

Application of SAN DIEGO GAS & ELECTRIC)
COMPANY for authority to update its gas and)
electric revenue requirement and base rates)
effective January 1, 2028 (U 902-M))

Application No.: A.26-06-XXX

Exhibit No.: (SDGE-07-CWP)

CAPITAL WORKPAPERS TO
PREPARED DIRECT TESTIMONY
OF JONATHAN WOLDEMARIAM
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

JUNE 2026



**2028 General Rate Case - APPLICATION
INDEX OF WORKPAPERS**

**Exhibit SDGE-07-CWP - WILDFIRE MITIGATION & VEGETATION
MANAGEMENT**

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Overall Summary For Exhibit No. SDGE-07-CWP

Area:	WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness:	Jonathan Woldemariam

In 2025 \$ (000)

- A. Grid Design Operations and Maintenance**
- B. Vegetation Management and Inspections**
- C. Situational Awareness and Forecasting**
- D. Emergency Prep Collab & Community Outreach**
- E. Enterprise Systems**
- G. Risk Methodology and Assessment**

Adjusted-Forecast					
2026	2027	2028	2029	2030	2031
146,779	129,887	284,378	333,335	454,463	379,444
2,598	2,601	11,620	8,168	4,674	4,300
0	0	0	0	7,000	0
15,051	9,983	6,607	10,797	11,996	6,606
4,349	4,352	11,365	9,052	9,851	13,862
6,036	5,654	8,054	6,779	6,778	6,634
Total	174,813	322,024	368,131	494,762	410,846

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Category: A. Grid Design Operations and Maintenance
Workpaper: VARIOUS

Summary for Category: A. Grid Design Operations and Maintenance

In 2025\$ (000) Incurred Costs

	Adjusted-Recorded	Adjusted-Forecast					
	2025	2026	2027	2028	2029	2030	2031
Labor	25,521	23,682	20,162	22,114	24,618	27,703	27,330
Non-Labor	251,804	123,097	109,725	262,264	308,717	426,760	352,114
NSE	0	0	0	0	0	0	0
Total	277,325	146,779	129,887	284,378	333,335	454,463	379,444
FTE	129.6	128.5	108.5	122.3	137.6	157.2	154.0

Workpapers belonging to this Category:

002390 CMP Repairs and Replacements

Labor	9,311	11,054	9,752	7,929	9,342	9,643	10,891
Non-Labor	49,325	34,010	26,185	21,473	25,146	25,845	29,028
NSE	0	0	0	0	0	0	0
Total	58,636	45,064	35,937	29,402	34,488	35,488	39,919
FTE	45.7	62.8	55.2	45.0	53.1	54.8	61.9

Unit Measure: Jobs completed

Units	2,271	1,829	1,599	1,328	1,535	1,578	1,757
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101430 Transmission Overhead Hardening (Distribution Underbuild)

Labor	44	45	101	166	12	0	0
Non-Labor	2,598	7,096	7,265	3,654	808	12	0
NSE	0	0	0	0	0	0	0
Total	2,642	7,141	7,366	3,820	820	12	0
FTE	0.2	0.4	0.6	1.0	0.1	0.0	0.0

Unit Measure: Miles hardened (Capital)

Units	0	8	7	0	6	0	0
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Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Category: A. Grid Design Operations and Maintenance
Workpaper: VARIOUS

In 2025\$ (000) Incurred Costs							
	Adjusted-Recorded	Adjusted-Forecast					
	2025	2026	2027	2028	2029	2030	2031
112530 Wireless Fault Indicators							
Labor	-2	0	0	0	0	0	0
Non-Labor	0	0	0	0	0	0	0
NSE	0	0	0	0	0	0	0
Total	-2	0	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unit Measure: Wireless fault indicators installed							
Units	0	0	0	0	0	0	0
152590 Advanced Protection							
Labor	1,763	1,911	928	1,047	1,045	1,044	1,044
Non-Labor	6,774	2,267	1,097	5,493	5,511	5,511	5,511
NSE	0	0	0	0	0	0	0
Total	8,537	4,178	2,025	6,540	6,556	6,555	6,555
FTE	9.4	9.6	4.6	5.2	5.2	5.2	5.2
Unit Measure: Circuits enabled							
Units	7	8	8	8	8	8	8
192420 Expulsion Fuse Replacements							
Labor	272	0	0	0	0	0	0
Non-Labor	690	0	0	0	0	0	0
NSE	0	0	0	0	0	0	0
Total	962	0	0	0	0	0	0
FTE	1.3	0.0	0.0	0.0	0.0	0.0	0.0
Unit Measure: Fuses replaced							
Units	503	0	0	0	0	0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Category: A. Grid Design Operations and Maintenance
Workpaper: VARIOUS

	In 2025\$ (000) Incurred Costs						
	Adjusted-Recorded	Adjusted-Forecast					
	2025	2026	2027	2028	2029	2030	2031
192450 PSPS Sectionalizing Enhancements							
Labor	142	74	74	102	105	96	99
Non-Labor	852	1,489	1,489	2,057	2,121	1,953	2,002
NSE	0	0	0	0	0	0	0
Total	994	1,563	1,563	2,159	2,226	2,049	2,101
FTE	0.6	0.3	0.3	0.4	0.5	0.4	0.4
Unit Measure: Switches installed							
Units	9	8	8	12	12	11	11
192460 Strategic Undergrounding							
Labor	1,727	0	0	3,671	4,781	6,804	5,693
Non-Labor	82,981	0	0	159,012	207,243	295,221	246,854
NSE	0	0	0	0	0	0	0
Total	84,708	0	0	162,683	212,024	302,025	252,547
FTE	10.6	0.0	0.0	23.2	30.2	43.0	36.0
Unit Measure: Miles hardened (Capital)							
Units	32	0	0	50	80	125	145
198720 Distribution Communications Reliability Improvements (DCRI)							
Labor	622	0	0	0	0	0	0
Non-Labor	10,583	450	0	0	0	0	0
NSE	0	0	0	0	0	0	0
Total	11,205	450	0	0	0	0	0
FTE	3.7	0.0	0.0	0.0	0.0	0.0	0.0
Unit Measure: Base stations							
Units	4	1	0	0	0	0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Category: A. Grid Design Operations and Maintenance
Workpaper: VARIOUS

	In 2025\$ (000) Incurred Costs						
	Adjusted-Recorded	Adjusted-Forecast					
	2025	2026	2027	2028	2029	2030	2031
201270 Distribution Underbuild Repairs on Transmission Structures							
Labor	1	0	0	0	0	0	0
Non-Labor	564	760	673	623	638	654	670
NSE	0	0	0	0	0	0	0
Total	565	760	673	623	638	654	670
FTE	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
Unit Measure: Poles replaced							
Units	17	17	15	14	14	14	15
202580 Capacitor Maintenance and Replacement Program (SCADA)							
Labor	-4	0	0	0	0	0	0
Non-Labor	-30	0	0	0	0	0	0
NSE	0	0	0	0	0	0	0
Total	-34	0	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unit Measure: Capacitors replaced							
Units	0	0	0	0	0	0	0
202770 Aviation Program							
Labor	-6	0	0	0	0	0	0
Non-Labor	1,608	435	8,435	8,435	1,435	435	435
NSE	0	0	0	0	0	0	0
Total	1,602	435	8,435	8,435	1,435	435	435
FTE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unit Measure: No feasible units							
Units	0	0	0	0	0	0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Category: A. Grid Design Operations and Maintenance
Workpaper: VARIOUS

	In 2025\$ (000) Incurred Costs						
	Adjusted-Recorded	Adjusted-Forecast					
	2025	2026	2027	2028	2029	2030	2031
202820 Lightning Arrestor Removal/Replace Program							
Labor	89	0	0	0	0	0	0
Non-Labor	412	0	0	0	0	0	0
NSE	0	0	0	0	0	0	0
Total	501	0	0	0	0	0	0
FTE	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Unit Measure: Poles protected							
Units	1,019	0	0	0	0	0	0
202840 Distribution Overhead System Hardening							
Labor	402	1,582	616	0	0	0	0
Non-Labor	2,494	11,267	3,424	0	0	0	0
NSE	0	0	0	0	0	0	0
Total	2,896	12,849	4,040	0	0	0	0
FTE	1.9	9.0	3.5	0.0	0.0	0.0	0.0
Unit Measure: Miles hardened (Capital)							
Units	0	4	2	0	0	0	0
202850 Combined Covered Conductor							
Labor	9,513	8,230	8,261	8,270	8,260	8,252	8,253
Non-Labor	78,736	57,121	57,121	57,391	57,391	57,391	57,391
NSE	0	0	0	0	0	0	0
Total	88,249	65,351	65,382	65,661	65,651	65,643	65,644
FTE	46.8	41.7	41.7	41.9	41.9	41.9	41.9
Unit Measure: Miles hardened (Capital)							
Units	52	50	50	50	50	50	50

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Category: A. Grid Design Operations and Maintenance
Workpaper: VARIOUS

In 2025\$ (000) Incurred Costs							
	Adjusted-Recorded	Adjusted-Forecast					
	2025	2026	2027	2028	2029	2030	
212730 Microgrids							
Labor	338	0	0	0	190	867	521
Non-Labor	550	0	0	0	4,673	35,430	6,987
NSE	0	0	0	0	0	0	0
Total	888	0	0	0	4,863	36,297	7,508
FTE	2.0	0.0	0.0	0.0	1.3	5.9	3.6
Unit Measure: Microgrids							
Units	0	0	0	0	0	3	0
222420 Strategic Pole Replacement Program							
Labor	670	314	0	0	0	0	0
Non-Labor	7,523	3,843	0	0	0	0	0
NSE	0	0	0	0	0	0	0
Total	8,193	4,157	0	0	0	0	0
FTE	3.3	1.8	0.0	0.0	0.0	0.0	0.0
Unit Measure: Poles							
Units	230	100	0	0	0	0	0
222470 Avian Protection							
Labor	106	0	0	0	0	0	0
Non-Labor	169	0	0	0	0	0	0
NSE	0	0	0	0	0	0	0
Total	275	0	0	0	0	0	0
FTE	0.6	0.0	0.0	0.0	0.0	0.0	0.0
Unit Measure: Poles protected							
Units	725	0	0	0	0	0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Category: A. Grid Design Operations and Maintenance
Workpaper: VARIOUS

	In 2025\$ (000) Incurred Costs						
	Adjusted-Recorded	Adjusted-Forecast					
	2025	2026	2027	2028	2029	2030	2031
222560 Early Fault Detection							
Labor	347	412	386	885	839	997	829
Non-Labor	5,458	3,982	2,781	3,183	2,841	3,683	2,636
NSE	0	0	0	0	0	0	0
Total	5,805	4,394	3,167	4,068	3,680	4,680	3,465
FTE	2.0	2.5	2.3	5.3	5.0	6.0	5.0
Unit Measure: Nodes							
Units	127	99	95	1,068	1,050	1,083	1,048
222590 Risk-Informed Drone Inspections							
Labor	22	0	0	0	0	0	0
Non-Labor	10	0	1,000	800	800	600	600
NSE	0	0	0	0	0	0	0
Total	32	0	1,000	800	800	600	600
FTE	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Unit Measure: No feasible units							
Units	0	0	0	0	0	0	0
231280 Cleveland National Forest Fire Hardening							
Labor	27	60	44	44	44	0	0
Non-Labor	425	377	255	143	110	25	0
NSE	0	0	0	0	0	0	0
Total	452	437	299	187	154	25	0
FTE	0.2	0.4	0.3	0.3	0.3	0.0	0.0
Unit Measure: No feasible units							
Units	0	0	0	0	0	0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Category: A. Grid Design Operations and Maintenance
Workpaper: VARIOUS

	In 2025\$ (000) Incurred Costs						
	Adjusted-Recorded	Adjusted-Forecast					
	2025	2026	2027	2028	2029	2030	2031
237250 CP2 RESILIENCE ZONE							
Labor	0	0	0	0	0	0	0
Non-Labor	0	0	0	0	0	0	0
NSE	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unit Measure:							
Units	0	0	0	0	0	0	0
242420 Hotline Clamps							
Labor	137	0	0	0	0	0	0
Non-Labor	82	0	0	0	0	0	0
NSE	0	0	0	0	0	0	0
Total	219	0	0	0	0	0	0
FTE	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Unit Measure: Hotline clamps removed							
Units	110	0	0	0	0	0	0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
002390 - CMP Repairs and Replacements

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 00239.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 002390 - CMP Repairs and Replacements
Unit Measure: Jobs completed

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Zero-Based	7,405	6,762	7,833	12,809	9,311	11,054	9,752	7,929	9,342	9,643	10,891
Non-Labor	Zero-Based	23,365	71,407	85,459	72,346	49,325	34,010	26,185	21,473	25,146	25,845	29,028
NSE	Zero-Based	0	0	0	0	0	0	0	0	0	0	0
Total		30,770	78,170	93,292	85,155	58,636	45,064	35,937	29,402	34,488	35,488	39,919
FTE	Zero-Based	0.1	30.1	38.1	61.6	45.7	62.8	55.2	45.0	53.1	54.8	61.9
Units	Zero-Based	1,412	1,632	2,842	2,991	2,271	1,829	1,599	1,328	1,535	1,578	1,757

Business Purpose:

This mitigation serves to identify, classify, and remediate conditions on overhead electric distribution structures that do not meet CPUC requirements or internal standards. Inspections mandated under GO 165 and GO 95 and generate findings (“infractions”) that must be corrected within prescribed compliance timeframes found in GO 95, Rule 18. By performing repairs, which at times include full replacement, within these timeframes, this program helps reduce the potential for infractions to result in a wildfire, safety or reliability risk event. All equipment is maintained with a time-based inspection cycle and corrective repair and replacement work is performed in adherence with, and sometimes exceeding, GO 95 timeframes.

Physical Description:

Inspections performed through the distribution overhead detailed, distribution wood pole intrusive, distribution overhead patrol, and risk informed drone inspection programs identify field conditions that necessitate the remediation or replacement of poles and other overhead equipment such as crossarms. Findings from those inspections are recorded in the work management system (SAP) and are processed through initiation, review, prioritization, and completion of corrective work orders. SDG&E adheres to all GO regulations for addressing corrective maintenance within required timeframes and, when applicable, exceeds requirements based on severity level, risk posed, and location, such as the HFTD tier. All work is within

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 00239.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 002390 - CMP Repairs and Replacements
Unit Measure: Jobs completed

the HFTD.

Project Justification:

Performing repairs of overhead electric facilities is a responsive and not elective mitigation. It is compliance driven and mandated by GO 95, Rule 18 and SDG&E standards. In addition, CMP Repairs and Replacements reduces wildfire and safety risk by ensuring that conditions identified through GO-165 inspections are corrected before they lead to ignitions, outages, or equipment failures, all of which has economic impacts on customers, businesses and the community. CMP Repairs and Replacements directly reduce the number of customers affected by PSPS de-energizations by clearing high-risk conditions on overhead lines in high-wind corridors.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 00239.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 002390 - CMP Repairs and Replacements
Unit Measure: Jobs completed

Forecast Methodology:

Labor - Zero-Based

CMP Repairs and Replacements applies a zero-based methodology to forecast labor requirements because the program is taking on new workstreams that have not previously been part of its historical baseline. Specifically, the team is absorbing the additional scope associated with Distribution UB Poles (20127), RIDI (22259) and DIAR Tier 2 (20286), which introduce new activity drivers, resource needs, and workload patterns. Since these programs do not have established historical labor trends within CMP Repairs and Replacements, a zero-based approach ensures that labor estimates are built from the ground up.

Non-Labor - Zero-Based

CMP Repairs and Replacements applies a zero-based methodology to forecast non-labor costs because the group is assuming new program responsibilities that do not align with its historical spending patterns. With the addition of Distribution UB Poles (20127), RIDI (22259), and DIAR Tier 2 (20286) the program is inheriting material, equipment, contractor, and support cost drivers that are significantly different from previous requirements. Since these activities introduce new categories of materials, updated unit cost assumptions, expanded contractor utilization, and incremental logistical needs, historical non-labor expenses are not a reliable basis for future projections.

NSE - Zero-Based

N/A

Units - Zero-Based

The number of jobs completed are the unit of measure for this program because multiple types of assets are being replaced or upgraded and directly anchor the scope, cost drivers, and work effort.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 00239.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 002390 - CMP Repairs and Replacements
Unit Measure: Jobs completed

Summary of Adjustments to Forecast:

In 2025 \$ (000)																		
Years	Base Forecast						Forecast Adjustments						Adjusted-Forecast					
	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031
Labor	10,899	9,579	7,811	9,215	9,521	10,751	155	173	118	127	122	140	11,054	9,752	7,929	9,342	9,643	10,891
NLbr	34,010	26,185	21,473	25,146	25,845	29,028	0	0	0	0	0	0	34,010	26,185	21,473	25,146	25,845	29,028
NSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	44,909	35,764	29,284	34,361	35,366	39,779	155	173	118	127	122	140	45,064	35,937	29,402	34,488	35,488	39,919
FTE	62.8	55.2	45.0	53.1	54.8	61.9	0.0	0.0	0.0	0.0	0.0	0.0	62.8	55.2	45.0	53.1	54.8	61.9
Units	1,829	1,599	1,328	1,535	1,578	1,757	0	0	0	0	0	0	1,829	1,599	1,328	1,535	1,578	1,757

Forecast Adjustment Details:

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2026	155	0	0	155	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2026 Total	155	0	0	155	0.0	0
2027	173	0	0	173	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2027 Total	173	0	0	173	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 00239.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 002390 - CMP Repairs and Replacements
Unit Measure: Jobs completed

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2028	118	0	0	118	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2028 Total	118	0	0	118	0.0	0
2029	127	0	0	127	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2029 Total	127	0	0	127	0.0	0
2030	122	0	0	122	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2030 Total	122	0	0	122	0.0	0
2031	140	0	0	140	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2031 Total	140	0	0	140	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 00239.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 002390 - CMP Repairs and Replacements
Unit Measure: Jobs completed

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Recorded (Nominal \$)*					
Labor	3,935	3,290	2,584	2,878	2,603
Non-Labor	8,654	8,900	6,853	7,140	7,827
NSE	0	0	0	0	0
Total	12,589	12,189	9,437	10,017	10,429
FTE	0.0	20.3	14.4	14.4	13.5
Units	0	0	0	0	0
Adjustments (Nominal \$) **					
Labor	141	1,005	3,418	8,004	5,519
Non-Labor	6,143	43,063	67,728	62,659	41,498
NSE	0	0	0	0	0
Total	6,284	44,069	71,146	70,663	47,018
FTE	0.1	5.5	18.6	39.1	25.8
Units	1,412	1,632	2,842	2,991	2,271
Recorded-Adjusted (Nominal \$)					
Labor	4,076	4,295	6,002	10,882	8,122
Non-Labor	14,797	51,963	74,580	69,799	49,325
NSE	0	0	0	0	0
Total	18,873	56,258	80,583	80,681	57,447
FTE	0.1	25.8	33.0	53.5	39.3
Units	1,412	1,632	2,842	2,991	2,271
Vacation & Sick (Nominal \$)					
Labor	614	626	834	1,477	1,189

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 00239.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 002390 - CMP Repairs and Replacements
Unit Measure: Jobs completed

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	614	626	834	1,477	1,189
FTE	0.0	4.3	5.1	8.1	6.4
Units	0	0	0	0	0
Escalation to 2025\$					
Labor	2,715	1,841	997	451	0
Non-Labor	8,568	19,444	10,879	2,547	0
NSE	0	0	0	0	0
Total	11,283	21,286	11,876	2,997	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Constant 2025\$)					
Labor	7,405	6,762	7,833	12,809	9,311
Non-Labor	23,365	71,407	85,459	72,346	49,325
NSE	0	0	0	0	0
Total	30,770	78,170	93,292	85,155	58,636
FTE	0.1	30.1	38.1	61.6	45.7
Units	1,412	1,632	2,842	2,991	2,271

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 00239.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 002390 - CMP Repairs and Replacements
Unit Measure: Jobs completed

Summary of Adjustments to Recorded:

		In Nominal \$(000)				
	Years	2021	2022	2023	2024	2025
Labor		141	1,005	3,418	8,004	5,519
Non-Labor		6,143	43,063	67,728	62,659	41,498
NSE		0	0	0	0	0
	Total	6,284	44,069	71,146	70,663	47,018
FTE		0.1	5.5	18.6	39.1	25.8
Units		1,412	1,632	2,842	2,991	2,271

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	0	0	0	0	0.0	1,412
Explanation:	Adding units completed for the year.					
2021	139	7,989	0	8,128	0.0	0
Explanation:	To transfer capital repair and replacement costs to Workpaper 002390 (CMP Repairs and Replacements).					
2021	2	420	0	421	0.1	0
Explanation:	To transfer CMP capital repair and replacement costs to Workpaper 002390 (CMP Repairs and Replacements).					

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 00239.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 002390 - CMP Repairs and Replacements
Unit Measure: Jobs completed

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	0	-2,265	0	-2,265	0.0	0
Explanation:	Reduce historical costs due to 2021 Track 2 disallowances for Detailed Inspections of Distribution Underbuild, HFTD Tier 3 Inspections, and Patrol Inspections of Dist.					
2021 Total	141	6,143	0	6,284	0.1	1,412
2022	0	0	0	0	0.0	1,632
Explanation:	Adding units completed for the year.					
2022	890	43,745	0	44,635	5.0	0
Explanation:	To transfer capital repair and replacement costs to Workpaper 002390 (CMP Repairs and Replacements).					
2022	116	448	0	563	0.5	0
Explanation:	To transfer CMP capital repair and replacement costs to Workpaper 002390 (CMP Repairs and Replacements).					
2022	0	-1,129	0	-1,129	0.0	0
Explanation:	Reduce historical costs due to 2022 Track 2 disallowances for Detailed Inspections of Distribution Underbuild, HFTD Tier 3 Inspections, and Patrol Inspections of Dist. Equipment.					
2022 Total	1,005	43,063	0	44,069	5.5	1,632
2023	0	0	0	0	0.0	2,842
Explanation:	Adding units completed for the year.					

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 00239.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 002390 - CMP Repairs and Replacements
Unit Measure: Jobs completed

Year	Labor	NLbr	NSE	Total	FTE	Units
2023	3,420	66,438	0	69,857	18.7	0
Explanation:	To transfer capital repair and replacement costs to Workpaper 002390 (CMP Repairs and Replacements).					
2023	-2	1,290	0	1,288	-0.1	0
Explanation:	To transfer CMP capital repair and replacement costs to Workpaper 002390 (CMP Repairs and Replacements).					
2023 Total	3,418	67,728	0	71,146	18.6	2,842
2024	0	0	0	0	0.0	2,991
Explanation:	Adding units completed for the year.					
2024	7,994	62,147	0	70,141	39.0	0
Explanation:	To transfer capital repair and replacement costs to Workpaper 002390 (CMP Repairs and Replacements).					
2024	10	512	0	523	0.1	0
Explanation:	To transfer CMP capital repair and replacement costs to Workpaper 002390 (CMP Repairs and Replacements).					
2024 Total	8,004	62,659	0	70,663	39.1	2,991
2025	0	0	0	0	0.0	2,271
Explanation:	Adding units completed for the year.					
2025	5,517	40,520	0	46,037	25.7	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 00239.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 002390 - CMP Repairs and Replacements
Unit Measure: Jobs completed

Year	Labor	NLbr	NSE	Total	FTE	Units
Explanation: To transfer capital repair and replacement costs to Workpaper 002390 (CMP Repairs and Replacements).						
2025	2	978	0	980	0.1	0
Explanation: To transfer CMP capital repair and replacement costs to Workpaper 002390 (CMP Repairs and Replacements).						
2025 Total	5,519	41,498	0	47,018	25.8	2,271

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 002390**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 00239.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 002390 - CMP Repairs and Replacements
Workpaper Detail: 002390.001 - RAMP - CMP Repairs and Replacements
Unit Measure: Jobs completed

In-Service Date: Not Applicable

Description:

CMP Repairs and Replacements

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	6,734	5,439	3,650	5,089	5,416	6,685
Non-Labor	17,550	14,119	9,501	13,268	14,133	17,440
NSE	0	0	0	0	0	0
Total	24,284	19,558	13,151	18,357	19,549	24,125
FTE	38.2	30.8	20.7	28.9	30.8	38.0
Units	1,005	806	540	752	800	985

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 00239.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 002390 - CMP Repairs and Replacements
Workpaper Detail: 002390.002 - RAMP - Risk Informed Drone Repairs
Unit Measure: Jobs completed

In-Service Date: Not Applicable

Description:

Risk Informed Drone Repairs

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	4,313	4,307	4,273	4,247	4,222	4,201
Non-Labor	11,370	11,313	11,256	11,200	11,144	11,088
NSE	0	0	0	0	0	0
Total	15,683	15,620	15,529	15,447	15,366	15,289
FTE	24.5	24.3	24.2	24.1	23.9	23.8
Units	780	776	772	768	765	761

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 00239.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 002390 - CMP Repairs and Replacements
Workpaper Detail: 002390.003 - RAMP - Distribution Underbuilt CMP Repairs
Unit Measure: Jobs completed

In-Service Date: Not Applicable

Description:

Distribution Underbuilt CMP Repairs

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	7	6	6	6	5	5
Non-Labor	896	753	716	678	568	500
NSE	0	0	0	0	0	0
Total	903	759	722	684	573	505
FTE	0.1	0.1	0.1	0.1	0.1	0.1
Units	20	17	16	15	13	11

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 00239.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 002390 - CMP Repairs and Replacements
Workpaper Detail: 002390.004 - RAMP - DIAR Tier 2
Unit Measure: Jobs completed

In-Service Date: Not Applicable

Description:

DIAR Tier 2

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	0	0	0	0
Non-Labor	4,194	0	0	0	0	0
NSE	0	0	0	0	0	0
Total	<u>4,194</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
FTE	0.0	0.0	0.0	0.0	0.0	0.0
Units	24	0	0	0	0	0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 002390

TY2028 GRC FORECAST - DETAILS

Workpaper/Mitigation: 002390 CMP Repairs and Replacements

002390 CMP Repairs and Replacements			2026			2027			2028			2029			2030			2031		
Line Item	Unit Description	Labor/Non-Labor/ NSE	RAMP/Non-RAMP	Unit Metric (e.g. #/1/mile)	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	Total Cost
1	Maint & Non-Labor Labor - Distribution LR Poles	Labor	RAMP	Hours	7	\$ 85	\$ 595	6	\$ 85	\$ 510	6	\$ 85	\$ 510	5	\$ 85	\$ 425	5	\$ 85	\$ 425	\$ 425
2	Labor Labor - Distribution LR Poles	Labor	RAMP	Hours	41	\$ 97	\$ 3,987	34	\$ 97	\$ 3,298	33	\$ 97	\$ 3,201	32	\$ 97	\$ 3,104	46	\$ 97	\$ 4,462	\$ 4,462
3	Materials, Warehouse/Issuances - Distribution LR Poles	Non-Labor	RAMP	poles	20	\$ -	\$ -	17	\$ -	\$ -	16	\$ -	\$ -	15	\$ -	\$ -	13	\$ -	\$ -	\$ -
4	Material, Vendor - Distribution LR Poles	Non-Labor	RAMP	poles	20	\$ 12,865	\$ 257,300	17	\$ 13,115	\$ 222,945	16	\$ 10,098	\$ 161,572	15	\$ 9,391	\$ 140,865	13	\$ 8,610	\$ 112,034	\$ 112,034
5	Services and Other - Distribution LR Poles	Non-Labor	RAMP	poles	20	\$ 15,969	\$ 319,377	17	\$ 16,700	\$ 281,910	16	\$ 15,155	\$ 242,480	15	\$ 13,115	\$ 196,725	13	\$ 10,200	\$ 132,600	\$ 132,600
6	Company Labor - RID	Labor	RAMP	poles	400	\$ 8,075	\$ 3,230,000	398	\$ 8,075	\$ 3,213,850	396	\$ 8,075	\$ 3,187,710	394	\$ 8,075	\$ 3,161,550	392	\$ 8,075	\$ 3,135,300	\$ 3,135,300
7	Pole Materials - RID	Non-Labor	RAMP	poles	400	\$ 10,200	\$ 4,080,000	398	\$ 10,200	\$ 4,039,600	396	\$ 10,200	\$ 4,039,200	394	\$ 10,200	\$ 4,018,800	392	\$ 10,200	\$ 3,998,400	\$ 3,998,400
8	Contractors - RID	Non-Labor	RAMP	poles	400	\$ 11,388	\$ 4,555,200	398	\$ 11,388	\$ 4,533,424	396	\$ 11,388	\$ 4,509,744	394	\$ 11,388	\$ 4,487,112	392	\$ 11,388	\$ 4,464,416	\$ 4,464,416
9	Company Labor - RID	Labor	RAMP	crossarms	380	\$ 2,692	\$ 1,022,800	378	\$ 2,692	\$ 1,017,696	376	\$ 2,692	\$ 1,012,608	374	\$ 2,692	\$ 1,007,520	372	\$ 2,692	\$ 1,002,384	\$ 1,002,384
10	Pole Materials - RID	Non-Labor	RAMP	crossarms	380	\$ 3,400	\$ 1,292,000	378	\$ 3,400	\$ 1,285,440	376	\$ 3,400	\$ 1,278,112	374	\$ 3,400	\$ 1,272,816	372	\$ 3,400	\$ 1,267,680	\$ 1,267,680
11	Contractors - RID	Non-Labor	RAMP	crossarms	380	\$ 3,796	\$ 1,435,280	378	\$ 3,796	\$ 1,430,064	376	\$ 3,796	\$ 1,424,896	374	\$ 3,796	\$ 1,419,696	372	\$ 3,796	\$ 1,414,464	\$ 1,414,464
12	Company Labor - HFTD	Labor	RAMP	poles	893	\$ 7,098	\$ 6,328,014	720	\$ 7,098	\$ 5,110,560	486	\$ 7,098	\$ 3,449,688	486	\$ 7,098	\$ 3,449,688	725	\$ 7,098	\$ 5,142,143	\$ 5,142,143
13	Pole Materials - HFTD	Non-Labor	RAMP	poles	893	\$ 8,200	\$ 7,332,400	720	\$ 8,200	\$ 5,896,000	486	\$ 8,200	\$ 4,005,500	486	\$ 8,200	\$ 4,005,500	725	\$ 8,200	\$ 5,943,250	\$ 5,943,250
14	Contractors - HFTD	Non-Labor	RAMP	poles	893	\$ 10,500	\$ 9,376,500	720	\$ 10,500	\$ 7,560,000	486	\$ 10,500	\$ 5,108,000	486	\$ 10,500	\$ 5,108,000	725	\$ 10,500	\$ 7,612,500	\$ 7,612,500
15	Company Labor - HFTD	Labor	RAMP	crossarms	112	\$ 2,692	\$ 301,400	86	\$ 2,692	\$ 231,472	54	\$ 2,692	\$ 145,308	72	\$ 2,692	\$ 193,776	75	\$ 2,692	\$ 201,975	\$ 201,975
16	Pole Materials - HFTD	Non-Labor	RAMP	crossarms	112	\$ 3,400	\$ 380,800	86	\$ 3,400	\$ 292,400	54	\$ 3,400	\$ 183,600	72	\$ 3,400	\$ 244,800	75	\$ 3,400	\$ 255,000	\$ 255,000
17	Contractors - HFTD	Non-Labor	RAMP	crossarms	112	\$ 3,796	\$ 425,152	86	\$ 3,796	\$ 324,456	54	\$ 3,796	\$ 204,864	72	\$ 3,796	\$ 273,312	75	\$ 3,796	\$ 284,700	\$ 284,700
18	Company Labor - DMAR Tier 2	Labor	RAMP	poles	24	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -	\$ -
19	Pole Materials - DMAR Tier 2	Non-Labor	RAMP	poles	24	\$ 8,000	\$ 192,000	-	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -	\$ -
20	Contractors - DMAR Tier 2	Non-Labor	RAMP	poles	24	\$ 188,771	\$ 4,522,500	-	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -	\$ -
Summary																				
	Labor	RAMP				\$ 10,890,320			\$ 9,579,319			\$ 7,810,971			\$ 6,213,310			\$ 6,521,194		\$ 10,751,437
	Non-Labor	RAMP				\$ 34,010,564			\$ 28,385,026			\$ 21,471,521			\$ 20,146,326			\$ 20,844,018		\$ 20,028,474
		NSE				\$ -			\$ -			\$ -			\$ -			\$ -		\$ -
	Subtotal RAMP					\$ 44,900,884			\$ 37,964,344			\$ 29,282,492			\$ 26,359,636			\$ 27,365,212		\$ 26,779,911
	Labor	Non-RAMP				\$ -			\$ -			\$ -			\$ -			\$ -		\$ -
	Non-Labor	Non-RAMP				\$ -			\$ -			\$ -			\$ -			\$ -		\$ -
		NSE				\$ -			\$ -			\$ -			\$ -			\$ -		\$ -
	Subtotal Non-RAMP					\$ -			\$ -			\$ -			\$ -			\$ -		\$ -
	Total Project Forecast					\$ 44,900,884			\$ 37,964,344			\$ 29,282,492			\$ 26,359,636			\$ 27,365,212		\$ 26,779,911

Note: The variance between the direct costs found in workpapers and the supplemental workpapers supporting Ex. SDGE-07 are due to a system wide adjustment to reflect changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony. Ex. SCG-16/SDGE-20.

Beginning of Workpaper Group
101430 - Transmission Overhead Hardening (Distribution Underbuild)

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 10143.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 101430 - Transmission Overhead Hardening (Distribution Underbuild)
Unit Measure: Miles hardened (Capital)

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Zero-Based	118	111	283	176	44	45	101	166	12	0	0
Non-Labor	Zero-Based	4,196	3,350	15,965	12,439	2,598	7,096	7,265	3,654	808	12	0
NSE	Zero-Based	0	0	0	0	0	0	0	0	0	0	0
Total		4,314	3,461	16,247	12,616	2,642	7,141	7,366	3,820	820	12	0
FTE	Zero-Based	0.7	0.7	1.7	0.9	0.2	0.4	0.6	1.0	0.1	0.0	0.0
Units	Zero-Based	3	1	17	1	0	8	7	0	6	0	0

Business Purpose:

Overhead Transmission Fire Hardening is replacing select existing wood poles with new steel poles and replacing aging conductor with new high-strength conductor to fire harden the electric transmission system. These pole and conductor replacements are part of an overall effort to help improve the reliability and integrity of the electric transmission system and to mitigate future potential fire risk. This project will improve the electric transmission system performance during extreme weather conditions such as Santa Ana wind events. When these transmission poles are replaced, the distribution facilities on the pole will need to be replaced or reloaded onto the new pole. This program will be discontinued in 2030.

Physical Description:

This program will replace select existing wood poles with new steel poles and replace aging conductor with new high-strength conductor to fire harden the electric transmission system.

Project Justification:

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 10143.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 101430 - Transmission Overhead Hardening (Distribution Underbuild)
Unit Measure: Miles hardened (Capital)

These pole and conductor replacements are part of an overall effort to help improve the reliability and integrity of the electric transmission system and to mitigate future potential fire risk. By replacing the existing wood poles and aging conductor this program increases the service reliability of the transmission line during extreme weather conditions and protects the electric transmission system from wildfire damage, while also reducing the potential for the transmission line to be an ignition source. There are no transmission costs included.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 10143.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 101430 - Transmission Overhead Hardening (Distribution Underbuild)
Unit Measure: Miles hardened (Capital)

Forecast Methodology:

Labor - Zero-Based

The forecast method used is zero based. The forecast is based on cost estimates that were developed based on the specific scope of work for the project. Cost estimates are based on current construction labor rates, material costs, contract pricing/quotes, and other project specific details.

Non-Labor - Zero-Based

The forecast method used is zero based. The forecast is based on cost estimates that were developed based on the specific scope of work for the project. Cost estimates are based on current construction labor rates, material costs, contract pricing/quotes, and other project specific details.

NSE - Zero-Based

N/A

Units - Zero-Based

The units are based on the associated overhead transmission hardening miles. The cost requested are not FERC related.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 10143.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 101430 - Transmission Overhead Hardening (Distribution Underbuild)
Unit Measure: Miles hardened (Capital)

Summary of Adjustments to Forecast:

In 2025 \$ (000)																		
Years	Base Forecast						Forecast Adjustments						Adjusted-Forecast					
	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031
Labor	44	99	164	12	0	0	1	2	2	0	0	0	45	101	166	12	0	0
NLbr	7,096	7,265	3,654	808	12	0	0	0	0	0	0	0	7,096	7,265	3,654	808	12	0
NSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	7,140	7,364	3,818	820	12	0	1	2	2	0	0	0	7,141	7,366	3,820	820	12	0
FTE	0.4	0.6	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.6	1.0	0.1	0.0	0.0
Units	8	7	0	6	0	0	0	0	0	0	0	0	8	7	0	6	0	0

Forecast Adjustment Details:

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2026	1	0	0	1	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2026 Total	1	0	0	1	0.0	0
2027	2	0	0	2	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2027 Total	2	0	0	2	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 10143.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 101430 - Transmission Overhead Hardening (Distribution Underbuild)
Unit Measure: Miles hardened (Capital)

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2028	2	0	0	2	0.0	0
Explanation: Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.						
2028 Total	2	0	0	2	0.0	0
2029 Total	0	0	0	0	0.0	0
2030 Total	0	0	0	0	0.0	0
2031 Total	0	0	0	0	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 10143.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 101430 - Transmission Overhead Hardening (Distribution Underbuild)
Unit Measure: Miles hardened (Capital)

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Recorded (Nominal \$)*					
Labor	93	96	207	141	39
Non-Labor	5,370	3,125	13,171	5,839	2,598
NSE	0	0	0	0	0
Total	5,463	3,222	13,379	5,980	2,637
FTE	0.5	0.6	1.4	0.8	0.2
Units	0	0	0	0	0
Adjustments (Nominal \$) **					
Labor	-28	-26	10	9	0
Non-Labor	-2,699	-680	791	6,176	0
NSE	0	0	0	0	0
Total	-2,727	-706	801	6,185	0
FTE	0.1	0.0	0.1	0.0	0.0
Units	3	1	17	1	0
Recorded-Adjusted (Nominal \$)					
Labor	65	71	217	150	39
Non-Labor	2,670	2,445	13,962	12,015	2,598
NSE	0	0	0	0	0
Total	2,735	2,516	14,179	12,165	2,637
FTE	0.6	0.6	1.5	0.8	0.2
Units	3	1	17	1	0
Vacation & Sick (Nominal \$)					
Labor	10	10	30	20	6

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 10143.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 101430 - Transmission Overhead Hardening (Distribution Underbuild)
Unit Measure: Miles hardened (Capital)

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	10	10	30	20	6
FTE	0.1	0.1	0.2	0.1	0.0
Units	0	0	0	0	0
Escalation to 2025\$					
Labor	43	30	35	6	0
Non-Labor	1,526	905	2,002	424	0
NSE	0	0	0	0	0
Total	1,569	935	2,038	430	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Constant 2025\$)					
Labor	118	111	283	176	44
Non-Labor	4,196	3,350	15,965	12,439	2,598
NSE	0	0	0	0	0
Total	4,314	3,461	16,247	12,616	2,642
FTE	0.7	0.7	1.7	0.9	0.2
Units	3	1	17	1	0

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 10143.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 101430 - Transmission Overhead Hardening (Distribution Underbuild)
Unit Measure: Miles hardened (Capital)

Summary of Adjustments to Recorded:

		In Nominal \$(000)				
	Years	2021	2022	2023	2024	2025
Labor		-28	-26	10	9	0
Non-Labor		-2,699	-680	791	6,176	0
NSE		0	0	0	0	0
Total		-2,727	-706	801	6,185	0
FTE		0.1	0.0	0.1	0.0	0.0
Units		3	1	17	1	0

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	0	0	0	0	0.0	3
Explanation:	To input historical units completed.					
2021	-31	-2,711	0	-2,742	0.0	0
Explanation:	Align work paper level histoical actuals with current SAP/TM1 as a result of work order transfers (SAP Data Change)					
2021	0.523	-27	0	-27	0.1	0
Explanation:	Align work paper level histoical actuals with current SAP/TM1 as a result of work order transfers (SAP Data Change)					

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 10143.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 101430 - Transmission Overhead Hardening (Distribution Underbuild)
Unit Measure: Miles hardened (Capital)

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	3	39	0	41	0.0	0
Explanation: Align work paper level histoical actuals with current SAP/TM1 as a result of work order transfers (SAP Data Change)						
2021 Total	-28	-2,699	0	-2,727	0.1	3
2022	-34	-947	0	-981	0.0	1
Explanation: Align work paper level histoical actuals with current SAP/TM1 as a result of work order transfers (SAP Data Change) and updated units to historical completed						
2022	8	228	0	236	0.0	0
Explanation: Align work paper level histoical actuals with current SAP/TM1 as a result of work order transfers (SAP Data Change)						
2022	0.164	39	0	39	0.0	0
Explanation: Align work paper level histoical actuals with current SAP/TM1 as a result of work order transfers (SAP Data Change)						
2022 Total	-26	-680	0	-706	0.0	1
2023	0	0	0	0	0.0	17
Explanation: Updated to historical units completed.						
2023	-2	-135	0	-137	0.0	0
Explanation: Align work paper level histoical actuals with current SAP/TM1 as a result of work order transfers (SAP Data Change)						

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 10143.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 101430 - Transmission Overhead Hardening (Distribution Underbuild)
Unit Measure: Miles hardened (Capital)

Year	Labor	NLbr	NSE	Total	FTE	Units
2023	10	567	0	577	0.1	0
Explanation:	Align work paper level histoical actuals with current SAP/TM1 as a result of work order transfers (SAP Data Change)					
2023	1	360	0	361	0.0	0
Explanation:	Align work paper level histoical actuals with current SAP/TM1 as a result of work order transfers (SAP Data Change)					
2023 Total	10	791	0	801	0.1	17
2024	-0.778	-9	0	-10	0.0	0
Explanation:	Align work paper level histoical actuals with current SAP/TM1 as a result of work order transfers (SAP Data Change)					
2024	0	18	0	18	0.0	0
Explanation:	Align work paper level histoical actuals with current SAP/TM1 as a result of work order transfers (SAP Data Change)					
2024	8	5,926	0	5,934	0.0	1
Explanation:	Align work paper level histoical actuals with current SAP/TM1 as a result of work order transfers (SAP Data Change) and updated units to historical completed					
2024	2	241	0	243	0.0	0
Explanation:	Align work paper level histoical actuals with current SAP/TM1 as a result of work order transfers (SAP Data Change)					
2024 Total	9	6,176	0	6,185	0.0	1

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 10143.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 101430 - Transmission Overhead Hardening (Distribution Underbuild)
Unit Measure: Miles hardened (Capital)

Year	Labor	NLbr	NSE	Total	FTE	Units
2025	0	0	0	0	0.0	0
Explanation: united unit of measure						
2025 Total	0	0	0	0	0.0	0

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 101430**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 10143.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 101430 - Transmission Overhead Hardening (Distribution Underbuild)
Workpaper Detail: 101430.001 - RAMP - Transmission Overhead Hardening (Distribution Underbuild) - ISD 2026
Unit Measure: Miles hardened (Capital)

In-Service Date: 12/31/2026

Description:

This program will replace select existing wood poles with new steel poles and replace aging conductor with new high-strength conductor to fire harden distribution underbuild on the electric transmission system.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	3	0	0	0	0	0
Non-Labor	86	0	0	0	0	0
NSE	0	0	0	0	0	0
Total	89	0	0	0	0	0
FTE	0.1	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 10143.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 101430 - Transmission Overhead Hardening (Distribution Underbuild)
Workpaper Detail: 101430.002 - RAMP - Transmission Overhead Hardening (Distribution Underbuild) - ISD 2027
Unit Measure: Miles hardened (Capital)

In-Service Date: 12/31/2027

Description:

This program will replace select existing wood poles with new steel poles and replace aging conductor with new high-strength conductor to fire harden distribution underbuild on the electric transmission system.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	1	0	0	0	0	0
Non-Labor	5,149	1,880	0	0	0	0
NSE	0	0	0	0	0	0
Total	5,150	1,880	0	0	0	0
FTE	0.1	0.0	0.0	0.0	0.0	0.0
Units	7	2	0	0	0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 10143.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 101430 - Transmission Overhead Hardening (Distribution Underbuild)
Workpaper Detail: 101430.003 - RAMP - Transmission Overhead Hardening (Distrubtion Underbuild) - ISD 2028
Unit Measure: Miles hardened (Capital)

In-Service Date: 12/31/2028

Description:

This program will replace select existing wood poles with new steel poles and replace aging conductor with new high-strength conductor to fire harden distribution underbuild on the electric transmission system.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	27	87	14	0	0	0
Non-Labor	1,665	2,600	426	5	0	0
NSE	0	0	0	0	0	0
Total	1,692	2,687	440	5	0	0
FTE	0.1	0.5	0.1	0.0	0.0	0.0
Units	1	3	0	0	0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 10143.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 101430 - Transmission Overhead Hardening (Distribution Underbuild)
Workpaper Detail: 101430.004 - RAMP - Transmission Overhead Hardening (Distribution Underbuild) - ISD 2029
Unit Measure: Miles hardened (Capital)

In-Service Date: 12/31/2029

Description:

This program will replace select existing wood poles with new steel poles and replace aging conductor with new high-strength conductor to fire harden distribution underbuild on the electric transmission system.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	14	14	152	12	0	0
Non-Labor	196	2,785	3,228	803	12	0
NSE	0	0	0	0	0	0
Total	210	2,799	3,380	815	12	0
FTE	0.1	0.1	0.9	0.1	0.0	0.0
Units	0	2	0	6	0	0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 101430

TY2028 GRC FORECAST - DETAILS

Workpaper/Mitigation: 101430 Transmission Overhead Hardening (Distribution Underbuilt)

101430 Transmission Overhead Hardening (Distribution Underbuilt)				2016			2017			2018			2019			2020			2021			Total		
Line Item	Unit Description	Labor/Non-Labor/ NSE	RAMP/Non-RAMP	Unit Metric (ea./ft./mile)	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	Total Cost	
1	TL696 - Camp Pendleton - Wood to Steel	Labor	RAMP	FTE	0.1	\$ 174,266	\$ 17,427	0.1	\$ 174,266	\$ 17,427	0.1	\$ 174,266	\$ 17,427	0.1	\$ 174,266	\$ 17,427							\$ -	\$ 17,427
2	TL696 - Camp Pendleton - Wood to Steel	Non-Labor	RAMP	miles	-	\$ 198,000	\$ -	-	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -	5.50	\$ 12,000	\$ 66,000				\$ -	\$ 66,000
5	TL695/6971 Tasega Cristanitos Japanese (Camp Pend)	Labor	RAMP	FTE	0.1	\$ 174,266	\$ 17,427	0.5	\$ 174,266	\$ 87,133	0.1	\$ 174,266	\$ 17,427										\$ -	\$ 17,427
6	TL695/6971 Tasega Cristanitos Japanese (Camp Pend)	Non-Labor	RAMP	miles	-	\$ 2,602,835	\$ -	2.60	\$ 918,495	\$ 2,375,088	-	\$ -	\$ -										\$ -	\$ 2,375,088
7	TL694 Wood to Steel Replacement	Labor	RAMP	FTE	-	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -										\$ -	\$ -
8	TL694 Wood to Steel Replacement	Non-Labor	RAMP	miles	3.30	\$ 960,108	\$ 3,168,351	-	\$ -	\$ 627,768	-	\$ -	\$ -										\$ -	\$ 3,796,119
11	TL627 Tier 2 W25 Project	Labor	RAMP	FTE	-	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -										\$ -	\$ -
12	TL627 Tier 2 W25 Project	Non-Labor	RAMP	miles	-	\$ -	\$ -	1.80	\$ 558,889	\$ 1,006,000	-	\$ -	\$ -										\$ -	\$ 2,006,000
13	TL691 Fallbrook W25 Project	Labor	RAMP	FTE	-	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -										\$ -	\$ -
14	TL691 Fallbrook W25 Project	Non-Labor	RAMP	miles	-	\$ -	\$ -	2.70	\$ 582,815	\$ 1,573,600	-	\$ -	\$ -										\$ -	\$ 2,573,600
15	TL675 Tier 2 W25 Project	Labor	RAMP	FTE	0.0	\$ 174,266	\$ 3,407	-	\$ -	\$ -	-	\$ -	\$ -										\$ -	\$ 3,407
16	TL675 Tier 2 W25 Project	Non-Labor	RAMP	miles	0.15	\$ 573,280	\$ 85,992	-	\$ -	\$ -	-	\$ -	\$ -										\$ -	\$ 85,992
17	TL6910 Tier 2 W25 Project	Labor	RAMP	FTE	0.0	\$ -	\$ 13,678	-	\$ -	\$ -	-	\$ -	\$ -										\$ -	\$ 13,678
18	TL6910 Tier 2 W25 Project	Non-Labor	RAMP	miles	1.0	\$ 63,200	\$ 63,200	1.0	\$ -	\$ 223,000	-	\$ -	\$ -										\$ -	\$ 286,200
19	TL13811-W25	Labor	RAMP	FTE	0.0	\$ -	\$ 348	-	\$ -	\$ -	-	\$ -	\$ -										\$ -	\$ 348
20	TL13811-W25	Non-Labor	RAMP	miles	3.57	\$ 554,926	\$ 1,981,085	-	\$ -	\$ 245,565	-	\$ -	\$ -										\$ -	\$ 2,227,054

Summary																										
	Labor	RAMP		\$	48,806	\$	98,670	\$	164,088	\$	32,081	\$	18,613	\$	-	\$	-	\$	-	\$	-	\$	-	\$	118,613	
	Non-Labor	RAMP		\$	7,096,263	\$	7,265,021	\$	9,653,756	\$	807,590	\$	12,000	\$	18,834,590	\$	-	\$	-	\$	-	\$	-	\$	-	18,834,590
	NSE	RAMP		\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	
	Subtotal RAMP			\$	7,140,628	\$	7,363,691	\$	9,817,803	\$	820,082	\$	12,000	\$	18,854,303	\$	-	\$	-	\$	-	\$	-	\$	-	18,854,303
	Labor	Non-RAMP		\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	
	Non-Labor	Non-RAMP		\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	
	NSE	Non-RAMP		\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	
	Subtotal Non-RAMP			\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	
	Total Project Forecast			\$	7,140,628	\$	7,363,691	\$	9,817,803	\$	820,082	\$	12,000	\$	18,854,303	\$	-	\$	-	\$	-	\$	-	\$	-	18,854,303

Note: The variance between the direct costs found in workpapers and the supplemental workpapers supporting Ex. SDGE-07 are due to a system wide adjustment to reflect changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.

**Beginning of Workpaper Group
152590 - Advanced Protection**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 15259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 152590 - Advanced Protection
Unit Measure: Circuits enabled

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Zero-Based	1,588	2,593	5,001	1,550	1,763	1,911	928	1,047	1,045	1,044	1,044
Non-Labor	Zero-Based	12,069	18,368	12,544	9,244	6,774	2,267	1,097	5,493	5,511	5,511	5,511
NSE	Zero-Based	0	0	0	0	0	0	0	0	0	0	0
Total		13,657	20,961	17,544	10,793	8,536	4,178	2,025	6,540	6,556	6,555	6,555
FTE	Zero-Based	6.2	10.1	16.1	8.2	9.4	9.6	4.6	5.2	5.2	5.2	5.2
Units	Zero-Based	4	3	4	5	7	8	8	8	8	8	8

Business Purpose:

The Advanced Protection Program (APP) deploys advanced protection technologies in substations and distribution systems to reduce fire risk, improve situational awareness in fire-prone areas, and support new relay standards where low fault currents challenge traditional protection coordination.

The program replaces aging equipment, enhances distribution reliability, and improves fire safety in Tier 2 and 3 High Fire Threat Districts (HFTDs) through upgrades including:

- Reconfiguration of 12kV circuit breakers and relays
- Installation of Distribution SCADA RTUs
- New transformer bank relays
- New 12kV bus differential relays
- Microprocessor feeder relays
- Advanced protection devices enabling:

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 15259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 152590 - Advanced Protection
Unit Measure: Circuits enabled

- Falling Conductor Protection (FCP)
- Arc Sensing Technology (AST)
- Sensitive Ground Fault (SGF) sensing
- Advanced Remote Event Retrieval (ARER)
- Remote setting changes
- Sensor camera technology

The Jamacha 69/12kV Substation Rebuild Program shares the same mission of deploying advanced protection to reduce fire risk, increase visibility, and support modern relay standards where low fault currents limit legacy methods. It also focuses on replacing aging infrastructure, improving reliability, and enhancing fire safety in Tier 2 and 3 HFTDs through the same upgrades.

Physical Description:

The Advanced Protection Program will install new circuit breakers and relays to improve protection functions, event recording, and communication between field devices and substation relays. It also includes installing 12 kV bus differential relays to enhance protection and adding Distribution SCADA systems where appropriate. In addition, the program will deploy approximately 2,000 sensor-camera units at strategic pole locations within SDG&E's HFTD. Each unit integrates an optical sensor, onboard processor with advanced analytics, communications module, and self-contained power supply in a weather-resistant housing. Positioned for maximum coverage, each camera monitors two to three spans in both directions.

The Jamacha 69/12kV Substation Rebuild is a major, multi-phase project replacing nearly all substation components. It is currently in Phase 3, with final ISD planned for early 2027. The phases include:

- Phase 1: Site development, SG1230 work, 12kV East bus, switchgear, and T/D line construction — Complete.
- Phase 2: SWGR 1231, 12kV West bus, and T/D line work — Complete.
- Phase 3: SWGR 1232/33, 69kV North bus, move BK 32, install BK 33, and T/D line work — Est. March 2026.
- Phases 4 & 5: Move BK 30, install cap banks A/B/D, 69kV South bus, and transmission work — Est. March 2027.

Project Justification:

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 15259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 152590 - Advanced Protection
Unit Measure: Circuits enabled

All substations and circuits in this program fall within the fire-threat zone. The APP program and the Jamacha Rebuild project will upgrade distribution relaying and associated breakers at these substations and improve operator visibility. These upgrades support new relay standards and improve device coordination in areas where low fault currents make coordination difficult. Once field devices are upgraded, communication between field devices and substation feeder relays will also be enabled.

In addition to protection enhancements, the program will deploy advanced sensor-camera technology to improve real-time situational awareness on distribution circuits. Current monitoring relies on labor-intensive inspections such as foot, vehicle, and aerial patrols. The sensor-camera system provides continuous, automated monitoring of conductors and nearby conditions, enabling real-time detection of conductor clashing, vegetation contact, equipment anomalies, foreign interference, and other ignition precursors. Each alert includes video evidence and advanced analytics, allowing operators to remotely validate conditions, reduce unnecessary truck rolls, and dispatch crews more efficiently and safely. A single validated detection can prevent an outage, reduce field response, or avoid a potential ignition event, and decreasing reliance on PSPS events can generate meaningful reliability and financial benefits.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 15259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 152590 - Advanced Protection
Unit Measure: Circuits enabled

Forecast Methodology:

Labor - Zero-Based

The forecast method used is zero-based. The forecast is based on cost estimates developed based on the scope of work for the project. SDG&E develops cost estimates based on construction labor rates, material costs, overhead rates, contract pricing/quotes, and other project specific details. When projects are completed, actual costs are compared to the estimate to verify the estimates are accurate. Any significant variances between the estimated cost for a project and the actual costs are scrutinized to determine whether cost estimate inputs need to be adjusted for future projects.

Non-Labor - Zero-Based

The forecast method used is zero-based. The forecast is based on cost estimates developed based on the scope of work for the project. SDG&E develops cost estimates based on construction labor rates, material costs, overhead rates, contract pricing/quotes, and other project specific details. When projects are completed, actual costs are compared to the estimate to verify the estimates are accurate. Any significant variances between the estimated cost for a project and the actual costs are scrutinized to determine whether cost estimate inputs need to be adjusted for future projects.

NSE - Zero-Based

N/A

Units - Zero-Based

APP Distribution: Number of distribution circuits on which advanced protection technologies or relay/breaker upgrades are installed.
APP Substation & JAM: Number of substations where system upgrades are completed

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 15259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 152590 - Advanced Protection
Unit Measure: Circuits enabled

Summary of Adjustments to Forecast:

In 2025 \$ (000)																		
	Base Forecast						Forecast Adjustments						Adjusted-Forecast					
Years	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031
Labor	1,884	912	1,031	1,031	1,031	1,031	27	16	16	14	13	13	1,911	928	1,047	1,045	1,044	1,044
NLbr	2,267	1,097	5,493	5,511	5,511	5,511	0	0	0	0	0	0	2,267	1,097	5,493	5,511	5,511	5,511
NSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	4,151	2,009	6,524	6,542	6,542	6,542	27	16	16	14	13	13	4,178	2,025	6,540	6,556	6,555	6,555
FTE	9.6	4.6	5.2	5.2	5.2	5.2	0.0	0.0	0.0	0.0	0.0	0.0	9.6	4.6	5.2	5.2	5.2	5.2
Units	8	8	8	8	8	8	0	0	0	0	0	0	8	8	8	8	8	8

Forecast Adjustment Details:

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2026	27	0	0	27	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2026 Total	27	0	0	27	0.0	0
2027	16	0	0	16	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2027 Total	16	0	0	16	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 15259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 152590 - Advanced Protection
Unit Measure: Circuits enabled

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2028	16	0	0	16	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2028 Total	16	0	0	16	0.0	0
2029	14	0	0	14	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2029 Total	14	0	0	14	0.0	0
2030	13	0	0	13	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2030 Total	13	0	0	13	0.0	0
2031	13	0	0	13	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2031 Total	13	0	0	13	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 15259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 152590 - Advanced Protection
Unit Measure: Circuits enabled

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Recorded (Nominal \$)*					
Labor	1,060	1,608	2,710	1,480	1,537
Non-Labor	9,568	15,432	13,024	9,374	6,774
NSE	0	0	0	0	0
Total	10,628	17,040	15,735	10,854	8,311
FTE	6.0	10.3	15.1	8.0	8.1
Units	0	0	0	0	0
Adjustments (Nominal \$) **					
Labor	-186	39	1,122	-163	0
Non-Labor	-1,925	-2,066	-2,078	-456	0
NSE	0	0	0	0	0
Total	-2,110	-2,026	-956	-619	0
FTE	-0.7	-1.6	-1.2	-0.9	0.0
Units	4	3	4	5	7
Recorded-Adjusted (Nominal \$)					
Labor	874	1,647	3,832	1,317	1,537
Non-Labor	7,643	13,366	10,947	8,918	6,774
NSE	0	0	0	0	0
Total	8,517	15,013	14,779	10,235	8,311
FTE	5.3	8.7	13.9	7.1	8.1
Units	4	3	4	5	7
Vacation & Sick (Nominal \$)					
Labor	132	240	532	179	225

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 15259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 152590 - Advanced Protection
Unit Measure: Circuits enabled

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	132	240	532	179	225
FTE	0.9	1.4	2.2	1.1	1.3
Units	0	0	0	0	0
Escalation to 2025\$					
Labor	582	706	637	55	0
Non-Labor	4,426	5,002	1,597	325	0
NSE	0	0	0	0	0
Total	5,008	5,708	2,233	380	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Constant 2025\$)					
Labor	1,588	2,593	5,001	1,550	1,763
Non-Labor	12,069	18,368	12,544	9,244	6,774
NSE	0	0	0	0	0
Total	13,657	20,961	17,544	10,793	8,536
FTE	6.2	10.1	16.1	8.2	9.4
Units	4	3	4	5	7

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 15259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 152590 - Advanced Protection
Unit Measure: Circuits enabled

Summary of Adjustments to Recorded:

		In Nominal \$(000)				
	Years	2021	2022	2023	2024	2025
Labor		-186	39	1,122	-163	0
Non-Labor		-1,925	-2,066	-2,078	-456	0
NSE		0	0	0	0	0
Total		-2,110	-2,026	-956	-619	0
FTE		-0.7	-1.6	-1.2	-0.9	0.0
Units		4	3	4	5	7

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	-79	-1,017	0	-1,096	-0.7	0
Explanation:	Transfer WOA 2454903 4256772 4256864 5085242 5202876 and 5983127 from WMP WP 152590 to ED WP 242520					
2021	0	0	0	0	0.0	4
Explanation:	updated units					
2021	-107	-906	0	-1,013	0.0	0
Explanation:	Align work paper level histoical actuals with current SAP/TM1 as a result of work order transfers (SAP Data Change)					

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 15259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 152590 - Advanced Protection
Unit Measure: Circuits enabled

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	0	-1	0	-1	0.0	0
Explanation: Reduce historical costs due to 2021 Track 2 disallowances for Advanced Protection.						
2021 Total	-186	-1,925	0	-2,110	-0.7	4
2022	-185	-2,813	0	-2,998	-1.6	0
Explanation: Transfer WOA 2454903 4256772 4256864 5085242 5202876 and 5983127 from WMP WP 152590 to ED WP 242520						
2022	0	0	0	0	0.0	3
Explanation: Updated circuits						
2022	224	828	0	1,052	0.0	0
Explanation: Align work paper level histoical actuals with current SAP/TM1 as a result of work order transfers (SAP Data Change)						
2022	0	-81	0	-81	0.0	0
Explanation: Reduce historical costs due to 2022 Track 2 disallowances for Advanced Protection.						
2022 Total	39	-2,066	0	-2,026	-1.6	3
2023	-150	-1,841	0	-1,991	-1.2	0
Explanation: Transfer WOA 2454903 4256772 4256864 5085242 5202876 and 5983127 from WMP WP 152590 to ED WP 242520						
2023	0	0	0	0	0.0	3

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 15259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 152590 - Advanced Protection
Unit Measure: Circuits enabled

Year	Labor	NLbr	NSE	Total	FTE	Units
Explanation: Updated units						
2023	0	0	0	0	0.0	1
Explanation: Updated units						
2023	-31	-925	0	-956	0.0	0
Explanation: Align work paper level histoical actuals with current SAP/TM1 as a result of work order transfers (SAP Data Change)						
2023	1,303	688	0	1,991	0.0	0
Explanation: Align work paper level histoical actuals with current SAP/TM1 as a result of work order transfers (SAP Data Change)						
2023 Total	1,122	-2,078	0	-956	-1.2	4
2024	-129	-656	0	-785	-0.9	0
Explanation: Transfer WOA 2454903 4256772 4256864 5085242 5202876 and 5983127 from WMP WP 152590 to ED WP 242520						
2024	0	0	0	0	0.0	4
Explanation: Updated units						
2024	0	0	0	0	0.0	1
Explanation: Updated units						
2024	-35	201	0	166	0.0	0
Explanation: Align work paper level histoical actuals with current SAP/TM1 as a result of work order transfers (SAP Data Change)						

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 15259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 152590 - Advanced Protection
Unit Measure: Circuits enabled

Year	Labor	NLbr	NSE	Total	FTE	Units
2024 Total	-163	-456	0	-619	-0.9	5
2025	0	0	0	0	0.0	7
Explanation:	Updated 2025 units					
2025	0	0	0	0	0.0	0
Explanation:	updated unit of measure					
2025 Total	0	0	0	0	0.0	7

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 152590**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 15259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 152590 - Advanced Protection
Workpaper Detail: 152590.001 - RAMP - Advanced Protection
Unit Measure: Circuits enabled

In-Service Date: Not Applicable

Description:

The Advanced Protection Program will install new circuit breakers and relays to improve protection functions, event recording, and communication between field devices and substation relays. It also includes installing 12 kV bus differential relays to enhance protection and adding Distribution SCADA systems where appropriate. In addition, the program will deploy approximately 2,000 sensor-camera units at strategic pole locations within SDG&E's HFTD. Each unit integrates an optical sensor, onboard processor with advanced analytics, communications module, and self-contained power supply in a weather-resistant housing. Positioned for maximum coverage, each camera monitors two to three spans in both directions.

The Jamacha 69/12kV Substation Rebuild is a major, multi-phase project replacing nearly all substation components. It is currently in Phase 3, with final ISD planned for early 2027. The phases include:

- Phase 1: Site development, SG1230 work, 12kV East bus, switchgear, and T/D line construction — Complete.
- Phase 2: SWGR 1231, 12kV West bus, and T/D line work — Complete.
- Phase 3: SWGR 1232/33, 69kV North bus, move BK 32, install BK 33, and T/D line work — Est. March 2026.
- Phases 4 & 5: Move BK 30, install cap banks A/B/D, 69kV South bus, and transmission work — Est. March 2027.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	1,467	829	848	846	845	845
Non-Labor	1,524	1,035	1,025	1,025	1,025	1,025
NSE	0	0	0	0	0	0
Total	2,991	1,864	1,873	1,871	1,870	1,870
FTE	7.3	4.1	4.2	4.2	4.2	4.2

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 15259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 152590 - Advanced Protection
Workpaper Detail: 152590.001 - RAMP - Advanced Protection
Unit Measure: Circuits enabled

In-Service Date: Not Applicable

Units	8	8	8	8	8
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Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 15259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 152590 - Advanced Protection
Workpaper Detail: 152590.002 - RAMP - Advanced Protection - Jamacha Substation
Unit Measure: Circuits enabled

In-Service Date: Not Applicable

Description:

The Jamacha 69/12kV Substation Rebuild is a major multi-phase project replacing nearly all substation components. It is currently in Phase 3, with final ISD planned for early 2027. The phases include:

- Phase 1: Site development, SG1230 work, 12kV East bus, switchgear, and T/D line construction — Complete.
- Phase 2: SWGR 1231, 12kV West bus, and T/D line work — Complete.
- Phase 3: SWGR 1232/33, 69kV North bus, move BK 32, install BK 33, and T/D line work — Est. March 2026.
- Phases 4 & 5: Move BK 30, install cap banks A/B/D, 69kV South bus, and transmission work — Est. March 2027.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	444	99	0	0	0	0
Non-Labor	743	62	0	0	0	0
NSE	0	0	0	0	0	0
Total	1,187	161	0	0	0	0
FTE	2.3	0.5	0.0	0.0	0.0	0.0
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 15259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 152590 - Advanced Protection
Workpaper Detail: 152590.003 - RAMP - Advanced Protection - Wildfire Sensor Camera Technology
Unit Measure: Circuits enabled

In-Service Date: Not Applicable

Description:

The program will deploy advanced sensor-camera technology to improve real-time situational awareness on distribution circuits. Current monitoring relies on labor-intensive inspections such as foot, vehicle, and aerial patrols. The sensor-camera system provides continuous, automated monitoring of conductors and nearby conditions, enabling real-time detection of conductor clashing, vegetation contact, equipment anomalies, foreign interference, and other ignition precursors. Each alert includes video evidence with advanced analytics, allowing operators to remotely validate conditions, reduce unnecessary truck rolls, and dispatch crews more efficiently and safely. A single validated detection can prevent an outage, reduce field response, or avoid a potential ignition event, and decreasing reliance on PSPS events can generate meaningful reliability and financial benefits.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	199	199	199	199
Non-Labor	0	0	4,268	4,286	4,286	4,286
NSE	0	0	0	0	0	0
Total	0	0	4,467	4,485	4,485	4,485
FTE	0.0	0.0	1.0	1.0	1.0	1.0
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 15259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 152590 - Advanced Protection
Workpaper Detail: 152590.004 - RAMP - Advanced Protection - Video Based Operational Insights Program
Unit Measure: Circuits enabled

In-Service Date: Not Applicable

Description:

The program will deploy advanced sensor-camera technology to improve real-time situational awareness on distribution circuits. Current monitoring relies on labor-intensive inspections such as foot, vehicle, and aerial patrols. The sensor-camera system provides continuous, automated monitoring of conductors and nearby conditions, enabling real-time detection of conductor clashing, vegetation contact, equipment anomalies, foreign interference, and other ignition precursors. Each alert includes video evidence with advanced analytics, allowing operators to remotely validate conditions, reduce unnecessary truck rolls, and dispatch crews more efficiently and safely. A single validated detection can prevent an outage, reduce field response, or avoid a potential ignition event, and decreasing reliance on PSPS events can generate meaningful reliability and financial benefits.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	0	0	0	0
Non-Labor	0	0	200	200	200	200
NSE	0	0	0	0	0	0
Total	0	0	200	200	200	200
FTE	0.0	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 152590

TY2028 GRC FORECAST - DETAILS

Workpaper/Mitigation:

152590 Advanced Protection

152590 Advanced Protection			2026			2027			2028			2029			2030			2031			Total Cost	Comments
Line Item	Item Description	Labor/Non-Labor/ N/E	Unit Metric (ea)	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	Total Cost			
1	Mgmt & Non-Union Labor (Distribution)	Labor	RAMP	hours	558	\$ 75	\$ 42,543												\$	\$ 42,543		
2	Union Labor (Distribution)	Labor	RAMP	hours	5,637	\$ 85	\$ 479,145	5,065	\$ 85	\$ 430,525	5,191	\$ 85	\$ 441,235	5,191	\$ 85	\$ 441,235	5,191	\$ 85	\$ 441,235	\$ 1,809,280		
3	Materials, Warehouse (Distribution)	Non-Labor	RAMP	Circuits	8	\$ 1,487	\$ 11,896												\$	\$ 11,896		
4	Materials, Vendor Procured (Distribution)	Non-Labor	RAMP	Circuits	8	\$ 8,519	\$ 68,152	8	\$ 8,519	\$ 68,152	8	\$ 8,519	\$ 68,152	8	\$ 8,519	\$ 68,152	8	\$ 8,519	\$ 68,152	\$ 1,307,800		
5	Services and Others (Distribution)	Non-Labor	RAMP	Circuits	8	\$ 85,390	\$ 683,120	8	\$ 85,390	\$ 683,120	8	\$ 85,390	\$ 683,120	8	\$ 85,390	\$ 683,120	8	\$ 85,390	\$ 683,120	\$ 2,588,120		
6	Mgmt & Non-Union Labor (Substation)	Labor	RAMP	hours	327	\$ 75	\$ 24,525												\$	\$ 24,525		
7	Union Labor (Substation)	Labor	RAMP	hours	8,565	\$ 85	\$ 728,025	3,376	\$ 85	\$ 287,080	3,461	\$ 85	\$ 294,185	3,461	\$ 85	\$ 294,185	3,461	\$ 85	\$ 294,185	\$ 2,489,180		
8	Materials, Warehouse (Substation)	Non-Labor	RAMP	Substation	6	\$ 12,551	\$ 75,306												\$	\$ 75,306		
9	Materials, Vendor Procured (Substation)	Non-Labor	RAMP	Substation	6	\$ 7,738	\$ 46,428												\$	\$ 46,428		
10	Services and Others (Substation)	Non-Labor	RAMP	Substation	6	\$ 106,497	\$ 638,982	3	\$ 136,647	\$ 410,000	3	\$ 68,333	\$ 205,000	3	\$ 68,333	\$ 205,000	3	\$ 68,333	\$ 205,000	\$ 1,868,982		
11	Contract Services (IAM)	Non-Labor	RAMP	Substation	1	\$ 887,239	\$ 887,239	1	\$ 50,000	\$ 50,000									\$	\$ 937,239		
12	Mgmt & Non-Union Labor (IAM)	Labor	RAMP	hours	2,371	\$ 75	\$ 177,825	592	\$ 75	\$ 44,400									\$	\$ 222,225		
13	Union Labor (IAM)	Labor	RAMP	hours	2,438	\$ 85	\$ 207,230	488	\$ 85	\$ 41,480									\$	\$ 248,710		
14	Materials, Warehouse (IAM)	Non-Labor	RAMP	each	1	\$ 48,000	\$ 48,000	1	\$ 12,000	\$ 12,000									\$	\$ 60,000		
15	Materials, Vendor (IAM)	Non-Labor	RAMP	each	1	\$ 8,000	\$ 8,000												\$	\$ 8,000		
16	Wildfire Sensor Camera Technology	Labor	RAMP	hours		\$ -	\$ -		\$ 2,000	\$ 85	\$ 170,700	2,000	\$ 85	\$ 170,700	2,000	\$ 85	\$ 170,700	2,000	\$ 85	\$ 170,700	\$ 701,200	Installation of cameras internal labor assuming 4 FTEs installing @ cameras per day.
17	Wildfire Sensor Camera Technology	Non-Labor	RAMP	each		\$ -	\$ -		500	\$ 8,500	\$ 4,250,000	500	\$ 8,500	\$ 4,250,000	500	\$ 8,500	\$ 4,250,000	500	\$ 8,500	\$ 4,250,000	\$ 176,000	Cameras for situational awareness equipment
18	Wildfire Sensor Camera Technology	Non-Labor	RAMP	contract		\$ -	\$ -		1	\$ 36,000	\$ 36,000	1	\$ 36,000	\$ 36,000	1	\$ 36,000	\$ 36,000	1	\$ 36,000	\$ 36,000	\$ 36,000	
19	Video-Based Operational Insights Program	Non-Labor	RAMP	contract		\$ -	\$ -		1	\$ 200,000	\$ 200,000	1	\$ 200,000	\$ 200,000	1	\$ 200,000	\$ 200,000	1	\$ 200,000	\$ 200,000	\$ 800,000	Technology to enhance internal processes like Sentrios
Summary			Labor	RAMP		\$ 1,881,075		\$ 912,438		\$ 1,090,577		\$ 1,090,577		\$ 1,090,577		\$ 1,090,577		\$ 1,090,577		\$ 6,918,423		
			Non-Labor	RAMP		\$ 2,267,120		\$ 1,096,653		\$ 5,493,000		\$ 5,511,000		\$ 5,511,000		\$ 5,511,000		\$ 5,511,000		\$ 25,383,773		
			N/E	RAMP		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		
Subtotal RAMP			Labor	Non-RAMP		\$ 4,150,795		\$ 2,009,091		\$ 6,523,577		\$ 6,541,577		\$ 6,541,577		\$ 6,541,577		\$ 6,541,577		\$ 12,308,196		
			Non-Labor	Non-RAMP		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		
			Non-Labor	Non-RAMP		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		
Subtotal Non-RAMP			N/E	Non-RAMP		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		
Total Project Forecast						\$ 4,150,795		\$ 2,009,091		\$ 6,523,577		\$ 6,541,577		\$ 6,541,577		\$ 6,541,577		\$ 6,541,577		\$ 12,308,196		

Note: The variance between the direct costs found in workpapers and the supplemental workpapers supporting Ex. SDGE-07 are due to a system wide adjustment to reflect changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.

Beginning of Workpaper Group
192450 - PSPS Sectionalizing Enhancements

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19245.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 192450 - PSPS Sectionalizing Enhancements
Unit Measure: Switches installed

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Zero-Based	206	150	91	163	142	74	74	102	105	96	99
Non-Labor	Zero-Based	2,800	3,094	2,220	2,039	852	1,489	1,489	2,057	2,121	1,953	2,002
NSE	Zero-Based	0	0	0	0	0	0	0	0	0	0	0
Total		3,006	3,244	2,310	2,202	994	1,563	1,563	2,159	2,226	2,049	2,101
FTE	Zero-Based	0.0	0.6	0.5	0.7	0.6	0.3	0.3	0.4	0.5	0.4	0.4
Units	Zero-Based	13	12	10	18	9	8	8	12	12	11	11

Business Purpose:

The purpose of this project is to install distribution sectionalizing devices in the HFTD to minimize customer impacts during PSPS events. Additional sectionalizing devices allow for the use of PSPS to be targeted to only the areas with extreme weather conditions, minimizing the number of customers impacted by PSPS.

Physical Description:

The PSPS Sectionalizing Enhancement Program installs switches in strategic locations, improving the ability to isolate high-risk areas for potential de-energization. For example, switches are installed on circuits that have significant sections underground, allowing customers to remain energized during weather events. Another example is combining weather stations with sectionalizing devices to de-energize only sections of circuits that are experiencing extreme wind events.

Project Justification:

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19245.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 192450 - PSPS Sectionalizing Enhancements
Unit Measure: Switches installed

By increasing the number of remotely operated sectionalizing devices on higher risk circuits, SDG&E can reduce the number of customers that have the potential to be impacted by a PSPS de-energization or potentially reduce the duration of de-energizations based on local wind events.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19245.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 192450 - PSPS Sectionalizing Enhancements
Unit Measure: Switches installed

Forecast Methodology:

Labor - Zero-Based

The forecast method used is zero based. This program selects specific locations for new installations each year. The forecast is based on cost estimates that were developed based on the specific scope of work for the project. Cost estimates are based on current construction labor rates, material costs, contract pricing/quotes, and other project specific details.

Non-Labor - Zero-Based

The forecast method used is zero based. This program selects specific locations for new installations each year. The forecast is based on cost estimates that were developed based on the specific scope of work for the project. Cost estimates are based on current construction labor rates, material costs, contract pricing/quotes, and other project specific details.

NSE - Zero-Based

N/A

Units - Zero-Based

The units are determined by the electric distribution planning team.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19245.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 192450 - PSPS Sectionalizing Enhancements
Unit Measure: Switches installed

Summary of Adjustments to Forecast:

In 2025 \$ (000)																			
Years	Base Forecast						Forecast Adjustments						Adjusted-Forecast						
	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	
Labor	73	73	100	104	95	98	1	1	2	1	1	1	74	74	102	105	96	99	
NLbr	1,489	1,489	2,057	2,121	1,953	2,002	0	0	0	0	0	0	1,489	1,489	2,057	2,121	1,953	2,002	
NSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	1,562	1,562	2,157	2,225	2,048	2,100	1	1	2	1	1	1	1,563	1,563	2,159	2,226	2,049	2,101	
FTE	0.3	0.3	0.4	0.5	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.4	0.5	0.4	0.4	
Units	8	8	12	12	11	11	0	0	0	0	0	0	8	8	12	12	11	11	

Forecast Adjustment Details:

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2026	1	0	0	1	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2026 Total	1	0	0	1	0.0	0
2027	1	0	0	1	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2027 Total	1	0	0	1	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19245.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 192450 - PSPS Sectionalizing Enhancements
Unit Measure: Switches installed

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2028	2	0	0	2	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2028 Total	2	0	0	2	0.0	0
2029	1	0	0	1	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2029 Total	1	0	0	1	0.0	0
2030	1	0	0	1	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2030 Total	1	0	0	1	0.0	0
2031	1	0	0	1	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2031 Total	1	0	0	1	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19245.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 192450 - PSPS Sectionalizing Enhancements
Unit Measure: Switches installed

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Recorded (Nominal \$)*					
Labor	113	95	69	139	124
Non-Labor	1,773	2,251	1,937	1,967	852
NSE	0	0	0	0	0
Total	1,887	2,347	2,007	2,106	976
FTE	0.0	0.5	0.4	0.6	0.5
Units	0	0	0	0	0
Adjustments (Nominal \$) **					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	13	12	10	18	9
Recorded-Adjusted (Nominal \$)					
Labor	113	95	69	139	124
Non-Labor	1,773	2,251	1,937	1,967	852
NSE	0	0	0	0	0
Total	1,887	2,347	2,007	2,106	976
FTE	0.0	0.5	0.4	0.6	0.5
Units	13	12	10	18	9
Vacation & Sick (Nominal \$)					
Labor	17	14	10	19	18

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19245.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 192450 - PSPS Sectionalizing Enhancements
Unit Measure: Switches installed

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	17	14	10	19	18
FTE	0.0	0.1	0.1	0.1	0.1
Units	0	0	0	0	0
Escalation to 2025\$					
Labor	76	41	12	6	0
Non-Labor	1,027	842	283	72	0
NSE	0	0	0	0	0
Total	1,102	883	294	78	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Constant 2025\$)					
Labor	206	150	91	163	142
Non-Labor	2,800	3,094	2,220	2,039	852
NSE	0	0	0	0	0
Total	3,006	3,244	2,310	2,202	994
FTE	0.0	0.6	0.5	0.7	0.6
Units	13	12	10	18	9

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19245.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 192450 - PSPS Sectionalizing Enhancements
Unit Measure: Switches installed

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2021	2022	2023	2024	2025
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	13	12	10	18	9

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	0	0	0	0	0.0	13
Explanation:	To input historical units completed.					
2021 Total	0	0	0	0	0.0	13
2022	0	0	0	0	0.0	12
Explanation:	To input historical units completed.					
2022 Total	0	0	0	0	0.0	12

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19245.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 192450 - PSPS Sectionalizing Enhancements
Unit Measure: Switches installed

Year	Labor	NLbr	NSE	Total	FTE	Units
2023	0	0	0	0	0.0	10
Explanation: To input historical units completed.						
2023 Total	0	0	0	0	0.0	10
2024	0	0	0	0	0.0	18
Explanation: To input historical units completed.						
2024 Total	0	0	0	0	0.0	18
2025	0	0	0	0	0.0	9
Explanation: To input historical units completed.						
2025 Total	0	0	0	0	0.0	9

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 192450**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19245.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 192450 - PSPS Sectionalizing Enhancements
Workpaper Detail: 192450.001 - RAMP - PSPS Sectionalizing Enhancements
Unit Measure: Switches installed

In-Service Date: Not Applicable

Description:

The PSPS Sectionalizing Enhancement Program installs switches in strategic locations, improving the ability to isolate high-risk areas for potential de-energization. For example, switches are installed on circuits that have significant sections underground, allowing customers to remain energized during weather events. Another example is combining weather stations with sectionalizing devices to de-energize only sections of circuits that are experiencing extreme wind events.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	74	74	102	105	96	99
Non-Labor	1,489	1,489	2,057	2,121	1,953	2,002
NSE	0	0	0	0	0	0
Total	1,563	1,563	2,159	2,226	2,049	2,101
FTE	0.3	0.3	0.4	0.5	0.4	0.4
Units	8	8	12	12	11	11

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 192450

TY2028 GRC FORECAST - DETAILS

Workpaper/Mitigation: 192450 PSPS Sectionalizing Enhancements

192450 - PSPS Sectionalizing Enhancements				2026			2027			2028			2029			2030			2031				
Line Item	Unit Description	Labor/Non-Labor/ NSE	RAMP/Non-RAMP	Unit Metric (ea./ft./mile)	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	Total Cost			
1	Mgmt & Non-Union Labor	Labor	RAMP	hours	99	\$ 75	\$ 8,424	99	\$ 75	\$ 8,423	137	\$ 75	\$ 11,639	141	\$ 75	\$ 12,000	130	\$ 75	\$ 11,048	133	\$ 75	\$ 11,328	\$ 62,859
2	Union Labor	Labor	RAMP	hours	666	\$ 85	\$ 64,246	666	\$ 85	\$ 64,246	920	\$ 85	\$ 88,778	948	\$ 85	\$ 91,560	873	\$ 85	\$ 84,284	895	\$ 85	\$ 86,325	\$ 478,423
3	Materials, Warehouse	Non-Labor	RAMP	ea	8	\$ 64,740	\$ 548,406	8	\$ 64,740	\$ 548,406	12	\$ 64,740	\$ 757,773	12	\$ 64,740	\$ 781,272	11	\$ 64,740	\$ 739,278	11	\$ 64,740	\$ 737,264	\$ 4,092,398
4	Materials, Vendor Procured	Non-Labor	RAMP	ea	8	\$ 1,207	\$ 10,221	8	\$ 1,207	\$ 10,221	12	\$ 1,207	\$ 14,423	12	\$ 1,207	\$ 14,561	11	\$ 1,207	\$ 13,406	11	\$ 1,207	\$ 13,740	\$ 76,273
5	Services and Others	Non-Labor	RAMP	ea	8	\$ 109,827	\$ 930,135	8	\$ 109,827	\$ 930,334	12	\$ 109,827	\$ 1,285,512	12	\$ 109,827	\$ 1,325,376	11	\$ 109,827	\$ 1,220,208	11	\$ 109,827	\$ 1,250,720	\$ 6,942,485
Summary							\$ 72,670		\$ 72,670		\$ 100,413		\$ 103,527		\$ 95,312		\$ 97,695		\$ 97,695		\$ 542,285		
		Non-Labor	RAMP				\$ 1,488,962		\$ 1,488,961		\$ 2,057,408		\$ 2,121,208		\$ 1,952,892		\$ 2,001,724		\$ 2,001,724		\$ 11,111,154		
		NSE	RAMP				\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		
	Subtotal RAMP						\$ 1,561,631		\$ 1,561,630		\$ 2,157,821		\$ 2,224,735		\$ 2,048,204		\$ 2,099,420		\$ 2,099,420		\$ 11,653,440		
		Labor	Non-RAMP				\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		
		Non-Labor	Non-RAMP				\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		
		NSE	Non-RAMP				\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		
	Subtotal Non-RAMP						\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		
	Total Project Forecast						\$ 1,561,631		\$ 1,561,630		\$ 2,157,821		\$ 2,224,735		\$ 2,048,204		\$ 2,099,420		\$ 2,099,420		\$ 11,653,440		

The variance between the direct costs found in workpapers and the supplemental workpapers supporting Ex. SDGE-07 are due to a system wide adjustment to reflect changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.

**Beginning of Workpaper Group
192460 - Strategic Undergrounding**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19246.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 192460 - Strategic Undergrounding
Unit Measure: Miles hardened (Capital)

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Zero-Based	1,588	4,587	3,511	2,411	1,727	0	0	3,671	4,781	6,804	5,693
Non-Labor	Zero-Based	108,205	169,730	196,956	222,108	82,981	0	0	159,012	207,243	295,221	246,854
NSE	Zero-Based	0	0	0	0	0	0	0	0	0	0	0
Total		109,792	174,317	200,467	224,519	84,708	0	0	162,683	212,024	302,025	252,547
FTE	Zero-Based	7.5	17.5	20.9	15.5	10.6	0.0	0.0	23.2	30.2	43.0	36.0
Units	Zero-Based	26	65	72	112	32	0	0	50	80	125	145

Business Purpose:

The purpose of this project is to reduce the risk of wildfire and PSPS caused by foreign object contact, wind, extreme weather conditions, and other external triggers affecting overhead electrical facilities by converting overhead infrastructure to underground .

Physical Description:

The project will install new underground electric distribution facilities, and remove from service existing overhead electric facilities. The facilities being installed and removed are within the HFTD.

Project Justification:

The goal of the Strategic Undergrounding Program, established in 2019, is to reduce the threat of wildfire and the use of PSPS mitigation measures during extreme weather events. Underground electric distribution lines greatly reduces the risk of ignition from electric facilities, and underground electric distribution lines can remain energized during PSPS, reducing the impact of power outages to fire-prone communities. Undergrounding is

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19246.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 192460 - Strategic Undergrounding
Unit Measure: Miles hardened (Capital)

the most effective mitigation against faults that lead to ignitions, and is estimated to reduce 98% of faults that lead to ignitions. In order to reduce the risk of wildfire within SDG&E's service territory, while also reaching PSPS reduction goals, undergrounding of distribution infrastructure will play an important role.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19246.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 192460 - Strategic Undergrounding
Unit Measure: Miles hardened (Capital)

Forecast Methodology:

Labor - Zero-Based

The forecast method used is zero based. The forecast is based on cost estimates that were developed based on the specific scope of work for the project. Cost estimates are based on current construction labor rates, material costs, contract pricing/quotes, and other project specific details. The forecast is based on the number of miles of strategic undergrounding being designed and constructed each year.

Non-Labor - Zero-Based

The forecast method used is zero based. The forecast is based on cost estimates that were developed based on the specific scope of work for the project. Cost estimates are based on current construction labor rates, material costs, contract pricing/quotes, and other project specific details.

NSE - Zero-Based

N/A

Units - Zero-Based

The units are mileage of underground cable installation.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19246.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 192460 - Strategic Undergrounding
Unit Measure: Miles hardened (Capital)

Summary of Adjustments to Forecast:

In 2025 \$ (000)																		
Years	Base Forecast						Forecast Adjustments						Adjusted-Forecast					
	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031
Labor	0	0	3,617	4,716	6,718	5,620	0	0	54	65	86	73	0	0	3,671	4,781	6,804	5,693
NLbr	0	0	159,012	207,243	295,221	246,854	0	0	0	0	0	0	0	0	159,012	207,243	295,221	246,854
NSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	162,629	211,959	301,939	252,474	0	0	54	65	86	73	0	0	162,683	212,024	302,025	252,547
FTE	0.0	0.0	23.2	30.2	43.0	36.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.2	30.2	43.0	36.0
Units	0	0	50	80	125	145	0	0	0	0	0	0	0	0	50	80	125	145

Forecast Adjustment Details

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2026 Total	0	0	0	0	0.0	0
2027 Total	0	0	0	0	0.0	0
2028	54	0	0	54	0.0	0
Explanation: Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.						
2028 Total	54	0	0	54	0.0	0
2029	65	0	0	65	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19246.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 192460 - Strategic Undergrounding
Unit Measure: Miles hardened (Capital)

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
Explanation: Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.						
2029 Total	65	0	0	65	0.0	0
2030	86	0	0	86	0.0	0
Explanation: Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.						
2030 Total	86	0	0	86	0.0	0
2031	73	0	0	73	0.0	0
Explanation: Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.						
2031 Total	73	0	0	73	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19246.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 192460 - Strategic Undergrounding
Unit Measure: Miles hardened (Capital)

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Recorded (Nominal \$)*					
Labor	874	2,913	2,690	2,048	1,507
Non-Labor	68,533	123,526	171,884	212,721	84,550
NSE	0	0	0	0	0
Total	69,407	126,439	174,574	214,769	86,057
FTE	6.4	15.0	18.1	13.5	9.1
Units	0	0	0	0	0
Adjustments (Nominal \$) **					
Labor	0	0	0	0	0
Non-Labor	-7	-13	0	1,569	-1,569
NSE	0	0	0	0	0
Total	-7	-13	0	1,569	-1,569
FTE	0.0	0.0	0.0	0.0	0.0
Units	26	65	72	112	32
Recorded-Adjusted (Nominal \$)					
Labor	874	2,913	2,690	2,048	1,507
Non-Labor	68,526	123,513	171,884	214,290	82,981
NSE	0	0	0	0	0
Total	69,400	126,426	174,574	216,338	84,488
FTE	6.4	15.0	18.1	13.5	9.1
Units	26	65	72	112	32
Vacation & Sick (Nominal \$)					
Labor	132	424	374	278	221

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19246.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 192460 - Strategic Undergrounding
Unit Measure: Miles hardened (Capital)

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	132	424	374	278	221
FTE	1.1	2.5	2.8	2.0	1.5
Units	0	0	0	0	0
Escalation to 2025\$					
Labor	582	1,249	447	85	0
Non-Labor	39,679	46,218	25,073	7,818	0
NSE	0	0	0	0	0
Total	40,261	47,467	25,519	7,903	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Constant 2025\$)					
Labor	1,588	4,587	3,511	2,411	1,727
Non-Labor	108,205	169,730	196,956	222,108	82,981
NSE	0	0	0	0	0
Total	109,792	174,317	200,467	224,519	84,708
FTE	7.5	17.5	20.9	15.5	10.6
Units	26	65	72	112	32

* After company-wide exclusions of Non-GRC costs
 ** Refer to "Detail of Adjustments to Recorded" page for line item adjustments
 Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19246.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 192460 - Strategic Undergrounding
Unit Measure: Miles hardened (Capital)

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2021	2022	2023	2024	2025
Labor	0	0	0	0	0
Non-Labor	-7	-13	0	1,569	-1,569
NSE	0	0	0	0	0
Total	-7	-13	0	1,569	-1,569
FTE	0.0	0.0	0.0	0.0	0.0
Units	26	65	72	112	32

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	0	0	0	0	0.0	26
Explanation:	To input historical units completed.					
2021	0	-7	0	-7	0.0	0
Explanation:	Reduce historical costs due to 2021 Track 2 disallowances for Strategic Undergrounding.					
2021 Total	0	-7	0	-7	0.0	26
2022	0	0	0	0	0.0	65

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19246.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 192460 - Strategic Undergrounding
Unit Measure: Miles hardened (Capital)

Year	Labor	NLbr	NSE	Total	FTE	Units
Explanation: To input historical units completed.						
2022	0	-13	0	-13	0.0	0
Explanation: Reduce historical costs due to 2022 Track 2 disallowances for Strategic Undergrounding.						
2022 Total	0	-13	0	-13	0.0	65
2023	0	0	0	0	0.0	72
Explanation: To input historical units completed.						
2023 Total	0	0	0	0	0.0	72
2024	0	0	0	0	0.0	112
Explanation: To input historical units completed.						
2024	0	1,569	0	1,569	0.0	0
Explanation: Align Work Paper Level Historical Actuals with current SAP/TM1 as a result of a JE reclass from O&M to Capital related to 2024 costs.						
2024 Total	0	1,569	0	1,569	0.0	112
2025	0	0	0	0	0.0	32
Explanation: To input historical units completed.						

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19246.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 192460 - Strategic Undergrounding
Unit Measure: Miles hardened (Capital)

Year	Labor	NLbr	NSE	Total	FTE	Units
2025	0	-1,569	0	-1,569	0.0	0
Explanation: Align Work Paper Level Historical Actuals with current SAP/TM1 as a result of a JE reclass from O&M to Capital related to 2024 costs.						
2025 Total	0	-1,569	0	-1,569	0.0	32

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 192460**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19246.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 192460 - Strategic Undergrounding
Workpaper Detail: 192460.001 - RAMP - Strategic Undergrounding
Unit Measure: Miles hardened (Capital)

In-Service Date: Not Applicable

Description:

The goal of the Strategic Undergrounding Program established in 2019, is to reduce the threat of wildfire and the use of PSPS mitigation measures during extreme weather events. Underground electric distribution lines greatly reduces the risk of ignition from electric facilities, and underground electric distribution lines can remain energized during PSPS, reducing the impact of power outages to fire-prone communities. Undergrounding is the most effective mitigation against faults that lead to ignitions, and is estimated to reduce 98% of faults that lead to ignitions. In order to reduce the risk of wildfire within SDG&E's service territory, while also reaching PSPS reduction goals, undergrounding of distribution infrastructure will play an important role.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	3,671	4,781	6,804	5,693
Non-Labor	0	0	159,012	207,243	295,221	246,854
NSE	0	0	0	0	0	0
Total	0	0	162,683	212,024	302,025	252,547
FTE	0.0	0.0	23.2	30.2	43.0	36.0
Units	0	0	50	80	125	145

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 192460

TY2028 GRC FORECAST - DETAILS

Workpaper/Mitigation: 192460 Strategic Undergrounding

192460 - Strategic Undergrounding				2026			2027			2028			2029			2030			2031				
Line Item	Unit Description	Labor/Non-Labor/ N/E	RAMP/Non-RAMP	Unit Metric (ea./ft./mile)	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	Total Cost			
1	Construction - Electric	Non-Labor	RAMP	Miles LIG (Capital)		\$ -	\$ -		\$ -	\$ -	50	\$ 162,968	\$ 8,148,363	80	\$ 162,968	\$ 13,037,412	125	\$ 162,968	\$ 20,370,856	145	\$ 162,968	\$ 23,630,309	\$ 64,187,060
2	Construction - Materials	Non-Labor	RAMP	Miles LIG (Capital)		\$ -	\$ -		\$ -	\$ -	30	\$ 114,618	\$ 3,438,546	80	\$ 114,618	\$ 9,169,424	125	\$ 114,618	\$ 14,327,268	145	\$ 114,618	\$ 16,619,306	\$ 43,668,306
3	Construction - Civil	Non-Labor	RAMP	Miles		\$ -	\$ -		\$ -	\$ -	70	\$ 1,000,081	\$ 70,005,671	91	\$ 1,000,081	\$ 91,007,352	130	\$ 1,000,081	\$ 130,011,130	109	\$ 1,000,081	\$ 108,759,479	\$ 400,024,860
4	Design & Engineering	Non-Labor	RAMP	Miles		\$ -	\$ -		\$ -	\$ -	90	\$ 280,283	\$ 25,225,464	103	\$ 280,283	\$ 28,728,367	135	\$ 280,283	\$ 37,838,111	73	\$ 280,283	\$ 20,370,489	\$ 112,111,040
5	Project Support	Non-Labor	RAMP	Miles		\$ -	\$ -		\$ -	\$ -	70	\$ 712,872	\$ 49,901,036	91	\$ 712,872	\$ 64,863,564	130	\$ 712,872	\$ 92,673,312	109	\$ 712,872	\$ 77,524,921	\$ 285,148,774
6	Labor	Labor	RAMP	Miles		\$ -	\$ -		\$ -	\$ -	70	\$ 53,672	\$ 3,757,040	91	\$ 53,672	\$ 4,785,340	130	\$ 53,672	\$ 6,978,029	109	\$ 53,672	\$ 5,851,880	\$ 20,670,859
Summary																							
	Labor	RAMP				\$ -	\$ -		\$ -	\$ -		\$ 3,817,080			\$ 4,713,940			\$ 6,718,029			\$ 6,838,988	\$ 20,670,858	
	Non-Labor	RAMP				\$ -	\$ -		\$ -	\$ -		\$ 199,011,748			\$ 207,243,167			\$ 295,220,776			\$ 246,954,404	\$ 908,130,094	
	N/E	RAMP				\$ -	\$ -		\$ -	\$ -		\$ -			\$ -			\$ -			\$ -	\$ -	
	Subtotal RAMP					\$ -	\$ -		\$ -	\$ -		\$ 3,817,080			\$ 4,713,940			\$ 6,718,029			\$ 6,838,988	\$ 20,670,858	
	Labor	Non RAMP				\$ -	\$ -		\$ -	\$ -		\$ -			\$ -			\$ -			\$ -	\$ -	
	Non-Labor	Non RAMP				\$ -	\$ -		\$ -	\$ -		\$ -			\$ -			\$ -			\$ -	\$ -	
	N/E	Non RAMP				\$ -	\$ -		\$ -	\$ -		\$ -			\$ -			\$ -			\$ -	\$ -	
	Subtotal Non-RAMP					\$ -	\$ -		\$ -	\$ -		\$ -			\$ -			\$ -			\$ -	\$ -	
	Total Project Forecast					\$ -	\$ -		\$ -	\$ -		\$ 3,817,080			\$ 4,713,940			\$ 6,718,029			\$ 6,838,988	\$ 20,670,858	

The variance between the direct costs found in workpapers and the supplemental workpapers supporting Ex. SDGE-07 are due to a system wide adjustment to reflect changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCO-16/SDGE 20.

Beginning of Workpaper Group
198720 - Distribution Communications Reliability Improvements (DCRI)

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19872.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 198720 - Distribution Communications Reliability Improvements (DCRI)
Unit Measure: Base stations

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Zero-Based	1,436	1,763	1,404	1,047	622	0	0	0	0	0	0
Non-Labor	Zero-Based	86,642	67,637	95,380	21,072	10,583	450	0	0	0	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0	0	0	0
Total		88,078	69,400	96,785	22,119	11,205	450	0	0	0	0	0
FTE	Zero-Based	7.1	9.2	8.5	6.4	3.7	0.0	0.0	0.0	0.0	0.0	0.0
Units	Zero-Based	10	21	10	3	4	1	0	0	0	0	0

Business Purpose:

The Distribution Communication Reliability Improvement (DCRI) program aims to establish a private LTE wireless communication network across the High Fire Threat District's Tier 2 and Tier 3 areas, as well as the Wildland Urban Interface (WUI). This network, owned and operated by San Diego Gas & Electric (SDG&E), will enhance reliability, bandwidth, and cybersecurity. It will support various applications, including advanced protection programs like Falling Conductor and Early Fault Detection, and maintain operations during red flag warnings or other adverse weather events.

Physical Description:

The DCRI program will install hundreds of new sites throughout SDG&E's service territory, particularly in areas prone to wildfires. These new sites will include stand-alone foundation steel poles located inside and adjacent to substations, as well as across the service territory. Additionally, existing transmission overhead facilities, such as lattice towers and foundation steel poles, will be retrofitted. The largest deployment will occur on our 12kV distribution system, where foundation steel poles will be installed to replace existing poles or interset between two poles. Any 12kV conductors will be replaced with covered conductors, and adjacent poles may undergo pole top work or, in some cases, be replaced to accommodate the new construction.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19872.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 198720 - Distribution Communications Reliability Improvements (DCRI)
Unit Measure: Base stations

Project Justification:

The justification for the DCRI program stems from SDG&E's current reliance on ten proprietary wireless network providers, which are inadequate for the company's future needs, including falling conductor detection, early fault detection, and other operational requirements. Once fully deployed, the DCRI program is expected to reduce operating expenses and enhance the cybersecurity and resiliency of our network compared to the proprietary networks used today. Additionally, the current proprietary networks do not provide full coverage, whereas we anticipate achieving 100% coverage throughout the entire service territory with the new network.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19872.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 198720 - Distribution Communications Reliability Improvements (DCRI)
Unit Measure: Base stations

Forecast Methodology:

Labor - Zero-Based

A zero-based forecasting methodology is the most appropriate approach for the Distribution Communication Reliability Improvement (DCRI) program because the planned scope significantly tapers after 2026 and no additional capital funding is anticipated beyond that year. As a result, historical labor and cost trends do not provide a meaningful basis for projecting future needs. Zero-based forecasting allows labor requirements to be built from the ground up based on the limited remaining scope.

Non-Labor - Zero-Based

A zero-based forecasting methodology is most appropriate for the Distribution Communication Reliability Improvement (DCRI) program's non-labor costs because planned work in 2026 is minimal, and no additional capital spending is expected beyond that year. Given this limited remaining scope, historical non-labor expenditures are not a reliable indicator of future needs. A zero-based approach ensures that all non-labor cost components are built from the ground up based on the specific activities planned for the year, rather than relying on incomplete or non-representative historical spending patterns.

NSE - Zero-Based

N/A

Units - Zero-Based

The units for this workpaper is base stations.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19872.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 198720 - Distribution Communications Reliability Improvements (DCRI)
Unit Measure: Base stations

Summary of Adjustments to Forecast:

In 2025 \$ (000)																		
Years	Base Forecast						Forecast Adjustments						Adjusted-Forecast					
	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031
Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NLbr	450	0	0	0	0	0	0	0	0	0	0	0	450	0	0	0	0	0
NSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	450	0	0	0	0	0	0	0	0	0	0	0	450	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Units	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0

Forecast Adjustment Details

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2026 Total	0	0	0	0	0.0	0
2027 Total	0	0	0	0	0.0	0
2028 Total	0	0	0	0	0.0	0
2029 Total	0	0	0	0	0.0	0
2030 Total	0	0	0	0	0.0	0
2031 Total	0	0	0	0	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19872.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 198720 - Distribution Communications Reliability Improvements (DCRI)
Unit Measure: Base stations

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Recorded (Nominal \$)*					
Labor	791	1,120	1,076	889	542
Non-Labor	55,634	50,873	86,471	9,714	10,583
NSE	0	0	0	0	0
Total	56,425	51,993	87,548	10,603	11,125
FTE	6.1	7.8	7.3	5.5	3.2
Units	0	0	0	0	0
Adjustments (Nominal \$) **					
Labor	0	0	0	1	0
Non-Labor	-748	-1,641	-3,214	10,611	0
NSE	0	0	0	0	0
Total	-748	-1,641	-3,214	10,612	0
FTE	0.0	0.1	0.1	0.1	0.0
Units	10	21	10	3	4
Recorded-Adjusted (Nominal \$)					
Labor	791	1,120	1,076	889	542
Non-Labor	54,886	49,232	83,258	20,325	10,583
NSE	0	0	0	0	0
Total	55,676	50,352	84,334	21,215	11,125
FTE	6.1	7.9	7.4	5.6	3.2
Units	10	21	10	3	4
Vacation & Sick (Nominal \$)					
Labor	119	163	150	121	79

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19872.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 198720 - Distribution Communications Reliability Improvements (DCRI)
Unit Measure: Base stations

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	119	163	150	121	79
FTE	1.0	1.3	1.1	0.8	0.5
Units	0	0	0	0	0
Escalation to 2025\$					
Labor	526	480	178	37	0
Non-Labor	31,756	18,405	12,123	747	0
NSE	0	0	0	0	0
Total	32,282	18,885	12,301	783	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Constant 2025\$)					
Labor	1,436	1,763	1,404	1,047	622
Non-Labor	86,642	67,637	95,380	21,072	10,583
NSE	0	0	0	0	0
Total	88,078	69,400	96,785	22,119	11,205
FTE	7.1	9.2	8.5	6.4	3.7
Units	10	21	10	3	4

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19872.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 198720 - Distribution Communications Reliability Improvements (DCRI)
Unit Measure: Base stations

Summary of Adjustments to Recorded:

		In Nominal \$(000)				
	Years	2021	2022	2023	2024	2025
Labor		0	0	0	1	0
Non-Labor		-748	-1,641	-3,214	10,611	0
NSE		0	0	0	0	0
Total		-748	-1,641	-3,214	10,612	0
FTE		0.0	0.1	0.1	0.1	0.0
Units		10	21	10	3	4

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	0	0	0	0	0.0	10
Explanation:	Adding stations completed for the year.					
2021	0	-33	0	-33	0.0	0
Explanation:	Align Work Paper Level Historical Actuals with current SAP/TM1 as a result of Unmapped FERC accounts, (SAP Data Change)					
2021	0	24	0	24	0.0	0
Explanation:	Align Work Paper Level Historical Actuals with current SAP/TM1 as a result of CPD Removals (SAP Data Change)					

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19872.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 198720 - Distribution Communications Reliability Improvements (DCRI)
Unit Measure: Base stations

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	0	-739	0	-739	0.0	0
Explanation: Reverse the Dec 24 entry reclassifying costs from F397 to F351 for all historical costs on BC19134. Then, reclassify only 2021 costs.						
2021 Total	0	-748	0	-748	0.0	10
2022	0	0	0	0	0.0	21
Explanation: Adding stations completed for the year.						
2022	0.281	6	0	6	0.1	0
Explanation: Align Work Paper Level Historical Actuals with current SAP/TM1 as a result of CPD Removals (SAP Data Change)						
2022	0	-1,647	0	-1,647	0.0	0
Explanation: Reverse the Dec 24 entry reclassifying costs from F397 to F351 for all historical costs on BC19134. Then, reclassify only 2022 costs.						
2022 Total	0.281	-1,641	0	-1,641	0.1	21
2023	0	0	0	0	0.0	10
Explanation: Adding stations completed for the year.						
2023	0	-94	0	-94	0.0	0
Explanation: Align Work Paper Level Historical Actuals with current SAP/TM1 as a result of Unmapped FERC accounts, (SAP Data Change)						
2023	0.130	76	0	76	0.1	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19872.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 198720 - Distribution Communications Reliability Improvements (DCRI)
Unit Measure: Base stations

Year	Labor	NLbr	NSE	Total	FTE	Units
Explanation: Align Work Paper Level Historical Actuals with current SAP/TM1 as a result of CPD Removals (SAP Data Change)						
2023	0	-3,196	0	-3,196	0.0	0
Explanation: Reverse the Dec 24 entry reclassifying costs from F397 to F351 for all historical costs on BC19134. Then, reclassify only 2023 costs.						
2023 Total	0.130	-3,214	0	-3,214	0.1	10
2024	0	0	0	0	0.0	3
Explanation: Adding stations completed for the year.						
2024	0	117	0	117	0.0	0
Explanation: Align Work Paper Level Historical Actuals with current SAP/TM1 as a result of Unmapped FERC accounts, (SAP Data Change)						
2024	0.589	59	0	59	0.1	0
Explanation: Align Work Paper Level Historical Actuals with current SAP/TM1 as a result of CPD Removals (SAP Data Change)						
2024	0	10,436	0	10,436	0.0	0
Explanation: Reverse the Dec 24 entry reclassifying costs from F397 to F351 for all historical costs on BC19134. Then, reclassify only 2024 costs.						
2024 Total	0.589	10,611	0	10,612	0.1	3
2025	0	0	0	0	0.0	4
Explanation: Adding the number of completed stations for the year.						

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19872.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 198720 - Distribution Communications Reliability Improvements (DCRI)
Unit Measure: Base stations

Year	Labor	NLbr	NSE	Total	FTE	Units
2025 Total	0	0	0	0	0.0	4

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 198720**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19872.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 198720 - Distribution Communications Reliability Improvements (DCRI)
Workpaper Detail: 198720.001 - RAMP - Distribution Communications Reliability Improvements
Unit Measure: Base stations

In-Service Date: Not Applicable

Description:

The DCRI program will install hundreds of new sites throughout SDG&E's service territory, particularly in areas prone to wildfires. These new sites will include stand-alone foundation steel poles located inside and adjacent to substations, as well as across the service territory. Additionally, existing transmission overhead facilities, such as lattice towers and foundation steel poles, will be retrofitted. The largest deployment will occur on our 12kV distribution system, where foundation steel poles will be installed to replace existing poles or interset between two poles. Any 12kV conductors will be replaced with covered conductors, and adjacent poles may undergo pole top work or, in some cases, be replaced to accommodate the new construction.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	0	0	0	0
Non-Labor	450	0	0	0	0	0
NSE	0	0	0	0	0	0
Total	450	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0	0.0
Units	1	0	0	0	0	0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 198720

TY2028 GRC FORECAST - DETAILS

Workpaper/Mitigation: 158720 Distribution Communications Reliability Improvements (DCRI)

158720 Distribution Communications Reliability Improvements (DCRI)				2026			2027			2028			2029			2030			2031		
Units Item	Units Description	Labor/Non-Labor/ NSE	RAMP/ Non-RAMP	Units Metric (see FR/units)	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	Total Cost	
1	Site Buys	Non-Labor	RAMP	ea	1	\$ 450,000	\$ 450,000		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	\$ 450,000	
2	Substation Sites	Non-Labor	RAMP	ea			\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	\$ -	
3	Pre-Construction	Non-Labor	RAMP	ea			\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	\$ -	
4	Core Network Support	Non-Labor	RAMP	ea			\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	\$ -	
5	Spectrum License	Non-Labor	RAMP	ea			\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	\$ -	
6	Internal Labor	Labor	RAMP	hours			\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	\$ -	
Summary							\$ 450,000		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	\$ 450,000	
Subtotal RAMP		Labor Non-Labor NSE	RAMP RAMP RAMP				\$ 450,000		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	\$ 450,000	
Subtotal Non-RAMP		Labor Non-Labor NSE	Non-RAMP Non-RAMP Non-RAMP				\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	\$ -	
Total Project Forecast							\$ 450,000		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	\$ 450,000	

Beginning of Workpaper Group
201270 - Distribution Underbuild Repairs on Transmission Structures

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20127.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 201270 - Distribution Underbuild Repairs on Transmission Structures
Unit Measure: Poles replaced

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Zero-Based	0	0	5	4	1	0	0	0	0	0	0
Non-Labor	Zero-Based	-73	15	241	464	564	760	673	623	638	654	670
NSE	Zero-Based	0	0	0	0	0	0	0	0	0	0	0
Total		-73	15	247	468	564	760	673	623	638	654	670
FTE	Zero-Based	-0.1	0.0	0.0	0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
Units	Zero-Based	4	10	23	28	17	17	15	14	14	14	15

Business Purpose:

This mitigation focuses on proactively reducing the risk of equipment failures by addressing targeted small reliability needs on transmission structures with distribution underbuild, within the HFTD. The projects support improvement of overall reliability and performance of the electric system and safety for customers, field personnel, and the public by reducing the likelihood of asset failures.

Physical Description:

These small to mid scale reliability projects include repair, replacement, and reinforcement activities that degradation or emerging reliability concerns, including the replacement of aging or deteriorated poles, crossarms, insulators, or hardware, and upgrading equipment that have reached or are nearing end of useful life.

Project Justification:

Projects are based on reliability, safety, operational, and cost effectiveness considerations, including risk reduction, aging infrastructure, regulatory

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20127.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 201270 - Distribution Underbuild Repairs on Transmission Structures
Unit Measure: Poles replaced

and standards compliance, safety enhancement, and grid reliability.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20127.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 201270 - Distribution Underbuild Repairs on Transmission Structures
Unit Measure: Poles replaced

Forecast Methodology:

Labor - Zero-Based

The forecast method developed for this cost category is zero-based. While historic-based data (e.g., an applicable unit cost) was utilized to develop the forecast, use of historic total dollars spent is not applicable for this item. The forecast is based on cost estimates developed from the scope of work for each project. SDG&E develops cost estimates based on construction labor rates, material costs, contract pricing/quotes, and other project specific details, as applicable.

Non-Labor - Zero-Based

The forecast method developed for this cost category is zero-based. While historic-based data (e.g., an applicable unit cost) was utilized to develop the forecast, use of historic total dollars spent is not applicable for this item. The forecast is based on cost estimates developed from the scope of work for each project. SDG&E develops cost estimates based on construction labor rates, material costs, contract pricing/quotes, and other project specific details, as applicable.

NSE - Zero-Based

N/A

Units - Zero-Based

The forecasted units are developed using a zero-based methodology. For 2026–2027, unit counts reflect only the currently identified, in-flight projects with confirmed scope and timing. For the remaining forecast years, unit levels are based on an estimate of the average number of new projects expected to be identified and advanced.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20127.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 201270 - Distribution Underbuild Repairs on Transmission Structures
Unit Measure: Poles replaced

Summary of Adjustments to Forecast:

In 2025 \$ (000)																		
Years	Base Forecast						Forecast Adjustments						Adjusted-Forecast					
	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031
Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NLbr	760	673	623	638	654	670	0	0	0	0	0	0	760	673	623	638	654	670
NSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	760	673	623	638	654	670	0	0	0	0	0	0	760	673	623	638	654	670
FTE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Units	17	15	14	14	14	15	0	0	0	0	0	0	17	15	14	14	14	15

Forecast Adjustment Details

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2026 Total	0	0	0	0	0.0	0
2027 Total	0	0	0	0	0.0	0
2028 Total	0	0	0	0	0.0	0
2029 Total	0	0	0	0	0.0	0
2030 Total	0	0	0	0	0.0	0
2031 Total	0	0	0	0	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20127.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 201270 - Distribution Underbuild Repairs on Transmission Structures
Unit Measure: Poles replaced

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Recorded (Nominal \$)*					
Labor	1	96	4	12	3
Non-Labor	335	379	1,261	822	1,542
NSE	0	0	0	0	0
Total	336	475	1,265	834	1,545
FTE	0.0	0.4	0.0	0.1	0.0
Units	0	0	0	0	0
Adjustments (Nominal \$) **					
Labor	-1	-96	0	-9	-2
Non-Labor	-381	-367	-1,047	-372	-978
NSE	0	0	0	0	0
Total	-382	-464	-1,047	-381	-980
FTE	-0.1	-0.4	0.0	0.0	-0.1
Units	4	10	23	28	17
Recorded-Adjusted (Nominal \$)					
Labor	0	0	4	3	0
Non-Labor	-46	12	214	450	564
NSE	0	0	0	0	0
Total	-46	12	218	453	564
FTE	-0.1	0.0	0.0	0.1	-0.1
Units	4	10	23	28	17
Vacation & Sick (Nominal \$)					
Labor	0	0	1	0	0

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20127.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 201270 - Distribution Underbuild Repairs on Transmission Structures
Unit Measure: Poles replaced

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	1	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Escalation to 2025\$					
Labor	0	0	1	0	0
Non-Labor	-28	3	28	14	0
NSE	0	0	0	0	0
Total	-28	3	29	14	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Constant 2025\$)					
Labor	0	0	5	4	1
Non-Labor	-73	15	241	464	564
NSE	0	0	0	0	0
Total	-73	15	247	468	564
FTE	-0.1	0.0	0.0	0.1	-0.1
Units	4	10	23	28	17

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20127.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 201270 - Distribution Underbuild Repairs on Transmission Structures
Unit Measure: Poles replaced

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2021	2022	2023	2024	2025
Labor	-1	-96	0	-9	-2
Non-Labor	-381	-367	-1,047	-372	-978
NSE	0	0	0	0	0
Total	-382	-464	-1,047	-381	-980
FTE	-0.1	-0.4	0.0	0.0	-0.1
Units	4	10	23	28	17

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	0	0	0	0	0.0	4
Explanation:	To input historical units completed.					
2021	-2	-420	0	-421	-0.1	0
Explanation:	To transfer CMP capital repair and replacement costs to Workpaper 002390 (CMP Repairs and Replacements).					
2021	-0.092	9	0	9	-0.1	0
Explanation:	Align Work Paper Level Historical Actuals with current SAP/TM1 as a result of Unmapped FERC accounts, (SAP Data Change)					

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20127.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 201270 - Distribution Underbuild Repairs on Transmission Structures
Unit Measure: Poles replaced

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	0.528	30	0	30	0.1	0
Explanation: Align Work Paper Level Historical Actuals with current SAP/TM1 as a result of CPD Removals (SAP Data Change)						
2021 Total	-1	-381	0	-382	-0.1	4
2022	0	0	0	0	0.0	10
Explanation: To input historical units completed.						
2022	-116	-448	0	-563	-0.5	0
Explanation: To transfer CMP capital repair and replacement costs to Workpaper 002390 (CMP Repairs and Replacements).						
2022	0	38	0	38	0.0	0
Explanation: Align Work Paper Level Historical Actuals with current SAP/TM1 as a result of Unmapped FERC accounts, (SAP Data Change)						
2022	19	42	0	62	0.1	0
Explanation: Align Work Paper Level Historical Actuals with current SAP/TM1 as a result of CPD Removals (SAP Data Change)						
2022 Total	-96	-367	0	-464	-0.4	10
2023	0	0	0	0	0.0	23
Explanation: To input historical units completed.						
2023	2	-1,290	0	-1,288	0.1	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20127.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 201270 - Distribution Underbuild Repairs on Transmission Structures
Unit Measure: Poles replaced

Year	Labor	NLbr	NSE	Total	FTE	Units
Explanation: To transfer CMP capital repair and replacement costs to Workpaper 002390 (CMP Repairs and Replacements).						
2023	0	46	0	46	0.0	0
Explanation: Align Work Paper Level Historical Actuals with current SAP/TM1 as a result of Unmapped FERC accounts, (SAP Data Change)						
2023	-2	197	0	195	-0.1	0
Explanation: Align Work Paper Level Historical Actuals with current SAP/TM1 as a result of CPD Removals (SAP Data Change)						
2023 Total	0.148	-1,047	0	-1,047	0.0	23
2024	0	0	0	0	0.0	28
Explanation: To input historical units completed.						
2024	-10	-512	0	-523	-0.1	0
Explanation: To transfer CMP capital repair and replacement costs to Workpaper 002390 (CMP Repairs and Replacements).						
2024	0	109	0	109	0.0	0
Explanation: Align Work Paper Level Historical Actuals with current SAP/TM1 as a result of Unmapped FERC accounts, (SAP Data Change)						
2024	1	31	0	32	0.1	0
Explanation: Align Work Paper Level Historical Actuals with current SAP/TM1 as a result of CPD Removals (SAP Data Change)						
2024 Total	-9	-372	0	-381	0.0	28

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20127.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 201270 - Distribution Underbuild Repairs on Transmission Structures
Unit Measure: Poles replaced

Year	Labor	NLbr	NSE	Total	FTE	Units
2025	0	0	0	0	0.0	17
Explanation: To input historical units completed.						
2025	-2	-978	0	-980	-0.1	0
Explanation: To transfer CMP capital repair and replacement costs to Workpaper 002390 (CMP Repairs and Replacements).						
2025 Total	-2	-978	0	-980	-0.1	17

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 201270**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20127.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 201270 - Distribution Underbuild Repairs on Transmission Structures
Workpaper Detail: 201270.001 - RAMP - Distribution Underbuild Repairs on Transmission Structures
Unit Measure: Poles replaced

In-Service Date: Not Applicable

Description:

This mitigation focuses on proactively reducing the risk of equipment failures by addressing targeted small reliability needs on transmission structures with distribution underbuild, within the HFTD. The projects support improvement of overall reliability and performance of the electric system and safety for customers, field personnel, and the public by reducing the likelihood of asset failures.

These small to mid scale reliability projects include repair, replacement, and reinforcement activities that degradation or emerging reliability concerns, including the replacement of aging or deteriorated poles, crossarms, insulators, or hardware, and upgrading equipment that have reached or are nearing end of useful life.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	0	0	0	0
Non-Labor	760	673	623	638	654	670
NSE	0	0	0	0	0	0
Total	760	673	623	638	654	670
FTE	0.0	0.0	0.0	0.0	0.0	0.0
Units	17	15	14	14	14	15

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 201270

TY2028 GRC FORECAST - DETAILS

Workpaper/Mitigation: 201270 - Distribution Underbuild Repairs on Transmission Structures

201270 - Distribution Underbuild Repairs on Transmission Structures					2026			2027			2028			2029			2030			2031			
Line Item	Unit Description	Labor/Non-Labor/ NSE	RAMP/Non-RAMP	Unit Metric (ea./ft./mile)	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	
1	Distribution UB Poles (21134) - Material_Vendor	Non-Labor	RAMP	poles	17	\$ 9,412	\$ 160,000	15	\$ 10,667	\$ 160,000	14	\$ 11,429	\$ 160,000	14	\$ 11,714	\$ 164,000	14	\$ 12,007	\$ 168,096	15	\$ 11,487	\$ 172,288	\$ 984,394
2	Distribution UB Poles (21134) - Services and Other	Non-Labor	RAMP	poles	17	\$ 35,294	\$ 600,000	15	\$ 34,167	\$ 512,500	14	\$ 33,036	\$ 462,500	14	\$ 33,862	\$ 474,064	14	\$ 34,708	\$ 485,914	15	\$ 33,204	\$ 498,061	\$ 3,031,089
Summary		Labor	RAMP			\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	
		Non-Labor	RAMP			\$ 760,000	\$ 672,500		\$ 672,500	\$ 622,500		\$ 638,063	\$ 654,010		\$ 654,010	\$ 670,359		\$ 670,359	\$ 4,017,432		\$ -	\$ -	
		NSE	RAMP			\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	
	Subtotal RAMP					\$ 760,000	\$ 672,500		\$ 672,500	\$ 622,500		\$ 638,063	\$ 654,010		\$ 654,010	\$ 670,359		\$ 670,359	\$ 4,017,432		\$ -	\$ -	
		Labor	Non-RAMP			\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	
		Non-Labor	Non-RAMP			\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	
		NSE	Non-RAMP			\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	
	Subtotal Non-RAMP					\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	
	Total Project Forecast					\$ 760,000	\$ 672,500		\$ 672,500	\$ 622,500		\$ 638,063	\$ 654,010		\$ 654,010	\$ 670,359		\$ 670,359	\$ 4,017,432		\$ -	\$ -	

**Beginning of Workpaper Group
202770 - Aviation Program**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20277.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202770 - Aviation Program
Unit Measure: No feasible units

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Zero-Based	0	0	487	119	-6	0	0	0	0	0	0
Non-Labor	Zero-Based	0	0	3,586	2,079	1,608	435	8,435	8,435	1,435	435	435
NSE	Zero-Based	0	0	0	0	0	0	0	0	0	0	0
Total		0	0	4,073	2,198	1,602	435	8,435	8,435	1,435	435	435
FTE	Zero-Based	0.0	0.0	2.4	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Units	Zero-Based	0	0	0	0	0	0	0	0	0	0	0

Business Purpose:

The Aviation Program focuses on providing SDG&E's operations with expert, safety-driven Unmanned Aerial Systems (UAS) drone solutions. The UAS program is an alternative work method available to the company that has proven to enhance safety and drive efficiency. These services are available to any SDG&E business unit upon request 365 days of the year. UAS support services cover the entire spectrum of work performed at SDG&E to include maintenance, construction, wildfire mitigation and other operational needs.

Physical Description:

This includes the purchase of UAS resources from various manufacturers. The drones vary in capability to carry sensors that can capture still imagery or video in various formats (RGB, infrared, multispectral) as well as collect LiDAR data. A smaller subset of drones have the capability to carry additional weight and therefore are utilized to support construction and agricultural activities such as line pulling or herbicide spraying (for environmental services).

Project Justification:

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20277.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202770 - Aviation Program
Unit Measure: No feasible units

The Aviation Program focuses on providing SDG&E's operations with expert, safety-driven UAS solutions. The UAS program is an alternative work method available to the company that has proven to enhance safety and drive efficiency. SDG&E replaces a portion of the UAS fleet each year to spread out capital replacements costs. This also helps SDG&E stay up to date with the latest aircraft and sensor technology. As the technology matures, the drones become more capable and unlock further gains in work productivity that yield eventual cost savings while still providing the added safety benefits.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20277.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202770 - Aviation Program
Unit Measure: No feasible units

Forecast Methodology:

Labor - Zero-Based

Not applicable.

Non-Labor - Zero-Based

The forecast method used is zero based. The forecast is based on cost estimates that were developed based on the specific technical specifications for the acquisition of the drones.

NSE - Zero-Based

Not applicable.

Units - Zero-Based

Due to the significant differences in both cost and asset type between historical and future costs , it is not feasible to define a single "unit" metric that accurately represents the program's expenditures . Historical spend includes spend on aviation training area, aviation crossing markers and helicopter. The forecasted procurement plan includes multiple unmanned aerial systems (UAS), or drones. These two categories have vastly different cost profiles, making a unified per-unit cost measure not feasible.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20277.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202770 - Aviation Program
Unit Measure: No feasible units

Summary of Adjustments to Forecast:

In 2025 \$ (000)																		
Years	Base Forecast						Forecast Adjustments						Adjusted-Forecast					
	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031
Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NLbr	435	8,435	8,435	1,435	435	435	0	0	0	0	0	0	435	8,435	8,435	1,435	435	435
NSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	435	8,435	8,435	1,435	435	435	0	0	0	0	0	0	435	8,435	8,435	1,435	435	435
FTE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Forecast Adjustment Details

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2026 Total	0	0	0	0	0.0	0
2027 Total	0	0	0	0	0.0	0
2028 Total	0	0	0	0	0.0	0
2029 Total	0	0	0	0	0.0	0
2030 Total	0	0	0	0	0.0	0
2031 Total	0	0	0	0	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20277.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202770 - Aviation Program
Unit Measure: No feasible units

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Recorded (Nominal \$)*					
Labor	0	285	373	101	-5
Non-Labor	13,461	11,069	3,023	2,347	-24,171
NSE	0	0	0	0	0
Total	13,461	11,354	3,396	2,448	-24,176
FTE	0.0	1.5	2.1	0.7	0.0
Units	0	0	0	0	0
Adjustments (Nominal \$) **					
Labor	0	-285	0	0	0
Non-Labor	-13,461	-11,069	107	-342	25,779
NSE	0	0	0	0	0
Total	-13,461	-11,354	107	-342	25,779
FTE	0.0	-1.5	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Nominal \$)					
Labor	0	0	373	101	-5
Non-Labor	0	0	3,130	2,006	1,608
NSE	0	0	0	0	0
Total	0	0	3,503	2,107	1,603
FTE	0.0	0.0	2.1	0.7	0.0
Units	0	0	0	0	0
Vacation & Sick (Nominal \$)					
Labor	0	0	52	14	-1

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20277.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202770 - Aviation Program
Unit Measure: No feasible units

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	52	14	-1
FTE	0.0	0.0	0.3	0.1	0.0
Units	0	0	0	0	0
Escalation to 2025\$					
Labor	0	0	62	4	0
Non-Labor	0	0	456	73	0
NSE	0	0	0	0	0
Total	0	0	518	77	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Constant 2025\$)					
Labor	0	0	487	119	-6
Non-Labor	0	0	3,586	2,079	1,608
NSE	0	0	0	0	0
Total	0	0	4,073	2,198	1,602
FTE	0.0	0.0	2.4	0.8	0.0
Units	0	0	0	0	0

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20277.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202770 - Aviation Program
Unit Measure: No feasible units

Summary of Adjustments to Recorded:

		In Nominal \$(000)				
	Years	2021	2022	2023	2024	2025
Labor		0	-285	0	0	0
Non-Labor		-13,461	-11,069	107	-342	25,779
NSE		0	0	0	0	0
Total		-13,461	-11,354	107	-342	25,779
FTE		0.0	-1.5	0.0	0.0	0.0
Units		0	0	0	0	0

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	0	-10,458	0	-10,458	0.0	0
Explanation:	Exclude historical costs related to the Firehawk helicopter including 2021–2024 capital expenditures and sale of the asset in December 2025.					
2021	0	-3,003	0	-3,003	0.0	0
Explanation:	Reduce historical costs due to 2021 Track 2 disallowances for Aviation Firefighting Program.					
2021 Total	0	-13,461	0	-13,461	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20277.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202770 - Aviation Program
Unit Measure: No feasible units

Year	Labor	NLbr	NSE	Total	FTE	Units
2022	0	-378	0	-378	0.0	0
Explanation:	Exclude historical costs related to the Firehawk helicopter including 2021–2024 capital expenditures and sale of the asset in December 2025.					
2022	-285	-10,691	0	-10,975	-1.5	0
Explanation:	Reduce historical costs due to 2022 Track 2 disallowances for Aviation Firefighting Program.					
2022 Total	-285	-11,069	0	-11,354	-1.5	0
2023	0	-92	0	-92	0.0	0
Explanation:	Exclude historical costs related to the Firehawk helicopter including 2021–2024 capital expenditures and sale of the asset in December 2025.					
2023	0	199	0	199	0.0	0
Explanation:	Adjustment to add back common FERC account FERC-jurisdiction costs for RO model carve-out					
2023 Total	0	107	0	107	0.0	0
2024	0	-455	0	-455	0.0	0
Explanation:	Exclude historical costs related to the Firehawk helicopter including 2021–2024 capital expenditures and sale of the asset in December 2025.					
2024	0	113	0	113	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20277.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202770 - Aviation Program
Unit Measure: No feasible units

Year	Labor	NLbr	NSE	Total	FTE	Units
Explanation: Adjustment to add back common FERC account FERC-jurisdiction costs for RO model carve-out						
2024 Total	0	-342	0	-342	0.0	0
2025	0	25,592	0	25,592	0.0	0
Explanation: Exclude historical costs related to the Firehawk helicopter including 2021–2024 capital expenditures and sale of the asset in December 2025.						
2025	0	187	0	187	0.0	0
Explanation: Adjustment to add back common FERC account FERC-jurisdiction costs for RO model carve-out						
2025 Total	0	25,779	0	25,779	0.0	0

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 202770**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20277.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202770 - Aviation Program
Workpaper Detail: 202770.001 - RAMP - Aviation Program- UAS
Unit Measure: No feasible units

In-Service Date: Not Applicable

Description:

This includes the purchase of UAS resources from various manufacturers. The drones vary in capability to carry sensors that can capture still imagery or video in various formats (RGB, infrared, multispectral) as well as collect LiDAR data. A smaller subset of drones have the capability to carry additional weight and therefore are utilized to support construction and agricultural activities such as line pulling or herbicide spraying (for environmental services).

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	0	0	0	0
Non-Labor	435	435	435	435	435	435
NSE	0	0	0	0	0	0
Total	435	435	435	435	435	435
FTE	0.0	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20277.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202770 - Aviation Program
Workpaper Detail: 202770.002 - RAMP - Aviation Program Helicopter
Unit Measure: No feasible units

In-Service Date: Not Applicable

Description:

This workpaper includes forecasted capital costs that SDG&E is no longer requesting in this 2028 Test-Year Application. The correction was not identified in time for the dollars to be excluded from the 2028 Test-Year Application revenue requirement calculation. This correction will be included in the revenue requirement at the next available opportunity.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	0	0	0	0
Non-Labor	0	8,000	8,000	1,000	0	0
NSE	0	0	0	0	0	0
Total	<u>0</u>	<u>8,000</u>	<u>8,000</u>	<u>1,000</u>	<u>0</u>	<u>0</u>
FTE	0.0	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 202770

TY2028 GRC FORECAST - DETAILS
 Workpaper/Mitigation:

Category	Item	Unit	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	Notes
Subtotal	Subtotal		1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	
	Subtotal		1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	
	Subtotal		1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	
	Subtotal		1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	
	Subtotal		1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	

The workpaper includes Commission-approved data from 2028 to 2049 being reported in this 2028 Year Application. The information was not available or may vary for the details to be included in the 2028 Year Application request approval calculation. The information is provided for the internal requirement of the Year Application approval only.

Beginning of Workpaper Group
202840 - Distribution Overhead System Hardening

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20284.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202840 - Distribution Overhead System Hardening
Unit Measure: Miles hardened (Capital)

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Zero-Based	9,951	1,937	1,084	426	402	1,582	616	0	0	0	0
Non-Labor	Zero-Based	137,840	30,066	6,769	3,236	2,494	11,267	3,424	0	0	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0	0	0	0
Total		147,791	32,004	7,853	3,662	2,896	12,849	4,040	0	0	0	0
FTE	Zero-Based	14.5	10.1	5.2	2.1	1.9	9.0	3.5	0.0	0.0	0.0	0.0
Units	Zero-Based	100	26	2	1	0	4	2	0	0	0	0

Business Purpose:

The purpose of the Traditional Hardening (TH) program is to enhance the resilience of SDG&E's overhead distribution facilities within High Fire Threat District (HFTD) Tiers 2 and 3. By implementing long-term solutions, SDG&E aims to significantly reduce fire risk of the overhead distribution system.

Physical Description:

The TH program aims to reduce fire risk by upgrading SDG&E's overhead infrastructure. This includes replacing wood poles with fire-resistant steel poles, bare conductors with new bare conductor, and wood crossarms with fiberglass crossarms. Additional materials will be replaced as necessary to enhance system resilience. The weather conditions the system will be designed to meet or exceed include 85 mph or 111 mph wind, and ice loading depending on location.

Project Justification:

The main justification for TH is to significantly reduce the ignition risk of our overhead distribution facilities in the HFTD Tier 2 and Tier 3, and to be

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20284.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202840 - Distribution Overhead System Hardening
Unit Measure: Miles hardened (Capital)

more resilient during winter conditions including ice for elevations above 3,000ft.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20284.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202840 - Distribution Overhead System Hardening
Unit Measure: Miles hardened (Capital)

Forecast Methodology:

Labor - Zero-Based

The forecast uses a zero-based methodology, with labor estimates built from the actual work expected to be completed, including crew types, production rates, and task-level effort for traditional hardening activities such as pole installations, removals, anchor installation, and conductor work. A zero-based approach is appropriate because the program concludes in 2027, and historical data no longer reflects the reduced, end-of-program workload.

Non-Labor - Zero-Based

The non-labor forecast for the Traditional Hardening program is developed using a zero-based methodology, where all material and equipment needs are built from the ground up based on the remaining scope of work. A zero-based methodology is appropriate because the Traditional Hardening program is nearing completion and will end in 2027. Historical averages would not accurately represent the remaining work, as past spending includes higher-volume years, one-time conditions, and work patterns that will not recur in the final years of the program.

NSE - Zero-Based

N/A

Units - Zero-Based

The units for this workpaper is miles hardened.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20284.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202840 - Distribution Overhead System Hardening
Unit Measure: Miles hardened (Capital)

Summary of Adjustments to Forecast:

In 2025 \$ (000)																		
Years	Base Forecast						Forecast Adjustments						Adjusted-Forecast					
	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031
Labor	1,560	605	0	0	0	0	22	11	0	0	0	0	1,582	616	0	0	0	0
NLbr	11,267	3,424	0	0	0	0	0	0	0	0	0	0	11,267	3,424	0	0	0	0
NSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	12,827	4,029	0	0	0	0	22	11	0	0	0	0	12,849	4,040	0	0	0	0
FTE	9.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0	3.5	0.0	0.0	0.0	0.0
Units	4	2	0	0	0	0	0	0	0	0	0	0	4	2	0	0	0	0

Forecast Adjustment Details:

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2026	22	0	0	22	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2026 Total	22	0	0	22	0.0	0
2027	11	0	0	11	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2027 Total	11	0	0	11	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20284.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202840 - Distribution Overhead System Hardening
Unit Measure: Miles hardened (Capital)

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2028 Total	0	0	0	0	0.0	0
2029 Total	0	0	0	0	0.0	0
2030 Total	0	0	0	0	0.0	0
2031 Total	0	0	0	0	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20284.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202840 - Distribution Overhead System Hardening
Unit Measure: Miles hardened (Capital)

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Recorded (Nominal \$)*					
Labor	5,477	1,231	831	362	350
Non-Labor	87,673	21,879	5,907	3,122	2,494
NSE	0	0	0	0	0
Total	93,151	23,110	6,738	3,484	2,844
FTE	12.4	8.7	4.5	1.8	1.6
Units	0	0	0	0	0
Adjustments (Nominal \$) **					
Labor	0	0	0	0	0
Non-Labor	-379	0	0	0	0
NSE	0	0	0	0	0
Total	-379	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	100	26	2	1	0
Recorded-Adjusted (Nominal \$)					
Labor	5,477	1,231	831	362	350
Non-Labor	87,294	21,879	5,907	3,122	2,494
NSE	0	0	0	0	0
Total	92,771	23,110	6,738	3,484	2,844
FTE	12.4	8.7	4.5	1.8	1.6
Units	100	26	2	1	0
Vacation & Sick (Nominal \$)					
Labor	825	179	115	49	51

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20284.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202840 - Distribution Overhead System Hardening
Unit Measure: Miles hardened (Capital)

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	825	179	115	49	51
FTE	2.1	1.4	0.7	0.3	0.3
Units	0	0	0	0	0
Escalation to 2025\$					
Labor	3,649	528	138	15	0
Non-Labor	50,546	8,187	862	114	0
NSE	0	0	0	0	0
Total	54,195	8,715	1,000	129	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Constant 2025\$)					
Labor	9,951	1,937	1,084	426	402
Non-Labor	137,840	30,066	6,769	3,236	2,494
NSE	0	0	0	0	0
Total	147,791	32,004	7,853	3,662	2,896
FTE	14.5	10.1	5.2	2.1	1.9
Units	100	26	2	1	0

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20284.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202840 - Distribution Overhead System Hardening
Unit Measure: Miles hardened (Capital)

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2021	2022	2023	2024	2025
Labor	0	0	0	0	0
Non-Labor	-379	0	0	0	0
NSE	0	0	0	0	0
Total	-379	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	100	26	2	1	0

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	0	0	0	0	0.0	100
Explanation:	Adding miles completed for the year.					
2021	0	-379	0	-379	0.0	0
Explanation:	Reduce historical costs due to 2021 Track 2 disallowances for Distribution Overhead System Hardening.					
2021 Total	0	-379	0	-379	0.0	100
2022	0	0	0	0	0.0	26

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20284.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202840 - Distribution Overhead System Hardening
Unit Measure: Miles hardened (Capital)

Year	Labor	NLbr	NSE	Total	FTE	Units
Explanation: Adding miles completed for the year.						
2022 Total	0	0	0	0	0.0	26
2023	0	0	0	0	0.0	2
Explanation: Adding miles completed for the year.						
2023 Total	0	0	0	0	0.0	2
2024	0	0	0	0	0.0	1
Explanation: Adding miles completed for the year.						
2024 Total	0	0	0	0	0.0	1
2025 Total	0	0	0	0	0.0	0

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 202840**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20284.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202840 - Distribution Overhead System Hardening
Workpaper Detail: 202840.001 - RAMP - Distribution Overhead System Hardening
Unit Measure: Miles hardened (Capital)

In-Service Date: Not Applicable

Description:

The TH program aims to reduce fire risk by upgrading our overhead infrastructure . This includes replacing wood poles with fire-resistant steel poles, bare conductors with new bare conductor, and wood crossarms with fiberglass crossarms. Additional materials will be replaced as necessary to enhance system resilience. The weather conditions the system will be designed to meet or exceed include 85 mph or 111 mph wind, and ice loading depending on location.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	1,582	616	0	0	0	0
Non-Labor	11,267	3,424	0	0	0	0
NSE	0	0	0	0	0	0
Total	12,849	4,040	0	0	0	0
FTE	9.0	3.5	0.0	0.0	0.0	0.0
Units	4	2	0	0	0	0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 202840

TY2028 GRC FORECAST - DETAILS

Workpaper/Mitigation: 202840 Distribution Overhead System Hardening

202840 Distribution Overhead System Hardening				2026			2027			2028			2029			2030			2031			Total Cost	Comments
Line Item	Unit Description	Labor/Non-Labor/ NSE	RAMP/Non-RAMP	Unit Metric (ea, ft/s, mbl)	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	Total Cost			
1	Construction	Non-Labor	RAMP	ea	4	\$ 454,500	\$ 1,818,000	2	\$ 454,500	\$ 909,000	-	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -	\$ 2,727,000	Reconductor		
2	Union	Labor	RAMP	ea	4	\$ 216,369	\$ 865,476	2	\$ 216,369	\$ 432,738	-	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -	\$ 1,298,214	Reconductor		
3	Mat Poles	Non-Labor	RAMP	ea	4	\$ 83,137	\$ 332,548	2	\$ 83,137	\$ 166,274	-	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -	\$ 500,822	True Use		
4	Mat Misc	Non-Labor	RAMP	ea	4	\$ 113,228	\$ 452,912	2	\$ 113,228	\$ 226,456	-	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -	\$ 679,368	True Use		
5	MGMT	Labor	RAMP	ea	4	\$ 59,624	\$ 238,496	2	\$ 59,624	\$ 119,248	-	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -	\$ 357,744			
6	Other	Non-Labor	RAMP	ea	4	\$ 799,836	\$ 3,199,344	2	\$ 799,836	\$ 1,599,672	-	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -	\$ 4,799,016			
7	Construction	Non-Labor	RAMP	ea	150	\$ 15,372	\$ 2,305,800	80	\$ 15,372	\$ 1,229,760	-	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -	\$ 3,535,560			
8	Union	Labor	RAMP	ea	150	\$ 1,550	\$ 232,500	80	\$ 1,550	\$ 124,000	-	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -	\$ 356,500			
9	Mat Poles	Non-Labor	RAMP	ea	150	\$ 1,700	\$ 255,000	80	\$ 1,700	\$ 136,000	-	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -	\$ 391,000			
10	Mat Misc	Non-Labor	RAMP	ea	150	\$ 4,330	\$ 649,500	80	\$ 4,330	\$ 346,400	-	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -	\$ 995,900			
11	MGMT	Labor	RAMP	ea	150	\$ 775	\$ 116,250	80	\$ 775	\$ 62,000	-	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -	\$ 178,250			
12	Other	Non-Labor	RAMP	ea	150	\$ 5,459	\$ 818,850	80	\$ 5,459	\$ 436,720	-	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -	\$ 1,255,570			
Summary							\$ 1,860,349		\$ 605,595		\$ -		\$ -		\$ -		\$ -		\$ -	\$ 2,465,944			
		Labor	RAMP				\$ 11,267,200		\$ 4,403,891		\$ -		\$ -		\$ -		\$ -		\$ -	\$ 15,671,091			
		Non-Labor	RAMP				\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -			
		NSE	RAMP				\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -			
		Subtotal RAMP					\$ 12,827,600		\$ 4,029,552		\$ -		\$ -		\$ -		\$ -		\$ -	\$ 16,857,152			
		Labor	Non-RAMP				\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -			
		Non-Labor	Non-RAMP				\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -			
		NSE	Non-RAMP				\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -			
		Subtotal Non-RAMP					\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -			
		Total Project Forecast					\$ 12,827,600		\$ 4,029,552		\$ -		\$ -		\$ -		\$ -		\$ -	\$ 16,857,152			

Note: The variance between the direct costs found in workpapers and the supplemental workpapers supporting Ex. SDGE 07 are due to a system wide adjustment to reflect changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCC 16/SDGE 20.

**Beginning of Workpaper Group
202850 - Combined Covered Conductor**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20285.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202850 - Combined Covered Conductor
Unit Measure: Miles hardened (Capital)

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Zero-Based	4,499	12,028	10,258	8,562	9,513	8,230	8,261	8,270	8,260	8,252	8,253
Non-Labor	Zero-Based	44,758	85,320	80,734	69,002	78,736	57,121	57,121	57,391	57,391	57,391	57,391
NSE	Zero-Based	0	0	0	0	0	0	0	0	0	0	0
Total		49,257	97,347	90,992	77,564	88,249	65,351	65,382	65,661	65,651	65,643	65,644
FTE	Zero-Based	6.9	54.8	53.9	45.7	46.8	41.7	41.7	41.9	41.9	41.9	41.9
Units	Zero-Based	20	61	60	36	52	50	50	50	50	50	50

Business Purpose:

The purpose of the Covered Conductor (CC) program is to enhance the resilience of our overhead distribution facilities within High Fire Threat District (HFTD) Tiers 2 and 3. By implementing long-term solutions, we aim to significantly reduce fire risk and minimize the impact of Public Safety Power Shutoff (PSPS) events on the public.

Physical Description:

The CC hardening initiative aims to reduce fire risk and minimize the impact of Public Safety Power Shutoff (PSPS) events by upgrading our overhead infrastructure. This includes replacing wood poles with fire-resistant steel poles, bare conductors with new covered conductors, and wood crossarms with fiberglass crossarms. Additional materials will be replaced as necessary to enhance system resilience. The weather conditions the system will be designed to meet or exceed include 85 mph or 111 mph wind, and ice loading depending on location.

Project Justification:

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20285.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202850 - Combined Covered Conductor
Unit Measure: Miles hardened (Capital)

The main justification for CC hardening is to significantly reduce the ignition risk of our overhead distribution facilities in the HFTD Tier 2 and Tier 3. It also has the potential to raise the wind speed threshold for PSPS events when an entire segment (i.e., SCADA switch to SCADA switch) has been hardened with CC.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20285.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202850 - Combined Covered Conductor
Unit Measure: Miles hardened (Capital)

Forecast Methodology:

Labor - Zero-Based

The labor forecast for the covered conductor program is developed using a zero-based approach, building estimates from the ground up based on the specific scope of work planned for each project year. Labor projections are directly tied to the anticipated miles of covered conductor to be designed and constructed annually. The average cost per mile is calculated using recent project performance data and current market conditions, the cost per mile is then applied to the planned mileage, resulting in a reliable, scope-driven forecast grounded in up-to-date cost inputs.

Non-Labor - Zero-Based

The non-labor forecast is developed using a zero-based approach built from the specific scope of work planned each year. Costs are tied directly to the expected miles of covered conductor, using a cost-per-mile value derived from current material pricing, equipment rates, contractor quotes, and recent project data. This method ensures the forecast reflects real-time cost drivers and provides a transparent, scope-based estimate aligned with planned project execution.

NSE - Zero-Based

N/A

Units - Zero-Based

The units for this workpaper is hardened miles.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20285.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202850 - Combined Covered Conductor
Unit Measure: Miles hardened (Capital)

Summary of Adjustments to Forecast:

In 2025 \$ (000)																		
Years	Base Forecast						Forecast Adjustments						Adjusted-Forecast					
	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031
Labor	8,114	8,114	8,147	8,147	8,147	8,147	116	147	123	113	105	106	8,230	8,261	8,270	8,260	8,252	8,253
NLbr	57,121	57,121	57,391	57,391	57,391	57,391	0	0	0	0	0	0	57,121	57,121	57,391	57,391	57,391	57,391
NSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	65,235	65,235	65,538	65,538	65,538	65,538	116	147	123	113	105	106	65,351	65,382	65,661	65,651	65,643	65,644
FTE	41.7	41.7	41.9	41.9	41.9	41.9	0.0	0.0	0.0	0.0	0.0	0.0	41.7	41.7	41.9	41.9	41.9	41.9
Units	50	50	50	50	50	50	0	0	0	0	0	0	50	50	50	50	50	50

Forecast Adjustment Details:

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2026	116	0	0	116	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2026 Total	116	0	0	116	0.0	0
2027	147	0	0	147	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2027 Total	147	0	0	147	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20285.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202850 - Combined Covered Conductor
Unit Measure: Miles hardened (Capital)

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2028	123	0	0	123	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2028 Total	123	0	0	123	0.0	0
2029	113	0	0	113	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2029 Total	113	0	0	113	0.0	0
2030	105	0	0	105	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2030 Total	105	0	0	105	0.0	0
2031	106	0	0	106	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2031 Total	106	0	0	106	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20285.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202850 - Combined Covered Conductor
Unit Measure: Miles hardened (Capital)

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Recorded (Nominal \$)*					
Labor	2,476	7,640	7,860	7,274	8,298
Non-Labor	35,883	79,824	70,457	66,573	78,736
NSE	0	0	0	0	0
Total	38,360	87,463	78,317	73,847	87,034
FTE	5.9	47.0	46.6	39.7	40.2
Units	0	0	0	0	0
Adjustments (Nominal \$) **					
Labor	0	0	0	0	0
Non-Labor	-7,538	-17,737	0	0	0
NSE	0	0	0	0	0
Total	-7,538	-17,737	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	20	61	60	36	52
Recorded-Adjusted (Nominal \$)					
Labor	2,476	7,640	7,860	7,274	8,298
Non-Labor	28,345	62,087	70,457	66,573	78,736
NSE	0	0	0	0	0
Total	30,821	69,727	78,317	73,847	87,034
FTE	5.9	47.0	46.6	39.7	40.2
Units	20	61	60	36	52
Vacation & Sick (Nominal \$)					
Labor	373	1,113	1,092	987	1,215

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20285.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202850 - Combined Covered Conductor
Unit Measure: Miles hardened (Capital)

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	373	1,113	1,092	987	1,215
FTE	1.0	7.8	7.3	6.0	6.6
Units	0	0	0	0	0
Escalation to 2025\$					
Labor	1,650	3,275	1,306	301	0
Non-Labor	16,413	23,233	10,277	2,429	0
NSE	0	0	0	0	0
Total	18,062	26,508	11,583	2,730	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Constant 2025\$)					
Labor	4,499	12,028	10,258	8,562	9,513
Non-Labor	44,758	85,320	80,734	69,002	78,736
NSE	0	0	0	0	0
Total	49,257	97,347	90,992	77,564	88,249
FTE	6.9	54.8	53.9	45.7	46.8
Units	20	61	60	36	52

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20285.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202850 - Combined Covered Conductor
Unit Measure: Miles hardened (Capital)

Summary of Adjustments to Recorded:

		In Nominal \$(000)				
	Years	2021	2022	2023	2024	2025
Labor		0	0	0	0	0
Non-Labor		-7,538	-17,737	0	0	0
NSE		0	0	0	0	0
Total		-7,538	-17,737	0	0	0
FTE		0.0	0.0	0.0	0.0	0.0
Units		20	61	60	36	52

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	0	0	0	0	0.0	20
Explanation:	Adding units completed for the year.					
2021	0	-7,538	0	-7,538	0.0	0
Explanation:	Reduce historical costs due to 2021 Track 2 disallowances for Covered Conductor.					
2021 Total	0	-7,538	0	-7,538	0.0	20
2022	0	0	0	0	0.0	61

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20285.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202850 - Combined Covered Conductor
Unit Measure: Miles hardened (Capital)

Year	Labor	NLbr	NSE	Total	FTE	Units
Explanation: Adding units completed for the year.						
2022	0	-17,737	0	-17,737	0.0	0
Explanation: Reduce historical costs due to 2022 Track 2 disallowances for Covered Conductor.						
2022 Total	0	-17,737	0	-17,737	0.0	61
2023	0	0	0	0	0.0	60
Explanation: Adding units completed for the year.						
2023 Total	0	0	0	0	0.0	60
2024	0	0	0	0	0.0	36
Explanation: Adding units completed for the year.						
2024 Total	0	0	0	0	0.0	36
2025	0	0	0	0	0.0	52
Explanation: Adding units completed for the year.						
2025 Total	0	0	0	0	0.0	52

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 202850**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20285.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202850 - Combined Covered Conductor
Workpaper Detail: 202850.001 - RAMP - Combined Covered Conductor
Unit Measure: Miles hardened (Capital)

In-Service Date: Not Applicable

Description:

The Combined Covered Conductor (CCC) hardening initiative aims to reduce fire risk and minimize the impact of Public Safety Power Shutoff (PSPS) events by upgrading our overhead infrastructure. This includes replacing wood poles with fire-resistant steel poles, bare conductors with new covered conductors, and wood crossarms with fiberglass crossarms. Additional materials will be replaced as necessary to enhance system resilience. The weather conditions the system will be designed to meet or exceed include 85 mph or 111 mph wind, and ice loading depending on location.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	8,230	8,261	8,237	8,227	8,219	8,220
Non-Labor	57,121	57,121	57,121	57,121	57,121	57,121
NSE	0	0	0	0	0	0
Total	65,351	65,382	65,358	65,348	65,340	65,341
FTE	41.7	41.7	41.7	41.7	41.7	41.7
Units	50	50	50	50	50	50

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 20285.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 202850 - Combined Covered Conductor
Workpaper Detail: 202850.002 - RAMP - LiDAR
Unit Measure: Miles hardened (Capital)

In-Service Date: 06/30/2029

Description:

LiDAR provides high resolution 3D spatial data of existing distribution corridors, including conductor positions, pole locations, terrain profiles, vegetation encroachments, and surrounding infrastructure. This data is essential for engineering teams to assess existing clearances, validate structural loading assumptions, and identify field conditions that influence design decisions for CCC installations.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	33	33	33	33
Non-Labor	0	0	270	270	270	270
NSE	0	0	0	0	0	0
Total	0	0	303	303	303	303
FTE	0.0	0.0	0.2	0.2	0.2	0.2
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 202850

**Beginning of Workpaper Group
212730 - Microgrids**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 21273.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 212730 - Microgrids
Unit Measure: Microgrids

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Zero-Based	709	378	1,040	464	338	0	0	0	190	867	521
Non-Labor	Zero-Based	19,903	3,359	3,233	6,887	550	0	0	0	4,673	35,430	6,987
NSE	Zero-Based	0	0	0	0	0	0	0	0	0	0	0
Total		20,612	3,736	4,272	7,351	888	0	0	0	4,863	36,297	7,508
FTE	Zero-Based	3.1	2.1	1.7	3.0	2.0	0.0	0.0	0.0	1.3	5.9	3.6
Units	Zero-Based	0	1	0	0	0	0	0	0	0	3	0

Business Purpose:

The Butterfield and Shelter Valley Remote Grid projects represent a prudent capital investment to improve system resiliency and reduce wildfire risk by maintaining electric service to residential and critical customers during PSPS events in High Fire Threat Districts. Deployment of solar-plus-storage standalone power systems enables the de-energization of high-risk distribution assets, lowering long-term wildfire exposure while delivering cost-effective reliability, safety, and public-benefit outcomes. In addition, the Remote Grid provides a standalone energy resource to support California Department of Fish & Wildlife facilities during PSPS events, consistent with CPUC Resolution E-5308 (approved March 21, 2024), which authorized SDG&E's Remote Grid Standalone Power System Addendum Agreement.

Physical Description:

By serving limited customer load locally, the microgrids and Remote Grid reduce reliance on long, high-risk distribution assets located in High Fire Threat Districts, avoiding otherwise costly hardening investments and lowering long-term wildfire exposure. These projects provide a cost-effective means to improve public safety, system resiliency, and operational flexibility while supporting regulatory-approved wildfire mitigation strategies. Remote grids provide standalone, decentralized energy resources and utility infrastructure for continuous, permanent energy delivery, in

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 21273.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 212730 - Microgrids
Unit Measure: Microgrids

lieu of providing retail distribution services. These Remote Grid solutions can mitigate otherwise costly hardening efforts for long distribution lines with minimal customer loading. The 3 microgrids will be placed into service in 2030 and 2031 will have trailing costs which do not correspond to units.

Project Justification:

SDG&E's Wildfire Mitigation Plan includes a program which focuses on investing in infrastructure (such as microgrids) to provide backup power at strategic locations to ensure resiliency during Public Safety Power Shutoff (PSPS) events. This program seeks to mitigate the impact of PSPS events to the community. Additionally, microgrid programs, such as remote grids, may allow for the removal or permanent de-energization of lines in high wildfire risk areas providing benefits to both the customers served by Remote Grids and to all retail distribution customers who benefit from the cost-effective elimination of wildfire risks associated with retail distribution lines that run for significant distances through High Fire Threat Districts (HFTD) and which can sometimes serve a small number of remotely located customers. Until a feasibility study/proof of concept is complete, retail distribution assets serving the remote grid customer(s) will be de-energized but not removed.

Butterfield: A solar and battery storage yard to enable local critical infrastructure to stay energized during PSPS events . Communications equipment installations are included in the site scope allowing for enhanced network and line monitoring. The microgrid will be powered by 2,100 kW of solar generation and a 4,800 kWh Battery Energy Storage System designed to support 116 residential customers.

Shelter Valley: A solar and battery storage yard to enable local critical infrastructure to stay energized during PSPS events . Communications equipment installations are included in the site scope allowing for enhanced network and line monitoring. The microgrid will be powered by 2,100 kW of solar generation and a 4,800 kWh Battery Energy Storage System designed to support 222 residential customers and critical customers (San Diego County Fire Station and Community Center).

Remote Grid: Includes a Remote Grid Standalone Power System (RGSPS) made up of local sources of electricity supply, such as solar photovoltaic (PV) generation, energy storage, and/or other generation sources, as well as distribution and retail service facilities to connect one or more customers to the RGSPS.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 21273.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 212730 - Microgrids
Unit Measure: Microgrids

Forecast Methodology:

Labor - Zero-Based

Zero Based. The forecast is based cost estimates that were developed based on the specific scope of work for specific project sites. Microgrid projects costs are based on current construction labor rates, material costs, contract pricing/quotes, and other project specific details. When projects are completed, actual costs are compared to the estimate to verify the estimates are accurate. Any significant variances between the estimated cost for a project and the actuals costs are scrutinized to determine if cost estimate inputs need to be adjusted for future projects.

Non-Labor - Zero-Based

Zero Based. The forecast is based cost estimates that were developed based on the specific scope of work for specific project sites. Microgrid projects costs are based on current construction labor rates, material costs, contract pricing/quotes, and other project specific details. When projects are completed, actual costs are compared to the estimate to verify the estimates are accurate. Any significant variances between the estimated cost for a project and the actuals costs are scrutinized to determine if cost estimate inputs need to be adjusted for future projects.

NSE - Zero-Based

N/A

Units - Zero-Based

The units for this workpaper is microgrids.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 21273.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 212730 - Microgrids
Unit Measure: Microgrids

Summary of Adjustments to Forecast:

In 2025 \$ (000)																		
Years	Base Forecast						Forecast Adjustments						Adjusted-Forecast					
	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031
Labor	0	0	0	187	856	514	0	0	0	3	11	7	0	0	0	190	867	521
NLbr	0	0	0	4,673	35,430	6,987	0	0	0	0	0	0	0	0	0	4,673	35,430	6,987
NSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	4,860	36,286	7,501	0	0	0	3	11	7	0	0	0	4,863	36,297	7,508
FTE	0.0	0.0	0.0	1.3	5.9	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	5.9	3.6
Units	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3	0

Forecast Adjustment Details

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2026 Total	0	0	0	0	0.0	0
2027 Total	0	0	0	0	0.0	0
2028 Total	0	0	0	0	0.0	0
2029	3	0	0	3	0.0	0
2029 Total	3	0	0	3	0.0	0

Explanation: Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 21273.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 212730 - Microgrids
Unit Measure: Microgrids

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2030	11	0	0	11	0.0	0
Explanation: Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.						
2030 Total	11	0	0	11	0.0	0
2031	7	0	0	7	0.0	0
Explanation: Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.						
2031 Total	7	0	0	7	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 21273.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 212730 - Microgrids
Unit Measure: Microgrids

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Recorded (Nominal \$)*					
Labor	390	240	678	394	295
Non-Labor	12,605	2,444	2,519	6,644	550
NSE	0	0	0	0	0
Total	12,995	2,684	3,197	7,039	845
FTE	2.6	1.8	1.5	2.6	1.7
Units	0	0	0	0	0
Adjustments (Nominal \$) **					
Labor	0	0	119	0	0
Non-Labor	0	0	302	0	0
NSE	0	0	0	0	0
Total	0	0	421	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	1	0	0	0
Recorded-Adjusted (Nominal \$)					
Labor	390	240	797	394	295
Non-Labor	12,605	2,444	2,821	6,644	550
NSE	0	0	0	0	0
Total	12,995	2,684	3,618	7,039	845
FTE	2.6	1.8	1.5	2.6	1.7
Units	0	1	0	0	0
Vacation & Sick (Nominal \$)					
Labor	59	35	111	53	43

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 21273.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 212730 - Microgrids
Unit Measure: Microgrids

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	59	35	111	53	43
FTE	0.5	0.3	0.2	0.4	0.3
Units	0	0	0	0	0
Escalation to 2025\$					
Labor	260	103	132	16	0
Non-Labor	7,298	915	412	242	0
NSE	0	0	0	0	0
Total	7,558	1,017	544	259	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Constant 2025\$)					
Labor	709	378	1,040	464	338
Non-Labor	19,903	3,359	3,233	6,887	550
NSE	0	0	0	0	0
Total	20,612	3,736	4,272	7,351	888
FTE	3.1	2.1	1.7	3.0	2.0
Units	0	1	0	0	0

* After company-wide exclusions of Non-GRC costs
 ** Refer to "Detail of Adjustments to Recorded" page for line item adjustments
 Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 21273.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 212730 - Microgrids
Unit Measure: Microgrids

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2021	2022	2023	2024	2025
Labor	0	0	119	0	0
Non-Labor	0	0	302	0	0
NSE	0	0	0	0	0
Total	0	0	421	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	1	0	0	0

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	0	0	0	0	0.0	0
Explanation:	Updated unit of measure					
2021 Total	0	0	0	0	0.0	0
2022	0	0	0	0	0.0	1
Explanation:	Updated Unit Measure and Unit Count					
2022 Total	0	0	0	0	0.0	1

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 21273.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 212730 - Microgrids
Unit Measure: Microgrids

Year	Labor	NLbr	NSE	Total	FTE	Units
2023	119	302	0	421	0.0	0
Explanation: Align work paper level histoical actuals with current SAP/TM1 as a result of work order transfers (SAP Data Change)						
2023 Total	119	302	0	421	0.0	0
2024 Total	0	0	0	0	0.0	0
2025	0	0	0	0	0.0	0
Explanation: Updated unit of measure						
2025 Total	0	0	0	0	0.0	0

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 212730**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 21273.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 212730 - Microgrids
Workpaper Detail: 212730.001 - RAMP - Microgrids
Unit Measure: Microgrids

In-Service Date: 12/31/2030

Description:

By serving limited customer load locally the microgrids and Remote Grid reduce reliance on long, high-risk distribution assets located in High Fire Threat Districts, avoiding otherwise costly hardening investments and lowering long-term wildfire exposure. These projects provide a cost- effective means to improve public safety, system resiliency, and operational flexibility while supporting regulatory-approved wildfire mitigation strategies. Remote grids provide standalone, decentralized energy resources and utility infrastructure for continuous, permanent energy delivery, in lieu of providing retail distribution services. These Remote Grid solutions can mitigate otherwise costly hardening efforts for long distribution lines with minimal customer loading. The 3 microgrids will be placed into service in 2030 and 2031 will have trailing costs which do not correspond to units.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	0	190	867	521
Non-Labor	0	0	0	4,673	35,430	6,987
NSE	0	0	0	0	0	0
Total	0	0	0	4,863	36,297	7,508
FTE	0.0	0.0	0.0	1.3	5.9	3.6
Units	0	0	0	0	3	0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 212730

TY2028 GRC FORECAST - DETAILS
Workpaper/Mitigation:

212730 Microgrids

212730 Microgrids			2026			2027			2028			2029			2030			2031			Comments				
Line Item	Unit Description	Labor/Non-Labor/ MSE	RAMP/Non-RAMP	Unit Metric (Qty/7h/Week)	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost						
1	Internal Labor - Shelter Valley Site - ISD 2030	Labor	RAMP	hours	\$	-	\$	-	-	\$	-	-	\$	1460	\$ 64	\$ 93,440	7042	\$ 64	\$ 450,688	4015	\$ 64	\$ 256,960	\$ 401,242	ISD&E project labor	
2	EPC Contracts - Shelter Valley Site - ISD 2030	Non-Labor	RAMP	ea/# of Microgrids	\$	-	\$	-	-	\$	-	-	\$	-	-	\$	-	-	\$	-	-	\$	\$ 17,893,260	Scope estimate for solar arrays and battery storage system engineering, procurement, and construction contracts.	
3	Other Contracted Services - Shelter Valley Site - ISD 2030	Non-Labor	RAMP	ea/# of Microgrids	\$	-	\$	-	-	\$	-	-	\$	-	-	\$	-	-	\$	-	-	\$	\$ 123,406	1st party project support and non-EPC construction	
4	Non-EPC Materials - Shelter Valley Site - ISD 2030	Non-Labor	RAMP	ea/# of Microgrids	\$	-	\$	-	-	\$	-	-	\$	-	-	\$	-	-	\$	-	-	\$	\$ 1,589,740	Communications, security fencing and other misc. materials	
5	All Other - Shelter Valley - ISD 2030	Non-Labor	RAMP	N/A	\$	-	\$	-	-	\$	-	-	\$	-	-	\$	-	-	\$	-	-	\$	\$ 3,640,892	Communications, security fencing and other misc. materials	
6	Internal Labor - Butterfield Site - ISD 2030	Labor	RAMP	hours	\$	-	\$	-	-	\$	-	-	\$	1460	\$ 64	\$ 93,440	4380	\$ 64	\$ 280,320	4015	\$ 64	\$ 256,960	\$ 630,687	Internal project labor	
7	EPC Contracts - Butterfield Site - ISD 2030	Non-Labor	RAMP	ea/# of Microgrids	\$	-	\$	-	-	\$	-	-	\$	-	-	\$	-	-	\$	-	-	\$	\$ 14,525,398	Scope estimate for solar arrays and battery storage system engineering, procurement, and construction contracts.	
8	Other Contracted Services - Butterfield Site - ISD 2030	Non-Labor	RAMP	ea/# of Microgrids	\$	-	\$	-	-	\$	-	-	\$	-	-	\$	-	-	\$	-	-	\$	\$ 123,406	1st party project support and non-EPC construction	
9	Non-EPC Materials - Butterfield Site - ISD 2030	Non-Labor	RAMP	ea/# of Microgrids	\$	-	\$	-	-	\$	-	-	\$	-	-	\$	-	-	\$	-	-	\$	\$ 1,589,740	Communications, security fencing and other misc. materials	
10	All Other - Butterfield - ISD 2030	Non-Labor	RAMP	N/A	\$	-	\$	-	-	\$	-	-	\$	-	-	\$	-	-	\$	-	-	\$	\$ 3,640,892	Communications, security fencing and other misc. materials	
11	Contracted Services - Remote Grid (Off-Grid) Site - ISD 2030	Non-Labor	RAMP	# of Microgrids	\$	-	\$	-	-	\$	-	-	\$	1	\$ 500,000	\$ 500,000	\$	-	\$	-	\$	\$	\$ 500,000	Engineering and installation services of smaller remote grid power solutions	
12	Internal Labor - Remote Grid (Off-Grid) Site - ISD 2030	Labor	RAMP	hours	\$	-	\$	-	-	\$	-	-	\$	-	-	\$	-	-	\$	-	-	\$	\$ 124,945	Engineering and installation services of smaller remote grid power solutions	
13	All Other - Remote Grid (Off-Grid) Site - ISD 2030	Non-Labor	RAMP	N/A	\$	-	\$	-	-	\$	-	-	\$	1	\$ 300,000	\$ 300,000	\$	-	\$	-	\$	\$	\$ 300,000		
Summary			Labor	RAMP	\$	-	\$	-	\$	-	\$	-	\$	-	-	\$	-	-	\$	-	-	\$	\$ 188,820		
			Non-Labor	RAMP	\$	-	\$	-	\$	-	\$	-	\$	-	-	\$	-	-	\$	-	-	\$	\$ 35,426,752		
			NSE	RAMP	\$	-	\$	-	\$	-	\$	-	\$	-	-	\$	-	-	\$	-	-	\$	\$ 6,987,217		
Subtotal RAMP					\$	-	\$	-	\$	-	\$	-	\$	-	-	\$	-	-	\$	-	-	\$	\$ 38,542,789		
			Labor	Non-RAMP	\$	-	\$	-	\$	-	\$	-	\$	-	-	\$	-	-	\$	-	-	\$	\$	\$	
			Non-Labor	Non-RAMP	\$	-	\$	-	\$	-	\$	-	\$	-	-	\$	-	-	\$	-	-	\$	\$	\$	
			NSE	Non-RAMP	\$	-	\$	-	\$	-	\$	-	\$	-	-	\$	-	-	\$	-	-	\$	\$	\$	
Subtotal Non-RAMP					\$	-	\$	-	\$	-	\$	-	\$	-	-	\$	-	-	\$	-	-	\$	\$	\$	
Total Project Forecast					\$	-	\$	-	\$	-	\$	-	\$	-	-	\$	-	-	\$	-	-	\$	\$ 39,140,140	\$ 48,647,716	

The variance between the direct costs found in workpapers and the supplemental workpapers supporting Ex. SDGE-07 are due to a system wide adjustment to reflect changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-06.

**Beginning of Workpaper Group
222420 - Strategic Pole Replacement Program**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22242.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222420 - Strategic Pole Replacement Program
Unit Measure: Poles

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Zero-Based	0	0	36	105	670	314	0	0	0	0	0
Non-Labor	Zero-Based	0	0	43	2,429	7,523	3,843	0	0	0	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0	0	0	0
Total		0	0	79	2,534	8,193	4,157	0	0	0	0	0
FTE	Zero-Based	0.0	0.0	0.1	0.6	3.3	1.8	0.0	0.0	0.0	0.0	0.0
Units	Zero-Based	0	0	1	42	230	100	0	0	0	0	0

Business Purpose:

The purpose of the Strategic Pole Replacement Program WMP (SPRP WMP) is to replace gas-treated poles within Tier 2 and Tier 3 of the HFTD, as well as in the Wildland Urban Interface (WUI). Based on research, it has been determined that the gas-treated poles are at a higher risk for deterioration due to the pole interaction with moisture in the soil. In addition to the properties of these poles, SDG&E plans to prioritize replacement based on age and type of installation. Locations encased in concrete and/or steel will have a highest priority.

Physical Description:

The SPRP WMP will focus on replacement of gas treated wood poles, equipment, and hardware with a new pole, including pole top work on adjacent structures. In most cases it is anticipated that steel poles will be used, either galvanized or weathering steel, but in some cases wood or fiberglass may be used depending on the location and availability of material. Adjacent poles may need pole top work to accommodate the construction of the targeted pole, and in some cases the adjacent poles may need to be replaced to maintain clearances or pole loading requirements. Many of the poles are on the western edge of the HFTD Tier 2 and in more populated areas where poles will be more congested with third party attachments and equipment.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22242.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222420 - Strategic Pole Replacement Program
Unit Measure: Poles

Project Justification:

Poles replaced on this project have a higher risk of deterioration as compared to other forms of treatment of wood poles. Many of the gas treated poles are compromised and have a steel c-truss attached to the base of the pole to improve it's strength at the groundline.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22242.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222420 - Strategic Pole Replacement Program
Unit Measure: Poles

Forecast Methodology:

Labor - Zero-Based

A zero-based forecast is the most appropriate methodology for labor costs because the scope is relatively new, launching in 2023, and 2025 represents the first full year in which the expected scope, activity levels, and operational needs are fully defined. Early years include ramp up activities that do not reflect steady state requirements, making historical costs an unreliable basis for forecasting future needs. Additionally, because the program is scheduled to conclude in 2026, the limited historical data does not allow for a comprehensive assessment of labor requirements. Using a zero-based approach enables labor hours and costs are built from the ground up based on the specific activities, staffing needs, and timing of work planned for the year.

Non-Labor - Zero-Based

A zero-based forecast is the most appropriate methodology for non-labor because the scope is relatively new, launched in 2023, and 2025 represents the first full year in which the expected scope, activity levels, and operational needs are fully defined. Early years include ramp up activities that do not reflect steady state requirements, making historical non labor costs an unreliable basis for forecasting future needs. Additionally, because the program is scheduled to conclude in 2026, the limited historical data available does not provide a meaningful trend for projecting multi year costs. A zero-based approach enables all non labor components—such as materials, contracts, equipment, inspections, and other direct program expenses—to be built from the ground up based on the specific work planned the year, rather than relying on incomplete or non representative historical spending.

NSE - Zero-Based

N/A

Units - Zero-Based

The units for this workpaper is poles.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22242.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222420 - Strategic Pole Replacement Program
Unit Measure: Poles

Summary of Adjustments to Forecast:

In 2025 \$ (000)																		
Years	Base Forecast						Forecast Adjustments						Adjusted-Forecast					
	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031
Labor	310	0	0	0	0	0	4	0	0	0	0	0	314	0	0	0	0	0
NLbr	3,843	0	0	0	0	0	0	0	0	0	0	0	3,843	0	0	0	0	0
NSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	4,153	0	0	0	0	0	4	0	0	0	0	0	4,157	0	0	0	0	0
FTE	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0
Units	100	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0

Forecast Adjustment Details:

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2026	4	0	0	4	0.0	0
Explanation: Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.						
2026 Total	4	0	0	4	0.0	0
2027 Total	0	0	0	0	0.0	0
2028 Total	0	0	0	0	0.0	0
2029 Total	0	0	0	0	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22242.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222420 - Strategic Pole Replacement Program
Unit Measure: Poles

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2030 Total	0	0	0	0	0.0	0
2031 Total	0	0	0	0	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22242.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222420 - Strategic Pole Replacement Program
Unit Measure: Poles

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Recorded (Nominal \$)*					
Labor	0	0	28	89	585
Non-Labor	0	0	37	2,344	7,523
NSE	0	0	0	0	0
Total	0	0	65	2,433	8,108
FTE	0.0	0.0	0.1	0.5	2.8
Units	0	0	0	0	0
Adjustments (Nominal \$) **					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	1	42	230
Recorded-Adjusted (Nominal \$)					
Labor	0	0	28	89	585
Non-Labor	0	0	37	2,344	7,523
NSE	0	0	0	0	0
Total	0	0	65	2,433	8,108
FTE	0.0	0.0	0.1	0.5	2.8
Units	0	0	1	42	230
Vacation & Sick (Nominal \$)					
Labor	0	0	4	12	86

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22242.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222420 - Strategic Pole Replacement Program
Unit Measure: Poles

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	4	12	86
FTE	0.0	0.0	0.0	0.1	0.5
Units	0	0	0	0	0
Escalation to 2025\$					
Labor	0	0	5	4	0
Non-Labor	0	0	5	86	0
NSE	0	0	0	0	0
Total	0	0	10	89	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Constant 2025\$)					
Labor	0	0	36	105	670
Non-Labor	0	0	43	2,429	7,523
NSE	0	0	0	0	0
Total	0	0	79	2,534	8,193
FTE	0.0	0.0	0.1	0.6	3.3
Units	0	0	1	42	230

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22242.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222420 - Strategic Pole Replacement Program
Unit Measure: Poles

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2021	2022	2023	2024	2025
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	1	42	230

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE	Units
2021 Total	0	0	0	0	0.0	0
2022 Total	0	0	0	0	0.0	0
2023	0	0	0	0	0.0	1
2023 Total	0	0	0	0	0.0	1

Explanation: Adding units completed for the year.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22242.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222420 - Strategic Pole Replacement Program
Unit Measure: Poles

Year	Labor	NLbr	NSE	Total	FTE	Units
2024	0	0	0	0	0.0	42
Explanation: Adding units completed for the year.						
2024 Total	0	0	0	0	0.0	42
2025	0	0	0	0	0.0	230
Explanation: Adding units completed for the year.						
2025 Total	0	0	0	0	0.0	230

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 222420**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22242.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222420 - Strategic Pole Replacement Program
Workpaper Detail: 222420.001 - RAMP - Strategic Pole Replacement
Unit Measure: Poles

In-Service Date: Not Applicable

Description:

The SPRP WMP will focus on replacement of gas treated wood poles, equipment, and hardware with a new pole, equipment and hardware. In most cases it is anticipated that steel poles will be used, either galvanized or weathering steel, but in some cases wood or fiberglass may be used depending on the location and availability of material. Adjacent poles may need pole top work to accommodate the construction of the targeted pole, and in some cases the adjacent poles may need to be replaced to maintain clearances or pole loading requirements. Many of the poles are on the western edge of the HFTD Tier 2 and in more populated areas where poles will be more congested with third party attachments and equipment.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	314	0	0	0	0	0
Non-Labor	3,843	0	0	0	0	0
NSE	0	0	0	0	0	0
Total	4,157	0	0	0	0	0
FTE	1.8	0.0	0.0	0.0	0.0	0.0
Units	100	0	0	0	0	0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 222420

TY2028 GRC FORECAST - DETAILS

Workpaper/Mitigation: 222420 Strategic Pole Replacement Program

222420 Strategic Pole Replacement Program					2026			2027			2028			2029			2030			2031				
Line Item	Unit Description	Labor/Non-Labor/ NSE	RAMP/Non-RAMP	Unit Metric (ea, ft, mile)	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	Total Cost	
1	Material	Non-Labor	RAMP	poles	100	\$ 12,452	\$ 1,245,200																\$ -	\$ 1,245,200
2	Construction Contractor	Non-Labor	RAMP	ea	100	\$ 24,470	\$ 2,447,000																\$ -	\$ 2,447,000
3	Construction FTE	Labor	RAMP	ea	100	\$ 3,105	\$ 310,500																\$ -	\$ 310,500
4	All Other	Non-Labor	RAMP	ea	100	\$ 1,506	\$ 150,600																\$ -	\$ 150,600
5	Materials	Non-Labor	RAMP	N/A																			\$ -	\$ -
6	Permitting Costs	Non-Labor	RAMP	N/A																			\$ -	\$ -
Summary																								
		Labor	RAMP			\$ 310,528		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -	\$ 310,528
		Non-Labor	RAMP			\$ 3,843,077		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -	\$ 3,843,077
		NSE	RAMP			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -	\$ -
	Subtotal RAMP					\$ 4,153,605		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -	\$ 4,153,605
		Labor	Non-RAMP			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -	\$ -
		Non-Labor	Non-RAMP			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -	\$ -
		NSE	Non-RAMP			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -	\$ -
	Subtotal Non-RAMP					\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -	\$ -
	Total Project Forecast					\$ 4,153,605		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -	\$ 4,153,605

Note: The variance between the direct costs found in workpapers and the supplemental workpapers supporting Ex. SDGE-07 are due to a system wide adjustment to reflect changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.

**Beginning of Workpaper Group
222560 - Early Fault Detection**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22256.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222560 - Early Fault Detection
Unit Measure: Nodes

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Zero-Based	284	229	239	205	347	412	386	885	839	997	829
Non-Labor	Zero-Based	2,221	10,442	7,695	3,693	5,458	3,982	2,781	3,183	2,841	3,683	2,636
NSE	Zero-Based	0	0	0	0	0	0	0	0	0	0	0
Total		2,505	10,671	7,934	3,898	5,804	4,394	3,167	4,068	3,680	4,680	3,465
FTE	Zero-Based	0.0	0.9	1.5	1.3	2.0	2.5	2.3	5.3	5.0	6.0	5.0
Units	Zero-Based	0	0	32	62	127	99	95	1,068	1,050	1,083	1,048

Business Purpose:

Deploy Advanced Radio Frequency Sensors (ARFS), Power Quality (PQ) Meters, and Pole-mounted multi-sensor (PMS) devices in SDG&E electric substations and electric distribution circuits within the HFTD to enable the collection of time-series analog data used to detect incipient failures of electrical equipment and locate that failing equipment before it can cause significant damage.

Physical Description:

The EFD Program encompasses the deployment of three primary technologies, Advanced Radio Frequency Sensors (ARFS), Power Quality (PQ) Meters, and Pole-mounted multi-sensor (PMS) devices, across circuits located within High Fire Threat Districts (HFTD).

Physical activities include:

- Installing ARFS sensors at approximately 4-kilometer intervals along selected circuits, covering all three phases from substation boundaries to the furthest branches.
- Deploying PQ meters at substations and field locations, including wiring, relay installation, and communication hardware setup.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22256.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222560 - Early Fault Detection
Unit Measure: Nodes

- Upgrading existing PQ nodes and integrating new monitoring equipment into the network.
- Installing pole-mounted multi-sensor devices on every other pole for targeted circuits
- Establishing IT interfaces and synchronization systems to support real-time data collection and analysis.

The technical scope focuses on implementing advanced monitoring and analytics capabilities to improve system reliability and reduce fire risk. Key technical components include:

- ARFS technology for continuous radio frequency monitoring of partial discharge, enabling early detection of deteriorating components.
- PQ meters for high-resolution monitoring of power quality, fault location, and predictive analytics across transmission and distribution systems.
- Pole-mounted multi-sensor devices that continuously monitor electrical, physical, and environmental conditions. These devices are self-powered, operate even during outages, and utilize on-device analytics to detect anomalies in real time.
- Integration of communication networks, back-office systems, and time synchronization protocols to ensure accurate and timely data flow.
- Deployment of software tools for signal filtering, data validation, and risk assessment reporting.

Project Justification:

The EFD Program aims to detect what are known as incipient faults on the system with enough time to locate and potentially fix or replace equipment prior to it permanently failing. These incipient faults occur on failing pieces of equipment long before they fail violently and cause damage to the surrounding area.

The program reduces wildfire and outage program risk by identification and prediction of failures before they occur through radio frequency analysis, power quality monitoring technology, and advanced multi-sensor edge analytics technology. These enhancements enable detection of electrical, physical, and environmental anomalies that traditional systems often miss, such as high-impedance faults (HIFs), vegetation contact, and structural degradation. By leveraging real-time alerts and precise fault localization, the program significantly improves situational awareness and response times, reducing ignition risk and outage duration

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22256.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222560 - Early Fault Detection
Unit Measure: Nodes

Forecast Methodology:

Labor - Zero-Based

The forecast method used is zero-based. The forecast is based on cost estimates developed based on the scope of work for the project. SDG&E develops cost estimates based on construction labor rates, material costs, overhead rates, contract pricing/quotes, and other project specific details. When projects are completed, actual costs are compared to the estimate to verify the estimates are accurate. Any significant variances between the estimated cost for a project and the actual costs are scrutinized to determine whether cost estimate inputs need to be adjusted for future projects.

Non-Labor - Zero-Based

The forecast method used is zero-based. The forecast is based on cost estimates developed based on the scope of work for the project. SDG&E develops cost estimates based on construction labor rates, material costs, overhead rates, contract pricing/quotes, and other project specific details. When projects are completed, actual costs are compared to the estimate to verify the estimates are accurate. Any significant variances between the estimated cost for a project and the actual costs are scrutinized to determine whether cost estimate inputs need to be adjusted for future projects.

NSE - Zero-Based

N/A

Units - Zero-Based

ARFS/FBLK/PMS: # of nodes installed on a distribution circuit

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22256.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222560 - Early Fault Detection
Unit Measure: Nodes

Summary of Adjustments to Forecast:

In 2025 \$ (000)																		
	Base Forecast						Forecast Adjustments						Adjusted-Forecast					
Years	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031
Labor	406	379	872	828	984	818	6	7	13	11	13	11	412	386	885	839	997	829
NLbr	3,982	2,781	3,183	2,841	3,683	2,636	0	0	0	0	0	0	3,982	2,781	3,183	2,841	3,683	2,636
NSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	4,388	3,160	4,055	3,669	4,667	3,454	6	7	13	11	13	11	4,394	3,167	4,068	3,680	4,680	3,465
FTE	2.5	2.3	5.3	5.0	6.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	2.3	5.3	5.0	6.0	5.0
Units	99	95	1,068	1,050	1,083	1,048	0	0	0	0	0	0	99	95	1,068	1,050	1,083	1,048

Forecast Adjustment Details:

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2026	6	0	0	6	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2026 Total	6	0	0	6	0.0	0
2027	7	0	0	7	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2027 Total	7	0	0	7	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22256.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222560 - Early Fault Detection
Unit Measure: Nodes

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2028	13	0	0	13	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2028 Total	13	0	0	13	0.0	0
2029	11	0	0	11	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2029 Total	11	0	0	11	0.0	0
2030	13	0	0	13	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2030 Total	13	0	0	13	0.0	0
2031	11	0	0	11	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2031 Total	11	0	0	11	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22256.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222560 - Early Fault Detection
Unit Measure: Nodes

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Recorded (Nominal \$)*					
Labor	0	145	182	162	302
Non-Labor	0	6,385	5,817	3,279	5,458
NSE	0	0	0	0	0
Total	0	6,531	6,000	3,441	5,760
FTE	0.0	0.8	1.2	1.0	1.7
Units	0	0	0	0	0
Adjustments (Nominal \$) **					
Labor	156	0	1	12	0
Non-Labor	1,406	1,214	898	285	0
NSE	0	0	0	0	0
Total	1,563	1,214	899	297	0
FTE	0.0	0.0	0.1	0.1	0.0
Units	0	0	32	62	127
Recorded-Adjusted (Nominal \$)					
Labor	156	145	183	174	302
Non-Labor	1,406	7,599	6,715	3,563	5,458
NSE	0	0	0	0	0
Total	1,563	7,744	6,899	3,737	5,760
FTE	0.0	0.8	1.3	1.1	1.7
Units	0	0	32	62	127
Vacation & Sick (Nominal \$)					
Labor	24	21	25	24	44

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22256.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222560 - Early Fault Detection
Unit Measure: Nodes

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	24	21	25	24	44
FTE	0.0	0.1	0.2	0.2	0.3
Units	0	0	0	0	0
Escalation to 2025\$					
Labor	104	62	30	7	0
Non-Labor	814	2,843	980	130	0
NSE	0	0	0	0	0
Total	919	2,906	1,010	137	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Constant 2025\$)					
Labor	284	229	239	205	347
Non-Labor	2,221	10,442	7,695	3,693	5,458
NSE	0	0	0	0	0
Total	2,505	10,671	7,934	3,898	5,804
FTE	0.0	0.9	1.5	1.3	2.0
Units	0	0	32	62	127

* After company-wide exclusions of Non-GRC costs
 ** Refer to "Detail of Adjustments to Recorded" page for line item adjustments
 Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22256.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222560 - Early Fault Detection
Unit Measure: Nodes

Summary of Adjustments to Recorded:

		In Nominal \$(000)				
	Years	2021	2022	2023	2024	2025
Labor		156	0	1	12	0
Non-Labor		1,406	1,214	898	285	0
NSE		0	0	0	0	0
	Total	1,563	1,214	899	297	0
FTE		0.0	0.0	0.1	0.1	0.0
Units		0	0	32	62	127

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	0	0	0	0	0.0	0
Explanation:	Updated unit of measure					
2021	156	1,406	0	1,563	0.0	0
Explanation:	Align work paper level histoical actuals with current SAP/TM1 as a result of work order transfers (SAP Data Change)					
2021 Total	156	1,406	0	1,563	0.0	0
2022	0	1,214	0	1,214	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22256.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222560 - Early Fault Detection
Unit Measure: Nodes

Year	Labor	NLbr	NSE	Total	FTE	Units
Explanation: Adjustment to add back common FERC account FERC-jurisdiction costs for RO model carve-out						
2022 Total	0	1,214	0	1,214	0.0	0
2023	0	0	0	0	0.0	32
Explanation: Updated Units						
2023	0.841	898	0	899	0.1	0
Explanation: Adjustment to add back common FERC account FERC-jurisdiction costs for RO model carve-out						
2023 Total	0.841	898	0	899	0.1	32
2024	0	0	0	0	0.0	62
Explanation: Updated units						
2024	12	285	0	297	0.1	0
Explanation: Adjustment to add back common FERC account FERC-jurisdiction costs for RO model carve-out						
2024 Total	12	285	0	297	0.1	62
2025	0	0	0	0	0.0	127
Explanation: Updated 2025 Units and unit measure						
2025 Total	0	0	0	0	0.0	127

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 222560**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22256.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222560 - Early Fault Detection
Workpaper Detail: 222560.001 - RAMP - Early Fault Detection
Unit Measure: Nodes

In-Service Date: Not Applicable

Description:

The EFD Program encompasses the deployment of 3primary technologies: Advanced Radio Frequency Sensors (ARFS), Power Quality (PQ) Meters, and Pole-mounted multi-sensor (PMS) devices, across circuits located within High Fire Threat Districts (HFTD). Physical activities include:

- Installing ARFS sensors at approximately 4-kilometer intervals along selected circuits, covering all three phases from substation to the furthest branches.
- Deploying PQ meters at substations and field locations, including wiring, relay installation, and communication hardware setup. Upgrading existing PQ nodes and integrating new monitoring equipment into the network.
- Installing pole-mounted multi-sensor devices on every other pole for targeted circuits
- Establishing IT interfaces and synchronization systems to support real-time data collection and analysis.

The technical scope focuses on implementing advanced monitoring and analytics capabilities to improve system reliability and reduce fire risk. Key technical components include: ARFS technology for continuous radio frequency monitoring of partial discharge, enabling early detection of deteriorating components; PQ meters for high-resolution monitoring of power quality, fault location, and predictive analytics across transmission and distribution systems; Pole-mounted multi-sensor devices that continuously monitor electrical, physical, and environmental conditions; Integration of communication networks, back-office systems, and time synchronization protocols to ensure accurate and timely data flow; Deployment of software tools for signal filtering, data validation, and risk assessment reporting.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	389	363	862	816	974	806
Non-Labor	2,182	1,081	2,583	2,341	3,283	2,336
NSE	0	0	0	0	0	0
Total	2,571	1,444	3,445	3,157	4,257	3,142

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22256.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222560 - Early Fault Detection
Workpaper Detail: 222560.001 - RAMP - Early Fault Detection
Unit Measure: Nodes

In-Service Date: Not Applicable

FTE	2.4	2.2	5.2	4.9	5.9	4.9
Units	99	95	1,068	1,050	1,083	1,048

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22256.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222560 - Early Fault Detection
Workpaper Detail: 222560.002 - RAMP - Early Fault Detection - iPredict Software
Unit Measure: Nodes

In-Service Date: Not Applicable

Description:

Integration of communication networks back-office systems and time synchronization protocols to ensure accurate and timely data flow .
 • Deployment of software tools for signal filtering, data validation, and risk assessment reporting.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	23	23	23	23	23	23
Non-Labor	1,800	1,700	600	500	400	300
NSE	0	0	0	0	0	0
Total	1,823	1,723	623	523	423	323
FTE	0.1	0.1	0.1	0.1	0.1	0.1
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 222560

TY2028 GRC FORECAST - DETAILS

Workpaper/Mitigation:

222560 Early Fault Detection

222560 Early Fault Detection			2026		2027		2028		2029		2030		2031		Comments
Line Item	Unit Description	Labor/Non-Labor/NSE	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	
1	Mgmt & Non-Union Labor (ARFS)	Labor RAMP	42	\$ 75	\$ 3,150										
2	Union Labor (ARFS)	Labor RAMP	790	\$ 85	\$ 66,850										
3	Materials, Warehouse (ARFS)	Non-Labor RAMP	16	\$ 2,064	\$ 33,024										
4	Materials, Vendor Procured (ARFS)	Non-Labor RAMP	16	\$ 2,418	\$ 38,688										
5	Contract Services (ARFS)	Non-Labor RAMP	16	\$ 22,414	\$ 358,624										
6	Mgmt & Non-Union Labor (PQ_Substation)	Labor RAMP	924	\$ 75	\$ 69,300	1,174	\$ 75	\$ 88,050	1,248	\$ 75	\$ 93,600	2,072	\$ 75	\$ 155,400	
7	Union Labor (PQ_Substation)	Labor RAMP	998	\$ 85	\$ 84,830	1,268	\$ 85	\$ 107,780	1,368	\$ 85	\$ 116,280	2,398	\$ 85	\$ 203,830	
8	Materials, Warehouse (PQ_Substation)	Non-Labor RAMP	37	\$ 188	\$ 6,936	47	\$ 188	\$ 8,836	47	\$ 188	\$ 8,836	50	\$ 188	\$ 9,375	
9	Materials, Vendor Procured (PQ_Substation)	Non-Labor RAMP	37	\$ 2,300	\$ 85,100	47	\$ 2,300	\$ 108,100	47	\$ 2,300	\$ 108,100	50	\$ 2,300	\$ 115,000	
10	Contract Services (PQ_Substation)	Non-Labor RAMP	37	\$ 5,845	\$ 216,465	47	\$ 4,601	\$ 216,949	47	\$ 4,601	\$ 216,949	50	\$ 4,325	\$ 216,250	
11	Mgmt & Non-Union Labor (FBLK)	Labor RAMP	23	\$ 75	\$ 1,725	24	\$ 75	\$ 1,800	11	\$ 75	\$ 825				
12	Union Labor (FBLK)	Labor RAMP	1,303	\$ 85	\$ 110,755	1,339	\$ 85	\$ 113,815	595	\$ 85	\$ 50,575				
13	Materials, Warehouse (FBLK)	Non-Labor RAMP													
14	Materials, Vendor Procured (FBLK)	Non-Labor RAMP	46	\$ 6,183	\$ 284,418	48	\$ 13,533	\$ 649,604	21	\$ 9,838	\$ 207,022				
15	Contract Services (FBLK)	Non-Labor RAMP	46	\$ 2,058	\$ 93,728	48	\$ 2,058	\$ 97,824	21	\$ 2,058	\$ 43,218				
16	Mgmt & Non-Union Labor (PMS)	Labor RAMP	-						1,000	\$ 325	\$ 325,000	1,000	\$ 325	\$ 325,000	
17	Union Labor (PMS)	Labor RAMP	-						1,000	\$ 375	\$ 375,000	1,000	\$ 375	\$ 375,000	
18	Materials, Vendor Procured (PMS)	Non-Labor RAMP	-						1,000	\$ 2,000	\$ 2,000,000	1,000	\$ 2,000	\$ 2,000,000	
19	Mgmt & Non-Union Labor (Predict)	Labor RAMP	273	\$ 75	\$ 20,475	273	\$ 75	\$ 20,475	273	\$ 75	\$ 20,475	273	\$ 75	\$ 20,475	
20	Contract Services (Predict)	Non-Labor RAMP	1	\$ 1,800,000	\$ 1,800,000	1	\$ 1,700,000	\$ 1,700,000	1	\$ 600,000	\$ 600,000	1	\$ 500,000	\$ 500,000	

Summary				\$ 405,851	\$ 378,874	\$ 873,718	\$ 827,643	\$ 983,759	\$ 818,182	\$ 4,288,067
	Labor	RAMP		\$3,981,071	\$2,780,566	\$3,182,072	\$2,840,624	\$3,682,712	\$3,635,649	\$19,104,195
	Non-Labor	RAMP		\$-	\$-	\$-	\$-	\$-	\$-	\$-
	NSE	RAMP		\$-	\$-	\$-	\$-	\$-	\$-	\$-
	Subtotal RAMP			\$4,387,522	\$3,159,440	\$4,054,730	\$3,668,267	\$4,666,471	\$3,453,831	\$23,390,261
	Labor	Non-RAMP		\$-	\$-	\$-	\$-	\$-	\$-	\$-
	Non-Labor	Non-RAMP		\$-	\$-	\$-	\$-	\$-	\$-	\$-
	NSE	Non-RAMP		\$-	\$-	\$-	\$-	\$-	\$-	\$-
	Subtotal Non-RAMP			\$-	\$-	\$-	\$-	\$-	\$-	\$-
	Total Project Forecast			\$4,387,522	\$3,159,440	\$4,054,730	\$3,668,267	\$4,666,471	\$3,453,831	\$23,390,261

The variance between the direct costs found in workpapers and the supplemental workpapers supporting Ex. SDGE-07 are due to a system wide adjustment to reflect changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.

**Beginning of Workpaper Group
222590 - Risk-Informed Drone Inspections**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222590 - Risk-Informed Drone Inspections
Unit Measure: No feasible units

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Zero-Based	127	85	60	35	22	0	0	0	0	0	0
Non-Labor	Zero-Based	7,919	10,695	4,954	1,886	10	0	1,000	800	800	600	600
NSE	Zero-Based	0	0	0	0	0	0	0	0	0	0	0
Total		8,047	10,780	5,014	1,921	32	0	1,000	800	800	600	600
FTE	Zero-Based	0.5	0.5	0.5	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Units	Zero-Based	0	0	0	0	0	0	0	0	0	0	0

Business Purpose:

The purpose of Risk Informed Drone Inspections is to reduce wildfire risk by using drones, predictive analytics, and risk modeling to identify, prioritize, and inspect the highest-risk overhead electric assets—improving hazard detection, inspection efficiency, worker safety, and overall system reliability. The use of drones to collect imagery enhances an inspector’s ability to identify potential fire hazards related to certain types of issues or where conditions such as terrain and vegetation density make full detailed inspections challenging.

Physical Description:

RIDI enhances fixed-interval inspection cycles with a proactive, data-driven, risk-informed approach. RIDI uses current data and predictive analytics to prioritize assets and focuses on assets with the highest probability of failure and highest potential wildfire impact. This allows inspection resources to be concentrated where they provide the most wildfire risk reduction.

Each year, the Inspection Prioritization Model is updated using insights from the prior year’s inspections, the latest asset information (e.g. age, material), environmental and wind-risk data, and updated probability of failure and consequence of failure estimates. The scope of inspections can

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222590 - Risk-Informed Drone Inspections
Unit Measure: No feasible units

therefore adapt to changing conditions, aging infrastructure, and evolving fire risks. Finally, the scope is refined to eliminate the duplication of inspections within the same calendar year and to account for navigation efficiency .

Additionally, ad-hoc drone inspections of transmission structures and components for operational and reliability reasons are performed as needed. Inspections of transmission structures and components are also performed where distribution is present (i.e., where there is distribution underbuild on a transmission structure) or as part of a special inspection.

Finally, QA/QC is embedded in the program through both human and machine resources. An Inspection Supervisor reviews a percentage of inspections to validate that the correct condition codes are assigned, required images are captured, and inspection completeness meets compliance requirements. In addition, RIDI imagery feeds into Intelligent Image Processing (IIP) models to validate both model outputs and human findings. This approach helps machine learning models correctly identify potential hazards, track false positives/negatives, capture discrepancies missed by inspectors for repair, and deliver feedback to improve inspector quality and training.

Project Justification:

RIDI uses drones to collect imagery, improving traditional ground inspections by providing a “birds eye view” of overhead facilities, as well as high resolution imagery of overhead equipment and components. The use of drones to collect imagery enhances an inspector’s ability to identify potential fire hazards related to certain types of issues or where conditions such as terrain and vegetation density make full detailed inspections challenging. Issues that are more readily observed by drones include damaged arrestors, damaged insulators, issues with pole top work, issues with armor rods, crossarm or pole top damage, exposed connections, loose hardware, improper splices, and damaged conductors.

By identifying these issues earlier, RIDI reduces both the likelihood and consequence of ignition. An analysis of RIDI findings revealed that the program expedited the identification of emergency damages by approximately 29 months over Overhead Details inspections and approximately 6 months over patrols. These inspections also reduced potential outages to customers through identification and remediation of emergency damages and helped identify damages on overhead distribution poles located on potential PSPS circuits, allowing for wind speed adjustments and avoiding potential failures that could have resulted in an ignition event.

Images and inspection findings have also been used to build asset identification and damage detection models to support Intelligent Image

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222590 - Risk-Informed Drone Inspections
Unit Measure: No feasible units

Processing (IIP) technology, which is used to process imagery data, improve the quality of the RIDI assessments, and enhance the inspection risk prioritization model.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222590 - Risk-Informed Drone Inspections
Unit Measure: No feasible units

Forecast Methodology:

Labor - Zero-Based

There are no labor costs associated with this mitigation.

Non-Labor - Zero-Based

The forecast method is zero-based because the costs included are limited to IT expenditures. These costs include annual updates to the Inspection Prioritization Model, asset attributes, environmental and wind risk data, and probability and consequence of failure estimates drive costs associated with data management, model refinement, and system integration to adapt inspection scope and improve navigation efficiency.

NSE - Zero-Based

N/A

Units - Zero-Based

There is not a feasible unit to use for C534 Risk-Informed Drone Inspections. The capital spend for this mitigation is specific to IT costs only.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222590 - Risk-Informed Drone Inspections
Unit Measure: No feasible units

Summary of Adjustments to Forecast:

In 2025 \$ (000)																		
Years	Base Forecast						Forecast Adjustments						Adjusted-Forecast					
	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031
Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NLbr	0	1,000	800	800	600	600	0	0	0	0	0	0	0	1,000	800	800	600	600
NSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1,000	800	800	600	600	0	0	0	0	0	0	0	1,000	800	800	600	600
FTE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Forecast Adjustment Details

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2026 Total	0	0	0	0	0.0	0
2027 Total	0	0	0	0	0.0	0
2028 Total	0	0	0	0	0.0	0
2029 Total	0	0	0	0	0.0	0
2030 Total	0	0	0	0	0.0	0
2031 Total	0	0	0	0	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222590 - Risk-Informed Drone Inspections
Unit Measure: No feasible units

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Recorded (Nominal \$)*					
Labor	199	936	3,459	8,017	5,537
Non-Labor	12,269	50,376	70,128	63,549	40,530
NSE	0	0	0	0	0
Total	12,469	51,311	73,587	71,566	46,066
FTE	0.3	5.3	19.0	39.2	25.8
Units	0	0	0	0	0
Adjustments (Nominal \$) **					
Labor	-129	-882	-3,413	-7,988	-5,517
Non-Labor	-7,254	-42,593	-65,804	-61,730	-40,520
NSE	0	0	0	0	0
Total	-7,383	-43,474	-69,217	-69,717	-46,037
FTE	0.1	-4.9	-18.6	-38.9	-25.7
Units	0	0	0	0	0
Recorded-Adjusted (Nominal \$)					
Labor	70	54	46	30	19
Non-Labor	5,016	7,783	4,324	1,819	10
NSE	0	0	0	0	0
Total	5,086	7,837	4,369	1,849	29
FTE	0.4	0.4	0.4	0.3	0.1
Units	0	0	0	0	0
Vacation & Sick (Nominal \$)					
Labor	11	8	6	4	3

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222590 - Risk-Informed Drone Inspections
Unit Measure: No feasible units

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	11	8	6	4	3
FTE	0.1	0.1	0.1	0.1	0.1
Units	0	0	0	0	0
Escalation to 2025\$					
Labor	47	23	8	1	0
Non-Labor	2,904	2,912	631	66	0
NSE	0	0	0	0	0
Total	2,950	2,935	638	68	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Constant 2025\$)					
Labor	127	85	60	35	22
Non-Labor	7,919	10,695	4,954	1,886	10
NSE	0	0	0	0	0
Total	8,047	10,780	5,014	1,921	32
FTE	0.5	0.5	0.5	0.4	0.2
Units	0	0	0	0	0

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222590 - Risk-Informed Drone Inspections
Unit Measure: No feasible units

Summary of Adjustments to Recorded:

		In Nominal \$(000)				
	Years	2021	2022	2023	2024	2025
Labor		-129	-882	-3,413	-7,988	-5,517
Non-Labor		-7,254	-42,593	-65,804	-61,730	-40,520
NSE		0	0	0	0	0
Total		-7,383	-43,474	-69,217	-69,717	-46,037
FTE		0.1	-4.9	-18.6	-38.9	-25.7
Units		0	0	0	0	0

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	-139	-7,989	0	-8,128	0.0	0
Explanation:	To transfer capital repair and replacement costs to Workpaper 002390 (CMP Repairs and Replacements).					
2021	10	735	0	745	0.1	0
Explanation:	Adjustment to add back common FERC account FERC-jurisdiction costs for RO model carve-out					
2021 Total	-129	-7,254	0	-7,383	0.1	0
2022	-890	-43,745	0	-44,635	-5.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222590 - Risk-Informed Drone Inspections
Unit Measure: No feasible units

Year	Labor	NLbr	NSE	Total	FTE	Units
Explanation: To transfer capital repair and replacement costs to Workpaper 002390 (CMP Repairs and Replacements).						
2022	8	1,152	0	1,160	0.1	0
Explanation: Adjustment to add back common FERC account FERC-jurisdiction costs for RO model carve-out						
2022 Total	-882	-42,593	0	-43,474	-4.9	0
2023	-3,420	-66,438	0	-69,857	-18.7	0
Explanation: To transfer capital repair and replacement costs to Workpaper 002390 (CMP Repairs and Replacements).						
2023	7	633	0	640	0.1	0
Explanation: Adjustment to add back common FERC account FERC-jurisdiction costs for RO model carve-out						
2023 Total	-3,413	-65,804	0	-69,217	-18.6	0
2024	-7,994	-62,147	0	-70,141	-39.0	0
Explanation: To transfer capital repair and replacement costs to Workpaper 002390 (CMP Repairs and Replacements).						
2024	6	417	0	424	0.1	0
Explanation: Adjustment to add back common FERC account FERC-jurisdiction costs for RO model carve-out						
2024 Total	-7,988	-61,730	0	-69,717	-38.9	0
2025	-5,517	-40,520	0	-46,037	-25.7	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222590 - Risk-Informed Drone Inspections
Unit Measure: No feasible units

Year	Labor	NLbr	NSE	Total	FTE	Units
Explanation: To transfer capital repair and replacement costs to Workpaper 002390 (CMP Repairs and Replacements).						
2025 Total	-5,517	-40,520	0	-46,037	-25.7	0

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 222590**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222590 - Risk-Informed Drone Inspections
Workpaper Detail: 222590.001 - RAMP - Risk-Informed Drone Inspections
Unit Measure: No feasible units

In-Service Date: Not Applicable

Description:

The purpose of the RIDI Program is to reduce wildfire risk by using drones, predictive analytics, and risk modeling to identify, prioritize, and inspect the highest-risk overhead electric assets—improving hazard detection, inspection efficiency, worker safety, and overall system reliability. The use of drones to collect imagery enhances an inspector’s ability to identify potential fire hazards related to certain types of issues or where conditions such as terrain and vegetation density make full detailed inspections challenging.

RIDI enhances fixed-interval inspection cycles with a proactive, data-driven, risk-informed approach. RIDI uses current data and predictive analytics to prioritize assets and focuses on assets with the highest probability of failure and highest potential wildfire impact. This allows inspection resources to be concentrated where they provide the most wildfire risk reduction.

Each year, the Inspection Prioritization Model is updated using insights from the prior year’s inspections , the latest asset information (e.g. age, material), environmental and wind-risk data, and updated probability of failure and consequence of failure estimates. The scope of inspections can therefore adapt to changing conditions, aging infrastructure, and evolving fire risks. Finally, the scope is refined to eliminate the duplication of inspections within the same calendar year and to account for navigation efficiency .

Additionally, ad-hoc drone inspections of transmission structures and components for operational and reliability reasons are performed as needed. Inspections of transmission structures and components are also performed where distribution is present (i.e., where there is distribution underbuild on a transmission structure) or as part of a special inspection.

Finally, QA/QC is embedded in the program through both human and machine resources. An Inspection Supervisor reviews a percentage of inspections to validate that the correct condition codes are assigned, required images are captured, and inspection completeness meets compliance requirements. In addition, RIDI imagery feeds into Intelligent Image Processing (IIP) models to validate both model outputs and human findings. This approach helps machine learning models correctly identify potential hazards, track false positives/negatives, capture discrepancies missed by inspectors for repair, and deliver feedback to improve inspector quality and training.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22259.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 222590 - Risk-Informed Drone Inspections
Workpaper Detail: 222590.001 - RAMP - Risk-Informed Drone Inspections
Unit Measure: No feasible units

In-Service Date: Not Applicable

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	0	0	0	0
Non-Labor	0	1,000	800	800	600	600
NSE	0	0	0	0	0	0
Total	<u>0</u>	<u>1,000</u>	<u>800</u>	<u>800</u>	<u>600</u>	<u>600</u>
FTE	0.0	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 222590

TY2028 GRC FORECAST - DETAILS

Workpaper/Mitigation: 222590 - Risk-Informed Drone Inspections

Line Item	Unit Description	Labor/Non-Labor/ NSE	RAMP/Non-RAMP	Unit Metric (ea./ft./mile)	2026			2027			2028			2029			2030			2031			Total Cost
					# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	
1	IT - Drones	Non-Labor	RAMP	ea			\$ -			\$ 1,000,000			\$ 800,000			\$ 800,000			\$ 600,000			\$ 600,000	\$ 3,800,000
Summary																							
		Labor	RAMP				\$ -			\$ 800,000			\$ 800,000			\$ 800,000			\$ 600,000			\$ 600,000	\$ -
		Non-Labor	RAMP				\$ 1,000,000			\$ 800,000			\$ 800,000			\$ 800,000			\$ 600,000			\$ 600,000	\$ 3,800,000
		NSE	RAMP				\$ -			\$ -			\$ -			\$ -			\$ -			\$ -	\$ -
	Subtotal RAMP						\$ -			\$ 800,000			\$ 800,000			\$ 800,000			\$ 600,000			\$ 600,000	\$ 3,800,000
		Labor	Non-RAMP				\$ -			\$ -			\$ -			\$ -			\$ -			\$ -	\$ -
		Non-Labor	Non-RAMP				\$ -			\$ -			\$ -			\$ -			\$ -			\$ -	\$ -
		NSE	Non-RAMP				\$ -			\$ -			\$ -			\$ -			\$ -			\$ -	\$ -
	Subtotal Non-RAMP						\$ -			\$ -			\$ -			\$ -			\$ -			\$ -	\$ -
	Total Project Forecast						\$ -			\$ 1,000,000			\$ 800,000			\$ 800,000			\$ 600,000			\$ 600,000	\$ 3,800,000

Beginning of Workpaper Group
231280 - Cleveland National Forest Fire Hardening

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23128.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 231280 - Cleveland National Forest Fire Hardening
Unit Measure: No feasible units

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Zero-Based	4,173	136	77	39	27	60	44	44	44	0	0
Non-Labor	Zero-Based	15,552	2,068	1,503	1,032	425	377	255	143	110	25	0
NSE	Zero-Based	0	0	0	0	0	0	0	0	0	0	0
Total		19,724	2,204	1,581	1,071	451	437	299	187	154	25	0
FTE	Zero-Based	15.0	0.7	0.5	0.2	0.2	0.4	0.3	0.3	0.3	0.0	0.0
Units	Zero-Based	0	0	0	0	0	0	0	0	0	0	0

Business Purpose:

The Cleveland National Forest (CNF) Fire Hardening program hardened distribution electric infrastructure within CNF boundaries by replacing wood poles with steel poles, replacing aged conductor with new high-strength conductor, and associated upgrades. The CNF hardening projects were all completed in 2021, however, there are ongoing environmental restoration costs associated with the program.

Physical Description:

This program contains the costs associated with environmental restoration after CNF construction projects are completed.

Project Justification:

Environmental restoration associated with impacts of construction related to the CNF Fire Hardening projects is necessary to fulfill commitments to promote sustainability.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23128.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 231280 - Cleveland National Forest Fire Hardening
Unit Measure: No feasible units

Forecast Methodology:

Labor - Zero-Based

Zero based. Historical costs included work to fire harden distribution circuits within the CNF. This work is complete and these historical costs are therefore not applicable to future restoration work. The forecast is based on cost estimates that were developed based on the specific scope of work for the project. Cost estimates are based on current construction labor rates, material costs, contract pricing/quotes, and other project specific details.

Non-Labor - Zero-Based

Zero based. Historical costs included work to fire harden distribution circuits within the CNF. This work is complete and these historical costs are therefore not applicable to future restoration work. The forecast is based on cost estimates that were developed based on the specific scope of work for the project. Cost estimates are based on current construction labor rates, material costs, contract pricing/quotes, and other project specific details.

NSE - Zero-Based

Not applicable.

Units - Zero-Based

The CNF Program consists of costs associated with environmental restoration following construction activities. This includes the use of drones, crew trucks, herbicides, seed collection and processing equipment, and the lease of our seed facility. Because the program encompasses a wide range of restoration, monitoring, and operational activities, there is no single unit of measure that can accurately and consistently represent the full scope of work performed.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23128.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 231280 - Cleveland National Forest Fire Hardening
Unit Measure: No feasible units

Summary of Adjustments to Forecast:

In 2025 \$ (000)																		
Years	Base Forecast						Forecast Adjustments						Adjusted-Forecast					
	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031
Labor	59	43	43	43	0	0	1	1	1	1	0	0	60	44	44	44	0	0
NLbr	377	255	143	110	25	0	0	0	0	0	0	0	377	255	143	110	25	0
NSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	436	298	186	153	25	0	1	1	1	1	0	0	437	299	187	154	25	0
FTE	0.4	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.3	0.3	0.3	0.0	0.0
Units	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Forecast Adjustment Details:

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2026	1	0	0	1	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2026 Total	1	0	0	1	0.0	0
2027	1	0	0	1	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2027 Total	1	0	0	1	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23128.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 231280 - Cleveland National Forest Fire Hardening
Unit Measure: No feasible units

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2028	1	0	0	1	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2028 Total	1	0	0	1	0.0	0
2029	1	0	0	1	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2029 Total	1	0	0	1	0.0	0
2030 Total	0	0	0	0	0.0	0
2031 Total	0	0	0	0	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23128.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 231280 - Cleveland National Forest Fire Hardening
Unit Measure: No feasible units

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Recorded (Nominal \$)*					
Labor	2,297	86	59	34	23
Non-Labor	9,854	1,505	1,315	998	425
NSE	0	0	0	0	0
Total	12,152	1,591	1,374	1,031	448
FTE	12.8	0.6	0.4	0.2	0.2
Units	0	0	0	0	0
Adjustments (Nominal \$) **					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Nominal \$)					
Labor	2,297	86	59	34	23
Non-Labor	9,854	1,505	1,315	998	425
NSE	0	0	0	0	0
Total	12,152	1,591	1,374	1,031	448
FTE	12.8	0.6	0.4	0.2	0.2
Units	0	0	0	0	0
Vacation & Sick (Nominal \$)					
Labor	346	13	8	5	3

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23128.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 231280 - Cleveland National Forest Fire Hardening
Unit Measure: No feasible units

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	346	13	8	5	3
FTE	2.2	0.1	0.1	0.0	0.0
Units	0	0	0	0	0
Escalation to 2025\$					
Labor	1,529	37	10	1	0
Non-Labor	5,698	563	188	34	0
NSE	0	0	0	0	0
Total	7,227	600	198	35	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Constant 2025\$)					
Labor	4,173	136	77	39	27
Non-Labor	15,552	2,068	1,503	1,032	425
NSE	0	0	0	0	0
Total	19,724	2,204	1,581	1,071	451
FTE	15.0	0.7	0.5	0.2	0.2
Units	0	0	0	0	0

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23128.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 231280 - Cleveland National Forest Fire Hardening
Unit Measure: No feasible units

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2021	2022	2023	2024	2025
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	0	0	0	0	0.0	0
2021 Total	0	0	0	0	0.0	0
2022 Total	0	0	0	0	0.0	0
2023 Total	0	0	0	0	0.0	0

Explanation: To update the unit of measure.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23128.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 231280 - Cleveland National Forest Fire Hardening
Unit Measure: No feasible units

Year	Labor	NLbr	NSE	Total	FTE	Units
2024 Total	0	0	0	0	0.0	0
2025 Total	0	0	0	0	0.0	0

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 231280**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23128.0
Category: A. Grid Design Operations and Maintenance
Category-Sub: 1. Grid Design Operations and Maintenance
Workpaper Group: 231280 - Cleveland National Forest Fire Hardening
Workpaper Detail: 231280.001 - RAMP - Cleveland National Forest Fire Hardening
Unit Measure: No feasible units

In-Service Date: Not Applicable

Description:

The Cleveland National Forest (CNF) Fire Hardening program hardened distribution electric infrastructure within CNF boundaries by replacing wood poles with steel poles, replacing aged conductor with new high-strength conductor, and associated upgrades. The CNF hardening projects were all completed in 2021, however, there are ongoing environmental restoration costs associated with the program.

This program contains the costs associated with environmental restoration after CNF construction projects are completed.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	60	44	44	44	0	0
Non-Labor	377	255	143	110	25	0
NSE	0	0	0	0	0	0
Total	437	299	187	154	25	0
FTE	0.4	0.3	0.3	0.3	0.0	0.0
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 231280

TY2028 GRC FORECAST - DETAILS

Workpaper/Mitigation: 231280 Cleveland National Forest Fire Hardening

231280 - Cleveland National Forest Fire Hardening			2026			2027			2028			2029			2030			2031				
Line Item	Program Description	Unit Description	Labor/Non-Labor/ NSE	RAMP/Non-RAMP	Unit Metric (ea./ft./mile)	# of units	Cost per unit*	Total Cost	# of units	Cost per unit*	Total Cost	# of units	Cost per unit*	Total Cost	# of units	Cost per unit*	Total Cost	# of units	Cost per unit*	Total Cost		
1	CNF PLRP Project (231280)	FFEs	Labor	RAMP	Hours	915	\$ 65	\$ 59,475	665	\$ 65	\$ 43,225	665	\$ 65	\$ 43,225	-	\$ -	\$ -	-	\$ -	\$ -		
2	CNF PLRP Project (231280)	Contractors	Non-Labor	RAMP	ea	3,770	\$ 100	\$ 376,950	2,553	\$ 100	\$ 255,283	1,437	\$ 100	\$ 142,699	1,096	\$ 100	\$ 109,596	249	\$ 100	\$ 24,852	-	\$ -
Summary			Labor	RAMP			\$ 59,455		\$ 43,240		\$ 43,240		\$ 43,240		\$ -		\$ -		\$ -	\$ 188,176		
			Non-Labor	RAMP			\$ 376,955		\$ 255,283		\$ 142,699		\$ 109,596		\$ 24,852		\$ -		\$ -	\$ 909,884		
			NSE	RAMP			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -		
			Subtotal RAMP				\$ 436,410		\$ 298,523		\$ 185,939		\$ 152,836		\$ 24,852		\$ -		\$ -	\$ 1,098,060		
			Labor	Non-RAMP			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -		
			Non-Labor	Non-RAMP			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -		
			NSE	Non-RAMP			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -		
			Subtotal Non-RAMP				\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -		
			Total Project Forecast				\$ 436,410		\$ 298,523		\$ 185,939		\$ 152,836		\$ 24,852		\$ -		\$ -	\$ 1,098,060		

The variance between the direct costs found in workpapers and the supplemental workpapers supporting Ex. SDGE-07 are due to a system wide adjustment to reflect changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE 20.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Category: B. Vegetation Management and Inspections
Workpaper: VARIOUS

Summary for Category: B. Vegetation Management and Inspections

	In 2025\$ (000) Incurred Costs						
	Adjusted-Recorded	Adjusted-Forecast					
	2025	2026	2027	2028	2029	2030	2031
Labor	215	746	749	1,767	1,765	831	832
Non-Labor	1,964	1,852	1,852	9,853	6,403	3,843	3,468
NSE	0	0	0	0	0	0	0
Total	2,179	2,598	2,601	11,620	8,168	4,674	4,300
FTE	1.3	4.6	4.6	12.4	12.4	6.4	6.4

Workpapers belonging to this Category:

268860 Application Support and Risk Analytics

Labor	215	746	749	747	746	745	746
Non-Labor	1,964	1,852	1,852	1,496	1,496	3,126	2,751
NSE	0	0	0	0	0	0	0
Total	2,179	2,598	2,601	2,243	2,242	3,871	3,497
FTE	1.3	4.6	4.6	4.6	4.6	4.6	4.6

Unit Measure: No feasible units

Units	0	0	0	0	0	0	0
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26886A QA/QC

Labor	0	0	0	46	46	46	46
Non-Labor	0	0	0	358	358	358	358
NSE	0	0	0	0	0	0	0
Total	0	0	0	404	404	404	404
FTE	0.0	0.0	0.0	0.4	0.4	0.4	0.4

Unit Measure: No feasible units

Units	0	0	0	0	0	0	0
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Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Category: B. Vegetation Management and Inspections
Workpaper: VARIOUS

	In 2025\$ (000) Incurred Costs						
	Adjusted-Recorded	Adjusted-Forecast					
	2025	2026	2027	2028	2029	2030	2031
26886B Off Cycle Patrol							
Labor	0	0	0	40	40	40	40
Non-Labor	0	0	0	359	359	359	359
NSE	0	0	0	0	0	0	0
Total	0	0	0	399	399	399	399
FTE	0.0	0.0	0.0	1.4	1.4	1.4	1.4
Unit Measure: No feasible units							
Units	0	0	0	0	0	0	0
268900 Integrated Work Management & Risk Assessment Platform							
Labor	0	0	0	934	933	0	0
Non-Labor	0	0	0	7,640	4,190	0	0
NSE	0	0	0	0	0	0	0
Total	0	0	0	8,574	5,123	0	0
FTE	0.0	0.0	0.0	6.0	6.0	0.0	0.0
Unit Measure: No feasible units							
Units	0	0	0	0	0	0	0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
268860 - Application Support and Risk Analytics

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26886.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 268860 - Application Support and Risk Analytics
Unit Measure: No feasible units

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Zero-Based	0	0	0	0	215	746	749	747	746	745	746
Non-Labor	Zero-Based	0	0	0	0	1,964	1,852	1,852	1,496	1,496	3,126	2,751
NSE	Zero-Based	0	0	0	0	0	0	0	0	0	0	0
Total		0	0	0	0	2,179	2,598	2,601	2,243	2,242	3,871	3,497
FTE	Zero-Based	0.0	0.0	0.0	0.0	1.3	4.6	4.6	4.6	4.6	4.6	4.6
Units	Zero-Based	0	0	0	0	0	0	0	0	0	0	0

Business Purpose:

Technology Lifecycle Management team – Drive the continuous modernization and enhancement of vegetation management software systems that support core field activities (pre inspection, trimming, clearing, and auditing). This work strengthens compliance, advances fire risk mitigation capabilities, improves reporting and billing accuracy, and sustains system reliability through proactive lifecycle improvements and availability management.

Vegetation Data Foundation & Reporting – Deliver high-quality, secure, and trusted vegetation-related data products that enable accurate operational, financial, compliance, and regulatory reporting. This includes enhancing data pipelines, integrating financial datasets, and providing reliable, auditable data to support business continuity and enterprise data strategy.

Physical Description:

The Technology Lifecycle Management team drives the continuous improvement and modernization of critical vegetation -management applications supporting field operations. By enhancing platform stability, streamlining incident response, and strengthening audit-ready inspection and reporting

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26886.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 268860 - Application Support and Risk Analytics
Unit Measure: No feasible units

capabilities, the team ensures scalable, reliable systems that meet regulatory and operational demands.

The Vegetation Data Foundation & Reporting program provides the cloud-based data pipelines, curated datasets, and reporting products needed for accurate operational, financial, and compliance reporting, supported by strong governance, security, and data-quality controls. Together, these programs ensure that both day-to-day vegetation operations and enterprise-level reporting are reliable, auditable, and continuously supported.

Project Justification:

These initiatives support the ongoing modernization and resilience of vegetation-management operations, ensuring regulatory, safety, and reporting requirements are consistently met. The Technology Lifecycle Management team advances essential field and operational systems that enable inspections, trimming workflows, and accurate, audit-ready records.

The Data Foundation program provides the secure, high-quality data pipelines and reporting capabilities needed for accurate financial, operational, and compliance outputs. Together, they reduce operational risk, improve data integrity, maintain system reliability, and ensure the organization can continue to meet safety, regulatory, and business continuity requirements.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26886.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 268860 - Application Support and Risk Analytics
Unit Measure: No feasible units

Forecast Methodology:

Labor - Zero-Based

A zero-based methodology was utilized to develop the labor forecast because it provides a more accurate estimate of future costs than historical or linear methods, which fail to account for rapid technological advancements. This approach builds costs from the ground up using current market data and expert input, rather than relying on outdated patterns. Detailed estimates are developed by internal and external delivery teams (where applicable) experienced in similar projects, covering resources such as FTEs, systems, and environments, and tailored to each project's scope and schedule.

Non-Labor - Zero-Based

A zero-based methodology was utilized to develop the non-labor forecast because it provides a more accurate estimate of future costs than historical or linear methods, which fail to account for rapid technological advancements. This approach builds costs from the ground up using current market data and expert input, rather than relying on outdated patterns. Detailed estimates are developed by internal and external delivery teams (where applicable) experienced in similar projects, covering resources such as FTEs, systems, and environments, and tailored to each project's scope and schedule.

NSE - Zero-Based

N/A

Units - Zero-Based

There are no feasible units because costs are developed based on project specific scope, schedules, and required resources rather than discrete, countable outputs.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26886.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 268860 - Application Support and Risk Analytics
Unit Measure: No feasible units

Summary of Adjustments to Forecast:

In 2025 \$ (000)																		
	Base Forecast						Forecast Adjustments						Adjusted-Forecast					
Years	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031
Labor	736	736	736	736	736	736	10	13	11	10	9	10	746	749	747	746	745	746
NLbr	1,852	1,852	1,496	1,496	3,126	2,751	0	0	0	0	0	0	1,852	1,852	1,496	1,496	3,126	2,751
NSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2,588	2,588	2,232	2,232	3,862	3,487	10	13	11	10	9	10	2,598	2,601	2,243	2,242	3,871	3,497
FTE	4.6	4.6	4.6	4.6	4.6	4.6	0.0	0.0	0.0	0.0	0.0	0.0	4.6	4.6	4.6	4.6	4.6	4.6
Units	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Forecast Adjustment Details:

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2026	10	0	0	10	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2026 Total	10	0	0	10	0.0	0
2027	13	0	0	13	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2027 Total	13	0	0	13	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26886.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 268860 - Application Support and Risk Analytics
Unit Measure: No feasible units

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2028	11	0	0	11	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2028 Total	11	0	0	11	0.0	0
2029	10	0	0	10	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2029 Total	10	0	0	10	0.0	0
2030	9	0	0	9	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2030 Total	9	0	0	9	0.0	0
2031	10	0	0	10	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2031 Total	10	0	0	10	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26886.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 268860 - Application Support and Risk Analytics
Unit Measure: No feasible units

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Recorded (Nominal \$)*					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Adjustments (Nominal \$) **					
Labor	0	0	0	0	188
Non-Labor	0	0	0	0	1,964
NSE	0	0	0	0	0
Total	0	0	0	0	2,151
FTE	0.0	0.0	0.0	0.0	1.1
Units	0	0	0	0	0
Recorded-Adjusted (Nominal \$)					
Labor	0	0	0	0	188
Non-Labor	0	0	0	0	1,964
NSE	0	0	0	0	0
Total	0	0	0	0	2,151
FTE	0.0	0.0	0.0	0.0	1.1
Units	0	0	0	0	0
Vacation & Sick (Nominal \$)					
Labor	0	0	0	0	27

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26886.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 268860 - Application Support and Risk Analytics
Unit Measure: No feasible units

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	27
FTE	0.0	0.0	0.0	0.0	0.2
Units	0	0	0	0	0
Escalation to 2025\$					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Constant 2025\$)					
Labor	0	0	0	0	215
Non-Labor	0	0	0	0	1,964
NSE	0	0	0	0	0
Total	0	0	0	0	2,179
FTE	0.0	0.0	0.0	0.0	1.3
Units	0	0	0	0	0

* After company-wide exclusions of Non-GRC costs
 ** Refer to "Detail of Adjustments to Recorded" page for line item adjustments
 Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26886.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 268860 - Application Support and Risk Analytics
Unit Measure: No feasible units

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2021	2022	2023	2024	2025
Labor	0	0	0	0	188
Non-Labor	0	0	0	0	1,964
NSE	0	0	0	0	0
Total	0	0	0	0	2,151
FTE	0.0	0.0	0.0	0.0	1.1
Units	0	0	0	0	0

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE	Units
2021 Total	0	0	0	0	0.0	0
2022 Total	0	0	0	0	0.0	0
2023 Total	0	0	0	0	0.0	0
2024 Total	0	0	0	0	0.0	0
2025	188	1,964	0	2,151	1.1	1

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26886.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 268860 - Application Support and Risk Analytics
Unit Measure: No feasible units

Year	Labor	NLbr	NSE	Total	FTE	Units
Explanation: Transferring costs from IT 09090 to VMBA 268860 for PEGMAP Reporting 2025 IO:200585911 to capture in appropriate workpaper.						
2025	0	0	0	0	0.0	0
Explanation: updated unit of measure						
2025	0	0	0	0	0.0	-1
Explanation: updated unit count						
2025 Total	188	1,964	0	2,151	1.1	0

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 268860**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26886.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 268860 - Application Support and Risk Analytics
Workpaper Detail: 268860.001 - RAMP - Application Support and Risk Analytics Future Ssystem - ISD 2027
Unit Measure: No feasible units

In-Service Date: 12/31/2027

Description:

The Technology Lifecycle Management team drives the continuous improvement and modernization of critical vegetation -management applications supporting field operations. By enhancing platform stability, streamlining incident response, and strengthening audit-ready inspection and reporting capabilities, the team ensures scalable, reliable systems that meet regulatory and operational demands.

The Vegetation Data Foundation & Reporting program provides the cloud-based data pipelines, curated datasets, and reporting products needed for accurate operational, financial, and compliance reporting, supported by strong governance, security, and data-quality controls. Together, these programs ensure that both day-to-day vegetation operations and enterprise-level reporting are reliable, auditable, and continuously supported.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	746	749	0	0	0	0
Non-Labor	1,852	1,852	0	0	0	0
NSE	0	0	0	0	0	0
Total	2,598	2,601	0	0	0	0
FTE	4.6	4.6	0.0	0.0	0.0	0.0
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26886.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 268860 - Application Support and Risk Analytics
Workpaper Detail: 268860.002 - RAMP - Application Support and Risk Analytics - Future System - ISD 2029
Unit Measure: No feasible units

In-Service Date: 12/31/2029

Description:

The Technology Lifecycle Management team drives the continuous improvement and modernization of critical vegetation -management applications supporting field operations. By enhancing platform stability, streamlining incident response, and strengthening audit-ready inspection and reporting capabilities, the team ensures scalable, reliable systems that meet regulatory and operational demands.

The Vegetation Data Foundation & Reporting program provides the cloud-based data pipelines, curated datasets, and reporting products needed for accurate operational, financial, and compliance reporting, supported by strong governance, security, and data-quality controls. Together, these programs ensure that both day-to-day vegetation operations and enterprise-level reporting are reliable, auditable, and continuously supported.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	747	746	0	0
Non-Labor	0	0	1,496	1,496	0	0
NSE	0	0	0	0	0	0
Total	0	0	2,243	2,242	0	0
FTE	0.0	0.0	4.6	4.6	0.0	0.0
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26886.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 268860 - Application Support and Risk Analytics
Workpaper Detail: 268860.003 - RAMP - Application Support and Risk Analytics - Future System - ISD 2031
Unit Measure: No feasible units

In-Service Date: 12/31/2031

Description:

The Technology Lifecycle Management team drives the continuous improvement and modernization of critical vegetation -management applications supporting field operations. By enhancing platform stability, streamlining incident response, and strengthening audit-ready inspection and reporting capabilities, the team ensures scalable, reliable systems that meet regulatory and operational demands.

The Vegetation Data Foundation & Reporting program provides the cloud-based data pipelines, curated datasets, and reporting products needed for accurate operational, financial, and compliance reporting, supported by strong governance, security, and data-quality controls. Together, these programs ensure that both day-to-day vegetation operations and enterprise-level reporting are reliable, auditable, and continuously supported.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	0	0	745	746
Non-Labor	0	0	0	0	3,126	2,751
NSE	0	0	0	0	0	0
Total	0	0	0	0	3,871	3,497
FTE	0.0	0.0	0.0	0.0	4.6	4.6
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 268860

TY2028 GRC FORECAST - DETAILS
Workpaper/Mitigation:

268860 Application Support and Risk Analytics

268860 Application Support and Risk Analytics			2026			2027			2028			2029			2030			2031		
Line Item	Work Description	Labor/Non-Labor/ NSE	RAMP/Non-RAMP	Unit Metric (sq./ft./m/ste)	# of units	Cost per unit**	Total cost	# of units	Cost per unit**	Total cost	# of units	Cost per unit**	Total cost	# of units	Cost per unit**	Total cost	# of units	Cost per unit**	Total cost	
1	Veg Management - Data Foundation & Reporting - Future System	Labor	RAMP	FTE			\$			\$			\$			\$			\$	
2	Veg Management - Data Foundation & Reporting - Future System	Non-Labor	RAMP	each			\$			\$			\$			\$			\$	
3	Veg Management - Technology Lifecycle Management - Future System	Labor	RAMP	FTE			\$			\$			\$			\$			\$	
4	Veg Management - Technology Lifecycle Management - Future System	Non-Labor	RAMP	each			\$			\$			\$			\$			\$	
5	Data Foundation & Reporting - Legacy System	Labor	RAMP	FTE	2	162,000	\$ 367,967	2	162,000	\$ 367,967	2	162,000	\$ 367,967	2	162,000	\$ 367,967	2	162,000	\$ 367,967	
6	Data Foundation & Reporting - Legacy System	Non-Labor	RAMP	each	1	1,132,000	\$ 1,132,000	1	1,132,000	\$ 1,132,000	1	776,000	\$ 776,000	1	776,000	\$ 776,000	1	776,000	\$ 776,000	
7	Vegetation Management Technology Lifecycle Management - Legacy System	Labor	RAMP	FTE	2	162,000	\$ 367,967	2	162,000	\$ 367,967	2	162,000	\$ 367,967	2	162,000	\$ 367,967	2	162,000	\$ 367,967	
8	Vegetation Management Technology Lifecycle Management - Legacy System	Non-Labor	RAMP	each	1	720,000	\$ 720,000	1	720,000	\$ 720,000	1	720,000	\$ 720,000	1	720,000	\$ 720,000	1	720,000	\$ 720,000	
Summary			Labor	RAMP		\$ 726,934	\$ 726,934	\$ 726,934	\$ 726,934	\$ 726,934	\$ 726,934	\$ 726,934	\$ 726,934	\$ 726,934	\$ 726,934	\$ 726,934	\$ 726,934	\$ 726,934	\$ 726,934	
		Non-Labor	RAMP		\$ 1,652,000	\$ 1,652,000	\$ 1,496,000	\$ 1,496,000	\$ 1,496,000	\$ 1,496,000	\$ 1,496,000	\$ 1,496,000	\$ 1,496,000	\$ 1,496,000	\$ 1,496,000	\$ 1,496,000	\$ 1,496,000	\$ 1,496,000	\$ 1,496,000	
		NSE	RAMP		\$ 2,587,934	\$ 2,587,934	\$ 2,231,934	\$ 2,231,934	\$ 2,231,934	\$ 2,231,934	\$ 2,231,934	\$ 2,231,934	\$ 2,231,934	\$ 2,231,934	\$ 2,231,934	\$ 2,231,934	\$ 2,231,934	\$ 2,231,934	\$ 2,231,934	
		Labor	Non-RAMP		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
		Non-Labor	Non-RAMP		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
		NSE	Non-RAMP		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
		Total Project Forecast			\$ 2,587,934	\$ 2,587,934	\$ 2,231,934	\$ 2,231,934	\$ 2,231,934	\$ 2,231,934	\$ 2,231,934	\$ 2,231,934	\$ 2,231,934	\$ 2,231,934	\$ 2,231,934	\$ 2,231,934	\$ 2,231,934	\$ 2,231,934	\$ 2,231,934	

The variance between the direct costs found in workpapers and the supplemental workpapers supporting Ex. SDGE-07 are due to a system wide adjustment to reflect changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SDG-16/SDGE-20.

**Beginning of Workpaper Group
26886A - QA/QC**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26886.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 26886A - QA/QC
Unit Measure: No feasible units

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Zero-Based	0	0	0	0	0	0	0	46	46	46	46
Non-Labor	Zero-Based	0	0	0	0	0	0	0	358	358	358	358
NSE	Zero-Based	0	0	0	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	404	404	404	404
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4
Units	Zero-Based	0	0	0	0	0	0	0	0	0	0	0

Business Purpose:

As this program continues to evolve, SDG&E is exploring the integration of remote sensing technologies that have the potential to increase operational efficiency and/or add value. These technologies may include but are not limited to LiDAR, smart image capture, and satellite imagery. The primary objectives of technology integration would be to confirm clearances meet regulatory requirements, ensure documentation matches field conditions, and identify trees that may have strike potential but exist outside of the tree inventory. Use of technology would be coupled with subject matter expertise to provide the most value to our customers in the forms of foundational situational awareness and potentially operational savings for vegetation management activities. Specific operational value is being targeted in the enhanced ability to utilize remote data capture to reduce the overall field visits, increase the percent of audited activities, and/or enhance the value audits as a whole.

Physical Description:

As the program evolves, remote sensing technologies such as LiDAR, smart image capture, and satellite imagery may be integrated to support field validation, enhance situational awareness, and improve operational efficiency. These tools can help confirm that clearances meet regulatory requirements, ensure documentation accuracy, and identify trees outside the existing inventory that may pose a strike potential. When paired with

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26886.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 26886A - QA/QC
Unit Measure: No feasible units

subject matter expertise, this technology integration may reduce field visits, increase audit coverage, and elevate the overall value and effectiveness of vegetation management activities.

Project Justification:

As remote sensing technologies are integrated into vegetation management practices, they have the potential to further strengthen compliance and operational consistency by confirming actual field conditions, validating documentation, and identifying risks not previously captured in the inventory. These advancements are expected to enhance foundational situational awareness, optimize resource deployment, and potentially deliver operational savings by reducing the need for repeated field visits and increasing both the coverage and value of audits performed.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26886.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 26886A - QA/QC
Unit Measure: No feasible units

Forecast Methodology:

Labor - Zero-Based

A zero-based methodology was used to forecast labor capital costs because these activities represent new and evolving capabilities that are not adequately reflected in historical spending. Labor requirements vary by project phase and are driven by the need for specialized internal oversight, including program management, engineering review, quality assurance validation, and coordination with vendor-delivered LiDAR outputs.

Non-Labor - Zero-Based

A zero-based methodology was used to forecast non-labor capital costs because these activities rely heavily on specialized technical contractors and vendors whose services scale based on project scope and timing. Non-labor costs are primarily estimated with LiDAR data acquisition, processing, and QA/QC services, which fluctuate based on coverage requirements, data resolution, and off-cycle deployment needs.

NSE - Zero-Based

N/a

Units - Zero-Based

There are no feasible units because costs are developed based on project specific scope, schedules, and required resources rather than discrete, countable outputs.

**Beginning of Workpaper Sub Details for
Workpaper Group 26886A**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26886.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 26886A - QA/QC
Workpaper Detail: 26886A.001 - RAMP - QA/QC
Unit Measure: No feasible units

In-Service Date: 06/30/2029

Description:

As the program evolves technologies such as LiDAR smart image capture, and satellite imagery may be integrated to support field validation, enhance situational awareness, and improve operational efficiency. These tools can help confirm that clearances meet regulatory requirements, ensure documentation accuracy, and identify trees outside the existing inventory that may pose a strike potential. When paired with subject matter expertise, this technology integration may reduce field visits, increase audit coverage, and elevate the overall value and effectiveness of vegetation management activities.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	46	46	46	46
Non-Labor	0	0	358	358	358	358
NSE	0	0	0	0	0	0
Total	0	0	404	404	404	404
FTE	0.0	0.0	0.4	0.4	0.4	0.4
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 26886A

TY2028 GRC FORECAST - DETAILS
Workpaper/Mitigation:

26886A QA-QC

26886A QA-QC				2026			2027			2028			2029			2030			2031		
Line Item	Unit Description	Labor/Non-Labor/ NSE	RAMP/Non-RAMP	Unit Metric (ea./ft./mile)	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	Total Cost	
1	Labor	Labor	RAMP	fte	0	\$ 162,000	\$ 44,818	0	\$ 162,000	\$ 44,818	0	\$ 162,000	\$ 44,818	0	\$ 162,000	\$ 44,818	0	\$ 162,000	\$ 44,818	\$ 179,273	
2	Vendor Services	Non-Labor	RAMP	each	1	\$ 354,650	\$ 354,650	1	\$ 354,650	\$ 354,650	1	\$ 354,650	\$ 354,650	1	\$ 354,650	\$ 354,650	1	\$ 354,650	\$ 354,650	\$ 1,418,600	
3	Software Cloud Consumption	Non-Labor	RAMP	each	1	\$ 3,875	\$ 3,875	1	\$ 3,875	\$ 3,875	1	\$ 3,875	\$ 3,875	1	\$ 3,875	\$ 3,875	1	\$ 3,875	\$ 3,875	\$ 15,498	
Summary																					
		Labor	RAMP				\$ 44,818			\$ 44,818			\$ 44,818			\$ 44,818			\$ 44,818	\$ 179,273	
		Non-Labor	RAMP				\$ 358,525			\$ 358,525			\$ 358,525			\$ 358,525			\$ 358,525	\$ 1,434,098	
		NSE	RAMP				\$ -			\$ -			\$ -			\$ -			\$ -	\$ -	
	Subtotal RAMP						\$ 403,343			\$ 403,343			\$ 403,343			\$ 403,343			\$ 403,343	\$ 1,613,371	
		Labor	Non-RAMP				\$ -			\$ -			\$ -			\$ -			\$ -	\$ -	
		Non-Labor	Non-RAMP				\$ -			\$ -			\$ -			\$ -			\$ -	\$ -	
		NSE	Non-RAMP				\$ -			\$ -			\$ -			\$ -			\$ -	\$ -	
	Subtotal Non-RAMP						\$ -			\$ -			\$ -			\$ -			\$ -	\$ -	
	Total Project Forecast						\$ 403,343			\$ 403,343			\$ 403,343			\$ 403,343			\$ 403,343	\$ 1,613,371	

**Beginning of Workpaper Group
26886B - Off Cycle Patrol**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26886.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 26886B - Off Cycle Patrol
Unit Measure: No feasible units

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Zero-Based	0	0	0	0	0	0	0	40	40	40	40
Non-Labor	Zero-Based	0	0	0	0	0	0	0	359	359	359	359
NSE	Zero-Based	0	0	0	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	399	399	399	399
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4
Units	Zero-Based	0	0	0	0	0	0	0	0	0	0	0

Business Purpose:

As this program continues to mature and evolve, SDG&E is exploring the integration of remote sensing technologies that have the potential to increase operational efficiency and/or add value. Remote sensing technologies may include LiDAR, smart image capture, and satellite imagery. The primary objectives of technology integration would mature into a stronger risk informed schedule, confirm clearances for vegetation that may be challenging to identify from the ground, and identify spans that may not have inventory trees. Use of technology would be coupled with subject matter expertise to provide the most value to our customers in the forms of foundational situational awareness and potentially operational savings for vegetation management activities.

Physical Description:

As the program continues to evolve, SDG&E is evaluating how remote sensing technologies can supplement patroller observations by offering additional perspectives on vegetation proximity, terrain complexity, and span-specific risk factors. While these tools are not a replacement for ISA-certified field evaluations, they can provide valuable inspection insights that help patrollers focus attention on areas where vegetation encroachment or structural defects may be more difficult to detect from the ground. Integrating these capabilities enhances the precision and

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26886.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 26886B - Off Cycle Patrol
Unit Measure: No feasible units

consistency of field assessments and supports more proactive decision-making.

Project Justification:

Leveraging remote sensing technologies such as LiDAR, smart image capture, and satellite imagery can further strengthen this mid-cycle oversight by providing data-driven validation of field findings and improving the identification of emerging hazards between scheduled inspections. These technologies also help SDG&E refine its risk-informed inspection schedule and prioritize locations where vegetation dynamics or terrain conditions warrant closer monitoring. When paired with field expertise, these tools offer additional situational awareness that supports SDG&E's commitment to reducing ignition potential and enhancing customer and community safety.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26886.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 26886B - Off Cycle Patrol
Unit Measure: No feasible units

Forecast Methodology:

Labor - Zero-Based

A zero-based methodology was used to forecast labor capital costs because these activities represent new and evolving capabilities that are not adequately reflected in historical spending. Labor requirements vary by project phase and are driven by the need for specialized internal oversight, including program management, engineering review, quality assurance validation, and coordination with vendor-delivered LiDAR outputs.

Non-Labor - Zero-Based

A zero-based methodology was used to forecast non-labor capital costs because these activities rely heavily on specialized technical contractors and vendors whose services scale based on project scope and timing. Non-labor costs are primarily estimated with LiDAR data acquisition, processing, and QA/QC services, which fluctuate based on coverage requirements, data resolution, and off-cycle deployment needs.

NSE - Zero-Based

N/A

Units - Zero-Based

There are no feasible units because costs are developed based on project specific scope, schedules, and required resources rather than discrete, countable outputs.

**Beginning of Workpaper Sub Details for
Workpaper Group 26886B**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26886.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 26886B - Off Cycle Patrol
Workpaper Detail: 26886B.001 - RAMP - Off Cycle Patrol
Unit Measure: No feasible units

In-Service Date: 06/30/2029

Description:

As the program continues to evolve SDG&E is evaluating how advanced imaging technologies can supplement patroller observations by offering additional perspectives on vegetation proximity, terrain complexity, and span-specific risk factors. While these tools are not a replacement for ISA-certified field evaluations, they can provide valuable inspection insights that help patrollers focus attention on areas where vegetation encroachment or structural defects may be more difficult to detect from the ground. Integrating these capabilities enhances the precision and consistency of field assessments and supports more proactive decision-making.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	40	40	40	40
Non-Labor	0	0	359	359	359	359
NSE	0	0	0	0	0	0
Total	0	0	399	399	399	399
FTE	0.0	0.0	1.4	1.4	1.4	1.4
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 26886B

TY2028 GRC FORECAST - DETAILS

Workpaper/Mitigation:

268868 Off Cycle Patrol

268868 Off Cycle Patrol				2026			2027			2028			2029			2030			2031				
Line Item	Unit Description	Labor/ NSE	RAMP/Non-RAMP	Unit Metric (ea./ft./mile)	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	
1	Labor	Labor	RAMP	hr		\$		0	\$162,000	\$30,463		\$		0	\$162,000	\$30,463		\$		0	\$162,000	\$30,463	\$ 157,852
2	Vendor Services	Non-Labor	RAMP	each		\$		1	\$354,650	\$354,650		\$		1	\$354,650	\$354,650		\$		1	\$354,650	\$354,650	\$ 4,418,660
3	Software Cloud Consumption	Non-Labor	RAMP	each		\$		1	\$3,875	\$3,875		\$		1	\$3,875	\$3,875		\$		1	\$3,875	\$3,875	\$ 15,500
Summary																							
		Labor	RAMP			\$	-		\$	-		\$	39,463		\$	39,463		\$	39,463		\$	39,463	\$ 157,852
		Non-Labor	RAMP			\$	-		\$	-		\$	358,525		\$	358,525		\$	358,525		\$	358,525	\$ 4,434,100
		NSE	RAMP			\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	\$ -
		Subtotal RAMP				\$	-		\$	-		\$	397,988		\$	397,988		\$	397,988		\$	397,988	\$ 1,591,952
		Labor	Non-RAMP			\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	\$ -
		Non-Labor	Non-RAMP			\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	\$ -
		NSE	Non-RAMP			\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	\$ -
		Subtotal Non-RAMP				\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	\$ -
		Total Project Forecast				\$	-		\$	-		\$	397,988		\$	397,988		\$	397,988		\$	397,988	\$ 1,591,952

Beginning of Workpaper Group
268900 - Integrated Work Management & Risk Assessment Platform

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26890.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 268900 - Integrated Work Management & Risk Assessment Platform
Unit Measure: No feasible units

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Zero-Based	0	0	0	0	0	0	0	934	933	0	0
Non-Labor	Zero-Based	0	0	0	0	0	0	0	7,640	4,190	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	8,574	5,123	0	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	6.0	0.0	0.0
Units	Zero-Based	0	0	0	0	0	0	0	0	0	0	0

Business Purpose:

The purpose of this project is to replace SDG&E's end-of-life Vegetation Management system with a modern Software as a Service (SaaS) solution that supports continuous, compliant operations and improves overall data quality. Transitioning from an on-premises platform to a cloud-based SaaS environment aligns with the company's broader Data Center Exit Strategy, which aims to reduce technical debt, strengthen cybersecurity, and provide a more scalable and resilient technology infrastructure. The new cloud solution will also introduce native digital assistant capabilities designed to streamline workflows, enhance operational efficiency, and improve the user experience across the Vegetation Management program. The program also establishes an enhanced analytics and reporting foundation through a cloud-based data environment, enabling more consistent and accurate operational and regulatory reporting.

Physical Description:

This project replaces SDG&E's aging Vegetation Management system with a modern SaaS platform that ensures compliant, reliable operations and improves data quality. The transition to a cloud-based solution supports the company's Data Center Exit Strategy by reducing technical debt, enhancing cybersecurity, and providing scalable infrastructure. The new system also introduces digital assistant capabilities to streamline workflows

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26890.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 268900 - Integrated Work Management & Risk Assessment Platform
Unit Measure: No feasible units

and boosts reporting accuracy through a cloud-based analytics environment.

Project Justification:

The project is necessary to replace SDG&E's end-of-life Vegetation Management system, which poses increasing operational, compliance, and security risks. Implementing a modern SaaS solution ensures continued regulatory compliance, improves data accuracy, and eliminates reliance on outdated on-premises infrastructure. The shift to a cloud-based platform directly supports the company's Data Center Exit Strategy by reducing technical debt, strengthening cybersecurity, and providing a scalable, resilient foundation for future growth. Additionally, the new solution's digital assistant features and enhanced cloud-based analytics environment will streamline workflows, improve decision-making, and deliver more consistent and accurate operational and regulatory reporting. Together, these benefits justify the investment by mitigating risk, improving efficiency, and enabling long-term digital transformation.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26890.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 268900 - Integrated Work Management & Risk Assessment Platform
Unit Measure: No feasible units

Forecast Methodology:

Labor - Zero-Based

A zero-based methodology was utilized to develop the labor forecast because it provides a more accurate estimate of future costs than historical or linear methods, which fail to account for rapid technological advancements. This approach builds costs from the ground up using current market data and expert input, rather than relying on outdated patterns. Detailed estimates are developed by internal and external delivery teams (where applicable) experienced in similar projects, covering resources such as FTEs, systems, and environments, and tailored to each project's scope and schedule.

Non-Labor - Zero-Based

A zero-based methodology was utilized to develop the non-labor forecast because it provides a more accurate estimate of future costs than historical or linear methods, which fail to account for rapid technological advancements. This approach builds costs from the ground up using current market data and expert input, rather than relying on outdated patterns. Detailed estimates are developed by internal and external delivery teams (where applicable) experienced in similar projects, covering resources such as FTEs, systems, and environments, and tailored to each project's scope and schedule.

NSE - Zero-Based

N/A

Units - Zero-Based

There are no feasible units because these activities deliver integrated system modernization, training, and continuity activities that do not produce discrete, measurable unit outputs.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26890.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 268900 - Integrated Work Management & Risk Assessment Platform
Unit Measure: No feasible units

Summary of Adjustments to Forecast:

In 2025 \$ (000)																		
Years	Base Forecast						Forecast Adjustments						Adjusted-Forecast					
	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031
Labor	0	0	920	920	0	0	0	0	14	13	0	0	0	0	934	933	0	0
NLbr	0	0	7,640	4,190	0	0	0	0	0	0	0	0	0	0	7,640	4,190	0	0
NSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	8,560	5,110	0	0	0	0	14	13	0	0	0	0	8,574	5,123	0	0
FTE	0.0	0.0	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	6.0	0.0	0.0
Units	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Forecast Adjustment Details

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2026 Total	0	0	0	0	0.0	0
2027 Total	0	0	0	0	0.0	0
2028	14	0	0	14	0.0	0
Explanation: Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.						
2028 Total	14	0	0	14	0.0	0
2029	13	0	0	13	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26890.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 268900 - Integrated Work Management & Risk Assessment Platform
Unit Measure: No feasible units

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
Explanation: Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.						
2029 Total	13	0	0	13	0.0	0
2030 Total	0	0	0	0	0.0	0
2031 Total	0	0	0	0	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26890.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 268900 - Integrated Work Management & Risk Assessment Platform
Unit Measure: No feasible units

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Recorded (Nominal \$)*					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Adjustments (Nominal \$) **					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Nominal \$)					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Vacation & Sick (Nominal \$)					
Labor	0	0	0	0	0

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26890.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 268900 - Integrated Work Management & Risk Assessment Platform
Unit Measure: No feasible units

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Escalation to 2025\$					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Constant 2025\$)					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0

* After company-wide exclusions of Non-GRC costs
 ** Refer to "Detail of Adjustments to Recorded" page for line item adjustments
 Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26890.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 268900 - Integrated Work Management & Risk Assessment Platform
Unit Measure: No feasible units

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2021	2022	2023	2024	2025
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE	Units
2021 Total	0	0	0	0	0.0	0
2022 Total	0	0	0	0	0.0	0
2023 Total	0	0	0	0	0.0	0
2024 Total	0	0	0	0	0.0	0
2025	0	0	0	0	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26890.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 268900 - Integrated Work Management & Risk Assessment Platform
Unit Measure: No feasible units

Year	Labor	NLbr	NSE	Total	FTE	Units
Explanation: updated unit of measure						
2025 Total	0	0	0	0	0.0	0

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 268900**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26890.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 268900 - Integrated Work Management & Risk Assessment Platform
Workpaper Detail: 268900.001 - RAMP - Integrated Work Management & Risk Assessment Platform - License Cost
Unit Measure: No feasible units

In-Service Date: 12/31/2028

Description:

This project replaces SDG&E's aging Vegetation Management system with a modern SaaS platform that ensures compliant, reliable operations and improves data quality. The transition to a cloud-based solution supports the company's Data Center Exit Strategy by reducing technical debt, enhancing cybersecurity, and providing scalable infrastructure. The new system also introduces digital assistant capabilities to streamline workflows and boosts reporting accuracy through a cloud-based analytics environment.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	0	0	0	0
Non-Labor	0	0	4,000	0	0	0
NSE	0	0	0	0	0	0
Total	0	0	4,000	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 26890.0
Category: B. Vegetation Management and Inspections
Category-Sub: 1. Vegetation Management and Inspections
Workpaper Group: 268900 - Integrated Work Management & Risk Assessment Platform
Workpaper Detail: 268900.002 - RAMP - Integrated Work Management & Risk Assessment Platform - Future System
Unit Measure: No feasible units

In-Service Date: 12/31/2029

Description:

This project replaces SDG&E's aging Vegetation Management system with a modern SaaS platform that ensures compliant, reliable operations and improves data quality. The transition to a cloud-based solution supports the company's Data Center Exit Strategy by reducing technical debt, enhancing cybersecurity, and providing scalable infrastructure. The new system also introduces digital assistant capabilities to streamline workflows and boosts reporting accuracy through a cloud-based analytics environment.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	934	933	0	0
Non-Labor	0	0	3,640	4,190	0	0
NSE	0	0	0	0	0	0
Total	0	0	4,574	5,123	0	0
FTE	0.0	0.0	6.0	6.0	0.0	0.0
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 268900

TY2028 GRC FORECAST - DETAILS

Workpaper/Mitigation: 268900 Integrated Work Management & Risk Assessment Platform

268900 Integrated Work Management & Risk Assessment Platform			2026			2027			2028			2029			2030			2031			Total Cost	Comments
Line Item	Unit Description	Labor/Non-Labor/ N/E	RAMP/Non-RAMP	Unit Metric (ea, %/m/b)	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost			
1	Veg Management Software Replacement - License Cost - Future System	Non-Labor	RAMP	each	\$	-	\$	-	\$	-	1	\$ 4,000,000	\$ 4,000,000	\$	-	\$	-	\$	-	\$ 4,000,000	1 year license	
2	Veg Management Software Replacement - Future System	Labor	RAMP	hr	\$	-	\$	-	\$	-	6	\$ 162,000	\$ 918,917	6	\$ 162,000	\$ 918,917	\$	-	\$	\$ 1,838,834		
3	Veg Management Software Replacement - Future System	Non-Labor	RAMP	each	\$	-	\$	-	\$	-	1	\$ 3,640,000	\$ 3,640,000	1	\$ 4,190,000	\$ 4,190,000	\$	-	\$	\$ 7,830,000		
Summary																						
		Labor	RAMP		\$	-	\$	-	\$	-		\$ 918,917	\$ 918,917	\$	-	\$	-	\$	-	\$ 1,838,834		
		Non-Labor	RAMP		\$	-	\$	-	\$	-		\$ 7,640,000	\$ 7,640,000	\$	-	\$	-	\$	-	\$ 11,480,000		
		N/E	RAMP		\$	-	\$	-	\$	-		\$	\$			\$	-	\$	-	\$		
					\$	-	\$	-	\$	-		\$ 8,559,917	\$ 8,559,917	\$	-	\$	-	\$	-	\$ 13,069,834		
					\$	-	\$	-	\$	-		\$	\$			\$	-	\$	-	\$		
		Labor	Non-RAMP		\$	-	\$	-	\$	-		\$	\$			\$	-	\$	-	\$		
		Non-Labor	Non-RAMP		\$	-	\$	-	\$	-		\$	\$			\$	-	\$	-	\$		
		N/E	Non-RAMP		\$	-	\$	-	\$	-		\$	\$			\$	-	\$	-	\$		
					\$	-	\$	-	\$	-		\$	\$			\$	-	\$	-	\$		
					\$	-	\$	-	\$	-		\$ 8,559,917	\$ 8,559,917	\$	-	\$	-	\$	-	\$ 13,069,834		

The variance between the direct costs found in workpapers and the supplemental workpapers supporting Ex. SDGE-07 are due to a system wide adjustment to reflect changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Category: C. Situational Awareness and Forecasting
Workpaper: VARIOUS

Summary for Category: C. Situational Awareness and Forecasting

	In 2025\$ (000) Incurred Costs						
	Adjusted-Recorded	Adjusted-Forecast					
	2025	2026	2027	2028	2029	2030	2031
Labor	18	0	0	0	0	0	0
Non-Labor	-1,162	0	0	0	0	7,000	0
NSE	0	0	0	0	0	0	0
Total	-1,144	0	0	0	0	7,000	0
FTE	0.1	0.0	0.0	0.0	0.0	0.0	0.0

Workpapers belonging to this Category:

192470 Weather Network & Technology Programs

Labor	18	0	0	0	0	0	0
Non-Labor	57	0	0	0	0	7,000	0
NSE	0	0	0	0	0	0	0
Total	75	0	0	0	0	7,000	0
FTE	0.1	0.0	0.0	0.0	0.0	0.0	0.0

Unit Measure: Super Computer

Units	0	0	0	0	0	2	0
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192480 Fire Potential Index

Labor	0	0	0	0	0	0	0
Non-Labor	-1,219	0	0	0	0	0	0
NSE	0	0	0	0	0	0	0
Total	-1,219	0	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Unit Measure: No feasible units

Units	0	0	0	0	0	0	0
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Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Category: C. Situational Awareness and Forecasting
Workpaper: VARIOUS

	In 2025\$ (000) Incurred Costs						
	Adjusted-Recorded	Adjusted-Forecast					
	2025	2026	2027	2028	2029	2030	2031
228780 Air Quality Station Maintenance							
Labor	0	0	0	0	0	0	0
Non-Labor	0	0	0	0	0	0	0
NSE	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unit Measure: Other							
Units	0	0	0	0	0	0	0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
192470 - Weather Network & Technology Programs

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19247.0
Category: C. Situational Awareness and Forecasting
Category-Sub: 1. Situational Awareness and Forecasting
Workpaper Group: 192470 - Weather Network & Technology Programs
Unit Measure: Super Computer

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Zero-Based	26	37	25	29	18	0	0	0	0	0	0
Non-Labor	Zero-Based	691	8,723	224	76	57	0	0	0	0	7,000	0
NSE	Zero-Based	0	0	0	0	0	0	0	0	0	0	0
Total		717	8,761	249	105	75	0	0	0	0	7,000	0
FTE	Zero-Based	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Units	Zero-Based	0	2	0	0	0	0	0	0	0	2	0

Business Purpose:

SDG&E utilizes high-performance computing clusters (HPCCs) to run the Weather Research and Forecasting model specifically tailored to the unique weather and terrain characteristics of SDG&E's service territory. Additionally, the computing clusters are also involved in numerous big data analytics projects that generate terabytes of data required for operational Meteorology products/procedures. Currently, SDG&E owns and operates 5 HPCCs, two of which are in the process of being decommissioned after having reached the end of their operational life. These clusters serve as the foundation for SDG&E's ability to produce locally accurate forecasts and reduce operational risk associated with extreme weather events.

Physical Description:

This project will continuously enhance the SDG&E weather network to ensure a reliable flow of operationally critical fire weather information. This information feeds into fire weather tools such as the Fire Potential Index (FPI) and the Santa Anna Wildfire Threat Index (SAWTI). This data is used for critical decision-making during emergency situations to mitigate fire and weather-related risks. Historical costs - include supercomputers, weather stations and weather sensors. Super computers were chosen because units have reached the end of their life cycle.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19247.0
Category: C. Situational Awareness and Forecasting
Category-Sub: 1. Situational Awareness and Forecasting
Workpaper Group: 192470 - Weather Network & Technology Programs
Unit Measure: Super Computer

Project Justification:

Super computers were chosen because units have reached the end of their life cycle.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19247.0
Category: C. Situational Awareness and Forecasting
Category-Sub: 1. Situational Awareness and Forecasting
Workpaper Group: 192470 - Weather Network & Technology Programs
Unit Measure: Super Computer

Forecast Methodology:

Labor - Zero-Based

The forecast method used is zero based. The forecast is based on cost estimates that were developed based on the specific scope of work for the project. Cost estimates are based on current construction labor rates, material costs, contract pricing/quotes, and other project specific details.

Non-Labor - Zero-Based

The forecast method used is zero based. The forecast is based on cost estimates that were developed based on the specific scope of work for the project. Cost estimates are based on current construction labor rates, material costs, contract pricing/quotes, and other project specific details.

NSE - Zero-Based

N/A

Units - Zero-Based

The units for this workpaper is super computers. The two requested units would replace units that have reached the end of their life cycle.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19247.0
Category: C. Situational Awareness and Forecasting
Category-Sub: 1. Situational Awareness and Forecasting
Workpaper Group: 192470 - Weather Network & Technology Programs
Unit Measure: Super Computer

Summary of Adjustments to Forecast:

In 2025 \$ (000)																		
Years	Base Forecast						Forecast Adjustments						Adjusted-Forecast					
	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031
Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NLbr	0	0	0	0	7,000	0	0	0	0	0	0	0	0	0	0	0	7,000	0
NSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	7,000	0	0	0	0	0	0	0	0	0	0	0	7,000	0
FTE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0

Forecast Adjustment Details

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2026 Total	0	0	0	0	0.0	0
2027 Total	0	0	0	0	0.0	0
2028 Total	0	0	0	0	0.0	0
2029 Total	0	0	0	0	0.0	0
2030 Total	0	0	0	0	0.0	0
2031 Total	0	0	0	0	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19247.0
Category: C. Situational Awareness and Forecasting
Category-Sub: 1. Situational Awareness and Forecasting
Workpaper Group: 192470 - Weather Network & Technology Programs
Unit Measure: Super Computer

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Recorded (Nominal \$)*					
Labor	12	23	19	25	15
Non-Labor	378	5,409	195	73	57
NSE	0	0	0	0	0
Total	390	5,432	215	98	72
FTE	0.0	0.1	0.1	0.1	0.1
Units	0	0	0	0	0
Adjustments (Nominal \$) **					
Labor	2	1	0	0	0
Non-Labor	60	939	0	0	0
NSE	0	0	0	0	0
Total	62	940	0	0	0
FTE	0.1	0.1	0.0	0.0	0.0
Units	0	2	0	0	0
Recorded-Adjusted (Nominal \$)					
Labor	14	24	19	25	15
Non-Labor	438	6,348	195	73	57
NSE	0	0	0	0	0
Total	452	6,372	215	98	72
FTE	0.1	0.2	0.1	0.1	0.1
Units	0	2	0	0	0
Vacation & Sick (Nominal \$)					
Labor	2	3	3	3	2

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19247.0
Category: C. Situational Awareness and Forecasting
Category-Sub: 1. Situational Awareness and Forecasting
Workpaper Group: 192470 - Weather Network & Technology Programs
Unit Measure: Super Computer

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	2	3	3	3	2
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Escalation to 2025\$					
Labor	9	10	3	1	0
Non-Labor	254	2,375	28	3	0
NSE	0	0	0	0	0
Total	263	2,386	32	4	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Constant 2025\$)					
Labor	26	37	25	29	18
Non-Labor	691	8,723	224	76	57
NSE	0	0	0	0	0
Total	717	8,761	249	105	75
FTE	0.1	0.2	0.1	0.1	0.1
Units	0	2	0	0	0

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19247.0
Category: C. Situational Awareness and Forecasting
Category-Sub: 1. Situational Awareness and Forecasting
Workpaper Group: 192470 - Weather Network & Technology Programs
Unit Measure: Super Computer

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2021	2022	2023	2024	2025
Labor	2	1	0	0	0
Non-Labor	60	939	0	0	0
NSE	0	0	0	0	0
Total	62	940	0	0	0
FTE	0.1	0.1	0.0	0.0	0.0
Units	0	2	0	0	0

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	0	0	0	0	0.0	2
Explanation:	updated units					
2021	0	0	0	0	0.0	0
Explanation:	Updated unit of measure					
2021	0	0	0	0	0.0	0
Explanation:	updated unit of measure					

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19247.0
Category: C. Situational Awareness and Forecasting
Category-Sub: 1. Situational Awareness and Forecasting
Workpaper Group: 192470 - Weather Network & Technology Programs
Unit Measure: Super Computer

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	0	0	0	0	0.0	-2
Explanation:	updating units to reflect newly updated WP - supercomputers					
2021	2	60	0	62	0.1	0
Explanation:	Adjustment to add back common FERC account FERC-jurisdiction costs for RO model carve-out					
2021 Total	2	60	0	62	0.1	0
2022	0	0	0	0	0.0	2
Explanation:	updated units					
2022	1	939	0	940	0.1	0
Explanation:	Adjustment to add back common FERC account FERC-jurisdiction costs for RO model carve-out					
2022 Total	1	939	0	940	0.1	2
2023	0	0	0	0	0.0	2
Explanation:	updated units					
2023	0	0	0	0	0.0	-2
Explanation:	updated units to relect newly updated WP - supercomputers					
2023	0	0	0	0	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19247.0
Category: C. Situational Awareness and Forecasting
Category-Sub: 1. Situational Awareness and Forecasting
Workpaper Group: 192470 - Weather Network & Technology Programs
Unit Measure: Super Computer

Year	Labor	NLbr	NSE	Total	FTE	Units
Explanation: updated unit of measure						
2023 Total	0	0	0	0	0.0	0
2024	0	0	0	0	0.0	2
Explanation: updated units						
2024	0	0	0	0	0.0	-2
Explanation: updated units to reflect newly updated unit of measure for WP - supercomputers						
2024 Total	0	0	0	0	0.0	0
2025 Total	0	0	0	0	0.0	0

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 192470**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 19247.0
Category: C. Situational Awareness and Forecasting
Category-Sub: 1. Situational Awareness and Forecasting
Workpaper Group: 192470 - Weather Network & Technology Programs
Workpaper Detail: 192470.001 - RAMP - Weather Network & Technology Programs
Unit Measure: Super Computer

In-Service Date: 12/31/2030

Description:

This project will continuously enhance the SDG&E weather network to ensure a reliable flow of operationally critical fire weather information. This information feeds into fire weather tools such as the Fire Potential Index (FPI) and the Santa Anna Wildfire Threat Index (SAWTI). This data is used for critical decision-making during emergency situations to mitigate fire and weather-related risks.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	0	0	0	0
Non-Labor	0	0	0	0	7,000	0
NSE	0	0	0	0	0	0
Total	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>7,000</u>	<u>0</u>
FTE	0.0	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	2	0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 192470

TY2028 GRC FORECAST - DETAILS
 Workpaper/Mitigation:

152470 Weather Network & Technology Programs

152470 Weather Network & Technology Programs				2026			2027			2028			2029			2030			2031			Comments
Line Item	Link Description	Labor/Non-Labor/ NSE	RAMP/Non-RAMP	Unit Metric (sq. ft./cubic)	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost			
1	Supercomputer Replacement (Hardware)	Non-Labor	RAMP	each			\$ -			\$ -			\$ -			\$ -	2	\$ 3,500,000	\$ 7,000,000	\$ -	\$ 7,000,000	Supercomputer refresh - 2 computers have reached the end of their life cycle.
Summary																						
	Labor		RAMP				\$ -			\$ -			\$ -			\$ -			\$ -	\$ -	\$ -	
	Non-Labor		RAMP				\$ -			\$ -			\$ -			\$ -			\$ -	\$ 7,000,000	\$ -	\$ 7,000,000
	NSE		RAMP				\$ -			\$ -			\$ -			\$ -			\$ -	\$ -	\$ -	
	Subtotal RAMP						\$ -			\$ -			\$ -			\$ -			\$ -	\$ 7,000,000	\$ -	\$ 7,000,000
	Labor		Non-RAMP				\$ -			\$ -			\$ -			\$ -			\$ -	\$ -	\$ -	
	Non-Labor		Non-RAMP				\$ -			\$ -			\$ -			\$ -			\$ -	\$ -	\$ -	
	NSE		Non-RAMP				\$ -			\$ -			\$ -			\$ -			\$ -	\$ -	\$ -	
	Subtotal Non-RAMP						\$ -			\$ -			\$ -			\$ -			\$ -	\$ -	\$ -	
	Total Project Forecast						\$ -			\$ -			\$ -			\$ -			\$ -	\$ 7,000,000	\$ -	\$ 7,000,000

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Category: D. Emergency Prep Collab & Community Outreach
Workpaper: VARIOUS

Summary for Category: D. Emergency Prep Collab & Community Outreach

	In 2025\$ (000) Incurred Costs						
	Adjusted-Recorded	Adjusted-Forecast					
	2025	2026	2027	2028	2029	2030	2031
Labor	587	2,601	203	316	1,006	1,005	315
Non-Labor	11,188	12,450	9,780	6,291	9,791	10,991	6,291
NSE	0	0	0	0	0	0	0
Total	11,775	15,051	9,983	6,607	10,797	11,996	6,606
FTE	3.5	17.9	1.4	2.2	6.9	6.9	2.2

Workpapers belonging to this Category:

228790 Emergency Preparedness and Recovery Plan

Labor	352	2,601	203	316	1,006	1,005	315
Non-Labor	6,205	9,250	6,000	6,291	9,791	10,991	6,291
NSE	0	0	0	0	0	0	0
Total	6,557	11,851	6,203	6,607	10,797	11,996	6,606
FTE	2.1	17.9	1.4	2.2	6.9	6.9	2.2

Unit Measure: No feasible units

Units	0	0	0	0	0	0	0
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258820 Public Emergency Communication Strategy

Labor	235	0	0	0	0	0	0
Non-Labor	4,983	3,200	3,780	0	0	0	0
NSE	0	0	0	0	0	0	0
Total	5,218	3,200	3,780	0	0	0	0
FTE	1.4	0.0	0.0	0.0	0.0	0.0	0.0

Unit Measure: No feasible units

Units	0	0	0	0	0	0	0
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Note: Totals may include rounding differences.

Beginning of Workpaper Group
228790 - Emergency Preparedness and Recovery Plan

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22879.0
Category: D. Emergency Prep Collab & Community Outreach
Category-Sub: 1. Emergency Preparedness Collaboration and Community Outreach
Workpaper Group: 228790 - Emergency Preparedness and Recovery Plan
Unit Measure: No feasible units

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Zero-Based	4	74	809	913	352	2,601	203	316	1,006	1,005	315
Non-Labor	Zero-Based	27	953	33,650	13,327	6,205	9,250	6,000	6,291	9,791	10,991	6,291
NSE	Zero-Based	0	0	0	0	0	0	0	0	0	0	0
Total		31	1,027	34,460	14,240	6,557	11,851	6,203	6,607	10,797	11,996	6,606
FTE	Zero-Based	0.1	0.5	4.3	5.6	2.1	17.9	1.4	2.2	6.9	6.9	2.2
Units	Zero-Based	0	0	0	0	0	0	0	0	0	0	0

Business Purpose:

The purpose of the Emergency Preparedness and Recovery Plan Capital portfolio is to strengthen SDG&E's ability to prepare for, respond to, and recover from PSPS de-energizations and other all-hazards emergencies through modernized coordination, situational awareness, workforce readiness, and field command capabilities.

The Public Safety Partner Portal (PSPP) is intended to provide authorized public safety partners with timely, secure, and consistent situational awareness, supporting coordinated response and preparedness across jurisdictions before, during, and after emergency events.

The EOC App Hub (called Digital Fortress in the 2025 RAMP) is designed to serve as a centralized, resilient access point for mission-critical emergency management applications, enabling EOC responders to efficiently access operational tools in a single, cloud-based environment during in-person, virtual, or hybrid activations.

The Responder Lifecycle platform supports the end-to-end management of EOC responders, ensuring SDG&E maintains a trained, credentialed, and

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22879.0
Category: D. Emergency Prep Collab & Community Outreach
Category-Sub: 1. Emergency Preparedness Collaboration and Community Outreach
Workpaper Group: 228790 - Emergency Preparedness and Recovery Plan
Unit Measure: No feasible units

readily deployable emergency workforce capable of supporting sustained and recurring emergency activations.

The Incident Field Support program, including Emergency Command Vehicles (ECVs), provides deployable field-based command capability to support safe, disciplined operations during PSPS de-energizations, high-wind conditions, and wildfire-related incidents, while modernizing an aging emergency response fleet.

Together, these projects advance SDG&E's emergency preparedness objectives by improving coordination , workforce readiness, field safety, and operational resiliency.

Physical Description:

The Public Safety Partner Portal (PSPP) is a secure web-based and mobile platform available to CPUC-defined public safety partners. It integrates multiple internal data sources to deliver near real-time PSPS and incident information, advanced GIS mapping, secure access controls, accessibility features, and communication resources to support multi-jurisdictional emergency coordination.

The EOC App Hub (called Digital Fortress in the 2025 RAMP) is a cloud-based application framework that consolidates emergency response tools into a single interface. It provides access to PSPS and outage dashboards, GIS applications, EOC activation workflows, and supporting tools such as the EOC Tracker, reducing reliance on fragmented systems and manual data aggregation during activations.

The Responder Lifecycle platform is a dedicated system for managing emergency responders from onboarding through post-event activities. It supports training and credential tracking, responder availability and scheduling, activation status, and pay administration, and is integrated with SDG&E's cloud based EOC environment to support extended or repeated activations .

The Incident Field Support program deploys Emergency Command Vehicles as mobile , hardened command platforms during PSPS and wildfire conditions. ECVs function as field-based coordination hubs, integrating weather intelligence, operational data, and field observations to support disciplined decision-making, unified command, and safe execution of patrol, inspection, and re-energization activities.

Project Justification:

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22879.0
Category: D. Emergency Prep Collab & Community Outreach
Category-Sub: 1. Emergency Preparedness Collaboration and Community Outreach
Workpaper Group: 228790 - Emergency Preparedness and Recovery Plan
Unit Measure: No feasible units

The Emergency Preparedness and Recovery Plan Capital projects are justified by regulatory expectations, operational necessity, and increasing wildfire and PSPS risk across SDG&E's service territory.

California Public Utilities Code § 8386 requires utilities to implement Wildfire Mitigation Plans that address PSPS execution, emergency response, and operational readiness, while § 768.6(a) requires compliance with CPUC emergency preparedness standards. CPUC decisions including Resolution ESRB-8 and Decisions D.19-05-042, D.20-05-051, and D.21-06-034 emphasize timely situational awareness, coordination with public safety partners, accountability, and protection of both the public and utility workers during PSPS activations.

The PSPP directly supports these requirements by providing a secure, centralized mechanism for public safety partner coordination. The EOC App Hub enables resilient, efficient access to emergency response tools, reducing delays and operational risk during large scale events. The Responder Lifecycle platform addresses regulatory expectations for staffing, training, documentation, and sustained EOC activations, particularly in light of responder attrition and increasing activation frequency. The Incident Field Support program, through ECVs, supports worker safety, ignition risk reduction, and command continuity during hazardous field operations while replacing aging, less reliable vehicles.

Collectively, these projects represent prudent, non-discretionary investments that improve safety, reliability, and operational effectiveness and are consistent with industry best practices for utilities operating in high fire-threat environments.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22879.0
Category: D. Emergency Prep Collab & Community Outreach
Category-Sub: 1. Emergency Preparedness Collaboration and Community Outreach
Workpaper Group: 228790 - Emergency Preparedness and Recovery Plan
Unit Measure: No feasible units

Forecast Methodology:

Labor - Zero-Based

A zero-based forecast methodology was selected because historical spending is not representative of future needs, and forecasted costs are instead developed from defined project scope, current labor and vendor rates, and anticipated work activities.

Non-Labor - Zero-Based

A zero-based forecast methodology was selected because historical spending is not representative of future needs, and forecasted costs are instead developed from defined project scope, current labor and vendor rates, and anticipated work activities.

NSE - Zero-Based

N/A

Units - Zero-Based

The Emergency Preparedness and Recovery Plan encompasses the resources required to prepare for, respond to, and recover from emergencies affecting SDG&E's service territory, including PSPS events and other all-hazards incidents. The plan supports EOC responder training and readiness, operation and maintenance of cloud-based EOC applications and situational awareness tools, education and coordination with public safety partners, development and maintenance of business continuity plans, and compliance with CPUC emergency preparedness requirements. These activities span workforce readiness, technology platforms, partner coordination, and field and command operations, vary in scope and execution by event, and therefore cannot be represented by a single unit of measure.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22879.0
Category: D. Emergency Prep Collab & Community Outreach
Category-Sub: 1. Emergency Preparedness Collaboration and Community Outreach
Workpaper Group: 228790 - Emergency Preparedness and Recovery Plan
Unit Measure: No feasible units

Summary of Adjustments to Forecast:

In 2025 \$ (000)																			
Years	Base Forecast						Forecast Adjustments						Adjusted-Forecast						
	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	
Labor	2,564	199	311	992	992	311	37	4	5	14	13	4	2,601	203	316	1,006	1,005	315	
NLbr	9,250	6,000	6,291	9,791	10,991	6,291	0	0	0	0	0	0	9,250	6,000	6,291	9,791	10,991	6,291	
NSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	11,814	6,199	6,602	10,783	11,983	6,602	37	4	5	14	13	4	11,851	6,203	6,607	10,797	11,996	6,606	
FTE	17.9	1.4	2.2	6.9	6.9	2.2	0.0	0.0	0.0	0.0	0.0	0.0	17.9	1.4	2.2	6.9	6.9	2.2	
Units	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Forecast Adjustment Details:

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2026	37	0	0	37	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2026 Total	37	0	0	37	0.0	0
2027	4	0	0	4	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2027 Total	4	0	0	4	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22879.0
Category: D. Emergency Prep Collab & Community Outreach
Category-Sub: 1. Emergency Preparedness Collaboration and Community Outreach
Workpaper Group: 228790 - Emergency Preparedness and Recovery Plan
Unit Measure: No feasible units

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2028	5	0	0	5	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2028 Total	5	0	0	5	0.0	0
2029	14	0	0	14	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2029 Total	14	0	0	14	0.0	0
2030	13	0	0	13	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2030 Total	13	0	0	13	0.0	0
2031	4	0	0	4	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2031 Total	4	0	0	4	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22879.0
Category: D. Emergency Prep Collab & Community Outreach
Category-Sub: 1. Emergency Preparedness Collaboration and Community Outreach
Workpaper Group: 228790 - Emergency Preparedness and Recovery Plan
Unit Measure: No feasible units

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Recorded (Nominal \$)*					
Labor	383	423	541	630	146
Non-Labor	3,257	3,644	18,652	3,223	1,421
NSE	0	0	0	0	0
Total	3,640	4,067	19,192	3,852	1,567
FTE	3.2	3.3	3.3	4.1	1.0
Units	0	0	0	0	0
Adjustments (Nominal \$) **					
Labor	-381	-377	79	146	161
Non-Labor	-3,240	-2,950	10,715	9,636	4,784
NSE	0	0	0	0	0
Total	-3,621	-3,326	10,794	9,781	4,945
FTE	-3.2	-2.9	0.4	0.8	0.8
Units	0	0	0	0	0
Recorded-Adjusted (Nominal \$)					
Labor	2	47	620	775	307
Non-Labor	17	694	29,367	12,858	6,205
NSE	0	0	0	0	0
Total	19	741	29,987	13,634	6,512
FTE	0.0	0.4	3.7	4.9	1.8
Units	0	0	0	0	0
Vacation & Sick (Nominal \$)					
Labor	0	7	86	105	45

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22879.0
Category: D. Emergency Prep Collab & Community Outreach
Category-Sub: 1. Emergency Preparedness Collaboration and Community Outreach
Workpaper Group: 228790 - Emergency Preparedness and Recovery Plan
Unit Measure: No feasible units

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	7	86	105	45
FTE	0.1	0.1	0.6	0.7	0.3
Units	0	0	0	0	0
Escalation to 2025\$					
Labor	1	20	103	32	0
Non-Labor	10	260	4,284	469	0
NSE	0	0	0	0	0
Total	11	280	4,387	501	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Constant 2025\$)					
Labor	4	74	809	913	352
Non-Labor	27	953	33,650	13,327	6,205
NSE	0	0	0	0	0
Total	31	1,027	34,460	14,240	6,557
FTE	0.1	0.5	4.3	5.6	2.1
Units	0	0	0	0	0

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22879.0
Category: D. Emergency Prep Collab & Community Outreach
Category-Sub: 1. Emergency Preparedness Collaboration and Community Outreach
Workpaper Group: 228790 - Emergency Preparedness and Recovery Plan
Unit Measure: No feasible units

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2021	2022	2023	2024	2025
Labor	-381	-377	79	146	161
Non-Labor	-3,240	-2,950	10,715	9,636	4,784
NSE	0	0	0	0	0
Total	-3,621	-3,326	10,794	9,781	4,945
FTE	-3.2	-2.9	0.4	0.8	0.8
Units	0	0	0	0	0

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	42	1,562	0	1,604	0.3	0
Explanation:	To remap Public Safety Partner Portal projects from Workpaper 258820 to 228790					
2021	-423	-4,802	0	-5,225	-3.5	0
Explanation:	Reduce historical costs due to 2021 Track 2 disallowances for Community Outreach, Public Awareness & Communications Efforts, PSPS Communication Practices, and Personnel Work Procedures.					
2021 Total	-381	-3,240	0	-3,621	-3.2	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22879.0
Category: D. Emergency Prep Collab & Community Outreach
Category-Sub: 1. Emergency Preparedness Collaboration and Community Outreach
Workpaper Group: 228790 - Emergency Preparedness and Recovery Plan
Unit Measure: No feasible units

Year	Labor	NLbr	NSE	Total	FTE	Units
2022	71	3,200	0	3,271	0.4	0
Explanation:	To remap Public Safety Partner Portal projects from Workpaper 258820 to 228790					
2022	-447	-6,150	0	-6,597	-3.3	0
Explanation:	Reduce historical costs due to 2022 Track 2 disallowances for Community Outreach, Public Awareness & Communications Efforts and PSPS Communication Practices.					
2022 Total	-377	-2,950	0	-3,326	-2.9	0
2023	79	10,715	0	10,794	0.4	0
Explanation:	To remap Public Safety Partner Portal projects from Workpaper 258820 to 228790					
2023 Total	79	10,715	0	10,794	0.4	0
2024	146	9,636	0	9,781	0.8	0
Explanation:	To remap Public Safety Partner Portal projects from Workpaper 258820 to 228790					
2024 Total	146	9,636	0	9,781	0.8	0
2025	161	4,784	0	4,945	0.8	0
Explanation:	To remap Public Safety Partner Portal projects from Workpaper 258820 to 228790					
2025 Total	161	4,784	0	4,945	0.8	0

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 228790**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22879.0
Category: D. Emergency Prep Collab & Community Outreach
Category-Sub: 1. Emergency Preparedness Collaboration and Community Outreach
Workpaper Group: 228790 - Emergency Preparedness and Recovery Plan
Workpaper Detail: 228790.001 - RAMP - Emergency Preparedness and Recovery Plan - Digital Fortress
Unit Measure: No feasible units

In-Service Date: 12/31/2030

Description:

The EOC App Hub (called Digital Fortress in the 2025 RAMP) is a cloud-based application framework that consolidates emergency response tools into a single interface. It provides access to PSPS and outage dashboards, GIS applications, EOC activation workflows, and supporting tools such as the EOC Tracker, reducing reliance on fragmented systems and manual data aggregation during activations.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	671	0	0	690	690	0
Non-Labor	2,500	0	0	3,500	3,500	0
NSE	0	0	0	0	0	0
Total	3,171	0	0	4,190	4,190	0
FTE	4.6	0.0	0.0	4.7	4.7	0.0
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22879.0
Category: D. Emergency Prep Collab & Community Outreach
Category-Sub: 1. Emergency Preparedness Collaboration and Community Outreach
Workpaper Group: 228790 - Emergency Preparedness and Recovery Plan
Workpaper Detail: 228790.002 - RAMP - Emergency Preparedness and Recovery Plan - Responder Life Cycle
Unit Measure: No feasible units

In-Service Date: 12/31/2031

Description:

The Responder Lifecycle platform is a dedicated system for managing emergency responders from onboarding through post-event activities. It supports training and credential tracking, responder availability and scheduling, activation status, and pay administration, and is integrated with SDG&E's cloud based EOC environment to support extended or repeated activations .

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	1,728	0	114	114	113	113
Non-Labor	750	0	291	291	291	291
NSE	0	0	0	0	0	0
Total	2,478	0	405	405	404	404
FTE	11.9	0.0	0.8	0.8	0.8	0.8
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22879.0
Category: D. Emergency Prep Collab & Community Outreach
Category-Sub: 1. Emergency Preparedness Collaboration and Community Outreach
Workpaper Group: 228790 - Emergency Preparedness and Recovery Plan
Workpaper Detail: 228790.003 - RAMP - Emergency Preparedness and Recovery Plan PSPP
Unit Measure: No feasible units

In-Service Date: 12/31/2031

Description:

The Public Safety Partner Portal (PSPP) is a secure web-based and mobile platform available to CPUC-defined public safety partners. It integrates multiple internal data sources to deliver near real-time PSPS and incident information, advanced GIS mapping, secure access controls, accessibility features, and communication resources to support multi-jurisdictional emergency coordination.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	202	203	202	202	202	202
Non-Labor	6,000	6,000	6,000	6,000	6,000	6,000
NSE	0	0	0	0	0	0
Total	6,202	6,203	6,202	6,202	6,202	6,202
FTE	1.4	1.4	1.4	1.4	1.4	1.4
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 22879.0
Category: D. Emergency Prep Collab & Community Outreach
Category-Sub: 1. Emergency Preparedness Collaboration and Community Outreach
Workpaper Group: 228790 - Emergency Preparedness and Recovery Plan
Workpaper Detail: 228790.004 - RAMP - Emergency Preparedness and Recovery Plan Incident Command Vehicle
Unit Measure: No feasible units

In-Service Date: 12/31/2030

Description:

The Incident Field Support program deploys Emergency Command Vehicles as mobile , hardened command platforms during PSPS and wildfire conditions. ECVs function as field-based coordination hubs, integrating weather intelligence, operational data, and field observations to support disciplined decision-making, unified command, and safe execution of patrol, inspection, and re-energization activities.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	0	0	0	0
Non-Labor	0	0	0	0	1,200	0
NSE	0	0	0	0	0	0
Total	0	0	0	0	1,200	0
FTE	0.0	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 228790

TY2028 GRC FORECAST - DETAILS

Workpaper/Mitigation: 228700 Emergency Preparedness and Recovery Plan

228700 - Emergency Preparedness and Recovery Plan		2026				2027				2028				2029				2030				2031				Comments
Unit Item	Unit Description	Labor/Non-Labor/ NRE	RAMP/ Non-RAMP	Units (Hours/ Mile/Units)	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	Total Cost			
1	Digital Fortress FTI's (EOC Apps)	Labor	RAMP	hours	8,320	\$ 70	\$ 582,400	-	\$ -	\$ -	-	\$ -	\$ -	8,000	\$ 75	\$ 600,000	8,000	\$ 75	\$ 600,000	-	\$ -	\$ -	\$ 2,024,272	EOC App Hub. Continued Development supporting the added requirements to support pushing data to the end users, and taking advantage of the Emergency Management Data Lake to ensure alignment across the company.		
2	Digital Fortress Contract Labor (EOC Apps)	Non-Labor	RAMP	ea	1	\$ 2,500,000	\$ 2,500,000	-	\$ -	\$ -	-	\$ -	\$ -	1	\$ 3,000,000	\$ 3,000,000	1	\$ 3,000,000	\$ 3,000,000	-	\$ -	\$ -	\$ 6,500,000	EOC App Hub. Continued Development supporting the added requirements to support pushing data to the end users, and taking advantage of the Emergency Management Data Lake to ensure alignment across the company.		
3	Responder Life Cycle (FTI) (Responder Management)	Labor	RAMP	hours	1	\$ 1,500,000	\$ 1,700,569	-	\$ -	\$ -	1,081	\$ 95	\$ 102,707	1,081	\$ 95	\$ 102,301	1,081	\$ 95	\$ 102,301	1,081	\$ 95	\$ 102,301	\$ 2,510,399	Contract labor to build out a single portal to track and manage gaps in accuracy, fast tracking onboard and other training support, simplify and correct sign-in and sign-out procedures, speed up ways to work with position leads and other support roles to ensure the best emergency mitigation practices, allow for the access to personal documentation and response records in one place and finally meet company record retention requirements and understand the next steps in the training.		
4	Responder Life Cycle Contract Labor (Responder Management)	Non-Labor	RAMP	hours	1	\$ 750,000	\$ 760,000	-	\$ -	\$ -	1,000	\$ 287	\$ 287,000	1,000	\$ 280	\$ 280,000	1,000	\$ 280	\$ 280,000	1,000	\$ 280	\$ 280,000	\$ 2,944,400	Contract labor to build out a single portal to track and manage gaps in accuracy, fast tracking onboard and other training support, simplify and correct sign-in and sign-out procedures, speed up ways to work with position leads and other support roles to ensure the best emergency mitigation practices, allow for the access to personal documentation and response records in one place and finally meet company record retention requirements and understand the next steps in the training.		
5	PSIP FTI's	Labor	RAMP	hours	2,000	\$ -	\$ 48,748	2,000	\$ -	\$ 198,980	2,000	\$ -	\$ 189,748	2,000	\$ -	\$ 198,980	2,000	\$ -	\$ 189,748	2,000	\$ -	\$ 198,980	\$ 620,646			
6	PSIP Contractors - Application Enhancements (Phase)	Non-Labor	RAMP	hours	24,000	\$ 200	\$ 4,800,000	24,000	\$ 200	\$ 4,800,000	24,000	\$ 200	\$ 4,800,000	24,000	\$ 200	\$ 4,800,000	24,000	\$ 200	\$ 4,800,000	24,000	\$ 200	\$ 4,800,000	\$ 19,000,000			
7	PSIP Contractors - Testing (Improvement Cap Demos)	Non-Labor	RAMP	hours	10,000	\$ 100	\$ 1,000,000	10,000	\$ 100	\$ 1,000,000	10,000	\$ 100	\$ 1,000,000	10,000	\$ 100	\$ 1,000,000	10,000	\$ 100	\$ 1,000,000	10,000	\$ 100	\$ 1,000,000	\$ 4,000,000			
8	Replacement Incident Command Vehicle	Non-Labor	RAMP	ea	1	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -	1	\$ 1,200,000	\$ 1,200,000	1	\$ 1,200,000	\$ 1,200,000	1	\$ 1,200,000	\$ 1,200,000	\$ 2,400,000			
Summary		Labor	RAMP			\$ 2,568,720	\$ 198,748		\$ 198,980	\$ 130,655		\$ 962,375	\$ 962,375		\$ 962,375	\$ 962,375		\$ 962,375	\$ 6,291,200	\$ 10,991,200	\$ 11,953,575	\$ 316,955	\$ 13,868,381			
		Non-Labor	RAMP			\$ 9,250,000	\$ 4,000,000		\$ 6,250,000	\$ 6,292,200		\$ 6,794,200	\$ 6,794,200		\$ 6,794,200	\$ 6,794,200		\$ 6,794,200	\$ 6,794,200	\$ 6,794,200	\$ 6,794,200	\$ 6,794,200	\$ 6,794,200	\$ 46,254,680		
		NRE	RAMP			\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
						\$ 11,818,720	\$ 6,198,748		\$ 6,602,155	\$ 10,786,375		\$ 10,786,375	\$ 10,786,375		\$ 10,786,375	\$ 10,786,375		\$ 10,786,375	\$ 10,786,375	\$ 10,786,375	\$ 10,786,375	\$ 10,786,375	\$ 10,786,375	\$ 58,923,361		
		Labor	Non-RAMP			\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
		Non-Labor	Non-RAMP			\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
		NRE	Non-RAMP			\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
						\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
						\$ 11,818,720	\$ 6,198,748		\$ 6,602,155	\$ 10,786,375		\$ 10,786,375	\$ 10,786,375		\$ 10,786,375	\$ 10,786,375		\$ 10,786,375	\$ 10,786,375	\$ 10,786,375	\$ 10,786,375	\$ 10,786,375	\$ 10,786,375	\$ 58,923,361		

The variance between the direct costs found in workpapers and the supplemental workpapers supporting Ex. SDGE-07 are due to a system wide adjustment to reflect changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.

Beginning of Workpaper Group
258820 - Public Emergency Communication Strategy

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 25882.0
Category: D. Emergency Prep Collab & Community Outreach
Category-Sub: 1. Emergency Preparedness Collaboration and Community Outreach
Workpaper Group: 258820 - Public Emergency Communication Strategy
Unit Measure: No feasible units

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Zero-Based	0	0	195	241	235	0	0	0	0	0	0
Non-Labor	Zero-Based	0	0	2,164	7,103	4,983	3,200	3,780	0	0	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0	0	0	0
Total		0	0	2,359	7,344	5,217	3,200	3,780	0	0	0	0
FTE	Zero-Based	0.0	0.0	1.2	1.5	1.4	0.0	0.0	0.0	0.0	0.0	0.0
Units	Zero-Based	0	0	0	0	0	0	0	0	0	0	0

Business Purpose:

The purpose of the Customer Notification System (CNS) (called ENS Replacement in the 2025 RAMP) is to provide timely, reliable, and accessible direct notifications to customers who may be impacted by PSPS de-energizations or load curtailments. CNS supports public safety by ensuring customers receive advance notice, real-time updates, and restoration communications associated with de-energizations. The system is designed to meet CPUC requirements for enhanced customer notification, including redundancy, accessibility, and focused outreach to vulnerable customers.

Physical Description:

The CNS (called ENS Replacement in the 2025 RAMP) is SDG&E's primary, enterprise-level platform for outbound emergency customer notifications. The system delivers multi-channel notifications to impacted customers via recorded voice calls, text messages, and emails, increasing the likelihood of successful contact. The system supports the full PSPS notification timeline by enabling advanced notifications, updates at the start of de-energization, ongoing status communications, and restoration notifications in alignment with CPUC PPS requirements.

CNS Capital forecasts for 2026 and 2027 include system updates to support more accurate customer inclusion when PPS scope expands or

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 25882.0
Category: D. Emergency Prep Collab & Community Outreach
Category-Sub: 1. Emergency Preparedness Collaboration and Community Outreach
Workpaper Group: 258820 - Public Emergency Communication Strategy
Unit Measure: No feasible units

changes due to evolving weather conditions, new notification types to better align customer messaging with operational realities, system architecture updates to enhance resiliency and reliable performance when notification volumes are high and system availability is critical, and improved tracking and reporting for PSPS compliance.

Project Justification:

The Customer Notification System (CNS) (called ENS Replacement in the 2025 RAMP) is justified by regulatory requirements, public safety obligations, and the critical role of timely customer communications during PSPS de-energizations. In compliance with ESRB-8, Rulemaking 18-12-005, Decision 19-05-042, Decision 20-05-051, and Decision 21-06-034, the CNS provides a modernized, scalable, and accessible notification platform capable of supporting PSPS planning, execution, and post-event accountability. The system is a core component of SDG&E's PSPS implementation and wildfire mitigation strategy.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 25882.0
Category: D. Emergency Prep Collab & Community Outreach
Category-Sub: 1. Emergency Preparedness Collaboration and Community Outreach
Workpaper Group: 258820 - Public Emergency Communication Strategy
Unit Measure: No feasible units

Forecast Methodology:

Labor - Zero-Based

A zero-based forecast methodology was selected because historical costs are not representative of future needs, and forecasted costs are based on defined project scope, current contractor and labor costs, and anticipated implementation activities.

Non-Labor - Zero-Based

A zero-based forecast methodology was selected because historical costs are not representative of future needs, and forecasted costs are based on defined project scope, current contractor and labor costs, and anticipated implementation activities.

NSE - Zero-Based

Not applicable.

Units - Zero-Based

The CNS project costs consist of activities that include improvements to system performance, accessibility, and reliability of an enterprise-wide notification platform that must be continuously available for PSPS and other emergency events requiring customer notifications. This variety of activities cannot be defined using a single unit of measure.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 25882.0
Category: D. Emergency Prep Collab & Community Outreach
Category-Sub: 1. Emergency Preparedness Collaboration and Community Outreach
Workpaper Group: 258820 - Public Emergency Communication Strategy
Unit Measure: No feasible units

Summary of Adjustments to Forecast:

In 2025 \$ (000)																		
Years	Base Forecast						Forecast Adjustments						Adjusted-Forecast					
	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031
Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NLbr	3,200	3,780	0	0	0	0	0	0	0	0	0	0	3,200	3,780	0	0	0	0
NSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3,200	3,780	0	0	0	0	0	0	0	0	0	0	3,200	3,780	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Forecast Adjustment Details

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2026 Total	0	0	0	0	0.0	0
2027 Total	0	0	0	0	0.0	0
2028 Total	0	0	0	0	0.0	0
2029 Total	0	0	0	0	0.0	0
2030 Total	0	0	0	0	0.0	0
2031 Total	0	0	0	0	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 25882.0
Category: D. Emergency Prep Collab & Community Outreach
Category-Sub: 1. Emergency Preparedness Collaboration and Community Outreach
Workpaper Group: 258820 - Public Emergency Communication Strategy
Unit Measure: No feasible units

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Recorded (Nominal \$)*					
Labor	241	309	229	351	366
Non-Labor	5,822	6,359	12,603	16,488	9,767
NSE	0	0	0	0	0
Total	6,063	6,667	12,832	16,839	10,132
FTE	1.7	2.1	1.5	2.1	2.0
Units	0	0	0	0	0
Adjustments (Nominal \$) **					
Labor	-241	-309	-79	-146	-161
Non-Labor	-5,822	-6,359	-10,715	-9,636	-4,784
NSE	0	0	0	0	0
Total	-6,063	-6,667	-10,794	-9,781	-4,945
FTE	-1.7	-2.1	-0.4	-0.8	-0.8
Units	0	0	0	0	0
Recorded-Adjusted (Nominal \$)					
Labor	0	0	150	205	205
Non-Labor	0	0	1,888	6,853	4,983
NSE	0	0	0	0	0
Total	0	0	2,038	7,058	5,187
FTE	0.0	0.0	1.1	1.3	1.2
Units	0	0	0	0	0
Vacation & Sick (Nominal \$)					
Labor	0	0	21	28	30

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 25882.0
Category: D. Emergency Prep Collab & Community Outreach
Category-Sub: 1. Emergency Preparedness Collaboration and Community Outreach
Workpaper Group: 258820 - Public Emergency Communication Strategy
Unit Measure: No feasible units

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	21	28	30
FTE	0.0	0.0	0.1	0.2	0.2
Units	0	0	0	0	0
Escalation to 2025\$					
Labor	0	0	25	8	0
Non-Labor	0	0	275	250	0
NSE	0	0	0	0	0
Total	0	0	300	259	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Constant 2025\$)					
Labor	0	0	195	241	235
Non-Labor	0	0	2,164	7,103	4,983
NSE	0	0	0	0	0
Total	0	0	2,359	7,344	5,217
FTE	0.0	0.0	1.2	1.5	1.4
Units	0	0	0	0	0

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 25882.0
Category: D. Emergency Prep Collab & Community Outreach
Category-Sub: 1. Emergency Preparedness Collaboration and Community Outreach
Workpaper Group: 258820 - Public Emergency Communication Strategy
Unit Measure: No feasible units

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2021	2022	2023	2024	2025
Labor	-241	-309	-79	-146	-161
Non-Labor	-5,822	-6,359	-10,715	-9,636	-4,784
NSE	0	0	0	0	0
Total	-6,063	-6,667	-10,794	-9,781	-4,945
FTE	-1.7	-2.1	-0.4	-0.8	-0.8
Units	0	0	0	0	0

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	-42	-1,562	0	-1,604	-0.3	0
Explanation:	To remap Public Safety Partner Portal projects from Workpaper 258820 to 228790					
2021	-199	-4,260	0	-4,459	-1.4	0
Explanation:	Reduce historical costs due to 2021 Track 2 disallowances for PSPS Communication Practices.					
2021 Total	-241	-5,822	0	-6,063	-1.7	0
2022	-71	-3,200	0	-3,271	-0.4	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 25882.0
Category: D. Emergency Prep Collab & Community Outreach
Category-Sub: 1. Emergency Preparedness Collaboration and Community Outreach
Workpaper Group: 258820 - Public Emergency Communication Strategy
Unit Measure: No feasible units

Year	Labor	NLbr	NSE	Total	FTE	Units
Explanation: To remap Public Safety Partner Portal projects from Workpaper 258820 to 228790						
2022	-238	-3,159	0	-3,397	-1.7	0
Explanation: Reduce historical costs due to 2022 Track 2 disallowances for PSPS Communication Practices.						
2022 Total	-309	-6,359	0	-6,667	-2.1	0
2023	-79	-10,715	0	-10,794	-0.4	0
Explanation: To remap Public Safety Partner Portal projects from Workpaper 258820 to 228790						
2023 Total	-79	-10,715	0	-10,794	-0.4	0
2024	-146	-9,636	0	-9,781	-0.8	0
Explanation: To remap Public Safety Partner Portal projects from Workpaper 258820 to 228790						
2024 Total	-146	-9,636	0	-9,781	-0.8	0
2025	-161	-4,784	0	-4,945	-0.8	0
Explanation: To remap Public Safety Partner Portal projects from Workpaper 258820 to 228790						
2025 Total	-161	-4,784	0	-4,945	-0.8	0

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 258820**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 25882.0
Category: D. Emergency Prep Collab & Community Outreach
Category-Sub: 1. Emergency Preparedness Collaboration and Community Outreach
Workpaper Group: 258820 - Public Emergency Communication Strategy
Workpaper Detail: 258820.001 - RAMP - Public Emergency Communication Strategy
Unit Measure: No feasible units

In-Service Date: 12/31/2027

Description:

The CNS (called ENS Replacement in the 2025 RAMP) is SDG&E's primary, enterprise-level platform for outbound emergency customer notifications. The system delivers multi-channel notifications to impacted customers via recorded voice calls, text messages, and emails, increasing the likelihood of successful contact. The system supports the full PSPS notification timeline by enabling advanced notifications, updates at the start of de-energization, ongoing status communications, and restoration notifications in alignment with CPUC PSPS requirements.

CNS Capital forecasts for 2026 and 2027 include system updates to support more accurate customer inclusion when PSPS scope expands or changes due to evolving weather conditions, new notification types to better align customer messaging with operational realities, system architecture updates to enhance resiliency and reliable performance when notification volumes are high and system availability is critical, and improved tracking and reporting for PSPS compliance.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	0	0	0	0
Non-Labor	3,200	3,780	0	0	0	0
NSE	0	0	0	0	0	0
Total	3,200	3,780	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 258820

TY2028 GRC FORECAST - DETAILS

Workpaper/Mitigation: 25820 Public Emergency Communication Strategy

25820 - Public Emergency Communication Strategy						2024		2027		2028		2029		2030		2031					
Line Item	Unit Description	Labor/Non-Labor/ N/E	RAMP/Non-RAMP	Unit Metric (e.g. Hrs, Amps)	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total cost	# of units	Cost per unit*	Total Cost	Comments	
1	ENS Replacement FTE's (Customer Notification System)	Labor	RAMP	hours			\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	2	Employees support for the ongoing deployment project up to go live 1) Build and update Database, PowerBI, and UI to support business needs 2) Manage and support the build out of documentation for purposes of documenting the build application and perform KT for ongoing support and maintenance 3) Perform code changes and builds to support business needs and identified system and process improvements.
2	ENS Replacement Contract Labor (Customer Notification System)	Non-Labor	RAMP	ea	1	\$ 3,200,000	\$ 3,200,000		\$ -	\$ 1,780,000		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	2	Contractor support for the ongoing deployment project up to go live 1) Build and update Database, PowerBI, and UI to support business needs 2) Manage and support the build out of documentation for purposes of documenting the build application and perform KT for ongoing support and maintenance 3) Perform code changes and builds to support business needs and identified system and process improvements.
Summary							\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	2	
		Labor	RAMP				\$ 3,200,000		\$ 1,780,000		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		2	
		Non-Labor	RAMP				\$ -		\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		2	
		N/E	RAMP				\$ -		\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		2	
	Subtotal RAMP						\$ 3,200,000		\$ 1,780,000		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		2	
		Labor	Non-RAMP				\$ -		\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		2	
		Non-Labor	Non-RAMP				\$ -		\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		2	
		N/E	Non-RAMP				\$ -		\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		2	
	Subtotal Non-RAMP						\$ -		\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		2	
	Total Project Forecast						\$ 3,200,000		\$ 1,780,000		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		2	

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Category: E. Enterprise Systems
Workpaper: VARIOUS

Summary for Category: E. Enterprise Systems

In 2025\$ (000) Incurred Costs

	Adjusted-Recorded	Adjusted-Forecast					
	2025	2026	2027	2028	2029	2030	2031
Labor	659	668	671	1,684	871	870	1,681
Non-Labor	3,681	3,681	3,681	9,681	8,181	8,981	12,181
NSE	0	0	0	0	0	0	0
Total	4,340	4,349	4,352	11,365	9,052	9,851	13,862
FTE	4.2	4.2	4.2	9.3	4.3	4.3	9.3

Workpapers belonging to this Category:

238770 Vegetation Management Enterprise System

Labor	0	0	0	0	0	0	0
Non-Labor	0	0	0	0	0	0	0
NSE	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Unit Measure: Projects

Units	0	0	0	0	0	0	0
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248770 Enterprise Data Foundation

Labor	659	668	671	1,684	871	870	1,681
Non-Labor	3,681	3,681	3,681	9,681	8,181	8,981	12,181
NSE	0	0	0	0	0	0	0
Total	4,340	4,349	4,352	11,365	9,052	9,851	13,862
FTE	4.2	4.2	4.2	9.3	4.3	4.3	9.3

Unit Measure: No feasible units

Units	0	0	0	0	0	0	0
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Note: Totals may include rounding differences.

**Beginning of Workpaper Group
248770 - Enterprise Data Foundation**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 24877.0
Category: E. Enterprise Systems
Category-Sub: 1. Enterprise Systems
Workpaper Group: 248770 - Enterprise Data Foundation
Unit Measure: No feasible units

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Base YR Rec	0	0	796	616	659	668	671	1,684	871	870	1,681
Non-Labor	Base YR Rec	0	0	15,922	6,873	3,681	3,681	3,681	9,681	8,181	8,981	12,181
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0	0	0
Total		0	0	16,718	7,489	4,340	4,349	4,352	11,365	9,052	9,851	13,862
FTE	Base YR Rec	0.0	0.0	5.4	4.0	4.2	4.2	4.2	9.3	4.3	4.3	9.3
Units	Base YR Rec	0	0	0	0	0	0	0	0	0	0	0

Business Purpose:

The purpose of the Enterprise Data Foundation is to define how the utility will establish the core structures, standards, and capabilities needed to manage data as a strategic enterprise asset. As progress continues toward data-driven, risk-informed operations, reliable data foundations become essential for integrating asset information, spatial datasets, inspection records, vegetation management records, operational systems, situational awareness and climate trends, and emerging grid sensor data.

A strong enterprise data foundation—anchored by a clear strategy and governance model—enables the utility to operate with greater confidence, precision, and efficiency. High-quality, interoperable data improves the performance of risk models, enhances situational awareness, and drives more effective planning and mitigation activities. It reduces the operational friction caused by inconsistent or siloed datasets and ensures that teams across engineering, asset management operations, vegetation management, emergency management, climate adaptation and compliance are working from the same reliable sources of truth.

Physical Description:

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 24877.0
Category: E. Enterprise Systems
Category-Sub: 1. Enterprise Systems
Workpaper Group: 248770 - Enterprise Data Foundation
Unit Measure: No feasible units

Programs listed under the Enterprise Data Foundation establish the core capabilities, data structures, and governance needed to support risk-informed decision making, emergency operations, regulatory reporting, and enterprise analytics.

1) OEIS Data Foundation: This program is the core development effort responsible for transforming raw enterprise data into standardized , reusable data products that support a broad range of use cases—including, but not limited to, Office of Energy Infrastructure Safety (OEIS) regulatory reporting. It is the most critical data-foundation initiative for improving data management, consistency, quality, and cost efficiency across the organization. By creating, publishing, and maintaining common data products in the cloud, this initiative enables enterprise-wide sharing, reduces duplication of effort, and establishes the foundation needed for data-driven operational insights. Once standard data products are established, the initiative focuses on building automated data pipelines and processing capabilities required to meet OEIS regulatory obligations.

2) Emergency Management Data Foundation Resilience: In addition to the project scope mentioned in the OEIS Data Foundation, this program strengthens the utility’s ability to collect, manage, and use data during an emergency event. This program establishes the data backbone for real-time and near-real-time emergency responses. This program focuses on Emergency Management’s unique mission that necessitates a data environment that is purpose-built for speed, clarity, resilience, and regulatory integrity—distinct from but interoperable with broader utility operations.

3)WCS Intelligence Enablement: A end-to-end automation platform designed to streamline complex operational and regulatory workflows for WCS. The platform will support the automated monitoring of operational steps, identify potential delays or process bottlenecks, and surface actionable insights that help teams intervene earlier and more effectively . Its structured analytical methods will improve SDG&E’s ability to prioritize work, allocate resources efficiently, and maintain better visibility into compliance related obligations.

Project Justification:

These foundations also expand the utility’s capacity to adopt advanced technologies such as predictive analytics , automated operations and data analytic tools, and remote sensing technologies for grid monitoring. By establishing common standards and a unified data architecture, the organization becomes more agile and better prepared for unpredictable hazards, growth in electrification, and regulatory expectations. Ultimately, these data foundations empower the enterprise expectations, evidence-based decisions that are transparent, defensible, and aligned with operational and regulatory expectations and customer satisfaction —enhancing safety, reliability, and long-term resilience.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 24877.0
Category: E. Enterprise Systems
Category-Sub: 1. Enterprise Systems
Workpaper Group: 248770 - Enterprise Data Foundation
Unit Measure: No feasible units

Forecast Methodology:

Labor - Base YR Rec

The Labor forecast methodology is Base Year for OEIS Data Foundation. The base-year forecast methodology was selected as most indicative of future work as similar program work was being completed in the 2025. Historical costs prior to 2025 are not representative of future costs. The Emergency Management Data Foundation Resilience is an incremental cost as this is a new initiative, previously not included in the 2025 Base Year.

Non-Labor - Base YR Rec

The Non-labor forecast methodology is Base year for OEIS Data Foundation. The base-year forecast methodology was selected as most indicative of future work as similar program work was being completed in the 2025. Historical costs prior to 2025 are not representative of future costs. The Emergency Management Data Foundation Resilience and WCS Intelligence Enablement are incremental costs as these are new initiatives, previously not included in the 2025 Base Year.

NSE - Base YR Rec

N/A

Units - Base YR Rec

A unit type cannot be assigned because the activity's cost category includes multiple cost types with different measurement bases, making a single unit of measure unusable.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 24877.0
Category: E. Enterprise Systems
Category-Sub: 1. Enterprise Systems
Workpaper Group: 248770 - Enterprise Data Foundation
Unit Measure: No feasible units

Summary of Adjustments to Forecast:

In 2025 \$ (000)																			
	Base Forecast						Forecast Adjustments						Adjusted-Forecast						
Years	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	
Labor	659	659	659	659	659	659	9	12	1,025	212	211	1,022	668	671	1,684	871	870	1,681	
NLbr	3,681	3,681	3,681	3,681	3,681	3,681	0	0	6,000	4,500	5,300	8,500	3,681	3,681	9,681	8,181	8,981	12,181	
NSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	4,340	4,340	4,340	4,340	4,340	4,340	9	12	7,025	4,712	5,511	9,522	4,349	4,352	11,365	9,052	9,851	13,862	
FTE	4.2	4.2	4.2	4.2	4.2	4.2	0.0	0.0	5.1	0.1	0.1	5.1	4.2	4.2	9.3	4.3	4.3	9.3	
Units	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Forecast Adjustment Details:

Year	Labor (Base YR Rec)	NLbr (Base YR Rec)	NSE (Base YR Rec)	Total	FTE	Units (Base YR Rec)
2026	9	0	0	9	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2026 Total	9	0	0	9	0.0	0
2027	12	0	0	12	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2027 Total	12	0	0	12	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 24877.0
Category: E. Enterprise Systems
Category-Sub: 1. Enterprise Systems
Workpaper Group: 248770 - Enterprise Data Foundation
Unit Measure: No feasible units

Year	Labor (Base YR Rec)	NLbr (Base YR Rec)	NSE (Base YR Rec)	Total	FTE	Units (Base YR Rec)
2028	1,000	6,000	0	7,000	5.1	0
Explanation:	Adjusting the base year forecast to reflect costs for Emergency Management Data Foundation (\$4,500) and WCS Intelligence Enablement (\$2,500), which are incremental and are not included in the 2025 base year.					
2028	25	0	0	25	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2028 Total	1,025	6,000	0	7,025	5.1	0
2029	200	4,500	0	4,700	0.1	0
Explanation:	Adjusting the base year forecast to reflect costs for Emergency Management Data Foundation (\$700) and WCS Intelligence Enablement (\$4,000), which are incremental and are not included in the 2025 base year.					
2029	12	0	0	12	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2029 Total	212	4,500	0	4,712	0.1	0
2030	200	5,300	0	5,500	0.1	0
Explanation:	Adjusting the base year forecast to reflect costs for Emergency Management Data Foundation (\$500) and WCS Intelligence Enablement (\$5,000), which are incremental and are not included in the 2025 base year.					
2030	11	0	0	11	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2030 Total	211	5,300	0	5,511	0.1	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 24877.0
Category: E. Enterprise Systems
Category-Sub: 1. Enterprise Systems
Workpaper Group: 248770 - Enterprise Data Foundation
Unit Measure: No feasible units

Year	Labor (Base YR Rec)	NLbr (Base YR Rec)	NSE (Base YR Rec)	Total	FTE	Units (Base YR Rec)
2031	1,000	8,500	0	9,500	5.1	0
Explanation:	Adjusting the base year forecast to reflect costs for Emergency Management Data Foundation (\$4,500) and WCS Intelligence Enablement (\$5,000), which are incremental and are not included in the 2025 base year.					
2031	22	0	0	22	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2031 Total	1,022	8,500	0	9,522	5.1	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 24877.0
Category: E. Enterprise Systems
Category-Sub: 1. Enterprise Systems
Workpaper Group: 248770 - Enterprise Data Foundation
Unit Measure: No feasible units

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Recorded (Nominal \$)*					
Labor	689	520	610	523	575
Non-Labor	16,873	14,223	13,895	6,631	3,681
NSE	0	0	0	0	0
Total	17,562	14,743	14,505	7,155	4,256
FTE	6.1	4.4	4.7	3.5	3.6
Units	0	0	0	0	0
Adjustments (Nominal \$) **					
Labor	-689	-520	0	0	0
Non-Labor	-16,873	-14,223	0	0	0
NSE	0	0	0	0	0
Total	-17,562	-14,743	0	0	0
FTE	-6.1	-4.4	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Nominal \$)					
Labor	0	0	610	523	575
Non-Labor	0	0	13,895	6,631	3,681
NSE	0	0	0	0	0
Total	0	0	14,505	7,155	4,256
FTE	0.0	0.0	4.7	3.5	3.6
Units	0	0	0	0	0
Vacation & Sick (Nominal \$)					
Labor	0	0	85	71	84

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 24877.0
Category: E. Enterprise Systems
Category-Sub: 1. Enterprise Systems
Workpaper Group: 248770 - Enterprise Data Foundation
Unit Measure: No feasible units

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	85	71	84
FTE	0.0	0.0	0.7	0.5	0.6
Units	0	0	0	0	0
Escalation to 2025\$					
Labor	0	0	101	22	0
Non-Labor	0	0	2,027	242	0
NSE	0	0	0	0	0
Total	0	0	2,128	264	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Constant 2025\$)					
Labor	0	0	796	616	659
Non-Labor	0	0	15,922	6,873	3,681
NSE	0	0	0	0	0
Total	0	0	16,718	7,489	4,340
FTE	0.0	0.0	5.4	4.0	4.2
Units	0	0	0	0	0

* After company-wide exclusions of Non-GRC costs
 ** Refer to "Detail of Adjustments to Recorded" page for line item adjustments
 Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 24877.0
Category: E. Enterprise Systems
Category-Sub: 1. Enterprise Systems
Workpaper Group: 248770 - Enterprise Data Foundation
Unit Measure: No feasible units

Summary of Adjustments to Recorded:

		In Nominal \$(000)				
Years	2021	2022	2023	2024	2025	
Labor	-689	-520	0	0	0	
Non-Labor	-16,873	-14,223	0	0	0	
NSE	0	0	0	0	0	
Total	-17,562	-14,743	0	0	0	
FTE	-6.1	-4.4	0.0	0.0	0.0	
Units	0	0	0	0	0	

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	-689	-16,873	0	-17,562	-6.1	0
Explanation:	Reduce historical costs due to 2021 Track 2 disallowances for Centralized Data Repository and Documentation & Disclosure of WF-related Algorithms and Data.					
2021 Total	-689	-16,873	0	-17,562	-6.1	0
2022	-520	-14,223	0	-14,743	-4.4	0
Explanation:	Reduce historical costs due to 2022 Track 2 disallowances for Centralized Data Repository and Documentation & Disclosure of WF-related Algorithms and Data.					

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 24877.0
Category: E. Enterprise Systems
Category-Sub: 1. Enterprise Systems
Workpaper Group: 248770 - Enterprise Data Foundation
Unit Measure: No feasible units

Year	Labor	NLbr	NSE	Total	FTE	Units
2022 Total	-520	-14,223	0	-14,743	-4.4	0
2023 Total	0	0	0	0	0.0	0
2024 Total	0	0	0	0	0.0	0
2025 Total	0	0	0	0	0.0	0

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 248770**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 24877.0
Category: E. Enterprise Systems
Category-Sub: 1. Enterprise Systems
Workpaper Group: 248770 - Enterprise Data Foundation
Workpaper Detail: 248770.001 - RAMP - Enterprise Data Foundation - OEIS Data Foundation
Unit Measure: No feasible units

In-Service Date: Not Applicable

Description:

OEIS Data Foundation: This program is the core development effort responsible for transforming raw enterprise data into standardized , reusable data products that support a broad range of use cases—including, but not limited to, Office of Energy Infrastructure Safety (OEIS) regulatory reporting. It is the most critical data-foundation initiative for improving data management, consistency, quality, and cost efficiency across the organization . By creating, publishing, and maintaining common data products in the cloud, this initiative enables enterprise-wide sharing, reduces duplication of effort, and establishes the foundation needed for data-driven operational insights. Once standard data products are established, the initiative focuses on building automated data pipelines and processing capabilities required to meet OEIS regulatory obligations.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	668	671	669	668	667	668
Non-Labor	3,681	3,681	3,681	3,681	3,681	3,681
NSE	0	0	0	0	0	0
Total	4,349	4,352	4,350	4,349	4,348	4,349
FTE	4.2	4.2	4.2	4.2	4.2	4.2
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 24877.0
Category: E. Enterprise Systems
Category-Sub: 1. Enterprise Systems
Workpaper Group: 248770 - Enterprise Data Foundation
Workpaper Detail: 248770.002 - RAMP - Enterprise Data Foundation - Emergency Management Data Foundation Resilience
Unit Measure: No feasible units

In-Service Date: 12/31/2031

Description:

Emergency Management Data Foundation Resilience: In addition to the project scope mentioned in the OEIS Data Foundation, this program strengthens the utility's ability to collect, manage, and use data during an emergency event. This program establishes the data backbone for real-time and near-real-time emergency responses. This program focuses on Emergency Management's unique mission that necessitates a data environment that is purpose-built for speed, clarity, resilience, and regulatory integrity—distinct from but interoperable with broader utility operations.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	1,015	203	203	1,013
Non-Labor	0	0	3,500	500	300	3,500
NSE	0	0	0	0	0	0
Total	0	0	4,515	703	503	4,513
FTE	0.0	0.0	5.1	0.1	0.1	5.1
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 24877.0
Category: E. Enterprise Systems
Category-Sub: 1. Enterprise Systems
Workpaper Group: 248770 - Enterprise Data Foundation
Workpaper Detail: 248770.003 - RAMP - Enterprise Data Foundation - WCS Intelligence Enablement
Unit Measure: No feasible units

In-Service Date: 12/31/2031

Description:

WCS Intelligence Enablement: A end-to-end automation platform designed to streamline complex operational and regulatory workflows for WCS. The platform will support the automated monitoring of operational steps, identify potential delays or process bottlenecks, and surface actionable insights that help teams intervene earlier and more effectively. Its structured analytical methods will improve SDG&E's ability to prioritize work, allocate resources efficiently, and maintain better visibility into compliance related obligations.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	0	0	0	0
Non-Labor	0	0	2,500	4,000	5,000	5,000
NSE	0	0	0	0	0	0
Total	0	0	2,500	4,000	5,000	5,000
FTE	0.0	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Category: G. Risk Methodology and Assessment
Workpaper: VARIOUS

Summary for Category: G. Risk Methodology and Assessment

	In 2025\$ (000) Incurred Costs						
	Adjusted-Recorded	Adjusted-Forecast					
	2025	2026	2027	2028	2029	2030	2031
Labor	260	576	578	874	861	860	810
Non-Labor	3,533	5,460	5,076	7,180	5,918	5,918	5,824
NSE	0	0	0	0	0	0	0
Total	3,793	6,036	5,654	8,054	6,779	6,778	6,634
FTE	2.0	4.6	4.6	6.9	6.8	6.8	6.5

Workpapers belonging to this Category:

238750 Risk Methodology and Assessment

Labor	260	576	578	874	861	860	810
Non-Labor	3,533	5,460	5,076	7,180	5,918	5,918	5,824
NSE	0	0	0	0	0	0	0
Total	3,793	6,036	5,654	8,054	6,779	6,778	6,634
FTE	2.0	4.6	4.6	6.9	6.8	6.8	6.5
Unit Measure: No feasible units							
Units	0	0	0	0	0	0	0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
238750 - Risk Methodology and Assessment**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23875.0
Category: G. Risk Methodology and Assessment
Category-Sub: 1. Risk Methodology and Assessment
Workpaper Group: 238750 - Risk Methodology and Assessment
Unit Measure: No feasible units

Summary of Results (Constant 2025 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast					
Years		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Labor	Zero-Based	0	0	197	287	260	576	578	874	861	860	810
Non-Labor	Zero-Based	0	2,560	6,762	4,631	3,533	5,460	5,076	7,180	5,918	5,918	5,824
NSE	Zero-Based	0	0	0	0	0	0	0	0	0	0	0
Total		0	2,560	6,959	4,918	3,793	6,036	5,654	8,054	6,779	6,778	6,634
FTE	Zero-Based	0.0	0.0	1.5	2.0	2.0	4.6	4.6	6.9	6.8	6.8	6.5
Units	Zero-Based	0	0	0	0	0	0	0	0	0	0	0

Business Purpose:

The Risk Methodology and Assessment Program strengthens SDG&E's ability to assess, manage, and mitigate wildfire and outage risk in alignment with evolving CPUC and OEIS requirements. The program delivers a comprehensive, data-driven framework to evaluate long-term grid hardening strategies and operational mitigations by quantifying wildfire ignition likelihood, consequence severity, and the impacts of Public Safety Power Shutoffs (PSPS) and Protective Equipment and Device Settings (PEDS) across the service territory.

Through advanced analytics, cloud computing, machine learning and risk modeling, the program performs granular, conductor-span level risk calculations and scenario analyses to identify where capital investments—such as covered conductor installation or strategic undergrounding—provide the greatest risk reduction and cost efficiency. Millions of Monte Carlo simulations and predictive models inform both long-range infrastructure planning and near-term operational decisions, including precise wind-gust thresholds and location-specific de-energization strategies that reduce unnecessary outages while maintaining public safety.

The program integrates high-resolution LiDAR data and automated spatial analytics to enable sub-meter accuracy in vegetation management and

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23875.0
Category: G. Risk Methodology and Assessment
Category-Sub: 1. Risk Methodology and Assessment
Workpaper Group: 238750 - Risk Methodology and Assessment
Unit Measure: No feasible units

asset intelligence, supporting the transition from manual, schedule-based inspections to targeted, condition-based practices. By embedding this data into the Wildfire Next Generation System (WINGS) and operational forecasting platforms, SDG&E improves situational awareness, regulatory compliance, and decision-making during extreme fire weather events.

Additionally, the program establishes foundational capabilities—including centralized data governance, automated data pipelines, and scalable analytics platforms—that enhance long-term wildfire risk management and support future use cases such as dynamic risk forecasting, scenario planning, and climate adaptation modeling.

Physical Description:

The physical scope of the program covers the HFTD, which accounts for approximately two-thirds of the service territory, as well as WUI areas where risk of ignition and customer impact are significant. While the program primarily focuses on identifying, quantifying, and mitigating these high-risk areas, certain models, data pipelines, and risk-informed applications extend across the service territory, including non- HFTD areas affected by PSPS.

Project Justification:

Between 2028 and 2031, this program is expected to deliver measurable and sustained improvements in SDG& E's wildfire and outage risk management capabilities. The program enables updated, defensible quantification of wildfire, Public Safety Power Shutoff (PSPS), and Protective Equipment and Device Settings (PEDS) risks at the conductor-span, segment, and circuit levels, allowing mitigation investments to be precisely targeted to the highest-risk locations. These enhanced analytics directly support more optimized PSPS decision-making, reducing unnecessary customer impacts while maintaining rigorous public safety standards and lowering the likelihood and consequences of catastrophic wildfire events through improved situational awareness and predictive forecasting.

The program is mandated by CPUC decisions and Public Utilities Code § 8386 and reflects industry best practices for risk-informed utility management consistent with ISO 31000. Pilot deployments have demonstrated improved alignment between mitigation spending and realized risk reduction, supporting regulatory defensibility and transparent investment decisions.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
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Category: G. Risk Methodology and Assessment
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Workpaper Group: 238750 - Risk Methodology and Assessment
Unit Measure: No feasible units

A core justification for the program is its support of SDG&E's transition to a cost-benefit-driven wildfire mitigation framework. Advanced analytics within the Wildfire Next Generation System (WiNGS) execute millions of Monte Carlo simulations to quantify wildfire, PSPS, and PEDS risks, directly informing prioritization of capital-intensive grid hardening investments such as strategic undergrounding versus covered conductor installation. The program evaluates mitigation effectiveness using standardized metrics, including dollars per unit of risk reduced, dollars per customer avoided, and dollars per customer-minute of interruption avoided, while incorporating lifecycle cost savings from reduced operational mitigations and overhead asset maintenance.

The LiDAR Data Acquisition & Intelligence Program further strengthens this justification by providing high-resolution, timestamped 3D spatial data across the High Fire Threat District (HFTD). Integrated with WiNGS and operational systems, this data enables sub-meter accuracy in vegetation management and asset condition assessment, supporting the transition from manual, schedule-based inspections to targeted, condition-based practices. Together, these capabilities ensure mitigation investments are efficient, defensible, and deliver maximum safety, reliability, and customer benefit.

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
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Workpaper Group: 238750 - Risk Methodology and Assessment
Unit Measure: No feasible units

Forecast Methodology:

Labor - Zero-Based

The method used is Zero based. This approach is appropriate because many of the capital initiatives represent new or significantly expanded capabilities that are not adequately reflected in historical spending. Programs such as Advanced Analytics, the LiDAR workflow deployment are either newly introduced or have undergone substantial changes in scale and scope, making historical cost patterns unreliable indicators of future needs. Several of these activities rely heavily on specialized technical contractors and vendors whose resource requirements fluctuate based on project phase and work plan.

Non-Labor - Zero-Based

The method used is Zero based. This approach is appropriate because many of the capital initiatives represent new or significantly expanded capabilities that are not adequately reflected in historical spending. Programs such as Advanced Analytics, the LiDAR workflow deployment are either newly introduced or have undergone substantial changes in scale and scope, making historical cost patterns unreliable indicators of future needs. Several of these activities rely heavily on specialized technical contractors and vendors whose resource requirements fluctuate based on project phase and work plan.

NSE - Zero-Based

N/A

Units - Zero-Based

Units are not feasible because the activities included differ in a way they cannot be combined into one unit of work.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23875.0
Category: G. Risk Methodology and Assessment
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Workpaper Group: 238750 - Risk Methodology and Assessment
Unit Measure: No feasible units

Summary of Adjustments to Forecast:

In 2025 \$ (000)																			
	Base Forecast						Forecast Adjustments						Adjusted-Forecast						
Years	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	2026	2027	2028	2029	2030	2031	
Labor	568	568	861	849	849	800	8	10	13	12	11	10	576	578	874	861	860	810	
NLbr	5,460	5,076	7,180	5,918	5,918	5,824	0	0	0	0	0	0	5,460	5,076	7,180	5,918	5,918	5,824	
NSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	6,028	5,644	8,041	6,767	6,767	6,624	8	10	13	12	11	10	6,036	5,654	8,054	6,779	6,778	6,634	
FTE	4.6	4.6	6.9	6.8	6.8	6.5	0.0	0.0	0.0	0.0	0.0	0.0	4.6	4.6	6.9	6.8	6.8	6.5	
Units	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Forecast Adjustment Details:

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2026	8	0	0	8	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2026 Total	8	0	0	8	0.0	0
2027	10	0	0	10	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2027 Total	10	0	0	10	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23875.0
Category: G. Risk Methodology and Assessment
Category-Sub: 1. Risk Methodology and Assessment
Workpaper Group: 238750 - Risk Methodology and Assessment
Unit Measure: No feasible units

Year	Labor (Zero-Based)	NLbr (Zero-Based)	NSE (Zero-Based)	Total	FTE	Units (Zero-Based)
2028	13	0	0	13	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2028 Total	13	0	0	13	0.0	0
2029	12	0	0	12	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2029 Total	12	0	0	12	0.0	0
2030	11	0	0	11	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2030 Total	11	0	0	11	0.0	0
2031	10	0	0	10	0.0	0
Explanation:	Reflects changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.					
2031 Total	10	0	0	10	0.0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23875.0
Category: G. Risk Methodology and Assessment
Category-Sub: 1. Risk Methodology and Assessment
Workpaper Group: 238750 - Risk Methodology and Assessment
Unit Measure: No feasible units

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Recorded (Nominal \$)*					
Labor	41	353	151	244	227
Non-Labor	887	6,496	5,300	4,468	3,533
NSE	0	0	0	0	0
Total	928	6,850	5,451	4,712	3,760
FTE	0.4	2.9	1.3	1.7	1.7
Units	0	0	0	0	0
Adjustments (Nominal \$) **					
Labor	-41	-353	0	0	0
Non-Labor	-887	-4,633	601	0	0
NSE	0	0	0	0	0
Total	-928	-4,987	601	0	0
FTE	-0.4	-2.9	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Nominal \$)					
Labor	0	0	151	244	227
Non-Labor	0	1,863	5,901	4,468	3,533
NSE	0	0	0	0	0
Total	0	1,863	6,052	4,712	3,760
FTE	0.0	0.0	1.3	1.7	1.7
Units	0	0	0	0	0
Vacation & Sick (Nominal \$)					
Labor	0	0	21	33	33

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23875.0
Category: G. Risk Methodology and Assessment
Category-Sub: 1. Risk Methodology and Assessment
Workpaper Group: 238750 - Risk Methodology and Assessment
Unit Measure: No feasible units

Determination of Adjusted-Recorded (in thousands):

	2021	2022	2023	2024	2025
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	21	33	33
FTE	0.0	0.0	0.2	0.3	0.3
Units	0	0	0	0	0
Escalation to 2025\$					
Labor	0	0	25	10	0
Non-Labor	0	697	861	163	0
NSE	0	0	0	0	0
Total	0	697	886	173	0
FTE	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0
Recorded-Adjusted (Constant 2025\$)					
Labor	0	0	197	287	260
Non-Labor	0	2,560	6,762	4,631	3,533
NSE	0	0	0	0	0
Total	0	2,560	6,959	4,918	3,793
FTE	0.0	0.0	1.5	2.0	2.0
Units	0	0	0	0	0

* After company-wide exclusions of Non-GRC costs
 ** Refer to "Detail of Adjustments to Recorded" page for line item adjustments
 Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23875.0
Category: G. Risk Methodology and Assessment
Category-Sub: 1. Risk Methodology and Assessment
Workpaper Group: 238750 - Risk Methodology and Assessment
Unit Measure: No feasible units

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2021	2022	2023	2024	2025
Labor	-41	-353	0	0	0
Non-Labor	-887	-4,633	601	0	0
NSE	0	0	0	0	0
Total	-928	-4,987	601	0	0
FTE	-0.4	-2.9	0.0	0.0	0.0
Units	0	0	0	0	0

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE	Units
2021	0	0	0	0	0.0	0
Explanation:	Updated unit measure					
2021	-41	-887	0	-928	-0.4	0
Explanation:	Reduce historical costs due to 2021 Track 2 disallowances for Centralized Data Repository.					
2021 Total	-41	-887	0	-928	-0.4	0
2022	-353	-5,010	0	-5,364	-2.9	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
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Category: G. Risk Methodology and Assessment
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Workpaper Group: 238750 - Risk Methodology and Assessment
Unit Measure: No feasible units

Year	Labor	NLbr	NSE	Total	FTE	Units
Explanation: Reduce historical costs due to 2022 Track 2 disallowances for Centralized Data Repository.						
2022	0	377	0	377	0.0	0
Explanation: Adjustment to add back common FERC account FERC-jurisdiction costs for RO model carve-out.						
2022 Total	-353	-4,633	0	-4,987	-2.9	0
2023	0	601	0	601	0.0	0
Explanation: Align work paper level historical actuals with current SAP/TM1 as a result of work order transfers (SAP Data Change)						
2023 Total	0	601	0	601	0.0	0
2024 Total	0	0	0	0	0.0	0
2025 Total	0	0	0	0	0.0	0

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 238750**

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23875.0
Category: G. Risk Methodology and Assessment
Category-Sub: 1. Risk Methodology and Assessment
Workpaper Group: 238750 - Risk Methodology and Assessment
Workpaper Detail: 238750.001 - RAMP - Risk Methodology and Assessment - Advanced Analytics - ISD 2027
Unit Measure: No feasible units

In-Service Date: 12/31/2027

Description:

The Advanced Analytics program strengthens SDG&E's wildfire risk modeling and decision-support capabilities for both long-term grid planning (WiNGS Planning) and real-time Public Safety Power Shutoff (PSPS) operations (WiNGS Ops). By integrating detailed weather, vegetation, asset, customer exposure, simulated fire-spread data, and historical PSPS events, the program enhances SDG&E's ability to assess wildfire likelihood, consequences, and long-term risk reduction at a granular circuit-segment level.

Modernizing SDG&E's modeling framework, including new regulatory requirements, improves the accuracy of wildfire and PSPS risk characterization. These enhancements enable more reliable mitigation-effectiveness assessments, clearer quantification of long-term risk reductions, and advanced visualization tools that support investment decisions and operational de-energization actions during extreme fire-weather conditions.

The program also improves transparency, documentation, data integration, cross-utility comparability, and uncertainty quantification, directly addressing Areas of Continued Improvement (ACI) requirements and supporting SDG&E's compliance with evolving wildfire-risk governance standards.

Through enhanced data integration, methodological refinement, and robust validation supported by internal and external experts, the program enables SDG&E to (1) consistently quantify wildfire and PSPS risk, (2) prioritize grid-hardening mitigations based on risk and cost-effectiveness, and (3) demonstrate compliance and continued maturity aligned with statewide Wildfire Mitigation Plan expectations.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	576	578	0	0	0	0
Non-Labor	5,460	5,076	0	0	0	0
NSE	0	0	0	0	0	0
Total	6,036	5,654	0	0	0	0
FTE	4.6	4.6	0.0	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23875.0
Category: G. Risk Methodology and Assessment
Category-Sub: 1. Risk Methodology and Assessment
Workpaper Group: 238750 - Risk Methodology and Assessment
Workpaper Detail: 238750.001 - RAMP - Risk Methodology and Assessment - Advanced Analytics - ISD 2027
Unit Measure: No feasible units

In-Service Date: 12/31/2027

Units	0	0	0	0	0	0
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Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23875.0
Category: G. Risk Methodology and Assessment
Category-Sub: 1. Risk Methodology and Assessment
Workpaper Group: 238750 - Risk Methodology and Assessment
Workpaper Detail: 238750.002 - RAMP - Risk Methodology and Assessment - Advanced Analytics - ISD 2029
Unit Measure: No feasible units

In-Service Date: 12/31/2029

Description:

The Advanced Analytics program strengthens SDG&E's wildfire risk modeling and decision-support capabilities for both long-term grid planning (WiNGS Planning) and real-time Public Safety Power Shutoff (PSPS) operations (WiNGS Ops). By integrating detailed weather, vegetation, asset, customer exposure, simulated fire-spread data, and historical PSPS events, the program enhances SDG&E's ability to assess wildfire likelihood, consequences, and long-term risk reduction at a granular circuit-segment level.

Modernizing SDG&E's modeling framework, including new regulatory requirements, improves the accuracy of wildfire and PSPS risk characterization. These enhancements enable more reliable mitigation-effectiveness assessments, clearer quantification of long-term risk reductions, and advanced visualization tools that support investment decisions and operational de-energization actions during extreme fire-weather conditions.

The program also improves transparency, documentation, data integration, cross-utility comparability, and uncertainty quantification, directly addressing Areas of Continued Improvement (ACI) requirements and supporting SDG&E's compliance with evolving wildfire-risk governance standards.

Through enhanced data integration, methodological refinement, and robust validation supported by internal and external experts, the program enables SDG&E to (1) consistently quantify wildfire and PSPS risk, (2) prioritize grid-hardening mitigations based on risk and cost-effectiveness, and (3) demonstrate compliance and continued maturity aligned with statewide Wildfire Mitigation Plan expectations.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	752	752	0	0
Non-Labor	0	0	5,076	4,800	0	0
NSE	0	0	0	0	0	0
Total	0	0	5,828	5,552	0	0
FTE	0.0	0.0	6.0	6.0	0.0	0.0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23875.0
Category: G. Risk Methodology and Assessment
Category-Sub: 1. Risk Methodology and Assessment
Workpaper Group: 238750 - Risk Methodology and Assessment
Workpaper Detail: 238750.002 - RAMP - Risk Methodology and Assessment - Advanced Analytics - ISD 2029
Unit Measure: No feasible units

In-Service Date: 12/31/2029

Units	0	0	0	0	0	0
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Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23875.0
Category: G. Risk Methodology and Assessment
Category-Sub: 1. Risk Methodology and Assessment
Workpaper Group: 238750 - Risk Methodology and Assessment
Workpaper Detail: 238750.003 - RAMP - Risk Methodology and Assesment - Advanced Analytics - ISD 2031
Unit Measure: No feasible units

In-Service Date: 12/31/2031

Description:

The Advanced Analytics program strengthens SDG&E's wildfire risk modeling and decision-support capabilities for both long-term grid planning (WiNGS Planning) and real-time Public Safety Power Shutoff (PSPS) operations (WiNGS Ops). By integrating detailed weather, vegetation, asset, customer exposure, simulated fire-spread data, and historical PSPS events, the program enhances SDG&E's ability to assess wildfire likelihood, consequences, and long-term risk reduction at a granular circuit-segment level.

Modernizing SDG&E's modeling framework, including new regulatory requirements, improves the accuracy of wildfire and PSPS risk characterization. These enhancements enable more reliable mitigation-effectiveness assessments, clearer quantification of long-term risk reductions, and advanced visualization tools that support investment decisions and operational de-energization actions during extreme fire-weather conditions.

The program also improves transparency, documentation, data integration, cross-utility comparability, and uncertainty quantification, directly addressing Areas of Continued Improvement (ACI) requirements and supporting SDG&E's compliance with evolving wildfire-risk governance standards.

Through enhanced data integration, methodological refinement, and robust validation supported by internal and external experts, the program enables SDG&E to (1) consistently quantify wildfire and PSPS risk, (2) prioritize grid-hardening mitigations based on risk and cost-effectiveness, and (3) demonstrate compliance and continued maturity aligned with statewide Wildfire Mitigation Plan expectations.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	0	0	751	750
Non-Labor	0	0	0	0	4,800	4,800
NSE	0	0	0	0	0	0
Total	0	0	0	0	5,551	5,550
FTE	0.0	0.0	0.0	0.0	6.0	6.0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23875.0
Category: G. Risk Methodology and Assessment
Category-Sub: 1. Risk Methodology and Assessment
Workpaper Group: 238750 - Risk Methodology and Assessment
Workpaper Detail: 238750.003 - RAMP - Risk Methodology and Assesment - Advanced Analytics - ISD 2031
Unit Measure: No feasible units

In-Service Date: 12/31/2031

Units	0	0	0	0	0	0
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Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23875.0
Category: G. Risk Methodology and Assessment
Category-Sub: 1. Risk Methodology and Assessment
Workpaper Group: 238750 - Risk Methodology and Assessment
Workpaper Detail: 238750.004 - RAMP - Risk Methodology and Assessment - LiDAR capture
Unit Measure: No feasible units

In-Service Date: 06/30/2028

Description:

The LiDAR Data Acquisition & Intelligence Program provides high-resolution 3D measurements of SDG&E's grid and surrounding environment across the High Fire Threat District (HFTD). Through full-system LiDAR surveys and targeted resurveys, the program delivers precise, timestamped spatial data that reflects real-world asset conditions.

By integrating LiDAR data with advanced analytics, the program enables automated insights into vegetation encroachment, pole loading, conductor clearances, and structural integrity. It also creates a foundation for future capabilities such as predictive hazard detection, long-term asset degradation modeling, and scenario-based wildfire risk forecasting.

LiDAR-derived intelligence can be incorporated into wildfire risk tools like WiNGS-Ops and into operational, maintenance, and engineering systems, providing a unified source of objective data for decision-making. This strengthens situational awareness during high-risk conditions, supports more defensible PSPS determinations, and enhances regulatory compliance by grounding decisions in verifiable environmental measurements.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	0	0	0	0
Non-Labor	0	0	1,267	317	317	317
NSE	0	0	0	0	0	0
Total	0	0	1,267	317	317	317
FTE	0.0	0.0	0.0	0.0	0.0	0.0
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness: Jonathan Woldemariam
Budget Code: 23875.0
Category: G. Risk Methodology and Assessment
Category-Sub: 1. Risk Methodology and Assessment
Workpaper Group: 238750 - Risk Methodology and Assessment
Workpaper Detail: 238750.005 - RAMP - Risk Methodology and Assessment - LiDAR
Unit Measure: No feasible units

In-Service Date: 06/30/2029

Description:

The LiDAR Data Acquisition & Intelligence Program provides high-resolution 3D measurements of SDG&E's grid and surrounding environment across the High Fire Threat District (HFTD). Through full-system LiDAR surveys and targeted resurveys, the program delivers precise, timestamped spatial data that reflects real-world asset conditions. By integrating LiDAR data with advanced analytics, the program enables automated insights into vegetation encroachment, pole loading, conductor clearances, and structural integrity. It also creates a foundation for future capabilities such as predictive hazard detection, long-term asset degradation modeling, and scenario-based wildfire risk forecasting. LiDAR-derived intelligence can be incorporated into wildfire risk tools like WiNGS-Ops and into operational, maintenance, and engineering systems, providing a unified source of objective data for decision-making. This strengthens situational awareness during high-risk conditions, supports more defensible PSPS determinations, and enhances regulatory compliance by grounding decisions in verifiable environmental measurements.

Forecast In 2025 \$(000)

Years	2026	2027	2028	2029	2030	2031
Labor	0	0	122	109	109	60
Non-Labor	0	0	837	801	801	707
NSE	0	0	0	0	0	0
Total	0	0	959	910	910	767
FTE	0.0	0.0	0.9	0.8	0.8	0.5
Units	0	0	0	0	0	0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 238750

TY2028 GRC FORECAST - DETAILS
 Workpaper/Mitigation:

238750 Risk Methodology and Assessment

238750 Risk Methodology and Assessment			2026		2027		2028		2029		2030		2031		
Line Item	Link Description	Labor/Non-Labor/NSR	# of units	Cost per unit*	# of units	Cost per unit*	# of units	Cost per unit*	# of units	Cost per unit*	# of units	Cost per unit*	# of units	Cost per unit*	Comments
1	External Labor for advanced analysis	Non-Labor	12	\$ 300,000	\$ 1,800,000	12	\$ 300,000	\$ 1,800,000	12	\$ 300,000	\$ 1,800,000	12	\$ 300,000	\$ 1,800,000	Vendor labor hours contract
2	External Labor for IT related to advanced analysis	Non-Labor	12	\$ 100,000	\$ 1,200,000	12	\$ 100,000	\$ 1,200,000	12	\$ 100,000	\$ 1,200,000	12	\$ 100,000	\$ 1,200,000	IT contractor for advance analysis to support IT team data mg and visualization
3	Internal Labor for advanced analysis	Labor	5,268	\$ 95	\$ 500,460	5,268	\$ 95	\$ 500,460	5,268	\$ 95	\$ 500,460	5,268	\$ 95	\$ 500,460	776 IT Manpower
4	LODR support	Non-Labor		\$ 1,200,000	\$ 1,200,000		\$ 1,200,000	\$ 1,200,000		\$ 1,200,000	\$ 1,200,000		\$ 1,200,000	\$ 1,200,000	PA Distribution PFD expense (2,330 miles of 385kV) for aviation energy process, 27%
5	LODR Additional IT components / Internal Labor	Labor	1,071	\$ 800	\$ 856,800	1,071	\$ 800	\$ 856,800	1,071	\$ 800	\$ 856,800	1,071	\$ 800	\$ 856,800	2,200,000
6	LODR Additional IT components / External Labor	Non-Labor	1	\$ 800,000	\$ 800,000	1	\$ 800,000	\$ 800,000	1	\$ 800,000	\$ 800,000	1	\$ 800,000	\$ 800,000	allocated for ability to update inventory annually
7	LODR Data Storage/Cloud consumption costs	Non-Labor		\$ 54,800	\$ 54,800		\$ 54,800	\$ 54,800		\$ 54,800	\$ 54,800		\$ 54,800	\$ 54,800	PA Distribution
Summary															
	Labor	RAMP		\$ 500,460	\$ 500,460		\$ 500,460	\$ 500,460		\$ 500,460	\$ 500,460		\$ 500,460	\$ 500,460	
	Non-Labor	RAMP		\$ 4,000,460	\$ 4,000,460		\$ 4,000,460	\$ 4,000,460		\$ 4,000,460	\$ 4,000,460		\$ 4,000,460	\$ 4,000,460	
	NSR	RAMP		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	
	Subtotal RAMP			\$ 4,500,920	\$ 4,500,920		\$ 4,500,920	\$ 4,500,920		\$ 4,500,920	\$ 4,500,920		\$ 4,500,920	\$ 4,500,920	\$ 10,371,200
	Labor	Non-RAMP		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	\$ -
	Non-Labor	Non-RAMP		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	\$ -
	NSR	Non-RAMP		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	\$ -
	Subtotal Non-RAMP			\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	\$ -
	Total Project Forecast			\$ 4,500,920	\$ 4,500,920		\$ 4,500,920	\$ 4,500,920		\$ 4,500,920	\$ 4,500,920		\$ 4,500,920	\$ 4,500,920	\$ 10,371,200

The variance between the direct costs found in workpapers and the supplemental workpapers supporting Ex. SDOE-07 are due to a system wide adjustment to reflect changes in connection with the compensation modernization initiative. Please refer to the Compensation and Benefits testimony, Ex. SCG-16/SDGE-20.