

Application of SAN DIEGO GAS & ELECTRIC )  
COMPANY for authority to update its gas and )  
electric revenue requirement and base rates )  
effective January 1, 2024 (U 902-M) )

Application No. 22-05-016

Exhibit No.: (SDG&E-13-WP-R)

REVISED 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

AUGUST 2022



**2024 General Rate Case - REVISED  
INDEX OF WORKPAPERS**

**Exhibit SDG&E-13-WP-R - WILDFIRE MITIGATION & VEGETATION  
MANAGEMENT**

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Overall Summary For Exhibit No. SDG&E-13-WP-R

Area:	WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness:	Jonathan Woldemariam

Description	In 2021 \$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
<b>Non-Shared Services</b>	168,436	242,150	209,218	174,002
<b>Shared Services</b>	0	0	0	0
<b>Total</b>	<b>168,436</b>	<b>242,150</b>	<b>209,218</b>	<b>174,002</b>

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam

**Summary of Non-Shared Services Workpapers:**

Description	In 2021 \$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
A. Emergency Planning & Preparedness	13,315	16,024	16,277	16,236
B. Situational Awareness and Forecasting	2,994	3,469	3,728	3,877
C. Grid Design & System Hardening	26,041	34,170	35,215	30,446
D. Asset Management & Inspections	36,949	85,912	48,751	15,375
E. Vegetation Mgmt & Insp	10,365	13,177	13,809	14,301
F. Vegetation Mgmt & Insp. - Tree Trimming Only	52,195	56,080	54,375	55,622
G. Grid Operations & Operating Protocols	10,079	12,554	13,792	14,769
H. Resource Allocation Methodology	3,823	5,761	7,748	7,748
I. Risk Assessment & Mapping	608	2,013	2,327	2,413
J. Data Governance	1,082	1,425	1,631	1,650
K. Stakeholder Cooperation & Community Engagement	10,985	11,565	11,565	11,565
<b>Total</b>	<b>168,436</b>	<b>242,150</b>	<b>209,218</b>	<b>174,002</b>

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: A. Emergency Planning & Preparedness  
Workpaper: 1WM001.000

**Summary for Category: A. Emergency Planning & Preparedness**

	In 2021\$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
		2022	2023	2024
Labor	3,775	3,979	4,556	5,051
Non-Labor	9,540	12,045	11,721	11,185
NSE	0	0	0	0
<b>Total</b>	<b>13,315</b>	<b>16,024</b>	<b>16,277</b>	<b>16,236</b>
FTE	27.7	29.7	35.5	43.5

**Workpapers belonging to this Category:**

**1WM001.000 Emergency Planning & Preparedness**

Labor	3,775	3,979	4,556	5,051
Non-Labor	9,540	12,045	11,721	11,185
NSE	0	0	0	0
<b>Total</b>	<b>13,315</b>	<b>16,024</b>	<b>16,277</b>	<b>16,236</b>
FTE	27.7	29.7	35.5	43.5

*Note: Totals may include rounding differences.*

**Beginning of Workpaper**  
**1WM001.000 - Emergency Planning & Preparedness**

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: A. Emergency Planning & Preparedness  
Category-Sub: 1. Emergency Planning & Preparedness  
Workpaper: 1WM001.000 - Emergency Planning & Preparedness

**Activity Description:**

The mission of the SDG&E Emergency Management department is to coordinate safe and effective emergency preparedness for the Company, the public, and emergency response personnel. That mission extends to safely and efficiently preparing for, responding to, and recovering from all threats and hazards through strategic planning, training and exercising, and a sustained Quality Assurance and Improvement process. The Emergency Planning & Preparedness cost category comprises of five divisions: (1) Emergency Services Division, (2) Operational Field and Emergency Readiness, (3) Aviation Services, (4) Training and Exercise, and (5) Emergency Management Technology Solutions.

**Forecast Explanations:**

**Labor - Base YR Rec**

The base-year forecast methodology was selected as most indicative of future work. New initiatives and programs have been implemented beginning in 2020 due to the Wildfire Mitigation Plan, and these enhancements are not captured in the historical costs of this category. Accordingly, 2021 base year expenses are most representative of future needs based on an expansion in complexity and scope of existing projects and initiatives.

**Non-Labor - Base YR Rec**

The base-year forecast methodology was selected as most indicative of future work. New initiatives and programs have been implemented beginning in 2020 due to the Wildfire Mitigation Plan, and these enhancements are not captured in the historical costs of this category. Accordingly, 2021 base year expenses are most representative of future needs based on an expansion in complexity and scope of existing projects and initiatives.

**NSE - Base YR Rec**

Not applicable.

**Summary of Results:**

		In 2021\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2017	2018	2019	2020	2021	2022	2023	2024	
Labor		2,230	839	4,374	5,510	3,775	3,979	4,556	5,051	
Non-Labor		2,197	2,312	3,018	8,525	9,540	12,045	11,721	11,185	
NSE		0	0	0	0	0	0	0	0	
<b>Total</b>		<b>4,427</b>	<b>3,150</b>	<b>7,392</b>	<b>14,035</b>	<b>13,315</b>	<b>16,024</b>	<b>16,277</b>	<b>16,236</b>	
FTE		14.5	7.3	26.2	34.1	27.7	29.7	35.5	43.5	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: A. Emergency Planning & Preparedness  
Category-Sub: 1. Emergency Planning & Preparedness  
Workpaper: 1WM001.000 - Emergency Planning & Preparedness

**Summary of Adjustments to Forecast:**

In 2021 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	Base YR Rec	3,775	3,775	3,775	204	781	1,276	3,979	4,556	5,051
Non-Labor	Base YR Rec	9,540	9,540	9,540	2,505	2,181	1,645	12,045	11,721	11,185
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		13,315	13,315	13,315	2,709	2,962	2,921	16,024	16,277	16,236
FTE	Base YR Rec	27.7	27.7	27.7	2.0	7.8	15.8	29.7	35.5	43.5

**Forecast Adjustment Details:**

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
2022	204	2,505	0	2,709	2.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast primarily related to Emergency Management department and emergency event increases. See supplemental workpaper for adjustment details.					
<b>2022 Total</b>	<b>204</b>	<b>2,505</b>	<b>0</b>	<b>2,709</b>	<b>2.0</b>	
2023	781	2,181	0	2,962	7.8	1-Sided Adj
<b>Explanation:</b>	Increased forecast primarily related to Emergency Management department and emergency event increases. See supplemental workpaper for adjustment details.					
<b>2023 Total</b>	<b>781</b>	<b>2,181</b>	<b>0</b>	<b>2,962</b>	<b>7.8</b>	
2024	1,276	1,645	0	2,921	15.8	1-Sided Adj
<b>Explanation:</b>	Increased forecast primarily related to Emergency Management department and emergency event increases. See supplemental workpaper for adjustment details.					
<b>2024 Total</b>	<b>1,276</b>	<b>1,645</b>	<b>0</b>	<b>2,921</b>	<b>15.8</b>	

*Note: Totals may include rounding differences.*



San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: A. Emergency Planning & Preparedness  
Category-Sub: 1. Emergency Planning & Preparedness  
Workpaper: 1WM001.000 - Emergency Planning & Preparedness

**Determination of Adjusted-Recorded (Incurred Costs):**

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	828	664	721	97	3,282
Non-Labor	684	1,220	1,155	472	9,602
NSE	0	0	0	0	0
<b>Total</b>	<b>1,512</b>	<b>1,884</b>	<b>1,875</b>	<b>569</b>	<b>12,884</b>
FTE	7.7	5.9	5.9	1.1	23.8
<b>Adjustments (Nominal \$) **</b>					
Labor	911	7	2,895	4,579	0
Non-Labor	1,236	869	1,640	7,408	-62
NSE	0	0	0	0	0
<b>Total</b>	<b>2,147</b>	<b>875</b>	<b>4,535</b>	<b>11,987</b>	<b>-62</b>
FTE	4.8	0.4	16.7	28.3	0.0
<b>Recorded-Adjusted (Nominal \$)</b>					
Labor	1,739	671	3,615	4,676	3,282
Non-Labor	1,920	2,089	2,795	7,880	9,540
NSE	0	0	0	0	0
<b>Total</b>	<b>3,659</b>	<b>2,759</b>	<b>6,410</b>	<b>12,556</b>	<b>12,822</b>
FTE	12.4	6.3	22.6	29.4	23.7
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	258	102	518	663	493
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>258</b>	<b>102</b>	<b>518</b>	<b>663</b>	<b>493</b>
FTE	2.1	1.0	3.6	4.7	4.0
<b>Escalation to 2021\$</b>					
Labor	232	66	241	171	0
Non-Labor	277	223	223	644	0
NSE	0	0	0	0	0
<b>Total</b>	<b>509</b>	<b>289</b>	<b>464</b>	<b>815</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2021\$)</b>					
Labor	2,230	839	4,374	5,510	3,775
Non-Labor	2,197	2,312	3,018	8,525	9,540
NSE	0	0	0	0	0
<b>Total</b>	<b>4,427</b>	<b>3,150</b>	<b>7,392</b>	<b>14,035</b>	<b>13,315</b>
FTE	14.5	7.3	26.2	34.1	27.7

\* 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.

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: A. Emergency Planning & Preparedness  
Category-Sub: 1. Emergency Planning & Preparedness  
Workpaper: 1WM001.000 - Emergency Planning & Preparedness

**Summary of Adjustments to Recorded:**

In Nominal \$ (000) Incurred Costs					
Years	2017	2018	2019	2020	2021
Labor	911	7	2,895	4,579	0
Non-Labor	1,236	869	1,640	7,408	-62
NSE	0	0	0	0	0
<b>Total</b>	<b>2,147</b>	<b>875</b>	<b>4,535</b>	<b>11,987</b>	<b>-62</b>
FTE	4.8	0.4	16.7	28.3	0.0

**Detail of Adjustments to Recorded:**

Year	Labor	NLbr	NSE	FTE	Adj Type
2017	-5	-4	0	-0.1	1-Sided Adj
<b>Explanation:</b>	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2017	916	1,233	0	5.0	CCTR Transf From 2100-4089.000
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Emergency Planning & Preparedness from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM001 Emergency Planning & Preparedness in cost center 2100-3962 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2017	0	0	0	-0.1	1-Sided Adj
<b>Explanation:</b>	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2017	0	8	0	0.0	CCTR Transf From 2100-3773.000
<b>Explanation:</b>	Transfer Non-Labor associated with Emergency Planning & Preparedness from Workpaper 1WM006 Grid Ops & Protocols to Workpaper 1WM001 Emergency Planning & Preparedness in cost center 2100-3962 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2017	0	0	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
<b>2017 Total</b>	<b>911</b>	<b>1,236</b>	<b>0</b>	<b>4.8</b>	
2018	3	-114	0	0.1	1-Sided Adj
<b>Explanation:</b>	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2018	0	0	0	0.0	CCTR Transf From 2100-0166.000
<b>Explanation:</b>	Transfer Non-Labor associated with Emergency Planning & Preparedness from Workpaper 1WM005 Vegetation Mgmt & Insp to Workpaper 1WM001 Emergency Planning & Preparedness in cost center 2100-3962 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: A. Emergency Planning & Preparedness  
Category-Sub: 1. Emergency Planning & Preparedness  
Workpaper: 1WM001.000 - Emergency Planning & Preparedness

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>
2018	2	955	0	0.1	CCTR Transf From 2100-3761.000
<b>Explanation:</b>	Transfer Labor and Non-Labor associated with Emergency Planning & Preparedness from Workpaper 1WM002 Situational Awareness and Forecasting to Workpaper 1WM001 Emergency Planning & Preparedness in cost center 2100-3962 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2018	0	214	0	0.0	CCTR Transf From 2100-3773.000
<b>Explanation:</b>	Transfer Non-Labor associated with Emergency Planning & Preparedness from Workpaper 1WM006 Grid Ops & Protocols to Workpaper 1WM001 Emergency Planning & Preparedness in cost center 2100-3962 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2018	0	0	0	0.1	1-Sided Adj
<b>Explanation:</b>	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2018	0	-278	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2018	2	90	0	0.1	CCTR Transf From 2100-3963.000
<b>Explanation:</b>	Transfer Labor and Non-Labor associated with Emergency Planning & Preparedness from Workpaper 1WM002 Situational Awareness and Forecasting to Workpaper 1WM001 Emergency Planning & Preparedness in cost center 2100-3962 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2018	0	0	0	0.0	1-Sided Adj
<b>Explanation:</b>	One-sided adjustment to exclude \$19 related to Events and Tickets.				
<b>2018 Total</b>	<b>7</b>	<b>869</b>	<b>0</b>	<b>0.4</b>	
2019	0	4	0	0.0	CCTR Transf From 2100-3773.000
<b>Explanation:</b>	Transfer Non-Labor associated with Emergency Planning & Preparedness from Workpaper 1WM006 Grid Ops & Protocols to Workpaper 1WM001 Emergency Planning & Preparedness in cost center 2100-3962 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2019	2,895	1,638	0	16.7	CCTR Transf From 2100-4089.000
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Emergency Planning & Preparedness from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM001 Emergency Planning & Preparedness in cost center 2100-3962 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2019	0	0	0	0.0	CCTR Transf To 2100-3932.000
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM001 Emergency Planning & Preparedness to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2019	0	-1	0	0.0	1-Sided Adj

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: A. Emergency Planning & Preparedness  
Category-Sub: 1. Emergency Planning & Preparedness  
Workpaper: 1WM001.000 - Emergency Planning & Preparedness

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>
<b>Explanation:</b>	One-sided adjustment to exclude \$1,394 related to Events and Tickets.				
<b>2019 Total</b>	<b>2,895</b>	<b>1,640</b>	<b>0</b>	<b>16.7</b>	
2020	0	-328	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2020	0	0	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2020	4,555	7,369	0	28.2	CCTR Transf From 2100-4089.000
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Emergency Planning & Preparedness from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM001 Emergency Planning & Preparedness in cost center 2100-3962 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2020	-4	0	0	-0.1	1-Sided Adj
<b>Explanation:</b>	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2020	0	174	0	0.0	CCTR Transf From 2100-0460.000
<b>Explanation:</b>	Transfer historical Noggin 2.0 costs from IT chapter to Emergency Planning & Preparedness chapter				
2020	29	24	0	0.3	CCTR Transf From 2100-3073.000
<b>Explanation:</b>	Transfer historical Noggin 2.0 costs from IT chapter to Emergency Planning & Preparedness chapter				
2020	0	196	0	0.0	CCTR Transf From 2100-3172.000
<b>Explanation:</b>	Transfer historical Noggin 2.0 costs from IT chapter to Emergency Planning & Preparedness chapter				
2020	0	0	0	-0.1	1-Sided Adj
<b>Explanation:</b>	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2020	0	-7	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2020	0	-17	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2020	0	-1	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2020	0	0	0	0.0	1-Sided Adj

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: A. Emergency Planning & Preparedness  
Category-Sub: 1. Emergency Planning & Preparedness  
Workpaper: 1WM001.000 - Emergency Planning & Preparedness

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2020	0	-1	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2020	0	0	0	0.0	1-Sided Adj
<b>Explanation:</b>	One-sided adjustment to exclude \$250 related to Events and Tickets.				
<b>2020 Total</b>	<b>4,579</b>	<b>7,408</b>	<b>0</b>	<b>28.3</b>	
2021	0	-11	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2021	0	-21	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2021	0	-2	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2021	0	-1	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2021	0	-25	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2021	0	-2	0	0.0	1-Sided Adj
<b>Explanation:</b>	One-sided adjustment to exclude \$2121 related to Events and Tickets.				
<b>2021 Total</b>	<b>0</b>	<b>-62</b>	<b>0</b>	<b>0.0</b>	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: A. Emergency Planning & Preparedness  
Category-Sub: 1. Emergency Planning & Preparedness  
Workpaper: 1WM001.000 - Emergency Planning & Preparedness

**RAMP Item # 1**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C41

RAMP Line Item Name: Emergency Management Operations

Tranche(s): Tranche1: N/A

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	13,315	16,024	16,277	16,236	10,938	13,369

**Cost Estimate Changes from RAMP:**

Increased versus RAMP range primarily due to headcount increases identified after RAMP filing.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 Reduce risk by effectively responding to fires or extreme fire potential events.	0.00	0.00	0.00	0.00	0.00	0.00

**Work Unit Changes from RAMP:**

A department that reduces risk by effectively responding to fires or extreme fire potential events . Because there are multiple different types of units of measure in this program , it would not be accurate or consistent to identify one unit of measure.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

**RSE Changes from RAMP:**

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2)

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

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**Supplemental Workpapers for Workpaper 1WM001.000**



# San Diego Gas & Electric Company

## 2024 GRC - REVISED

### Non-Shared Service Workpapers

#### Wildfire Mitigation O&M - Forecast Adjustments

Line Item	WMP Initiative/Description	Labor/Non-Labor	RAMP/Non-RAMP	Unit Description	Unit Metric (ea./hr./mb)	Position Title	2022			2023			2024			Total Cost	Explanation	
							WMP%	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit			Total cost
1	Human Factor Engineering	Non-Labor	RAMP	Contractor Hrs	Hrs		100%	1,440	\$ 264	\$ 252,512	1,440	\$ 277	\$ 398,448	-	\$ -	\$ 651,000	Partnership with the Department of Energy, Pacific Southwest Engineering, and SDG&E to include human factor engineering in the PAPS decision-making process. Program is expected to expand to include other projects with EDO, BCS, and GHD. Requires contract with PSE.	
2	Human Factor Engineering	Labor	RAMP	FTE	FTE	Human Factors Engineering Scientist	58%	-	\$ 264	\$ -	-	\$ 277	\$ -	1	\$ 200,000	\$ 116,000	\$ 116,000	Employee for Human Factors Engineering Scientist to support human factor engineering beginning in 2024.
247	Watch Command Desk	Labor	RAMP	FTE	FTE	24/7 Watch Command Desk Sup	58%	1	\$ 100,000	\$ 29,000	1	\$ 100,000	\$ 58,000	1	\$ 100,000	\$ 58,000	\$ 145,000	24/7 Watch Desk Supervisor (ST1) - Bottom-line operations, scheduling, performance management, and coordination of Analyst group. Assumes hire date 6/2022
247	Watch Command Desk	Labor	RAMP	FTE	FTE	24/7 Watch Desk Analyst	58%	0	\$ 78,200	\$ -	3	\$ 78,200	\$ 136,155	6	\$ 78,200	\$ 272,310	\$ 408,465	24/7 Watch Desk Analyst (SA3) - Perform real-time assessments of risk impacts to SDG&E's assets, customers, and employees. Provide advanced situational awareness reporting to aid informed decision-making and planning. Assumes hire date 2023
247	Watch Command Desk	Non-Labor	RAMP	Equipment Costs, Training, Conferences, General	General		58%	1	\$ 130,000	\$ 82,500	1	\$ 130,000	\$ 191,400	1	\$ 130,000	\$ 191,400	\$ 465,300	2023 in RAMP in labor/non-labor. Assumes start date 9/2022
5	Emergency Operations Services	Labor	RAMP	FTE	FTE	Emergency Planning Program Analyst	58%	0	\$ -	\$ -	0	\$ -	\$ -	1	\$ 86,650	\$ 86,650	\$ 86,650	Documentation maintenance, outreach coordination, overall support to the planning program.
6	Emergency Operations Services	Labor	RAMP	FTE	FTE	Emergency Planning Strategic Lead	58%	0	\$ -	\$ -	0	\$ 111,250	\$ 64,525	1	\$ 111,250	\$ 64,525	\$ 129,050	Develop & maintain emergency plans, policies, and procedures.
7	Emergency Operations Services	Non-Labor	RAMP	Contractor	each		58%	4	\$ 111,357	\$ 258,348	3	\$ 111,357	\$ 193,761	3	\$ 111,357	\$ 193,761	\$ 645,871	31 Emergency Services Program Coordinator, (2) Business Analyst, (1) Emergency Planning Specialist. All performing functions in support of the Emergency Operations Center and planning.
8	Emergency Operations Services	Non-Labor	RAMP	Contractor	each		58%	1	\$ 120,000	\$ 34,800	1	\$ 120,000	\$ 69,600	0	\$ -	\$ -	\$ 104,400	Technical writer to produce plans, policy, and procedure related documentation. Assumes hire date of 6/2022
9	OPER - FROP	Labor	RAMP	FTE	FTE	IC Emergency Readiness Program Advisor	58%	0	\$ -	\$ -	1	\$ 120,000	\$ 69,600	1	\$ 120,000	\$ 69,600	\$ 139,200	One (A02) to advance ICS principles in support of the Utility Field Commander and other on-scene operational crews and personnel. Formalize deployable resources and roles to support the overall safety and scene management between SDG&E and first responder agencies for all risk responses.
9	OPER - AAR	Labor	RAMP	FTE	FTE	Emergency Readiness Program Analyst	58%	0	\$ -	\$ -	1	\$ 120,000	\$ 69,600	1	\$ 120,000	\$ 69,600	\$ 139,200	One (A02) to draft improvement plans and after-action review reports of outcomes, capabilities, and progress to directors and managers to support the continuous quality assurance and improvement process of all emergency incidents and events.
10	OPER - AAR	Non-Labor	RAMP	AAR Specialist and OPER Advisor Contractor	Contractor		58%	0	\$ 0	\$ -	1	\$ 96,600	\$ 56,057	1	\$ 96,600	\$ 56,057	\$ 112,114	One (A02) to draft improvement plans and after-action review reports of outcomes, capabilities, and progress to directors and managers to support the continuous quality assurance and improvement process of all emergency incidents and events.
14	Aviation Training Center	Labor	RAMP	FTE	FTE	Aviation Services Advisor	90%	1	\$ 111,250	\$ 50,063	1	\$ 111,250	\$ 100,125	1	\$ 111,250	\$ 100,125	\$ 250,313	One (A02) to bottom-line operations, scheduling, and coordination with other stakeholder groups to maintain the "On the Rocks" Aviation Training facility and complete ASD projects
15	UAS Expansion	Labor	RAMP	FTE	FTE	Aviation Specialist (SA3)	90%	0	\$ 78,200	\$ -	0	\$ 78,200	\$ -	2	\$ 78,200	\$ 140,800	\$ 140,800	One (A02) to bottom-line operations, scheduling, and coordination with other stakeholder groups to maintain the "On the Rocks" Aviation Training facility and complete ASD projects
16	Aviation Training Center	Non-Labor	RAMP	Facility maintenance	General		90%	1	\$ 100,000	\$ 45,000	1	\$ 100,000	\$ 45,000	1	\$ 100,000	\$ 45,000	\$ 135,000	Aviation contractor for facility maintenance and repairs.
17	Aviation (ASD)	Non-Labor	RAMP	Contractors	each		90%	1	\$ 100,000	\$ 45,000	1	\$ 100,000	\$ 45,000	1	\$ 100,000	\$ 45,000	\$ 135,000	Aviation contractor for facility maintenance and repairs.
18	Aviation (ASD)	Non-Labor	RAMP	Contractors	each		90%	1	\$ 100,000	\$ 45,000	1	\$ 100,000	\$ 45,000	1	\$ 100,000	\$ 45,000	\$ 135,000	Aviation contractor for facility maintenance and repairs.
19	Aviation (ASD)	Non-Labor	RAMP	Contractors	each		90%	1	\$ 100,000	\$ 45,000	1	\$ 100,000	\$ 45,000	1	\$ 100,000	\$ 45,000	\$ 135,000	Aviation contractor for facility maintenance and repairs.
20	UAS Expansion	Non-Labor	RAMP	Conferences	total		90%	1	\$ 100,000	\$ 45,000	1	\$ 100,000	\$ 45,000	1	\$ 100,000	\$ 45,000	\$ 135,000	25000 per person per conference. 2 conferences per year.
21	UAS Expansion	Non-Labor	RAMP	R&D / visits to a demo	total		90%	1	\$ 100,000	\$ 45,000	1	\$ 100,000	\$ 45,000	1	\$ 100,000	\$ 45,000	\$ 135,000	25000 per visit and demo. 2 visits per year.
22	UAS Expansion	Non-Labor	RAMP	Engineering support	total		90%	1	\$ 121,000	\$ 18,900	1	\$ 121,000	\$ 18,900	1	\$ 121,000	\$ 18,900	\$ 56,700	Engineering support.
23	UAS Expansion	Non-Labor	RAMP	New UAS and Sensors	total		90%	1	\$ 100,000	\$ 135,000	1	\$ 100,000	\$ 135,000	1	\$ 100,000	\$ 135,000	\$ 405,000	New UAS and Sensors
24	UAS Expansion	Non-Labor	RAMP	Flight planning & subscription services	total		90%	1	\$ 13,000	\$ 4,500	1	\$ 13,000	\$ 4,500	1	\$ 13,000	\$ 4,500	\$ 13,500	Flight planning subscription services
25	IR Cameras	Non-Labor	RAMP	Maintenance	General		90%	1	\$ 300,000	\$ 270,000	1	\$ 300,000	\$ 270,000	1	\$ 300,000	\$ 270,000	\$ 810,000	General maintenance of IR cameras
30	UAS Expansion	Non-Labor	RAMP	Maintenance	General		90%	1	\$ 30,000	\$ 37,000	1	\$ 30,000	\$ 37,000	1	\$ 30,000	\$ 37,000	\$ 114,000	General maintenance of UAS
31	ICS Implementation Initiative	Labor	RAMP	FTE	FTE	ICS Implementation Program Manager	58%	1	\$ 130,000	\$ 37,700	1	\$ 130,000	\$ 75,400	1	\$ 130,000	\$ 75,400	\$ 188,500	One (PAC) resource to launch a companywide initiative to standardize and expand the implementation of ICS principles so all field workgroups will be unified under one response structure
32	ICS Implementation Initiative	Labor	RAMP	FTE	FTE	ICS Implementation Advisor	58%	1	\$ 111,250	\$ 32,263	1	\$ 111,250	\$ 64,525	1	\$ 111,250	\$ 64,525	\$ 161,313	Two (A02) resources to formalize position-specific training and certification, and define ICS capabilities with a utility-based focus
33	ICS Implementation Initiative & Training & Exercise	Non-Labor	RAMP	Training Vendors	total		58%	1	\$ 140,000	\$ 81,200	1	\$ 140,000	\$ 81,200	1	\$ 140,000	\$ 81,200	\$ 262,400	Contract agency training to meet state mandates for PAPS/EOC requirements.
34	Training & Exercise	Labor	RAMP	FTE	FTE	Training & Exercise Advisor	58%	1	\$ 111,250	\$ 32,263	1	\$ 111,250	\$ 64,525	1	\$ 111,250	\$ 64,525	\$ 161,313	One (A02) resource to manage Emergency Management training and exercise program based on an HSEEP competency-based approach to focus on utility-specific outcomes and learning
35	Training & Exercise	Labor	RAMP	FTE	FTE	Training & Exercise Specialist	58%	0	\$ -	\$ -	1	\$ 78,200	\$ 45,385	1	\$ 78,200	\$ 45,385	\$ 90,770	Two (SA3) resources to develop and implement training and exercises to improve SDG&E's utility-focused ICS capabilities.
36	Training & Exercise	Non-Labor	RAMP	Contractor	each		58%	1	\$ 116,000	\$ 90,480	0	\$ 116,000	\$ -	0	\$ 116,000	\$ -	\$ 90,480	Contractor to assist with training and exercises scheduling and implementation.
37	Training & Exercise	Non-Labor	RAMP	Contractor	each		58%	1	\$ 116,000	\$ 90,480	0	\$ 116,000	\$ -	0	\$ 116,000	\$ -	\$ 90,480	Contractor to assist with training and exercises scheduling and implementation.
38	ICS Implementation Initiative	Non-Labor	RAMP	Contractor	Each		58%	1	\$ 110,000	\$ 63,800	0	\$ 110,000	\$ -	0	\$ 110,000	\$ -	\$ 63,800	Draft company-wide ICS documentation, define response capabilities, and formalize position specific training and requirements.
39	Information Technology Services	Labor	RAMP	FTE	FTE	Energy Mgmt Technlogy Analyst	58%	1	\$ 80,000	\$ 23,200	1	\$ 80,000	\$ 46,400	2	\$ 80,000	\$ 92,800	\$ 162,400	One (SA3) resource to maintain, oversee and upgrade all EDC technical equipment, including audio visual equipment, computers, network infrastructure, and communications tools
40	Information Technology Services	Non-Labor	RAMP	Contractor	each		100%	1	\$ 260,000	\$ 162,000	1	\$ 260,000	\$ 162,000	0	\$ 260,000	\$ -	\$ 324,000	Business Systems Analyst, 2500k based on \$125/hr rate x 2000 hours
43	Information Technology Services	Non-Labor	RAMP	Contractor	each		58%	0	\$ 172,640	\$ -	1	\$ 172,640	\$ 100,131	1	\$ 172,640	\$ 100,131	\$ 260,262	Additional contractor needs for wildfire climate resiliency center in 2023 & 2024
43	Primary EDC	Non-Labor	RAMP	Control Station Equipment (RSP)	Total		58%	2	\$ 53,000	\$ 3,480	0	\$ -	\$ -	0	\$ -	\$ -	\$ 3,480	Contractor to assist with training and exercises scheduling and implementation.
44	Primary EDC	Non-Labor	RAMP	EDC Display Stations	each		58%	3	\$ 1,000	\$ 2,980	0	\$ -	\$ -	0	\$ -	\$ -	\$ 2,980	Two (SA3) resources to maintain, oversee and upgrade all EDC technical equipment, including audio visual equipment, computers, network infrastructure, and communications tools
46	Primary EDC	Non-Labor	RAMP	EDC Display Stations	each		58%	1	\$ 11,000	\$ 2,800	0	\$ -	\$ -	0	\$ -	\$ -	\$ 2,800	Control station, stations for EDC
48	Primary EDC	Non-Labor	RAMP	SD Phones	each		58%	13	\$ 7,800	\$ 58,812	0	\$ 7,800	\$ 22,620	0	\$ 7,800	\$ 22,620	\$ 81,432	13 SD Phones. 3 in the backup EDC, 4 in the EDC, 6 in the EDC - 2500k a month or \$7800 a Year
49	Primary EDC	Non-Labor	RAMP	DirectTV Receivers	each		58%	37	\$ 6,930	\$ 256,110	0	\$ 6,930	\$ 256,110	0	\$ 6,930	\$ 256,110	\$ 512,220	37 DirectTV Receivers, 2015 in the EDC, 17 in the EDC, 17 in the EDC - 250k a month or \$5950 a year
50	Primary EDC	Non-Labor	RAMP	SD Phones	each		58%	1	\$ 900	\$ 522	1	\$ 900	\$ 522	1	\$ 900	\$ 522	\$ 1,566	SD Phone - 1 radio 7500 a month or \$900 a year
51	Primary EDC	Non-Labor	RAMP	SD Phones	each		58%	1	\$ 4,178	\$ 4,178	0	\$ -	\$ -	0	\$ -	\$ -	\$ 4,178	SD Phone - 1 radio 7500 a month or \$4178 a year
52	Information Technology Services	Non-Labor	RAMP	Equipment to support new FTEs	each		58%	4	\$ 55,200	\$ 18,076	7	\$ 55,200	\$ 211,112	8	\$ 55,200	\$ 241,184	\$ 633,366	Equipment for new FTEs. Computers and associated equipment
53	NEW EDC	Non-Labor	RAMP	Workstation equip	each		58%	90	\$ 2,418	\$ 70,695	90	\$ 2,418	\$ 217,620	90	\$ 2,418	\$ 217,620	\$ 706,950	New EDC workstation equipment
53	Virtual EDC	Non-Labor	RAMP	EDC-Responder work from home	each		58%	120	\$ 1,287	\$ 154,440	120	\$ 1,287	\$ 154,440	120	\$ 1,287	\$ 154,440	\$ 463,320	Virtual EDC-Responder equipment
53									\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	\$ -	
Summary		Labor	RAMP						\$ 204,488	\$ 204,488		\$ 780,697	\$ 780,697		\$ 1,276,159	\$ 1,276,159	\$ -	
		Non-Labor	RAMP						\$ 2,909,954	\$ 2,909,954		\$ 2,881,362	\$ 2,881,362		\$ 2,881,362	\$ 2,881,362	\$ 1,636,070	
		Subtotal RAMP							\$ 2,709,954	\$ 2,709,954		\$ 2,962,059	\$ 2,962,059		\$ 2,912,229	\$ 2,912,229	\$ -	
		Labor	Non-RAMP						\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	\$ -	
		Non-Labor	Non-RAMP						\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	\$ -	
		Subtotal Non-RAMP							\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	\$ -	
		Total Historical Adjustments							\$ 2,709,954	\$ 2,709,954		\$ 2,962,059	\$ 2,962,059		\$ 2,912,229	\$ 2,912,229	\$ -	

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: B. Situational Awareness and Forecasting  
Workpaper: 1WM002.000

**Summary for Category: B. Situational Awareness and Forecasting**

In 2021\$ (000) Incurred Costs				
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	1,002	1,095	1,196	1,251
Non-Labor	1,992	2,374	2,532	2,626
NSE	0	0	0	0
<b>Total</b>	<b>2,994</b>	<b>3,469</b>	<b>3,728</b>	<b>3,877</b>
FTE	9.1	10.1	11.0	11.6

**Workpapers belonging to this Category:**

**1WM002.000 Situational Awareness and Forecasting**

Labor	1,002	1,095	1,196	1,251
Non-Labor	1,992	2,374	2,532	2,626
NSE	0	0	0	0
<b>Total</b>	<b>2,994</b>	<b>3,469</b>	<b>3,728</b>	<b>3,877</b>
FTE	9.1	10.1	11.0	11.6

*Note: Totals may include rounding differences.*

**Beginning of Workpaper**  
**1WM002.000 - Situational Awareness and Forecasting**

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: B. Situational Awareness and Forecasting  
Category-Sub: 1. Situational Awareness and Forecasting  
Workpaper: 1WM002.000 - Situational Awareness and Forecasting

**Activity Description:**

Weather has a significant impact on utility operations. SDG&E develops and implements utility-specific meteorological technology to anticipate, prepare for, respond to, and recover from severe weather and wildfire events. Situational awareness tools are used to inform system planning, emergency operations, and the safe implementation of PSPS. Situational Awareness and Forecasting includes costs for SDG&E Fire Coordination, Meteorology, and Wildfire Resilience.

**Forecast Explanations:**

**Labor - Base YR Rec**

The base-year forecast methodology was selected as most indicative of future work. New initiatives and programs have been implemented beginning in 2020 due to the Wildfire Mitigation Plan, and these enhancements are not captured in the historical costs of this category. Accordingly, 2021 base year expenses are most representative of future needs based on an expansion in complexity and scope of existing projects and initiatives.

**Non-Labor - Base YR Rec**

The base-year forecast methodology was selected as most indicative of future work. New initiatives and programs have been implemented beginning in 2020 due to the Wildfire Mitigation Plan, and these enhancements are not captured in the historical costs of this category. Accordingly, 2021 base year expenses are most representative of future needs based on an expansion in complexity and scope of existing projects and initiatives.

**NSE - Base YR Rec**

Not applicable.

**Summary of Results:**

		In 2021\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2017	2018	2019	2020	2021	2022	2023	2024	
Labor		264	274	1,113	1,005	1,002	1,096	1,197	1,252	
Non-Labor		659	1,446	1,558	2,763	1,992	2,374	2,532	2,626	
NSE		0	0	0	0	0	0	0	0	
<b>Total</b>		<b>923</b>	<b>1,720</b>	<b>2,672</b>	<b>3,768</b>	<b>2,994</b>	<b>3,470</b>	<b>3,729</b>	<b>3,878</b>	
FTE		2.5	2.4	9.1	8.5	9.1	10.1	11.0	11.6	

*Note: Totals may include rounding differences.*

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2024 GRC - REVISED  
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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
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Category: B. Situational Awareness and Forecasting  
Category-Sub: 1. Situational Awareness and Forecasting  
Workpaper: 1WM002.000 - Situational Awareness and Forecasting

**Summary of Adjustments to Forecast:**

In 2021 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	Base YR Rec	1,002	1,002	1,002	93	194	249	1,095	1,196	1,251
Non-Labor	Base YR Rec	1,992	1,992	1,992	382	540	634	2,374	2,532	2,626
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		2,994	2,994	2,994	475	734	883	3,469	3,728	3,877
FTE	Base YR Rec	9.1	9.1	9.1	1.0	1.9	2.5	10.1	11.0	11.6

**Forecast Adjustment Details:**

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>
2022	93	287	0	380	1.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast primarily related to Fire Science & Climate Adaptation department and fire weather event increases. See supplemental workpaper for adjustment details.					
2022	0	95	0	95	0.0	1-Sided Adj
<b>Explanation:</b>	Forecast for Wildfire Smoke Particulates under RAMP Risk 8 Incidents Involving Employee.					
<b>2022 Total</b>	<b>93</b>	<b>382</b>	<b>0</b>	<b>475</b>	<b>1.0</b>	
2023	194	409	0	603	1.9	1-Sided Adj
<b>Explanation:</b>	Increased forecast primarily related to Fire Science & Climate Adaptation department and fire weather event increases. See supplemental workpaper for adjustment details.					
2023	0	131	0	131	0.0	1-Sided Adj
<b>Explanation:</b>	Forecast for Wildfire Smoke Particulates under RAMP Risk 8 Incidents Involving Employee.					
<b>2023 Total</b>	<b>194</b>	<b>540</b>	<b>0</b>	<b>734</b>	<b>1.9</b>	
2024	249	534	0	783	2.5	1-Sided Adj
<b>Explanation:</b>	Increased forecast primarily related to Fire Science & Climate Adaptation department and fire weather event increases. See supplemental workpaper for adjustment details.					
2024	0	100	0	100	0.0	1-Sided Adj
<b>Explanation:</b>	Forecast for Wildfire Smoke Particulates under RAMP Risk 8 Incidents Involving Employee.					
<b>2024 Total</b>	<b>249</b>	<b>634</b>	<b>0</b>	<b>883</b>	<b>2.5</b>	

*Note: Totals may include rounding differences.*

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2024 GRC - REVISED  
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Witness: Jonathan Woldemariam  
Category: B. Situational Awareness and Forecasting  
Category-Sub: 1. Situational Awareness and Forecasting  
Workpaper: 1WM002.000 - Situational Awareness and Forecasting

**Determination of Adjusted-Recorded (Incurred Costs):**

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	206	223	272	-14	871
Non-Labor	576	2,370	367	1,179	2,001
NSE	0	0	0	0	0
<b>Total</b>	<b>782</b>	<b>2,593</b>	<b>639</b>	<b>1,165</b>	<b>2,872</b>
FTE	2.1	2.2	2.3	-0.1	7.7
<b>Adjustments (Nominal \$) **</b>					
Labor	0	-4	649	867	0
Non-Labor	0	-1,064	1,076	1,375	-9
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>-1,068</b>	<b>1,724</b>	<b>2,243</b>	<b>-9</b>
FTE	0.0	-0.2	5.5	7.4	0.0
<b>Recorded-Adjusted (Nominal \$)</b>					
Labor	206	219	920	853	871
Non-Labor	576	1,307	1,443	2,554	1,992
NSE	0	0	0	0	0
<b>Total</b>	<b>782</b>	<b>1,526</b>	<b>2,363</b>	<b>3,407</b>	<b>2,863</b>
FTE	2.1	2.0	7.8	7.3	7.8
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	31	33	132	121	131
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>31</b>	<b>33</b>	<b>132</b>	<b>121</b>	<b>131</b>
FTE	0.4	0.4	1.3	1.2	1.3
<b>Escalation to 2021\$</b>					
Labor	27	22	61	31	0
Non-Labor	83	139	115	209	0
NSE	0	0	0	0	0
<b>Total</b>	<b>111</b>	<b>161</b>	<b>177</b>	<b>240</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2021\$)</b>					
Labor	264	274	1,113	1,005	1,002
Non-Labor	659	1,446	1,558	2,763	1,992
NSE	0	0	0	0	0
<b>Total</b>	<b>923</b>	<b>1,720</b>	<b>2,672</b>	<b>3,768</b>	<b>2,994</b>
FTE	2.5	2.4	9.1	8.5	9.1

\* 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.

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: B. Situational Awareness and Forecasting  
Category-Sub: 1. Situational Awareness and Forecasting  
Workpaper: 1WM002.000 - Situational Awareness and Forecasting

**Summary of Adjustments to Recorded:**

In Nominal \$ (000) Incurred Costs					
Years	2017	2018	2019	2020	2021
Labor	0	-4	649	867	0
Non-Labor	0	-1,064	1,076	1,375	-9
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>-1,068</b>	<b>1,724</b>	<b>2,243</b>	<b>-9</b>
FTE	0.0	-0.2	5.5	7.4	0.0

**Detail of Adjustments to Recorded:**

Year	Labor	NLbr	NSE	FTE	Adj Type
<b>2017 Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.0</b>	
2018	0	-19	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2018	-2	-955	0	-0.1	CCTR Transf To 2100-3962.000
<b>Explanation:</b>	Transfer Labor and Non-Labor associated with Emergency Planning & Preparedness from Workpaper 1WM002 Situational Awareness and Forecasting to Workpaper 1WM001 Emergency Planning & Preparedness in cost center 2100-3962 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2018	-2	-90	0	-0.1	CCTR Transf To 2100-3962.000
<b>Explanation:</b>	Transfer Labor and Non-Labor associated with Emergency Planning & Preparedness from Workpaper 1WM002 Situational Awareness and Forecasting to Workpaper 1WM001 Emergency Planning & Preparedness in cost center 2100-3962 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2018 Total</b>	<b>-4</b>	<b>-1,064</b>	<b>0</b>	<b>-0.2</b>	
2019	0	-1	0	0.0	1-Sided Adj
<b>Explanation:</b>	One-sided adjustment to exclude \$1,130 related to Events and Tickets.				
2019	649	1,077	0	5.5	CCTR Transf From 2100-4089.000
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Fire Science & Climate Adaptation Department from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM002.000 Situational Awareness and Forecasting in cost center 2100-3963 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2019 Total</b>	<b>649</b>	<b>1,076</b>	<b>0</b>	<b>5.5</b>	
2020	0	-1,080	0	0.0	1-Sided Adj

*Note: Totals may include rounding differences.*

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: B. Situational Awareness and Forecasting  
Category-Sub: 1. Situational Awareness and Forecasting  
Workpaper: 1WM002.000 - Situational Awareness and Forecasting

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>
<b>Explanation:</b>	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2020	-1	0	0	-0.1	1-Sided Adj
<b>Explanation:</b>	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2020	0	-1	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2020	868	2,552	0	7.5	CCTR Transf From 2100-4089.000
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Fire Science & Climate Adaptation Department from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM002.000 Situational Awareness and Forecasting in cost center 2100-3963 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2020	0	-1	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2020	0	-65	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2020	0	-29	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
<b>2020 Total</b>	<b>867</b>	<b>1,375</b>	<b>0</b>	<b>7.4</b>	
2021	0	-1	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2021	0	-1	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2021	0	-1	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2021	0	-6	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
<b>2021 Total</b>	<b>0</b>	<b>-9</b>	<b>0</b>	<b>0.0</b>	

*Note: Totals may include rounding differences.*



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Category-Sub: 1. Situational Awareness and Forecasting  
Workpaper: 1WM002.000 - Situational Awareness and Forecasting

**RAMP Item # 1**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C04

RAMP Line Item Name: Fire Science and Climate Adaptation Department

Tranche(s): Tranche1: N/A

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$)	
					Low	High
Tranche 1 Cost Estimate	2,994	3,374	3,597	3,777	3,700	4,523

**Cost Estimate Changes from RAMP:**

Slightly under RAMP range primarily due to headcount updates.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities	
					Low	High
Tranche 1 Creates weather forecasts including FPI forecasts.	0.00	0.00	0.00	0.00	0.00	0.00

**Work Unit Changes from RAMP:**

A department that creates weather forecasts, including FPI forecasts. Because there are multiple different types of units of measure in this program, it would not be accurate or consistent to identify one unit of measure.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

**RSE Changes from RAMP:**

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2)

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
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Category-Sub: 1. Situational Awareness and Forecasting  
Workpaper: 1WM002.000 - Situational Awareness and Forecasting

**RAMP Item # 2**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-8 Incident Involving an Employee

RAMP Line Item ID: M01

RAMP Line Item Name: Wildfire Smoke Particulates

Tranche(/s): Tranche1: N/A

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	0	95	131	100	2	2

**Cost Estimate Changes from RAMP:**

Higher than RAMP range primarily due to increased cyber support costs for sensors.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 # of particulate smoke sensors	0.00	6.00	23.00	40.00	40.00	46.00

**Work Unit Changes from RAMP:**

Within RAMP range.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	59.000	500.000

**RSE Changes from RAMP:**

General changes to risks scores or RSE values are primarily due to changes in the MAVF and RSE methodology , as discussed in the RAMP to GRC Integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2)

**Supplemental Workpapers for Workpaper 1WM002.000**

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Wildfire Mitigation O&M - Forecast Adjustments

Line Item	Workpaper	Cost Center	WMP Initiative/Description	Labor/Non-Labor	RAMP/Non-RAMP	Unit Description	Unit Metric (ea./ft./mile)	Headcount			2022			2023			2024			Total Cost	Explanation (External - Text to be entered in GRID)		
								GRC or Non-	Position Title	O&M/C apital	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost				
1	1WM002.000	2100-3761	Ignition Mgt Program (IMP) Fire Coordinator	Labor	RAMP	FTE's	FTE				58%	1	\$ 115,000	\$ 44,467	1	\$ 115,000	\$ 66,700	1	\$ 115,000	\$ 66,700	\$ 177,867	1 IMP Fire Coordinator expected hire Apr 2022 (8/12 months), 58% to WMP & 42% to transmission O&M.	
2	1WM002.000	2100-4056	Climate Education Specialist (WF Resilience Project Advisor)	Labor	RAMP	FTE's	FTE				58%	1	\$ 125,000	\$ 48,333	1	\$ 125,000	\$ 72,500	1	\$ 125,000	\$ 72,500	\$ 193,333	1 Climate Education Specialist expected hire April 2022 (8/12 months) 2022, 58% to WMP & 42% to transmission O&M	
3	1WM002.000	2100-4056	Community Resilience & Engagement FTE's	Labor	RAMP	FTE's	FTE				58%	-	\$ -	\$ -	1	\$ 95,000	\$ 55,100	2	\$ 95,000	\$ 110,200	\$ 165,300	2 FTE's (1 Community Engagement Planning Manager at 115k + 1 Community Resilience Specialist at 75k) expected hire Jan 2023, 58% to WMP & 42% to transmission O&M.	
4	1WM002.000	2100-4055	New Hire Non-Labor	Non-Labor	RAMP						58%	3	\$ 5,000	\$ 8,700	1	\$ 5,000	\$ 2,900		\$ -	\$ -	\$ 11,600	Non-Labor costs for new FTE computer equipment	
5	1WM002.000	2100-3761	Training for Fire Coordination	Non-Labor	RAMP						58%	1	\$ 100,000	\$ 58,000	1	\$ 100,000	\$ 58,000	1	\$ 100,000	\$ 58,000	\$ 174,000	Non-Labor costs for contract training for fire coordination personnel.	
6	1WM002.000	2100-4056	Mobile Command Trailer	Non-Labor	RAMP						58%	3	\$ 60,000	\$ 104,400	3	\$ 60,000	\$ 104,400	3	\$ 60,000	\$ 104,400	\$ 313,200	Mobile Command Trailers to serve as field headquarters during wildfire or other emergency.	
7	1WM002.000	2100-3963	Meteorology Increased O&M for Vendors	Non-Labor	RAMP						58%	1	\$ 200,000	\$ 116,000	1	\$ 420,000	\$ 243,600	1	\$ 640,000	\$ 371,200	\$ 730,800	Increase in vendor costs for meteorology. Enhancements being made to data management including weather stations, cameras, and AI Smoke detection.	
8	1WM002.000	TBD	Wildfire Smoke Particulates		RAMP						100%	6	\$ 15,900	\$ 95,400	17	\$ 7,729	\$ 131,400	17	\$ 5,906	\$ 100,400		RAMP item for wildfire smoke particulate sensors; cost estimates include \$69k/yr maintenance + IT and environmental support for up to 17 sensors each year.	
12													\$ -			\$ -			\$ -		\$ -		
16													\$ -			\$ -			\$ -		\$ -		
10																							
Summary																							
							Labor	RAMP					\$ 92,800			\$ 194,300		\$ 249,400	\$ 536,500				
							Non-Labor	RAMP					\$ 287,100			\$ 408,900		\$ 533,600	\$ 1,229,600				
							Subtotal RAMP						\$ 379,900			\$ 603,200		\$ 783,000	\$ 1,766,100				
							Labor	Non-RAMP					\$ -			\$ -		\$ -	\$ -				
							Non-Labor	Non-RAMP					\$ -			\$ -		\$ -	\$ -				
							Subtotal Non-RAMP						\$ -			\$ -		\$ -	\$ -				
							Total Historical Adjustments						\$ 379,900			\$ 603,200		\$ 783,000	\$ 1,766,100				

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: C. Grid Design & System Hardening  
Workpaper: 1WM003.000

**Summary for Category: C. Grid Design & System Hardening**

In 2021\$ (000) Incurred Costs				
	Adjusted-Recorded	Adjusted-Forecast		
		2022	2023	2024
Labor	821	911	904	687
Non-Labor	25,221	33,260	34,312	29,760
NSE	0	0	0	0
<b>Total</b>	<b>26,042</b>	<b>34,171</b>	<b>35,216</b>	<b>30,447</b>
FTE	6.5	7.4	7.3	5.1

**Workpapers belonging to this Category:**

**1WM003.000 Grid Design & System Hardening**

Labor	821	911	904	687
Non-Labor	25,221	33,260	34,312	29,760
NSE	0	0	0	0
<b>Total</b>	<b>26,042</b>	<b>34,171</b>	<b>35,216</b>	<b>30,447</b>
FTE	6.5	7.4	7.3	5.1

*Note: Totals may include rounding differences.*

**Beginning of Workpaper**  
**1WM003.000 - Grid Design & System Hardening**

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Witness: Jonathan Woldemariam  
Category: C. Grid Design & System Hardening  
Category-Sub: 1. Grid Design & System Hardening  
Workpaper: 1WM003.000 - Grid Design & System Hardening

**Activity Description:**

SDG&E's grid hardening programs are a set of initiatives that address the goal of reducing wildfires caused by utility equipment and minimizing the impacts to customers from mitigations such as PSPS. SDG&E has a number of initiatives including covered conductor and strategic undergrounding that reduce risk events on utility equipment, reducing the opportunities for ignition. SDG&E has a number of protection and equipment programs such as advanced protection, the expulsion fuse replacement program, and the lightning arrestor program. These programs reduce the chance that a risk event results in an ignition by utilizing protection settings and/or equipment that address a specific failure mode known to lead to ignition. Finally, SDG&E has a number of programs with the purpose of reducing PSPS impacts to customers including the PSPS sectionalizing program, microgrid and generator programs, as well as strategic undergrounding. The impacts of these programs are measured in the number of customers who will have reduced impacts from PSPS events assuming weather conditions similar to previous events. The costs represented are the O&M costs associated with the capital grid hardening programs, and the costs associated with the fully O&M programs such as the generator programs.

**Forecast Explanations:**

**Labor - Base YR Rec**

The base-year forecast methodology was selected as most indicative of future work. New initiatives and programs have been implemented beginning in 2020 due to the Wildfire Mitigation Plan, and these enhancements are not captured in the historical costs of this category. Accordingly, 2021 base year expenses are most representative of future needs based on an expansion in complexity and scope of existing projects and initiatives.

**Non-Labor - Base YR Rec**

The base-year forecast methodology was selected as most indicative of future work. New initiatives and programs have been implemented beginning in 2020 due to the Wildfire Mitigation Plan, and these enhancements are not captured in the historical costs of this category. Accordingly, 2021 base year expenses are most representative of future needs based on an expansion in complexity and scope of existing projects and initiatives.

**NSE - Base YR Rec**

Not applicable.

**Summary of Results:**

		In 2021\$ (000) Incurred Costs							
		Adjusted-Recorded					Adjusted-Forecast		
Years		2017	2018	2019	2020	2021	2022	2023	2024
Labor		36	23	410	608	821	910	903	686
Non-Labor		3,341	3,594	2,994	13,914	25,221	33,259	34,311	29,759
NSE		0	0	0	0	0	0	0	0
<b>Total</b>		<b>3,378</b>	<b>3,617</b>	<b>3,403</b>	<b>14,523</b>	<b>26,041</b>	<b>34,169</b>	<b>35,214</b>	<b>30,445</b>
FTE		0.5	0.5	1.8	3.7	6.5	7.4	7.3	5.1

*Note: Totals may include rounding differences.*

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Category: C. Grid Design & System Hardening  
Category-Sub: 1. Grid Design & System Hardening  
Workpaper: 1WM003.000 - Grid Design & System Hardening

**Summary of Adjustments to Forecast:**

In 2021 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	Base YR Rec	821	821	821	90	83	-134	911	904	687
Non-Labor	Base YR Rec	25,221	25,221	25,221	8,039	9,091	4,539	33,260	34,312	29,760
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		26,041	26,041	26,041	8,129	9,174	4,405	34,170	35,215	30,446
FTE	Base YR Rec	6.5	6.5	6.5	0.9	0.8	-1.4	7.4	7.3	5.1

**Forecast Adjustment Details:**

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
2022	36	636	0	672	0.4	1-Sided Adj
<b>Explanation:</b>	Increased forecast for Hotline Clamp program to align forecast with filed WMP 2022 plan.					
2022	0	231	0	231	0.0	1-Sided Adj
<b>Explanation:</b>	BLM Land Management on-going plan implementation costs. 71% of total costs are distribution ( WMP O&M), 29% Transmission and excluded from totals.					
2022	0	2,308	0	2,308	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Strategic Undergrounding.					
2022	0	655	0	655	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Covered Conductor based on 1% of capital forecast.					
2022	0	2,508	0	2,508	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Resiliency Grant Programs increased forecasts for backup battery units and alignment with the filed WMP 2022 plan.					
2022	0	1,416	0	1,416	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Standby Power Programs and alignment with the filed WMP 2022 plan.					
2022	214	870	0	1,084	2.1	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Resiliency Assistance Program and alignment with the filed WMP 2022 plan.					
2022	0	115	0	115	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for Microgrid O&M program to align forecast with filed WMP 2022 plan.					
2022	0	1,467	0	1,467	0.0	1-Sided Adj
<b>Explanation:</b>	WMP O&M forecast for CNF Access Road work associated with the CNF PLRP Project. Includes decommissioning of roads, engineered solutions, and installation of new BMPs.					
2022	0	202	0	202	0.0	1-Sided Adj

*Note: Totals may include rounding differences.*



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Category: C. Grid Design & System Hardening  
Category-Sub: 1. Grid Design & System Hardening  
Workpaper: 1WM003.000 - Grid Design & System Hardening

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>
<b>Explanation:</b>	Cost estimates for Cleveland National Forecast Master Special Use Permit (CNF MSUP) include (1) O&M Cost -Recovery Agreement: The annual estimate is based upon the total project cost of \$1,757,680 over 5 years = \$351,536. The cost recovery agreement is subject to further negotiation with the Agency. (2) CNF O&M Plan Implementation (\$105k in 2022): Costs for estimated mitigation based upon past CNF projects. (3) CNF O&M Programmatic Agreement (\$75k in 2022): New programmatic agreements (PA) for O&M to minimize agency review timeframes similar to what was obtained for the CNF PLRP project. 38% of total costs are distribution (WMP O&M), 62% Transmission and excluded from totals.					
2022	-160	-2,369	0	-2,529	-1.6	1-Sided Adj
<b>Explanation:</b>	Reduced forecasts for OH Dist Fire Hardening Bare Conductor.					
<b>2022 Total</b>	<b>90</b>	<b>8,039</b>	<b>0</b>	<b>8,129</b>	<b>0.9</b>	
2023	36	636	0	672	0.4	1-Sided Adj
<b>Explanation:</b>	Increased forecast for Hotline Clamp program to align forecast with filed WMP 2022 plan.					
2023	-167	-2,486	0	-2,653	-1.7	1-Sided Adj
<b>Explanation:</b>	Reduced forecasts for OH Dist Fire Hardening Bare Conductor.					
2023	0	3,452	0	3,452	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Strategic Undergrounding based on 1% of total capital forecast.					
2023	0	975	0	975	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast in 2023 for WMP O&M related to Covered Conductor based on 1% of capital forecast.					
2023	0	2,508	0	2,508	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Resiliency Grant Programs increased forecasts for backup battery units and alignment with the filed WMP 2022 plan.					
2023	0	1,416	0	1,416	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Standby Power Programs and alignment with the filed WMP 2022 plan.					
2023	214	870	0	1,084	2.1	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Resiliency Assistance Program and alignment with the filed WMP 2022 plan.					
2023	0	115	0	115	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for Microgrid O&M program to align forecast with filed WMP 2022 plan.					
2023	0	1,467	0	1,467	0.0	1-Sided Adj
<b>Explanation:</b>	WMP O&M forecast for CNF Access Road work associated with the CNF PLRP Project. Includes decommissioning of roads, engineered solutions, and installation of new BMPs.					
2023	0	134	0	134	0.0	1-Sided Adj

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: C. Grid Design & System Hardening  
Category-Sub: 1. Grid Design & System Hardening  
Workpaper: 1WM003.000 - Grid Design & System Hardening

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
<b>Explanation:</b>	Cost estimates for Cleveland National Forecast Master Special Use Permit (CNF MSUP) include (1) O&M Cost -Recovery Agreement: The annual estimate is based upon the total project cost of \$1,757,680 over 5 years = \$351,536. The cost recovery agreement is subject to further negotiation with the Agency. (2) CNF O&M Plan Implementation (\$105k in 2022): Costs for estimated mitigation based upon past CNF projects. (3) CNF O&M Programmatic Agreement (\$75k in 2022): New programmatic agreements (PA) for O&M to minimize agency review timeframes similar to what was obtained for the CNF PLRP project. 38% of total costs are distribution (WMP O&M), 62% Transmission and excluded from totals.					
2023	0	4	0	4	0.0	1-Sided Adj
<b>Explanation:</b>	BLM Land Management on-going plan implementation costs. 71% of total costs are distribution ( WMP O&M), 29% Transmission and excluded from totals.					
<b>2023 Total</b>	<b>83</b>	<b>9,091</b>	<b>0</b>	<b>9,174</b>	<b>0.8</b>	
2024	-180	-3,104	0	-3,284	-1.8	1-Sided Adj
<b>Explanation:</b>	Decreased forecast for Hotline Clamp program to align forecast with filed WMP 2022 plan.					
2024	-168	-2,491	0	-2,659	-1.7	1-Sided Adj
<b>Explanation:</b>	Reduced forecasts for OH Dist Fire Hardening Bare Conductor					
2024	0	4,025	0	4,025	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Strategic Undergrounding based on 1% of total capital forecast.					
2024	0	1,063	0	1,063	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast in 2024 for WMP O&M related to Covered Conductor based on 1% of capital forecast.					
2024	0	2,508	0	2,508	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Resiliency Grant Programs increased forecasts for backup battery units and alignment with the filed WMP 2022 plan.					
2024	0	1,416	0	1,416	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Standby Power Programs and alignment with the filed WMP 2022 plan.					
2024	214	870	0	1,084	2.1	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Resiliency Assistance Program and alignment with the filed WMP 2022 plan.					
2024	0	115	0	115	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for Microgrid O&M program to align forecast with filed WMP 2022 plan.					
2024	0	133	0	133	0.0	1-Sided Adj

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Workpaper: 1WM003.000 - Grid Design & System Hardening

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
<b>Explanation:</b>	Cost estimates for Cleveland National Forecast Master Special Use Permit (CNF MSUP) include (1) O&M Cost -Recovery Agreement: The annual estimate is based upon the total project cost of \$1,757,680 over 5 years = \$351,536. The cost recovery agreement is subject to further negotiation with the Agency. (2) CNF O&M Plan Implementation (\$105k in 2022): Costs for estimated mitigation based upon past CNF projects. (3) CNF O&M Programmatic Agreement (\$75k in 2022): New programmatic agreements (PA) for O&M to minimize agency review timeframes similar to what was obtained for the CNF PLRP project. 38% of total costs are distribution (WMP O&M), 62% Transmission and excluded from totals.					
2024	0	4	0	4	0.0	1-Sided Adj
<b>Explanation:</b>	BLM Land Management on-going plan implementation costs. 71% of total costs are distribution ( WMP O&M), 29% Transmission and excluded from totals.					
<b>2024 Total</b>	<b>-134</b>	<b>4,539</b>	<b>0</b>	<b>4,405</b>	<b>-1.4</b>	

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**Determination of Adjusted-Recorded (Incurred Costs):**

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	8	18	18	74	676
Non-Labor	1,890	1,978	319	354	24,165
NSE	0	0	0	0	0
<b>Total</b>	<b>1,898</b>	<b>1,997</b>	<b>337</b>	<b>428</b>	<b>24,841</b>
FTE	0.1	0.2	0.0	0.5	5.2
<b>Adjustments (Nominal \$) **</b>					
Labor	20	0	321	442	37
Non-Labor	1,030	1,270	2,453	12,509	1,056
NSE	0	0	0	0	0
<b>Total</b>	<b>1,051</b>	<b>1,270</b>	<b>2,774</b>	<b>12,951</b>	<b>1,093</b>
FTE	0.4	0.3	1.5	2.7	0.4
<b>Recorded-Adjusted (Nominal \$)</b>					
Labor	28	19	339	516	713
Non-Labor	2,920	3,248	2,772	12,862	25,221
NSE	0	0	0	0	0
<b>Total</b>	<b>2,949</b>	<b>3,267</b>	<b>3,111</b>	<b>13,379</b>	<b>25,934</b>
FTE	0.5	0.5	1.6	3.2	5.6
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	4	3	48	73	107
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>4</b>	<b>3</b>	<b>48</b>	<b>73</b>	<b>107</b>
FTE	0.0	0.0	0.2	0.5	0.9
<b>Escalation to 2021\$</b>					
Labor	4	2	23	19	0
Non-Labor	421	346	222	1,052	0
NSE	0	0	0	0	0
<b>Total</b>	<b>425</b>	<b>348</b>	<b>244</b>	<b>1,071</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2021\$)</b>					
Labor	36	23	410	608	821
Non-Labor	3,341	3,594	2,994	13,914	25,221
NSE	0	0	0	0	0
<b>Total</b>	<b>3,378</b>	<b>3,617</b>	<b>3,403</b>	<b>14,523</b>	<b>26,041</b>
FTE	0.5	0.5	1.8	3.7	6.5

\* 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.

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**Summary of Adjustments to Recorded:**

In Nominal \$ (000) Incurred Costs					
Years	2017	2018	2019	2020	2021
Labor	20	0.356	321	442	37
Non-Labor	1,030	1,270	2,453	12,509	1,056
NSE	0	0	0	0	0
<b>Total</b>	<b>1,051</b>	<b>1,270</b>	<b>2,774</b>	<b>12,951</b>	<b>1,093</b>
FTE	0.4	0.3	1.5	2.7	0.4

**Detail of Adjustments to Recorded:**

Year	Labor	NLbr	NSE	FTE	Adj Type
2017	1	0	0	0.1	CCTR Transf From 2100-0119.000
<b>Explanation:</b>	Transfer wildfire related O&M associated with System Hardening from Workpaper 1ED012 Electric Engineering to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2017	0	298	0	0.0	CCTR Transf From 2100-0218.000
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM005 Vegetation Management & Inspections to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2017	20	523	0	0.1	CCTR Transf From 2100-4089.000
<b>Explanation:</b>	Transfer Labor and Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2017	0	6	0	0.0	CCTR Transf From 2100-0222.000
<b>Explanation:</b>	Transfer wildfire related O&M associated with System Hardening from Workpaper 1ED012 Electric Engineering to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2017	0	0	0	0.1	CCTR Transf From 2100-0223.000
<b>Explanation:</b>	Transfer wildfire related O&M associated with System Hardening from Workpaper 1ED012 Electric Engineering to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2017	0	199	0	0.1	CCTR Transf From 2100-0225.000
<b>Explanation:</b>	Transfer wildfire related O&M associated with System Hardening from Workpaper 1ED012 Electric Engineering to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2017	0	4	0	0.0	CCTR Transf From 2100-3773.000

*Note: Totals may include rounding differences.*

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Workpaper: 1WM003.000 - Grid Design & System Hardening

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM006 Grid Operations & Protocols to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2017 Total</b>	<b>20</b>	<b>1,030</b>	<b>0</b>	<b>0.4</b>	
2018	0	0	0	0.1	CCTR Transf From 2100-0119.000
<b>Explanation:</b>	Transfer wildfire related O&M associated with System Hardening from Workpaper 1ED012 Electric Engineering to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2018	0	117	0	0.0	CCTR Transf From 2100-0166.000
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM005 Vegetation Management & Inspections to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2018	0	2	0	0.0	CCTR Transf From 2100-0218.000
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM005 Vegetation Management & Inspections to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2018	0	31	0	0.0	CCTR Transf From 2100-0222.000
<b>Explanation:</b>	Transfer wildfire related O&M associated with System Hardening from Workpaper 1ED012 Electric Engineering to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2018	0	0	0	0.1	CCTR Transf From 2100-0223.000
<b>Explanation:</b>	Transfer wildfire related O&M associated with System Hardening from Workpaper 1ED012 Electric Engineering to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2018	0	15	0	0.0	CCTR Transf From 2100-0224.000
<b>Explanation:</b>	Transfer wildfire related O&M associated with System Hardening from Workpaper 1ED012 Electric Engineering to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2018	0	1,108	0	0.1	CCTR Transf From 2100-0225.000
<b>Explanation:</b>	Transfer wildfire related O&M associated with System Hardening from Workpaper 1ED012 Electric Engineering to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2018	0	0	0	0.0	CCTR Transf From 2100-3773.000
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM006 Grid Operations & Protocols to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2018	0	-2	0	0.0	1-Sided Adj
<b>Explanation:</b>	One-sided adjustment to exclude \$1,917 related to Events and Tickets.				

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<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>
<b>2018 Total</b>	<b>0</b>	<b>1,270</b>	<b>0</b>	<b>0.3</b>	
2019	0	0	0	0.1	CCTR Transf From 2100-0166.000
<b>Explanation:</b>	Transfer Labor and Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM005 Vegetation Management & Inspections to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2019	0	0	0	0.0	CCTR Transf From 2100-0222.000
<b>Explanation:</b>	Transfer wildfire related O&M associated with System Hardening from Workpaper 1ED012 Electric Engineering to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2019	0	-29	0	0.0	CCTR Transf From 2100-0225.000
<b>Explanation:</b>	Transfer wildfire related O&M associated with System Hardening from Workpaper 1ED012 Electric Engineering to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2019	0	17	0	0.0	CCTR Transf From 2100-3773.000
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM006 Grid Operations & Protocols to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2019	0	0	0	0.0	CCTR Transf From 2100-3854.000
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM001 Emergency Planning & Preparedness to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2019	0	1	0	0.0	CCTR Transf From 2100-0218.000
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM005 Vegetation Management & Inspections to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2019	321	2,464	0	1.4	CCTR Transf From 2100-4089.000
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2019	0	-1	0	0.0	CCTR Transf To 2100-4089.002
<b>Explanation:</b>	Transfer Non-Labor associated with Asset Management & Inspections from Workpaper 1WM003 Grid Design & System Hardening to Workpaper 1WM004 Asset Management & Inspections in cost center 2100-4089.002 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2019 Total</b>	<b>321</b>	<b>2,453</b>	<b>0</b>	<b>1.5</b>	

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Workpaper: 1WM003.000 - Grid Design & System Hardening

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>
2020	0	-81	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2020	0	-1	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2020	0	9	0	0.0	CCTR Transf From 2100-3773.000
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM006 Grid Operations & Protocols to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2020	1	0	0	0.1	CCTR Transf From 2100-0166.000
<b>Explanation:</b>	Transfer Labor and Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM005 Vegetation Management & Inspections to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2020	0	1	0	0.0	CCTR Transf From 2100-0218.000
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM005 Vegetation Management & Inspections to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2020	441	12,578	0	2.6	CCTR Transf From 2100-4089.000
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2020	0	-12	0	0.0	CCTR Transf To 2100-4089.002
<b>Explanation:</b>	Transfer Non-Labor associated with Asset Management & Inspections from Workpaper 1WM003 Grid Design & System Hardening to Workpaper 1WM004 Asset Management & Inspections in cost center 2100-4089.002 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2020	0	11	0	0.0	CCTR Transf From 2100-0222.000
<b>Explanation:</b>	Transfer wildfire related O&M associated with System Hardening from Workpaper 1ED012 Electric Engineering to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2020	0	5	0	0.0	CCTR Transf From 2100-0225.000
<b>Explanation:</b>	Transfer wildfire related O&M associated with System Hardening from Workpaper 1ED012 Electric Engineering to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2020 Total</b>	<b>442</b>	<b>12,509</b>	<b>0</b>	<b>2.7</b>	

Note: Totals may include rounding differences.



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<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>
2021	0	-4	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2021	0	-1	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2021	17	506	0	0.2	1-Sided Adj
<b>Explanation:</b>	One-sided adjustment to include Labor, Non-Labor and FTE direct costs for the Covered Conductor O&M Settlement order.				
2021	20	555	0	0.2	1-Sided Adj
<b>Explanation:</b>	One-sided adjustment to include Labor, Non-Labor and FTE direct costs for the O&M associated with System Hardening Settlement orders.				
<b>2021 Total</b>	<b>37</b>	<b>1,056</b>	<b>0</b>	<b>0.4</b>	

*Note: Totals may include rounding differences.*

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**RAMP Item # 1**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C12/M7 T1-T2

RAMP Line Item Name: Hotline Clamps

Tranche(/s): Tranche1: Tier 3; Tranche2: Tier 2

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	383	2,160	2,160	182	164	201
Tranche 2 Cost Estimate	3,265	2,160	2,160	182	164	201

**Cost Estimate Changes from RAMP:**

Within RAMP range.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 # of hotline clamps removed	288.00	825.00	825.00	106.00	86.00	106.00
Tranche 2 # of hotline clamps removed	2,456.00	825.00	825.00	106.00	86.00	106.00

**Work Unit Changes from RAMP:**

Within RAMP range.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	264.000	0.000
Tranche 2	80.000	0.000

**RSE Changes from RAMP:**

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Category-Sub: 1. Grid Design & System Hardening  
Workpaper: 1WM003.000 - Grid Design & System Hardening

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2)

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: C. Grid Design & System Hardening  
Category-Sub: 1. Grid Design & System Hardening  
Workpaper: 1WM003.000 - Grid Design & System Hardening

**RAMP Item # 2**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C16/M11 T1-T2

RAMP Line Item Name: Strategic Undergrounding

Tranche(/s): Tranche1: Tier 3; Tranche2: Tier 2

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	57	1,511	2,321	2,592	5,993	7,324
Tranche 2 Cost Estimate	33	887	1,310	1,523	3,596	4,395

**Cost Estimate Changes from RAMP:**

Lower than RAMP range primarily due to updates to expected work units in 2024.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 # of Miles UG (Capital)	19.50	37.80	78.80	94.50	84.00	103.00
Tranche 2 # of Miles UG (Capital)	11.50	22.20	46.30	55.50	51.00	62.00

**Work Unit Changes from RAMP:**

Within RAMP range.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	235.000	156.000
Tranche 2	122.000	54.000

**RSE Changes from RAMP:**

San Diego Gas & Electric Company  
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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: C. Grid Design & System Hardening  
Category-Sub: 1. Grid Design & System Hardening  
Workpaper: 1WM003.000 - Grid Design & System Hardening

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2)

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: C. Grid Design & System Hardening  
Category-Sub: 1. Grid Design & System Hardening  
Workpaper: 1WM003.000 - Grid Design & System Hardening

**RAMP Item # 3**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C07/M2 T1-T2

RAMP Line Item Name: OH Dist Fire Hardening Covered Cond

Tranche(/s): Tranche1: Tier 3; Tranche2: Tier 2

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	445	971	1,237	1,309	2,962	3,620
Tranche 2 Cost Estimate	73	218	272	287	650	795

**Cost Estimate Changes from RAMP:**

Lower than RAMP range primarily due to updated unit targets for program through 2024.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 # of miles hardened (Capital)	11.00	49.00	82.00	82.00	74.00	90.00
Tranche 2 # of miles hardened (Capital)	2.00	11.00	18.00	18.00	16.00	20.00

**Work Unit Changes from RAMP:**

Within RAMP range.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	80.000	32.000
Tranche 2	54.000	14.000

**RSE Changes from RAMP:**

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: C. Grid Design & System Hardening  
Category-Sub: 1. Grid Design & System Hardening  
Workpaper: 1WM003.000 - Grid Design & System Hardening

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: C. Grid Design & System Hardening  
Category-Sub: 1. Grid Design & System Hardening  
Workpaper: 1WM003.000 - Grid Design & System Hardening

**RAMP Item # 4**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C13/M8 T1-T2

RAMP Line Item Name: Resiliency Grant Programs

Tranche(/s): Tranche1: Tier 3; Tranche2: Tier 2

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	2,938	3,640	3,640	3,465	2,370	2,897
Tranche 2 Cost Estimate	4,954	6,760	6,760	6,934	4,740	5,793

**Cost Estimate Changes from RAMP:**

Higher than RAMP range primarily due to increased targets for backup battery units.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 # of generators	860.00	1,050.00	1,050.00	1,000.00	600.00	733.00
Tranche 2 # of generators	1,450.00	1,950.00	1,950.00	2,000.00	1,200.00	1,467.00

**Work Unit Changes from RAMP:**

Higher than RAMP range primarily due to increased targets for backup battery units.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	418.000	76.000
Tranche 2	466.000	38.000

**RSE Changes from RAMP:**

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).



San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: C. Grid Design & System Hardening  
Category-Sub: 1. Grid Design & System Hardening  
Workpaper: 1WM003.000 - Grid Design & System Hardening

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San Diego Gas & Electric Company  
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Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: C. Grid Design & System Hardening  
Category-Sub: 1. Grid Design & System Hardening  
Workpaper: 1WM003.000 - Grid Design & System Hardening

**RAMP Item # 5**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C14/M9 T1-T2

RAMP Line Item Name: Standby Power Programs

Tranche(/s): Tranche1: Tier 3; Tranche2: Tier 2

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	8,822	10,253	10,247	10,350	4,163	5,088
Tranche 2 Cost Estimate	112	97	104	0	0	0

**Cost Estimate Changes from RAMP:**

Increase versus RAMP range 180 units 100% Tier 3 in 2024. Program expansion identified after RAMP filing to increase the number of fixed backup power generators to customers.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 # of generators	395.00	530.00	407.90	412.00	164.00	200.00
Tranche 2 # of generators	5.00	5.00	4.10	0.00	2.00	2.00

**Work Unit Changes from RAMP:**

Increase versus RAMP range 180 units 100% Tier 3 in 2024. Program expansion identified after RAMP filing to increase the number of fixed backup power generators to customers.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	133.000	120.000
Tranche 2	0.000	0.000

**RSE Changes from RAMP:**

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: C. Grid Design & System Hardening  
Category-Sub: 1. Grid Design & System Hardening  
Workpaper: 1WM003.000 - Grid Design & System Hardening

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: C. Grid Design & System Hardening  
Category-Sub: 1. Grid Design & System Hardening  
Workpaper: 1WM003.000 - Grid Design & System Hardening

**RAMP Item # 6**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C15/M10 T1-T2

RAMP Line Item Name: Resiliency Assistance Programs

Tranche(/s): Tranche1: Tier 3; Tranche2: Tier 2

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	299	731	731	732	324	396
Tranche 2 Cost Estimate	446	1,097	1,097	1,097	486	594

**Cost Estimate Changes from RAMP:**

Increase versus RAMP range due to Resiliency Assistance Program growth based on identifying additional customers and increasing capabilities to provide those customers with generators.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 # of generators	295.00	500.00	500.00	500.00	221.00	271.00
Tranche 2 # of generators	440.00	750.00	750.00	750.00	332.00	406.00

**Work Unit Changes from RAMP:**

Increase versus RAMP range due to Resiliency Assistance Program growth based on identifying additional customers and increasing capabilities to provide those customers with generators.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	380.000	569.000
Tranche 2	190.000	284.000

**RSE Changes from RAMP:**

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: C. Grid Design & System Hardening  
Category-Sub: 1. Grid Design & System Hardening  
Workpaper: 1WM003.000 - Grid Design & System Hardening

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: C. Grid Design & System Hardening  
Category-Sub: 1. Grid Design & System Hardening  
Workpaper: 1WM003.000 - Grid Design & System Hardening

**RAMP Item # 7**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C10/M5 T2

RAMP Line Item Name: Microgrids

Tranche(/s): Tranche1: Tier 3; Tranche2: Tier 2

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	1,492	0	0	0	0	0
Tranche 2 Cost Estimate	0	1,607	1,607	1,607	1,284	1,570

**Cost Estimate Changes from RAMP:**

Increase versus RAMP range based on updated cost and unit forecasts aligned with filed WMP 2022 plan.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 # of microgrids (Capital)	6.00	0.00	0.00	0.00	0.00	0.00
Tranche 2 # of microgrids (Capital)	0.00	6.00	6.00	6.00	1.00	1.00

**Work Unit Changes from RAMP:**

Increase versus RAMP range based on updated cost and unit forecasts aligned with filed WMP 2022 plan.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000
Tranche 2	28.000	30.000

**RSE Changes from RAMP:**

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: C. Grid Design & System Hardening  
Category-Sub: 1. Grid Design & System Hardening  
Workpaper: 1WM003.000 - Grid Design & System Hardening

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2)

**RAMP Item # 8**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: New02

RAMP Line Item Name: CNF Access Roads

Tranche(s): Tranche1: N/A

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	0	1,467	1,467	0	0	0

**Cost Estimate Changes from RAMP:**

New item not included in original RAMP filing, No new circuits are being hardened, but environmental restoration work on CNF land will continue.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 # Line Segments	0.00	4.50	4.50	0.00	0.00	0.00

**Work Unit Changes from RAMP:**

New item not included in original RAMP filing, No new circuits are being hardened, but environmental restoration work on CNF land will continue.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

**RSE Changes from RAMP:**

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

San Diego Gas & Electric Company  
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Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: C. Grid Design & System Hardening  
Category-Sub: 1. Grid Design & System Hardening  
Workpaper: 1WM003.000 - Grid Design & System Hardening

**RAMP Item # 9**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: New03

RAMP Line Item Name: CNF Land Management

Tranche(/s): Tranche1: N/A

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$)	
					Low	High
Tranche 1 Cost Estimate	0	202	134	134	0	0

**Cost Estimate Changes from RAMP:**

New item not included in original RAMP filing.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities	
					Low	High
Tranche 1 Cleveland National Forecast Master Special Use Permit	0.00	1.00	1.00	1.00	0.00	0.00

**Work Unit Changes from RAMP:**

New item not included in original RAMP filing.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

**RSE Changes from RAMP:**

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).



San Diego Gas & Electric Company  
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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: C. Grid Design & System Hardening  
Category-Sub: 1. Grid Design & System Hardening  
Workpaper: 1WM003.000 - Grid Design & System Hardening

**RAMP Item # 10**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: N/A

RAMP Line Item Name: BLM Land Management

Tranche(/s): Tranche1: New01

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	0	231	4	4	0	0

**Cost Estimate Changes from RAMP:**

New item not included in original RAMP filing.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 # plans	0.00	1.00	1.00	1.00	0.00	0.00

**Work Unit Changes from RAMP:**

New item not included in original RAMP filing.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

**RSE Changes from RAMP:**

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

San Diego Gas & Electric Company  
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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: C. Grid Design & System Hardening  
Category-Sub: 1. Grid Design & System Hardening  
Workpaper: 1WM003.000 - Grid Design & System Hardening

**RAMP Item # 11**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C17/M12 T1-T3

RAMP Line Item Name: OH Dist Fire Hardening Bare Conductor

Tranche(/s): Tranche1: Tier 3; Tranche2: Tier 2; Tranche3: Non-HFTD

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	1,143	75	23	20	0	0
Tranche 2 Cost Estimate	1,470	96	30	26	0	0
Tranche 3 Cost Estimate	109	7	2	2	0	0

**Cost Estimate Changes from RAMP:**

Increase versus RAMP range primarily due to expected program closeout costs not included in original RAMP report.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 # of miles hardened (Capital)	42.00	10.50	2.10	2.10	0.00	0.00
Tranche 2 # of miles hardened (Capital)	54.10	13.50	2.70	2.70	0.00	0.00
Tranche 3 # of miles hardened (Capital)	4.00	1.00	0.20	0.20	0.00	0.00

**Work Unit Changes from RAMP:**

Increase versus RAMP range primarily due to expected program closeout costs not included in original RAMP report.

San Diego Gas & Electric Company  
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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: C. Grid Design & System Hardening  
Category-Sub: 1. Grid Design & System Hardening  
Workpaper: 1WM003.000 - Grid Design & System Hardening

**Risk Spend Efficiency (RSE)**

	<b>GRC RSE</b>	<b>RAMP RSE</b>
Tranche 1	41.000	53.000
Tranche 2	0.000	53.000
Tranche 3	0.000	0.000

**RSE Changes from RAMP:**

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: D. Asset Management & Inspections  
Workpaper: 1WM004.000

**Summary for Category: D. Asset Management & Inspections**

	In 2021\$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
		2022	2023	2024
Labor	1,421	2,536	1,785	1,186
Non-Labor	35,528	83,376	46,966	14,189
NSE	0	0	0	0
<b>Total</b>	<b>36,949</b>	<b>85,912</b>	<b>48,751</b>	<b>15,375</b>
FTE	10.2	21.4	13.9	7.9

**Workpapers belonging to this Category:**

**1WM004.000 Asset Management & Inspections**

Labor	1,421	2,536	1,785	1,186
Non-Labor	35,528	83,376	46,966	14,189
NSE	0	0	0	0
<b>Total</b>	<b>36,949</b>	<b>85,912</b>	<b>48,751</b>	<b>15,375</b>
FTE	10.2	21.4	13.9	7.9

*Note: Totals may include rounding differences.*

**Beginning of Workpaper**  
**1WM004.000 - Asset Management & Inspections**

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: D. Asset Management & Inspections  
Category-Sub: 1. Asset Management & Inspections  
Workpaper: 1WM004.000 - Asset Management & Inspections

**Activity Description:**

This cost category consists of SDG&E's asset management and inspection programs. The purpose of these programs is to promote safety for the general public, SDG&E personnel, and contractors by providing a safe operating and construction environment while maintaining system reliability. SDG&E's established inspection and maintenance programs enable SDG&E to identify and repair conditions and components to reduce the potential of equipment failure on SDG&E's electric system to minimize hazards and maintain system reliability. To accomplish this, SDG&E meets or exceeds the requirements of the inspections mandated by Public Resource Code Sections 4292 and 4293 as well as G.O. 95, G.O. 128, G.O. 165, and G.O. 174.

The asset inspection programs contained within this workpaper are the HFTD inspections associated with drone inspections, detailed inspections, HFTD Tier 3 inspections, patrol inspections, intrusive wood pole inspections, LiDAR inspections, and infrared inspections.

**Forecast Explanations:**

**Labor - Base YR Rec**

The base-year forecast methodology was selected as most indicative of future work. New initiatives and programs have been implemented beginning in 2020 due to the Wildfire Mitigation Plan, and these enhancements are not captured in the historical costs of this category. Accordingly, 2021 base year expenses are most representative of future needs based on an expansion in complexity and scope of existing projects and initiatives.

**Non-Labor - Base YR Rec**

The base-year forecast methodology was selected as most indicative of future work. New initiatives and programs have been implemented beginning in 2020 due to the Wildfire Mitigation Plan, and these enhancements are not captured in the historical costs of this category. Accordingly, 2021 base year expenses are most representative of future needs based on an expansion in complexity and scope of existing projects and initiatives.

**NSE - Base YR Rec**

Not applicable.

**Summary of Results:**

		In 2021\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2017	2018	2019	2020	2021	2022	2023	2024	
Labor		0	0	811	2,013	1,421	2,535	1,784	1,185	
Non-Labor		2	9	15,849	56,435	35,528	83,376	46,966	14,189	
NSE		0	0	0	0	0	0	0	0	
<b>Total</b>		<b>2</b>	<b>9</b>	<b>16,661</b>	<b>58,448</b>	<b>36,949</b>	<b>85,911</b>	<b>48,750</b>	<b>15,374</b>	
FTE		0.0	0.0	5.1	13.2	10.2	21.4	13.9	7.9	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: D. Asset Management & Inspections  
Category-Sub: 1. Asset Management & Inspections  
Workpaper: 1WM004.000 - Asset Management & Inspections

**Summary of Adjustments to Forecast:**

In 2021 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	Base YR Rec	1,421	1,421	1,421	1,115	364	-235	2,536	1,785	1,186
Non-Labor	Base YR Rec	35,528	35,528	35,528	47,848	11,438	-21,339	83,376	46,966	14,189
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		36,949	36,949	36,949	48,963	11,802	-21,574	85,912	48,751	15,375
FTE	Base YR Rec	10.2	10.2	10.2	11.2	3.7	-2.3	21.4	13.9	7.9

**Forecast Adjustment Details:**

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
2022	953	46,714	0	47,667	9.6	1-Sided Adj
<b>Explanation:</b>	2022-2024 increase primarily related to timing of engineering and repair costs for Dist System Inspection – Drone Inspections. See supplemental workpaper for Capital BC 20248.					
2022	-28	-6	0	-34	-0.3	1-Sided Adj
<b>Explanation:</b>	Reduced forecast for WMP O&M related to Dist System Inspection – HFTD Tier 3 Inspections.					
2022	33	15	0	48	0.3	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Dist System Inspect – CMP – Annual Patrol.					
2022	-12	-767	0	-779	-0.1	1-Sided Adj
<b>Explanation:</b>	Decreased forecast for WMP O&M related to Intrusive Poles					
2022	141	77	0	218	1.4	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Dist Syst Inspect–CMP –5 Yr Detail Inspect.					
2022	28	1	0	29	0.3	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Dist System Inspection – IR/Corona					
2022	0	1,849	0	1,849	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to LiDAR Flights.					
2022	0	-313	0	-313	0.0	1-Sided Adj
<b>Explanation:</b>	Decreased forecast for WMP O&M related to Enhanced Steel Pole Insp. No forecasted spend expected 2022-2024.					
2022	0	278	0	278	0.0	1-Sided Adj
<b>Explanation:</b>	Increased 2022 forecast for WMP O&M related to Cross-Arm Remediation. No expected spend 2023-2024.					
<b>2022 Total</b>	<b>1,115</b>	<b>47,848</b>	<b>0</b>	<b>48,963</b>	<b>11.2</b>	
2023	260	12,750	0	13,010	2.6	1-Sided Adj

*Note: Totals may include rounding differences.*

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Category: D. Asset Management & Inspections  
Category-Sub: 1. Asset Management & Inspections  
Workpaper: 1WM004.000 - Asset Management & Inspections

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
<b>Explanation:</b>	2022-2024 increase primarily related to timing of engineering and repair costs for Dist System Inspection – Drone Inspections. See supplemental workpaper for Capital BC 20248.					
2023	-44	-10	0	-54	-0.4	1-Sided Adj
<b>Explanation:</b>	Reduced forecast for WMP O&M related to Dist System Inspection – HFTD Tier 3 Inspections.					
2023	33	15	0	48	0.3	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Dist System Inspect – CMP – Annual Patrol.					
2023	-13	-786	0	-799	-0.1	1-Sided Adj
<b>Explanation:</b>	Decreased forecast for WMP O&M related to Intrusive Poles					
2023	100	54	0	154	1.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Dist Syst Inspect CMP –5 Yr Detail Inspect					
2023	28	1	0	29	0.3	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Dist System Inspection – IR/Corona					
2023	0	349	0	349	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to LiDAR Flights.					
2023	0	-313	0	-313	0.0	1-Sided Adj
<b>Explanation:</b>	Decreased forecast for WMP O&M related to Enhanced Steel Pole Insp. No forecasted spend expected 2022-2024.					
2023	0	-622	0	-622	0.0	1-Sided Adj
<b>Explanation:</b>	Decreased forecast for WMP O&M related to Cross-Arm Remediation. No expected spend 2023-2024.					
<b>2023 Total</b>	<b>364</b>	<b>11,438</b>	<b>0</b>	<b>11,802</b>	<b>3.7</b>	
2024	-411	-20,162	0	-20,573	-4.1	1-Sided Adj
<b>Explanation:</b>	2022-2024 decrease primarily related to timing of engineering and repair costs for Dist System Inspection – Drone Inspections. See supplemental workpaper for Capital BC 20248.					
2024	31	7	0	38	0.3	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Dist System Inspection – HFTD Tier 3 Inspections.					
2024	33	15	0	48	0.3	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Dist System Inspect – CMP – Annual Patrol.					
2024	-11	-666	0	-677	-0.1	1-Sided Adj
<b>Explanation:</b>	Decreased forecast for WMP O&M related to Intrusive Poles					
2024	95	52	0	147	1.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Dist Syst Inspect CMP –5 Yr Detail Inspect					
2024	28	1	0	29	0.3	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Dist System Inspection – IR/Corona					
2024	0	349	0	349	0.0	1-Sided Adj

*Note: Totals may include rounding differences.*



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Category: D. Asset Management & Inspections  
Category-Sub: 1. Asset Management & Inspections  
Workpaper: 1WM004.000 - Asset Management & Inspections

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
<b>Explanation:</b>	Increased forecast for WMP O&M related to LiDAR Flights.					
2024	0	-313	0	-313	0.0	1-Sided Adj
<b>Explanation:</b>	Decreased forecast for WMP O&M related to Enhanced Steel Pole Insp. No forecasted spend expected 2022-2024.					
2024	0	-622	0	-622	0.0	1-Sided Adj
<b>Explanation:</b>	Decreased forecast for WMP O&M related to Cross-Arm Remediation. No expected spend 2023-2024.					
<b>2024 Total</b>	<b>-235</b>	<b>-21,339</b>	<b>0</b>	<b>-21,574</b>	<b>-2.3</b>	

*Note: Totals may include rounding differences.*

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Workpaper: 1WM004.000 - Asset Management & Inspections

**Determination of Adjusted-Recorded (Incurred Costs):**

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	0	0	0	101	1,235
Non-Labor	0	0	0	9,216	35,528
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9,317</b>	<b>36,763</b>
FTE	0.0	0.0	0.0	0.5	8.7
<b>Adjustments (Nominal \$) **</b>					
Labor	0	0	671	1,607	0
Non-Labor	1	8	14,676	42,953	0
NSE	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>8</b>	<b>15,347</b>	<b>44,559</b>	<b>0</b>
FTE	0.0	0.0	4.4	10.9	0.0
<b>Recorded-Adjusted (Nominal \$)</b>					
Labor	0	0	671	1,708	1,235
Non-Labor	1	8	14,676	52,168	35,528
NSE	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>8</b>	<b>15,347</b>	<b>53,876</b>	<b>36,763</b>
FTE	0.0	0.0	4.4	11.4	8.7
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	0	0	96	242	186
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>96</b>	<b>242</b>	<b>186</b>
FTE	0.0	0.0	0.7	1.8	1.5
<b>Escalation to 2021\$</b>					
Labor	0	0	45	62	0
Non-Labor	0	1	1,173	4,266	0
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>1</b>	<b>1,217</b>	<b>4,329</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2021\$)</b>					
Labor	0	0	811	2,013	1,421
Non-Labor	2	9	15,849	56,435	35,528
NSE	0	0	0	0	0
<b>Total</b>	<b>2</b>	<b>9</b>	<b>16,661</b>	<b>58,448</b>	<b>36,949</b>
FTE	0.0	0.0	5.1	13.2	10.2

\* 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.

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Workpaper: 1WM004.000 - Asset Management & Inspections

**Summary of Adjustments to Recorded:**

In Nominal \$ (000) Incurred Costs					
Years	2017	2018	2019	2020	2021
Labor	0	0	671	1,607	0
Non-Labor	1	8	14,676	42,953	0
NSE	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>8</b>	<b>15,347</b>	<b>44,559</b>	<b>0</b>
FTE	0.0	0.0	4.4	10.9	0.0

**Detail of Adjustments to Recorded:**

Year	Labor	NLbr	NSE	FTE	Adj Type
2017	0	1	0	0.0	CCTR Transf From 2100-3773.000
<b>Explanation:</b>	Transfer Non-Labor associated with Asset Management & Inspections from Workpaper 1WM006 Grid Operations & Protocols to Workpaper 1WM004 Asset Management & Inspections in cost center 2100-4089.002 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2017 Total</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0.0</b>	
2018	0	8	0	0.0	CCTR Transf From 2100-0225.000
<b>Explanation:</b>	Transfer wildfire related to Asset Management & Inspections from Workpaper 1ED012 Electric Engineering to Workpaper 1WM004 Asset Management & Inspections in cost center 2100-4089.002 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2018 Total</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0.0</b>	
2019	6	31	0	0.1	CCTR Transf From 2100-0225.000
<b>Explanation:</b>	Transfer wildfire related to Asset Management & Inspections from Workpaper 1ED012 Electric Engineering to Workpaper 1WM004 Asset Management & Inspections in cost center 2100-4089.002 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2019	0	1	0	0.0	CCTR Transf From 2100-3932.000
<b>Explanation:</b>	Transfer Non-Labor associated with Asset Management & Inspections from Workpaper 1WM003 Grid Design & System Hardening to Workpaper 1WM004 Asset Management & Inspections in cost center 2100-4089.002 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2019	665	14,644	0	4.3	CCTR Transf From 2100-4089.000
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Asset Management & Inspections from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM004 Asset Management & Inspections in cost center 2100-4089.002 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2019 Total</b>	<b>671</b>	<b>14,676</b>	<b>0</b>	<b>4.4</b>	

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Workpaper: 1WM004.000 - Asset Management & Inspections

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>
2020	0	12	0	0.0	CCTR Transf From 2100-3932.000
<b>Explanation:</b>	Transfer Non-Labor associated with Asset Management & Inspections from Workpaper 1WM003 Grid Design & System Hardening to Workpaper 1WM004 Asset Management & Inspections in cost center 2100-4089.002 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2020	1,584	42,699	0	10.7	CCTR Transf From 2100-4089.000
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Asset Management & Inspections from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM004 Asset Management & Inspections in cost center 2100-4089.002 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2020	0	179	0	0.0	CCTR Transf From 2100-4114.000
<b>Explanation:</b>	Transfer wildfire related to Asset Management & Inspections from Workpaper 1ED012 Electric Engineering to Workpaper 1WM004 Asset Management & Inspections in cost center 2100-4089.002 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2020	0	53	0	0.0	CCTR Transf From 2100-0225.000
<b>Explanation:</b>	Transfer wildfire related to Asset Management & Inspections from Workpaper 1ED012 Electric Engineering to Workpaper 1WM004 Asset Management & Inspections in cost center 2100-4089.002 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2020	23	9	0	0.2	CCTR Transf From 2100-0099.000
<b>Explanation:</b>	Transfer wildfire related to Asset Management & Inspections from Workpaper 1ED012 Electric Engineering to Workpaper 1WM004 Asset Management & Inspections in cost center 2100-4089.002 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2020 Total</b>	<b>1,607</b>	<b>42,953</b>	<b>0</b>	<b>10.9</b>	
<b>2021 Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.0</b>	

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Workpaper: 1WM004.000 - Asset Management & Inspections

**RAMP Item # 1**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C28 T1-T2

RAMP Line Item Name: Dist System Inspection Drone Inspections

Tranche(/s): Tranche1: Tier 3; Tranche2: Tier 2

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	14,349	0	0	12,656	2,025	2,475
Tranche 2 Cost Estimate	18,879	80,896	46,238	0	0	0

**Cost Estimate Changes from RAMP:**

Increase vs. RAMP range primarily due to the timing and number of repairs found during 2021 flights. In 2021, SDG&E's drone inspection program was paused for the first four months to establish a PMO for the program. Delays in starting flights led to more repair costs being pushed into 2022 and 2023. Additionally, these repair costs were higher than expected as the number of items found in 2021 in Tier 2 was higher than the number of items found in Tier 3 in 2020.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 # of HFTD inspections	9,517.00	0.00	0.00	22,000.00	13,320.00	16,280.00
Tranche 2 # of HFTD inspections	12,523.00	22,000.00	22,000.00	0.00	0.00	0.00

**Work Unit Changes from RAMP:**

Increase vs. RAMP range primarily due to the timing and number of repairs found during 2021 flights. In 2021, SDG&E's drone inspection program was paused for the first four months to establish a PMO for the program. Delays in starting flights led to more repair costs being pushed into 2022 and 2023. Additionally, these repair costs were higher than expected as the number of items found in 2021 in Tier 2 was higher than the number of items found in Tier 3 in 2020.

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Workpaper: 1WM004.000 - Asset Management & Inspections

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	22.000	194.000
Tranche 2	9.000	9.000

**RSE Changes from RAMP:**

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

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Category-Sub: 1. Asset Management & Inspections  
Workpaper: 1WM004.000 - Asset Management & Inspections

**RAMP Item # 2**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment  
RAMP Line Item ID: C27 T1-T2  
RAMP Line Item Name: Dist System Inspection HFTD Tier 3 Inspections  
Tranche(/s): Tranche1: Tier 3; Tranche2: Tier 2

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	290	256	237	328	282	344
Tranche 2 Cost Estimate	0	0	0	0	0	0

**Cost Estimate Changes from RAMP:**

Within range, Tier 2 costs not included in original RAMP report.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 # of HFTD inspections	10,815.00	12,380.00	11,864.00	11,596.00	9,734.00	11,897.00
Tranche 2 # of HFTD inspections	0.00	0.00	0.00	0.00	3.00	3.00

**Work Unit Changes from RAMP:**

Within range.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	187.000	111.000
Tranche 2	0.000	0.000

**RSE Changes from RAMP:**

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Category: D. Asset Management & Inspections  
Category-Sub: 1. Asset Management & Inspections  
Workpaper: 1WM004.000 - Asset Management & Inspections

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).



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Category-Sub: 1. Asset Management & Inspections  
Workpaper: 1WM004.000 - Asset Management & Inspections

**RAMP Item # 3**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C30 T1-T2

RAMP Line Item Name: Dist System Inspect CMP Annual Patrol

Tranche(/s): Tranche1: Tier 3; Tranche2: Tier 2

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	106	127	127	127	10	13
Tranche 2 Cost Estimate	125	151	151	151	12	15

**Cost Estimate Changes from RAMP:**

Increased vs. RAMP range in 2022-2024 due to higher than expected patrol and associated repair costs for the program.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 # of HFTD patrols	39,315.00	39,315.00	39,371.00	39,371.00	35,434.00	43,308.00
Tranche 2 # of HFTD patrols	46,685.00	46,685.00	46,751.00	46,751.00	42,076.00	51,426.00

**Work Unit Changes from RAMP:**

Within range

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	994.000	684.000
Tranche 2	533.000	373.000

**RSE Changes from RAMP:**

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Witness: Jonathan Woldemariam  
Category: D. Asset Management & Inspections  
Category-Sub: 1. Asset Management & Inspections  
Workpaper: 1WM004.000 - Asset Management & Inspections

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: D. Asset Management & Inspections  
Category-Sub: 1. Asset Management & Inspections  
Workpaper: 1WM004.000 - Asset Management & Inspections

**RAMP Item # 4**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C25 T1-T2

RAMP Line Item Name: Intrusive Poles

Tranche(/s): Tranche1: Tier 3; Tranche2: Tier 2

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$)	
					Low	High
Tranche 1 Cost Estimate	531	16	3	83	0	0
Tranche 2 Cost Estimate	272	8	1	43	0	0

**Cost Estimate Changes from RAMP:**

Increase vs. RAMP for 2022-2024 primarily related to timing of HFTD wood pole intrusive inspections not included in original RAMP report. HFTD intrusive inspections are on a cycle, and while there is a significant decrease from 2021 into 2022 through 2024, it will not go to zero.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities	
					Low	High
Tranche 1 # of HFTD inspections	6,470.00	251.00	42.00	1,321.00	0.00	0.00
Tranche 2 # of HFTD inspections	3,326.00	129.00	21.00	679.00	0.00	0.00

**Work Unit Changes from RAMP:**

Increase vs. RAMP for 2022-2024 primarily related to timing of HFTD wood pole intrusive inspections not included in original RAMP report. HFTD intrusive inspections are on a cycle, and while there is a significant decrease from 2021 into 2022 through 2024, it will not go to zero.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	534.000	2.000

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: D. Asset Management & Inspections  
Category-Sub: 1. Asset Management & Inspections  
Workpaper: 1WM004.000 - Asset Management & Inspections

Tranche 2	10.000	2.000
<b>RSE Changes from RAMP:</b> General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).		

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: D. Asset Management & Inspections  
Category-Sub: 1. Asset Management & Inspections  
Workpaper: 1WM004.000 - Asset Management & Inspections

**RAMP Item # 5**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C22 T1-T2

RAMP Line Item Name: Dist Syst InspectCMP 5 Yr Detail Inspect

Tranche(/s): Tranche1: Tier 3; Tranche2: Tier 2

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	84	242	201	197	185	226
Tranche 2 Cost Estimate	81	142	119	116	109	133

**Cost Estimate Changes from RAMP:**

Within range

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 # of HFTD inspections	11,245.00	11,368.00	7,440.00	10,320.00	9,266.00	11,326.00
Tranche 2 # of HFTD inspections	11,024.00	6,687.00	4,376.00	6,070.00	5,450.00	6,662.00

**Work Unit Changes from RAMP:**

Within range.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	170.000	65.000
Tranche 2	43.000	33.000

**RSE Changes from RAMP:**

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: D. Asset Management & Inspections  
Category-Sub: 1. Asset Management & Inspections  
Workpaper: 1WM004.000 - Asset Management & Inspections

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: D. Asset Management & Inspections  
Category-Sub: 1. Asset Management & Inspections  
Workpaper: 1WM004.000 - Asset Management & Inspections

**RAMP Item # 6**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C24 T1-T2

RAMP Line Item Name: Dist System Inspection IR/Corona

Tranche(/s): Tranche1: Tier 3; Tranche2: Tier 2

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	146	0	0	0	0	0
Tranche 2 Cost Estimate	0	175	175	175	157	192

**Cost Estimate Changes from RAMP:**

Within range

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 # of HFTD inspections	18,000.00	0.00	0.00	0.00	0.00	0.00
Tranche 2 # of HFTD inspections	0.00	18,000.00	18,000.00	18,000.00	16,200.00	19,800.00

**Work Unit Changes from RAMP:**

Within range

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000
Tranche 2	372.000	322.000

**RSE Changes from RAMP:**

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: D. Asset Management & Inspections  
Category-Sub: 1. Asset Management & Inspections  
Workpaper: 1WM004.000 - Asset Management & Inspections

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).



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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: D. Asset Management & Inspections  
Category-Sub: 1. Asset Management & Inspections  
Workpaper: 1WM004.000 - Asset Management & Inspections

**RAMP Item # 7**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C29 T1-T2

RAMP Line Item Name: Dist System Inspection Circuit Ownership

Tranche(/s): Tranche1: Tier 3; Tranche2: Tier 2

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	0	0	0	0	38	46
Tranche 2 Cost Estimate	0	0	0	0	75	92

**Cost Estimate Changes from RAMP:**

Initiative will be removed from WMP in 2022. This initiative is being removed because it was no longer necessary due to redundancy with other avenues to report concerns, primarily SDG&E's near miss application.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 Submissions made to the Circuit Ownership program that result in repairs being made in the field.	0.00	0.00	0.00	0.00	5.00	6.00
Tranche 2 Submissions made to the Circuit Ownership program that result in repairs being made in the field.	0.00	0.00	0.00	0.00	9.00	11.00

**Work Unit Changes from RAMP:**

Initiative will be removed from WMP in 2022. This initiative is being removed because it was no longer necessary due to redundancy with other avenues to report concerns, primarily SDG&E's near miss application.

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: D. Asset Management & Inspections  
Category-Sub: 1. Asset Management & Inspections  
Workpaper: 1WM004.000 - Asset Management & Inspections

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000
Tranche 2	0.000	0.000

**RSE Changes from RAMP:**  
General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: D. Asset Management & Inspections  
Category-Sub: 1. Asset Management & Inspections  
Workpaper: 1WM004.000 - Asset Management & Inspections

**RAMP Item # 8**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C26

RAMP Line Item Name: LiDAR Flights

Tranche(s): Tranche1: N/A

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$)	
					Low	High
Tranche 1 Cost Estimate	1,151	3,000	1,500	1,500	1,620	1,980

**Cost Estimate Changes from RAMP:**

Slightly lower than RAMP range in 2024 due to accomplishing more work in 2021 and 2022 than originally expected. Costs shifted more towards 2022, reducing future spend in 2023 and 2024.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities	
					Low	High
Tranche 1 New initiative, no units determined yet	0.00	0.00	0.00	0.00	0.00	0.00

**Work Unit Changes from RAMP:**

Program to create accurate surveys of electric distribution lines, structures, vegetation, and other potential hazards critical to design. One unit of measure would not accurately represent the program.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

**RSE Changes from RAMP:**

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: E. Vegetation Mgmt & Insp  
Workpaper: 1WM005.000

**Summary for Category: E. Vegetation Mgmt & Insp**

In 2021\$ (000) Incurred Costs				
	Adjusted-Recorded	Adjusted-Forecast		
		2022	2023	2024
Labor	362	435	457	473
Non-Labor	10,003	12,742	13,352	13,828
NSE	0	0	0	0
<b>Total</b>	<b>10,365</b>	<b>13,177</b>	<b>13,809</b>	<b>14,301</b>
FTE	3.9	5.5	5.7	6.1

**Workpapers belonging to this Category:**

**1WM005.000 Vegetation Mgmt & Insp**

Labor	362	435	457	473
Non-Labor	10,003	12,742	13,352	13,828
NSE	0	0	0	0
<b>Total</b>	<b>10,365</b>	<b>13,177</b>	<b>13,809</b>	<b>14,301</b>
FTE	3.9	5.5	5.7	6.1

*Note: Totals may include rounding differences.*

**Beginning of Workpaper**  
**1WM005.000 - Vegetation Mgmt & Insp**

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: E. Vegetation Mgmt & Insp  
Category-Sub: 1. Vegetation Mgmt & Insp  
Workpaper: 1WM005.000 - Vegetation Mgmt & Insp

**Activity Description:**

Vegetation around electric distribution lines and equipment poses potential risks for safety, wildfire, compliance, and reliability. To address these risks, SDG&E developed and executes a robust and detailed schedule and scope for its vegetation inspection activities. While tree clearances are mandated by CPUC G.O. 95, Rule 35, Public Resources Code 4293, and NERC FAC003-4, SDG&E's program goes beyond these minimum requirements to further enhance safety and mitigate ignition risk, especially in the HFTD. SDG&E's vegetation management initiatives captured in this workpaper are: fuels management, pole brushing, and sustainability initiatives such as 10,000 Tree Program efforts.

**Forecast Explanations:**

**Labor - Base YR Rec**

The base-year forecast methodology was selected as most indicative of future work. New initiatives and programs have been implemented beginning in 2020 due to the Wildfire Mitigation Plan, and these enhancements are not captured in the historical costs of this category. Additionally, the rates for vegetation management personnel were increased by SB247 in 2020. Accordingly, 2021 base year expenses are most representative of future needs based on an expansion in complexity and scope of existing projects and initiatives.

**Non-Labor - Base YR Rec**

The base-year forecast methodology was selected as most indicative of future work. New initiatives and programs have been implemented beginning in 2020 due to the Wildfire Mitigation Plan, and these enhancements are not captured in the historical costs of this category. Additionally, the rates for vegetation management personnel were increased by SB247 in 2020. Accordingly, 2021 base year expenses are most representative of future needs based on an expansion in complexity and scope of existing projects and initiatives.

**NSE - Base YR Rec**

Not applicable.

**Summary of Results:**

		In 2021\$ (000) Incurred Costs							
		Adjusted-Recorded					Adjusted-Forecast		
Years		2017	2018	2019	2020	2021	2022	2023	2024
Labor		272	186	391	426	362	435	457	473
Non-Labor		3,203	3,990	9,347	11,755	10,003	12,742	13,352	13,828
NSE		0	0	0	0	0	0	0	0
<b>Total</b>		<b>3,474</b>	<b>4,176</b>	<b>9,738</b>	<b>12,182</b>	<b>10,365</b>	<b>13,177</b>	<b>13,809</b>	<b>14,301</b>
FTE		2.9	2.1	4.0	4.3	3.9	5.5	5.7	6.1

*Note: Totals may include rounding differences.*

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: E. Vegetation Mgmt & Insp  
Category-Sub: 1. Vegetation Mgmt & Insp  
Workpaper: 1WM005.000 - Vegetation Mgmt & Insp

**Summary of Adjustments to Forecast:**

In 2021 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	Base YR Rec	362	362	362	73	95	111	435	457	473
Non-Labor	Base YR Rec	10,003	10,003	10,003	2,739	3,349	3,825	12,742	13,352	13,828
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		10,365	10,365	10,365	2,812	3,444	3,936	13,177	13,809	14,301
FTE	Base YR Rec	3.9	3.9	3.9	1.6	1.8	2.2	5.5	5.7	6.1

**Forecast Adjustment Details:**

Year	Labor	NLbr	NSE	Total	FTE	Adj Type
2022	14	1,370	0	1,384	1.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Fuels Management based on 1 Fuels Mgmt Lead Forester hired March 2021, Adds 1 FTE for 9 months (Apr-Dec) for 2022-2024. Non-Labor increase related to increased fuels reduction grants and aligning 22-24 forecast with filed WMP 2022 plan.					
2022	41	780	0	821	0.4	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Pole Brushing based on expected contractor rate increase of 3% annually and to align 22-24 forecasted spend with the filed WMP 2022 plan.					
2022	18	589	0	607	0.2	1-Sided Adj
<b>Explanation:</b>	Increased costs for WMP 10,000 Tree Program, not included in original RAMP report.					
<b>2022 Total</b>	<b>73</b>	<b>2,739</b>	<b>0</b>	<b>2,812</b>	<b>1.6</b>	
2023	16	1,600	0	1,616	1.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Fuels Management based on 1 Fuels Mgmt Lead Forester hired March 2021, Adds 1 FTE for 9 months (Apr-Dec) for 2022-2024. Non-Labor increase related to increased fuels reduction grants and aligning 22-24 forecast with filed WMP 2022 plan.					
2023	61	1,160	0	1,221	0.6	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Pole Brushing based on expected contractor rate increase of 3% annually and to align 22-24 forecasted spend with the filed WMP 2022 plan.					
2023	18	589	0	607	0.2	1-Sided Adj
<b>Explanation:</b>	Increased costs for WMP 10,000 Tree Program, not included in original RAMP report.					
<b>2023 Total</b>	<b>95</b>	<b>3,349</b>	<b>0</b>	<b>3,444</b>	<b>1.8</b>	
2024	19	1,839	0	1,858	1.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Fuels Management based on 1 Fuels Mgmt Lead Forester hired March 2021, Adds 1 FTE for 9 months (Apr-Dec) for 2022-2024. Non-Labor increase related to increased fuels reduction grants and aligning 22-24 forecast with filed WMP 2022 plan.					
2024	74	1,397	0	1,471	1.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Pole Brushing based on expected contractor rate increase of 3% annually and to align 22-24 forecasted spend with the filed WMP 2022 plan.					

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
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Category: E. Vegetation Mgmt & Insp  
Category-Sub: 1. Vegetation Mgmt & Insp  
Workpaper: 1WM005.000 - Vegetation Mgmt & Insp

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
2024	18	589	0	607	0.2	1-Sided Adj
<b>Explanation:</b> Increased costs for WMP 10,000 Tree Program, not included in original RAMP report.						
<b>2024 Total</b>	<b>111</b>	<b>3,825</b>	<b>0</b>	<b>3,936</b>	<b>2.2</b>	



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Category-Sub: 1. Vegetation Mgmt & Insp  
Workpaper: 1WM005.000 - Vegetation Mgmt & Insp

**Determination of Adjusted-Recorded (Incurred Costs):**

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	0	148	2	1	315
Non-Labor	316	3,724	12	137	9,104
NSE	0	0	0	0	0
<b>Total</b>	<b>316</b>	<b>3,873</b>	<b>14</b>	<b>138</b>	<b>9,418</b>
FTE	0.0	1.8	0.1	0.0	3.3
<b>Adjustments (Nominal \$) **</b>					
Labor	212	0	321	361	0
Non-Labor	2,484	-118	8,643	10,730	899
NSE	0	0	0	0	0
<b>Total</b>	<b>2,696</b>	<b>-118</b>	<b>8,965</b>	<b>11,090</b>	<b>899</b>
FTE	2.5	0.0	3.4	3.7	0.0
<b>Recorded-Adjusted (Nominal \$)</b>					
Labor	212	148	323	362	315
Non-Labor	2,799	3,606	8,655	10,867	10,003
NSE	0	0	0	0	0
<b>Total</b>	<b>3,011</b>	<b>3,754</b>	<b>8,978</b>	<b>11,229</b>	<b>10,318</b>
FTE	2.5	1.8	3.4	3.7	3.3
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	31	22	46	51	47
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>31</b>	<b>22</b>	<b>46</b>	<b>51</b>	<b>47</b>
FTE	0.4	0.3	0.6	0.6	0.6
<b>Escalation to 2021\$</b>					
Labor	28	15	21	13	0
Non-Labor	404	384	692	889	0
NSE	0	0	0	0	0
<b>Total</b>	<b>432</b>	<b>399</b>	<b>713</b>	<b>902</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2021\$)</b>					
Labor	272	186	391	426	362
Non-Labor	3,203	3,990	9,347	11,755	10,003
NSE	0	0	0	0	0
<b>Total</b>	<b>3,474</b>	<b>4,176</b>	<b>9,738</b>	<b>12,182</b>	<b>10,365</b>
FTE	2.9	2.1	4.0	4.3	3.9

\* 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.

San Diego Gas & Electric Company  
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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: E. Vegetation Mgmt & Insp  
Category-Sub: 1. Vegetation Mgmt & Insp  
Workpaper: 1WM005.000 - Vegetation Mgmt & Insp

**Summary of Adjustments to Recorded:**

In Nominal \$ (000) Incurred Costs					
Years	2017	2018	2019	2020	2021
Labor	212	0	321	361	0
Non-Labor	2,484	-118	8,643	10,730	899
NSE	0	0	0	0	0
<b>Total</b>	<b>2,696</b>	<b>-118</b>	<b>8,965</b>	<b>11,090</b>	<b>899</b>
FTE	2.5	0.0	3.4	3.7	0.0

**Detail of Adjustments to Recorded:**

Year	Labor	NLbr	NSE	FTE	Adj Type
2017	0	-298	0	0.0	CCTR Transf To 2100-3932.000
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM005 Vegetation Management & Inspections to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2017	212	2,782	0	2.5	CCTR Transf From 2100-4089.000
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Vegetation Mgmt & Inspections from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM005 Vegetation Management & Inspections in cost center 2100-0166 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2017 Total</b>	<b>212</b>	<b>2,484</b>	<b>0</b>	<b>2.5</b>	
2018	0	0	0	0.0	CCTR Transf To 2100-3962.000
<b>Explanation:</b>	Transfer Non-Labor associated with Emergency Planning & Preparedness from Workpaper 1WM005 Vegetation Mgmt & Insp to Workpaper 1WM001 Emergency Planning & Preparedness in cost center 2100-3962 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2018	0	-117	0	0.0	CCTR Transf To 2100-3932.000
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM005 Vegetation Management & Inspections to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2018	0	-2	0	0.0	CCTR Transf To 2100-3932.000
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM005 Vegetation Management & Inspections to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2018 Total</b>	<b>0</b>	<b>-118</b>	<b>0</b>	<b>0.0</b>	
2019	0	0	0	-0.1	CCTR Transf To 2100-3932.000

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
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Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: E. Vegetation Mgmt & Insp  
Category-Sub: 1. Vegetation Mgmt & Insp  
Workpaper: 1WM005.000 - Vegetation Mgmt & Insp

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>
<b>Explanation:</b>	Transfer Labor and Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM005 Vegetation Management & Inspections to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2019	0	-1	0	0.0	CCTR Transf To 2100-3932.000
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM005 Vegetation Management & Inspections to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2019	321	8,645	0	3.5	CCTR Transf From 2100-4089.000
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Vegetation Mgmt & Inspections from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM005 Vegetation Management & Inspections in cost center 2100-0166 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2019 Total</b>	<b>321</b>	<b>8,643</b>	<b>0</b>	<b>3.4</b>	
2020	0	-132	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2020	0	-3	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2020	-1	0	0	-0.1	CCTR Transf To 2100-3932.000
<b>Explanation:</b>	Transfer Labor and Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM005 Vegetation Management & Inspections to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2020	0	-1	0	0.0	CCTR Transf To 2100-3932.000
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM005 Vegetation Management & Inspections to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2020	361	10,865	0	3.8	CCTR Transf From 2100-4089.000
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Vegetation Mgmt & Inspections from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM005 Vegetation Management & Inspections in cost center 2100-0166 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2020 Total</b>	<b>361</b>	<b>10,730</b>	<b>0</b>	<b>3.7</b>	
2021	0	0	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: E. Vegetation Mgmt & Insp  
Category-Sub: 1. Vegetation Mgmt & Insp  
Workpaper: 1WM005.000 - Vegetation Mgmt & Insp

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>
2021	0	-6	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2021	0	905	0	0.0	1-Sided Adj
<b>Explanation:</b>	One-sided adjustment to include Non-Labor direct costs for Fuels Management related associated to Accounting Adj CE 6900200.				
<b>2021 Total</b>	<b>0</b>	<b>899</b>	<b>0</b>	<b>0.0</b>	

*Note: Totals may include rounding differences.*

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2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: E. Vegetation Mgmt & Insp  
Category-Sub: 1. Vegetation Mgmt & Insp  
Workpaper: 1WM005.000 - Vegetation Mgmt & Insp

**RAMP Item # 1**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C32/M15 T1-T2

RAMP Line Item Name: Fuels Management Program

Tranche(/s): Tranche1: Tier 3; Tranche2: Tier 2

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	3,434	4,640	4,826	5,019	5,586	6,827
Tranche 2 Cost Estimate	982	1,160	1,206	1,255	0	0

**Cost Estimate Changes from RAMP:**

Within RAMP range. HFTD Tier 2 costs and units not included in original RAMP estimate.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 # of structures cleared	360.00	400.00	400.00	440.00	450.00	550.00
Tranche 2 # of structures cleared	103.00	100.00	100.00	110.00	0.00	0.00

**Work Unit Changes from RAMP:**

Within RAMP range. HFTD Tier 2 costs and units not included in original RAMP estimate.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	19.000	7.000
Tranche 2	9.000	7.000

**RSE Changes from RAMP:**

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: E. Vegetation Mgmt & Insp  
Category-Sub: 1. Vegetation Mgmt & Insp  
Workpaper: 1WM005.000 - Vegetation Mgmt & Insp

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

San Diego Gas & Electric Company  
2024 GRC - REVISED  
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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: E. Vegetation Mgmt & Insp  
Category-Sub: 1. Vegetation Mgmt & Insp  
Workpaper: 1WM005.000 - Vegetation Mgmt & Insp

**RAMP Item # 2**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C34 T1-T3

RAMP Line Item Name: Pole Brushing

Tranche(/s): Tranche1: Tier 3; Tranche2: Tier 2; Tranche3: Non-HFTD

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	2,411	2,767	2,941	3,049	2,450	2,995
Tranche 2 Cost Estimate	2,580	2,961	3,147	3,263	2,773	3,390
Tranche 3 Cost Estimate	565	649	690	715	0	0

**Cost Estimate Changes from RAMP:**

Increase versus RAMP range primarily related to expected contractor rate increase of 3% annually. Non-HFTD estimates not included in original RAMP report.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 # of poles brushed	15,266.00	14,751.00	14,752.00	14,752.00	14,101.00	17,234.00
Tranche 2 # of poles brushed	16,338.00	15,787.00	15,788.00	15,788.00	15,959.00	19,506.00
Tranche 3 # of poles brushed	3,582.00	3,461.00	3,460.00	3,460.00	0.00	0.00

**Work Unit Changes from RAMP:**

Increase versus RAMP range primarily related to expected contractor rate increase of 3% annually. Non-HFTD estimates not included in original RAMP report.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	107.000	261.000
Tranche 2	90.000	152.000

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: E. Vegetation Mgmt & Insp  
Category-Sub: 1. Vegetation Mgmt & Insp  
Workpaper: 1WM005.000 - Vegetation Mgmt & Insp

Tranche 3	0.000	0.000
<b>RSE Changes from RAMP:</b> General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).		



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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: E. Vegetation Mgmt & Insp  
Category-Sub: 1. Vegetation Mgmt & Insp  
Workpaper: 1WM005.000 - Vegetation Mgmt & Insp

**RAMP Item # 3**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: New04

RAMP Line Item Name: 10,000 Tree Program

Tranche(s): Tranche1: NA

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	393	1,000	1,000	1,000	0	0

**Cost Estimate Changes from RAMP:**

Cost estimates for WMP 10,000 Tree Program, not included in original RAMP report.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 # of trees planted	0.00	10,000.00	10,000.00	10,000.00	0.00	0.00

**Work Unit Changes from RAMP:**

Cost estimates for WMP 10,000 Tree Program, not included in original RAMP report.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

**RSE Changes from RAMP:**

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: F. Vegetation Mgmt & Insp. - Tree Trimming Only  
Workpaper: 1WM005.001

**Summary for Category: F. Vegetation Mgmt & Insp. - Tree Trimming Only**

	In 2021\$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
		2022	2023	2024
Labor	1,716	1,716	1,716	1,716
Non-Labor	50,479	54,364	52,659	53,906
NSE	0	0	0	0
<b>Total</b>	<b>52,195</b>	<b>56,080</b>	<b>54,375</b>	<b>55,622</b>
FTE	18.9	18.9	18.9	18.9

**Workpapers belonging to this Category:**

**1WM005.001 Vegetation Mgmt & Insp. - Tree Trimming Only**

Labor	1,716	1,716	1,716	1,716
Non-Labor	50,479	54,364	52,659	53,906
NSE	0	0	0	0
<b>Total</b>	<b>52,195</b>	<b>56,080</b>	<b>54,375</b>	<b>55,622</b>
FTE	18.9	18.9	18.9	18.9

*Note: Totals may include rounding differences.*

**Beginning of Workpaper**  
**1WM005.001 - Vegetation Mgmt & Insp. - Tree Trimming Only**

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: F. Vegetation Mgmt & Insp. - Tree Trimming Only  
Category-Sub: 1. Vegetation Mgmt & Insp. - Tree Trimming Only  
Workpaper: 1WM005.001 - Vegetation Mgmt & Insp. - Tree Trimming Only

**Activity Description:**

SDG&E's Vegetation Management Program is responsible for annually inspecting and maintaining an inventory of approximately 460,000 trees that have the potential to encroach within the minimum required compliance distance between vegetation and overhead powerlines. This includes pruning healthy trees growing into overhead powerlines as well as the pruning or removal of dead, dying, diseased or structurally unsound trees with the potential to fall into overhead lines. In the High Fire Threat District, SDG&E conducts a second patrol that follows approximately 6 months after the scheduled annual inspection to ensure trees remain compliant and additional tree hazards are observed. SDG&E increased its post prune clearance up to 25 feet on targeted species in the HFTD that have been identified to cause the majority of its tree related outages due to very fast growth, strike potential, and failure characteristics. Vegetation around electric distribution lines and equipment poses potential risks for safety, wildfire, compliance, and reliability. To address these risks, SDG&E developed and executes a robust and detailed schedule and scope for its vegetation inspection activities. While tree trimming is a mandated activity pursuant to CPUC G.O. 95, Rule 35, Public Resources Code 4293, and NERC FAC003-4, SDG&E's program goes beyond these minimum requirements to further enhance safety, especially in the HFTD. SDG&E's vegetation management initiatives included in this workpaper are: tracking and maintaining a database of inventory trees and poles, routine and enhanced patrolling, pruning and removing hazardous trees, and replacing unsafe trees with more situationally compatible species.

**Forecast Explanations:**

**Labor - Base YR Rec**

The base-year forecast methodology was selected as most indicative of future work. New initiatives and programs have been implemented beginning in 2020 due to the Wildfire Mitigation Plan, and these enhancements are not captured in the historical costs of this category. Accordingly, 2021 base year expenses are most representative of future needs based on an expansion in complexity and scope of existing projects and initiatives.

**Non-Labor - Base YR Rec**

The base-year forecast methodology was selected as most indicative of future work. New initiatives and programs have been implemented beginning in 2020 due to the Wildfire Mitigation Plan, and these enhancements are not captured in the historical costs of this category. Accordingly, 2021 base year expenses are most representative of future needs based on an expansion in complexity and scope of existing projects and initiatives.

**NSE - Base YR Rec**

Not applicable.

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: F. Vegetation Mgmt & Insp. - Tree Trimming Only  
Category-Sub: 1. Vegetation Mgmt & Insp. - Tree Trimming Only  
Workpaper: 1WM005.001 - Vegetation Mgmt & Insp. - Tree Trimming Only

**Summary of Results:**

		In 2021\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2017	2018	2019	2020	2021	2022	2023	2024	
Labor		1,394	1,382	1,384	1,258	1,716	1,716	1,716	1,716	
Non-Labor		25,109	30,156	35,854	72,434	50,479	54,364	52,659	53,906	
NSE		0	0	0	0	0	0	0	0	
<b>Total</b>		<b>26,502</b>	<b>31,538</b>	<b>37,238</b>	<b>73,692</b>	<b>52,195</b>	<b>56,080</b>	<b>54,375</b>	<b>55,622</b>	
FTE		14.5	14.5	14.4	12.8	18.9	18.9	18.9	18.9	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: F. Vegetation Mgmt & Insp. - Tree Trimming Only  
Category-Sub: 1. Vegetation Mgmt & Insp. - Tree Trimming Only  
Workpaper: 1WM005.001 - Vegetation Mgmt & Insp. - Tree Trimming Only

**Summary of Adjustments to Forecast:**

In 2021 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	Base YR Rec	1,716	1,716	1,716	0	0	0	1,716	1,716	1,716
Non-Labor	Base YR Rec	50,479	50,479	50,479	3,885	2,180	3,427	54,364	52,659	53,906
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		52,195	52,195	52,195	3,885	2,180	3,427	56,080	54,375	55,622
FTE	Base YR Rec	18.9	18.9	18.9	0.0	0.0	0.0	18.9	18.9	18.9

**Forecast Adjustment Details:**

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
2022	0	280	0	280	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for Enhanced Vegetation Management RAMP item.					
2022	0	2,163	0	2,163	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for Tree Trimming Balancing Account (60% of totals, 40% of totals tracked as Electric Infrastructure Integrity RAMP item).					
2022	0	1,442	0	1,442	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for 40% of Tree Trim Balancing Account (TTBA) tracked in Electric Infrastructure Integrity RAMP chapter.					
<b>2022 Total</b>	<b>0</b>	<b>3,885</b>	<b>0</b>	<b>3,885</b>	<b>0.0</b>	
2023	0	280	0	280	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for Enhanced Vegetation Management RAMP item.					
2023	0	1,140	0	1,140	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for Tree Trimming Balancing Account (60% of totals, 40% of totals tracked as Electric Infrastructure Integrity RAMP item).					
2023	0	760	0	760	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for 40% of Tree Trim Balancing Account (TTBA) tracked in Electric Infrastructure Integrity RAMP chapter.					
<b>2023 Total</b>	<b>0</b>	<b>2,180</b>	<b>0</b>	<b>2,180</b>	<b>0.0</b>	
2024	0	280	0	280	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for Enhanced Vegetation Management RAMP item.					
2024	0	1,888	0	1,888	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for Tree Trimming Balancing Account (60% of totals, 40% of totals tracked as Electric Infrastructure Integrity RAMP item).					
2024	0	1,259	0	1,259	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for 40% of Tree Trim Balancing Account (TTBA) tracked in Electric Infrastructure Integrity RAMP chapter.					

*Note: Totals may include rounding differences.*

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Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: F. Vegetation Mgmt & Insp. - Tree Trimming Only  
Category-Sub: 1. Vegetation Mgmt & Insp. - Tree Trimming Only  
Workpaper: 1WM005.001 - Vegetation Mgmt & Insp. - Tree Trimming Only

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>
2024 Total	0	3,427	0	3,427	0.0	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: F. Vegetation Mgmt & Insp. - Tree Trimming Only  
Category-Sub: 1. Vegetation Mgmt & Insp. - Tree Trimming Only  
Workpaper: 1WM005.001 - Vegetation Mgmt & Insp. - Tree Trimming Only

**Determination of Adjusted-Recorded (Incurred Costs):**

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	1,087	1,105	1,144	1,067	1,492
Non-Labor	21,945	27,252	33,201	66,958	50,479
NSE	0	0	0	0	0
<b>Total</b>	<b>23,032</b>	<b>28,357</b>	<b>34,345</b>	<b>68,026</b>	<b>51,971</b>
FTE	12.4	12.4	12.4	11.0	16.1
<b>Adjustments (Nominal \$) **</b>					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Nominal \$)</b>					
Labor	1,087	1,105	1,144	1,067	1,492
Non-Labor	21,945	27,252	33,201	66,958	50,479
NSE	0	0	0	0	0
<b>Total</b>	<b>23,032</b>	<b>28,357</b>	<b>34,345</b>	<b>68,026</b>	<b>51,971</b>
FTE	12.4	12.4	12.4	11.0	16.1
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	161	167	164	151	224
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>161</b>	<b>167</b>	<b>164</b>	<b>151</b>	<b>224</b>
FTE	2.1	2.1	2.0	1.8	2.8
<b>Escalation to 2021\$</b>					
Labor	145	109	76	39	0
Non-Labor	3,164	2,904	2,653	5,476	0
NSE	0	0	0	0	0
<b>Total</b>	<b>3,309</b>	<b>3,013</b>	<b>2,729</b>	<b>5,515</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2021\$)</b>					
Labor	1,394	1,382	1,384	1,258	1,716
Non-Labor	25,109	30,156	35,854	72,434	50,479
NSE	0	0	0	0	0
<b>Total</b>	<b>26,502</b>	<b>31,538</b>	<b>37,238</b>	<b>73,692</b>	<b>52,195</b>
FTE	14.5	14.5	14.4	12.8	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.



San Diego Gas & Electric Company  
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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: F. Vegetation Mgmt & Insp. - Tree Trimming Only  
Category-Sub: 1. Vegetation Mgmt & Insp. - Tree Trimming Only  
Workpaper: 1WM005.001 - Vegetation Mgmt & Insp. - Tree Trimming Only

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2017	2018	2019	2020	2021
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

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>
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Note: Totals may include rounding differences.

San Diego Gas & Electric Company  
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Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: F. Vegetation Mgmt & Insp. - Tree Trimming Only  
Category-Sub: 1. Vegetation Mgmt & Insp. - Tree Trimming Only  
Workpaper: 1WM005.001 - Vegetation Mgmt & Insp. - Tree Trimming Only

**RAMP Item # 1**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C33/M16 T1-T2

RAMP Line Item Name: Enhanced Vegetation Management

Tranche(/s): Tranche1: Tier 3; Tranche2: Tier 2

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	3,248	4,410	4,410	4,410	4,637	5,668
Tranche 2 Cost Estimate	6,707	5,825	5,825	5,825	5,489	6,708

**Cost Estimate Changes from RAMP:**

Within range for combined totals.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 # of trees trimmed	4,095.00	5,526.00	5,526.00	5,526.00	7,007.00	8,564.00
Tranche 2 # of trees trimmed	8,456.00	7,298.00	7,298.00	7,298.00	8,293.00	10,136.00

**Work Unit Changes from RAMP:**

Lower than RAMP range for combined totals primarily due to updated metrics for # of trees inspected since original RAMP report.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	230.000	111.000
Tranche 2	174.000	61.000

**RSE Changes from RAMP:**

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: F. Vegetation Mgmt & Insp. - Tree Trimming Only  
Category-Sub: 1. Vegetation Mgmt & Insp. - Tree Trimming Only  
Workpaper: 1WM005.001 - Vegetation Mgmt & Insp. - Tree Trimming Only

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

San Diego Gas & Electric Company  
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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: F. Vegetation Mgmt & Insp. - Tree Trimming Only  
Category-Sub: 1. Vegetation Mgmt & Insp. - Tree Trimming Only  
Workpaper: 1WM005.001 - Vegetation Mgmt & Insp. - Tree Trimming Only

**RAMP Item # 2**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C31 T1-T2

RAMP Line Item Name: Tree Trimming

Tranche(/s): Tranche1: Tier 3; Tranche2: Tier 2

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	11,314	12,304	11,847	12,346	14,521	17,748
Tranche 2 Cost Estimate	14,030	15,202	14,637	14,886	17,508	21,398

**Cost Estimate Changes from RAMP:**

Lower than RAMP range primarily due to 40% of costs represented in Elect Infast Integrity RAMP chapter.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 # of trees inspected	116,068.00	115,038.00	115,038.00	123,772.00	41,294.00	50,470.00
Tranche 2 # of trees inspected	143,924.00	142,139.00	142,139.00	149,228.00	49,787.00	60,850.00

**Work Unit Changes from RAMP:**

Lower than RAMP range primarily due to 40% of costs represented in Elect Infast Integrity RAMP chapter.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	222.000	192.000
Tranche 2	200.000	104.000

**RSE Changes from RAMP:**

San Diego Gas & Electric Company  
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Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: F. Vegetation Mgmt & Insp. - Tree Trimming Only  
Category-Sub: 1. Vegetation Mgmt & Insp. - Tree Trimming Only  
Workpaper: 1WM005.001 - Vegetation Mgmt & Insp. - Tree Trimming Only

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

**RAMP Item # 3**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-2 Electric Infrastructure Integrity

RAMP Line Item ID: C06

RAMP Line Item Name: Tree Trimming (non-HFTD)

Tranche(/s): Tranche1: N/A

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$)	
					Low	High
Tranche 1 Cost Estimate	16,896	18,338	17,656	18,155	42,155	51,523

**Cost Estimate Changes from RAMP:**

Lower than RAMP range primarily due to 60% of costs represented in Wildfire RAMP chapter.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities	
					Low	High
Tranche 1 # of trees inspected	242,140.00	234,645.00	234,645.00	182,000.00	106,381.00	130,021.00

**Work Unit Changes from RAMP:**

Lower than RAMP range primarily due to 60% of costs represented in Wildfire RAMP chapter.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	109.000	15.000

**RSE Changes from RAMP:**

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

San Diego Gas & Electric Company  
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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: G. Grid Operations & Operating Protocols  
Workpaper: 1WM006.000

**Summary for Category: G. Grid Operations & Operating Protocols**

	In 2021\$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
		2022	2023	2024
Labor	0	0	0	0
Non-Labor	10,079	12,554	13,792	14,769
NSE	0	0	0	0
<b>Total</b>	<b>10,079</b>	<b>12,554</b>	<b>13,792</b>	<b>14,769</b>
FTE	0.0	0.0	0.0	0.0

**Workpapers belonging to this Category:**

**1WM006.000 Grid Operations & Operating Protocols**

Labor	0	0	0	0
Non-Labor	10,079	12,554	13,792	14,769
NSE	0	0	0	0
<b>Total</b>	<b>10,079</b>	<b>12,554</b>	<b>13,792</b>	<b>14,769</b>
FTE	0.0	0.0	0.0	0.0

*Note: Totals may include rounding differences.*

**Beginning of Workpaper**  
**1WM006.000 - Grid Operations & Operating Protocols**

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: G. Grid Operations & Operating Protocols  
Category-Sub: 1. Grid Operations & Operating Protocols  
Workpaper: 1WM006.000 - Grid Operations & Operating Protocols

**Activity Description:**

SDG&E Grid Operations & Protocols O&M costs account for the aviation firefighting program and wildfire infrastructure protection teams.

SDG&E's grid operations and protocols activities consist of mitigations that reduce risk through changing the way SDG&E operates during periods of elevated and extreme wildfire risk. This includes the disabling of reclosing in the HFTD, the enabling of fast recloser settings, restricting work in the HFTD during extreme fire potential and Red Flag Warnings, and sending contract fire resources into the field during elevated days in the HFTD. These operational decisions strive to reduce ignitions on the electric system .

Also included within SDG&E's grid operations and protocols is the aviation firefighting program . Specifically, Firehawk and Bell 412 helicopters are available to be used by CalFire to respond to active fires. Operations and maintenance on new helicopters will begin in 2022. Additional costs to support the aviation firefighting program include leases for an aviation hanger and training facility for the helicopters. Annual hangar lease expected to begin in October 2021 with 10 months lease in 2022 . Annual facility maintenance costs are also accounted for within this workpaper.

SDG&E's wildfire infrastructure protection teams include contracting teams of qualified firefighters that join electric crews to assist in prevention and mitigation of ignitions.

**Forecast Explanations:**

**Labor - Base YR Rec**

The base-year forecast methodology was selected as most indicative of future work. New initiatives and programs have been implemented beginning in 2020 due to the Wildfire Mitigation Plan, and these enhancements are not captured in the historical costs of this category. Accordingly, 2021 base year expenses are most representative of future needs based on an expansion in complexity and scope of existing projects and initiatives.

**Non-Labor - Base YR Rec**

The base-year forecast methodology was selected as most indicative of future work. New initiatives and programs have been implemented beginning in 2020 due to the Wildfire Mitigation Plan, and these enhancements are not captured in the historical costs of this category. Accordingly, 2021 base year expenses are most representative of future needs based on an expansion in complexity and scope of existing projects and initiatives.

**NSE - Base YR Rec**

Not applicable.

*Note: Totals may include rounding differences.*



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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: G. Grid Operations & Operating Protocols  
Category-Sub: 1. Grid Operations & Operating Protocols  
Workpaper: 1WM006.000 - Grid Operations & Operating Protocols

**Summary of Results:**

		In 2021\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2017	2018	2019	2020	2021	2022	2023	2024	
Labor		0	0	0	0	0	0	0	0	
Non-Labor		2,321	5,593	8,454	10,136	10,079	12,554	13,792	14,769	
NSE		0	0	0	0	0	0	0	0	
<b>Total</b>		<b>2,321</b>	<b>5,593</b>	<b>8,454</b>	<b>10,136</b>	<b>10,079</b>	<b>12,554</b>	<b>13,792</b>	<b>14,769</b>	
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: G. Grid Operations & Operating Protocols  
Category-Sub: 1. Grid Operations & Operating Protocols  
Workpaper: 1WM006.000 - Grid Operations & Operating Protocols

**Summary of Adjustments to Forecast:**

In 2021 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	Base YR Rec	0	0	0	0	0	0	0	0	0
Non-Labor	Base YR Rec	10,079	10,079	10,079	2,475	3,713	4,690	12,554	13,792	14,769
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		10,079	10,079	10,079	2,475	3,713	4,690	12,554	13,792	14,769
FTE	Base YR Rec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Forecast Adjustment Details:**

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
2022	0	158	0	158	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast primarily related to higher Wildland Infrastructure Protection Team expenses for contract firefighting resources.					
2022	0	2,317	0	2,317	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for Aviation Firefighting Program based on expected flight hours.					
<b>2022 Total</b>	<b>0</b>	<b>2,475</b>	<b>0</b>	<b>2,475</b>	<b>0.0</b>	
2023	0	3,555	0	3,555	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast primarily related to higher Aviation Program flight hours and maintenance expenses for new aviation assets.					
2023	0	158	0	158	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for Wildfire Infrastructure Protection Teams based on number of expected resources.					
<b>2023 Total</b>	<b>0</b>	<b>3,713</b>	<b>0</b>	<b>3,713</b>	<b>0.0</b>	
2024	0	4,532	0	4,532	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast primarily related to higher Aviation Program flight hours and maintenance expenses for new aviation assets.					
2024	0	158	0	158	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for Wildfire Infrastructure Protection Teams based on number of expected resources.					
<b>2024 Total</b>	<b>0</b>	<b>4,690</b>	<b>0</b>	<b>4,690</b>	<b>0.0</b>	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: G. Grid Operations & Operating Protocols  
Category-Sub: 1. Grid Operations & Operating Protocols  
Workpaper: 1WM006.000 - Grid Operations & Operating Protocols

**Determination of Adjusted-Recorded (Incurred Costs):**

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	0	0	0	0	0
Non-Labor	2,050	5,403	324	79	10,143
NSE	0	0	0	0	0
<b>Total</b>	<b>2,050</b>	<b>5,403</b>	<b>324</b>	<b>79</b>	<b>10,143</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Adjustments (Nominal \$) **</b>					
Labor	0	0	0	0	0
Non-Labor	-21	-348	7,504	9,290	-64
NSE	0	0	0	0	0
<b>Total</b>	<b>-21</b>	<b>-348</b>	<b>7,504</b>	<b>9,290</b>	<b>-64</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Nominal \$)</b>					
Labor	0	0	0	0	0
Non-Labor	2,029	5,054	7,829	9,369	10,079
NSE	0	0	0	0	0
<b>Total</b>	<b>2,029</b>	<b>5,054</b>	<b>7,829</b>	<b>9,369</b>	<b>10,079</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Escalation to 2021\$</b>					
Labor	0	0	0	0	0
Non-Labor	292	539	626	766	0
NSE	0	0	0	0	0
<b>Total</b>	<b>292</b>	<b>539</b>	<b>626</b>	<b>766</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2021\$)</b>					
Labor	0	0	0	0	0
Non-Labor	2,321	5,593	8,454	10,136	10,079
NSE	0	0	0	0	0
<b>Total</b>	<b>2,321</b>	<b>5,593</b>	<b>8,454</b>	<b>10,136</b>	<b>10,079</b>
FTE	0.0	0.0	0.0	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.

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: G. Grid Operations & Operating Protocols  
Category-Sub: 1. Grid Operations & Operating Protocols  
Workpaper: 1WM006.000 - Grid Operations & Operating Protocols

**Summary of Adjustments to Recorded:**

In Nominal \$ (000) Incurred Costs					
Years	2017	2018	2019	2020	2021
Labor	0	0	0	0	0
Non-Labor	-21	-348	7,504	9,290	-64
NSE	0	0	0	0	0
<b>Total</b>	<b>-21</b>	<b>-348</b>	<b>7,504</b>	<b>9,290</b>	<b>-64</b>
FTE	0.0	0.0	0.0	0.0	0.0

**Detail of Adjustments to Recorded:**

Year	Labor	NLbr	NSE	FTE	Adj Type
2017	0	-8	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2017	0	-8	0	0.0	CCTR Transf To 2100-3962.000
<b>Explanation:</b>	Transfer Non-Labor associated with Emergency Planning & Preparedness from Workpaper 1WM006 Grid Ops & Protocols to Workpaper 1WM001 Emergency Planning & Preparedness in cost center 2100-3962 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2017	0	-4	0	0.0	CCTR Transf To 2100-3932.000
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM006 Grid Operations & Protocols to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2017	0	-1	0	0.0	CCTR Transf To 2100-4089.002
<b>Explanation:</b>	Transfer Non-Labor associated with Asset Management & Inspections from Workpaper 1WM006 Grid Operations & Protocols to Workpaper 1WM004 Asset Management & Inspections in cost center 2100-4089.002 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2017 Total</b>	<b>0</b>	<b>-21</b>	<b>0</b>	<b>0.0</b>	
2018	0	-134	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2018	0	-214	0	0.0	CCTR Transf To 2100-3962.000
<b>Explanation:</b>	Transfer Non-Labor associated with Emergency Planning & Preparedness from Workpaper 1WM006 Grid Ops & Protocols to Workpaper 1WM001 Emergency Planning & Preparedness in cost center 2100-3962 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2018	0	0	0	0.0	CCTR Transf To 2100-3932.000

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: G. Grid Operations & Operating Protocols  
Category-Sub: 1. Grid Operations & Operating Protocols  
Workpaper: 1WM006.000 - Grid Operations & Operating Protocols

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM006 Grid Operations & Protocols to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2018 Total</b>	<b>0</b>	<b>-348</b>	<b>0</b>	<b>0.0</b>	
2019	0	-4	0	0.0	CCTR Transf To 2100-3962.000
<b>Explanation:</b>	Transfer Non-Labor associated with Emergency Planning & Preparedness from Workpaper 1WM006 Grid Ops & Protocols to Workpaper 1WM001 Emergency Planning & Preparedness in cost center 2100-3962 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2019	0	-17	0	0.0	CCTR Transf To 2100-3932.000
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM006 Grid Operations & Protocols to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2019	0	7,526	0	0.0	CCTR Transf From 2100-4089.000
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Operations & Protocols from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM006 Grid Operations & Protocols in cost center 2100-4089.001 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2019 Total</b>	<b>0</b>	<b>7,504</b>	<b>0</b>	<b>0.0</b>	
2020	0	-36	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2020	0	-9	0	0.0	CCTR Transf To 2100-3932.000
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM006 Grid Operations & Protocols to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2020	0	9,335	0	0.0	CCTR Transf From 2100-4089.000
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Operations & Protocols from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM006 Grid Operations & Protocols in cost center 2100-4089.001 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2020 Total</b>	<b>0</b>	<b>9,290</b>	<b>0</b>	<b>0.0</b>	
2021	0	-64	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
<b>2021 Total</b>	<b>0</b>	<b>-64</b>	<b>0</b>	<b>0.0</b>	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: G. Grid Operations & Operating Protocols  
Category-Sub: 1. Grid Operations & Operating Protocols  
Workpaper: 1WM006.000 - Grid Operations & Operating Protocols

**RAMP Item # 1**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C36 T1-T2

RAMP Line Item Name: Wildfire Infrastructure Protection Teams

Tranche(/s): Tranche1: Tier 3; Tranche2: Tier 2

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	2,156	2,267	2,267	2,267	1,855	2,267
Tranche 2 Cost Estimate	915	963	963	963	788	963

**Cost Estimate Changes from RAMP:**

Within RAMP range (max).

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 Qualified firefighters join electric crews to serve in a prevention and ignition mitigation role.	0.00	0.00	0.00	0.00	0.00	0.00
Tranche 2 Qualified firefighters join electric crews to serve in a prevention and ignition mitigation role.	0.00	0.00	0.00	0.00	0.00	0.00

**Work Unit Changes from RAMP:**

Qualified firefighters join electric crews to serve in a prevention and ignition mitigation role. Because there are multiple different types of units of measure in this program, it would not be accurate or consistent to identify one unit of measure.

San Diego Gas & Electric Company  
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Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: G. Grid Operations & Operating Protocols  
Category-Sub: 1. Grid Operations & Operating Protocols  
Workpaper: 1WM006.000 - Grid Operations & Operating Protocols

**Risk Spend Efficiency (RSE)**

	<b>GRC RSE</b>	<b>RAMP RSE</b>
Tranche 1	63.000	63.000
Tranche 2	67.000	56.000

**RSE Changes from RAMP:**

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

San Diego Gas & Electric Company  
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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: G. Grid Operations & Operating Protocols  
Category-Sub: 1. Grid Operations & Operating Protocols  
Workpaper: 1WM006.000 - Grid Operations & Operating Protocols

**RAMP Item # 2**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C35 T1-T3

RAMP Line Item Name: Aviation Firefighting Program

Tranche(/s): Tranche1: Tier 3; Tranche2: Tier 2; Tranche3: Non-HFTD

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	4,294	5,713	6,472	7,070	5,691	6,956
Tranche 2 Cost Estimate	2,532	3,369	3,816	4,169	3,356	4,101
Tranche 3 Cost Estimate	182	242	275	300	241	295

**Cost Estimate Changes from RAMP:**

Increased forecast for Aviation Firefighting Program based on expected flight hours.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 No feasible units	0.00	0.00	0.00	0.00	0.00	0.00
Tranche 2 No feasible units	0.00	0.00	0.00	0.00	0.00	0.00
Tranche 3 No feasible units	0.00	0.00	0.00	0.00	0.00	0.00

**Work Unit Changes from RAMP:**

Helicopters available for use by CalFire to respond to active fires. One unit of measure would not accurately represent the program.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	218.000	24.000
Tranche 2	453.000	14.000



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Category-Sub: 1. Grid Operations & Operating Protocols  
Workpaper: 1WM006.000 - Grid Operations & Operating Protocols

Tranche 3	0.000	0.000
<b>RSE Changes from RAMP:</b> General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).		

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: H. Resource Allocation Methodology  
Workpaper: 1WM007.000

**Summary for Category: H. Resource Allocation Methodology**

	In 2021\$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
		2022	2023	2024
Labor	1,367	2,655	4,642	4,642
Non-Labor	2,456	3,106	3,106	3,106
NSE	0	0	0	0
<b>Total</b>	<b>3,823</b>	<b>5,761</b>	<b>7,748</b>	<b>7,748</b>
FTE	10.1	23.0	42.9	42.9

**Workpapers belonging to this Category:**

**1WM007.000 Resource Allocation Methodology**

Labor	1,367	2,655	4,642	4,642
Non-Labor	2,456	3,106	3,106	3,106
NSE	0	0	0	0
<b>Total</b>	<b>3,823</b>	<b>5,761</b>	<b>7,748</b>	<b>7,748</b>
FTE	10.1	23.0	42.9	42.9

*Note: Totals may include rounding differences.*

**Beginning of Workpaper**  
**1WM007.000 - Resource Allocation Methodology**

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: H. Resource Allocation Methodology  
Category-Sub: 1. Resource Allocation Methodology  
Workpaper: 1WM007.000 - Resource Allocation Methodology

**Activity Description:**

1WM007 Resource Allocation Methodology includes costs for WMP Mitigations : Asset Management O&M; Wildfire Mitigation Personnel and PSPS Mitigation Engineering Team. This WMP mitigation includes costs for the Wildfire Mitigation department (Cost Centers 2100-4089; 2100-4097). Resource Allocation includes costs for development of tools and models utilized for allocating funding for WMP programs (e.g., WINGS) to promote efficient and cost-effective wildfire mitigation efforts. SDG&E's Wildfire Mitigation department is also included in this workpaper. This department, which was formed in 2019, contains three departments. First, the Wildfire Mitigation Programs group which is involved with the various regulatory proceedings that address wildfire and de-energization as well as legislative and media inquiries. Second, the Wildfire Mitigation Plan Strategic group develops metrics, leads vision projects, promotes new ways to enhance fire safety, and explores advancements to further drive improvement and change including risk modeling capabilities. Third, the Wildfire Mitigation Plan Accountability group is responsible for monitoring fire-related metrics, tracking WMP activities, complying with reporting requirements, provide for governance specifications and procedures, and act in a lead capacity on audits of the WMP programs.

**Forecast Explanations:**

**Labor - Base YR Rec**

The base-year forecast methodology was selected as most indicative of future work. New initiatives and programs have been implemented beginning in 2020 due to the Wildfire Mitigation Plan, and these enhancements are not captured in the historical costs of this category. Given that aspects of this workpaper were initiated in 2019, utilizing historical data prior to 2019 would not represent the costs for this workpaper in test year 2024. Most recent recorded data, Base year 2021, more accurately reflects the costs for this workpaper.

**Non-Labor - Base YR Rec**

The base-year forecast methodology was selected as most indicative of future work. New initiatives and programs have been implemented beginning in 2020 due to the Wildfire Mitigation Plan, and these enhancements are not captured in the historical costs of this category. Given that aspects of this workpaper were initiated in 2019, utilizing historical data prior to 2019 would not represent the costs for this workpaper in test year 2024. Most recent recorded data, Base year 2021, more accurately reflects the costs for this workpaper.

**NSE - Base YR Rec**

Not applicable.

*Note: Totals may include rounding differences.*

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Category-Sub: 1. Resource Allocation Methodology  
Workpaper: 1WM007.000 - Resource Allocation Methodology

**Summary of Results:**

		In 2021\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2017	2018	2019	2020	2021	2022	2023	2024	
Labor		0	0	245	1,833	1,367	2,656	4,643	4,643	
Non-Labor		0	0	65	1,350	2,456	3,106	3,106	3,106	
NSE		0	0	0	0	0	0	0	0	
<b>Total</b>		<b>0</b>	<b>0</b>	<b>310</b>	<b>3,182</b>	<b>3,823</b>	<b>5,762</b>	<b>7,749</b>	<b>7,749</b>	
FTE		0.0	0.0	5.4	17.0	10.1	23.0	42.9	42.9	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
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Category: H. Resource Allocation Methodology  
Category-Sub: 1. Resource Allocation Methodology  
Workpaper: 1WM007.000 - Resource Allocation Methodology

**Summary of Adjustments to Forecast:**

In 2021 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	Base YR Rec	1,367	1,367	1,367	1,288	3,275	3,275	2,655	4,642	4,642
Non-Labor	Base YR Rec	2,456	2,456	2,456	650	650	650	3,106	3,106	3,106
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		3,823	3,823	3,823	1,938	3,925	3,925	5,761	7,748	7,748
FTE	Base YR Rec	10.1	10.1	10.1	12.9	32.8	32.8	23.0	42.9	42.9

**Forecast Adjustment Details:**

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
2022	1,288	650	0	1,938	12.9	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Wildfire Mitigation Department increases. Increased labor and FTE's 100% to WMP O&M. Non-Labor increases include forecasts for data foundation licenses, advanced analytics, independent Evaluator and PSPS Studies, Joint IOU Enhanced Veg Analysis, Risk Analysis contract support, applicable Asset Mgmt O&M. See supplemental workpaper for adjustment details.					
<b>2022 Total</b>	<b>1,288</b>	<b>650</b>	<b>0</b>	<b>1,938</b>	<b>12.9</b>	
2023	3,275	650	0	3,925	32.8	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Wildfire Mitigation Department increases. Increased labor and FTE's 100% to WMP O&M. Non-Labor increases include forecasts for data foundation licenses, advanced analytics, independent Evaluator and PSPS Studies, Joint IOU Enhanced Veg Analysis, Risk Analysis contract support, and Asset Mgmt O&M. See supplemental workpaper for adjustment details.					
<b>2023 Total</b>	<b>3,275</b>	<b>650</b>	<b>0</b>	<b>3,925</b>	<b>32.8</b>	
2024	3,275	650	0	3,925	32.8	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Wildfire Mitigation Department increases. Increased labor and FTE's 100% to WMP O&M. Non-Labor increases include forecasts for data foundation licenses, advanced analytics, independent Evaluator and PSPS Studies, Joint IOU Enhanced Veg Analysis, Risk Analysis contract support, and Asset Mgmt O&M. See supplemental workpaper for adjustment details.					
<b>2024 Total</b>	<b>3,275</b>	<b>650</b>	<b>0</b>	<b>3,925</b>	<b>32.8</b>	

*Note: Totals may include rounding differences.*

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Workpaper: 1WM007.000 - Resource Allocation Methodology

**Determination of Adjusted-Recorded (Incurred Costs):**

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	1,148	0	5,122	10,159	1,511
Non-Labor	4,538	0	40,064	95,482	3,753
NSE	0	0	0	0	0
<b>Total</b>	<b>5,685</b>	<b>0</b>	<b>45,186</b>	<b>105,642</b>	<b>5,264</b>
FTE	8.1	0.0	36.7	73.7	11.1
<b>Adjustments (Nominal \$) **</b>					
Labor	-1,148	0	-4,919	-8,604	-322
Non-Labor	-4,537	0	-40,003	-94,234	-1,297
NSE	0	0	0	0	0
<b>Total</b>	<b>-5,685</b>	<b>0</b>	<b>-44,923</b>	<b>-102,839</b>	<b>-1,619</b>
FTE	-7.6	0.0	-32.0	-59.1	-2.4
<b>Recorded-Adjusted (Nominal \$)</b>					
Labor	0	0	203	1,555	1,189
Non-Labor	0	0	60	1,248	2,456
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>263</b>	<b>2,803</b>	<b>3,645</b>
FTE	0.5	0.0	4.7	14.6	8.6
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	0	0	29	221	179
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>221</b>	<b>179</b>
FTE	0.1	0.0	0.7	2.4	1.5
<b>Escalation to 2021\$</b>					
Labor	0	0	13	57	0
Non-Labor	0	0	5	102	0
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>159</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2021\$)</b>					
Labor	0	0	245	1,833	1,367
Non-Labor	0	0	65	1,350	2,456
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>310</b>	<b>3,182</b>	<b>3,823</b>
FTE	0.6	0.0	5.4	17.0	10.1

\* 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.

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Workpaper: 1WM007.000 - Resource Allocation Methodology

**Summary of Adjustments to Recorded:**

In Nominal \$ (000) Incurred Costs					
Years	2017	2018	2019	2020	2021
Labor	-1,148	0	-4,919	-8,604	-322
Non-Labor	-4,537	0	-40,003	-94,234	-1,297
NSE	0	0	0	0	0
<b>Total</b>	<b>-5,685</b>	<b>0</b>	<b>-44,923</b>	<b>-102,839</b>	<b>-1,619</b>
FTE	-7.6	0.0	-32.0	-59.1	-2.4

**Detail of Adjustments to Recorded:**

Year	Labor	NLbr	NSE	FTE	Adj Type
2017	-916	-1,233	0	-5.0	CCTR Transf To 2100-3962.000
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Emergency Planning & Preparedness from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM001 Emergency Planning & Preparedness in cost center 2100-3962 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2017	-20	-523	0	-0.1	CCTR Transf To 2100-3932.000
<b>Explanation:</b>	Transfer Labor and Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2017	-212	-2,782	0	-2.5	CCTR Transf To 2100-0166.000
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Vegetation Mgmt & Inspections from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM005 Vegetation Management & Inspections in cost center 2100-0166 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2017 Total</b>	<b>-1,148</b>	<b>-4,537</b>	<b>0</b>	<b>-7.6</b>	
<b>2018 Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.0</b>	
2019	-2,895	-1,638	0	-16.7	CCTR Transf To 2100-3962.000
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Emergency Planning & Preparedness from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM001 Emergency Planning & Preparedness in cost center 2100-3962 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2019	-649	-1,077	0	-5.5	CCTR Transf To 2100-3963.000
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Fire Science & Climate Adaptation Department from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM002.000 Situational Awareness and Forecasting in cost center 2100-3963 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				

*Note: Totals may include rounding differences.*



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Workpaper: 1WM007.000 - Resource Allocation Methodology

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>
2019	-321	-2,464	0	-1.4	CCTR Transf To 2100-3932.000
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2019	-665	-14,644	0	-4.3	CCTR Transf To 2100-4089.002
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Asset Management & Inspections from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM004 Asset Management & Inspections in cost center 2100-4089.002 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2019	-321	-8,645	0	-3.5	CCTR Transf To 2100-0166.000
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Vegetation Mgmt & Inspections from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM005 Vegetation Management & Inspections in cost center 2100-0166 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2019	0	-7,526	0	0.0	CCTR Transf To 2100-4089.001
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Operations & Protocols from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM006 Grid Operations & Protocols in cost center 2100-4089.001 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2019	-67	-3,777	0	-0.5	CCTR Transf To 2100-4089.006
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Stakeholder Cooperation & Community Engagement from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM008 Stakeholder Cooperation & Community Engagement in cost center 2100-4089.006 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2019	-2	-232	0	-0.1	CCTR Transf To 2100-4089.005
<b>Explanation:</b>	Transfer wildfire costs related to Data Governance from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM007.002 Data Governance in cost center 2100-4089.005 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2019 Total</b>	<b>-4,919</b>	<b>-40,003</b>	<b>0</b>	<b>-32.0</b>	
2020	0	-2	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2020	-4,555	-7,369	0	28.2	CCTR Transf To 2100-3962.000
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Emergency Planning & Preparedness from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM001 Emergency Planning & Preparedness in cost center 2100-3962 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2020	-868	-2,552	0	-7.5	CCTR Transf To 2100-3963.000

Note: Totals may include rounding differences.

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Witness: Jonathan Woldemariam  
Category: H. Resource Allocation Methodology  
Category-Sub: 1. Resource Allocation Methodology  
Workpaper: 1WM007.000 - Resource Allocation Methodology

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Fire Science & Climate Adaptation Department from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM002.000 Situational Awareness and Forecasting in cost center 2100-3963 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2020	-441	-12,578	0	-2.6	CCTR Transf To 2100-3932.000
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM003 Grid Design & System Hardening in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2020	-1,584	-42,699	0	-10.7	CCTR Transf To 2100-4089.002
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Asset Management & Inspections from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM004 Asset Management & Inspections in cost center 2100-4089.002 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2020	-361	-10,865	0	-3.8	CCTR Transf To 2100-0166.000
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Vegetation Mgmt & Inspections from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM005 Vegetation Management & Inspections in cost center 2100-0166 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2020	0	-9,335	0	0.0	CCTR Transf To 2100-4089.001
<b>Explanation:</b>	Transfer Non-Labor associated with Grid Operations & Protocols from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM006 Grid Operations & Protocols in cost center 2100-4089.001 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2020	-602	-8,157	0	-5.0	CCTR Transf To 2100-4089.006
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Stakeholder Cooperation & Community Engagement from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM008 Stakeholder Cooperation & Community Engagement in cost center 2100-4089.006 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2020	-192	-677	0	-1.3	CCTR Transf To 2100-4089.005
<b>Explanation:</b>	Transfer wildfire costs related to Data Governance from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM007.002 Data Governance in cost center 2100-4097 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2020 Total</b>	<b>-8,604</b>	<b>-94,234</b>	<b>0</b>	<b>-59.1</b>	
2021	0	-2	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2021	-322	-695	0	-2.4	CCTR Transf To 2100-4089.005

*Note: Totals may include rounding differences.*

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Category-Sub: 1. Resource Allocation Methodology  
Workpaper: 1WM007.000 - Resource Allocation Methodology

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>
<b>Explanation:</b> Transfer wildfire costs related to Data Governance from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM007.002 Data Governance in cost center 2100-4089.005 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.					
2021	0	-600	0	0.0	CCTR Transf To 2100-4097.000
<b>Explanation:</b> Transfer wildfire costs related to Risk Assessment & Mapping from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM007.001 Risk Assessment & Mapping in cost center 2100-4097 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.					
<b>2021 Total</b>	<b>-322</b>	<b>-1,297</b>	<b>0</b>	<b>-2.4</b>	

*Note: Totals may include rounding differences.*

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Workpaper: 1WM007.000 - Resource Allocation Methodology

**RAMP Item # 1**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C40

RAMP Line Item Name: Wildfire Mitigation Personnel

Tranche(/s): Tranche1: None

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$)	
					Low	High
Tranche 1 Cost Estimate	3,823	5,761	7,748	7,748	5,224	6,385

**Cost Estimate Changes from RAMP:**

Increased versus RAMP range driven by increased labor due to additional FTE's charging 100% to WMP.  
Non-labor increases include additional forecasts for data foundation licenses, advanced analytics, and regulatory mandated items such as Independent Evaluator and Joint IOU Enhanced Veg Analysis.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities	
					Low	High
Tranche 1 Track and report on wildfire mitigation programs through quarterly reports and annual WMP.	0.00	0.00	0.00	0.00	0.00	0.00

**Work Unit Changes from RAMP:**

A department that tracks and reports on wildfire mitigation programs through quarterly reports and annual WMP .  
Because there are multiple different types of units of measure in this program , it would not be accurate or  
consistent to identify one unit of measure.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

**RSE Changes from RAMP:**

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: H. Resource Allocation Methodology  
Category-Sub: 1. Resource Allocation Methodology  
Workpaper: 1WM007.000 - Resource Allocation Methodology

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: H. Resource Allocation Methodology  
Category-Sub: 1. Resource Allocation Methodology  
Workpaper: 1WM007.000 - Resource Allocation Methodology

**RAMP Item # 2**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C39

RAMP Line Item Name: Asset Management

Tranche(/s): Tranche1: None

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	0	0	0	0	349	426

**Cost Estimate Changes from RAMP:**

Lower than RAMP range primarily due to management decision to track Asset Management O&M under appropriate sub-categories for Risk Assessment & Mapping and Data Governance. See supplemental workpaper for adjustment details.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 Develops proactive asset replacement, inspection, and repair programs based on risk.	0.00	0.00	0.00	0.00	0.00	0.00

**Work Unit Changes from RAMP:**

Initiative that develops proactive asset replacement, inspection, and repair programs based on risk. Because there are multiple different types of units of measure in this program, it would not be accurate or consistent to identify one unit of measure.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

**RSE Changes from RAMP:**

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: H. Resource Allocation Methodology  
Category-Sub: 1. Resource Allocation Methodology  
Workpaper: 1WM007.000 - Resource Allocation Methodology

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

**Supplemental Workpapers for Workpaper 1WM007.000**



San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Wildfire Mitigation O&M - Forecast Adjustments

Line Item	Workpaper	Wkp Name	WMP Initiative	Labor/Non-Labor	RAMP/Non-RAMP	Unit Description	Unit Metric (ea./ft./mile)	2022			2023			2024			Total Cost	Explanation
								# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost		
1	1WM007.000	Resource Allocation Method	Wildfire Mitigation Personnel	Labor	RAMP	FTE's	FTE	8	\$ 125,000	\$ 500,000	8	\$ 125,000	\$ 1,000,000	8	\$ 125,000	\$ 1,000,000	\$ 2,500,000	Wildfire Mitigation Programs and Accountability are requesting eight additional employees to address the increasing regulatory requirements and data standardization. Additional employees are slated to start halfway through 2022.
2	1WM007.000	Resource Allocation Method	New FTE requests (PSPS/Risk management)	Labor	RAMP	FTE's	FTE	7	\$ 125,000	\$ 437,500	7	\$ 125,000	\$ 875,000	7	\$ 125,000	\$ 875,000	\$ 2,187,500	Wildfire Mitigation Strategy is requesting seven additional employees to address increasing work around risk modeling including RSEs. Additional employees are slated to start halfway through 2022.
3	1WM007.000	Resource Allocation Method	PSPS Department (1 Dir)	Labor	RAMP	FTE's	FTE	1	\$ 200,000	\$ 50,000	1	\$ 200,000	\$ 200,000	1	\$ 200,000	\$ 200,000	\$ 450,000	New Director of PSPS beginning September 2022.
4	1WM007.000	Resource Allocation Method	PSPS Department (3 Mgrs)	Labor	RAMP	FTE's	FTE	3	\$ 150,000	\$ 112,500	3	\$ 150,000	\$ 450,000	3	\$ 150,000	\$ 450,000	\$ 1,012,500	Three managers beginning September 2022: PSPS Compliance, PSPS Strategy, and PSPS Programs.
5	1WM007.000	Resource Allocation Method	PSPS Department (6 PM's)	Labor	RAMP	FTE's	FTE	6	\$ 125,000	\$ 187,500	6	\$ 125,000	\$ 750,000	6	\$ 125,000	\$ 750,000	\$ 1,687,500	Six project managers beginning September 2022. Two for each manager: PSPS Compliance, PSPS Strategy, and PSPS Programs.
6	1WM007.000	Resource Allocation Method	Independent Evaluator	Non-Labor	RAMP	# of Reports	Reports	1	\$ 400,000	\$ 400,000	1	\$ 400,000	\$ 400,000	1	\$ 400,000	\$ 400,000	\$ 1,200,000	Non-labor costs to address increased spend associated with the Independent Evaluator. 2021 engagement was short, and expected future engagements will include additional scope.
7	1WM007.000	Resource Allocation Method	Joint IOU - Enhanced Veg Analysis	Non-Labor	RAMP			1	\$ 250,000	\$ 250,000	1	\$ 250,000	\$ 250,000	1	\$ 250,000	\$ 250,000	\$ 750,000	Third-party vendor costs to assist with project management and data analysis of the OEIS ordered joint IOU Enhanced Vegetation Management study.
Summary																		
				Labor	RAMP				\$ 1,287,500	\$ 3,275,000		\$ 3,275,000	\$ 7,837,500				\$ 7,837,500	
				Non-Labor	RAMP				\$ 650,000	\$ 1,950,000		\$ 1,950,000	\$ 4,887,500				\$ 4,887,500	
					Subtotal RAMP				\$ 1,937,500	\$ 5,225,000		\$ 5,225,000	\$ 12,725,000				\$ 12,725,000	
				Labor	Non-RAMP				\$ -	\$ -		\$ -	\$ -				\$ -	
				Non-Labor	Non-RAMP				\$ -	\$ -		\$ -	\$ -				\$ -	
					Subtotal Non-RAMP				\$ -	\$ -		\$ -	\$ -				\$ -	
					Total Historical Adjustments				\$ 1,937,500	\$ 5,225,000		\$ 5,225,000	\$ 12,725,000				\$ 12,725,000	

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: I. Risk Assessment & Mapping  
Workpaper: 1WM007.001

**Summary for Category: I. Risk Assessment & Mapping**

	In 2021\$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
		2022	2023	2024
Labor	0	125	125	125
Non-Labor	608	1,888	2,202	2,288
NSE	0	0	0	0
<b>Total</b>	<b>608</b>	<b>2,013</b>	<b>2,327</b>	<b>2,413</b>
FTE	0.0	1.3	1.3	1.3

**Workpapers belonging to this Category:**

**1WM007.001 Risk Assessment & Mapping**

Labor	0	125	125	125
Non-Labor	608	1,888	2,202	2,288
NSE	0	0	0	0
<b>Total</b>	<b>608</b>	<b>2,013</b>	<b>2,327</b>	<b>2,413</b>
FTE	0.0	1.3	1.3	1.3

*Note: Totals may include rounding differences.*

**Beginning of Workpaper**  
**1WM007.001 - Risk Assessment & Mapping**

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: I. Risk Assessment & Mapping  
Category-Sub: 1. Risk Assessment & Mapping  
Workpaper: 1WM007.001 - Risk Assessment & Mapping

**Activity Description:**

Risk Assessment & Mapping includes costs for specific risk modeling tools .  
SDG&E has utilized its Wildfire Risk Reduction Model (WRRM) and WRRM-Operational System (WRRM-Ops) which continue to help SDG&E understand the wildfire risk from electric grid assets and fire propagation.  
While WRRM and WRRM-Ops continue to play a critical role in understanding the fire risk, SDG&E recognized a need for a model with the capability to analyze circuit segments for risk of wildfire and PSPS impacts, as well as calculate Risk Spend Efficiency scores for mitigation initiatives . To meet that need, SDG&E developed a new model in 2020 named Wildfire Next Generation System (WiNGS). While it is in the first year of use, WiNGS is expected to help prioritize SDG&E's grid hardening mitigations in the coming years.  
SDG&E has remained committed to the ongoing development and implementation of its wildfire risk modeling through joint collaboration with Energy Safety, other IOUs, and contractors and continues to refine a primarily automated risk assessment and mapping methodology.

**Forecast Explanations:**

**Labor - Base YR Rec**

The base-year forecast methodology was selected as most indicative of future work. New initiatives and programs have been implemented beginning in 2020 due to the Wildfire Mitigation Plan, and these enhancements are not captured in the historical costs of this category. Given that aspects of this workpaper were initiated in 2019, utilizing historical data prior to 2019 would not represent the costs for this workpaper in test year 2024. Most recent recorded data, Base year 2021, more accurately reflects the costs for this workpaper.

**Non-Labor - Base YR Rec**

The base-year forecast methodology was selected as most indicative of future work. New initiatives and programs have been implemented beginning in 2020 due to the Wildfire Mitigation Plan, and these enhancements are not captured in the historical costs of this category. Given that aspects of this workpaper were initiated in 2019, utilizing historical data prior to 2019 would not represent the costs for this workpaper in test year 2024. Most recent recorded data, Base year 2021, more accurately reflects the costs for this workpaper.

**NSE - Base YR Rec**

Not applicable.

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: I. Risk Assessment & Mapping  
Category-Sub: 1. Risk Assessment & Mapping  
Workpaper: 1WM007.001 - Risk Assessment & Mapping

**Summary of Results:**

		In 2021\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2017	2018	2019	2020	2021	2022	2023	2024	
Labor		0	0	0	0	0	125	125	125	
Non-Labor		0	0	0	0	608	1,888	2,202	2,288	
NSE		0	0	0	0	0	0	0	0	
<b>Total</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>608</b>	<b>2,013</b>	<b>2,327</b>	<b>2,413</b>	
FTE		0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: I. Risk Assessment & Mapping  
Category-Sub: 1. Risk Assessment & Mapping  
Workpaper: 1WM007.001 - Risk Assessment & Mapping

**Summary of Adjustments to Forecast:**

In 2021 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	Base YR Rec	0	0	0	125	125	125	125	125	125
Non-Labor	Base YR Rec	608	608	608	1,280	1,594	1,680	1,888	2,202	2,288
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		608	608	608	1,405	1,719	1,805	2,013	2,327	2,413
FTE	Base YR Rec	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3

**Forecast Adjustment Details:**

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
2022	125	1,280	0	1,405	1.3	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Wildfire Mitigation Department increases. Increased labor and FTE's 100% to WMP O&M. Non-Labor increases include forecasts for data foundation licenses, advanced analytics, independent Evaluator and PSPS Studies, Joint IOU Enhanced Veg Analysis, Risk Analysis contract support, applicable Asset Mgmt O&M. See supplemental workpaper for adjustment details.					
<b>2022 Total</b>	<b>125</b>	<b>1,280</b>	<b>0</b>	<b>1,405</b>	<b>1.3</b>	
2023	125	1,594	0	1,719	1.3	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Wildfire Mitigation Department increases. Increased labor and FTE's 100% to WMP O&M. Non-Labor increases include forecasts for data foundation licenses, advanced analytics, independent Evaluator and PSPS Studies, Joint IOU Enhanced Veg Analysis, Risk Analysis contract support, applicable Asset Mgmt O&M. See supplemental workpaper for adjustment details.					
<b>2023 Total</b>	<b>125</b>	<b>1,594</b>	<b>0</b>	<b>1,719</b>	<b>1.3</b>	
2024	125	1,680	0	1,805	1.3	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Wildfire Mitigation Department increases. Increased labor and FTE's 100% to WMP O&M. Non-Labor increases include forecasts for data foundation licenses, advanced analytics, independent Evaluator and PSPS Studies, Joint IOU Enhanced Veg Analysis, Risk Analysis contract support, applicable Asset Mgmt O&M. See supplemental workpaper for adjustment details.					
<b>2024 Total</b>	<b>125</b>	<b>1,680</b>	<b>0</b>	<b>1,805</b>	<b>1.3</b>	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: I. Risk Assessment & Mapping  
Category-Sub: 1. Risk Assessment & Mapping  
Workpaper: 1WM007.001 - Risk Assessment & Mapping

**Determination of Adjusted-Recorded (Incurred Costs):**

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	9
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Adjustments (Nominal \$) **</b>					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	599
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>599</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Nominal \$)</b>					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	608
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>608</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Escalation to 2021\$</b>					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2021\$)</b>					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	608
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>608</b>
FTE	0.0	0.0	0.0	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.

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: I. Risk Assessment & Mapping  
Category-Sub: 1. Risk Assessment & Mapping  
Workpaper: 1WM007.001 - Risk Assessment & Mapping

**Summary of Adjustments to Recorded:**

In Nominal \$ (000) Incurred Costs					
Years	2017	2018	2019	2020	2021
Labor	0	0	0	0	0
Non-Labor	0	0	0	-0.250	599
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-0.250</b>	<b>599</b>
FTE	0.0	0.0	0.0	0.0	0.0

**Detail of Adjustments to Recorded:**

Year	Labor	NLbr	NSE	FTE	Adj Type
<b>2017 Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.0</b>	
<b>2018 Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.0</b>	
<b>2019 Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.0</b>	
2020	0	0	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
<b>2020 Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.0</b>	
2021	0	-1	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2021	0	600	0	0.0	CCTR Transf From 2100-4089.000
<b>Explanation:</b>	Transfer wildfire costs related to Risk Assessment & Mapping from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM007.001 Risk Assessment & Mapping in cost center 2100-4097 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2021 Total</b>	<b>0</b>	<b>599</b>	<b>0</b>	<b>0.0</b>	

*Note: Totals may include rounding differences.*



San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: I. Risk Assessment & Mapping  
Category-Sub: 1. Risk Assessment & Mapping  
Workpaper: 1WM007.001 - Risk Assessment & Mapping

**RAMP Item # 1**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: New05

RAMP Line Item Name: Risk Assessment & Mapping

Tranche(/s): Tranche1: N/A

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$)	
					Low	High
Tranche 1 Cost Estimate	608	2,013	2,327	2,413	0	0

**Cost Estimate Changes from RAMP:**

Not included in original RAMP report and identified as a unique RAMP item primarily due to management decision to track program costs under appropriate sub-categories for Risk Assessment & Mapping and Data Governance. See supplemental workpaper for adjustment details.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities	
					Low	High
Tranche 1 N/A	0.00	0.00	0.00	0.00	0.00	0.00

**Work Unit Changes from RAMP:**

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

**RSE Changes from RAMP:**

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: J. Data Governance  
Workpaper: 1WM007.002

**Summary for Category: J. Data Governance**

	In 2021\$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
		2021	2022	2023
	Labor	380	568	755
Non-Labor	702	857	876	895
NSE	0	0	0	0
Total	1,082	1,425	1,631	1,650
FTE	2.9	4.8	6.7	6.7

**Workpapers belonging to this Category:**

**1WM007.002 Data Governance**

Labor	380	568	755	755
Non-Labor	702	857	876	895
NSE	0	0	0	0
<b>Total</b>	<b>1,082</b>	<b>1,425</b>	<b>1,631</b>	<b>1,650</b>
FTE	2.9	4.8	6.7	6.7

*Note: Totals may include rounding differences.*

**Beginning of Workpaper**  
**1WM007.002 - Data Governance**

San Diego Gas & Electric Company  
2024 GRC - REVISED  
Non-Shared Service Workpapers

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: J. Data Governance  
Category-Sub: 1. Data Governance  
Workpaper: 1WM007.002 - Data Governance

**Activity Description:**

Data Governance includes costs for centralization of data, WMP metrics, data repository, and documentation of models.

Initially, SDG&E almost exclusively collected data metrics and measures manually. To enhance data quality and improve the efficiency of the data gathering process, SDG&E began developing a WMP Data Governance Framework (DGF) and an automated Central Data Repository (CDR) for wildfire-related data, which can be used by multiple internal and external stakeholders in the future. These changes will improve data collection by moving away from manual collection to a more uniform, electronic format that will provide data metrics in a searchable format, similar to a GIS data structure.

The DGF will define a set of repeatable standards, policies, processes and controls for wildfire-related data. Similar to the Wildfire Safety Division's GIS Data Standards, the vision of SDG&E's DGF is to make its wildfire-related data actionable, accessible, aligned, and auditable.

In 2020, SDG&E began centralizing its measures and metrics put forth in Wildfire Mitigation Plans in a central repository to gain insights and assess progress on programs and initiatives.

**Forecast Explanations:**

**Labor - Base YR Rec**

Base-year was selected as most indicative of future work. New initiatives and programs have been implemented beginning in 2020 due to the Wildfire Mitigation Plan, and utilizing the base year captures these changes. Given that aspects of this workpaper were initiated in 2019, utilizing historical data prior to 2019 would not represent the costs for this workpaper in test year 2024. Most recent recorded data, Base year 2021, more accurately reflects the costs for this workpaper.

**Non-Labor - Base YR Rec**

Base-year was selected as most indicative of future work. New initiatives and programs have been implemented beginning in 2020 due to the Wildfire Mitigation Plan, and utilizing the base year captures these changes. Given that aspects of this workpaper were initiated in 2019, utilizing historical data prior to 2019 would not represent the costs for this workpaper in test year 2024. Most recent recorded data, Base year 2021, more accurately reflects the costs for this workpaper.

**NSE - Base YR Rec**

Not applicable.

**Summary of Results:**

		In 2021\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2017	2018	2019	2020	2021	2022	2023	2024	
Labor		0	0	3	227	380	568	755	755	
Non-Labor		0	0	251	732	702	857	876	895	
NSE		0	0	0	0	0	0	0	0	
<b>Total</b>		<b>0</b>	<b>0</b>	<b>254</b>	<b>959</b>	<b>1,082</b>	<b>1,425</b>	<b>1,631</b>	<b>1,650</b>	
FTE		0.0	0.0	0.1	1.5	2.9	4.8	6.7	6.7	

*Note: Totals may include rounding differences.*

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: J. Data Governance  
Category-Sub: 1. Data Governance  
Workpaper: 1WM007.002 - Data Governance

**Summary of Adjustments to Forecast:**

In 2021 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	Base YR Rec	380	380	380	188	375	375	568	755	755
Non-Labor	Base YR Rec	702	702	702	155	174	193	857	876	895
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		1,082	1,082	1,082	343	549	568	1,425	1,631	1,650
FTE	Base YR Rec	2.9	2.9	2.9	1.9	3.8	3.8	4.8	6.7	6.7

**Forecast Adjustment Details:**

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
2022	188	155	0	343	1.9	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Wildfire Mitigation Department increases. Increased labor and FTE's 100% to WMP O&M. Non-Labor increases include forecasts for data foundation licenses, advanced analytics, independent Evaluator and PSPS Studies, Joint IOU Enhanced Veg Analysis, Risk Analysis contract support, applicable Asset Mgmt O&M. See supplemental workpaper for adjustment details.					
<b>2022 Total</b>	<b>188</b>	<b>155</b>	<b>0</b>	<b>343</b>	<b>1.9</b>	
2023	375	174	0	549	3.8	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Wildfire Mitigation Department increases. Increased labor and FTE's 100% to WMP O&M. Non-Labor increases include forecasts for data foundation licenses, advanced analytics, independent Evaluator and PSPS Studies, Joint IOU Enhanced Veg Analysis, Risk Analysis contract support, applicable Asset Mgmt O&M. See supplemental workpaper for adjustment details.					
<b>2023 Total</b>	<b>375</b>	<b>174</b>	<b>0</b>	<b>549</b>	<b>3.8</b>	
2024	375	193	0	568	3.8	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to Wildfire Mitigation Department increases. Increased labor and FTE's 100% to WMP O&M. Non-Labor increases include forecasts for data foundation licenses, advanced analytics, independent Evaluator and PSPS Studies, Joint IOU Enhanced Veg Analysis, Risk Analysis contract support, applicable Asset Mgmt O&M. See supplemental workpaper for adjustment details.					
<b>2024 Total</b>	<b>375</b>	<b>193</b>	<b>0</b>	<b>568</b>	<b>3.8</b>	

*Note: Totals may include rounding differences.*

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: J. Data Governance  
Category-Sub: 1. Data Governance  
Workpaper: 1WM007.002 - Data Governance

**Determination of Adjusted-Recorded (Incurred Costs):**

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	0	0	0	0	9
Non-Labor	0	0	0	0	7
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>
FTE	0.0	0.0	0.0	0.0	0.1
<b>Adjustments (Nominal \$) **</b>					
Labor	0	0	2	192	322
Non-Labor	0	0	232	677	695
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>235</b>	<b>869</b>	<b>1,017</b>
FTE	0.0	0.0	0.1	1.3	2.4
<b>Recorded-Adjusted (Nominal \$)</b>					
Labor	0	0	2	192	331
Non-Labor	0	0	232	677	702
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>235</b>	<b>869</b>	<b>1,032</b>
FTE	0.0	0.0	0.1	1.3	2.5
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	0	0	0	27	50
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>50</b>
FTE	0.0	0.0	0.0	0.2	0.4
<b>Escalation to 2021\$</b>					
Labor	0	0	0	7	0
Non-Labor	0	0	19	55	0
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>62</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2021\$)</b>					
Labor	0	0	3	227	380
Non-Labor	0	0	251	732	702
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>254</b>	<b>959</b>	<b>1,082</b>
FTE	0.0	0.0	0.1	1.5	2.9

\* 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.

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Witness: Jonathan Woldemariam  
Category: J. Data Governance  
Category-Sub: 1. Data Governance  
Workpaper: 1WM007.002 - Data Governance

**Summary of Adjustments to Recorded:**

In Nominal \$ (000) Incurred Costs					
Years	2017	2018	2019	2020	2021
Labor	0	0	2	192	322
Non-Labor	0	0	232	677	695
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>235</b>	<b>869</b>	<b>1,017</b>
FTE	0.0	0.0	0.1	1.3	2.4

**Detail of Adjustments to Recorded:**

Year	Labor	NLbr	NSE	FTE	Adj Type
<b>2017 Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.0</b>	
<b>2018 Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.0</b>	
2019	2	232	0	0.1	CCTR Transf From 2100-4089.000
<b>Explanation:</b>	Transfer wildfire costs related to Data Governance from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM007.002 Data Governance in cost center 2100-4089.005 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2019 Total</b>	<b>2</b>	<b>232</b>	<b>0</b>	<b>0.1</b>	
2020	192	677	0	1.3	CCTR Transf From 2100-4089.000
<b>Explanation:</b>	Transfer wildfire costs related to Data Governance from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM007.002 Data Governance in cost center 2100-4097 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2020 Total</b>	<b>192</b>	<b>677</b>	<b>0</b>	<b>1.3</b>	
2021	322	695	0	2.4	CCTR Transf From 2100-4089.000
<b>Explanation:</b>	Transfer wildfire costs related to Data Governance from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM007.002 Data Governance in cost center 2100-4089.005 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
<b>2021 Total</b>	<b>322</b>	<b>695</b>	<b>0</b>	<b>2.4</b>	

*Note: Totals may include rounding differences.*

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Category-Sub: 1. Data Governance  
Workpaper: 1WM007.002 - Data Governance

**RAMP Item # 1**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: New06

RAMP Line Item Name: Data Governance

Tranche(s): Tranche1: N/A

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$)	
					Low	High
Tranche 1 Cost Estimate	1,082	1,425	1,631	1,650	0	0

**Cost Estimate Changes from RAMP:**

Not included in original RAMP report and identified as a unique RAMP item to enhance SDG &E's data governance framework.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities	
					Low	High
Tranche 1 N/A	0.00	0.00	0.00	0.00	0.00	0.00

**Work Unit Changes from RAMP:**

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

**RSE Changes from RAMP:**

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).



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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: K. Stakeholder Cooperation & Community Engagement  
Workpaper: 1WM008.000

**Summary for Category: K. Stakeholder Cooperation & Community Engagement**

In 2021\$ (000) Incurred Costs				
	Adjusted-Recorded	Adjusted-Forecast		
		2021	2022	2023
Labor	1,497	1,968	1,968	1,968
Non-Labor	9,488	9,597	9,597	9,597
NSE	0	0	0	0
<b>Total</b>	<b>10,985</b>	<b>11,565</b>	<b>11,565</b>	<b>11,565</b>
FTE	12.8	16.8	16.8	16.8

**Workpapers belonging to this Category:**

**1WM008.000 Stakeholder Cooperation & Community Engagement**

Labor	1,497	1,968	1,968	1,968
Non-Labor	9,488	9,597	9,597	9,597
NSE	0	0	0	0
<b>Total</b>	<b>10,985</b>	<b>11,565</b>	<b>11,565</b>	<b>11,565</b>
FTE	12.8	16.8	16.8	16.8

*Note: Totals may include rounding differences.*

**Beginning of Workpaper**  
**1WM008.000 - Stakeholder Cooperation & Community Engagement**

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: K. Stakeholder Cooperation & Community Engagement  
Category-Sub: 1. Stakeholder Cooperation & Community Engagement  
Workpaper: 1WM008.000 - Stakeholder Cooperation & Community Engagement

**Activity Description:**

Engagement and cooperation among all wildfire stakeholders, including the public, are extremely important to SDG&E. SDG&E partners with utility customers, elected officials, nonprofit support organizations, first responders and all other public safety and community partners. Each stakeholder group plays a unique and important role in achieving wildfire prevention and mitigation in SDG&E's service territory. SDG&E provides an essential service, and it takes its role within the communities it serves very seriously. This is especially true during times of PSPS events, when communities depend on complete, accurate, and timely information for their well-being.

**Forecast Explanations:**

**Labor - Base YR Rec**

The base-year forecast methodology was selected as most indicative of future work. New initiatives and programs have been implemented beginning in 2020 due to the Wildfire Mitigation Plan, and these enhancements are not captured in the historical costs of this category. Accordingly, 2021 base year expenses are most representative of future needs based on an expansion in complexity and scope of existing projects and initiatives.

**Non-Labor - Base YR Rec**

The base-year forecast methodology was selected as most indicative of future work. New initiatives and programs have been implemented beginning in 2020 due to the Wildfire Mitigation Plan, and these enhancements are not captured in the historical costs of this category. Accordingly, 2021 base year expenses are most representative of future needs based on an expansion in complexity and scope of existing projects and initiatives.

**NSE - Base YR Rec**

Not applicable.

**Summary of Results:**

		In 2021\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2017	2018	2019	2020	2021	2022	2023	2024	
Labor		8	0	81	710	1,497	1,968	1,968	1,968	
Non-Labor		118	214	4,090	8,825	9,488	9,597	9,597	9,597	
NSE		0	0	0	0	0	0	0	0	
<b>Total</b>		<b>125</b>	<b>214</b>	<b>4,171</b>	<b>9,534</b>	<b>10,985</b>	<b>11,565</b>	<b>11,565</b>	<b>11,565</b>	
FTE		0.1	0.0	0.6	5.8	12.8	16.8	16.8	16.8	

*Note: Totals may include rounding differences.*

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: K. Stakeholder Cooperation & Community Engagement  
Category-Sub: 1. Stakeholder Cooperation & Community Engagement  
Workpaper: 1WM008.000 - Stakeholder Cooperation & Community Engagement

**Summary of Adjustments to Forecast:**

In 2021 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	Base YR Rec	1,497	1,497	1,497	471	471	471	1,968	1,968	1,968
Non-Labor	Base YR Rec	9,488	9,488	9,488	109	109	109	9,597	9,597	9,597
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		10,985	10,985	10,985	580	580	580	11,565	11,565	11,565
FTE	Base YR Rec	12.8	12.8	12.8	4.0	4.0	4.0	16.8	16.8	16.8

**Forecast Adjustment Details:**

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>
2022	125	0	0	125	1.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to WMP Communication Practices.					
2022	0	48	0	48	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to WMP Mylar Balloons.					
2022	250	13	0	263	2.0	1-Sided Adj
<b>Explanation:</b>	Increased costs for WMP AFN Customer Support, not included in original RAMP report. Forecast adds 2 FTE's in 2022 100% WMP plus associated non-labor.					
2022	96	48	0	144	1.0	1-Sided Adj
<b>Explanation:</b>	Increased costs for WMP Tribal Customer Support, not included in original RAMP report. Forecast adds 1 FTE's in 2022 100% WMP plus associated non-labor.					
<b>2022 Total</b>	<b>471</b>	<b>109</b>	<b>0</b>	<b>580</b>	<b>4.0</b>	
2023	125	0	0	125	1.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to WMP Communication Practices.					
2023	0	48	0	48	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to WMP Mylar Balloons.					
2023	250	13	0	263	2.0	1-Sided Adj
<b>Explanation:</b>	Increased costs for WMP AFN Customer Support, not included in original RAMP report. Forecast adds 2 FTE's in 2022 100% WMP plus associated non-labor.					
2023	96	48	0	144	1.0	1-Sided Adj
<b>Explanation:</b>	Increased costs for WMP Tribal Customer Support, not included in original RAMP report. Forecast adds 1 FTE's in 2022 100% WMP plus associated non-labor.					
<b>2023 Total</b>	<b>471</b>	<b>109</b>	<b>0</b>	<b>580</b>	<b>4.0</b>	
2024	125	0	0	125	1.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast due to increased interest in Stakeholder & Community Engagement programs .					
2024	0	48	0	48	0.0	1-Sided Adj
<b>Explanation:</b>	Increased forecast for WMP O&M related to WMP Mylar Balloons.					

*Note: Totals may include rounding differences.*

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Category: K. Stakeholder Cooperation & Community Engagement  
Category-Sub: 1. Stakeholder Cooperation & Community Engagement  
Workpaper: 1WM008.000 - Stakeholder Cooperation & Community Engagement

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
2024	250	13	0	263	2.0	1-Sided Adj
<b>Explanation:</b>	Increased costs for WMP AFN Customer Support, not included in original RAMP report. Forecast adds 2 FTE's in 2022 100% WMP plus associated non-labor.					
2024	96	48	0	144	1.0	1-Sided Adj
<b>Explanation:</b>	Increased costs for WMP Tribal Customer Support, not included in original RAMP report. Forecast adds 1 FTE's in 2022 100% WMP plus associated non-labor.					
<b>2024 Total</b>	<b>471</b>	<b>109</b>	<b>0</b>	<b>580</b>	<b>4.0</b>	

*Note: Totals may include rounding differences.*

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Category: K. Stakeholder Cooperation & Community Engagement  
Category-Sub: 1. Stakeholder Cooperation & Community Engagement  
Workpaper: 1WM008.000 - Stakeholder Cooperation & Community Engagement

**Determination of Adjusted-Recorded (Incurred Costs):**

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	0	0	0	0	1,302
Non-Labor	0	0	0	0	9,489
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10,790</b>
FTE	0.0	0.0	0.0	0.0	10.9
<b>Adjustments (Nominal \$) **</b>					
Labor	6	0	67	602	0
Non-Labor	103	193	3,788	8,157	-1
NSE	0	0	0	0	0
<b>Total</b>	<b>109</b>	<b>193</b>	<b>3,855</b>	<b>8,760</b>	<b>-1</b>
FTE	0.1	0.0	0.5	5.0	0.0
<b>Recorded-Adjusted (Nominal \$)</b>					
Labor	6	0	67	602	1,302
Non-Labor	103	193	3,788	8,157	9,488
NSE	0	0	0	0	0
<b>Total</b>	<b>109</b>	<b>193</b>	<b>3,855</b>	<b>8,760</b>	<b>10,789</b>
FTE	0.1	0.0	0.5	5.0	10.9
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	1	0	10	85	195
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>0</b>	<b>10</b>	<b>85</b>	<b>195</b>
FTE	0.0	0.0	0.1	0.8	1.9
<b>Escalation to 2021\$</b>					
Labor	1	0	4	22	0
Non-Labor	15	21	303	667	0
NSE	0	0	0	0	0
<b>Total</b>	<b>16</b>	<b>21</b>	<b>307</b>	<b>689</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2021\$)</b>					
Labor	8	0	81	710	1,497
Non-Labor	118	214	4,090	8,825	9,488
NSE	0	0	0	0	0
<b>Total</b>	<b>125</b>	<b>214</b>	<b>4,171</b>	<b>9,534</b>	<b>10,985</b>
FTE	0.1	0.0	0.6	5.8	12.8

\* 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.

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Category: K. Stakeholder Cooperation & Community Engagement  
Category-Sub: 1. Stakeholder Cooperation & Community Engagement  
Workpaper: 1WM008.000 - Stakeholder Cooperation & Community Engagement

**Summary of Adjustments to Recorded:**

In Nominal \$ (000) Incurred Costs					
Years	2017	2018	2019	2020	2021
Labor	6	0	67	602	0
Non-Labor	103	193	3,788	8,157	-0.765
NSE	0	0	0	0	0
<b>Total</b>	<b>109</b>	<b>193</b>	<b>3,855</b>	<b>8,760</b>	<b>-0.765</b>
FTE	0.1	0.0	0.5	5.0	0.0

**Detail of Adjustments to Recorded:**

Year	Labor	NLbr	NSE	FTE	Adj Type
2017	6	3	0	0.1	CCTR Transf From 2100-0622.000
<b>Explanation:</b>	Transfer labor, non-labor and FTE associated with Community Fire Preparedness Program Mgr. from cost center 2100-0622 in work paper group 100005 CCC Support to cost center 2100-4089.006 in workpaper group 1WM008 Stakeholder Cooperation & Community Engagement to align costs where activity/function resides and is forecasted.				
2017	0	100	0	0.0	CCTR Transf From 2100-0058.000
<b>Explanation:</b>	Transfer WMP related expenses recorded in CFSP IO 200404182 to 2100-4089.006 in WMP workpaper 1WM008.000 Stakeholder Cooperation & Community Engagement where activity resides.				
<b>2017 Total</b>	<b>6</b>	<b>103</b>	<b>0</b>	<b>0.1</b>	
2018	0	193	0	0.0	CCTR Transf From 2100-0058.000
<b>Explanation:</b>	Transfer WMP related expenses recorded in CFSP IO 200404182 to 2100-4089.006 in WMP workpaper 1WM008.000 Stakeholder Cooperation & Community Engagement where activity resides.				
<b>2018 Total</b>	<b>0</b>	<b>193</b>	<b>0</b>	<b>0.0</b>	
2019	67	3,777	0	0.5	CCTR Transf From 2100-4089.000
<b>Explanation:</b>	Transfer Labor, FTEs, and Non-Labor associated with Stakeholder Cooperation & Community Engagement from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM008 Stakeholder Cooperation & Community Engagement in cost center 2100-4089.006 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.				
2019	0	10	0	0.0	CCTR Transf From 2100-0058.000
<b>Explanation:</b>	Transfer WMP related expenses recorded in CFSP IO 200404182 to 2100-4089.006 in WMP workpaper 1WM008.000 Stakeholder Cooperation & Community Engagement where activity resides.				
<b>2019 Total</b>	<b>67</b>	<b>3,788</b>	<b>0</b>	<b>0.5</b>	
2020	602	8,157	0	5.0	CCTR Transf From 2100-4089.000

*Note: Totals may include rounding differences.*

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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam  
Category: K. Stakeholder Cooperation & Community Engagement  
Category-Sub: 1. Stakeholder Cooperation & Community Engagement  
Workpaper: 1WM008.000 - Stakeholder Cooperation & Community Engagement

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>
<b>Explanation:</b> Transfer Labor, FTEs, and Non-Labor associated with Stakeholder Cooperation & Community Engagement from Workpaper 1WM007 Resource Allocation Methodology to Workpaper 1WM008 Stakeholder Cooperation & Community Engagement in cost center 2100-4089.006 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.					
<b>2020 Total</b>	<b>602</b>	<b>8,157</b>	<b>0</b>	<b>5.0</b>	
2021	0	-1	0	0.0	1-Sided Adj
<b>Explanation:</b> One-sided adjustment to exclude \$765 related to Events and Tickets.					
<b>2021 Total</b>	<b>0</b>	<b>-1</b>	<b>0</b>	<b>0.0</b>	

*Note: Totals may include rounding differences.*



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Workpaper: 1WM008.000 - Stakeholder Cooperation & Community Engagement

**RAMP Item # 1**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C42

RAMP Line Item Name: PSPS Communication Practices

Tranche(s): Tranche1: N/A

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	9,766	9,889	9,889	9,889	5,996	7,328

**Cost Estimate Changes from RAMP:**

Higher than RAMP range primarily due to shift in forecasting. PSPS Communication practices expected to retain base year levels of spend through 2024.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 Improve coordination and customer awareness during fires or PSPS events.	0.00	0.00	0.00	0.00	0.00	0.00

**Work Unit Changes from RAMP:**

Program that improves coordination and customer awareness during fires or PSPS events. Because there are multiple different types of units of measure in this program, it would not be accurate or consistent to identify one unit of measure.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

**RSE Changes from RAMP:**

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Category: K. Stakeholder Cooperation & Community Engagement  
Category-Sub: 1. Stakeholder Cooperation & Community Engagement  
Workpaper: 1WM008.000 - Stakeholder Cooperation & Community Engagement

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

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Witness: Jonathan Woldemariam  
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Category-Sub: 1. Stakeholder Cooperation & Community Engagement  
Workpaper: 1WM008.000 - Stakeholder Cooperation & Community Engagement

**RAMP Item # 2**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: C43

RAMP Line Item Name: Mylar Balloon Alternative

Tranche(/s): Tranche1: N/A

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	37	86	86	86	68	83

**Cost Estimate Changes from RAMP:**

Slightly higher than RAMP due primarily due to continuation of program versus lower than expected cost forecasts in original RAMP report.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 Develop a non-conductive balloon which will not cause an electrical fault when it comes in contact w	0.00	0.00	0.00	0.00	0.00	0.00

**Work Unit Changes from RAMP:**

Program to develop a non-conductive balloon that will not cause an electrical fault when it comes in contact with overhead distribution power lines. One unit of measure would not accurately represent the program.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

**RSE Changes from RAMP:**

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Witness: Jonathan Woldemariam  
Category: K. Stakeholder Cooperation & Community Engagement  
Category-Sub: 1. Stakeholder Cooperation & Community Engagement  
Workpaper: 1WM008.000 - Stakeholder Cooperation & Community Engagement

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

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**RAMP Item # 3**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: New07

RAMP Line Item Name: WMP AFN Customer Support

Tranche(/s): Tranche1: N/A

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	1,127	1,390	1,390	1,390	0	0

**Cost Estimate Changes from RAMP:**

To address regulatory requirements, additional forecasts for WMP AFN Customer Support have been added that were not included in original RAMP report.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 Improve AFN coordination and customer awareness during fires or PSPS events.	0.00	0.00	0.00	0.00	0.00	0.00

**Work Unit Changes from RAMP:**

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

**RSE Changes from RAMP:**

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

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Witness: Jonathan Woldemariam  
Category: K. Stakeholder Cooperation & Community Engagement  
Category-Sub: 1. Stakeholder Cooperation & Community Engagement  
Workpaper: 1WM008.000 - Stakeholder Cooperation & Community Engagement

**RAMP Item # 4**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-1 Wildfire Involving SDG&E Equipment

RAMP Line Item ID: New08

RAMP Line Item Name: WMP Tribal Customer Support

Tranche(/s): Tranche1: N/A

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$) Low High	
Tranche 1 Cost Estimate	54	200	200	200	0	0

**Cost Estimate Changes from RAMP:**

Forecasts for WMP Tribal Customer Support, not included in original RAMP report.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities Low High	
Tranche 1 Improve Tribal coordination and customer awareness during fires or PSPS events.	0.00	0.00	0.00	0.00	0.00	0.00

**Work Unit Changes from RAMP:**

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

**RSE Changes from RAMP:**

General changes to risk scores or RSE values are primarily due to changes in the MAVF and RSE methodology as discussed in the RAMP to GRC integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

San Diego Gas & Electric Company  
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Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT  
Witness: Jonathan Woldemariam

**Appendix A: List of Non-Shared Cost Centers**

<b>Cost Center</b>	<b>Sub</b>	<b>Description</b>
2100-0166	000	VEGETATION MGMT ADMIN
2100-0216	000	EMERGENCY SERVICES SOUTH
2100-0218	000	TREE TRIM PROGRAM
2100-3761	000	SDGE F. COORDINATION
2100-3773	000	HELICOPTER UTILIZATION
2100-3854	000	AIR COORDINATION
2100-3889	000	FIELD SRVC SAFETY SUPPORT
2100-3932	000	FIRE & RISK MITIGATION
2100-3962	000	DIR EMERGENCY PREPAREDNESS & MANAGEMENT
2100-3963	000	METEOROLOGY
2100-4048	000	BUSINESS RESUMPTION & TECH SOLUTIONS
2100-4055	000	Fire Science & Climate Dir
2100-4056	000	Fire Mit & Climate Adap
2100-4089	000	DIR-WF MIT & VEG MGT
2100-4097	000	FIRE MITIGATION MEASURES & METRICS
2100-4176	000	EMERGENCY MANAGEMENT TRAINING & EXERCIS
2100-4178	000	ESH PROGRAM MANAGEMENT # SOUTH