innovation in new wildfire initiatives:** HWT's survey responses project no growth in this capability. HWT uses pilots and measures reduction in ignition events to develop and evaluate the efficacy of new wildfire initiatives.
I. Emergency planning and preparedness Median automated maturity levels: 2020: 0 2023: 1	• HWT plans to increase its maturity level by 2023 in two of five capabilities. Specifically, by capability: • **43. Wildfire plan integrated with overall disaster / emergency plan**: HWT's survey responses indicate an increased maturity level in 2023. Currently HWT does not run drills to audit the viability and execution of its wildfire plans. By 2023, HWT plans to run these drills. • **44. Plan to restore service after wildfire related outages:** HWT's survey responses project no growth in this capability. HWT has detailed and actionable procedures are in place to restore service after a wildfire related outage. • **45. Emergency community engagement during and after wildfire:** HWT's survey responses project no growth in this capability. HWT does not provide clear and substantially complete communication of available information relevant to affected customers. • **46. Protocols in place to learn from wildfire events:** HWT's survey responses indicate an increased maturity level in 2023. Currently, HWT does not use dry runs to test plans updated on learnings and improvements. By 2023, HWT plans to use dry runs to confirm the effectiveness of updates. • **47. Processes for continuous improvement after wildfire and PSPS:** HWT's survey responses do not indicate an increased maturity level in 2023. However, HWT projects some growth within the capability:

Maturity Model Category	Summary of Maturity Assessment Focused on areas where utility plans to grow over the 2020-2022 WMP period
	currently, HWT does not have a clear plan for incorporating lessons learned after wildfire / PSPS events, but by 2023 HWT plans to have such a plan and to track implementation of recommendations to understand its impact.
J. Stakeholder cooperation and community engagement Median automated maturity levels: 2020: 1 2023: 2	• HWT plans to increase its maturity level by 2023 in two of five capabilities. Specifically, by capability: • **48. Cooperation and best practice sharing with other utilities**: HWT's survey responses indicate an increased maturity level in 2023. Currently HWT does not share best practices with other. By 2023 HWT plans to do so. • **49**. **Engagement with communities on utility wildfire mitigation initiatives:** HWT's survey responses project no growth in this capability. HWT has a clear and actionable plan to develop or maintain a collaborative relationship with local communities. • **50. Engagement with LEP[1] and AFN[2] populations:** HWT's survey responses project no growth in this capability. HWT does not provide a plan to partner with LEP and AFN communities. • **51. Collaboration with emergency response agencies:** HWT's survey responses project no growth in this capability. HWT cooperates with suppression agencies by working to detect ignitions throughout all areas under its control. • **52. Collaboration on wildfire mitigation plan with stakeholders:** HWT's survey responses indicate an increased maturity level in 2023. Currently, HWT does not coordinate broader fuel management with stakeholders. By 2023, HWT plans to share its fuel management plans with stakeholders and to work with other stakeholders conducting fuel management concurrently. 1. Limited English Proficiency 2. Access and Functional Needs

1.2 HWT: Maturity Detail by Capability

1.2.1 A. Risk assessment and mapping

1.2.1.1 Capability 1: Climate scenario modeling

Capability 1: Climate scenario modeling		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1	a. Wildfire risk can be reliably categorized by level of risk b. Scenarios are assessed by independent experts c. Climate scenario tool is less granular than regional d. The climate scenario modelling tool is not automated e. Weather measured at the circuit level, how weather effects failure modes and propagation, and existing hardware are used to estimate model weather scenarios and their risk f. Future risk estimates take into account generally higher risk across entire service territory due to changing climate	**a. Risk for various weather scenarios is planned to be reliably estimated** **b. Scenarios are planned to be assessed by independent experts, supported by historical data of incidents and near misses** **c. Climate scenario modelling tool is planned to model with asset-level granularity** **d. The climate scenario modelling tool is planned to be partially automated (<50%)** e. Weather measured at the circuit level, how weather effects failure modes and propagation, and existing hardware are planned to be used to estimate model weather scenarios and their risk **f. Utility plans to use basic temperature modeling to estimate effects of a changing climate on future**

Capability 1: Climate scenario modeling		
0		**weather and risk, taking into account differences in geography and vegetation**
	Criteria missing to reach a maturity level of 1 or more: i. Utility has the ability to reliably determine wildfire risk across each region of the grid	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.1.2 Capability 2: Ignition risk estimation

Capability 2: Ignition risk estimation		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Tools and processes can quantitatively and accurately assess the risk of ignition across the grid based on characteristics and condition of lines, equipment, surrounding vegetation, and localized weather patters b. Ignition risk calculation tool is partially automated (<50%) c. Ignition risk calculation tool estimates with asset level granularity d. Ignition risk assessment is confirmed by experts e. Utility uses >60% confidence interval, or no quantified confidence interval, in its wildfire risk assessments	a. Tools and processes are planned to be able to quantitatively and accurately assess the risk of ignition across the grid based on characteristics and condition of lines, equipment, surrounding vegetation, and localized weather patterns **b. Ignition risk calculation tool is planned to be mostly automated (>50%)** c. Ignition risk calculation tool is planned to estimate with asset level granularity **d. Ignition risk assessment is planned to be confirmed by experts and historical data** e. Utility plans to use >60% confidence interval, or no quantified confidence interval, in its wildfire risk assessments
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.1.3 Capability 3: Estimation of wildfire consequences for communities

Capability 3: Estimation of wildfire consequences for communities		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. No translation of ignition risk estimates to potential consequences for communities b. Consequence of ignition risk is calculated as a function of one of the following: potential fatalities, structures burned, or area burned c. Ignition risk impact analysis is available for all seasons d. The ignition risk estimation process is not automated e. Ignition risk estimation process has asset level granularity f. Outputs of ignition risk estimation process are independently assessed by experts g. Level and conditions of vegetation and weather, including the vegetation specifies immediately surrounding the ignition site, are also used as inputs to estimate impact	a. Utility does not plan translate ignition risk estimates to potential consequence for communities b. Consequence of ignition risk is planned to be calculated as a function of one of the following: potential fatalities, structures burned, or area burned c. Ignition risk estimation process is planned to be available for all seasons **d. The ignition risk estimation process is planned to be partially automated (<50%)** e. Ignition risk estimation process is planned to have asset level granularity **f. Outputs of ignition risk estimation process are planned to be independently assessed by experts, and confirmed by historical data** g. Levels and conditions of vegetation and weather, including the vegetation specifies immediately surrounding the ignition site, are also planned to be used as inputs to estimate impact
	Criteria missing to reach a maturity level of 1 or more: i. Partially automated tools to reliably categorize ignition events as low or high risk to communities	**Criteria missing to reach a maturity level of 1 or more:** i. Partially automated tools to reliably categorize ignition events as low or high risk to communities

1.2.1.4 Capability 4. Estimation of wildfire and PSPS reduction impact

Capability 4. Estimation of wildfire and PSPS reduction impact		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Risk reduction potential estimation approach reliably estimates risk reduction potential of initiatives on an interval scale (e.g. specific quantitative units) b. Ignition risk reduction impact assessment tool is partially automated (<50%) c. Ignition risk reduction impact assessment tool has asset-level granularity d. Ignition risk reduction impact assessment tool estimates are assessed by independent experts e. Existing hardware type and condition are also used to estimate risk reduction impact	a. Risk reduction potential estimation approach is planned to reliably estimate risk reduction potential of initiatives on an interval scale (e.g., specific quantitative units) b. Ignition risk reduction impact assessment tool is planned to be partially automated (<50%) c. Ignition risk reduction impact assessment tool is planned to have asset-based granularity **d. Ignition risk reduction impact assessment tool estimates are planned to be assessed by independent experts, supported by historical data of incidents and near misses** **e. Existing hardware type and condition, including operating history; level and condition of vegetation; weather; and combination of initiatives already deployed are planned to be used to estimate risk reduction impact**
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.1.5 Capability 5. Risk maps and simulation algorithms

Capability 5. Risk maps and simulation algorithms		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Risk mapping algorithms are updated based on detected deviations of risk model to ignitions and propagation b. Mechanism to determine whether to update algorithms based on deviations is not automated c. Deviations from risk model to ignitions and propagation detected manually d. Decisions to update algorithms are evaluated independently by experts e. None of the following are used when deciding to update risk mapping algorithms: current or historic ignition and propagation data, near miss data, data from other utilities	a. Risk mapping algorithms are planned to be updated based on detected deviations of risk model to ignitions and propagation b. Decision to update algorithms based on deviations is not planned to be automated c. Deviations from risk model to ignitions and propagations are planned to be calculated manually **d. Decisions to update algorithms are planned to be evaluated independently by experts and historical data** **e. Current and historic ignition and propagation data, as well as near-miss data and data from other utilities and other sources, are planned to be used to decide whether to update algorithms**
	Criteria missing to reach a maturity level of 1 or more: • Utility uses at least current ignition and propagation data when making decisions to update risk mapping algorithms	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.2 B. Situational awareness and forecasting

1.2.2.1 Capability 6: Weather variables collected

Capability 6: Weather variables collected		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. A range of accurate weather variables (e.g., humidity, precipitation, surface and atmospheric wind conditions) that impact probability of ignition and propagation from utility assets is collected by utility b. Measurements are not currently validated c. Elements that cannot be reliably measured in real time are being predicted (e.g., fuel moisture content) d. More than one data source is used for each weather metric collected	a. A range of accurate weather variables (e.g. humidity, precipitation, surface and atmospheric wind conditions) that impact probability of ignition and propagation from utility assets is planned to be collected by utility **b. Measurements are planned to be validated through automatic field calibration** c. Elements that cannot be reliably measured in real time (e.g., fuel moisture content) are planned to be predicted d. More than one data source is planned to be used for each weather metric collected
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.2.2 Capability 7: Weather data resolution

Capability 7: Weather data resolution		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Weather data has sufficient granularity to reliably measure weather conditions in HFTD areas, along the entire grid, and in all areas needed to predict weather on the grid b. Weather data collected at least six times per hour c. Weather data resolution is region-based e. Measurement of weather conditions is fully automated	a. Weather data is planned to have sufficient granularity to reliably measure conditions in HFTD areas, along the entire grid, and in all areas needed to predict weather on the grid b. Weather data is planned to be collected at least six times per hour **c. Weather data resolution is planned to be asset-based** d. Measurement of weather conditions is planned to be fully automated
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.2.3 Capability 8: Weather forecasting ability

Capability 8: Weather forecasting ability		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility has the ability to use a combination of accurate weather stations and external weather data to make accurate forecasts b. Accurate forecasts are prepared less than two weeks in advance c. Weather forecasts have region-level granularity d. Forecast results are error checked against historical weather patterns e. Forecast process is mostly (>=50%) automated	a. Utility plans to have the ability to use a combination of accurate weather stations and external weather data to make accurate forecasts b. Accurate forecasts are planned to be prepared less than two weeks in advance **c. Weather forecasts are planned to have asset-level granularity** d. Forecast results are planned to be error checked against historical weather patterns e. Forecast process is planned to be mostly (>=50%) automated
	Criteria missing to reach a maturity level of 1 or more: • Weather forecasting ability sufficiently accurate to fulfill PSPS requirements at circuit level	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.2.4 Capability 9: External sources used in weather forecasting

Capability 9: External sources used in weather forecasting		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility uses external data where direct measurements from utility's own weather stations are not available b. Weather station data is not checked for errors c. Weather data is used to make decisions	a. Utility plans to use a combination of accurate weather stations and external weather data **b. Utility plans to use mostly automated processes for error checking weather stations with external data sources** **c. Weather data is planned to be used to create a single visual and configurable live map that can be used to help make decisions**
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.2.5 Capability 10: Wildfire detection processes and capabilities

Capability 10: Wildfire detection processes and capabilities		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Well-defined procedures for detecting ignitions along the grid exist b. Well-defined equipment for detecting ignitions along grid, including remote detection equipment including cameras, is used c. Procedure exists for notifying suppression forces and key stakeholders d. Ignition detection software in cameras is used to augment ignition detection procedures	a. Well-defined procedures for detecting ignitions along the grid are planned to exist b. Well-defined equipment for detecting ignitions along grid, including remote detection equipment including cameras, are planned to be used **c. HWT plans to have a procedure that automatically, accurately, and in real time notifies suppression forces and key stakeholders** **d. Ignition detection software in cameras operates automatically as part of ignition detection procedures**
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.3 C. Grid design and system hardening

1.2.3.1 Capability 11: Approach to prioritizing initiatives across territory

Capability 11: Approach to prioritizing initiatives across territory		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Plan prioritizes risk reduction initiatives based on local geography and conditions within only HFTD areas	a. HWT plans to prioritize wildfire risk reduction initiatives based on local geography and conditions within only HFTD areas
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.3.2 Capability 12: Grid design for minimizing ignition risk

Capability 12: Grid design for minimizing ignition risk		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Grid design meets minimum G095 requirements and loading standards in HFTD areas b. Utility does not provide micro grids or islanding where traditional grid infrastructure is impracticable and wildfire risk is high c. Routing of new portions of the grid takes wildfire risk into account d. Some efforts are made in HFTD areas to include the latest asset management strategies and new technologies into grid topology	**a. Grid topology is planned to exceed design requirements, and to be designed based on accurate understanding of utility ignition risk** **b.** Utility does not plan to provide micro grids or islanding where traditional grid infrastructure is impracticable and wildfire risk is high **c.** Routing of new portions of the grid is planned to take wildfire risk into account **d. Efforts are planned to be made to include the latest asset management strategies and new technologies into grid topology across the entire service area**
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.3.3 Capability 13: Grid design for resiliency and minimizing PSPS

Capability 13: Grid design for resiliency and minimizing PSPS		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility's transmission architecture has many single points of failure b. Utility's distribution architecture has many single points of failure c. Utility's distribution architecture is sectionalized to have switches in HFTD areas to individually isolate circuits d. Utility uses egress points as an input for grid topology design	a. Utility's transmission architecture is planned to have many single points of failure b. Utility's distribution architecture is planned to have many single points of failure c. Utility's distribution architecture is planned to be sectionalized to have switches in HFTD areas to individually isolate circuits d. Utility plans to use egress points as an input for grid topology design
	Criteria missing to reach a maturity level of 1 or more: i. Grid architecture includes (n-1) redundancy for transmission circuits subject to PSPS	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.3.4 Capability 14: Risk-based grid hardening and cost efficiency

Capability 14: Risk-based grid hardening and cost efficiency		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility has an accurate understanding of the relative cost and effectiveness of different initiatives, tailored to the circumstances of different locations on its grid b. Estimates can be prepared with asset-based granularity c. Estimates are updated annually or more frequently d. Utility has some grid hardening initiatives included within its evaluation e. Utility evaluates risk reduction synergies from combinations of various initiatives	a. Utility plans to have an accurate understanding of the relative cost and effectiveness of different initiatives, tailored to the circumstances of different locations on its grid b. Estimates planned to be prepared with asset-based granularity c. Estimates are planned to be updated annually or more frequently **d. Utility plans to include most grid hardening initiatives included within its evaluation** e. Utility plans to be able to evaluate risk reduction synergies from combinations of various initiatives
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.3.5 Capability 15: Grid design and asset innovation

Capability 15: Grid design and asset innovation		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. New grid hardening initiatives are evaluated based on installation into grid and measurement of direct reduction in ignition events b. Results of pilot and commercial deployments, including project performance, project cost, geography, climate, vegetation etc. are shared in sufficient detail to inform decision making at a limited set of partners c. Performance of new initiatives is not independently audited	a. New initiatives are planned to be evaluated based on installation into grid and measurement of direct reduction in ignition events b. Results of pilot and commercial deployments, including project performance, project cost, geography, climate, vegetation etc. are planned to be shared in sufficient detail to inform decision making at a limited set of partners c. Performance of new initiatives is not planned to be independently audited
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.4 D. Asset management and inspections

1.2.4.1 Capability 16: Asset inventory and condition assessments

Capability 16: Asset inventory and condition assessments		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. There is an accurate inventory of equipment that may contribute to wildfire risk, including age, state of wear, and expected lifecycle b. Condition assessment is updated monthly c. Sensorized, continuous monitoring equipment is in place to determine the state of equipment and reliably detect incipient malfunctions likely to cause ignition, with the ability to de-activate electric lines and equipment exhibiting such failure d. Inventory is kept with asset level granularity	**a. HWT plans to have an accurate inventory of equipment that may contribute to wildfire risk, including age, state of wear, and expected lifecycle, including records of all inspections and repairs** **b.** Condition assessment is planned to be updated monthly **c.** Sensorized, continuous monitoring equipment is planned to be in place to reliably detect incipient malfunctions likely to cause ignition, with the ability to deactivate electric lines and equipment exhibiting such failure **d.** Inventory is planned to be kept with asset level granularity
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.4.2 Capability 17: Asset inspection cycle

Capability 17: Asset inspection cycle		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1	a. Patrol inspections are consistent with minimum regulatory requirements b. Patrol inspections are scheduled based on up-to-date static maps of equipment types and environment c. At least annually updated or verified static maps of equipment and environment are the inputs for scheduling patrol inspections d. Detailed inspections are consistent with minimum regulatory requirements e. Detailed inspections are scheduled based on up-to-date static maps of equipment types and environment f. At least annually updated or verified static maps of equipment and environment are the input for scheduling patrol inspections g. Other inspections are consistent with minimum regulatory requirements h. Other inspections are scheduled based on up-to-date static maps of equipment types and environment	a. Patrol inspections are planned to be consistent with minimum regulatory requirements **b. Patrol inspections are planned to be scheduled based on risk, as determined by predictive modeling of equipment failure probability and risk causing ignition** **c. Predictive modeling supplemented with continuous monitoring by sensors is planned to be the input for scheduling patrol inspections** d. Detailed inspections are planned to be consistent with minimum regulatory requirements **e. Detailed inspections are planned to be scheduled based on risk, as determined by predictive modeling of equipment failure probability and risk causing ignition** **f. Predictive modeling supplemented with continuous monitoring by sensors is planned to be the input for scheduling patrol inspections** g. Other inspections are consistent with above minimum regulatory requirements **h. Other inspections are planned to be scheduled based on risk, as determined by predictive**

Capability 17: Asset inspection cycle		
0	i. At least annually updated or verified static maps of equipment and environment are inputs for scheduling patrol inspections	**modeling of equipment failure probability and risk causing ignition** **i. Predictive modeling supplemented with continuous monitoring by sensors is planned to be the input for scheduling patrol inspections**
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.4.3 Capability 18: Asset inspection effectiveness

Capability 18: Asset inspection effectiveness		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Patrol, detailed, enhanced, and other inspection procedures and checklists include all items required by statute and regulations, and include lines and equipment typically responsible for ignitions and near misses b. Procedures and inspection checklists are determined based on predictive modeling based on vegetation and equipment type, age, and condition c. Checklists, training, and procedures are customized at the asset-level	a. Patrol, detailed, enhanced, and other inspection procedures and checklists are planned to include all items required by statute and regulations, and to include lines and equipment typically responsible for ignitions and near misses b. Procedures and inspection checklists are planned to be determined based on predictive modeling based on vegetation and equipment type, age, and condition c. Checklists, training, and procedures are planned to be customized at the asset-level
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.4.4 Capability 19: Asset maintenance and repair

Capability 19: Asset maintenance and repair		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Electrical lines and equipment maintained as required by regulation, and additional maintenance is done in areas of grid at highest wildfire risk based on detailed risk mapping b. Service intervals are set based on wildfire risk in relevant circuit, as well as real-time monitoring from sensors c. Maintenance and repair procedures take wildfire risk, performance history, and past operating conditions most into account	a. Electrical lines and equipment are planned to be maintained as required by regulation, and additional maintenance is planned to be done in areas of grid at highest wildfire risk based on detailed risk mapping b. Service intervals are planned to be set based on wildfire risk in relevant circuit, as well as real-time monitoring from sensors c. Maintenance and repair procedures are planned to take wildfire risk, performance history, and past operating conditions most into account
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.4.5 Capability 20: QA/QC for asset management

Capability 20: QA/QC for asset management		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Contractor activity is audited through an established and demonstrably functioning audit process to manage and confirm work completed by subcontractors, where contractor activity is subject to semi-automated audits using technologies capable of sampling the contractor's work (e.g., LiDAR scans, photographic evidence) b. Contractors follow the same processes and standards as utility's own employees c. QA/QC information is regularly used to identify deficiencies in quality of work performance and inspections performance d. QA/QC information is used to identify systemic deficiencies in quality of work and inspections, and recommend training based on weaknesses e. Workforce management software tools are used to manage and confirm work completed by subcontractors	a. Contractor activity is planned to be audited through an established and demonstrably functioning audit process to manage and confirm work completed by subcontractors, where contractor activity is subject to semi-automated audits using technologies capable of sampling the contractor's work (e.g., LiDAR scans, photographic evidence) b. Contractors are planned to follow the same processes and standards as utility's own employees c. QA/QC information is planned to be regularly used to identify deficiencies in quality of work performance and inspections performance d. QA/QC information is planned to be used to identify systemic deficiencies in quality of work and inspections, and recommend training based on weaknesses e. Workforce management software tools are planned to be used to manage and confirm work completed by subcontractors
	Criteria missing to reach a maturity level of 1 or more:	**Criteria missing to reach a maturity level of 1 or more:**

Capability 20: QA/QC for asset management		
	• N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	• N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.5 E. Vegetation Management and inspections

1.2.5.1 Capability 21: Vegetation inventory for condition assessments

Capability 21: Vegetation inventory for condition assessments		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Centralized inventory of vegetation clearances, including predominant vegetation species and individual high-risk trees across grid b. Inventory is updated annually c. Inspections are independently verified by third party experts d. Inventory has asset level granularity	**a. Planned centralized inventory of vegetation clearances, including individual vegetation species and their expected growth rate, as well as individual high risk trees across grid** **b. Inventory planned to be updated within one week of collection** **c.** Inspections are planned to be independently verified by third party experts **d.** Inventory planned to have asset level granularity
	Criteria missing to reach a maturity level of 1 or more: i. Inventory database of vegetation clearances is updated within 90 days of vegetation inventory or conditions being collected	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.5.2 Capability 22: Vegetation inspection cycle

Capability 22: Vegetation inspection cycle		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. All types of vegetation inspections are consistent with minimum regulatory requirements b. Vegetation inspections are scheduled based on up-to-date static maps of predominant vegetation species and environment c. Inputs for scheduling vegetation inspections include at least annually-updated static maps of vegetation and environment	a. All types of vegetation inspections are consistent with minimum regulatory requirements b. Vegetation inspections are planned to be scheduled based on up-to-date static maps of predominant vegetation species and environment **c. Planned inputs for scheduling vegetation inspections include up to date, static maps of vegetation and environment, as well as data on annual growing conditions**
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.5.3 Capability 23: Vegetation inspection effectiveness

Capability 23: Vegetation inspection effectiveness		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Patrol, detailed, enhanced, and other inspection procedures and checklists include all items required by statute and regulations, and include vegetation types typically responsible for ignitions and near misses b. Procedures and checklists are based on predictive modeling based on vegetation and equipment type, age, and condition, and are validated by independent experts c. Checklists, training, and procedures are customized at the asset level	a. Patrol, detailed, enhanced, and other inspection procedures and checklists are planned to include all items required by statute and regulations, and include vegetation types typically responsible for ignitions and near misses b. Procedures and checklists are planned to be based on predictive modeling based on vegetation and equipment type, age, and condition, and are planned to be validated by independent experts c. Checklists, training, and procedures are planned to be customized at the asset level
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.5.4 Capability 24: Vegetation grow-in mitigation

Capability 24: Vegetation grow-in mitigation		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4	a. Utility meets minimum statutory and regulatory clearances around all lines and equipment b. Utility meets or exceeds minimum statutory or regulatory clearances during all seasons c. Both ignition risk modeling and propagation risk modeling is used to guide clearances around lines and equipment d. Species growth rates and species limb failure rates are used to guide clearance around lines and equipment e. Community organizations are not engaged in setting local clearances and protocols f. Utility removes vegetation waste along its right of way across the entire grid g. Utility removes vegetation waste along the right of way on the same day as cutting h. Utility does not work with local landowners to provide a cost effective use for cutting vegetation	a. Utility plans to meet minimum statutory and regulatory clearances around all lines and equipment b. Utility plans to meet or exceed minimum statutory or regulatory clearances during all seasons c. Both ignition risk modeling and propagation risk modeling is planned to be used to guide clearances around lines and equipment d. Species growth rates and species limb failure rates are planned to be used to guide clearance around lines and equipment e. Community organizations are not planned to be engaged in setting local clearances and protocols f. Utility plans to remove vegetation waste along its right of way across the entire grid g. Utility plans to remove vegetation waste along the right of way on the same day as cutting h. Utility does not plan to work with local landowners to provide a cost effective use for cutting vegetation
3		
2		
1		

Capability 24: Vegetation grow-in mitigation		
0	i. Utility does not work with partners to identify new cost effective uses for vegetation, taking into consideration environmental impacts and emissions of vegetation waste	i. Utility does not plan to work with partners to identify new cost effective uses for vegetation, taking into consideration environmental impacts and emissions of vegetation waste
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.5.5 Capability 25: Vegetation fall-in mitigation

Capability 25: Vegetation fall-in mitigation		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility does not remove vegetation outside of its right of way b. Potential vegetation that may pose a threat identified based on the height of trees with potential to make contact with electric lines and equipment c. Vegetation is not removed with cooperation from the community d. Utility does not remove vegetation waste outside its right of way across the entire grid e. Utility does not remove vegetation outside its right of way at all f. Utility does not work with local landowners to provide a cost effective use for cutting vegetation j. Utility does not work with partners to identify new cost effective uses for vegetation, taking into consideration environmental impacts and emissions of vegetation waste	a. Utility does not plan to remove vegetation outside of its right of way b. Potential vegetation that may pose a threat is planned to be identified based on the height of trees with potential to make contact with electric lines and equipment c. Vegetation is not planned to be removed with cooperation from the community d. Utility does not plan to remove vegetation waste outside its right of way across the entire grid e. Utility does not plan to remove vegetation outside its right of way at all f. Utility does not plan to work with local landowners to provide a cost effective use for cutting vegetation g. Utility does not plan to work with partners to identify new cost effective uses for vegetation, taking into consideration environmental impacts and emissions of vegetation waste
	Criteria missing to reach a maturity level of 1 or more:	**Criteria missing to reach a maturity level of 1 or more:**

Capability 25: Vegetation fall-in mitigation		
	i. Utility removes some vegetation outside of right of ways iii. Utility removes vegetation outside right of ways within one week of cutting vegetation across entire grid	i. Utility removes some vegetation outside of right of ways iii. Utility removes vegetation outside right of ways within one week of cutting vegetation across entire grid

1.2.5.6 Capability 26: QA/QC for vegetation management

Capability 26: QA/QC for vegetation management		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Contractor and employee activity audited through an established and functioning audit process to manage and confirm work completed by subcontractors, where contractor activity is subject to semi-automated audits using technologies capable of sampling the contractor's work (e.g., LiDAR scans, photographic evidence) b. Contractors follow the same processes and standards as utility's own employees c. QA/QC information is used regularly to identify deficiencies in quality of work performance and inspections performance d. QA/QC information is used to identify systemic deficiencies in quality of work and inspections, and recommend training based on weaknesses e. Workforce management software tools are used to manage and confirm work completed by subcontractors	a. Contractor and employee activity planned to be audited through an established and functioning audit process to manage and confirm work completed by subcontractors, where contractor activity is subject to semi-automated audits using technologies capable of sampling the contractor's work (e.g., LiDAR scans, photographic evidence) b. Contractors are planned to follow the same processes and standards as utility's own employees c. QA/QC information is planned to be used regularly to identify deficiencies in quality of work performance and inspections performance d. QA/QC information is planned to be used to identify systemic deficiencies in quality of work and inspections, and recommend training based on weaknesses e. Workforce management software tools are planned to be used to manage and confirm work completed by subcontractors
	Criteria missing to reach a maturity level of 1 or more:	**Criteria missing to reach a maturity level of 1 or more:**

Capability 26: QA/QC for vegetation management		
	• N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	• N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.6 F. Grid operations and protocols

1.2.6.1 Capability 27: Protective equipment and device settings

Capability 27: Protective equipment and device settings		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility does not make changes to adjustable equipment in response to high wildfire threat conditions b. Utility does not use an automated process to adjust sensitivity of grid elements and evaluate effectiveness c. There is not a predetermined protocol driven by fire conditions for adjusting sensitivity of grid elements	a. Utility does not plan to make changes to adjustable equipment in response to high wildfire threat conditions b. Utility does not plan to use an automated process to adjust sensitivity of grid elements and evaluate effectiveness c. Utility does not plan to have a predetermined protocol driven by fire conditions for adjusting sensitivity of grid elements
	Criteria missing to reach a maturity level of 1 or more: • Utility increases sensitivity of risk reduction elements during high threat weather conditions	**Criteria missing to reach a maturity level of 1 or more:** • Utility increases sensitivity of risk reduction elements during high threat weather conditions

1.2.6.2 Capability 28: Incorporating ignition risk factors in grid control

Capability 28: Incorporating ignition risk factors in grid control		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4	a. Utility has a clearly explained process for determining whether to operate the grid beyond current or voltage designs b. Utility has systems in place to automatically track operation history including current, loads, and voltage throughout the grid at circuit level c. Utility uses predictive modeling to estimate the expected life and make equipment maintenance, rebuild, or replacement decisions based on grid operating history; modeling is evaluated by external experts and verified by historical data d. Utility never operates the grid above rated voltage and current load	a. Utility plans to have a clearly explained process for determining whether to operate the grid beyond current or voltage designs b. Utility plans to have systems ins place to automatically track operation history including current, loads, and voltage throughout the grid at circuit level c. Utility plans to use predictive modeling to estimate the expected life and make equipment maintenance, rebuild, or replacement decisions based on grid operating history; modeling is planned to be evaluated by external experts and verified by historical data d. Utility plans to never operate the grid above rated voltage and current load
3		
2		
1		
0		
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.6.3 Capability 29: PSPS op. model and consequence mitigation

Capability 29: PSPS op. model and consequence mitigation		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. PSPS events are generally forecasted accurately with fewer than 25% of predictions being false positives b. PSPS events are communicated to >99.9% of affected customers and 100% of medical baseline customers in advance of PSPS action c. Less than 0.5% of customers complain during PSPS events d. Website does not go down during PSPS events e. Average downtime per customer is less than 0.1 hour f. Specific resources are not provided to all affected customers to alleviate the impact of the power shutoff (e.g., providing backup generators, supplies, batteries, etc.)	a. PSPS events are planned to generally forecast accurately with fewer than 25% of predictions being false positives b. PSPS events are planned to be communicated to >99.9% of affected customers and 100% of medical baseline customers in advance of PSPS action c. Less than 0.5% of customers are planned to complain during PSPS events d. Website is not planned to go down during PSPS events e. Average downtime per customer is planned to be less than 0.1 hours f. Specific resources are not planned to be provided to all affected customers to alleviate the impact of the power shutoff (e.g., providing backup generators, supplies, batteries, etc.)
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.6.4 Capability 30: Protocols for PSPS initiation

Capability 30: Protocols for PSPS initiation		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility has explicit policies and explanation for the thresholds above which PSPS is activated as a measure of last resort b. Utility takes into account a partially automated system which recommends circuits for which PSPS should be activated and that is validated by SMEs when making PSPS decisions c. Utility de-energizes circuits upon detection of damaged conditions of electric equipment, when circuit presents a safety risk to suppression or other personnel, and when equipment has come into contact with foreign objects posing ignition risk d. Given condition of the grid, utility expects less than 5% probability of any large scale PSPS events affecting more than 10,000 people to occur in the coming year; grid is in sufficiently low risk condition that PSPS events will not be required, and the only circuits which may require de-energization have sufficient redundancy that energy supply to customers will not be disrupted	a. Utility plans to have explicit policies and explanation for the thresholds above which PSPS is activated as a measure of last resort b. Utility plans to take into account a partially automated system which recommends circuits for which PSPS should be activated and that is validated by SMEs when making PSPS decisions c. Utility plans to de-energize circuits upon detection of damaged conditions of electric equipment, when circuit presents a safety risk to suppression or other personnel, and when equipment has come into contact with foreign objects posing ignition risk d. Given condition of the grid, utility plans to expect less than 5% probability of any large scale PSPS events affecting more than 10,000 people to occur in the coming year; grid is planned to be in sufficiently low risk condition that PSPS events will not be required, and the only circuits which may require de-energization have sufficient redundancy that energy supply to customers will not be disrupted
	Criteria missing to reach a maturity level of 1 or more:	**Criteria missing to reach a maturity level of 1 or more:**

Capability 30: Protocols for PSPS initiation		
	• N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	• N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.6.5 Capability 31: Protocols for PSPS re-energization

Capability 31: Protocols for PSPS re-energization		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. There is an existing process for accurately inspecting de-energized sections of the grid prior to re-energization b. There is a mostly automated process (>50%) for inspecting de-energized sections of the grid prior to re-energization c. Average time it takes to re-energize grid from a PSPS once weather has subsided to below de-energization threshold is less than 8 hours d. No probability estimates of after event ignitions	a. HWT plans to have an existing process for accurately inspecting de-energized sections of the grid prior to re-energization b. HWT plans to have a mostly automated process (>50%) for inspecting de-energized sections of the grid prior to re-energization c. Average time it takes to re-energize grid from a PSPS once weather has subsided to below de-energization threshold is planned to be less than 8 hours **d. Utility plans to have an accurate quantitative understanding of ignition risk following re-energization by asset, validated by historical data and near misses**
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.6.6 Capability 32: Ignition prevention and suppression

Capability 32: Ignition prevention and suppression		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility has explicit policies about the role of crews, including contractors and subcontractors, at the site of ignition b. Training and communications tools are provided to immediately report ignitions caused by workers or in immediate vicinity of workers; in addition, suppression tools and training to suppress small ignitions caused by workers or in immediate vicinity of workers are provided c. No Cal/OSHA reported injuries or fatalities occurred in the last year in events where workers have encountered an ignition d. Utility does not provide training to other workers at other utilities and outside the utility industry on best practices to minimize, report, and suppress ignition	a. Utility plans to have explicit policies about the role of crews, including contractors and subcontractors, at the site of ignition b. Training and communications tools are planned to be provided to immediately report ignitions caused by workers or in immediate vicinity of workers; in addition, suppression tools and training to suppress small ignitions caused by workers or in immediate vicinity of workers are planned to be provided c. No Cal/OSHA reported injuries or fatalities are planned to occur in events where workers have encountered an ignition **d. Utility plans to provide training to other workers at other utilities and outside the utility industry on best practices to minimize, report, and suppress ignition**
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.7 G. Data Governance

1.2.7.1 Capability 33: Data collection and curation

Capability 33: Data collection and curation		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility does not have a centralized database of situational, operational, and risk data b. Utility is not able to use advanced analytics on its centralized database of situational, operational, and risk data to make operational and investment decisions c. Utility collects data from all sensored portions of electric lines, equipment, weather stations, etc. d. Utility's database of situational, operational, and risk data is not able to ingest and share data using real-time API protocols with a wide variety of stakeholders e. Utility does not identify highest priority additional data sources to improve decision making f. Utility does not share best practices for database management and use with other utilities in California and beyond	**a. Utility plans to have a centralized database of situational, operational, and risk data** **b. Utility plans to use advanced analytics on its centralized database of situational, operational, and risk data to make short-term and long-term operational and investment decisions** **c.** Utility plans to collect data from all sensored portions of electric lines, equipment, weather stations, etc. **d.** Utility's database of situational, operational, and risk data is not planned to be able to ingest and share data using real-time API protocols with a wide variety of stakeholders **e. Utility plans to identify highest priority additional data sources to improve decision making, with plans to incorporate these into centralized database of situational, operational, and risk data** **f. Utility plans to share best practices for database management and use with other utilities in California and beyond**

Capability 33: Data collection and curation		
	Criteria missing to reach a maturity level of 1 or more: i) Utility has centralized repository of accurate situational, operational, and risk data	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.7.2 Capability 34: Data transparency and analytics

Capability 34: Data transparency and analytics		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. There is not a single document cataloguing all fire-related data and algorithms, analyses, and data processes b. There is not an explanation of the sources, cleaning processes, and assumptions made in the single document catalog c. Not all analyses, algorithms, and data processing are documented d. There is not a system capable of sharing data in real time across multiple levels of permissions e. Most relevant wildfire related data algorithms are not disclosed to regulators and other relevant stakeholders upon request	**a. There is planned to be a single document cataloguing all fire-related data and algorithms, analyses, and data processes** **b. There is planned to be an explanation of the sources, cleaning processes, and assumptions made in the single document catalog** **c. All analyses, algorithms, and data processing are planned to be documented and explained** **d.** There is not planned to be a system capable of sharing data in real time across multiple levels of permissions **e. Most relevant wildfire related data algorithms is planned to be disclosed to regulators and other relevant stakeholders upon request**
	Criteria missing to reach a maturity level of 1 or more: i) All wildfire-related data and algorithms used by utility are catalogued in a single document, ii) including an explanation of the sources, and assumptions made; and iii) all analysis and algorithms documented	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.7.3 Capability 35: Near-miss tracking

Capability 35: Near-miss tracking		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility does not track near miss data for all near misses with wildfire ignition potential b. Utility is not able to simulate wildfire potential given an ignition based on event characteristics, fuel loads, and moisture using captured near miss data c. Utility does not capture data related to the specific mode of failure when capturing near-miss data d. Utility is not able to predict the probability of a near miss in causing an ignition based on a set of event characteristics e. Utility does not use data from near misses to change grid operation protocols in real time	**a. Utility plans to track near miss data for all near misses with wildfire ignition potential** **b. Utility plans to be able to simulate wildfire potential given an ignition based on event characteristics, fuel loads, and moisture using captured near miss data** **c. Utility plans to capture data related to the specific mode of failure when capturing near-miss data** **d.** Utility does not plan to be able to predict the probability of a near miss in causing an ignition based on a set of event characteristics **e.** Utility does not plan to use data from near misses to change grid operation protocols in real time
	Criteria missing to reach a maturity level of 1 or more: • Tracking of near miss data for all near misses with wildfire ignition potential and associated event characteristics, including capturing data related to the specific mode of failure	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.7.4 Capability 36: Data sharing with research community

Capability 36: Data sharing with research community		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility makes required data disclosures, but does not share data beyond what is required b. Utility participates in collaborative research c. Utility research addresses utility ignited wildfires and risk reduction initiatives d. Utility promotes best practices based on latest independent scientific and operational research	**a. Utility plans to make required data disclosures, and to share data beyond what is required** **b.** Utility plans to fund collaborative research **c.** Utility research is planned to address utility ignited wildfires and risk reduction initiatives **d.** Utility plans to promote best practices based on latest independent scientific and operational research
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.8 H. Resource allocation methodology

1.2.8.1 Capability 37: Scenario analysis across different risk levels

Capability 37: Scenario analysis across different risk levels		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility provides an accurate high-risk reduction and low-risk reduction scenario, and the projected cost and total risk reduction potential b. Utility provides projections for each scenario with asset-level granularity c. Utility does not include a long term (e.g., 6-10 year) risk estimate taking into account macro factors (climate change, etc.) as well as planned risk reduction initiatives in its scenarios d. Utility does not provide an estimate of impact on reliability factors in its scenarios	a. Utility plans to provide an accurate high-risk reduction and low-risk reduction scenario, and the projected cost and total risk reduction potential b. Utility plans to provide projections for each scenario with asset-level granularity c. Utility does not plan to include a long term (e.g., 6-10 year) risk estimate taking into account macro factors (climate change, etc.) as well as planned risk reduction initiatives in its scenarios **d. Utility plans to provide an estimate of impact on reliability factors in its scenarios**
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.8.2 Capability 38: Presentation of relative risk spend efficiency for portfolio of initiatives

Capability 38: Presentation of relative risk spend efficiency for portfolio of initiatives			
Automated levels based on Maturity Rubric		**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both		Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0		a. Utility does not present accurate qualitative rankings for its initiatives by risk spend efficiency b. No commercial initiatives are captured in the ranking of risk spend efficiency c. Utility does not include figures for present value cost and project risk reduction impact of each initiative d. Utility does not provide an explanation of its investment in each particular initiative e. Utility is able to provide risk efficiency figures with asset level granularity	a. Utility does not plan to present accurate qualitative rankings for its initiatives by risk spend efficiency b. No commercial initiatives are planned to be captured in the ranking of risk spend efficiency c. Utility does not plan to include figures for present value cost and project risk reduction impact of each initiative d. Utility does not plan to provide an explanation of its investment in each particular initiative e. Utility plans to be able to provide risk efficiency figures with asset level granularity
		Criteria missing to reach a maturity level of 1 or more: i. Utility provides accurate qualitative ranking of commercial initiatives ii. Ranking includes common commercial initiatives in initiative rankings	**Criteria missing to reach a maturity level of 1 or more:** i. Utility provides accurate qualitative ranking of commercial initiatives ii. Ranking includes common commercial initiatives in initiative rankings

Capability 38: Presentation of relative risk spend efficiency for portfolio of initiatives		
	iii. Rankings include figures for estimated cost and projected risk reduction impact of each initiative v. Utility provides explanations of its investments in each initiative	iii. Rankings include figures for estimated cost and projected risk reduction impact of each initiative v. Utility provides explanations of its investments in each initiative

1.2.8.4 Capability 39: Process for determining risk spend efficiency of vegetation management initiatives

Capability 39: Process for determining risk spend efficiency of vegetation management initiatives		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility has no clear understanding of the relative RSE of various clearances and types of vegetation management initiatives b. RSE estimates of vegetation management initiatives are prepared with less than regional granularity or not at all c. RSE estimates of vegetation management initiatives are never updated d. No vegetation management initiatives are included within its evaluation e. Utility cannot evaluate risk reduction synergies from combination of various initiatives	a. Utility does not plan to have a clear understanding of the relative RSE of various clearances and types of vegetation management initiatives b. RSE estimates of vegetation management initiatives are planned to be prepared with less than regional granularity or not at all c. RSE estimates of vegetation management initiatives are not planned to be updated d. No vegetation management initiatives are planned to be included within its evaluation e. Utility does not plan to be able to evaluate risk reduction synergies from combination of various initiatives
	Criteria missing to reach a maturity level of 1 or more: i. Utility has accurate relative understanding of ii. the cost, and iii. effectiveness to produce iv. a reliable RSE estimate of	**Criteria missing to reach a maturity level of 1 or more:** i. Utility has accurate relative understanding of ii. the cost, and iii. effectiveness to produce iv. a reliable RSE estimate of v. commonly-deployed vegetation management initiatives

Capability 39: Process for determining risk spend efficiency of vegetation management initiatives		
	v. commonly-deployed vegetation management initiatives vi. in each area of the utility's grid	vi. In each area of the utility's grid

1.2.8.5 Capability 40: Process for determining risk spend efficiency of system hardening initiatives

Capability 40: Process for determining risk spend efficiency of system hardening initiatives		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility has no clear understanding of the relative RSE of various clearances and types of grid hardening initiatives b. RSE estimates of grid hardening initiatives are prepared with less than regional granularity or not at all c. RSE estimates of grid hardening initiatives are never updated d. No grid hardening initiatives are included within its evaluation e. Utility cannot evaluate risk reduction synergies from combinations of various initiatives	a. Utility does not plan to have a clear understanding of the relative RSE of various clearances and types of grid hardening initiatives b. RSE estimates of grid hardening initiatives are planned to be prepared with less than regional granularity or not at all c. RSE estimates of grid hardening initiatives are not planned to be updated d. No grid hardening initiatives are planned to be included within its evaluation e. Utility does not plan to be able to evaluate risk reduction synergies from combinations of various initiatives
	Criteria missing to reach a maturity level of 1 or more: i. Utility has accurate relative understanding of ii. the cost, and iii. effectiveness to produce iv. a reliable RSE estimate of v. commonly-deployed grid hardening initiatives	**Criteria missing to reach a maturity level of 1 or more:** i. Utility has accurate relative understanding of ii. the cost, and iii. effectiveness to produce iv. a reliable RSE estimate of v. commonly-deployed grid hardening initiatives

Capability 40: Process for determining risk spend efficiency of system hardening initiatives		
	vi. in each area of the utility's grid	vi. In each area of the utility's grid

1.2.8.7 Capability 41: Portfolio-wide initiative allocation methodology

Capability 41: Portfolio-wide initiative allocation methodology		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility does not base capital allocation on RSE b. Utility takes into account specific information by initiative at the asset level, including state of specific assets and location where initiative will be implemented c. Utility does not verify RSE estimates d. Utility takes impact on safety, reliability, and other priorities into consideration when making spending decisions	a. Utility does not plan to base capital allocation on RSE b. Utility plans to take into account specific information by initiative at the asset level, including state of specific assets and location where initiative will be implemented when generating RSE estimates c. Utility does not plan to verify RSE estimates d. Utility plans to take impact on safety, reliability, and other priorities into consideration when making spending decisions
	Criteria missing to reach a maturity level of 1 or more: ii) Utility allocates spend within each category of wildfire risk reduction by accurate risk spend efficiency estimates	**Criteria missing to reach a maturity level of 1 or more:** ii. Utility allocates spend within each category of wildfire risk reduction by accurate risk spend efficiency estimates

1.2.8.9 Capability 42: Portfolio-wide innovation in new wildfire initiatives

Capability 42: Portfolio-wide innovation in new wildfire initiatives		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility uses pilots and measures reduction in ignition events to develop and evaluate the efficacy of new wildfire initiatives b. No program is in place to develop and evaluate the RSE of new wildfire initiatives c. Utility measures efficacy of new wildfire initiatives with asset level granularity d. Reviews of innovative initiatives are not audited by independent parties e. Utility does not share the findings of its evaluation of innovative initiatives with other utilities, academia, and the general public	a. Utility plans to use pilots and to measure reduction in ignition events to develop and evaluate the efficacy on new wildfire initiatives b. Utility does not plan to have a program in place to develop and evaluate the RSE of new wildfire initiatives c. Utility plans to measure efficacy of new wildfire initiatives with asset level granularity d. Reviews of innovative initiatives are not planned to be audited by independent parties e. Utility does not plan to share the findings of its evaluation of innovative initiatives with other utilities, academia, and the general public
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.9 I. Emergency planning and preparedness

1.2.9.1 Capability 43: Wildfire plan integrated with overall disaster / emergency plan

Capability 43: Wildfire plan integrated with overall disaster / emergency plan		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Wildfire plan is a component of overall disaster and emergency plans b. Utility does not run drills to audit the viability and execution of its wildfire plans c. Impact of confounding events or multiple simultaneous disasters is considered in the planning process d. Wildfire plan is integrated with disaster and emergency preparedness plans of other relevant stakeholders (e.g., CAL FIRE, Fire Safe Councils, etc.) e. Utility takes a leading role in planning, coordinating, and integrating plans across stakeholders	a. Wildfire plan is planned to be a component of overall disaster and emergency plans **b. Utility plans to run drills to audit the viability and execution of its wildfire plans** c. Impact of confounding events or multiple simultaneous disasters is planned to be considered in the planning process d. Wildfire plan is planned to be integrated with disaster and emergency preparedness plans of other relevant stakeholders (e.g., CAL FIRE, Fire Safe Councils, etc.) e. Utility plans to take a leading role in planning, coordinating, and integrating plans across stakeholders
	Criteria missing to reach a maturity level of 1 or more:	**Criteria missing to reach a maturity level of 1 or more:**

Capability 43: Wildfire plan integrated with overall disaster / emergency plan		
	ii. Utility runs drills to audit the viability and execution of plan	• N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.9.2 Capability 44: Plan to restore service after wildfire related outage

Capability 44: Plan to restore service after wildfire related outage		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Detailed and actionable procedures are in place to restore service after a wildfire related outage b. Employee and subcontractor crews are trained in and aware of plans c. Procedures to restore service after a wildfire-related outage are customized with asset level granularity d. Customized procedure to restore service is not based on topography, vegetation, or community needs e. There is not an inventory of high risk spend efficiency resources available for repairs f. Wildfire plan is a component of overall disaster and emergency plans	a. Detailed and actionable procedures are planned to be in place to restore service after a wildfire related outage b. Employee and subcontractor crews are planned to be trained in and aware of plans c. Procedures to restore service after a wildfire-related are planned to be customized with asset level granularity d. Customized procedure to restore service is not planned to be based on topography, vegetation, or community needs e. Utility does not plan to have an inventory of high risk spend efficiency resources available for repairs f. Wildfire plan is planned to be a component of overall disaster and emergency plans
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.9.3 Capability 45: Emergency community engagement during and after wildfire

Capability 45: Emergency community engagement during and after wildfire		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1	a. Utility does not provide clear and substantially complete communication of available information relevant to affected customers b. <95% of customers receive complete details of available information c. <99.9% of affected medical baseline customers receive complete details of available information d. Utility does not assist where helpful with communication of information related to power outages through availability of relevant evacuation information and links on website/toll-free number, or by assisting disaster response professionals as requested e. Utility has detailed and actionable established protocols for engaging with emergency management organizations f. Utility does not communicate or coordinate resources to communities during emergencies (e.g., shelters, supplies, transportation, etc.)	a. Utility does not plan to provide clear and substantially complete communication of available information relevant to affected customers b. <95% of customers are planned to receive complete details of available information c. <99.9% of medical baseline customers are expected to receive complete details of available information d. Utility does not plan to assist where helpful with communication of information related to power outages through availability of relevant evacuation information and links on website/toll-free number, or by assisting disaster response professionals as requested e. Utility plans to have detailed and actionable established protocols for engaging with other emergency management organizations during emergency situations f. Utility does not plan to communicate or coordinate resources during emergencies (e.g., shelters, supplies, transportation, etc.)

Capability 45: Emergency community engagement during and after wildfire		
0		
	Criteria missing to reach a maturity level of 1 or more: i. Utility provides clear and substantially complete communication of available utility-related information ii. Utility provides information to >95% of affected customers iii. Utility provides information to >99% of affected medical baseline customers, as well as referral to other agencies iv. Utility provides links to relevant evacuation information prominently on website and via toll-free phone number	**Criteria missing to reach a maturity level of 1 or more:** i. Utility provides clear and substantially complete communication of available utility-related information ii. Utility provides information to >95% of affected customers iii. Utility provides information to >99% of affected medical baseline customers, as well as referral to other agencies iv. Utility provides links to relevant evacuation information prominently on website and via toll-free phone number

1.2.9.4 Capability 46: Protocols in place to learn from wildfire events

Capability 46: Protocols in place to learn from wildfire events		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. There is a protocol in place to record the outcome of emergency events and to clearly and actionably document learnings and potential process improvements b. There is a defined process and staff responsible for incorporating learnings into emergency plan c. "Dry runs" are not used to test plans updated based on learnings and improvements to confirm its effectiveness d. There is a defined process to solicit input from a variety of other stakeholders and incorporate learnings from other stakeholders into the emergency plan	a. Utility plans to have a protocol in place to record the outcome of emergency events and to clearly and actionably document learnings and potential process improvements b. Utility plans to have a defined process and staff responsible for incorporating learnings into emergency plan **c. Utility plans to have "dry runs" to test plans updated based on learnings and improvements to confirm its effectiveness** d. Utility plans to have a defined process to solicit input from a variety of other stakeholders and incorporate learnings from other stakeholders into the emergency plan
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.9.5 Capability 47: Processes for continuous improvement after wildfire and PSPS

Capability 47: Processes for continuous improvement after wildfire and PSPS		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1	a. Utility conducts an evaluation or debrief process after a wildfire b. Utility either conducts a customer survey or utilizes partners to disseminate requests for stakeholder engagement c. Utility engages in debriefs with partners d. Utility shares findings with partners about what can be improved e. Feedback and recommendations on potential improvements are not made public f. Utility conducts proactive outreach to local agencies and organizations to solicit additional feedback on what can be improved g. Utility does not have a clear plan for post-event listening and incorporating lessons learned from all stakeholders	a. Utility plans to conduct an evaluation or debrief process after a wildfire b. Utility plans to conduct either a customer survey or utilize partners to disseminate requests for stakeholder engagement c. Utility plans to engage in debriefs with partners d. Utility plans to share findings with partners about what can be improved e. Feedback and recommendations on potential improvements are not planned to be made public f. Utility plans to conduct proactive outreach to local agencies and organizations to solicit additional feedback on what can be improved **g. Utility plans to have a clear plan for post-event listening and incorporating lessons learned from all stakeholders**

Capability 47: Processes for continuous improvement after wildfire and PSPS		
0	h. Utility does not track the implementation of recommendations and report upon their impact i. Utility does not have a process to conduct reviews after wildfires in other territories of other utilities and states to identify and address areas of improvement	**h. Utility plans to track the implementation of recommendations and report upon their impact** **i. Utility plans to have a process to conduct reviews after wildfires in other territories of other utilities and states to identify and address areas of improvement**
	Criteria missing to reach a maturity level of 1 or more: i. Utility conducts a customer survey and utilizes partners to disseminate requests for stakeholder engagement iii. Feedback and recommendations on potential improvements are made public	**Criteria missing to reach a maturity level of 1 or more:** i. Utility conducts a customer survey and utilizes partners to disseminate requests for stakeholder engagement iii. Feedback and recommendations on potential improvements are made public

1.2.10 J. Stakeholder cooperation and community engagement

1.2.10.1 Capability 48: Cooperation and best practice sharing with other utilities

Capability 48: Cooperation and best practice sharing with other utilities		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility actively works to identify best practices from other global utilities through a clearly defined operational process b. Utility successfully adopts and implements best practices identified from other utilities c. Utility does not seek to share best practices and lessons learned in a consistent format d. Utility does not share best practices and lessons via a consistent and predictable set of venues / media e. Utility does not participate in annual benchmarking exercises with other utilities to find other areas for improvement f. Utility has not implemented a defined process for testing lessons learned from other utilities to ensure local applicability	a. Utility plans to actively work to identify best practices from other global utilities through a clearly defined operational process b. Utility plans to successfully adopt and implement best practices identified from other utilities **c. Utility plans to seek to share best practices and lessons learned in a consistent format** **d. Utility plans to share best practices and lessons via a consistent and predictable set of venues / media** **e. Utility plans to participate in annual benchmarking exercises with other utilities to find other areas for improvement** **f. Utility plans to implement a defined process for testing lessons learned from other utilities to ensure local applicability**
	Criteria missing to reach a maturity level of 1 or more:	**Criteria missing to reach a maturity level of 1 or more:**

Capability 48: Cooperation and best practice sharing with other utilities		
	• N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	• N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.10.2 Capability 49: Engagement with communities on utility wildfire mitigation initiatives

Capability 49: Engagement with communities on utility wildfire mitigation initiatives		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 2023 Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility has a clear and actionable plan to develop or maintain a collaborative relationship with local communities b. There are not communities in HFTD areas where meaningful resistance is expected in response to efforts to mitigate fire risk (e.g., vegetation clearance) c. Less than 0.5% of landowners are non-compliant with utility initiatives (e.g., vegetation management) d. Less than 1% of landowners complain about utility initiatives (e.g., vegetation management) e. Utility has a demonstratively cooperative relationship with communities containing >90% of the population in HFTD areas (e.g., by being recognized by other agencies as having a cooperative relationship with those communities in HFTD areas) f. Utility does not have records of landowners throughout communities containing >90% of the population in HFTD areas reaching out to notify of risks, dangers, or issues in the past year	a. Utility plans to have a clear and actionable plan to develop or maintain a collaborative relationship with local communities b. Utility does not plan to have communities in HFTD areas where meaningful resistance is expected in response to efforts to mitigate fire risk (e.g., vegetation clearance) c. Utility plans to have less than 0.5% of landowners non-compliant with utility initiatives (e.g., vegetation management) d. Utility plans to have less than 1% of landowners complain about utility initiatives (e.g., vegetation management) e. Utility plans to have a demonstratively cooperative relationship with communities containing >90% of the population in HFTD areas (e.g., by being recognized by other agencies as having a cooperative relationship with those communities in HFTD areas) f. Utility does not plan to have records of landowners throughout communities containing >90% of the population in HFTD areas reaching out to notify of risks, dangers, or issues in the past year

Capability 49: Engagement with communities on utility wildfire mitigation initiatives		
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.10.3 Capability 50: Engagement with LEP and AFN populations

Capability 50: Engagement with LEP and AFN populations		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility does not provide a plan to partner with organizations representing Limited English Proficiency (LEP) and Access & Functional Needs (AFN) communities b. Utility cannot outline how partnerships with LEP and AFN communities create pathways for implementing suggested activities to address the needs of these communities c. Utility cannot point to clear examples of how relationships with LEP and AFN communities have driven the utility's ability to interact with and prepare these communities for wildfire mitigation activities d. Utility does not have a specific annually-updated action plan to further reduce wildfires and PSPS risk to LEP & AFN communities	a. Utility does not plan to provide a plan to partner with organizations representing Limited English Proficiency (LEP) and Access & Functional Needs (AFN) communities b. Utility does not plan to be able to outline how partnerships with LEP and AFN communities create pathways for implementing suggested activities to address the needs of these communities c. Utility does not plan to be able to point to clear examples of how relationships with LEP and AFN communities have driven the utility's ability to interact with and prepare these communities for wildfire mitigation activities d. Utility does not plan to have a specific annually-updated action plan to further reduce wildfires and PSPS risk to LEP & AFN communities
	Criteria missing to reach a maturity level of 1 or more: i. Utility has a plan for partnering with organizations representing LEP and AFN communities	**Criteria missing to reach a maturity level of 1 or more:** i. Utility has a plan for partnering with organizations representing LEP and AFN communities

Capability 50: Engagement with LEP and AFN populations		
	ii. Utility is able to provide information about the nature of these partnerships	ii. Utility is able to provide information about the nature of these partnerships

1.2.10.5 Capability 51: Collaboration with emergency response agencies

Capability 51: Collaboration with emergency response agencies		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility cooperates with suppression agencies by working cooperatively with them to detect ignitions, in addition to notifying them of ignitions as needed b. Utility is cooperating with suppression agencies throughout all areas under utility control c. Utility does not accurately predict and communicate the forecasted fire propagation path using available analytics resources and weather data d. Utility does not communicate fire paths to the community as requested e. Utility works to assist suppression crews logistically where possible	a. Utility plans to cooperate with suppression by working cooperatively with them to detect ignitions, in addition to notifying them of ignitions as needed b. Utility plans to cooperate with suppression agencies throughout all areas under utility control c. Utility does not plan to be able to accurately predict and communicate the forecasted fire propagation path using available analytics resources and weather data d. Utility does not plan to be able to communicate fire paths to the community as requested e. Utility plans to work to assist suppression crews logistically where possible
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.10.6 Capability 52: Collaboration on wildfire mitigation planning with stakeholders

Capability 52: Collaboration on wildfire mitigation planning with stakeholders		
Automated levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility conducts fuel management along rights of way b. Utility does not coordinate with broader fuel management efforts by other stakeholders c. Utility cultivates a native vegetative ecosystem across its territory that is consistent with lower fire risk d. Utility funds local groups (e.g., fire safe councils) to support fuel management	a. Utility plans to conduct fuel management along rights of way **b. Utility plans to share fuel management plans with other stakeholders and to work with other stakeholders conducting fuel management concurrently** c. Utility plans to cultivate a native vegetative ecosystem across its territory that is consistent with lower fire risk d. Utility plans to fund local groups (e.g., fire safe councils) to support fuel management
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.3 HWT: Numerical Maturity Summary

Please reference the Guidance Resolution for the Maturity Rubric and for necessary context to interpret the maturity levels shown below. **All levels are based solely on the Maturity Rubric and on HWT's responses to the Utility Wildfire Mitigation Maturity Survey ("Survey").**

"2020" refers to February 2020, and "2023" refers to February 2023. See the Survey for more detail.

Legend: **2020 Maturity Level** | **2023 Maturity Level** | **Maturity Level for 2020 and 2023**

Category	Capability I	Capability II	Capability III	Capability IV	Capability V	Capability VI
A. Risk assessment and mapping	1. Climate scenario modeling **0** 1 **2** 3 4	2. Ignition risk estimation 0 **1** **2** 3 4	3. Estimation of wildfire consequences for communities **0** 1 2 3 4	4. Estimation of wildfire and PSPS reduction impact 0 1 **2** 3 4	5. Risk maps and simulation algorithms **0** **1** 2 3 4	N/A
B. Situational awareness and forecasting	6. Weather variables collected 0 **1** **2** 3 4	7. Weather data resolution 0 **1** 2 **3** 4	8. Weather forecasting ability **0** 1 **2** 3 4	9. External sources used in weather forecasting 0 **1** **2** 3 4	10. Wildfire detection processes and capabilities 0 1 **2** 3 4	N/A
C. Gird design and system hardening	11. Approach to prioritizing initiatives across territory 0 1 **2** 3 4	12. Grid design for minimizing ignition risk 0 **1** 2 **3** 4	13. Grid design for resiliency and minimizing PSPS **0** 1 2 3 4	14. Risk-based grid hardening and cost efficiency 0 **1** **2** 3 4	15. Grid design and asset innovation 0 **1** 2 3 4	N/A
D. Asset management and inspections	16. Asset inventory and condition assessments 0 **1** **2** 3 4	17. Asset inspection cycle 0 **1** 2 3 4	18. Asset inspection effectiveness 0 1 **2** 3 4	19. Asset maintenance and repair 0 1 2 3 **4**	20. QA/QC for asset management 0 1 **2** 3 4	N/A
E. Vegetation management and inspections	21. Vegetation inventory for condition assessment **0** 1 2 **3** 4	22. Vegetation inspection cycle 0 1 **2** 3 4	23. Vegetation inspection effectiveness 0 1 2 **3** 4	24. Vegetation grow-in mitigation 0 **1** 2 3 4	25. Vegetation fall-in mitigation **0** 1 2 3 4	26. QA/QC for vegetation management 0 1 2 **3** 4
F. Grid operations and protocols	27. Protective equipment and device settings **0** 1 2 3 4	28. Incorporating ignition risk factors in grid control 0 1 2 3 **4**	29. PSPS op. model and consequence mitigation 0 1 **2** 3 4	30. Protocols for PSPS initiation 0 1 **2** 3 4	31. Protocols for PSPS re-energization 0 **1** **2** 3 4	32. Ignition prevention and suppression 0 1 **2** 3 4
G. Data governance	33. Data collection and curation **0** 1 **2** 3 4	34. Data transparency and analytics **0** **1** 2 3 4	35. Near-miss tracking **0** 1 **2** 3 4	36. Data sharing with research community 0 **1** 2 3 4	N/A	N/A
H. Resource allocation methodology	37. Scenario analysis across different risk levels 0 **1** 2 3 4	38. Presentation of relative risk spend efficiency for portfolio of initiatives **0** 1 2 3 4	39. Process for determining risk spend efficiency of vegetation management initiatives **0** 1 2 3 4	40. Process for determining risk spend efficiency of system hardening initiatives **0** 1 2 3 4	41. Portfolio-wide initiative allocation methodology **0** 1 2 3 4	42. Portfolio-wide innovation in new wildfire initiatives 0 **1** 2 3 4
I. Emergency planning and preparedness	43. Wildfire plan integrated with overall disaster / emergency plan **0** **1** 2 3 4	44. Plan to restore service after wildfire related outage 0 **1** 2 3 4	45. Emergency community engagement during and after wildfire **0** 1 2 3 4	46. Protocols in place to learn from wildfire events 0 1 **2** 3 **4**	47. Process for continuous improvement after wildfire and PSPS **0** 1 2 3 4	N/A
J. Stakeholder cooperation and community engagement	48. Cooperation and best practice sharing with other utilities 0 **1** 2 3 **4**	49. Engagement with communities on utility wildfire mitigation initiatives 0 1 2 **3** 4	50. Engagement with LEP and AFN populations **0** 1 2 3 4	51. Collaboration with emergency response agencies 0 1 **2** 3 4	52. Collaboration on wildfire mitigation planning with stakeholders 0 **1** **2** 3 4	N/A

(End of Appendix C-HWT)

APPENDIX C-TBC

Trans Bay Cable Maturity Model Summary

0. Trans Bay Cable: Description of data sources

Data related to the Maturity Model is based on the latest submitted versions of 2020 Utility Wildfire Mitigation Maturity Survey ("Survey") as of April 10th, 2020. Data for the Maturity Model is pulled from Survey responses unless stated otherwise.

All source data (the WMP and the Survey responses) are available at cpuc.ca.gov/wildfiremitigationplans

All the analysis and corresponding tables presented in this appendix rely upon data that is self-reported by the utilities. By utilizing and presenting this self-reported data in this appendix, the WSD is not independently validating that all data elements submitted by utilities are accurate. The WSD will continue to evaluate utility data, conduct data requests, and conduct additional compliance activities to ensure that data provided is accurate.

1. Trans Bay Cable: Maturity Model Summary

Contents

1.1 Trans Bay Cable: Maturity Summary by Category

Maturity Model Category	Summary of Maturity Assessment Focused on areas where utility plans to grow over the 2020-2022 WMP period

A. Risk assessment and mapping
 	
Median automated maturity levels:
 	
2020: 0
2023: 1
	• Trans Bay Cable plans to increase its maturity level by 2023 in two of five capabilities. Specifically, by capability:
	  • **1. Climate Scenario Modeling**: Trans Bay Cable's survey responses project no growth in this capability. Wildfire risk can be reliably determined based on weather and its impact.
	  • **2. Ignition Risk Estimation:** Trans Bay Cable's survey responses do not indicate an increased maturity level in 2023. However, Trans Bay Cable projects some growth within the capability: currently, ignition risk estimates use a 60% confidence interval, but by 2023, Trans Bay Cable plans to use a 90% confidence interval.
	  • **3. Estimation of Wildfire Consequences for Communities:** Trans Bay Cable's survey responses do not indicate an increased maturity level in 2023. However, Trans Bay Cable projects some growth within the capability: currently, consequence of ignition is calculated as a function of one of fatalities, burnt structures, or area burnt. By 2023, Trans Bay Cable plans to calculate ignition risk as a function of all three, as well as a function of monetary damage, impact on air quality, and impact on GHG reduction goals.
	  • **4. Estimation of wildfire and PSPS risk-reduction impact:** Trans Bay Cable's survey responses indicate an increased maturity level in 2023. Currently, risk reduction potential is estimated on an interval scale without a confidence interval. By 2023, Trans Bay Cable plans to estimate risk reduction potential on an interval scale with a quantitative confidence interval
	  • **5. Risk maps and simulation algorithms**: Trans Bay Cable's survey responses indicate an increased maturity level in 2023. Currently, there is no defined process for updating risk mapping algorithms. By 2023, Trans Bay Cable plans to update risk mapping algorithms based on detected deviations of risk model to ignitions and propagation.

B. Situational awareness and forecasting
 	
Median automated maturity levels:
 	
2020: 0
	• Trans Bay Cable plans to increase its maturity level by 2023 in zero of five capabilities. Specifically, by capability:
	  • **6. Weather variables collected:** Trans Bay Cable's survey responses project no growth in this capability. Weather data is not currently validated.
	  • **7. Weather data resolution:** Trans Bay Cable's survey responses project no growth in this capability. Weather data being collected does not accurately reflect local weather conditions across grid infrastructure.

Maturity Model Category	Summary of Maturity Assessment Focused on areas where utility plans to grow over the 2020-2022 WMP period
2023: 0	• **8. Weather forecasting ability:** Trans Bay Cable's survey responses project no growth in this capability. Trans Bay Cable has no reliable weather forecasting ability. • **9. External sources used in weather forecasting:** Trans Bay Cable's survey responses project no growth in this capability. Trans Bay Cable uses external data where direct measurements from utility's own weather stations are not available. • **10. Wildfire detection processes and capabilities:** Trans Bay Cable's survey responses project no growth in this capability. Well-defined procedures for detecting ignitions along the grid exist.
C. Grid design and system hardening Median automated maturity levels: 2020: 3 2023: 3	• Trans Bay Cable plans to increase its maturity level by 2023 in one of five capabilities. Specifically, by capability: • **11. Approach to prioritizing initiatives across territory:** Trans Bay Cable's survey responses project no growth in this capability. Trans Bay Cable prioritizes risk reduction initiatives along a number of dimensions. • **12. Grid design for minimizing ignition risk:** Trans Bay Cable's survey responses project no growth in this capability. Grid topology exceeds design requirements. • **13. Grid design for resiliency and minimizing PSPS:** Trans Bay Cable's survey responses project no growth in this capability. Trans Bay Cable's architecture has many single points of failure. • **14. Risk based hardening and cost efficiency:** Trans Bay Cable's survey responses project no growth in this capability. Trans Bay Cable has an accurate understanding of the relative cost and effectiveness of different initiatives, tailored to the circumstances of different locations on the grid. • **15. Grid design and asset innovation:** Trans Bay Cable's survey responses indicate an increased maturity level in 2023. Currently, new initiatives are evaluated based on the measurement of direct reduction in ignition events. By 2023 Trans Bay Cable plans to also measure reduction impact on near-miss metrics.
D. Asset management and inspections Median automated maturity levels: 2020: 1 2023: 1	• Trans Bay Cable plans to increase its maturity level by 2023 in zero of five capabilities. Specifically, by capability: • **16. Asset inventory and condition assessments:** Trans Bay Cable's survey responses do not indicate an increased maturity level in 2023. However, Trans Bay Cable projects some growth within the capability: currently, Trans Bay Cable has an accurate inventory of equipment that may contribute to wildfire risk, and by 2023 Trans Bay Cable plans to include up-to-date work plans on expected future repairs and replacements in this inventory. • **17. Asset inspection cycle:** Trans Bay Cable's survey responses project no growth in this capability. Trans Bay Cable's inspections are above minimum regulatory requirements, with more frequent inspections for highest risk equipment.

Maturity Model Category	Summary of Maturity Assessment Focused on areas where utility plans to grow over the 2020-2022 WMP period
	• **18. Asset inspection effectiveness:** Trans Bay Cable's survey responses project no growth in this capability. Inspection procedures and checklists include all items required by statute and regulations, including lines and equipment typically responsible for ignitions and near misses. • **19. Asset maintenance and repair:** Trans Bay Cable's survey responses project no growth in this capability. Electrical lines and equipment are maintained as required by regulation, with additional maintenance done in areas of the grid with highest wildfire risk. • **20. QA/QC for asset management:** Trans Bay Cable's survey responses project no growth in this capability. Contractor activity is audited through an established and demonstrably functioning audit process to manage and confirm work completed by subcontractors.
E. Vegetation management and inspections Median automated maturity levels: 2020: 0 2023: 0	• Trans Bay Cable plans to increase its maturity level by 2023 in zero of six capabilities. Specifically, by capability: • **21. Vegetation inventory and condition assessments:** Trans Bay Cable's survey responses project no growth in this capability. There is no vegetation inventory sufficient to determine vegetation clearances across the grid at the time of the last inspection. • **22. Vegetation inspection cycle**: Trans Bay Cable's survey responses project no growth in this capability. All types of vegetation inspections are consistent with minimum regulatory requirements. • **23. Vegetation inspection effectiveness**: Trans Bay Cable's survey responses project no growth in this capability. Patrol, detailed, enhanced, and other inspection procedures and checklists include all items required by statute and regulations. • **24. Vegetation grow-in mitigation**: Trans Bay Cable's survey responses project no growth in this capability. Trans Bay Cable exceeds minimum statutory and regulatory clearance around all lines and equipment. • **25. Vegetation fall-in mitigation**: Trans Bay Cable's survey responses project no growth in this capability. Trans Bay Cable does not remove vegetation outside of its right of way • **26. QA/QC for vegetation management**: Trans Bay Cable's survey responses project no growth in this capability. There is a lack of controls for auditing work completed, including inspections, for employees or subcontractors
F. Grid operations and protocols	• Trans Bay Cable plans to increase its maturity level by 2023 in one of six capabilities. Specifically, by capability:

Maturity Model Category	Summary of Maturity Assessment Focused on areas where utility plans to grow over the 2020-2022 WMP period
Median automated maturity levels: 2020: 1 2023: 1	• **27. Protective equipment and device settings**: Trans Bay Cable's survey responses project no growth in this capability. Trans Bay Cable does not make changes to adjustable equipment in response to high wildfire threat conditions. • **28**. **Incorporating ignition risk factors in grid control:** Trans Bay Cable's survey responses project no growth in this capability. Trans Bay Cable has a clearly explained process for determining whether to operate the grid beyond current or voltage designs. • **29. PSPS op. model and consequence mitigation:** Trans Bay Cable's survey responses project no growth in this capability. PSPS events are generally forecasted accurately with fewer than 50% of predictions being false positives. • **30. Protocols for PSPS initiation:** Trans Bay Cable's survey responses project no growth in this capability. Utility has explicit policies and explanation for the thresholds above which PSPS is activated as a measure of last resort. • **31. Protocols for PSPS re-energization:** Trans Bay Cable's survey responses project no growth in this capability. There is an existing process for accurately inspecting de-energized sections of the grid prior to re-energization, which is augmented with sensors and aerial tools. • **32. Ignition prevention and suppression:** Trans Bay Cable's survey responses indicate an increased maturity level in 2023. Currently, Trans Bay Cable has no policies governing what crews' roles are in suppressing ignitions. By 2023, Trans Bay Cable plans to have explicit policies about the role of crews, including contractors and subcontractors, at the site of ignition.
G. Data Governance Median automated maturity levels: 2020: 0.5 2023: 1	• Trans Bay Cable plans to increase its maturity level by 2023 in two of four capabilities. Specifically, by capability: • **33. Data collection and curation**: Trans Bay Cable's survey responses indicate an increased maturity level in 2023. Currently, Trans Bay Cable does not have a centralized database of situational, operational, and risk data. By 2023, Trans Bay Cable plans to have this database. • **34. Data transparency and analytics:** Trans Bay Cable's survey responses indicate an increased maturity level in 2023. Currently, there is not a single document cataloguing all fire-related data and algorithms, analyses, and data processes. By 2023, Trans Bay Cable plans to have this document. • **35. Near-miss tracking:** Trans Bay Cable's survey responses project no growth in this capability. Trans Bay Cable tracks near miss data for all near misses with wildfire ignition potential. • **36. Data sharing with research community:** Trans Bay Cable's survey responses project no growth in this capability. Trans Bay Cable makes required data disclosures but does not share data beyond what is required.

Maturity Model Category	Summary of Maturity Assessment Focused on areas where utility plans to grow over the 2020-2022 WMP period
H. Resource allocation methodology Median automated maturity levels: 2020: 0 2023: 0	• Trans Bay Cable plans to increase its maturity level by 2023 in zero of six capabilities. Specifically, by capability: • **37. Scenario analysis across different risk levels**: Trans Bay Cable's survey responses project no growth in this capability. Trans Bay Cable does not project proposed initiatives or costs across different levels of risk scenarios. • **38. Presentation of relative risk spend efficiency (RSE) for portfolio of initiatives:** Trans Bay Cable's survey responses project no growth in this capability. Trans Bay Cable does not present accurate qualitative rankings for its initiatives by risk spend efficiency. • **39. Process for determining risk spend efficiency of vegetation management initiatives:** Trans Bay Cable's survey responses project no growth in this capability. Trans Bay Cable has no clear understanding of the relative RSE of various clearances and types of vegetation management initiatives. • **40. Process for determining risk spend efficiency of system hardening initiatives:** Trans Bay Cable's survey responses project no growth in this capability. Trans Bay Cable has accurate relative understanding of cost and effectiveness to produce a reliable RSE estimate. • **41. Portfolio-wide initiative allocation methodology:** Trans Bay Cable's survey responses project no growth in this capability. Trans Bay Cable does not base capital allocation on RSE. • **42. Portfolio-wide innovation in new wildfire initiatives:** Trans Bay Cable's survey responses project no growth in this capability. Trans Bay Cable has no program in place to develop and evaluate the efficacy of new wildfire initiatives.
I. Emergency planning and preparedness Median automated maturity levels: 2020: 1 2023: 3	• Trans Bay Cable plans to increase its maturity level by 2023 in two of five capabilities. Specifically, by capability: • **43. Wildfire plan integrated with overall disaster/emergency plan**: Trans Bay Cable's survey responses indicate an increased maturity level in 2023. Currently, Trans Bay Cable does not run drills to audit the viability and execution of its wildfire plans. By 2023, Trans Bay Cable plans to do so. • **44. Plan to restore service after wildfire related outages:** Trans Bay Cable's survey responses project no growth in this capability. Detailed and actionable procedures are in place to restore service after a wildfire related outage. • **45. Emergency community engagement during and after wildfire:** Trans Bay Cable's survey responses do not indicate an increased maturity level in 2023. However, Trans Bay Cable projects some growth within the capability: currently, Trans Bay Cable engages with other emergency management agencies in an ad hoc manner, but by 2023, Trans Bay Cable plans to have detailed and actionable established protocols for engagement.

Maturity Model Category	Summary of Maturity Assessment Focused on areas where utility plans to grow over the 2020-2022 WMP period
	• **46. Protocols in place to learn from wildfire events:** Trans Bay Cable's survey responses indicate an increased maturity level in 2023. Currently, Trans Bay Cable does not use dry runs to test plans. By 2023, Trans Bay Cable plans to do so. • **47. Processes for continuous improvement after wildfire and PSPS:** Trans Bay Cable's survey responses do not indicate an increased maturity level in 2023. However, Trans Bay Cable projects some growth within the capability: currently, Trans Bay Cable does not share findings with partners about how response can be improved, but by 2023 Trans Bay Cable plans to do so.
J. Stakeholder cooperation and community engagement Median automated maturity levels: 2020: 0 2023: 2	• Trans Bay Cable plans to increase its maturity level by 2023 in two of five capabilities. Specifically, by capability: • **48. Cooperation and best practice sharing with other utilities**: Trans Bay Cable's survey responses indicate an increased maturity level in 2023. Currently, Trans Bay Cable does not work to identify best practices from other utilities. By 2023, Trans Bay Cable plans to do so through a clearly defined operational process. • **49**. **Engagement with communities on utility wildfire mitigation initiatives:** Trans Bay Cable's survey responses indicate an increased maturity level in 2023. Currently, Trans Bay Cable does not have a plan to develop or maintain a collaborative relationship with local communities. By 2023, Trans Bay Cable plans to have a clear and actionable plan to do so. • **50. Engagement with LEP[1] and AFN[2] populations:** Trans Bay Cable's survey responses project no growth in this capability. Trans Bay Cable does not have a plan to work with LEP and AFN communities. • **51. Collaboration with emergency response agencies:** Trans Bay Cable's survey responses project no growth in this capability. Trans Bay Cable cooperates with suppression agencies by working cooperatively with them to detect ignitions and notifies them of ignitions as needed. • **52. Collaboration on wildfire mitigation plan with stakeholders:** Trans Bay Cable's survey responses project no growth in this capability. Trans Bay Cable does not conduct fuel management 1. Limited English Proficiency 2. Access and Functional Needs

1.2 Trans Bay Cable: Maturity Detail by Capability

1.2.1 A. Risk assessment and mapping

1.2.1.1 Capability 1: Climate scenario modeling

Capability 1: Climate scenario modeling		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1	a. Wildfire risk can be reliably determined based on weather and its impacts b. Scenarios are assessed by independent experts, supported by historical data of incidents and near misses c. Climate scenario tool has asset-based granularity d. The climate scenario modelling tool is not automated e. Weather measured at the circuit level, how weather effects failure modes and propagation, existing hardware, and level of vegetation are used to estimate model weather scenarios and their risk f. Future climate change not accounted for in estimating future weather and resulting risk	a. Wildfire risk is planned to be reliably determined based on weather and its impacts b. Scenarios are planned to be assessed by independent experts, supported by historical data of incidents and near misses c. Climate scenario modelling tool is planned to model with asset-level granularity d. The climate scenario modelling tool is not automated e. Weather measured at the circuit level, how weather effects failure modes and propagation, existing hardware, and level of vegetation are planned to be used to estimate model weather scenarios and their risk

Capability 1: Climate scenario modeling		
0		f. Future risk estimates are planned to take into account generally higher risk across entire service territory due to changing climate
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.1.2 Capability 2: Ignition risk estimation

Capability 2: Ignition risk estimation		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Tools and processes can reliably categorize the risk of ignition across the grid into at least two categories based on characteristics and condition of lines, equipment, surrounding vegetation, and localized weather patterns b. Ignition risk calculation tool is not automated c. Ignition risk calculation tool estimates with asset level granularity d. Ignition risk assessment is confirmed by experts and by historical data e. Utility uses >60% confidence interval, or no quantified confidence interval, in its wildfire risk assessments	**a. Tools and processes are planned to be able to quantitatively and accurately assess the risk of ignition across the grid based on characteristics and condition of lines, equipment, surrounding vegetation, and localized weather patterns** **b.** Ignition risk calculation tool is not automated **c.** Ignition risk calculation tool is planned to estimate with asset level granularity **d.** Ignition risk assessment is planned to be confirmed by experts and historical data **e. Utility plans to use >90% confidence interval**
	Criteria missing to reach a maturity level of 1 or more: i. Utility has a partially automated tools and processes to reliably categorize regions of the grid based on ignition risk	**Criteria missing to reach a maturity level of 1 or more:** i. Utility has a partially automated tools and processes to reliably categorize regions of the grid based on ignition risk

1.2.1.3 Capability 3: Estimation of wildfire consequences for communities

Capability 3: Estimation of wildfire consequences for communities		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4	a. Consequence of ignition events quantitatively, accurately, and precisely estimated b. Consequence of ignition risk is calculated as a function of one of the following: potential fatalities, structures burned, and area burned c. Ignition risk impact analysis is available for all seasons d. The ignition risk estimation process is not automated e. Ignition risk estimation process has asset level granularity f. Outputs of ignition risk estimation process are independently assessed by experts and confirmed by historical data g. Level and conditions of vegetation and weather, including the vegetation specifies immediately surrounding the ignition site	a. Consequence of ignition events are planned to be quantitatively, accurately, and precisely estimated **b. Consequence of ignition risk is planned to be calculated as a function of at least potential fatalities, structures burned, area burned, monetary damages, impact on air quality, and impact on GHG reduction goals** c. Ignition risk estimation process is planned to be available for all seasons d. The ignition risk estimation process is not planned to be automated e. Ignition risk estimation process is planned to have asset level granularity f. Outputs of ignition risk estimation process are planned to be independently assessed by experts, and confirmed by historical data g. Levels and conditions of vegetation and weather, including the vegetation specifies immediately surrounding the ignition site, up-to-date moisture content, and local weather patterns are also planned to be used as inputs to estimate impact
3		
2		
1		
0		

Capability 3: Estimation of wildfire consequences for communities		
	Criteria missing to reach a maturity level of 1 or more: i. Partially automated tools to reliably categorize ignition events as low or high risk to communities	**Criteria missing to reach a maturity level of 1 or more:** i. Partially automated tools to reliably categorize ignition events as low or high risk to communities

1.2.1.4 Capability 4. Estimation of wildfire and PSPS reduction impact

Capability 4. Estimation of wildfire and PSPS reduction impact		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Risk reduction potential estimation approach reliably estimates risk reduction potential of initiatives on an interval scale (e.g. specific quantitative units) b. Ignition risk reduction impact assessment tool is not automated c. Ignition risk reduction impact assessment tool has asset-level granularity d. Ignition risk reduction impact assessment tool estimates are assessed with evidence and logical reasoning e. Existing hardware type and condition, including operating history, are also used to estimate risk reduction impact	**a. Risk reduction potential estimation approach is planned to reliably estimate risk reduction potential of initiatives on an interval scale (e.g., specific quantitative units) with a quantitative confidence interval** **b. Ignition risk reduction impact assessment tool is planned to be mostly automated (>50%)** **c.** Ignition risk reduction impact assessment tool is planned to have asset-based granularity **d. Ignition risk reduction impact assessment tool estimates are planned to be assessed by independent experts, supported by historical data of incidents and near misses** **e. Existing hardware type and condition, including operating history; level and condition of vegetation; and weather are planned to be used to estimate risk reduction impact**
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.1.5 Capability 5. Risk maps and simulation algorithms

Capability 5. Risk maps and simulation algorithms		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. No defined process for updating risk mapping algorithms b. Mechanism to determine whether to update algorithms based on deviations is not automated c. Deviations from risk model to ignitions and propagation are not currently calculated d. Decisions to update algorithms are not currently evaluated e. Current and historic ignition and propagation data, as well as near-miss data, is used to make decisions on whether to update algorithms	**a. Risk mapping algorithms are planned to be updated based on detected deviations of risk model to ignitions and propagation** **b. Mechanism to determine whether to update algorithms based on deviations is mostly (>50%) automated** **c. Deviations from risk model to ignitions and propagations are planned to be calculated through a semi-automated process** **d. Decisions to update algorithms are planned to be evaluated independently by experts and historical data** **e.** Current and historic ignition and propagation data, as well as near-miss data, are planned to be used to decide whether to update algorithms
	Criteria missing to reach a maturity level of 1 or more: ii. Risk mapping algorithms updated based on manually detected deviations of risk model to actual ignitions and wildfire propagation	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.2 B. Situational awareness and forecasting

1.2.2.1 Capability 6: Weather variables collected

Capability 6: Weather variables collected		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Wind data being collected is insufficient to properly understand wind related risks along grid b. Measurements are not currently validated c. Elements that cannot be reliably measured in real time are not being predicted (e.g., fuel moisture content) d. No data sources are being used to provide data on weather metrics being collected.	a. Wind data that is planned to be collected is insufficient to properly understand wind related risks along grid b. Measurements are not planned to be validated c. Elements that cannot be reliably measured in real time (e.g., fuel moisture content) are not planned to be predicted d. No data sources is planned to be used for each weather metric collected
	Criteria missing to reach a maturity level of 1 or more: • Wind, temperature, and relative humidity being accurately measured along grid	**Criteria missing to reach a maturity level of 1 or more:** • Wind, temperature, and relative humidity being accurately measured along grid

1.2.2.2 Capability 7: Weather data resolution

Capability 7: Weather data resolution		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Weather data being collected does not accurately reflect local weather conditions across grid infrastructure b. Measurements occur less frequently than hourly c. Weather data tool is less granular than regional, or no tool exists d. Weather condition monitoring is not automated at all	a. Weather data collected is not planned to accurately reflect local weather conditions across grid infrastructure b. Measurements are planned to occur less frequently than hourly c. Weather data tool is planned to be less granular than regional, or no tool exists d. Weather condition monitoring is not planned to be automated at all
	Criteria missing to reach a maturity level of 1 or more: i. Weather data is gathered with sufficient granularity to reliably measure weather conditions ii. Weather data is gathered independently for each area of the grid iii. Weather data is gathered at least once an hour	**Criteria missing to reach a maturity level of 1 or more:** i. Weather data is gathered with sufficient granularity to reliably measure weather conditions ii. Weather data is gathered independently for each area of the grid iii. Weather data is gathered at least once an hour

1.2.2.3 Capability 8: Weather forecasting ability

Capability 8: Weather forecasting ability		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility has no reliable weather forecasting ability b. Accurate forecasts are prepared less than two weeks in advance c. Weather forecasts have less than regional granularity, or there is no forecast at all d. Forecast results are not error checked e. Forecast process is not automated	a. Utility does not plan to have a reliable weather forecasting ability b. Accurate forecasts are planned to be prepared less than two weeks in advance c. Weather forecasts are planned to have less than regional granularity, or there is not planned to be a forecast at all d. Forecast results are not planned to be error checked e. Forecast process is not planned to be automated
	Criteria missing to reach a maturity level of 1 or more: • Weather forecasting ability sufficiently accurate to fulfill PSPS requirements at circuit level	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.2.4 Capability 9: External sources used in weather forecasting

Capability 9: External sources used in weather forecasting		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility uses external data where direct measurements from utility's own weather stations are not available b. Weather station data is not checked for errors c. Weather data is used to make decisions	a. Utility plans to use external data where direct measurements from utility's own weather stations are not available b. Weather station data is not planned to be checked for errors c. Weather data is planned to be used to make decisions
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.2.5 Capability 10: Wildfire detection processes and capabilities

Capability 10: Wildfire detection processes and capabilities		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Well-defined procedures for detecting ignitions along the grid exist b. Well-defined equipment for detecting ignitions along grid, including remote detection equipment including cameras, is used c. Procedure exists for notifying suppression forces and key stakeholders d. Ignition detection software is not currently deployed	a. Well-defined procedures for detecting ignitions along the grid are planned to exist b. Well-defined equipment for detecting ignitions along grid, including remote detection equipment including cameras, are planned to be used c. Procedure is planned to exist for notifying suppression forces and key stakeholders d. Ignition detection software is not planned to be deployed
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.3 C. Grid design and system hardening

1.2.3.1 Capability 11: Approach to prioritizing initiatives across territory

Capability 11: Approach to prioritizing initiatives across territory		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4	a. Plan prioritizes risk reduction initiatives based on i) risk modeling driven by local geography and climate/weather conditions, fuel loads and moisture content and topography, ii) risk estimates across individual circuits, including estimates of actual consequence, and iii) taking delivery uptime into account (e.g., reliability, PSPS, etc.)	a. Trans Bay Cable plans to prioritize risk reduction initiatives based on i) risk modeling driven by local geography and climate/weather conditions, fuel loads and moisture content and topography, ii) risk estimates across individual circuits, including estimates of actual consequence, and iii) taking delivery uptime into account (e.g., reliability, PSPS, etc.)
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1		
0		
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.3.2 Capability 12: Grid design for minimizing ignition risk

Capability 12: Grid design for minimizing ignition risk		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Grid topology exceeds design requirements, designed based on accurate understanding of drivers of utility ignition risk b. Utility does not provide micro grids or islanding where traditional grid infrastructure is impracticable and wildfire risk is high c. Routing of new portions of the grid takes wildfire risk into account d. Efforts are made to include the latest asset management strategies and new technologies into grid topology across the entire service area	a. Grid topology is planned to exceed design requirements, and to be designed based on accurate understanding of utility ignition risk b. Utility does not plan to provide micro grids or islanding where traditional grid infrastructure is impracticable and wildfire risk is high c. Routing of new portions of the grid is planned to take wildfire risk into account d. Efforts are planned to be made to include the latest asset management strategies and new technologies into grid topology across the entire service area
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.3.3 Capability 13: Grid design for resiliency and minimizing PSPS

Capability 13: Grid design for resiliency and minimizing PSPS		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility's transmission architecture has many single points of failure b. Utility's distribution architecture has many single points of failure c. Utility's distribution architecture is not sectionalized and has many single points of failure d. Utility does not consider egress points in its grid topology	a. Utility's transmission architecture is planned to have many single points of failure b. Utility's distribution architecture is planned to have many single points of failure c. Utility's distribution architecture is not planned to be sectionalized and have many single points of failure d. Utility does not plan to consider egress points in its grid topology
	Criteria missing to reach a maturity level of 1 or more: i. Grid architecture includes (n-1) redundancy for transmission circuits subject to PSPS ii. Grid architecture has switches in HFTD areas to individually isolate circuits	**Criteria missing to reach a maturity level of 1 or more:** i. Grid architecture includes (n-1) redundancy for transmission circuits subject to PSPS ii. Grid architecture has switches in HFTD areas to individually isolate circuits

1.2.3.4 Capability 14: Risk-based grid hardening and cost efficiency

Capability 14: Risk-based grid hardening and cost efficiency		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility has an accurate understanding of the relative cost and effectiveness of different initiatives, tailored to the circumstances of different locations on its grid b. Estimates can be prepared with asset-based granularity c. Estimates are updated annually or more frequently d. Utility includes all grid hardening initiatives within its evaluation e. Utility evaluates risk reduction synergies from combinations of various initiatives	a. Utility plans to have an accurate understanding of the relative cost and effectiveness of different initiatives, tailored to the circumstances of different locations on its grid b. Estimates planned to be prepared with asset-based granularity c. Estimates are planned to be updated annually or more frequently d. Utility plans to include all grid hardening initiatives within its evaluation e. Utility plans to be able to evaluate risk reduction synergies from combinations of various initiatives
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.3.5 Capability 15: Grid design and asset innovation

Capability 15: Grid design and asset innovation		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. New grid hardening initiatives are evaluated based on installation into grid and measurement of direct reduction in ignition events b. Results of pilot and commercial deployments, including project performance, project cost, geography, climate, vegetation etc. are not shared in sufficient detail to inform decision making at other utilities c. Performance of new initiatives is not independently audited	**a. New initiatives are planned to be evaluated based on installation into grid and measurement of direct reduction in ignition events, and measuring reduction impact on near-miss metrics** **b.** Results of pilot and commercial deployments, including project performance, project cost, geography, climate, vegetation etc. are not planned to be shared in sufficient detail to inform decision at other utilities **c.** Performance of new initiatives is not planned to be independently audited
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.4 D. Asset management and inspections

1.2.4.1 Capability 16: Asset inventory and condition assessments

Capability 16: Asset inventory and condition assessments		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. There is an accurate inventory of equipment that may contribute to wildfire risk, including age, state of wear, and expected lifecycle, including records of all inspections and repairs b. Condition assessment is updated annually c. Sensorized, continuous monitoring equipment is in place to determine the state of equipment and reliably detect incipient malfunctions likely to cause ignition, with the ability to de-activate electric lines and equipment exhibiting such failure d. Inventory is kept with asset level granularity	**a. Trans Bay Cable plans to have an accurate inventory of equipment that may contribute to wildfire risk, including age, state of wear, and expected lifecycle, including records of all inspections and repairs and up-to-date work plans on expected future repairs and replacements wherein repairs and sensor outputs are independently audited** **b.** Condition assessment is planned to be updated annually **c.** Sensorized, continuous monitoring equipment is planned to be in place to reliably detect incipient malfunctions likely to cause ignition, with the ability to de-activate electric lines and equipment exhibiting such failure **d.** Inventory is planned to be kept with asset level granularity
	Criteria missing to reach a maturity level of 1 or more:	**Criteria missing to reach a maturity level of 1 or more:**

Capability 16: Asset inventory and condition assessments		
	i. Inventory database is updated within 90 days of equipment inventory or conditions being collected	i. Inventory database is updated within 90 days of equipment inventory or conditions being collected

1.2.4.2 Capability 17: Asset inspection cycle

Capability 17: Asset inspection cycle			
Automated maturity levels based on Maturity Rubric		**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both		Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4		a. Patrol inspections are above minimum regulatory requirements, with more frequent inspections for highest risk equipment b. Patrol inspections are scheduled based on annual or periodic schedules c. At least annually updated or verified static maps of equipment and environment are the inputs for scheduling patrol inspections d. Detailed inspections are above minimum regulatory requirements, with more frequent inspections for highest risk equipment e. Detailed inspections are scheduled based on annual or periodic schedules f. At least annually updated or verified static maps of equipment and environment are the inputs for scheduling patrol inspections g. Other inspections are above minimum regulatory requirements, with more frequent inspections for highest risk equipment h. Other inspections are scheduled based on annual or periodic schedules	a. Patrol inspections are planned to be above minimum regulatory requirements, with more frequent inspections for highest risk equipment b. Patrol inspections are planned to be scheduled based on annual or periodic schedules c. At least annually updated or verified static maps of equipment and environment are planned to be the inputs for scheduling patrol inspections d. Detailed inspections are planned to be above minimum regulatory requirements, with more frequent inspections for highest risk equipment e. Detailed inspections are planned to be scheduled based on annual or periodic schedules f. At least annually updated or verified static maps of equipment and environment are planned to be the inputs for scheduling patrol inspections g. Other inspections are planned to be above minimum regulatory requirements, with more frequent inspections for highest risk equipment h. Other inspections are planned to be scheduled based on annual or periodic schedules
3			
2			
1			

Capability 17: Asset inspection cycle		
0	i. At least annually updated or verified static maps of equipment and environment are inputs for scheduling patrol inspections	i. At least annually updated or verified static maps of equipment and environment are planned to be inputs for scheduling patrol inspections
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.4.3 Capability 18: Asset inspection effectiveness

Capability 18: Asset inspection effectiveness		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Patrol, detailed, enhanced, and other inspection procedures and checklists include all items required by statute and regulations, and include lines and equipment typically responsible for ignitions and near misses b. Procedures and inspection checklists are determined based on statute and regulatory guidelines only c. Checklists, training, and procedures are customized at the asset-level	a. Patrol, detailed, enhanced, and other inspection procedures and checklists are planned to include all items required by statute and regulations, and to include lines and equipment typically responsible for ignitions and near misses b. Procedures and inspection checklists are planned to be determined based on statute and regulatory guidelines only c. Checklists, training, and procedures are planned to be customized at the asset-level
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.4.4 Capability 19: Asset maintenance and repair

Capability 19: Asset maintenance and repair		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Electrical lines and equipment maintained as required by regulation, and additional maintenance is done in areas of grid at highest wildfire risk based on detailed risk mapping b. Service intervals are not set based on wildfire risk in relevant circuit or real-time monitoring from sensors c. Maintenance and repair procedures do not take wildfire risk, performance history, or past operating conditions most into account	a. Electrical lines and equipment is planned to be maintained as required by regulation, and additional maintenance is done in areas of grid at highest wildfire risk based on detailed risk mapping b. Service intervals are not planned to be set based on wildfire risk in relevant circuit or real-time monitoring from sensors c. Maintenance and repair procedures are not planned to take wildfire risk, performance history, or past operating conditions most into account
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.4.5 Capability 20: QA/QC for asset management

Capability 20: QA/QC for asset management		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Contractor activity is audited through an established and demonstrably functioning audit process to manage and confirm work completed by subcontractors b. Contractors follow the same processes and standards as utility's own employees c. QA/QC information is regularly used to identify deficiencies in quality of work performance and inspections performance d. QA/QC information is used to identify systemic deficiencies in quality of work and inspections, grade individuals, and recommend specific pre-made and tested training based on weaknesses e. Workforce management software tools are used to manage and confirm work completed by subcontractors	a. Contractor activity is planned to be audited through an established and demonstrably functioning audit process to manage and confirm work completed by subcontractors b. Contractors are planned to follow the same processes and standards as utility's own employees c. QA/QC information is planned to be regularly used to identify deficiencies in quality of work performance and inspections performance d. QA/QC information is planned to be used to identify systemic deficiencies in quality of work and inspections, to grade individuals, and to recommend specific pre-made and tested training based on weaknesses e. Workforce management software tools are planned to be used to manage and confirm work completed by subcontractors
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.5 E. Vegetation Management and inspections

1.2.5.1 Capability 21: Vegetation inventory for condition assessments

Capability 21: Vegetation inventory for condition assessments		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. There is no vegetation inventory sufficient to determine vegetation clearances across the grid at the time of the last inspection b. Inventory is never updated c. Inspections are not independently verified by third party experts d. Inventory has asset level granularity	a. There is not planned to be a vegetation inventory sufficient to determine vegetation clearances across the grid at the time of the last inspection b. Inventory is not planned to be updated c. Inspections are not planned to be independently verified by third party experts d. Inventory planned to have asset level granularity
	Criteria missing to reach a maturity level of 1 or more: ii. Inventory database of vegetation clearances is updated within 90 days of vegetation inventory or conditions being collected	**Criteria missing to reach a maturity level of 1 or more:** ii. Inventory database of vegetation clearances is updated within 90 days of vegetation inventory or conditions being collected

1.2.5.2 Capability 22: Vegetation inspection cycle

Capability 22: Vegetation inspection cycle		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. All types of vegetation inspections are consistent with minimum regulatory requirements b. Vegetation inspections are scheduled based on annual or periodic schedules c. Inputs for scheduling vegetation inspections include at least annually-updated static maps of vegetation and environment	a. All types of vegetation inspections are consistent with minimum regulatory requirements b. Vegetation inspections are planned to be scheduled based on up-to-date static maps of predominant vegetation species and environment c. Planned inputs for scheduling vegetation inspections include at least annually-updated static maps of vegetation and environment
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.5.3 Capability 23: Vegetation inspection effectiveness

Capability 23: Vegetation inspection effectiveness		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Patrol, detailed, enhanced, and other inspection procedures and checklists include all items required by statute and regulations b. Procedures and checklists are based on statute and regulatory guidelines only c. Checklists, training, and procedures are customized at the asset level	a. Patrol, detailed, enhanced, and other inspection procedures and checklists are planned to include all items required by statute and regulations b. Procedures and checklists are planned to be based on statute and regulatory guidelines only c. Checklists, training, and procedures are planned to be customized at the asset level
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.5.4 Capability 24: Vegetation grow-in mitigation

Capability 24: Vegetation grow-in mitigation		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4	a. Utility exceeds minimum statutory and regulatory clearance around all lines and equipment b. Utility meets or exceeds minimum statutory or regulatory clearances during all seasons c. Neither ignition risk modeling nor propagation risk modeling is used to guide clearances around lines and equipment d. Neither species growth rates nor species limb failure rates are used to guide clearance around lines and equipment e. Community organizations are not engaged in setting local clearances and protocols f. Utility does not remove vegetation waste along its right of way across the entire grid g. Utility does not remove vegetation waste along the right of way at all h. Utility does not work with local landowners to provide a cost effective use for cutting vegetation	a. Utility plans to exceed minimum statutory and regulatory clearances around all lines and equipment b. Utility plans to meet or exceed minimum statutory or regulatory clearances during all seasons c. Neither ignition risk modeling nor propagation risk modeling is planned to be used to guide clearances around lines and equipment d. Neither species growth rates nor species limb failure rates are planned to be used to guide clearance around lines and equipment e. Community organizations are not planned to be engaged in setting local clearances and protocols f. Utility does not plan to remove vegetation waste along its right of way across the entire grid g. Utility does not plan to remove vegetation waste along the right of way on the same day as cutting h. Utility does not plan to work with local landowners to provide a cost effective use for cutting vegetation
3		
2		
1		

Capability 24: Vegetation grow-in mitigation		
0	i. Utility does not work with partners to identify new cost effective uses for vegetation, taking into consideration environmental impacts and emissions of vegetation waste	i. Utility does not plan to work with partners to identify new cost effective uses for vegetation, taking into consideration environmental impacts and emissions of vegetation waste
	Criteria missing to reach a maturity level of 1 or more: i. Utility removes vegetation waste along right of ways	**Criteria missing to reach a maturity level of 1 or more:** i. Utility removes vegetation waste along right of ways

1.2.5.5 Capability 25: Vegetation fall-in mitigation

Capability 25: Vegetation fall-in mitigation		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility does not remove vegetation outside of its right of way b. No specific process in place to systematically identify trees likely to pose a risk c. Vegetation is not removed with cooperation from the community d. Utility does not remove vegetation waste outside its right of way across the entire grid e. Utility does not remove vegetation outside its right of way at all f. Utility does not work with local landowners to provide a cost effective use for cutting vegetation j. Utility does not work with partners to identify new cost effective uses for vegetation, taking into consideration environmental impacts and emissions of vegetation waste	a. Utility does not plan to remove vegetation outside of its right of way b. No specific process in place to systematically identify trees likely to pose a risk c. Vegetation is not planned to be removed with cooperation from the community d. Utility does not plan to remove vegetation waste outside its right of way across the entire grid e. Utility does not plan to remove vegetation outside its right of way on the same day as cutting f. Utility does not plan to work with local landowners to provide a cost effective use for cutting vegetation g. Utility does not plan to work with partners to identify new cost effective uses for vegetation, taking into consideration environmental impacts and emissions of vegetation waste
	Criteria missing to reach a maturity level of 1 or more:	**Criteria missing to reach a maturity level of 1 or more:**

Capability 25: Vegetation fall-in mitigation		
	i. Utility removes some vegetation outside of right of ways iii. Utility removes vegetation outside right of ways within one week of cutting vegetation across entire grid	i. Utility removes some vegetation outside of right of ways iii. Utility removes vegetation outside right of ways within one week of cutting vegetation across entire grid

1.2.5.6 Capability 26: QA/QC for vegetation management

Capability 26: QA/QC for vegetation management		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Lack of controls for auditing work completed, including inspections, for employees or subcontractors b. Contractors follow the same processes and standards as utility's own employees c. QA/QC information is never used to identify deficiencies in quality of work performance and inspections performance d. QA/QC information is used to identify systemic deficiencies in quality of work and inspections e. Workforce management software tools are not used to manage and confirm work completed by subcontractors	a. Trans Bay Cable plans to have a lack of controls for auditing work completed, including inspections, for employees or subcontractors b. Contractors are planned to follow the same processes and standards as utility's own employees c. QA/QC information is planned to never be used to identify deficiencies in quality of work performance and inspections performance d. QA/QC information is planned to be used to identify systemic deficiencies in quality of work and inspections e. Workforce management software tools are not planned to be used to manage and confirm work completed by subcontractors
	Criteria missing to reach a maturity level of 1 or more: iv. QA/QC information is used periodically to identify deficiencies in quality of work and inspections	**Criteria missing to reach a maturity level of 1 or more:** iv. QA/QC information is used periodically to identify deficiencies in quality of work and inspections

1.2.6 F. Grid operations and protocols

1.2.6.1 Capability 27: Protective equipment and device settings

Capability 27: Protective equipment and device settings		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility does not make changes to adjustable equipment in response to high wildfire threat conditions b. Utility does not use an automated process to adjust sensitivity of grid elements and evaluate effectiveness c. There is not a predetermined protocol driven by fire conditions for adjusting sensitivity of grid elements	a. Utility does not plan to make changes to adjustable equipment in response to high wildfire threat conditions b. Utility does not plan to use an automated process to adjust sensitivity of grid elements and evaluate effectiveness c. Utility does not plan to have a predetermined protocol driven by fire conditions for adjusting sensitivity of grid elements
	Criteria missing to reach a maturity level of 1 or more: • Utility increases sensitivity of risk reduction elements during high threat weather conditions	**Criteria missing to reach a maturity level of 1 or more:** • Utility increases sensitivity of risk reduction elements during high threat weather conditions

1.2.6.2 Capability 28: Incorporating ignition risk factors in grid control

Capability 28: Incorporating ignition risk factors in grid control		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility has a clearly explained process for determining whether to operate the grid beyond current or voltage designs b. Utility has systems in place to automatically track operation history including current, loads, and voltage throughout the grid at circuit level c. Utility does not use predictive modeling to estimate the expected life and make equipment maintenance, rebuild, or replacement decisions based on grid operating history d. Utility never operates the grid above rated voltage and current load only in conditions that are unlikely to cause wildfire	a. Utility plans to have a clearly explained process for determining whether to operate the grid beyond current or voltage designs b. Utility plans to have systems ins place to automatically track operation history including current, loads, and voltage throughout the grid at circuit level c. Utility does not plan to use predictive modeling to estimate the expected life and make equipment maintenance, rebuild, or replacement decisions based on grid operating history d. Utility plans to never operate the grid above rated voltage and current load only in conditions that are unlikely to cause wildfire
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.6.3 Capability 29: PSPS op. model and consequence mitigation

Capability 29: PSPS op. model and consequence mitigation		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. PSPS events are generally forecasted accurately with fewer than 50% of predictions being false positives b. PSPS events are communicated to >99.9% of affected customers and 100% of medical baseline customers in advance of PSPS action c. Less than 0.5% of customers complain during PSPS events d. Website does not go down during PSPS events e. Average downtime per customer is less than 0.1 hour f. Specific resources are not provided to all affected customers to alleviate the impact of the power shutoff (e.g., providing backup generators, supplies, batteries, etc.)	a. PSPS events are planned to generally forecast accurately with fewer than 50% of predictions being false positives b. PSPS events are planned to be communicated to >99.9% of affected customers and 100% of medical baseline customers in advance of PSPS action c. Less than 0.5% of customers are planned to complain during PSPS events d. Website is not planned to go down during PSPS events e. Average downtime per customer is planned to be less than 0.1 hours f. Specific resources are not planned to be provided to all affected customers to alleviate the impact of the power shutoff (e.g., providing backup generators, supplies, batteries, etc.)
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.6.4 Capability 30: Protocols for PSPS initiation

Capability 30: Protocols for PSPS initiation		
Automated mmaturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility has explicit policies and explanation for the thresholds above which PSPS is activated as a measure of last resort, but maintains grid in sufficiently low risk condition to not require any PSPS activity, though may de-energize specific circuits upon detection of damaged condition of electrical lines and equipment, or contact with foreign objects b. Utility takes into account SME opinion when making PSPS decisions c. Utility de-energizes circuits upon detection of damaged conditions of electric equipment, when circuit presents a safety risk to suppression or other personnel, and when equipment has come into contact with foreign objects posing ignition risk d. Given condition of the grid, utility expects less than 5% probability of any large scale PSPS events affecting more than 10,000 people to occur in the coming year; grid is in sufficiently low risk condition that PSPS events will not be required, and that the only circuits which may require de-energization have sufficient redundancy that energy supply to customers will not be disrupted	a. Utility plans to have explicit policies and explanation for the thresholds above which PSPS is activated as a measure of last resort, but plans to maintain grid in sufficiently low risk condition to not require any PSPS activity, though may de-energize specific circuits upon detection of damaged condition of electrical lines and equipment, or contact with foreign objects b. Utility plans to take into account SME opinion when making PSPS decisions c. Utility plans to de-energize circuits upon detection of damaged conditions of electric equipment, when circuit presents a safety risk to suppression or other personnel, and when equipment has come into contact with foreign objects posing ignition risk d. Given condition of the grid, utility plans to expect less than 5% probability of any large scale PSPS events affecting more than 10,000 people to occur in the coming year; grid is planned to be in sufficiently low risk condition that PSPS events will not be required, and that the only circuits which may require de-energization have sufficient redundancy that energy supply to customers will not be disrupted

Capability 30: Protocols for PSPS initiation		
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.6.5 Capability 31: Protocols for PSPS re-energization

Capability 31: Protocols for PSPS re-energization		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4	a. There is an existing process for accurately inspecting de-energized sections of the grid prior to re-energization, augmented with sensors and aerial tools b. There is a primarily automated process, with minimal manual inputs, for inspecting de-energized sections of the grid prior to re-energization c. Average time it takes to re-energize grid from a PSPS once weather has subsided to below your de-energization threshold is less than 8 hours d. Utility has accurate quantitative understanding of ignition risk following re-energization, by asset, validated by historical data and near misses	a. Trans Bay Cable plans to have an existing process for accurately inspecting de-energized sections of the grid prior to re-energization, augmented with sensors and aerial tools b. Trans Bay Cable plans to have a primarily automated process, with minimal manual inputs, for inspecting de-energized sections of the grid prior to re-energization c. Average time it takes to re-energize grid from a PSPS once weather has subsided to below your de-energization threshold is planned to be less than 8 hours d. Utility plans to have an accurate quantitative understanding of ignition risk following re-energization by asset, validated by historical data and near misses
3		
2		
1		
0		
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.6.6 Capability 32: Ignition prevention and suppression

Capability 32: Ignition prevention and suppression		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4	a. Utility has no policies governing what crews' roles are in suppressing ignitions b. Training and communications tools are provided to immediately report ignitions caused by workers or in immediate vicinity of workers; in addition, suppression tools and training to suppress small ignitions caused by workers or in immediate vicinity of workers are provided; communication tools function without cell reception and training is provided by suppression professionals c. No Cal/OSHA reported injuries or fatalities occurred in the last year in events where workers have encountered an ignition d. Utility does not provide training to other workers at other utilities and outside the utility industry on best practices to minimize, report, and suppress ignition	**a. Utility plans to have explicit policies about the role of crews, including contractors and subcontractors, at the site of ignition** **b. Training and communications tools are planned to be provided to immediately report ignitions caused by workers or in immediate vicinity of workers; in addition, suppression tools and training to suppress small ignitions caused by workers or in immediate vicinity of workers are planned to be provided; communication tools function without cell reception and training is provided by suppression professionals; all tools and trainings provided to contractors and utility workers** **c.** No Cal/OSHA reported injuries or fatalities are planned to occur in events where workers have encountered an ignition **d.** Utility does not plan to provide training to other workers at other utilities and outside the utility industry on best practices to minimize, report, and suppress ignition
3		
2		
1		
0		

Capability 32: Ignition prevention and suppression		
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.7 G. Data Governance

1.2.7.1 Capability 33: Data collection and curation

Capability 33: Data collection and curation		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility does not have a centralized database of situational, operational, and risk data b. Utility is not able to use advanced analytics on its centralized database of situational, operational, and risk data to make operational and investment decisions c. Utility collects data from all sensored portions of electric lines, equipment, weather stations, etc. d. Utility's database of situational, operational, and risk data is not able to ingest and share data using real-time API protocols with a wide variety of stakeholders e. Utility does not identify highest priority additional data sources to improve decision making f. Utility does not share best practices for database management and use with other utilities in California and beyond	**a. Utility plans to have a centralized database of situational, operational, and risk data** **b. Utility plans to use advanced analytics on its centralized database of situational, operational, and risk data to make short-term and long-term operational and investment decisions** **c.** Utility plans to collect data from all sensored portions of electric lines, equipment, weather stations, etc. **d.** Utility's database of situational, operational, and risk data is not planned to be able to ingest and share data using real-time API protocols with a wide variety of stakeholders **e.** Utility does no plan to identify highest priority additional data sources to improve decision making, with plans to incorporate these into centralized database of situational, operational, and risk data **f.** Utility does not plan to share best practices for database management and use with other utilities in California and beyond

Capability 33: Data collection and curation		
	Criteria missing to reach a maturity level of 1 or more: i) Utility has centralized repository of accurate situational, operational, and risk data	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.7.2 Capability 34: Data transparency and analytics

Capability 34: Data transparency and analytics		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. There is not a single document cataloguing all fire-related data and algorithms, analyses, and data processes b. There is not an explanation of the sources, cleaning processes, and assumptions made in the single document catalog c. All analyses, algorithms, and data processing are not documented d. There is not a system capable of sharing data in real time across multiple levels of permissions e. Most relevant wildfire related data algorithms are disclosed publicly in WMP upon request	**a. There is planned to be a single document cataloguing all fire-related data and algorithms, analyses, and data processes** **b. There is planned to be an explanation of the sources, cleaning processes, and assumptions made in the single document catalog** **c. All analyses, algorithms, and data processing are planned to be documented and explained** **d.** There is not planned to be a system capable of sharing data in real time across multiple levels of permissions **e.** Most relevant wildfire related data algorithms is planned to be disclosed publicly in WMP upon request
	Criteria missing to reach a maturity level of 1 or more: i) All wildfire-related data and algorithms used by utility are catalogued in a single document, ii) including an explanation of the sources, and assumptions made; and iii) all analysis and algorithms documented	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.7.3 Capability 35: Near-miss tracking

Capability 35: Near-miss tracking		
Automated based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility tracks near miss data for all near misses with wildfire ignition potential b. Utility is not able to simulate wildfire potential given an ignition based on event characteristics, fuel loads, and moisture using captured near miss data c. Utility captures data related to the specific mode of failure when capturing near-miss data d. Utility is not able to predict the probability of a near miss in causing an ignition based on a set of event characteristics e. Utility does not use data from near misses to change grid operation protocols in real time	a. Utility plans to track near miss data for all near misses with wildfire ignition potential b. Utility does not plan to be able to simulate wildfire potential given an ignition based on event characteristics, fuel loads, and moisture using captured near miss data c. Utility plans to capture data related to the specific mode of failure when capturing near-miss data d. Utility does not plan to be able to predict the probability of a near miss in causing an ignition based on a set of event characteristics e. Utility does not plan to use data from near misses to change grid operation protocols in real time
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.7.4 Capability 36: Data sharing with research community

Capability 36: Data sharing with research community		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility makes required data disclosures, but does not share data beyond what is required b. Utility does not participate in collaborative research c. Utility research addresses does not address utility ignited wildfires or risk reduction initiatives d. Utility does not promote best practices based on latest independent scientific and operational research	a. Utility plans to make required data disclosures, but does not share data beyond what is required b. Utility does not plan to participate in collaborative research c. Utility research is not planned to address utility ignited wildfires or risk reduction initiatives d. Utility plans to promote best practices based on latest independent scientific and operational research
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.8 H. Resource allocation methodology

1.2.8.1 Capability 37: Scenario analysis across different risk levels

Capability 37: Scenario analysis across different risk levels		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility does not project proposed initiatives or costs across different levels of risk scenarios b. Utility provides projections for each scenario with asset-level granularity c. Utility does not include a long term (e.g., 6-10 year) risk estimate taking into account macro factors (climate change, etc.) as well as planned risk reduction initiatives in its scenarios d. Utility provides an estimate of impact on reliability factors in its scenarios	a. Utility does not plan to project proposed initiatives or costs across different levels of risk scenarios b. Utility plans to provide projections for each scenario with asset-level granularity c. Utility does not plan to include a long term (e.g., 6-10 year) risk estimate taking into account macro factors (climate change, etc.) as well as planned risk reduction initiatives in its scenarios d. Utility plans to provide an estimate of impact on reliability factors in its scenarios
	Criteria missing to reach a maturity level of 1 or more: i. Utility provides at least an accurate high-risk reduction and a low risk reduction scenario ii. Utility provides a projected cost and total risk reduction potential for each region	**Criteria missing to reach a maturity level of 1 or more:** i. Utility provides at least an accurate high-risk reduction and a low risk reduction scenario ii. Utility provides a projected cost and total risk reduction potential for each region

1.2.8.2 Capability 38: Presentation of relative risk spend efficiency for portfolio of initiatives

Capability 38: Presentation of relative risk spend efficiency for portfolio of initiatives		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility does not present accurate qualitative rankings for its initiatives by risk spend efficiency b. No commercial initiatives are captured in the ranking of risk spend efficiency c. Utility does not include figures for present value cost and project risk reduction impact of each initiative d. Utility provides an explanation of its investment in each particular initiative, including the expected overall reduction in risk e. Utility is able to provide risk efficiency figures with asset-level granularity	a. Utility does not plan to present accurate qualitative rankings for its initiatives by risk spend efficiency b. No commercial initiatives are planned to be captured in the ranking of risk spend efficiency c. Utility does not plan to include figures for present value cost and project risk reduction impact of each initiative d. Utility plans to provide an explanation of its investment in each particular initiative, including the expected overall reduction in risk e. Utility plans to be able to provide risk efficiency figures with asset-level granularity
	Criteria missing to reach a maturity level of 1 or more: i. Utility provides accurate qualitative ranking of commercial initiatives ii. Ranking includes common commercial initiatives in initiative rankings	**Criteria missing to reach a maturity level of 1 or more:** i. Utility provides accurate qualitative ranking of commercial initiatives ii. Ranking includes common commercial initiatives in initiative rankings

Capability 38: Presentation of relative risk spend efficiency for portfolio of initiatives		
	iii. Rankings include figures for estimated cost and projected risk reduction impact of each initiative	iii. Rankings include figures for estimated cost and projected risk reduction impact of each initiative

1.2.8.3 Capability 39: Process for determining risk spend efficiency of vegetation management initiatives

Capability 39: Process for determining risk spend efficiency of vegetation management initiatives		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1	a. Utility has no clear understanding of the relative RSE of various clearances and types of vegetation management initiatives b. RSE estimates of vegetation management initiatives are prepared with asset-level granularity c. RSE estimates of vegetation management initiatives are never updated d. No vegetation management initiatives are included within its evaluation e. Utility cannot evaluate risk reduction synergies from combination of various initiatives	a. Utility does not plan to have a clear understanding of the relative RSE of various clearances and types of vegetation management initiatives b. RSE estimates of vegetation management initiatives are planned to be prepared with asset-level granularity c. RSE estimates of vegetation management initiatives are not planned to be updated d. No vegetation management initiatives are planned to be included within its evaluation e. Utility does not plan to be able to evaluate risk reduction synergies from combination of various initiatives
0	**Criteria missing to reach a maturity level of 1 or more:** i. Utility has accurate relative understanding of ii. the cost, and iii. effectiveness to produce iv. a reliable RSE estimate of	**Criteria missing to reach a maturity level of 1 or more:** i. Utility has accurate relative understanding of ii. the cost, and iii. effectiveness to produce iv. a reliable RSE estimate of v. commonly-deployed vegetation management initiatives

Capability 39: Process for determining risk spend efficiency of vegetation management initiatives		
	v. commonly-deployed vegetation management initiatives vi. in each area of the utility's grid	vi. In each area of the utility's grid

1.2.8.4 Capability 40: Process for determining risk spend efficiency of system hardening initiatives

Capability 40: Process for determining risk spend efficiency of system hardening initiatives		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1	a. Utility has accurate relative understanding of cost and effectiveness to produce a reliable RSE estimate b. RSE estimates of grid hardening initiatives are prepared with asset-level granularity c. RSE estimates of grid hardening initiatives are updated less frequently than annually d. No grid hardening initiatives are included within its evaluation e. Utility can evaluate risk reduction synergies from combination of various initiatives	a. Utility has accurate quantitative understanding of cost and effectiveness to produce a reliable RSE estimate b. RSE estimates of grid hardening initiatives are planned to be prepared with asset-level granularity c. RSE estimates of grid hardening initiatives are planned to be updated annually or more frequently d. No grid hardening initiatives are planned to be included within its evaluation e. Utility plans to be able to evaluate risk reduction synergies from combination of various initiatives
0		
	Criteria missing to reach a maturity level of 1 or more: v. Utility has accurate relative understanding of the cost and effectiveness to produce a reliable RSE estimate of commonly-deployed initiatives	**Criteria missing to reach a maturity level of 1 or more:** v. Utility has accurate relative understanding of the cost and effectiveness to produce a reliable RSE estimate of commonly-deployed initiatives

1.2.8.5 Capability 41: Portfolio-wide initiative allocation methodology

Capability 41: Portfolio-wide initiative allocation methodology		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility does not base capital allocation on RSE b. Utility takes into account specific information by initiative at the asset level, including state of specific assets and location where initiative will be implemented c. Utility does not verify RSE estimates d. Utility takes impact on safety, reliability, and other priorities into consideration when making spending decisions	a. Utility does not plan to base capital allocation on RSE b. Utility plans to take into account specific information by initiative at the asset level, including state of specific assets and location where initiative will be implemented when generating RSE estimates c. Utility does not plan to verify RSE estimates d. Utility plans to take impact on safety, reliability, and other priorities into consideration when making spending decisions
	Criteria missing to reach a maturity level of 1 or more: ii) Utility allocates spend within each category of wildfire risk reduction by accurate risk spend efficiency estimates	**Criteria missing to reach a maturity level of 1 or more:** ii. Utility allocates spend within each category of wildfire risk reduction by accurate risk spend efficiency estimates

1.2.8.6 Capability 42: Portfolio-wide innovation in new wildfire initiatives

Capability 42: Portfolio-wide innovation in new wildfire initiatives		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. No program in place to develop and evaluate the efficacy of new wildfire initiatives b. No program is in place to develop and evaluate the RSE of new wildfire initiatives c. Utility measures efficacy of new wildfire initiatives with asset level granularity d. Reviews of innovative initiatives are not audited by independent parties e. Utility does not share the findings of its evaluation of innovative initiatives with other utilities, academia, and the general public	a. Utility does not plan to have a program in place to develop and evaluate the RSE of new wildfire initiatives b. Utility does not plan to have a program in place to develop and evaluate the RSE of new wildfire initiatives c. Utility plans to measure efficacy of new wildfire initiatives with asset level granularity d. Reviews of innovative initiatives are not planned to be audited by independent parties e. Utility does not plan to share the findings of its evaluation of innovative initiatives with other utilities, academia, and the general public
	Criteria missing to reach a maturity level of 1 or more: i. New initiatives developed and evaluated based on piloting ii. New initiatives developed and evaluated based on measuring direct reduction in ignition events	**Criteria missing to reach a maturity level of 1 or more:** i. New initiatives developed and evaluated based on piloting ii. New initiatives developed and evaluated based on measuring direct reduction in ignition events

1.2.9 I. Emergency planning and preparedness

1.2.9.1 Capability 43: Wildfire plan integrated with overall disaster / emergency plan

Capability 43: Wildfire plan integrated with overall disaster / emergency plan		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Wildfire plan is an integrated component of overall plan b. Utility does not run drills to audit the viability and execution of its wildfire plans c. Impact of confounding events or multiple simultaneous disasters is not considered in the planning process d. Wildfire plan is not integrated with disaster and emergency preparedness plans of other relevant stakeholders (e.g., CAL FIRE, Fire Safe Councils, etc.) e. Utility does not a leading role in planning, coordinating, and integrating plans across stakeholders	a. Wildfire plan is planned to be a component of overall disaster and emergency plans **b. Utility plans to run drills to audit the viability and execution of its wildfire plans** **c. Impact of confounding events or multiple simultaneous disasters is planned to be considered in the planning process** **d. Wildfire plan is planned to be integrated with disaster and emergency preparedness plans of other relevant stakeholders (e.g., CAL FIRE, Fire Safe Councils, etc.)** e. Utility does not plan to take a leading role in planning, coordinating, and integrating plans across stakeholders
	Criteria missing to reach a maturity level of 1 or more:	**Criteria missing to reach a maturity level of 1 or more:**

Capability 43: Wildfire plan integrated with overall disaster / emergency plan		
	ii. Utility runs drills to audit the viability and execution of plan	• N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.9.2 Capability 44: Plan to restore service after wildfire related outage

Capability 44: Plan to restore service after wildfire related outage		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Detailed and actionable procedures are in place to restore service after a wildfire related outage b. Employee and subcontractor crews are trained in and aware of plans c. Procedures to restore service after a wildfire-related outage are customized with asset level granularity d. Customized procedure to restore service is not based on topography, vegetation, and community needs e. There is an inventory of high risk spend efficiency resources available for repairs f. Wildfire plan is an integrated component of overall disaster and emergency plans	a. Detailed and actionable procedures are planned to be in place to restore service after a wildfire related outage b. Employee and subcontractor crews are planned to be trained in and be aware of plans c. Procedures to restore service after a wildfire-related are planned to be customized with asset level granularity d. Customized procedure to restore service is not planned to be based on topography, vegetation, and community needs e. Utility plans to have an inventory of high risk spend efficiency resources available for repairs f. Wildfire plan is planned to be a component of overall disaster and emergency plans
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.9.3 Capability 45: Emergency community engagement during and after wildfire

Capability 45: Emergency community engagement during and after wildfire		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility provides clear and substantially complete communication of available information relevant to affected customers b. >99.9% of customers receive complete details of available information c. >99.9% of affected medical baseline customers receive complete details of available information d. Utility does not assist where helpful with communication of information related to power outages through availability of relevant evacuation information and links on website/toll-free number, or by assisting disaster response professionals as requested e. Utility engages with other emergency management agencies in an ad hoc manner f. Utility does not communicate or coordinate resources to communities during emergencies (e.g., shelters, supplies, transportation, etc.)	a. Utility plans to provide clear and substantially complete communication of available information relevant to affected customers b. >99.9% of customers are planned to receive complete details of available information c. >99.9% of medical baseline customers are expected to receive complete details of available information d. Utility does not plan to assist where helpful with communication of information related to power outages through availability of relevant evacuation information and links on website/toll-free number, or by assisting disaster response professionals as requested **e. Utility plans to have detailed and actionable established protocols for engaging with other emergency management organizations during emergency situations** f. Utility does not plan to communicate or coordinate resources during emergencies (e.g., shelters, supplies, transportation, etc.)

Capability 45: Emergency community engagement during and after wildfire		
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.9.4 Capability 46: Protocols in place to learn from wildfire events

Capability 46: Protocols in place to learn from wildfire events		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. There is a protocol in place to record the outcome of emergency events and to clearly and actionably document learnings and potential process improvements b. There is a defined process and staff responsible for incorporating learnings into emergency plan c. "Dry runs" are not used to test plans updated based on learnings and improvements to confirm its effectiveness d. There is not a defined process to solicit input from a variety of other stakeholders and incorporate learnings from other stakeholders into the emergency plan	a. Utility plans to have a protocol in place to record the outcome of emergency events and to clearly and actionably document learnings and potential process improvements b. Utility plans to have a defined process and staff responsible for incorporating learnings into emergency plan **c. Utility plans to have "dry runs" to test plans updated based on learnings and improvements to confirm its effectiveness** **d. Utility plans to have a defined process to solicit input from a variety of other stakeholders and incorporate learnings from other stakeholders into the emergency plan**
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.9.5 Capability 47: Processes for continuous improvement after wildfire and PSPS

Capability 47: Processes for continuous improvement after wildfire and PSPS		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1	a. Utility does not conduct an evaluation or debrief process after a wildfire b. Utility conducts neither a customer survey nor utilizes partners to disseminate requests for stakeholder engagement c. Utility does not engage in debriefs with partners or public listening sessions d. Utility does not share findings with partners about what can be improved e. Feedback and recommendations on potential improvements are not made public f. Utility does not conduct proactive outreach to local agencies and organizations to solicit additional feedback on what can be improved g. Utility does not have a clear plan for post-event listening and incorporating lessons learned from all stakeholders	a. Utility does not plan to conduct an evaluation or debrief process after a wildfire b. Utility does not plan to conduct either a customer survey or utilize partners to disseminate requests for stakeholder engagement c. Utility does not plan to engage in debriefs with partners or public listening sessions **d. Utility plans to share findings with partners about what can be improved** **e. Feedback and recommendations on potential improvements are not to be made public** **f. Utility plans to conduct proactive outreach to local agencies and organizations to solicit additional feedback on what can be improved** **g. Utility plans to have a clear plan for post-event listening and incorporating lessons learned from all stakeholders**

Capability 47: Processes for continuous improvement after wildfire and PSPS		
0	h. Utility does not track the implementation of recommendations and report upon their impact i. Utility does not have a process to conduct reviews after wildfires in other territories of other utilities and states to identify and address areas of improvement	**h. Utility plans to track the implementation of recommendations and report upon their impact** **i. Utility plans to have a process to conduct reviews after wildfires in other territories of other utilities and states to identify and address areas of improvement**
	Criteria missing to reach a maturity level of 1 or more: i. Utility conducts a customer survey and utilizes partners to disseminate requests for stakeholder engagement iii. Feedback and recommendations on potential improvements are made public	**Criteria missing to reach a maturity level of 1 or more:** i. Utility conducts a customer survey and utilizes partners to disseminate requests for stakeholder engagement

1.2.10 J. Stakeholder cooperation and community engagement

1.2.10.1 Capability 48: Cooperation and best practice sharing with other utilities

Capability 48: Cooperation and best practice sharing with other utilities		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4	a. Utility does not actively work to identify best practices from other utilities through a clearly defined operational process b. Utility successfully adopts and implements best practices identified from other utilities c. Utility does not seek to share best practices and lessons learned in a consistent format d. Utility does not share best practices and lessons via a consistent and predictable set of venues / media e. Utility does not participate in annual benchmarking exercises with other utilities to find other areas for improvement f. Utility has not implemented a defined process for testing lessons learned from other utilities to ensure local applicability	**a. Utility plans to actively work to identify best practices from other California utilities through a clearly defined operational process** **b.** Utility plans to successfully adopt and implement best practices identified from other utilities **c. Utility plans to seek to share best practices and lessons learned in a consistent format** **d. Utility plans to share best practices and lessons via a consistent and predictable set of venues / media** **e. Utility plans to participate in annual benchmarking exercises with other utilities to find other areas for improvement** **f. Utility plans to implement a defined process for testing lessons learned from other utilities to ensure local applicability**
3		
2		
1		
0		
	Criteria missing to reach a maturity level of 1 or more:	**Criteria missing to reach a maturity level of 1 or more:**

Capability 48: Cooperation and best practice sharing with other utilities		
	i. Utility has a clearly defined operational process in place to learn from other utilities ii. Utility exchanges best practices with other California utilities iii. Utility tests lessons learned from other utilizes to ensure local applicability	• N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.10.2 Capability 49: Engagement with communities on utility wildfire mitigation initiatives

Capability 49: Engagement with communities on utility wildfire mitigation initiatives		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility does not have a clear and actionable plan to develop or maintain a collaborative relationship with local communities b. There are not communities in HFTD areas where meaningful resistance is expected in response to efforts to mitigate fire risk (e.g., vegetation clearance) c. Less than 0.5% of landowners are non-compliant with utility initiatives (e.g., vegetation management) d. Less than 1% of landowners complain about utility initiatives (e.g., vegetation management) e. Utility does not have a demonstratively cooperative relationship with communities containing >90% of the population in HFTD areas (e.g., by being recognized by other agencies as having a cooperative relationship with those communities in HFTD areas) f. Utility does not have records of landowners throughout communities containing >90% of the population in HFTD areas reaching out to notify of risks, dangers, or issues in the past year	**a. Utility plans to have a clear and actionable plan to develop or maintain a collaborative relationship with local communities** **b.** Utility does not plan to have communities in HFTD areas where meaningful resistance is expected in response to efforts to mitigate fire risk (e.g., vegetation clearance) **c.** Utility plans to have less than 0.5% of landowners non-compliant with utility initiatives (e.g., vegetation management) **d.** Utility plans to have less than 1% of landowners complain about utility initiatives (e.g., vegetation management) **e.** Utility does not plan to have a demonstratively cooperative relationship with communities containing >90% of the population in HFTD areas (e.g., by being recognized by other agencies as having a cooperative relationship with those communities in HFTD areas) **f.** Utility does not plan to have records of landowners throughout communities containing >90% of the population in HFTD areas reaching out to notify of risks, dangers, or issues in the past year

Capability 49: Engagement with communities on utility wildfire mitigation initiatives		
	Criteria missing to reach a maturity level of 1 or more: i. Utility has a clear and actionable plan to develop or maintain a collaborative relationship with local communities	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.10.3 Capability 50: Engagement with LEP and AFN populations

Capability 50: Engagement with LEP and AFN populations		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility does not provide a plan to partner with organizations representing Limited English Proficiency (LEP) and Access & Functional Needs (AFN) communities b. Utility cannot outline how partnerships with LEP and AFN communities create pathways for implementing suggested activities to address the needs of these communities c. Utility cannot point to clear examples of how relationships with LEP and AFN communities have driven the utility's ability to interact with and prepare these communities for wildfire mitigation activities d. Utility does not have a specific annually-updated action plan to further reduce wildfires and PSPS risk to LEP & AFN communities	a. Utility does not plan to provide a plan to partner with organizations representing Limited English Proficiency (LEP) and Access & Functional Needs (AFN) communities b. Utility does not plan to be able to outline how partnerships with LEP and AFN communities create pathways for implementing suggested activities to address the needs of these communities c. Utility does not plan to be able to point to clear examples of how relationships with LEP and AFN communities have driven the utility's ability to interact with and prepare these communities for wildfire mitigation activities d. Utility does not plan to have a specific annually-updated action plan to further reduce wildfires and PSPS risk to LEP & AFN communities
	Criteria missing to reach a maturity level of 1 or more: i. Utility has a plan for partnering with organizations representing LEP and AFN communities	**Criteria missing to reach a maturity level of 1 or more:** i. Utility has a plan for partnering with organizations representing LEP and AFN communities

Capability 50: Engagement with LEP and AFN populations		
	ii. Utility is able to provide information about the nature of these partnerships	ii. Utility is able to provide information about the nature of these partnerships

1.2.10.4 Capability 51: Collaboration with emergency response agencies

Capability 51: Collaboration with emergency response agencies		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility cooperates with suppression agencies by working cooperatively with them to detect ignitions, in addition to notifying them of ignitions as needed b. Utility is cooperating with suppression agencies throughout utility service areas c. Utility does not accurately predict and communicate the forecasted fire propagation path using available analytics resources and weather data d. Utility does not communicate fire paths to the community as requested e. Utility works to assist suppression crews logistically where possible	a. Utility plans to cooperate with suppression by working cooperatively with them to detect ignitions, in addition to notifying them of ignitions as needed b. Utility plans to cooperate with suppression agencies throughout utility service areas c. Utility does not plan to be able to accurately predict and communicate the forecasted fire propagation path using available analytics resources and weather data d. Utility does not plan to be able to communicate fire paths to the community as requested e. Utility plans to work to assist suppression crews logistically where possible
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.2.10.5 Capability 52: Collaboration on wildfire mitigation planning with stakeholders

Capability 52: Collaboration on wildfire mitigation planning with stakeholders		
Automated maturity levels based on Maturity Rubric	**Responses to survey questions** *Each letter indicates a survey question, with the relevant response shown below.*	
Legend 2020 / 2023 / Both	Current state As of February 2020	Planned state for 2023 "Three years from now" as of February 2020 **Bold responses have planned growth between 2020 and 2023**
4 3 2 1 0	a. Utility does not conduct fuel management b. Utility does not coordinate with broader fuel management efforts by other stakeholders c. Utility does not cultivate a native vegetative ecosystem across its territory that is consistent with lower fire risk d. Utility does not fund local groups (e.g., fire safe councils) to support fuel management	a. Utility does not plan to conduct fuel management b. Utility does not plan to coordinate with broader fuel management efforts by other stakeholders c. Utility does not plan to cultivate a native vegetative ecosystem across its territory that is consistent with lower fire risk d. Utility does not plan to fund local groups (e.g., fire safe councils) to support fuel management
	Criteria missing to reach a maturity level of 1 or more: • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric	**Criteria missing to reach a maturity level of 1 or more:** • N/A – all criteria to reach a 1 are met based on survey responses and maturity rubric

1.3 Trans Bay Cable: Numerical Maturity Summary

Please reference the Guidance Resolution for the Maturity Rubric and for necessary context to interpret the levels shown below. **All levels are based solely on the Maturity Rubric and on Trans Bay Cable's responses to the Utility Wildfire Mitigation Maturity Survey ("Survey").**

"2020" refers to February 2020, and "2023" refers to February 2023. See the Survey for more detail.

Category	Capability I	Capability II	Capability III	Capability IV	Capability V	Capability VI
A. Risk assessment and mapping	1. Climate scenario modeling	2. Ignition risk estimation	3. Estimation of wildfire consequences for communities	4. Estimation of wildfire and PSPS reduction impact	5. Risk maps and simulation algorithms	N/A
B. Situational awareness and forecasting	6. Weather variables collected	7. Weather data resolution	8. Weather forecasting ability	9. External sources used in weather forecasting	10. Wildfire detection processes and capabilities	N/A
C. Grid design and system hardening	11. Approach to prioritizing initiatives across territory	12. Grid design for minimizing ignition risk	13. Grid design for resiliency and minimizing PSPS	14. Risk-based grid hardening and cost efficiency	15. Grid design and asset innovation	N/A
D. Asset management and inspections	16. Asset inventory and condition assessments	17. Asset inspection cycle	18. Asset inspection effectiveness	19. Asset maintenance and repair	20. QA/QC for asset management	N/A
E. Vegetation management and inspections	21. Vegetation inventory for condition assessment	22. Vegetation inspection cycle	23. Vegetation inspection effectiveness	24. Vegetation grow-ir mitigation	25. Vegetation fall-in mitigation	26. QA/QC for vegetation management
F. Grid operations and protocols	27. Protective equipment and device settings	28. Incorporating ignition risk factors in grid control	29. PSPS op. model and consequence mitigation	30. Protocols for PSPS initiation	31. Protocols for PSPS re-energization	32. Ignition prevention and suppression
G. Data governance	33. Data collection and curation	34. Data transparency and analytics	35. Near-miss tracking	36. Data sharing with research community	N/A	N/A
H. Resource allocation methodology	37. Scenario analysis across different risk levels	38. Presentation of relative risk spend efficiency for portfolio of initiatives	39. Process for determining risk spend efficiency of vegetation management initiatives	40. Process for determining risk spend efficiency of system hardening initiatives	41. Portfolio-wide initiative allocation methodology	42. Portfolio-wide innovation in new wildfire initiatives
I. Emergency planning and preparedness	43. Wildfire plan integrated with overall disaster / emergency plan	44. Plan to restore service after wildfire related outage	45. Emergency community engagement during and after wildfire	46. Protocols in place to learn from wildfire events	47. Process for continuous improvement after wildfire and PSPS	N/A
J. Stakeholder cooperation and community engagement	48. Cooperation and best practice sharing with other utilities	49. Engagement with communities on utility wildfire mitigation initiatives	50. Engagement with LEP and AFN populations	51. Collaboration with emergency response agencies	52. Collaboration on wildfire mitigation planning with stakeholders	N/A

(End of Appendix C-TBC)

APPENDIX D

Definitions of Mitigation Initiatives from Section 5 of WMP Guidelines

5.3.11 Definitions of initiatives by category

Category	Initiative	Definition
A. Risk mapping and simulation	A summarized risk map that shows the overall ignition probability and estimated wildfire consequence along the electric lines and equipment	Development and use of tools and processes to develop and update risk map and simulations and to estimate risk reduction potential of initiatives for a given portion of the grid (or more granularly, e.g., circuit, span, or asset). May include verification efforts, independent assessment by experts, and updates.
	Climate-driven risk map and modelling based on various relevant weather scenarios	Development and use of tools and processes to estimate incremental risk of foreseeable climate scenarios, such as drought, across a given portion of the grid (or more granularly, e.g., circuit, span, or asset). May include verification efforts, independent assessment by experts, and updates.
	Ignition probability mapping showing the probability of ignition along the electric lines and equipment	Development and use of tools and processes to assess the risk of ignition across regions of the grid (or more granularly, e.g., circuits, spans, or assets).
	Initiative mapping and estimation of wildfire and PSPS risk-reduction impact	Development of a tool to estimate the risk reduction efficacy (for both wildfire and PSPS risk) and risk-spend efficiency of various initiatives.
	Match drop simulations showing the potential wildfire consequence of ignitions that occur along the electric lines and equipment	Development and use of tools and processes to assess the impact of potential ignition and risk to communities (e.g., in terms of potential fatalities, structures burned, monetary damages, area burned, impact on air quality and greenhouse gas, or GHG, reduction goals, etc.).
B. Situational awareness and forecasting	Advanced weather monitoring and weather stations	Purchase, installation, maintenance, and operation of weather stations. Collection, recording, and analysis of weather data from weather stations and from external sources.
	Continuous monitoring sensors	Installation, maintenance, and monitoring of sensors and sensorized equipment used to monitor the condition of electric lines and equipment.
	Fault indicators for detecting faults on electric lines and equipment	Installation and maintenance of fault indicators.
	Forecast of a fire risk index, fire potential index, or similar	Index that uses a combination of weather parameters (such as wind speed, humidity, and temperature), vegetation and/or fuel conditions, and other factors to judge current fire risk and to create a forecast indicative of fire risk. A sufficiently granular index shall inform operational decision-making.
	Personnel monitoring areas of electric lines and equipment in elevated fire risk conditions	Personnel position within utility service territory to monitor system conditions and weather on site. Field observations shall inform operational decisions.
	Weather forecasting and estimating impacts on electric lines and equipment	Development methodology for forecast of weather conditions relevant to utility operations, forecasting weather conditions and conducting analysis to incorporate into utility decision-making, learning and updates to reduce false positives and false negatives of forecast PSPS conditions.

Category	Initiative	Definition
C. Grid design and system hardening	Capacitor maintenance and replacement program	Remediation, adjustments, or installations of new equipment to improve or replace existing capacitor equipment.
	Circuit breaker maintenance and installation to de-energize lines upon detecting a fault	Remediation, adjustments, or installations of new equipment to improve or replace existing fast switching circuit breaker equipment to improve the ability to protect electrical circuits from damage caused by overload of electricity or short circuit.
	Covered conductor installation	Installation of covered or insulated conductors to replace standard bare or unprotected conductors (defined in accordance with GO 95 as supply conductors, including but not limited to lead wires, not enclosed in a grounded metal pole or not covered by: a "suitable protective covering" (in accordance with Rule 22.8), grounded metal conduit, or grounded metal sheath or shield). In accordance with GO 95, conductor is defined as a material suitable for: (1) carrying electric current, usually in the form of a wire, cable or bus bar, or (2) transmitting light in the case of fiber optics; insulated conductors as those which are surrounded by an insulating material (in accordance with Rule 21.6), the dielectric strength of which is sufficient to withstand the maximum difference of potential at normal operating voltages of the circuit without breakdown or puncture; and suitable protective covering as a covering of wood or other non-conductive material having the electrical insulating efficiency (12kV/in. dry) and impact strength (20ft.-lbs) of 1.5 inches of redwood or other material meeting the requirements of Rule 22.8-A, 22.8-B, 22.8-C or 22.8-D.
	Covered conductor maintenance	Remediation and adjustments to installed covered or insulated conductors. In accordance with GO 95, conductor is defined as a material suitable for: (1) carrying electric current, usually in the form of a wire, cable or bus bar, or (2) transmitting light in the case of fiber optics; insulated conductors as those which are surrounded by an insulating material (in accordance with Rule 21.6), the dielectric strength of which is sufficient to withstand the maximum difference of potential at normal operating voltages of the circuit without breakdown or puncture; and suitable protective covering as a covering of wood or other non-conductive material having the electrical insulating efficiency (12kV/in. dry) and impact strength (20ft.-lbs) of 1.5 inches of redwood or other material meeting the requirements of Rule 22.8-A, 22.8-B, 22.8-C or 22.8-D.
	Crossarm maintenance, repair, and replacement	Remediation, adjustments, or installations of new equipment to improve or replace existing crossarms, defined as horizontal support attached to poles or structures generally at right angles to the conductor supported in accordance with GO 95.
	Distribution pole replacement and reinforcement, including with composite poles	Remediation, adjustments, or installations of new equipment to improve or replace existing distribution poles (i.e., those supporting lines under 65kV), including with equipment such as composite poles manufactured with materials reduce ignition probability by increasing pole lifespan and resilience against failure from object contact and other events.
	Expulsion fuse replacement	Installations of new and CAL FIRE-approved power fuses to replace existing expulsion fuse equipment.

Category	Initiative	Definition
	Grid topology improvements to mitigate or reduce PSPS events	Plan to support and actions taken to mitigate or reduce PSPS events in terms of geographic scope and number of customers affected, such as installation and operation of electrical equipment to sectionalize or island portions of the grid, microgrids, or local generation.
	Installation of system automation equipment	Installation of electric equipment that increases the ability of the utility to automate system operation and monitoring, including equipment that can be adjusted remotely such as automatic reclosers (switching devices designed to detect and interrupt momentary faults that can reclose automatically and detect if a fault remains, remaining open if so).
	Maintenance, repair, and replacement of connectors, including hotline clamps	Remediation, adjustments, or installations of new equipment to improve or replace existing connector equipment, such as hotline clamps.
	Mitigation of impact on customers and other residents affected during PSPS event	Actions taken to improve access to electricity for customers and other residents during PSPS events, such as installation and operation of local generation equipment (at the community, household, or other level).
	Other corrective action	Other maintenance, repair, or replacement of utility equipment and structures so that they function properly and safely, including remediation activities (such as insulator washing) of other electric equipment deficiencies that may increase ignition probability due to potential equipment failure or other drivers.
	Pole loading infrastructure hardening and replacement program based on pole loading assessment program	Actions taken to remediate, adjust, or install replacement equipment for poles that the utility has identified as failing to meet safety factor requirements in accordance with GO 95 or additional utility standards in the utility's pole loading assessment program.
	Transformers maintenance and replacement	Remediation, adjustments, or installations of new equipment to improve or replace existing transformer equipment.
	Transmission tower maintenance and replacement	Remediation, adjustments, or installations of new equipment to improve or replace existing transmission towers (e.g., structures such as lattice steel towers or tubular steel poles that support lines at or above 65kV).
	Undergrounding of electric lines and/or equipment	Actions taken to convert overhead electric lines and/or equipment to underground electric lines and/or equipment (i.e., located underground and in accordance with GO 128).
	Updates to grid topology to minimize risk of ignition in HFTDs	Changes in the plan, installation, construction, removal, and/or undergrounding to minimize the risk of ignition due to the design, location, or configuration of utility electric equipment in HFTDs.

Category	Initiative	Definition
D. Asset management and inspections	Detailed inspections of distribution electric lines and equipment	In accordance with GO 165, careful visual inspections of overhead electric distribution lines and equipment where individual pieces of equipment and structures are carefully examined, visually and through use of routine diagnostic test, as appropriate, and (if practical and if useful information can be so gathered) opened, and the condition of each rated and recorded.
	Detailed inspections of transmission electric lines and equipment	Careful visual inspections of overhead electric transmission lines and equipment where individual pieces of equipment and structures are carefully examined, visually and through use of routine diagnostic test, as appropriate, and (if practical and if useful information can be so gathered) opened, and the condition of each rated and recorded.
	Improvement of inspections	Identifying and addressing deficiencies in inspections protocols and implementation by improving training and the evaluation of inspectors.
	Infrared inspections of distribution electric lines and equipment	Inspections of overhead electric distribution lines, equipment, and right-of-way using infrared (heat-sensing) technology and cameras that can identify "hot spots", or conditions that indicate deterioration or potential equipment failures, of electrical equipment.
	Infrared inspections of transmission electric lines and equipment	Inspections of overhead electric transmission lines, equipment, and right-of-way using infrared (heat-sensing) technology and cameras that can identify "hot spots", or conditions that indicate deterioration or potential equipment failures, of electrical equipment.
	Intrusive pole inspections	In accordance with GO 165, intrusive inspections involve movement of soil, taking samples for analysis, and/or using more sophisticated diagnostic tools beyond visual inspections or instrument reading.
	LiDAR inspections of distribution electric lines and equipment	Inspections of overhead electric transmission lines, equipment, and right-of-way using LiDAR (Light Detection and Ranging, a remote sensing method that uses light in the form of a pulsed laser to measure variable distances).
	LiDAR inspections of transmission electric lines and equipment	Inspections of overhead electric distribution lines, equipment, and right-of-way using LiDAR (Light Detection and Ranging, a remote sensing method that uses light in the form of a pulsed laser to measure variable distances).
	Other discretionary inspection of distribution electric lines and equipment, beyond inspections mandated by rules and regulations	Inspections of overhead electric transmission lines, equipment, and right-of-way that exceed or otherwise go beyond those mandated by rules and regulations, including GO 165, in terms of frequency, inspection checklist requirements or detail, analysis of and response to problems identified, or other aspects of inspection or records kept.
	Other discretionary inspection of transmission electric lines and equipment, beyond inspections mandated by rules and regulations	Inspections of overhead electric distribution lines, equipment, and right-of-way that exceed or otherwise go beyond those mandated by rules and regulations, including GO 165, in terms of frequency, inspection checklist requirements or detail, analysis of and response to problems identified, or other aspects of inspection or records kept.,
	Patrol inspections of distribution electric lines and equipment	In accordance with GO 165, simple visual inspections of overhead electric distribution lines and equipment that is designed to identify obvious structural problems and hazards. Patrol inspections may be carried out in the course of other company business.

Category	Initiative	Definition
	Patrol inspections of transmission electric lines and equipment	Simple visual inspections of overhead electric transmission lines and equipment that is designed to identify obvious structural problems and hazards. Patrol inspections may be carried out in the course of other company business.
	Pole loading assessment program to determine safety factor	Calculations to determine whether a pole meets pole loading safety factor requirements of GO 95, including planning and information collection needed to support said calculations. Calculations shall consider many factors including the size, location, and type of pole; types of attachments; length of conductors attached; and number and design of supporting guys, per D.15-11-021.
	Quality assurance / quality control of inspections	Establishment and function of audit process to manage and confirm work completed by employees or subcontractors, including packaging QA/QC information for input to decision-making and related integrated workforce management processes.
	Substation inspections	In accordance with GO 175, inspection of substations performed by qualified persons and according to the frequency established by the utility, including record-keeping.
E. Vegetation management and inspection	Additional efforts to manage community and environmental impacts	Plan and execution of strategy to mitigate negative impacts from utility vegetation management to local communities and the environment, such as coordination with communities to plan and execute vegetation management work or promotion of fire-resistant planting practices
	Detailed inspections of vegetation around distribution electric lines and equipment	Careful visual inspections of vegetation around the right-of-way, where individual trees are carefully examined, visually, and the condition of each rated and recorded.
	Detailed inspections of vegetation around transmission electric lines and equipment	Careful visual inspections of vegetation around the right-of-way, where individual trees are carefully examined, visually, and the condition of each rated and recorded.
	Emergency response vegetation management due to red flag warning or other urgent conditions	Plan and execution of vegetation management activities, such as trimming or removal, executed based upon and in advance of forecast weather conditions that indicate high fire threat in terms of ignition probability and wildfire consequence.
	Fuel management and reduction of “slash” from vegetation management activities	Plan and execution of fuel management activities that reduce the availability of fuel in proximity to potential sources of ignition, including both reduction or adjustment of live fuel (in terms of species or otherwise) and of dead fuel, including "slash" from vegetation management activities that produce vegetation material such as branch trimmings and felled trees.
	Improvement of inspections	Identifying and addressing deficiencies in inspections protocols and implementation by improving training and the evaluation of inspectors.
	LiDAR inspections of vegetation around distribution electric lines and equipment	Inspections of right-of-way using LiDAR (Light Detection and Ranging, a remote sensing method that uses light in the form of a pulsed laser to measure variable distances).
	LiDAR inspections of vegetation around transmission electric lines and equipment	Inspections of right-of-way using LiDAR (Light Detection and Ranging, a remote sensing method that uses light in the form of a pulsed laser to measure variable distances).

Category	Initiative	Definition
	Other discretionary inspections of vegetation around distribution electric lines and equipment	Inspections of rights-of-way and adjacent vegetation that may be hazardous, which exceeds or otherwise go beyond those mandated by rules and regulations, in terms of frequency, inspection checklist requirements or detail, analysis of and response to problems identified, or other aspects of inspection or records kept.
	Other discretionary inspections of vegetation around transmission electric lines and equipment	Inspections of rights-of-way and adjacent vegetation that may be hazardous, which exceeds or otherwise go beyond those mandated by rules and regulations, in terms of frequency, inspection checklist requirements or detail, analysis of and response to problems identified, or other aspects of inspection or records kept.
	Patrol inspections of vegetation around distribution electric lines and equipment	Visual inspections of vegetation along rights-of-way that is designed to identify obvious hazards. Patrol inspections may be carried out in the course of other company business.
	Patrol inspections of vegetation around transmission electric lines and equipment	Visual inspections of vegetation along rights-of-way that is designed to identify obvious hazards. Patrol inspections may be carried out in the course of other company business.
	Quality assurance / quality control of vegetation inspections	Establishment and function of audit process to manage and confirm work completed by employees or subcontractors, including packaging QA/QC information for input to decision-making and related integrated workforce management processes.
	Recruiting and training of vegetation management personnel	Programs to ensure that the utility is able to identify and hire qualified vegetation management personnel and to ensure that both full-time employees and contractors tasked with vegetation management responsibilities are adequately trained to perform vegetation management work, according to the utility's wildfire mitigation plan, in addition to rules and regulations for safety.
	Remediation of at-risk species	Actions taken to reduce the ignition probability and wildfire consequence attributable to at-risk vegetation species, such as trimming, removal, and replacement.
	Removal and remediation of trees with strike potential to electric lines and equipment	Actions taken to remove or otherwise remediate trees that could potentially strike electrical equipment, if adverse events such as failure at the ground-level of the tree or branch breakout within the canopy of the tree, occur.
	Substation inspection	Inspection of vegetation surrounding substations, performed by qualified persons and according to the frequency established by the utility, including record-keeping.
	Substation vegetation management	Based on location and risk to substation equipment only, actions taken to reduce the ignition probability and wildfire consequence attributable to contact from vegetation to substation equipment.
	Vegetation inventory system	Inputs, operation, and support for centralized inventory of vegetation clearances updated based upon inspection results, including (1) inventory of species, (2) forecasting of growth, (3) forecasting of when growth threatens minimum right-of-way clearances (“grow-in” risk) or creates fall-in/fly-in risk.
	Vegetation management to achieve clearances around electric lines and equipment	Actions taken to ensure that vegetation does not encroach upon the minimum clearances set forth in Table 1 of GO 95, measured between line conductors and vegetation, such as trimming adjacent or overhanging tree limbs.

Category	Initiative	Definition
F. Grid operations and protocols	Automatic recloser operations	Designing and executing protocols to deactivate automatic reclosers based on local conditions for ignition probability and wildfire consequence.
	Crew-accompanying ignition prevention and suppression resources and services	Those firefighting staff and equipment (such as fire suppression engines and trailers, firefighting hose, valves, and water) that are deployed with construction crews and other electric workers to provide site-specific fire prevention and ignition mitigation during on-site work
	Personnel work procedures and training in conditions of elevated fire risk	Work activity guidelines that designate what type of work can be performed during operating conditions of different levels of wildfire risk. Training for personnel on these guidelines and the procedures they prescribe, from normal operating procedures to increased mitigation measures to constraints on work performed.
	Protocols for PSPS re-energization	Designing and executing procedures that accelerate the restoration of electric service in areas that were de-energized, while maintaining safety and reliability standards.
	PSPS events and mitigation of PSPS impacts	Designing, executing, and improving upon protocols to conduct PSPS events, including development of advanced methodologies to determine when to use PSPS, and to mitigate the impact of PSPS events on affected customers and local residents.
	Stationed and on-call ignition prevention and suppression resources and services	Firefighting staff and equipment (such as fire suppression engines and trailers, firefighting hose, valves, firefighting foam, chemical extinguishing agent, and water) stationed at utility facilities and/or standing by to respond to calls for fire suppression assistance.
G. Data governance	Centralized repository for data	Designing, maintaining, hosting, and upgrading a platform that supports storage, processing, and utilization of all utility proprietary data and data compiled by the utility from other sources.
	Collaborative research on utility ignition and/or wildfire	Developing and executing research work on utility ignition and/or wildfire topics in collaboration with other non-utility partners, such as academic institutions and research groups, to include data-sharing and funding as applicable.
	Documentation and disclosure of wildfire-related data and algorithms	Design and execution of processes to document and disclose wildfire-related data and algorithms to accord with rules and regulations, including use of scenarios for forecasting and stress testing.
	Tracking and analysis of near miss data	Tools and procedures to monitor, record, and conduct analysis of data on near miss events.
H. Resource allocation methodology	Allocation methodology development and application	Development of prioritization methodology for human and financial resources, including application of said methodology to utility decision-making.
	Risk reduction scenario development and analysis	Development of modelling capabilities for different risk reduction scenarios based on wildfire mitigation initiative implementation; analysis and application to utility decision-making.
	Risk spend efficiency analysis	Tools, procedures, and expertise to support analysis of wildfire mitigation initiative risk-spend efficiency, in terms of MAVF and/ or MARS methodologies.

Category	Initiative	Definition
I. Emergency planning and preparedness	Adequate and trained workforce for service restoration	Actions taken to identify, hire, retain, and train qualified workforce to conduct service restoration in response to emergencies, including short-term contracting strategy and implementation.
	Community outreach, public awareness, and communications efforts	Actions to identify and contact key community stakeholders; increase public awareness of emergency planning and preparedness information; and design, translate, distribute, and evaluate effectiveness of communications taken before, during, and after a wildfire, including Access and Functional Needs populations and Limited English Proficiency populations in particular.
	Customer support in emergencies	Resources dedicated to customer support during emergencies, such as website pages and other digital resources, dedicated phone lines, etc.
	Disaster and emergency preparedness plan	Development of plan to deploy resources according to prioritization methodology for disaster and emergency preparedness of utility and within utility service territory (such as considerations for critical facilities and infrastructure), including strategy for collaboration with Public Safety Partners and communities.
	Preparedness and planning for service restoration	Development of plans to prepare the utility to restore service after emergencies, such as developing employee and staff trainings, and to conduct inspections and remediation necessary to re-energize lines and restore service to customers.
	Protocols in place to learn from wildfire events	Tools and procedures to monitor effectiveness of strategy and actions taken to prepare for emergencies and of strategy and actions taken during and after emergencies, including based on an accounting of the outcomes of wildfire events.
J. Stakeholder cooperation and community engagement	Community engagement	Strategy and actions taken to identify and contact key community stakeholders; increase public awareness and support of utility wildfire mitigation activity; and design, translate, distribute, and evaluate effectiveness of related communications. Includes specific strategies and actions taken to address concerns and serve needs of Access and Functional Needs populations and Limited English Proficiency populations in particular.
	Cooperation and best practice sharing with agencies outside CA	Strategy and actions taken to engage with agencies outside of California to exchange best practices both for utility wildfire mitigation and for stakeholder cooperation to mitigate and respond to wildfires.
	Cooperation with suppression agencies	Coordination with CAL FIRE, federal fire authorities, county fire authorities, and local fire authorities to support planning and operations, including support of aerial and ground firefighting in real-time, including information-sharing, dispatch of resources, and dedicated staff.
	Forest service and fuel reduction cooperation and joint roadmap	Strategy and actions taken to engage with local, state, and federal entities responsible for or participating in forest management and fuel reduction activities; and design utility cooperation strategy and joint stakeholder roadmap (plan for coordinating stakeholder efforts for forest management and fuel reduction activities).

(End of Appendix D)

APPENDIX E

Public Utilities Code Section 8386

8386.

(a) Each electrical corporation shall construct, maintain, and operate its electrical lines and equipment in a manner that will minimize the risk of catastrophic wildfire posed by those electrical lines and equipment.

(b) Each electrical corporation shall annually prepare and submit a wildfire mitigation plan to the Wildfire Safety Division for review and approval. In calendar year 2020, and thereafter, the plan shall cover at least a three-year period. The division shall establish a schedule for the submission of subsequent comprehensive wildfire mitigation plans, which may allow for the staggering of compliance periods for each electrical corporation. In its discretion, the division may allow the annual submissions to be updates to the last approved comprehensive wildfire mitigation plan; provided, that each electrical corporation shall submit a comprehensive wildfire mitigation plan at least once every three years.

(c) The wildfire mitigation plan shall include all of the following:

(1) An accounting of the responsibilities of persons responsible for executing the plan.

(2) The objectives of the plan.

(3) A description of the preventive strategies and programs to be adopted by the electrical corporation to minimize the risk of its electrical lines and equipment causing catastrophic wildfires, including consideration of dynamic climate change risks.

(4) A description of the metrics the electrical corporation plans to use to evaluate the plan's performance and the assumptions that underlie the use of those metrics.

(5) A discussion of how the application of previously identified metrics to previous plan performances has informed the plan.

(6) Protocols for disabling reclosers and deenergizing portions of the electrical distribution system that consider the associated impacts on public safety. As part of these protocols, each electrical corporation shall include protocols related to mitigating the public safety impacts of disabling reclosers and deenergizing portions of the electrical distribution system that consider the impacts on all of the following:

(A) Critical first responders.

(B) Health and communication infrastructure.

(C) Customers who receive medical baseline allowances pursuant to subdivision (c) of Section 739. The electrical corporation may deploy backup electrical resources or provide financial assistance for backup electrical resources to a customer receiving a medical baseline allowance for a customer who meets all of the following requirements:

(i) The customer relies on life-support equipment that operates on electricity to sustain life.

(ii) The customer demonstrates financial need, including through enrollment in the California Alternate Rates for Energy program created pursuant to Section 739.1.

(iii) The customer is not eligible for backup electrical resources provided through medical services, medical insurance, or community resources.

(D) Subparagraph (C) shall not be construed as preventing an electrical corporation from deploying backup electrical resources or providing financial assistance for backup electrical resources under any other authority.

(7) Appropriate and feasible procedures for notifying a customer who may be impacted by the deenergizing of electrical lines, including procedures for those customers receiving a medical baseline allowance as described in paragraph (6). The procedures shall direct notification to all public safety offices, critical first responders, health care facilities, and operators of telecommunications infrastructure with premises within the footprint of potential deenergization for a given event.
(8) Plans for vegetation management.
(9) Plans for inspections of the electrical corporation's electrical infrastructure.
(10) Protocols for the deenergization of the electrical corporation's transmission infrastructure, for instances when the deenergization may impact customers who, or entities that, are dependent upon the infrastructure.
(11) A list that identifies, describes, and prioritizes all wildfire risks, and drivers for those risks, throughout the electrical corporation's service territory, including all relevant wildfire risk and risk mitigation information that is part of the Safety Model Assessment Proceeding and the Risk Assessment Mitigation Phase filings. The list shall include, but not be limited to, both of the following:

(A) Risks and risk drivers associated with design, construction, operations, and maintenance of the electrical corporation's equipment and facilities.

(B) Particular risks and risk drivers associated with topographic and climatological risk factors throughout the different parts of the electrical corporation's service territory.

(12) A description of how the plan accounts for the wildfire risk identified in the electrical corporation's Risk Assessment Mitigation Phase filing.
(13) A description of the actions the electrical corporation will take to ensure its system will achieve the highest level of safety, reliability, and resiliency, and to ensure that its system is prepared for a major event, including hardening and modernizing its infrastructure with improved engineering, system design, standards, equipment, and facilities, such as undergrounding, insulation of distribution wires, and pole replacement.
(14) A description of where and how the electrical corporation considered undergrounding electrical distribution lines within those areas of its service territory identified to have the highest wildfire risk in a commission fire threat map.
(15) A showing that the electrical corporation has an adequately sized and trained workforce to promptly restore service after a major event, taking into account employees of other utilities pursuant to mutual aid agreements and employees of entities that have entered into contracts with the electrical corporation.
(16) Identification of any geographic area in the electrical corporation's service territory that is a higher wildfire threat than is currently identified in a commission fire threat map, and where the commission should consider expanding the high fire threat district based on new information or changes in the environment.
(17) A methodology for identifying and presenting enterprisewide safety risk and wildfire-related risk that is consistent with the methodology used by other electrical corporations unless the commission determines otherwise.
(18) A description of how the plan is consistent with the electrical corporation's disaster and emergency preparedness plan prepared pursuant to Section 768.6, including both of the following:

(A) Plans to prepare for, and to restore service after, a wildfire, including workforce mobilization and prepositioning equipment and employees.

(B) Plans for community outreach and public awareness before, during, and after a wildfire, including language notification in English, Spanish, and the top three primary languages used in the state other than English or Spanish, as determined by the commission based on the United States Census data.

(19) A statement of how the electrical corporation will restore service after a wildfire.

(20) Protocols for compliance with requirements adopted by the commission regarding activities to support customers during and after a wildfire, outage reporting, support for low-income customers, billing adjustments, deposit waivers, extended payment plans, suspension of disconnection and nonpayment fees, repair processing and timing, access to electrical corporation representatives, and emergency communications.

(21) A description of the processes and procedures the electrical corporation will use to do all of the following:

(A) Monitor and audit the implementation of the plan.

(B) Identify any deficiencies in the plan or the plan's implementation and correct those deficiencies.

(C) Monitor and audit the effectiveness of electrical line and equipment inspections, including inspections performed by contractors, carried out under the plan and other applicable statutes and commission rules.

(22) Any other information that the Wildfire Safety Division may require.

(d) The Wildfire Safety Division shall post all wildfire mitigation plans and annual updates on the commission's internet website for no less than two months before the division's decision regarding approval of the plan. The division shall accept comments on each plan from the public, other local and state agencies, and interested parties, and verify that the plan complies with all applicable rules, regulations, and standards, as appropriate.

(Amended by Stats. 2019, Ch. 410, Sec. 2.3. (SB 560) Effective January 1, 2020.)

(End of Appendix E)

APPENDIX F

Glossary of Terms

Glossary of Terms

Term	Definition
AB	Assembly Bill
AFN	Access and Functional Needs
ALJ	Administrative Law Judge
BVES	Bear Valley Electric Service
CAISO	California Independent System Operator
Cal Advocates	Public Advocate's Office
CAL FIRE	California Department of Forestry and Fire Protection
CEJA	California Environmental Justice Alliance
CNRA	California Natural Resources Agency
D.	Decision
DFA	Distribution Fault Attribution
EBMUD	East Bay Municipal Utility District
EFD	Early Fault Detection
EPIC	Electric Program Investment Charge
EPUC	Energy Producers and Users Coalition
EVM	Enhanced Vegetation Management
FERC	Federal Energy Regulatory Commission
FGDC	Federal Geographic Data Committee
FIRIS	Fire Integrated Real Time Intelligence System
FMEA	Failure Modes and Effects Analysis
FPI	Fire Potential Index
GIS	Geographic Information Systems
GO	General Order
GPI	Green Power Institute
GRC	General Rate Case
HFRA	High Fire Risk Area
HFTD	High Fire Threat District
Horizon West	Horizon West Transmission
HWT	Horizon West Transmission
I.	Investigation
ICS	Incident Command System

Term	Definition
ICS	Incident Command Structure
IOU	Investor Owned Utility
ISA	International Society of Arboriculture
ITO	Independent Transmission Operator
IVM	Integrated Vegetation Management Plan
IVR	Interactive Voice Response
JIS	Joint Information System
kV	Kilovolt
Liberty	Liberty Utilities / CalPeco Electric
LiDAR	Light Detection and Ranging
LTE	Long-Term Evolution
Maturity Model	Utility Wildfire Mitigation Maturity Model
MAVF	Multi-Attribute Value Function
MGRA	Mussey Grade Road Alliance
MMAA	Mountain Mutual Aid Association
NERC	North American Electric Reliability Corporation
NFDRS	National Fire Danger Rating System
OCFA	Orange County Fire Authority
OEIS	Office of Energy Infrastructure Safety
OP	Ordering Paragraph
OPW	Outage Producing Winds
PG&E	Pacific Gas and Electric Company
PLP	Pole Loading Assessment Program
PMO (PacifiCorp)	Project Management Office
PMO (SCE)	Public Safety Program Management Office
PMU	Phasor Measurement Unit
POC	Protect Our Communities Foundation
PRC	Public Resources Code
PSPS	Public Safety Power Shutoff
QA	Quality Assurance
QC	Quality Control
R.	Rulemaking

Glossary of Terms

Term	Definition
RAMP	Risk Assessment and Management Phase
RAR	Remote Automatic Reclosers
RBDM	Risk-Based Decision Making
RCP	Remedial Compliance Plan
RCRC	Rural Counties of California Representatives
REFCL	Rapid Earth Fault Current Limiter
RFW	Red Flag Warning
RSE	Risk Spend Efficiency
SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition
SCE	Southern California Edison Company
SDG&E	San Diego Gas & Electric Company
S-MAP	Safety Model Assessment Proceeding
SMJU	Small and Multijurisdictional Utility
SUI	Wildland-Urban Interface
SWATI	Santa Ana Wildfire Threat Index
TAT	Tree Assessment Tool
TBC	Trans Bay Cable
TURN	The Utility Reform Network
USFS	United States Forest Service
WMP	Wildfire Mitigation Plan
WRRM	Wildfire Risk Reduction Model
WSAB	Wildfire Safety Advisory Board
WSD	Wildfire Safety Division
WSIP	Wildfire Safety Inspection Program

(End of Appendix F)