

SDG&E's 2022 Wildfire Mitigation Plan 4th Quarter Progress Update

(All data as of December 31st, 2022)

2022 Wildfire Mitigation Plan Activities Q4 Summary



7.3.2 – Situational Awareness & Forecasting		7.3.4 – Asset Management & Inspections						7.3.5 – Vegetation Management & Inspections				
7.3.2.1 Advanced weather monitoring and weather stations		7.3.4.1 CMP HFTD Inspections 5 Year Detailed	7.3.4.2 Detailed inspections of transmission electric lines and equipment	7.3.4.4 Infrared inspections of distribution electric lines and equipment	7.3.4.5 Infrared inspections of transmission electric lines and equipment	7.3.4.6 CMP HFTD Inspections - Wood Pole Intrusive	7.3.4.9.1 HFTD Tier 3 distribution pole inspections	7.3.5.2 Detailed inspections of vegetation around distribution				
7.3.2.2.1 Air Quality Index		7.3.4.9.2 Drone assessments of distribution infrastructure	7.3.4.10.1 Drone assessments of transmission infrastructure	7.3.4.10.2 Additional transmission aerial 69kV tier 3 visual inspection	7.3.4.11 Patrol inspections of distribution electric lines and equipment	7.3.4.12 Patrol inspections of transmission electric lines and equipment	7.3.4.15 Substation inspections	7.3.5.5 Fuels management and reduction of "slash"				
7.3.2.2.2 Satellite-based remote sensing		7.3.4.11.3 Fault indicators for detecting faults on electric lines and equipment	7.3.3.1 Capacitor maintenance and replacement program	7.3.3.3 Covered conductor installation	7.3.3.7 Expulsion fuse replacement	7.3.3.8.1 PSPS sectionalizing enhancements	7.3.3.8.2 Microgrids	7.3.3.9 Installation of system automation equipment	7.3.3.10 Maintenance, repair, and replacement of connectors, including hotline clamps	7.3.3.11.1 Generator grant programs	7.3.3.11.2 Standby power programs	7.3.5.7 LiDAR inspections of vegetation around distribution
7.3.3.11.3 Generator assistance programs		7.3.3.16 Undergrounding of electric lines and/or equipment	7.3.3.17.1 Distribution overhead system hardening	7.3.3.17.2.1 Overhead transmission fire hardening	7.3.3.17.2.2 Underground transmission fire hardening	7.3.3.17.2.3 Distribution overhead transmission fire hardening	7.3.3.18.1 Distribution communications reliability improvements	7.3.3.18.2 Lightning arrester removal and replacement	7.3.3.18.3 Avian Mitigation	7.3.5.9 Other discretionary inspection of vegetation around distribution electric lines and equipment	7.3.5.13 QA/QC of inspections	7.3.5.16 Removal and remediation of trees with strike potential to electric lines and equipment
										7.3.5.20 Vegetation management to achieve clearances around electric lines and equipment		

Q4 Activity Status vs 2022 Goals



7.3.2 – Situational Awareness and Forecasting

7.3.2.1
50
Weather Station Upgrades

250% Advanced weather monitoring & station upgrades
Volume vs 2022 Goal: 50 of 20 weather station upgrades (250%)
Key Actions: Program completed.

7.3.2.2.2
12
Cameras

150% Satellite-based remote sensing
Volume vs 2022 Goal: 12 of 8 cameras installed (150%)
Key Actions: Program complete.

7.3.2.2.1
8
Sensors

133% Continuous monitoring sensors - Air Quality Index
Volume vs 2022 Goal: 8 of 6 air quality sensors installed (133%)
Key Actions: Program complete.

7.3.2.3
545
Wireless fault indicators

109% Fault indicators for detecting faults on electric lines and equipment
Volume vs 2022 Goal: 545 of 500 wireless fault indicators (109%)
Key Actions: Program complete.

Q4 Activity Status vs 2022 Goals



7.3.3 – Grid Design and System Hardening (1 of 2)

7.3.3.1
58
Capacitors

145% Capacitor maintenance and replacement program - SCADA capacitors
Volume vs 2022 Goal: 58 of 40 SCADA capacitors (145%)
Key Actions: Program complete.

7.3.3.3
61.23
Miles

102% Covered conductor installation - Distribution OH Hardening
Volume vs 2022 Goal: 61.23 of 60 miles covered conductor (102%)
Key Actions: Program complete.

7.3.3.7
231
Fuses

102% Expulsion fuse replacement
Volume vs 2022 Goal: 231 of 227 expulsion fuses (102%)
Key Actions: Program complete.

7.3.3.8.1
12
Switches

120% PSPS sectionalizing enhancements
Volume vs 2022 Goal: 12 of 10 sectionalizing devices (120%)
Key Actions: Program complete.

7.3.3.8.2
1
Microgrids

25% Microgrids
Volume vs 2022 Goal: 1 of 4 microgrids (25%)
Key Actions: Program team continues to pursue battery commissioning. See additional detail on page 9.

7.3.3.9
3
Circuits

38% Installation of system automation equipment
Volume vs 2022 Goal: 3 of 8 circuits enabled (38%)
Key Actions: See additional detail on page 9.

7.3.3.10
1,903
Hotline Camps

115% Maintenance, repair, and replacement of connectors, including hotline clamps
Volume vs 2022 Goal: 1,903 of 1,650 hotline clamps (115%)
Key Actions: Program complete.

7.3.3.11.1
921
Generators

31% Generator Grant Programs
Volume vs 2022 Goal: 921 of 3,000 generators (31%)
Key Actions: Program team tracking customer enrollment in MBL, Life Support and AFN to ensure those most vulnerable are targeted for participation. Change order filed on October 14th.

All data is up to date as of December 31, 2022

Q4 Activity Status vs 2022 Goals



7.3.3 – Grid Design and System Hardening (2 of 2)

7.3.3.11.2
376
Generators

91% Standby power programs
Volume vs 2022 Goal: 376 of 412 generators (91%)
Key Actions: Program complete.

7.3.3.11.3
140
Generators

11% Generator assistance programs
Volume vs 2022 Goal: 140 of 1250 generators (11%)
Key Actions: See page 10 for additional detail.

7.3.3.16
65
Miles

100% Undergrounding of electric lines and/or equipment
Volume vs 2022 Goal: 65 of 65 miles UG (100%)
Key Actions: Program complete.

7.3.3.17.1
26.30
Miles

526% Distribution overhead system hardening
Volume vs 2022 Goal: 26.30 of 5 miles hardened (526%)
Key Actions: Many miles carried over from 2021. Program complete.

7.3.3.17.2.1
18.28
Miles

99% Overhead transmission fire hardening
Volume vs 2022 Goal: 18.28 of 18.5 miles of OH miles hardened (99%)
Key Actions: Program complete.

7.3.3.17.2.2
5.69
Miles

104% Underground transmission fire hardening
Volume vs 2022 Goal: 5.69 of 5.5 miles hardened (104%)
Key Actions: Program complete.

7.3.3.17.2.3
0.6
Miles

8% Overhead transmission fire hardening (Distribution Underbuilt)
Volume vs 2022 Goal: 0.6 of 7.6 miles hardened (8%)
Key Actions: TL6926 distribution work pushed to 2023. See page 11 for additional detail.

7.3.3.18.1
21
Base stations

84% Distribution communications reliability improvements
Volume vs 2022 Goal: 21 of 25 base stations (84%)
Key Actions: See page 11 for additional detail.

7.3.3.18.2
2,710
Arrestors

147% Lightning arrestor removal and replacement
Volume vs 2022 Goal: 2,710 of 1,848 lightning arrestors replaced (147%)
Key Actions: Program complete.

7.3.3.18.3
973
Poles

115% Avian mitigation
Volume vs 2022 Goal: 973 of 847 poles (115%)
Key Actions: Program complete.

Q4 Activity Status vs 2022 Goals



7.3.4 – Asset Management and Inspections (1 of 2)

7.3.4.1
17,935
Inspections

99% CMP HFTD Inspections - 5 Year Detailed
Volume vs 2022 Goal: 17,935 of 18,177 inspections (99%)
Key Actions: Program complete.

7.3.4.2
2,323
Inspections

111% Transmission Inspections – Detailed
Volume vs 2022 Goal: 2,323 of 2,087 inspections (111%)
Key Actions: Program complete.

7.3.4.4
12,264
Inspections

102% Distribution Infrared Inspections
Volume vs 2022 Goal: 12,264 of 12,000 inspections (102%)
Key Actions: Program complete.

7.3.4.5
6,259
Inspections

102% Transmission Infrared Inspections
Volume vs 2022 Goal: 6,259 of 6,154 inspections (102%)
Key Actions: Program complete.

7.3.4.6
967
Inspections

276% CMP HFTD Inspections - Wood Pole Intrusive
Volume vs 2022 Goal: 967 of 350 inspections (276%)
Key Actions: Program complete.

7.3.4.9.1
12,263
Inspections

100% HFTD Tier 3 distribution pole inspections
Volume vs 2022 Goal: 12,263 of 12,268 inspections (100%)
Key Actions: Program complete.

7.3.4.9.2
30,044
Inspections

137% Drone assessments of distribution infrastructure
Volume vs 2022 Goal: 30,044 of 22,000 inspections (137%)
Key Actions: Program complete.

7.3.4.10.1
1,028
Inspections

206% Drone assessment of transmission
Volume vs 2022 Goal: 1,028 of 500 inspections (206%)
Key Actions: Program complete.

Q4 Activity Status vs 2022 Goals



7.3.4 – Asset Management and Inspections (2 of 2)

7.3.4.10.2
1,649
Inspections

100% Additional Transmission Aerial 69kV Tier 3 Visual Inspection
Volume vs 2022 Goal: 1,649 of 1,654 inspections (100%)
Key Actions: Program complete.

7.3.4.12
6,445
Inspections

102% Patrol inspections of transmission electric lines and equipment
Volume vs 2022 Goal: 6,445 of 6,312 inspections (102%)
Key Actions: Program complete.

7.3.4.11
86,821
Inspections

100% Patrol inspections of distribution electric lines and equipment
Volume vs 2022 Goal: 86,821 of 86,490 inspections (100%)
Key Actions: Program complete.

7.3.4.15
397
Inspections

120% Substation inspections
Volume vs 2022 Goal: 397 of 330 inspections (120%)
Key Actions: Program complete.

Q4 Activity Status vs 2022 Goals



7.3.5 – Vegetation Management and Inspections

7.3.5.2
509,110
Inspections

104% Detailed inspections of vegetation around distribution electric lines and equipment
Volume vs 2022 Goal: 509,110 of 491,822 trees inspected (104%)
Key Actions: Program complete.

7.3.5.13
17%
Inspections

107% Quality assurance/quality control of inspections
Volume vs 2022 Goal: 17% of 15% of inspections (107%)
Key Actions: Program complete.

7.3.5.5
500
Poles Cleared

100% Fuels management and reduction of "slash" from vegetation management activities
Volume vs 2022 Goal: 500 of 500 poles cleared (100%)
Key Actions: Program complete.

7.3.5.16
105
Vegetation Management Areas

99% Removal and remediation of trees with strike potential to electric lines and equipment
Volume vs 2022 Goal: 105 of 106 Vegetation Management Areas Completed (99%)
Key Actions: Program completed.

7.3.5.7
737.51
Circuit Line Mile

101% LiDAR inspections of vegetation around distribution electric lines and equipment
Volume vs 2022 Goal: 737.51 of 730 miles inspected (101%)
Key Actions: Program complete.

7.3.5.20
35,485
Poles brushed

104% Vegetation management to achieve clearances around electric lines and equipment
Volume vs 2022 Goal: 35,485 of 34,000 poles brushed (104%)
Key Actions: Program complete.

7.3.5.9
10,488
Trees

84% Other discretionary inspection of vegetation around distribution electric lines and equipment, beyond inspections mandated by rules and regulations
Volume vs 2022 Goal: 10,488 of 12,500 trees trimmed/removed (84%)
Key Actions: See page 12 for additional detail.

2022 WMP Off Track Activities – Details



7.3.3.8.2
1
Microgrids

25% Microgrids

Volume vs 2022 Goal: 1 of 4 microgrids (25%)

Key Actions: Program team continues to pursue battery commissioning.

The Microgrids initiative did not meet the target of commissioning the remaining three microgrids in 2022. Acquiring appropriate and sufficient land rights for the projects has been delayed leading to the delay in the permanent renewable solution. New technologies have required longer implementation timelines than previously planned for. Microgrid spend is still on track as SDG&E converts existing microgrid sites from traditional generation to renewable power sources. Cameron Corners is slated to be fully commissioned in early 2023, and Shelter Valley and Butterfield/Agua Caliente have been pushed to 2024. The PSPS risk for customers is still mitigated by these microgrids through traditional generators. Despite having no PSPS events in 2022, the microgrid’s temporary configuration (deployment of diesel generators) did support SDG&E’s strategic undergrounding activities in August of 2022. The team has undertaken a new process to address land right issues early in the microgrid planning phase. Additionally, SDG&E may implement more conservative timelines to account for land acquisition challenges and new technologies. SDG&E has now acquired the land to complete the projects. The process to deploy the permanent renewable microgrid has been initiated by opening of a request for proposals (RFP) for a battery energy storage asset necessary to energize the microgrid during future PSPS events. Thereafter, SDG&E can begin construction on the permanent microgrid solution.

7.3.3.9
3
Circuits

38% Installation of system automation equipment (advanced protection)

Volume vs 2022 Goal: 3 of 8 circuits enabled (38%)

Key Actions: Program off track. PMs to evaluate construction options for remaining circuits.

This initiative did not achieve its targets in 2022 primarily due to the Bureau of Indian Affairs (BIA) changing its process regarding approval of easement requests. This resulted in designs being delayed up to six months longer than originally forecasted. This delay was not within the control of the utility. The normal design process did not perform permitting review until the 90% design phase, which did not provide a sufficient buffer to adjust project timelines and targets. SDG&E’s Land team is currently working with tribal land representatives to establish new process and timelines on achieving new easements. We have adjusted our process to perform a permitting risk assessment during initial project scoping to identify locations which may be impacted by extended duration easement requests. The process is to proactively research locations in BIA and other potentially challenging jurisdictions to identify locations. When this occurs, the team adjusts the permitting task duration and downstream in-service dates to reflect realistic completion dates. We are increasing the number of circuit designs initiated to be at least 150% over our initiative targets to have a backlog of available projects and reduce the risk of missing forecasted goals.

2022 WMP Off Track Activities – Details



7.3.3.11.1
921
Generators

31% Generator Grant Programs

Volume vs 2022 Goal: 921 of 3,000 generators (31%)

Key Actions: Program team tracking customer enrollment in MBL, Life Support and AFN to ensure those most vulnerable are targeted for participation.

The mission of SDG&E’s Generator Grant Program is to provide a safe and reliable backup battery unit at no cost, which can be used during PSPS events to support our most vulnerable, electricity-dependent customers (i.e., Medical Baseline (MBL), Life Support, and select Access and Functional Needs (AFN)). Since submitting the 2022 WMP Update, SDG&E’s program team revisited the delivery model. Specifically, the team refocused the targeted outreach of the program on those vulnerable customers who are impacted the most by PSPS events - those who reside in the HFTD and have experienced at least one PSPS event since 2019. Using this criterion to identify a target customer population, the team estimated delivering approximately 700 units to customers in 2022, instead of the 3,000 originally forecasted. This updated forecast goal was submitted via the 2022 Change Order Report process in October 2022. Based on the updated program approach to focus priority on the region’s most vulnerable customers, this program achieved its revised target of 700, and therefore met the revised risk reduction goals. The program plans to continue prioritizing focus on the region’s most vulnerable customers going forward and will leverage customer data and historical trends to identify appropriate targets for the WMP.

7.3.3.11.3
140
Generators

11% Generator Assistance Programs

Volume vs 2022 Goal: 140 of 1250 generators (11%)

Key Actions:

The Generator Assistance Program offers a partial rebate to customers who purchase a fuel generator or portable battery power station. The rebate covers approximately half of a customer’s cost on an average unit, and the customer must pay for the remainder. A primary driver of a customer participating in this program and purchasing a backup power solution is the anticipation of power shutoff due to high winds, wildfire risk, or other weather emergency. In 2022, SDG&E did not initiate any PSPS events and therefore customer participation was low. Steps that were taken to ensure customer awareness and participation in this program include:

- Promoted program offering to over 44,000 eligible customers via multiple channels and multiple timeframes
- Expanded offering to allow rebates on purchases from any retailer, which also expanded the full list of product models available
- Enabled “instant rebates” to reduce the upfront cost for income qualified customers
- Enhanced customer portal and verification processes to streamline rebate payments
- Increase rebate amounts on portable power station products

2022 WMP Off Track Activities – Details



7.3.3.17.2.3
0.6
Miles

8% Overhead transmission fire hardening (Distribution Underbuild)

Volume vs 2022 Goal: 0.6 of 7.6 miles hardened (8%)

Key Actions:

This program did not meet the annual target due to issues with obtaining permits for work on Camp Pendleton property. This delay was not within the control of the utility. We did not receive final permits for Fallbrook Naval Weapons station and the base did not issue an environmental release. Additionally, there were prior issues and delays with the jack and bore construction method and dewatering. The project was re-designed to overcome these issues, pushing construction schedule to 2023.

7.3.3.18.1
21
Base Stations

84% Distribution Communications Reliability Improvements

Volume vs 2022 Goal: 21 of 25 base stations (84%)

Key Actions:

The DCRI Program is an intricate project that is building a complex wireless network in a variety of locations across the service territory that overlaps numerous jurisdictions, environments, programs, and asset types. The 2022 base station target was missed due to delays from jurisdictional and legal dependencies, weather, and programming conflicts. In several cases the reasons are outside the utility’s control, including timely responses from 3rd party entities and weather conditions. However, design conflicts can be mitigated within the utility’s control by involving key personnel early in the design process to ensure all design considerations are being accounted for. Many risks were mitigated but compounding risks on the same sites contributed to greater delays than intended. The DCRI initiative's next steps are to continue the buildout of the private wireless network across the HFTD portion of SDG&E’s service territory. This initiative will be accomplished by establishing a dedicated team across all of SDG&E to streamline execution, and target 200% of the yearly build goal to place the program in a better position for meeting yearly metrics.

7.3.5.9
10,488
Trees

84% Other discretionary inspection of vegetation around distribution electric lines and equipment

Volume vs 2022 Goal: 10,488 of 12,500 inspections (84%)

Enhanced clearances are not arbitrary or predetermined and are not performed on all targeted tree species. Rather, those trees that cannot be maintained with routine clearance, and/or present a potential threat to the conductors by branch-break are candidates for enhanced clearance. The determination and application of enhanced clearances is made during the tree trimming activity. The pre-inspection activity does not prescribe post-trim clearance, however the determination of whether a tree requires removal or substantial crown reduction due to growth rate or defect is made by the pre-inspector.

There is a high degree of variability in forecasting the number of trees that may require enhanced trimming, including but not limited to: species, precipitation, tree growth, location of defect, pruning frequency, regional tree mortality, etc. The methodology to derive the target for this initiative was modified in 2022 using tree inventory trim frequency data, and historical averages. However, since SDG&E only formally began its enhanced trim/removal initiative in 2019, the data is still somewhat limited for forecasting using a trend analysis with a high degree of confidence. Using current trends, it is likely a more accurate forecast number of trees that will require enhanced clearance annually is 10,000-11,000. SDG&E will continue to review its methodology to derive an appropriate, annual target for this initiative.