- The number of customers impacted including critical facilities and medical baseline customers;
- Advance notification to potentially impacted customers via social media, calls, texts and emails, and door knock and door hangers for medical baseline customers;
- The disabling of automatic reclosing;
- The inadequacy of alternatives to de-energization³, such as additional patrols and repairs or vegetation management work that could be completed before the predicted event time;
- Opportunities to narrow the areas in scope to create targeted polygons of areas of high risk in order to minimize impacts to customers, especially those outside of Tier 2 and Tier 3 High Fire Threat Districts (HFTD);
- Fire simulation modeling⁴ that showed the potential for fires with a high rate of spread and potentially large consequences;
- The ability of PG&E to open Community Resource Centers (CRCs) and Resilience Zones (also known as Community Assistance Locations) in and around the impacted areas; and
- The ability of PG&E to pre-stage re-energization teams to restore power to customers as efficiently as possible.

Section 3 - Time, Place and Duration

The table below shows each circuit involved in the PSPS event, along with the following for each circuit: whether the areas affected by the de-energization are classified as Zone 1, Tier 2, or Tier 3 as per the definition in General Order 95, Rule 21.2-D; the start time of the outage; communities served; and the restoration date and time for the last customer energized. Restoration of the circuits takes place in sections. The restoration time represents the date and time when the last section of circuit and associated customers were restored.

Table 1 - Location Alpha Distribution Circuits De-energized - AMENDED 2.28.2020

Circuit	HFTD Tier(s)	Start Date and Time	Key Communities	Restoration Date and Time
BANGOR 1101	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/23/2019 17:06	MARYSVILLE, BANGOR, OREGON HOUSE, BROWNS VALLEY, RACKERBY, OROVILLE, DOBBINS,	09/24/2019 15:46

³ PG&E is also pursuing long-term mitigations through its Wildfire Mitigation Plan, such as system hardening, to reduce the frequency of PSPS.

⁴ PG&E is implementing the Technosylva FireCast and FireSim models, which provide fire spread predictions to calculate the expected risk consequence from fires associated with PG&E infrastructure. The model is still an experimental prototype; PG&E has not completed validation of the application of the model. PG&E continues to assess the capabilities and accuracy of the model for ongoing support of daily operational risk assessment.

Circuit	HFTD Tier(s)	Start Date and Time	Key Communities	Restoration Date and Time
			BROWNSVILLE, LOMA RICA	
BIG BEND 1101	TIER 3, TIER 2	09/23/2019 17:07	OROVILLE	09/24/2019 11:11
BIG BEND 1102	TIER 3, PARTIALLY OUTSIDE HFTD	09/23/2019 17:07	BERRY CREEK, BRUSH CREEK	09/24/2019 12:42
BROWNS VALLEY 1101	TIER 2, PARTIALLY OUTSIDE HFTD	09/23/2019 17:07	BROWNS VALLEY, MARYSVILLE	09/24/2019 10:34
CHALLENGE 1102	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/23/2019 17:06	BROWNSVILLE, CHALLENGE, FORBESTOWN, DOBBINS	09/25/2019 15:51
DOBBINS 1101	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/23/2019 17:08	DOBBINS, OREGON HOUSE, CAMPTONVILLE	09/24/2019 14:16
KANAKA 1101	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/23/2019 17:09	OROVILLE, FORBESTOWN, FEATHER FALLS	09/24/2019 18:38
NARROWS 2101	TIER 2	09/23/2019 17:19	BROWNS VALLEY, SMARTVILLE	09/24/2019 12:58
NARROWS 2102	TIER 2, PARTIALLY OUTSIDE HFTD	09/23/2019 17:19	PENN VALLEY, NEVADA CITY, SMARTVILLE	09/24/2019 15:34
NARROWS 2105	TIER 2, PARTIALLY OUTSIDE HFTD	09/23/2019 17:19	PENN VALLEY, ROUGH AND READY, SMARTVILLE, GRASS VALLEY	09/24/2019 14:19
SMARTVILLE 1101	TIER 2, PARTIALLY OUTSIDE HFTD	09/23/2019 17:07	SMARTVILLE, MARYSVILLE	09/24/2019 09:03
WYANDOTTE 1102*	TIER 2, PARTIALLY OUTSIDE HFTD	09/23/2019 17:14	OROVILLE	09/24/2019 08:29
WYANDOTTE 1103*	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/23/2019 17:07	OROVILLE, BERRY CREEK	09/24/2019 14:10
WYANDOTTE 1105	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/23/2019 17:07	OROVILLE	09/24/2019 11:18

Circuit	HFTD Tier(s)	Start Date and Time	Key Communities	Restoration Date and Time
WYANDOTTE 1106*	TIER 2, PARTIALLY OUTSIDE HFTD	09/23/2019 17:13	OROVILLE	09/24/2019 15:27
WYANDOTTE 1107*	TIER 2, PARTIALLY OUTSIDE HFTD	09/23/2019 17:12	OROVILLE	09/24/2019 13:04
WYANDOTTE 1109*	TIER 2, PARTIALLY OUTSIDE HFTD	09/23/2019 17:16	OROVILLE, PALERMO	09/24/2019 23:52
WYANDOTTE 1110*	TIER 2, PARTIALLY OUTSIDE HFTD	09/23/2019 17:10	OROVILLE	09/24/2019 14:16

Table 2 - Location Alpha Transmission Circuits De-energized – $\underbrace{AMENDED}_{2.28.2020}$

Circuit	HFTD Tier(s)	Start Date and Time	Key Communities	Restoration Date and Time
COLGATE - PALERMO 60KV	Tier 2, Partially Outside HFTD	9/23/2019 17:06	TRANSMISSION LINE	9/24/2019 8:00
COLGATE - SMARTVILLE #1 60KV	Tier 2	9/23/2019 17:19	TRANSMISSION LINE	9/24/2019 8:56
COLGATE - SMARTVILLE #2 60KV	Tier 2	9/23/2019 17:23	TRANSMISSION LINE	9/24/2019 9:39
PALERMO - OROVILLE #1 60KV	Tier 2, Partially Outside HFTD	9/23/2019 17:47	TRANSMISSION LINE	9/24/2019 8:37
PALERMO - OROVILLE #2 60KV	Tier 2, Partially Outside HFTD	9/23/2019 17:47	TRANSMISSION LINE	9/24/2019 8:57
NARROWS #2 60KV	Tier 2	9/23/2019 17:23	TRANSMISSION LINE	9/23/2019 17:47
SMARTVILLE - CAMP FAR WEST 60KV	Tier 2	9/23/2019 17:23	TRANSMISSION LINE	9/23/2019 17:59
SMARTVILLE - MARYSVILLE 60KV	Tier 2	9/23/2019 17:23	TRANSMISSION LINE	9/23/2019 17:57

Circuit	HFTD Tier(s)	Start Date and Time	Key Communities	Restoration Date and Time
SMARTVILLE - NICOLAUS #1 60KV	Tier 2	9/23/2019 17:23	TRANSMISSION LINE	9/23/2019 17:51
SMARTVILLE - NICOLAUS #2 60KV	Tier 2	9/23/2019 17:23	TRANSMISSION LINE	9/23/2019 17:47

In limited instances, transmission lines passing through HFTDs were de-energized leading to PSPS impacts to distribution circuits and customers outside HFTD areas.

Oroville substation was dropped due to de-energizing some of the lines feeding the substation as part of the initial PSPS event. The Oroville substation was subsequently re-energized with lines not involved in the PSPS event. As a result, the Narrows #2 60kV, Smartville – Camp Far West 60kV, Smartville – Marysville 60kV and Smartville – Nicolaus #1 and #2 60 kV lines were re-energized within 30 minutes of being de-energized.

Table 3 - Location Bravo Distribution Circuits De-energized - AMENDED 2.28.2020

Circuit	HFTD Tier(s)	Start Date and Time	Key Communities	Restoration Date and Time
BANGOR 1101	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 03:13	MARYSVILLE, BANGOR, OREGON HOUSE, BROWNS VALLEY, RACKERBY, OROVILLE, DOBBINS, BROWNSVILLE, LOMA RICA	09/25/2019 18:55
BIG BEND 1101	TIER 3, TIER 2	09/25/2019 03:06	OROVILLE	09/25/2019 16:20
BIG BEND 1102	TIER 3, PARTIALLY OUTSIDE HFTD	09/25/2019 03:06	BERRY CREEK, BRUSH CREEK	09/25/2019 17:15
BROWNS VALLEY 1101	TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 03:01	BROWNS VALLEY, MARYSVILLE	09/25/2019 15:18
BRUNSWICK 1102	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 02:49	GRASS VALLEY, NEVADA CITY	09/25/2019 15:35
BRUNSWICK 1105*	TIER 3, TIER 2	09/25/2019 02:55	NEVADA CITY, GRASS VALLEY	09/25/2019 19:21

Circuit	HFTD Tier(s)	Start Date and Time	Key Communities	Restoration Date and Time
BRUNSWICK 1106	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 02:51	GRASS VALLEY	09/25/2019 18:06
BUCKS CREEK 1101	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 02:52	STORRIE	09/25/2019 17:23
BUTTE 1105*	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 02:56	CHICO	09/25/2019 16:45
CALISTOGA 1101*	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 04:10	CALISTOGA	09/25/2019 17:00
CHALLENGE 1102	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 03:13	BROWNSVILLE, CHALLENGE, FORBESTOWN, DOBBINS	09/25/2019 17:24
CLARK ROAD 1101	TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 03:04	OROVILLE	09/25/2019 15:20
CLARK ROAD 1102	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 03:04	OROVILLE, PARADISE	09/26/2019 09:52
DOBBINS 1101	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 02:57	DOBBINS, OREGON HOUSE, CAMPTONVILLE	09/25/2019 18:23
FORESTHILL 1101	TIER 3, TIER 2	09/25/2019 02:59	FORESTHILL	09/25/2019 14:23
FORESTHILL 1102	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 02:59	FORESTHILL	09/25/2019 15:41
FULTON 1107*	TIER 3	09/25/2019 04:12	SANTA ROSA	09/25/2019 14:39
KANAKA 1101	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 03:27	OROVILLE, FORBESTOWN, FEATHER FALLS	09/25/2019 18:18
MONTICELLO 1101*	TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 04:10	NAPA	09/25/2019 15:34

Circuit	HFTD Tier(s)	Start Date and Time	Key Communities	Restoration Date and Time
NARROWS 2101	TIER 2	09/25/2019 03:02	BROWNS VALLEY, SMARTVILLE	09/25/2019 17:45
NARROWS 2102	TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 03:02	PENN VALLEY, NEVADA CITY, SMARTVILLE	09/25/2019 19:25
NARROWS 2105	TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 03:02	PENN VALLEY, ROUGH AND READY, SMARTVILLE, GRASS VALLEY	09/25/2019 18:17
NOTRE DAME 1104*	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 02:53	FOREST RANCH, CHICO	09/25/2019 16:47
ORO FINO 1101	TIER 3	09/25/2019 02:54	MAGALIA	09/26/2019 11:01
ORO FINO 1102	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 02:54	FOREST RANCH, MAGALIA, BUTTE MEADOWS, STIRLING CITY	09/26/2019 10:38
OROVILLE 0402	NON-HFTD	09/25/2019 03:09	OROVILLE	09/25/2019 16:42
OROVILLE 0403	NON-HFTD	09/25/2019 03:09	OROVILLE	09/25/2019 16:38
OROVILLE 1101	NON-HFTD	09/25/2019 03:09	OROVILLE	09/25/2019 15:39
OROVILLE 1102	NON-HFTD	09/25/2019 03:09	OROVILLE	09/25/2019 15:47
OROVILLE 1103	NON-HFTD	09/25/2019 03:09	OROVILLE	09/25/2019 15:56
OROVILLE 1104	NON-HFTD	09/25/2019 03:09	OROVILLE	09/25/2019 16:02
PARADISE 1103	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 02:46	PARADISE	09/25/2019 17:09
PARADISE 1104	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 02:48	PARADISE	09/25/2019 19:01

Circuit	HFTD Tier(s)	Start Date and Time	Key Communities	Restoration Date and Time
PARADISE 1105	TIER 3, PARTIALLY OUTSIDE HFTD	09/25/2019 02:50	MAGALIA, PARADISE	09/25/2019 20:32
PARADISE 1106	TIER 3, PARTIALLY OUTSIDE HFTD	09/25/2019 02:51	PARADISE	09/25/2019 15:41
RINCON 1103*	TIER 3	09/25/2019 04:09	SANTA ROSA	09/25/2019 15:16
SMARTVILLE 1101	TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 02:51	SMARTVILLE, MARYSVILLE	09/25/2019 14:39
WYANDOTTE 1102*	TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 03:23	OROVILLE	09/25/2019 17:19
WYANDOTTE 1103*	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 03:10	OROVILLE, BERRY CREEK	09/25/2019 21:04
WYANDOTTE 1105	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 03:06	OROVILLE	09/25/2019 15:26
WYANDOTTE 1106*	TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 03:03	OROVILLE	09/25/2019 16:19
WYANDOTTE 1107*	TIER 3, TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 03:15	OROVILLE	09/25/2019 18:21
WYANDOTTE 1109*	TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 02:54	OROVILLE, PALERMO	09/25/2019 19:19
WYANDOTTE 1110*	TIER 2, PARTIALLY OUTSIDE HFTD	09/25/2019 02:51	OROVILLE	09/25/2019 16:54

^{*}Circuits marked with a single asterisk had only certain higher risk sections de-energized rather than the whole circuit.

Table 4 - Location Bravo Transmission Circuits De-energized

Circuit	HFTD Tier(s)	Start Date and Time	Key Communities	Restoration Date and Time
COLGATE - PALERMO 60KV	Tier 2, Partially Outside HFTD	9/25/2019 3:13	TRANSMISSION LINE	9/25/2019 16:07
COLGATE - SMARTVILLE #1 60KV	Tier 2	9/25/2019 3:02	TRANSMISSION LINE	9/25/2019 15:36
COLGATE - SMARTVILLE #2 60KV	Tier 2	9/25/2019 3:07	TRANSMISSION LINE	9/25/2019 15:44
PALERMO - OROVILLE #1 60KV	Tier 2, Partially Outside HFTD	9/25/2019 3:09	TRANSMISSION LINE	9/25/2019 15:40
PALERMO - OROVILLE #2 60KV	Tier 2, Partially Outside HFTD	9/25/2019 3:09	TRANSMISSION LINE	9/25/2019 16:24
WOODLEAF - PALERMO 115KV	Tier 2, Tier 3, Partially Outside HFTD	Was already de-energized pre-event for maintenance /repair	TRANSMISSION LINE	Still de-energized for maintenance/repair as of 9/26 1135
DESABLA - CENTERVILL E 60KV	Tier 3	9/25/2019 2:54	TRANSMISSION LINE	9/25/2019 15:54
FORKS OF THE BUTTE TAP 60KV	Tier 3	9/25/2019 2:54	TRANSMISSION LINE	9/25/2019 15:54
MIDDLE FORK #1 60KV	Tier 2, Tier 3	9/25/2019 2:51	TRANSMISSION LINE	9/25/2019 14:33
ORO FINO TAP #60KV	Tier 3	9/25/2019 2:54	TRANSMISSION LINE	9/25/2019 15:54
WEIMAR #1 60KV	Tier 3	9/25/2019 2:51	TRANSMISSION LINE	9/25/2019 13:47
CENTERVILLE - TABLE MOUNTAIN 60KV	Tier 2, Tier 3, Partially Outside HFTD	9/25/2019 2:59	TRANSMISSION LINE	9/25/2019 15:5
CENTERVILLE - TABLE MOUNTAIN - OROVILLE 60KV	Tier 2, Tier 3, Partially Outside HFTD	9/25/2019 3:04	TRANSMISSION LINE	9/25/2019 15:02

In limited instances, transmission lines passing through HFTDs were de-energized leading to PSPS impacts to distribution circuits and customers outside HFTD areas.

Section 4 - Customers Impacted

There were approximately 26,121 21,724 customers whose power was turned off for some period of time during the PSPS event at location Alpha and 49,264 49,102 customers whose power was turned off at location Bravo. The table below shows each circuit involved, the total number of customers impacted on each circuit, and the number of customers on each circuit by type.

Table 5.1 - Location Alpha Distribution Customers De-Energized - AMENDED 2.28.2020

Circuit	Total Number Out	Residential	Commercial/ Industrial	Medical Baseline	Other
BANGOR 1101	2,299	2,029	232	152	38
BIG BEND 1101	190	168	20	11	2
BIG BEND 1102	368	326	36	16	6
BROWNS VALLEY 1101	565	492	66	37	7
CHALLENGE 1102	819	709	107	51	3
DOBBINS 1101	847	731	100	44	16
KANAKA 1101	609	553	49	34	7
NARROWS 2101	503	454	42	26	7
NARROWS 2102	3,392	3,242	136	163	14
NARROWS 2105	3,904	3,495	387	170	22
SMARTVILLE 1101	255	221	29	15	5
WYANDOTTE 1102	33	29	3	2	1
WYANDOTTE 1103	1,603	1,466	128	119	9
WYANDOTTE 1105	331	320	10	37	1
WYANDOTTE 1106	166	135	12	13	19
WYANDOTTE 1107	1,911	1,782	103	147	26
WYANDOTTE 1109	2,287	2,044	208	222	35
WYANDOTTE 1110	1,638	1,582	53	167	3
Total	21,720	19,778	1,721	1,426	221

Table 5.2 - Location Alpha Transmission Customers

Circuit	Total Number Out	Residential	Commercial/ Industrial	Medical Baseline	Other
SMARTVILLE-CAMP FAR WEST-	_				
60kV Conductor	1	О	1	0	0
SMARTVILLE-MARYSVILLE-					
60kV	1	0	1	0	0
Conductor					
PALERMO-OROVILLE #1-60kV					
Conductor	1	0	1	О	0
PALERMO-OROVILLE #2-60kV					
Conductor	1	0	1	0	0
Total	4		4	0	0

Table 6.1 - Location Bravo Distribution Customers - AMENDED 2.28.2020

Circuit	Total Number Out	Residential	Commercial/ Industrial	Medical Baseline	Other
BANGOR 1101	2299	2029	232	154	38
BIG BEND 1101	190	168	20	11	2
BIG BEND 1102	368	326	36	16	6
BROWNS VALLEY	565	492	66	37	7
BRUNSWICK 1102	1379	798	581	42	0
BRUNSWICK 1105	3400	3264	130	156	6
BRUNSWICK 1106	4475	4254	210	209	11
BUCKS CREEK 1101	3	0	3	0	0
BUTTE 1105	228	207	19	10	2
CALISTOGA 1101	1077	812	181	19	84
CHALLENGE 1102	817	707	107	51	3
CLARK ROAD 1101	14	0	14	0	0
CLARK ROAD 1102 ⁵	1056	911	123	65	22
DOBBINS 1101	846	730	100	43	16
FORESTHILL 1101	2210	2061	148	142	1
FORESTHILL 1102	421	399	22	13	0
FULTON 1107	168	113	50	7	5
KANAKA 1101	609	553	49	34	7
MONTICELLO 1101	18	8	7	0	3
NARROWS 2101	503	454	42	26	7
NARROWS 2102	3392	3242	136	163	14
NARROWS 2105	3904	3496	386	171	22
NOTRE DAME 1104	217	185	29	5	3
ORO FINO 1101	2277	2205	70	220	2
ORO FINO 1102	1952	1817	123	103	12
OROVILLE 0402	359	204	155	9	0
OROVILLE 0403	243	209	33	13	1
OROVILLE 1101	2464	2114	336	204	14
OROVILLE 1102	652	429	223	46	0
OROVILLE 1103	515	474	40	50	1
OROVILLE 1104	1265	1145	120	96	0
PARADISE 1103	805	574	230	34	1
PARADISE 1104	783	647	136	50	0
PARADISE 1105	1016	794	221	54	1
PARADISE 1106	243	194	49	6	0

⁵ 1 Customer on Clark Road 1102 was incorrectly mapped to Loyola 1102

Circuit	Total Number Out	Residential	Commercial/ Industrial	Medical Baseline	Other
RINCON 1103	147	127	17	3	3
SMARTVILLE 1101	255	221	29	15	5
WYANDOTTE 1102	33	29	3	2	1
WYANDOTTE 1103	1600	1465	126	119	9
WYANDOTTE 1105	331	320	10	37	1
WYANDOTTE 1106	166	135	12	13	19
WYANDOTTE 1107	1911	1782	103	147	26
WYANDOTTE 1109	2286	2043	208	222	35
WYANDOTTE 1110	1638	1583	52	167	3
Total	49,100	43,720	4,987	2,984	393

Table 6.2 - Location Bravo Transmission Customers - AMENDED 2.28.2020

Circuit	Total Number Out	Residential	Commercial/ Industrial	Medical Baseline	Other
PALERMO-OROVILLE #1 60KV	1	0	1	0	0
PALERMO-OROVILLE	1	0	1	0	0
#2 60KV					
Total	2	0	2	0	0

During the PSPS event, PG&E under-reported the number of customers de-energized in the Alpha event. The difference relates to the customers served from the Oroville substation. As noted in section 3 – the Oroville substation was dropped due to de-energizing some of the lines feeding the substation as part of the initial PSPS event. The Oroville substation was subsequently re-energized with lines not involved in the PSPS event. As a result, the Narrows #2 60kV, Smartville – Camp Far West 60kV, Smartville – Marysville 60kV and Smartville – Nicolaus #1 and #2 60 kV lines were re-energized within 30 minutes of being de-energized.

During the PSPS event, PG&E under-reported the number of customers de-energized in the Bravo event. The difference is attributed to the difference between the functional design of the PSPS tools that PG&E used during the PSPS event and PG&E's Outage Management Tool (OMT) that produces the views for this report. The PSPS tools define customers as service points with active service agreements while the Outage Management Tool (OMT) also includes service points without active service agreements. As the Bravo event included the Paradise area, where a number of service points without active service agreements exist, the OMT