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-2R-E)

SECOND REVISED WORKPAPERS TO PREPARED DIRECT TESTIMONY OF JONATHAN WOLDEMARIAM

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ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

ERRATA

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

MAY 2023



2024 General Rate Case - SECOND REVISED ERRATA INDEX OF WORKPAPERS

Exhibit SDG&E-13-WP-2R-E - WILDFIRE MITIGATION & VEGETATION MANAGEMENT

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Appendix A: List of Non-Shared Cost Centers

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Overall Summary For Exhibit No. SDG&E-13-WP-2R-E

	Area: WILDFIRE	Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT					
	Witness: Jonathan	Witness: Jonathan Woldemariam					
		In 2021 \$ (000) Incurred Costs					
	Adjusted-Recorded						
Description	2021	2022	2023	2024			
Non-Shared Services	168,436	235,109	203,428	168,953			
Shared Services	0	0	0	0			
Total	168,436	235,109	203,428	168,953			

Area: WILDFIRE MITIGATION & VEGETATION MANAGEMENT

Witness: Jonathan Woldemariam

Summary of Non-Shared Services Workpapers:

	In 2021 \$ (000) Incurred Costs				
	Adjusted- Recorded	Adjusted-Forecast			
Description	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	27,129	29,425	25,397	
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	
Total	168,436	235,109	203,428	168,953	

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				
	2021	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		
Total	13,315	16,024	16,277	16,236		
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
Total	13,315	16,024	16,277	16,236
FTE	27.7	29.7	35.5	43.5

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

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:

				ln 2021\$ (00	0) Incurred	Costs		
		Adju	sted-Recor	ded		Ad	justed-Fore	cast
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
Total	4,427	3,150	7,392	14,035	13,315	16,024	16,277	16,236
FTE	14.5	7.3	26.2	34.1	27.7	29.7	35.5	43.5

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 202	1 \$(000) lı	ncurred Co	sts				
Forecast	t Method	Bas	se Foreca	st	Forecast Adjustments			Adjusted-Forecast		
Years	6	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
Tota	I	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>	Labor	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	FTE	<u>Adj Type</u>	
2022	204	2,505	0	2,709	2.0	1-Sided Adj	
Explanation:	Increased forecast prima increases. See supplemental workp			·	department and	d emergency event	
2022 Total	204	2,505	0	2,709	2.0		
2023	781	2,181	0	2,962	7.8	1-Sided Adj	
Explanation:	Increased forecast prima increases. See supplemental workp			·	department and	d emergency event	
2023 Total	781	2,181	0	2,962	7.8		
2024	1,276	1,645	0	2,921	15.8	1-Sided Adj	
Explanation:	Increased forecast prima increases. See supplemental workp	,	0,	Ū	department and	d emergency event	
2024 Total	1,276	1,645	0	2,921	15.8		

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)
ecorded (Nominal \$)*					
Labor	828	664	721	97	3,282
Non-Labor	684	1,220	1,155	472	9,602
NSE	0	0	0	0	0
Total	1,512	1,884	1,875	569	12,884
FTE	7.7	5.9	5.9	1.1	23.8
djustments (Nominal \$) **					
Labor	911	7	2,895	4,579	0
Non-Labor	1,236	869	1,640	7,408	-62
NSE	0	0	0	0	0
Total	2,147	875	4,535	11,987	-62
FTE	4.8	0.4	16.7	28.3	0.0
ecorded-Adjusted (Nomin	al \$)				
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
Total	3,659	2,759	6,410	12,556	12,822
FTE	12.4	6.3	22.6	29.4	23.7
acation & Sick (Nominal \$)				
Labor	258	102	518	663	493
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	258	102	518	663	493
FTE	2.1	1.0	3.6	4.7	4.0
scalation to 2021\$					
Labor	232	66	241	171	0
Non-Labor	277	223	223	644	0
NSE	0	0	0	0	0
Total	509	289	464	815	0
FTE	0.0	0.0	0.0	0.0	0.0
ecorded-Adjusted (Consta	ant 2021\$)				
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
Total	4,427	3,150	7,392	14,035	13,315
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

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
	Total	2,147	875	4,535	11,987	-62
FTE		4.8	0.4	16.7	28.3	0.0

Detail of Adjustments to Recorded:

Year	Labor	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	Adj Type
2017	-5	-4	0	-0.1	1-Sided Adj
Explanation:	Incremental costs that are anticipate Memorandum Account (CEMA).	ed to be reque	sted for reco	very through	a non-GRC Catastrophic Event
2017	916	1,233	0	5.0	CCTR Transf From 2100-4089.000
Explanation:	Transfer Labor, FTEs, and Non-Lab 1WM007 Resource Allocation Meth cost center 2100-3962 to align costs Categories.	odology to Wo	rkpaper 1WN	/001 Emerg	ency Planning & Preparedness in
2017	0	0	0	-0.1	1-Sided Adj
Explanation:	Incremental costs that are anticipate Memorandum Account (CEMA).	ed to be reque	sted for reco	very through	a non-GRC Catastrophic Event
2017	0	8	0	0.0	CCTR Transf From 2100-3773.000
Explanation:	Transfer Non-Labor associated with Ops & Protocols to Workpaper 1WM align costs where they are reflected	/1001 Emerger	ncy Planning	& Preparedr	ness in cost center 2100-3962 to
2017	0	0	0	0.0	1-Sided Adj
Explanation:	Incremental costs that are anticipate Memorandum Account (CEMA).	ed to be reque	sted for reco	very through	a non-GRC Catastrophic Event
2017 Total	911	1,236	0	4.8	
2018	3	-114	0	0.1	1-Sided Adj
Explanation:	Incremental costs that are anticipate Memorandum Account (CEMA).	ed to be reque	sted for reco	very through	a non-GRC Catastrophic Event
2018	0	0	0	0.0	CCTR Transf From 2100-0166.000
Explanation:	Transfer Non-Labor associated with Vegetation Mgmt & Insp to Workpar 2100-3962 to align costs where the	per 1WM001 E	Emergency Pl	anning & Pr	eparedness in cost center

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
Explanation:	1WM002 Situation	al Awareness a ost center 2100	and Forecasting f	to Workpape	r 1WM001 E	paredness from Workpaper Emergency Planning & cted in the Wildfire Mitigation Plan
2018		0	214	0	0.0	CCTR Transf From 2100-3773.000
Explanation:	Ops & Protocols to	o Workpaper 1V	VM001 Emergen	ncy Planning	& Preparedr	from Workpaper 1WM006 Grid ness in cost center 2100-3962 to nitiative Categories.
2018		0	0	0	0.1	1-Sided Adj
Explanation:	Incremental costs Memorandum Acc	-	ated to be reque	sted for reco	very through	a non-GRC Catastrophic Event
2018		0	-278	0	0.0	1-Sided Adj
Explanation:	Incremental costs Memorandum Acc		ated to be reque	sted for reco	very through	a non-GRC Catastrophic Event
		•	90	0	0.1	CCTR Transf From 2100-3963.000
2018	Transfor Labor and	2 d Non Lobor og				
Explanation:	1WM002 Situation	d Non-Labor as al Awareness a ost center 2100	sociated with En and Forecasting t	nergency Pla to Workpape	nning & Pre r 1WM001 E	paredness from Workpaper Emergency Planning & cted in the Wildfire Mitigation Plan
Explanation: 2018	1WM002 Situation Preparedness in c (WMP) Initiative C	d Non-Labor as aal Awareness a ost center 2100 ategories. 0	sociated with En and Forecasting t)-3962 to align co 0	nergency Pla to Workpape osts where th 0	nning & Pre r 1WM001 E ney are reflec 0.0	paredness from Workpaper Emergency Planning &
Explanation: 2018 Explanation:	1WM002 Situation Preparedness in c	d Non-Labor as aal Awareness a ost center 2100 ategories. 0 nent to exclude	sociated with En and Forecasting t 0-3962 to align co 0 \$19 related to E	nergency Pla to Workpape osts where th 0 vents and Tio	nning & Pre r 1WM001 E ney are reflec 0.0 ckets.	paredness from Workpaper Emergency Planning & cted in the Wildfire Mitigation Plan
Explanation: 2018	1WM002 Situation Preparedness in c (WMP) Initiative C	d Non-Labor as aal Awareness a ost center 2100 ategories. 0	sociated with En and Forecasting t)-3962 to align co 0	nergency Pla to Workpape osts where th 0	nning & Pre r 1WM001 E ney are reflec 0.0	paredness from Workpaper Emergency Planning & cted in the Wildfire Mitigation Plan
Explanation: 2018 Explanation:	1WM002 Situation Preparedness in c (WMP) Initiative C	d Non-Labor as aal Awareness a ost center 2100 ategories. 0 nent to exclude	sociated with En and Forecasting t 0-3962 to align co 0 \$19 related to E	nergency Pla to Workpape osts where th 0 vents and Tio	nning & Pre r 1WM001 E ney are reflec 0.0 ckets.	paredness from Workpaper Emergency Planning & cted in the Wildfire Mitigation Plan
2018 2018 Explanation: 2018 Total 2019	1WM002 Situation Preparedness in c (WMP) Initiative C One-sided adjustm Transfer Non-Labo Ops & Protocols to	d Non-Labor as aal Awareness a ost center 2100 ategories. 0 nent to exclude 7 0 or associated w o Workpaper 1V	sociated with En and Forecasting to 0-3962 to align co 0 \$19 related to E 869 4 ith Emergency P VM001 Emergen	nergency Pla to Workpape osts where th 0 vents and Tio 0 Planning & Pr ncy Planning	nnning & Pre r 1WM001 E ney are reflect 0.0 ckets. 0.4 0.0 reparedness & Preparedr	paredness from Workpaper Emergency Planning & cted in the Wildfire Mitigation Plan 1-Sided Adj
2018 Z018 Explanation: 2018 Total	1WM002 Situation Preparedness in c (WMP) Initiative C One-sided adjustm Transfer Non-Labo Ops & Protocols to	d Non-Labor as aal Awareness a ost center 2100 ategories. 0 nent to exclude 7 0 or associated w o Workpaper 1V	sociated with En and Forecasting to 0-3962 to align co 0 \$19 related to E 869 4 ith Emergency P VM001 Emergen	nergency Pla to Workpape osts where th 0 vents and Tio 0 Planning & Pr ncy Planning	nnning & Pre r 1WM001 E ney are reflect 0.0 ckets. 0.4 0.0 reparedness & Preparedr	paredness from Workpaper Emergency Planning & cted in the Wildfire Mitigation Plan 1-Sided Adj CCTR Transf From 2100-3773.000 from Workpaper 1WM006 Grid ness in cost center 2100-3962 to
2018 2018 Explanation: 2018 Total 2019 Explanation: 2019	1WM002 Situation Preparedness in c (WMP) Initiative C One-sided adjustm Transfer Non-Labo Ops & Protocols to align costs where to Transfer Labor, FT 1WM007 Resource	d Non-Labor as aal Awareness a ost center 2100 ategories. 0 nent to exclude 7 0 or associated w o Workpaper 1V they are reflecte 2,895 ITEs, and Non-L e Allocation Me	sociated with En and Forecasting to 0-3962 to align co 0 \$19 related to E 869 4 ith Emergency P VM001 Emergen ed in the Wildfire 1,638 abor associated thodology to Wo	nergency Pla to Workpaper osts where th 0 vents and Tio 0 Planning & Pr ncy Planning e Mitigation P 0 with Emerge rkpaper 1WM	nnning & Pre r 1WM001 E ney are reflect 0.0 ckets. 0.4 0.0 reparedness & Preparedr lan (WMP) I 16.7 ncy Planning M001 Emerg	paredness from Workpaper Emergency Planning & cted in the Wildfire Mitigation Plan 1-Sided Adj CCTR Transf From 2100-3773.000 from Workpaper 1WM006 Grid ness in cost center 2100-3962 to nitiative Categories.
2018 2018 Explanation: 2018 Total 2019 Explanation:	1WM002 Situation Preparedness in c (WMP) Initiative C One-sided adjustm Transfer Non-Labo Ops & Protocols to align costs where the Transfer Labor, FT 1WM007 Resource cost center 2100-3	d Non-Labor as aal Awareness a ost center 2100 ategories. 0 nent to exclude 7 0 or associated w o Workpaper 1V they are reflecte 2,895 ITEs, and Non-L e Allocation Me	sociated with En and Forecasting to 0-3962 to align co 0 \$19 related to E 869 4 ith Emergency P VM001 Emergen ed in the Wildfire 1,638 abor associated thodology to Wo	nergency Pla to Workpaper osts where th 0 vents and Tio 0 Planning & Pr ncy Planning e Mitigation P 0 with Emerge rkpaper 1WM	nnning & Pre r 1WM001 E ney are reflect 0.0 ckets. 0.4 0.0 reparedness & Preparedr lan (WMP) I 16.7 ncy Planning M001 Emerg	paredness from Workpaper Emergency Planning & cted in the Wildfire Mitigation Plan 1-Sided Adj CCTR Transf From 2100-3773.000 from Workpaper 1WM006 Grid ness in cost center 2100-3962 to nitiative Categories. CCTR Transf From 2100-4089.000 g & Preparedness from Workpaper ency Planning & Preparedness in
Explanation: 2018 Explanation: 2018 Total 2019 Explanation: 2019 Explanation:	1WM002 Situation Preparedness in c (WMP) Initiative C One-sided adjustm Transfer Non-Labo Ops & Protocols to align costs where in Transfer Labor, FT 1WM007 Resource cost center 2100-3 Categories.	d Non-Labor as aal Awareness a ost center 2100 ategories. 0 nent to exclude 7 0 or associated w o Workpaper 1V they are reflecte 2,895 IEs, and Non-L e Allocation Me 3962 to align co 0 or associated w redness to Worl	sociated with En and Forecasting f 0-3962 to align co 819 related to E 869 4 ith Emergency P VM001 Emergen ed in the Wildfire 1,638 abor associated thodology to Wo sts where they a 0 ith Grid Design & spaper 1WM003	nergency Pla to Workpaper osts where th 0 vents and Tic 0 Planning & Pr o Planning & Pr o Planning & Pr o vith Emerge orkpaper 1WM ore reflected i 0 & System Ha Grid Design	nnning & Pre r 1WM001 E ney are reflect 0.0 ckets. 0.4 0.0 reparedness & Preparedr lan (WMP) I 16.7 ncy Planning M001 Emerg n the Wildfir 0.0 rdening from & System H	paredness from Workpaper Emergency Planning & cted in the Wildfire Mitigation Plan 1-Sided Adj CCTR Transf From 2100-3773.000 from Workpaper 1WM006 Grid ness in cost center 2100-3962 to nitiative Categories. CCTR Transf From 2100-4089.000 g & Preparedness from Workpaper ency Planning & Preparedness in e Mitigation Plan (WMP) Initiative

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>	Labor	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	Adj Type
Explanation:	One-sided adjustment to exclud	e \$1,394 related to	Events and	l Tickets.	
2019 Total	2,895	1,640	0	16.7	
2020	0	-328	0	0.0	1-Sided Adj
Explanation:	Incremental costs that are antici Memorandum Account (CEMA).		ted for reco	very through	n a non-GRC Catastrophic Event
2020	0	0	0	0.0	1-Sided Adj
Explanation:	Incremental costs that are antici Memorandum Account (CEMA).	• •	ted for reco	very through	n a non-GRC Catastrophic Event
2020	4,555	7,369	0	28.2	CCTR Transf From 2100-4089.000
Explanation:	1WM007 Resource Allocation N	lethodology to Wor	kpaper 1WN	M001 Emerg	g & Preparedness from Workpaper jency Planning & Preparedness in e Mitigation Plan (WMP) Initiative
2020	-4	0	0	-0.1	1-Sided Adj
Explanation:	Incremental costs that are antici Memorandum Account (CEMA).		ted for reco	very through	n a non-GRC Catastrophic Event
2020	0	174	0	0.0	CCTR Transf From 2100-0460.000
Explanation:	Transfer historical Noggin 2.0 co	osts from IT chapte	r to Emerge	ncy Planning	g & Preparedness chapter
2020	29	24	0	0.3	CCTR Transf From 2100-3073.000
Explanation:	Transfer historical Noggin 2.0 co	osts from IT chapte	r to Emerge	ncy Planning	g & Preparedness chapter
2020	0	196	0	0.0	CCTR Transf From 2100-3172.000
Explanation:	Transfer historical Noggin 2.0 co	osts from IT chapte	r to Emerge	ncy Planninę	g & Preparedness chapter
2020	0	0	0	-0.1	1-Sided Adj
Explanation:	Incremental costs that are antici Memorandum Account (CEMA).		ted for reco	very through	a non-GRC Catastrophic Event
2020	0	-7	0	0.0	1-Sided Adj
Explanation:	Incremental COVID-related cost Catastrophic Event Memorandu			uested for re	ecovery through a non-GRC
2020	0	-17	0	0.0	1-Sided Adj
Explanation:	Incremental COVID-related cost Catastrophic Event Memorandu			uested for re	ecovery through a non-GRC
2020	0	-1	0	0.0	1-Sided Adj
Explanation:	Incremental COVID-related cost Catastrophic Event Memorandu			uested for re	ecovery through a non-GRC
2020	0	0	0	0.0	1-Sided Adj

2024 GRC - SECOND REVISED ERRATA

Non-Shared Service Workpapers

Area: Witness: Category: Category-Sub: Workpaper:	WILDFIRE MITIGATION & Jonathan Woldemariam A. Emergency Planning & 1. Emergency Planning & 1WM001.000 - Emergenc	Preparedness Preparedness		iΤ		
Year	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	Adj Type	
Explanation:	Incremental COVID-related cost Catastrophic Event Memorandu			uested for r	ecovery through a non-GRC	
2020	0	-1	0	0.0	1-Sided Adj	
Explanation:	Incremental COVID-related cost Catastrophic Event Memorandu			uested for r	ecovery through a non-GRC	
2020	0	0	0	0.0	1-Sided Adj	
Explanation:	One-sided adjustment to exclud	e \$250 related to E	Events and T	ickets.		
2020 Total	4,579	7,408	0	28.3		
2021	0	-11	0	0.0	1-Sided Adj	
Explanation:	Incremental COVID-related cost Catastrophic Event Memorandu	-		uested for r	ecovery through a non-GRC	
2021	0	-21	0	0.0	1-Sided Adj	
Explanation:	Incremental COVID-related cost Catastrophic Event Memorandu			uested for r	ecovery through a non-GRC	
2021	0	-2	0	0.0	1-Sided Adj	
Explanation:	Incremental COVID-related cost Catastrophic Event Memorandu	-		uested for r	ecovery through a non-GRC	
2021	0	-1	0	0.0	1-Sided Adj	
Explanation:	Incremental COVID-related cost Catastrophic Event Memorandu			uested for r	ecovery through a non-GRC	
2021	0	-25	0	0.0	1-Sided Adj	
Explanation:	Incremental COVID-related cost Catastrophic Event Memorandu	-		uested for r	ecovery through a non-GRC	
2021	0	-2	0	0.0	1-Sided Adj	
Explanation:	One-sided adjustment to exclud	e \$2121 related to	Events and	Tickets.		

Note: Totals may include rounding differences.

0

-62

0

0.0

2021 Total

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:A. Emergency Planning & PreparednessCategory-Sub:1. Emergency Planning & PreparednessWorkpaper: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)

					202	4
	2021 Historical	2022	2023	2024	RAMP F	Range
	Embedded Cost	Forecast	Forecast	Forecast	(2020 Inc	urred \$)
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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	<u>Estimates</u>					
Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RA Range Act	
Measure	Activities	Activities	Activities	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.

<u>Risk Spend Efficiency (RSE)</u>			
	GRC RSE	RAMP RSE	
Tranche 1	0.000	0.000	
•	r RSE values are primarily due to changes ; integration testimony of R. Scott Pearson		

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

Supplemental Workpapers for Workpaper 1WM001.000

Wildfire Mitigation O&M - Forecast Adjustments

-								T	2022			2023	1		2024		-	
					Unit Metric													
Line Item	WMP Initiative/Description	Labor/Non-Labor	RAMP/Non-RAM	P Unit Description	(ea./ft./mile)	Position Title	WMP%	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	Total Cost	Explanation artnership with the Department of Energy, Pacific Science& Engineering, and SDG&E to include human factor
	Human Factor Engineering	Non-Labor	RAMP	Contractor Hrs	Hrs												e	ngineering in the PSPS decision-making process. Program is expected to expand to include other projects with EDO,
1							100%	1,440	\$ 264	\$ 252,512	1,440	\$ 277 \$	398,488		\$		\$ 651,000 E	RO, and GRID. Requires contract with PSE.
	Human Factor Engineering	Labor	RAMP	FTE	FTE	Human Factors Engineering Scientist	58%		\$ 764			\$ 277 \$			\$ 200,000 \$	116,000	\$ 116.000 E	mployee for Human Factors Engineering Scientist to support Human Factor Engineering beginning in 2024.
						Human Pactors Engineering sciencist	26%		⇒ 204	\$.	· ·	\$ 2/7 \$		1	5 200,000 \$	116,000		4/7 Watch Desk Supervisor (ST3) - Bottom-line operations, scheduling, performance management, and
	24/7 Watch Command Desk	Labor	RAMP	FTE's	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 c	oordination of Analyst group. Assumes hire date 6/2022
																	S	ix 24/7 Watch Desk Analyst (SA3) - Perform real-time assessments of risk impacts to SDG&E's assets, customers, an
	24/7 Watch Command Desk	Labor	RAMP	FTE's	FTE	24/7 Watch Deck Analyst	58%		\$ 78.250			\$ 78 250 \$	136 155		\$ 78 250 \$	272,310	e	mployees. Provide advanced situational awareness reporting to aid informed decision-making and planning. sources hire date 2023
-	24/7 Watch Command Desk	Non-Labor	RAMP	Equipment Costs, Training, Conferences, General	general	24/7 Watch Desk Analyst	58%	0	\$ 330,000	\$ 82,500	3	\$ 78,250 \$ \$ 330,000 \$	136,155	6	\$ 330,000 \$	2/2,310		ssumes nire date 2023 00k in RAMP in labor/non-labor. Assumes start date 9/2022
	Emergency Operations Services	Labor	RAMP	FTE	FTE	Emergency Planning Program Analyst	58%		0	\$ -	0	0 \$	-	1	96,650 \$	56,057		locumentation maintenance, outreach coordination, overall support to the planning program.
6	Emergency Operations Services	Labor	RAMP	FTE	FTE	Emergency Planning Strategic Lead	58%	0	0	\$ -	1	111,250 \$	64,525	1	111,250 \$	64,525	\$ 129,050	levelop & maintain emergency plans, policies, and procedures.
	Emergency Operations Services	Non-Labor	RAMP	Contractor			58%		\$111,357	\$ 258.348		\$111.357 \$			\$111.357 \$	193.761		1) Emergency Services Program Coordinator, (2) Business Analyst, (1) Emergency Planning Specilaist. All performing
		Non-Labor	KAMP	Contractor	eacn		58%	-	\$111,357	\$ 258,348	3	\$111,357 \$	193,761	3	\$111,357 \$	193,761	5 645,8/1	unctions 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	0 \$		\$ 104.400 T	echnical writer to produce plans, policy, and procedure related documentation. Assume hire date of 6/2022
																	0	Ine (AD2) to advance ICS principles in support of the Utility Field Commander and other on-scene operational crews
	OFER - FROP																	nd personnel. Formalize deployable resources and roles to support the overall safety and scene management
9		Labor	RAMP	FTE	FTE	Sr Emergency Readiness Program Advisor	58%	0	0	\$-	1	120,000 \$	69,600	1	120,000 \$	69,600		etween SDG&E and first responder agencies for all risk responses.
1	OFER- AAR	1	1		1			Ì										Ine (SAS) to draft improvement plans and after-action review reports of outcomes, capabilities, and progress to irectors and managers to support the continuous quality assurance and imporvement process of all emergency
10		Labor	RAMP	FTE	FTE	Emergency Readiness Program Analyst	58%		śn	s -	1	\$96,650 \$	56.057	1	\$96.650 \$	56,057		rectors and managers to support the continuous quality assurance and imporvement process of all emergency icidents and events.
11	OFER- AAR	Non-Labor	RAMP	AAR Specialist and OFER Advisor Contractor	Contractor		58%	2	\$255,000	\$ 295,800		\$255,000 \$		0	\$255,000 \$			1) Emergency Readiness Program Specialst, (1) Emergency Readiness Program Advisor
								1								-	c	Ine (AD2) to bottom-line operations, scheduling, and coordination with other stakeholder groups to maintain the
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		On the Rocks" Aviation Training facility and complete ASD projects
	UAS Expansion	Labor	RAMP	FTF		Aviation Specialist (SA3)	90%		\$78.250			\$78,250 \$			\$78.250 \$	140.850		ix (SA3) resources to utilize UAS technology to conduct a variety of missions to increase system knowledge and Ituational awareness of the structures, improving the electric system reliability.
	Aviation Training Center		RAMP	Figure Facility maintenance	ric	Aviation specialist (SAS)	90%	1	\$50,000	\$ 45,000	1	\$50,000 \$	45,000		\$50,000 \$	45,000		In the Rocks Facility management
	Aviation (ASD)		RAMP	Contractors	each		90%		\$100,848		1	\$100,848 \$	90,763	1	\$100,848 \$	90,763		viation contractor for facility maintenance and repairs.
	Aviation (ASD)	Non-Labor	RAMP	Contractors	each		90%		\$50,000	\$ 45,000	1	\$50,000 \$	45,000	1	\$50,000 \$	45,000		viation contractor for facility maintenance and repairs.
	Aviation (ASD)	Non-Labor	RAMP	Contractors	each		90%		\$40,000	\$ 36,000	1	\$40,000 \$	36,000	1	\$40,000 \$	36,000		viation contractor for facility maintenance and repairs.
	UAS Expansion UAS Expansion	Non-Labor Non-Labor	RAMP	Conferences R&D / visits to a demo	total		90%	1	\$10,000 \$10.000	\$ 9,000 \$ 9,000	1	\$10,000 \$ \$10,000 \$	9,000	1	\$10,000 \$ \$10,000 \$	9,000	\$ 27,000 5	5000 per person per conference. 2 conferences per year. 2500 per visit and 2 people per visit. 2 demos per year
	UAS Expansion		RAMP	Engineering support	total		90%		\$10,000		1	\$21,000 \$	18,900	1	\$21,000 \$	18,900		zoo per visit and 2 people per visit. 2 demos per year ingineering support
	UAS Expansion	Non-Labor	RAMP	New UAS and Sensors	total		90%		\$150,000	\$ 135,000	1	\$150,000 \$	135,000	1	\$150,000 \$	135,000		lew UAS and Sensors
	UAS Expansion	Non-Labor	RAMP	Flight planning subscription service	total		90%	1	\$5,000	\$ 4,500	1	\$5,000 \$	4,500	1	\$5,000 \$	4,500	\$ 13,500 F	light planning subscription service.
25	IR Cameras	Non-Labor	RAMP	Maintenance	general		90%		\$300,000	\$ 270,000	1	\$300,000 \$	270,000	1	\$300,000 \$	270,000		eneral maintenance of IR cameras
30	UAS Expansion	Non-Labor	RAMP	Maintenance	general		90%	1	\$30,000	\$ 27,000	1	\$30,000 \$	27,000	1	\$30,000 \$	27,000		ieneral maintenance of UAS Ine (PM2) resource to launch a companywide initiative to standardize and expand the implementation of ICS
31	ICS Implementation Initiative	Labor	RAMP	FTE	FTF	ICS Implementation Program Manager	58%	1	130,000	\$ 37,700	1	130,000 s	75,400	1	130,000 s	75,400		rinciples so all field workgroups will be unified under one response structure
									111,250			111,250			111,250			wo (AD2) resources to formalize position-specific training and certification, and define ICS capabilities with a utility-
33	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 b	ased focus
	ICS Implementation Initiative & Training &	Non-Labor	PAMP				59%		140,000	\$ 81,200		140,000			140,000	162.400		
33	Exercise	Non-Labor	RAMP	Training Vendors	total		58%	1		\$ 81,200	1	\$	81,200	2	\$	162,400		iontract agency training to meet state mandates for PSPS/EDC requirements. Ine (AD2) resource to manage Emergency Management training and exercise program based on an HSEEP
34	Training & Exercise	Labor	RAMP	FTF	FTF	Training & Exercise Advisor	58%	1	111,250	\$ 32,263	1	111,250 s	64,525	1	111,250 s	64,525		ompetency-based approach to focus on utility-specific outcomes and learning
												78.250			78.250			wo (SA3) resources to develop and implement training and exercises to improve SDG&E's utility-focused ICS
39	Training & Exercise	Labor	RAMP	FTE	FTE	Training & Exercise Specialist	58%	. 0	, v	ş -	1	\$	45,385	1	\$	45,385	\$ 90,770 c	
	Training & Exercise Training & Exercise	Non-Labor Non-Labor	RAMP	Contractor	Each		58%	1	\$156,000	\$ 90,480 \$ 90,480	0	\$156,000 \$ \$156,000 \$	156.000	0	\$156,000 \$ \$156,000 \$	156.000	\$ 90,480 0	ontractor to assist with training and exercies scheduling and implementation. ontractor to assist with training and exercies scheduling and implementation.
31								1		*	1		156,000	1	,	156,000		ontractor to assist with training and exercises scheduling and implementation. Iraft company-wide ICS documentation, define response capabilities, and formalize position specific training and
38	ICS Implementation Initiative	Non-Labor	RAM	IP Contract	tor Each		58%	1	\$110,000	\$ 63,800	0	\$110,000 \$		0	\$110,000 \$			equirements.
		1						1									T	wo (SA3) resources to maintain, oversee and upgrade all EOC technical equipment, including audio visual
39	Information Technology Services	Labor	RAMP	FTE	FTE	Emrgcy Mgmt Techlgy Analyst	58%	1	\$80,000	\$ 23,200	1	\$80,000 \$	46,400	2	\$80,000 \$	92,800		quipment, computers, network infrastructure, and communications tools
	Information Technology Services Information Technology Services	Non-Labor Non-Labor	RAMP	Contractor Contractor	each each		100%		260,000		1	260,000 \$ 172,640 \$	162,000	0	260,000 \$ 172,640 \$	100,131		usiness Systems Analyst. \$260k based on \$125/hr rate x 2080 hours dditional contractor needs for wildfire climate resiliency center in 2023 & 2024
41	Primary EDC		RAMP	Contractor Control Station Equipment (RSP)	Total		58%	2	1/2,640 \$3.000	\$ - \$ 3.480	1	1/2,640 \$	100,131	1	1/2,640 \$	100,131	5 200,262 4	aditional contractor needs for widtire climate resiliency center in 2023 & 2024 ontrol station for EOC. Display and powerful workstation
	Primary EOC	Non-Labor	RAMP	EOC Responder Headsets	Total		58%		\$250		4	\$250 \$	580	4	\$250 \$	580		lew headsets for EOC responders
44	Primary EOC	Non-Labor	RAMP	EOC Display Stations	each		58%	5	\$1,000	\$ 2,900	0	0 \$		1	\$1,000 \$	580	\$ 3,480	lew display stations for EOC
46	Primary EOC	Non-Labor	RAMP	Sat Phones	each		58%	13	\$7,800	\$ 58,812	5	\$7,800 \$	22,620	5	\$7,800 \$	22,620	\$ 104,052 5	at Phones: 3 in the backup EOC. 4 in the EOC. 6 in the eMCT – \$650 a month or \$7800 a Year.
	Primary EOC Primary EOC	Non-Labor Non-Labor	RAMP	DirecTV Receivers 800Mbz Radio	each		58%	37	\$6,930	\$ 148,718 \$ 522	0	\$ 02 \$ 000	522	0	\$0 \$ \$900 \$	522		lirecTV Receivers: 20 in CP, 15 in RB, 2 in eMCT - 577.50 a month or 6930 a year 00Mhz Radio – 1 radio 75.00 a month 900 a year.
	Primary EOC Primary EOC	Non-Labor	RAMP	Cox Communications	each		58%	1	\$7,200		1	\$7,200 \$	4.176	1	\$7,200 \$	4.176		DX Communications – 600 a month or 7200 a year.
	Information Technology Services	Non-Labor	RAMP	Equipment to support new FTEs			58%		\$5,200	\$ 18,096	7	\$5,200 \$	21,112	8	\$5,200 \$	24,128		quipment for new FTEs. Computers and associated equipment.
51	NEW EIC EOC		RAMP	Workstation equip	each		58%	50	\$ 2,438			ş . ş	-		s - \$	-	\$ 70,690	lew EIC EOC workstation equipment
52	Virtual EOC	non-Labor	RAMP	EOC Responder work from home	each		58%	120	1,287	\$ 89,609	120	1,287 \$	89,609	120	1,287 \$	89,609	\$ 268,826	Irtual EDC responder equipment
Summaria	1	1	1	1	-1			l	I	\$.		\$			\$		s .	
-ammary				Labor	RAMP					\$ 204.488		s	780.697		s	1.276.159	s -	
				Non-Labor	RAMP			1		\$ 2,505,466		ŝ	2,181,362		ŝ	1,636,070	\$ -	
				Subtotal RAMP						\$ 2,709,954		\$	2,962,059		\$	2,912,229	\$ -	
1				Labor	Non-RAMP			Ì		s -		s			\$		s -	
				Non-Labor	Non-RAMP			1		\$ -		ŝ			ŝ		s -	
1				Subtotal Non-RAMP				Ì		\$-		\$			\$	-	\$-	
				Total Historical Adjustments						\$ 2,709,954		\$	2,962,059		\$	2,912,229	s -	

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) Incu	urred 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
Total	2,994	3,469	3,728	3,877
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
Total	2,994	3,469	3,728	3,877
FTE	9.1	10.1	11.0	11.6

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

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:

[ln 2021\$ (00	0) Incurred (Costs		
		Adju	isted-Recor	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
Total	923	1,720	2,672	3,768	2,994	3,470	3,729	3,878
FTE	2.5	2.4	9.1	8.5	9.1	10.1	11.0	11.6

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

Summary of Adjustments to Forecast:

			In 202	1 \$(000) Ir	ncurred Co	sts				
Forecast	t Method	Ba	se Foreca	st	Forec	ast Adjust	ments	Adjus	ted-Forec	ast
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
Tota	I	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>	Labor	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	Adj Type
2022	93	287	0	380	1.0	1-Sided Adj
Explanation:	Increased forecast prime event increases. See supplemental work				aptation depart	ment and fire weather
2022	0	95	0	95	0.0	1-Sided Adj
Explanation:	Forecast for Wildfire Sm	oke Particulate	s under RAM	1P Risk 8 Inci	dents Involving	Employee.
2022 Total	93	382	0	475	1.0	
2023	194	409	0	603	1.9	1-Sided Adj
Explanation:	Increased forecast prime event increases. See supplemental work				aptation depart	ment and fire weather
2023	0	131	0	131	0.0	1-Sided Adj
Explanation:	Forecast for Wildfire Sm	oke Particulate	s under RAM	1P Risk 8 Inci	dents Involving	Employee.
2023 Total	194	540	0	734	1.9	
2024	249	534	0	783	2.5	1-Sided Adj
Explanation:	Increased forecast prime event increases. See supplemental work				aptation depart	ment and fire weather
2024	0	100	0	100	0.0	1-Sided Adj
Explanation:	Forecast for Wildfire Sm	oke Particulate	s under RAM	1P Risk 8 Inci	dents Involving	Employee.
2024 Total	249	634	0	883	2.5	

Note: Totals may include rounding differences. SDG&E/WILDFIRE MITIGATION & VEGETATION MANAGEMENT/Exh No:SDG&E-13-WP-2R-E/Witness: J. Woldemariam Page 19 of 165

2024 GRC - SECOND REVISED ERRATA

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

Determination of Adjusted-Recorded (Incurred Costs):

,,	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
ecorded (Nominal \$)*					
Labor	206	223	272	-14	871
Non-Labor	576	2,370	367	1,179	2,001
NSE	0	0	0	0	0
Total	782	2,593	639	1,165	2,872
FTE	2.1	2.2	2.3	-0.1	7.7
djustments (Nominal \$) *	*				
Labor	0	-4	649	867	0
Non-Labor	0	-1,064	1,076	1,375	-9
NSE	0	0	0	0	0
Total	0	-1,068	1,724	2,243	-9
FTE	0.0	-0.2	5.5	7.4	0.0
ecorded-Adjusted (Nomin	nal \$)				
Labor	206	219	920	853	871
Non-Labor	576	1,307	1,443	2,554	1,992
NSE	0	0	0	0	0
Total	782	1,526	2,363	3,407	2,863
FTE	2.1	2.0	7.8	7.3	7.8
acation & Sick (Nominal S	\$)				
Labor	31	33	132	121	131
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	31	33	132	121	131
FTE	0.4	0.4	1.3	1.2	1.3
scalation to 2021\$					
Labor	27	22	61	31	0
Non-Labor	83	139	115	209	0
NSE	0	0	0	0	0
Total	111	161	177	240	0
FTE	0.0	0.0	0.0	0.0	0.0
ecorded-Adjusted (Const	tant 2021\$)				
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
Total	923	1,720	2,672	3,768	2,994
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

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

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					
	Total –	0	-1,068	1,724	2,243	-9					
FTE		0.0	-0.2	5.5	7.4	0.0					

Detail of Adjustments to Recorded:

Year	Labo	<u>r NL</u>	.br <u>NSE</u>	<u>FTI</u>	E	Adj Type				
2017 Total	C	1	0 0	0.	0					
2018	C	-1	9 0	0.	0 1-Side	ed Adj				
Explanation:	Incremental costs that are Memorandum Account (Cl	•	e requested for	recovery th	rough a non-GF	C Catastrophic Event				
2018	-2	-95	55 0	-0.	1 CCTR	Transf To 2100-3962.000				
Explanation:	Transfer Labor and Non-L 1WM002 Situational Awar Preparedness in cost cent (WMP) Initiative Categorie	eness and Fored er 2100-3962 to	casting to Work	baper 1WM	1001 Emergency	Planning &				
2018	-2	-9	0 0	-0.	1 CCTR	Transf To 2100-3962.000				
Explanation:	ion: 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 Total	-4	-1,06	64 0	-0.2	2					
2019	C		-1 0	0.0	0 1-Side	ed Adj				
Explanation:	One-sided adjustment to e	xclude \$1,130 r	elated to Events	s and Ticke	ts.					
2019	649	1,07	7 0	5.	5 CCTR	Transf From 2100-4089.000				
Explanation:	Transfer Labor, FTEs, and Workpaper 1WM007 Resc and Forecasting in cost ce Plan (WMP) Initiative Cate	ource Allocation nter 2100-3963	Methodology to	Workpape	r 1WM002.000 \$	Situational Awareness				
2019 Total	649	1,07	76 0	5.	5					
2020	C	-1,08	30 0	0.0	0 1-Side	ed Adj				

2024 GRC - SECOND REVISED ERRATA

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

Year	Labor	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	Adj Type				
Explanation:	Incremental costs that are anticip Memorandum Account (CEMA).	ated to be reque	sted for reco	very through	a non-GRC Catastrophic Event				
2020	-1	0	0	-0.1	1-Sided Adj				
Explanation:	Incremental costs that are anticip Memorandum Account (CEMA).	ated to be reque	sted for reco	very through	a non-GRC Catastrophic Event				
2020	0	-1	0	0.0	1-Sided Adj				
Explanation:	Incremental COVID-related costs Catastrophic Event Memorandun		-	uested for re	ecovery through a non-GRC				
2020	868	2,552	0	7.5	CCTR Transf From 2100-4089.000				
Explanation:	Transfer Labor, FTEs, and Non-L Workpaper 1WM007 Resource A and Forecasting in cost center 21 Plan (WMP) Initiative Categories	llocation Method 00-3963 to align	ology to Worl	kpaper 1WM	1002.000 Situational Awareness				
2020	0	-1	0	0.0	1-Sided Adj				
Explanation:	Incremental COVID-related costs Catastrophic Event Memorandun	-	-	uested for re	ecovery through a non-GRC				
2020	0	-65	0	0.0	1-Sided Adj				
Explanation:	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				
Explanation:	Incremental COVID-related costs Catastrophic Event Memorandun		-	uested for re	ecovery through a non-GRC				
2020 Total	867	1,375	0	7.4					
2021	0	-1	0	0.0	1-Sided Adj				
Explanation:	Incremental COVID-related costs Catastrophic Event Memorandum	-	-	uested for re	ecovery through a non-GRC				
2021	0	-1	0	0.0	1-Sided Adj				
Explanation:	Incremental COVID-related costs Catastrophic Event Memorandum		-	uested for re	ecovery through a non-GRC				
2021	0	-1	0	0.0	1-Sided Adj				
Explanation:	Incremental COVID-related costs Catastrophic Event Memorandum		-	uested for re	ecovery through a non-GRC				
2021	0	-6	0	0.0	1-Sided Adj				
Explanation:	Incremental COVID-related costs Catastrophic Event Memorandum			uested for re	ecovery through a non-GRC				
	0	-9	0	0.0					

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:B. Situational Awareness and ForecastingCategory-Sub:1. Situational Awareness and ForecastingWorkpaper: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)

					2024			
	2021 Historical	2022	2023	2024	RAMP R	ange		
	Embedded Cost	Forecast Forecast		Forecast	(2020 Inc	urred \$)		
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP Range Activities				
Measure	Activities	Activities	Activities	Activities	Low	High			
Tranche 1 Creates weather	0.00	0.00	0.00	0.00	0.00	0.00			

forecasts including FPI

forecasts.

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 i	n the MAVF and RSE methodology as	
discussed in the RAMP to GRC in	tegration testimony of R. Scott Pearson an	d Gregory S. Flores (Ex.	
SCG-03/SDG&E-03, Chapter 2)			

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:B. Situational Awareness and ForecastingCategory-Sub:1. Situational Awareness and ForecastingWorkpaper: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)

					2024	1
	2021 Historical	2022	2023	2024	RAMP R	ange
	Embedded Cost	Forecast	Forecast	Forecast	(2020 Inci	urred \$)
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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.

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

	GRC RSE	RAMP RSE
Tranche 1	59.000	500.000

SCG-03/SDG&E-03, Chapter 2)

Supplemental Workpapers for Workpaper 1WM002.000

Wildfire Mitigation O&M - Forecast Adjustments

							н	eadcount			2022		1		20	023		2	024			
Line Item Workpape	er Cost Center	WMP Initiative/Description	Labor/Non-Labor	RAMP/Non- RAMP	Unit Description	Unit Metric (ea./ft./mile)		Positio O&M, n Title apita		ts Co	ost per unit	Total cost	# of units	Cost	per unit	Total cost	# of units	Cost per	unit	Total cost	Total Cost	Explanation (External - Text to be entered in GRID)
1WM002.00	0 2100-3761	Ignition Mgt Program (IMP) Fire Coordinator	Labor	RAMP	FTE's	FTE		58	3%	1 \$	115,000	\$ 44,46	7 1	1 \$	115,000	\$ 66,700		1 \$ 115	6,000 \$	66,700	\$ 177,86	
1WM002.00 2	0 2100-4056	Climate Education Specialist (WF Resilience Project Advisor)	Labor	RAMP	FTE's	FTE		54	3%	1 \$	125,000	\$ 48,33	3 1	1\$	125,000	\$ 72,500		1 \$ 125	6,000 \$	72,500	\$ 193,33	1 Climate Education Specialist expected hire April 2022 (8/12 months) 2022, 58% to WMP & 42% to transmission 3 O&M
1WM002.00 3	0 2100-4056	Communtiy Resilience & Engagement FTE's	Labor	RAMP	FTE's	FTE		58	3% -	- \$	-	\$-	1	1 \$	95,000	\$ 55,100		2 \$ 95	i,000 \$; 110,200	\$ 165,30	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 1WM002.00	0 2100-4055	New Hire Non-Labor	Non-Labor	RAMP				58	3%	3\$	5,000	\$ 8,70) 1	1\$	5,000	\$ 2,900			ş		\$ 11,60	
1WM002.00	0 2100-3761	Training for Fire Coorindation	Non-Labor	RAMP				58	3%	1 \$	100,000	\$ 58,00) 1	1\$	100,000	\$ 58,000		1 \$ 100	0,000 \$	58,000	\$ 174,00	Non-Labor costs for contract training for fire coordination personnel.
6 1WM002.00	0 2100-4056	Mobile Command Trailer	Non-Labor	RAMP				51	3%	3\$	60,000	\$ 104,40) :	3\$	60,000	\$ 104,400		3 \$ 60	0,000 \$	104,400	\$ 313,20	Mobile Command Trailers to serve as field headquarters 0 during wildfire or other emergency.
1WM002.00 7	0 2100-3963	Meteorology Increased O&M for Vendors	Non-Labor	RAMP				54	3%	1\$	200,000	\$ 116,00		1\$	420,000	\$ 243,600		1 \$ 640	0,000 \$	371,200	\$ 730,80	Increase In vendor costs for meteorology. Enhancements being made to data management including weather stations, cameras, and AI Smoke detection. 0
1WM002.00 8	0 TBD	Wildfire Smoke Particulates		RAMP				10	3%	6\$	15,900	\$ 95,40	0 17	7 \$	7,729	\$ 131,400	1	7 \$ 5	i,906 \$	100,400		RAMP item for wildfire smoke particulate sensors; cost estiamtes include \$69k/yr maintenance + IT and environmental support for up to 17 sensors each year.
12												\$-				\$ -			\$	-		
16 10												\$-		_		\$ -		-	\$	-	ş -	
Summary					1										l							
,						RAMP						\$ 92,80	2			\$ 194,300			s	249,400	\$ 536,50	
					Non-Labor Subtotal RAMP	RAMP			_			\$ 287,10 \$ 379.90	1			\$ 408,900 \$ 603.200			\$	533,600	\$ 1,229,60 \$ 1,766,10	
					Labor	Non-RAMP Non-RAMP						\$ - \$ -				\$ - \$			ş	-	\$ -	~
					Subtotal Non-RAMP	inverties with						\$ -				\$ -			\$	-	\$ -	1
					Total Historical Adjus	tments						\$ 379,90	0			\$ 603,200			\$	783,000	\$ 1,766,10	D

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:C. Grid Design & System HardeningWorkpaper:1WM003.000

Summary for Category: C. Grid Design & System Hardening

	In 2021\$ (000) Incurred Costs						
	Adjusted-Recorded	Adjusted-Forecast					
	2021	2022	2023	2024			
Labor	821	911	904	687			
Non-Labor	25,221	26,219	28,522	24,711			
NSE	0	0	0	0			
Total	26,042	27,130	29,426	25,398			
FTE	6.5	7.4	7.3	5.1			

Workpapers belonging to this Category:

1WM003.000 Grid Design	& Syster	n Hardening
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Labor	821	911	904	687
Non-Labor	25,221	26,219	28,522	24,711
NSE	0	0	0	0
Total	26,042	27,130	29,426	25,398
FTE	6.5	7.4	7.3	5.1
	,	,		-

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

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

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	26,218	28,521	24,710
NSE	0	0	0	0	0	0	0	0
Total	3,378	3,617	3,403	14,523	26,041	27,128	29,424	25,396
FTE	0.5	0.5	1.8	3.7	6.5	7.4	7.3	5.1

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

Summary of Adjustments to Forecast:

In 2021 \$(000) Incurred Costs										
Forecast	t Method	Bas	Base Forecast		Forecast Adjustments			Adjusted-Forecast		
Years	6	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	998	3,301	-510	26,219	28,522	24,711
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Tota	I	26,041	26,041	26,041	1,088	3,384	-644	27,129	29,425	25,397
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>	Adj Type			
2022	36	636	0	672	0.4	1-Sided Adj			
Explanation:	Increased forecast for H	Increased forecast for Hotline Clamp program to align forecast with filed WMP 2022 plan.							
2022	0	231	0	231	0.0	1-Sided Adj			
Explanation:	•	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	1,170	0	1,170	0.0	1-Sided Adj			
Explanation:	Increased forecast for V	VMP O&M rela	ted to Strateg	ic Undergrou	ınding.				
2022	0	252	0	252	0.0	1-Sided Adj			
Explanation:	Increased forecast for V	VMP O&M rela	ted to Covere	d Conductor	based on 1% o	f capital forecast.			
2022	0	-2,992	0	-2,992	0.0	1-Sided Adj			
Explanation:	Increased forecast for N backup battery units an			2	0	ed forecasts for			
2022	0	1,416	0	1,416	0.0	1-Sided Adj			
Explanation:	Increased forecast for V WMP 2022 plan.	VMP O&M rela	ated to Standb	y Power Pro	grams and aligr	ment with the filed			
2022	214	870	0	1,084	2.1	1-Sided Adj			
Explanation:	Increased forecast for V filed WMP 2022 plan.	VMP O&M rela	ated to Resilie	ncy Assistand	ce Program and	alignment with the			
2022	0	115	0	115	0.0	1-Sided Adj			
Explanation:	Increased forecast for N	Aicrogrid O&M	program to al	ign forecast v	with filed WMP	2022 plan.			
2022	0	1,467	0	1,467	0.0	1-Sided Adj			
Explanation:	WMP O&M forecast for decommissioning of roa					Project. Includes			
2022	0	202	0	202	0.0	1-Sided Adj			

Note: Totals may include rounding differences. SDG&E/WILDFIRE MITIGATION & VEGETATION MANAGEMENT/Exh No:SDG&E-13-WP-2R-E/Witness: J. Woldemariam Page 30 of 165

2024 GRC - SECOND REVISED ERRATA

Non-Shared Service Workpapers

Area:	WILDFIRE MITIG	ATION & VEGE		NAGEMENT			
Witness:	Jonathan Woldemariam						
Category:	C. Grid Design & System Hardening						
Category-Sub:	1. Grid Design & S	System Hardeni	ng				
Workpaper:	1WM003.000 - Gr	id Design & Sys	stem Hardeni	ng			
Year	Labor	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	Adj_Type	
Explanation:	Cost estimates for Cle O&M Cost -Recovery & \$1,757,680 over 5 yea with the Agency. (2) C based upon past CNF programmatic agreem obtained for the CNF F Transmission and excl	Agreement: The rs = \$351,536. NF O&M Plan Ir projects. (3) CN ents (PA) for O& PLRP project. 36	e annual esti The cost rec nplementatic IF O&M Prog M to minimi 3% of total co	mate is based u overy agreeme on (\$105k in 202 grammatic Agre ze agency revie	upon the total ent is subject to 22): Costs for ement (\$75k ew timeframes	project cost of o further negotiation estimated mitigation n 2022): New similar to what was	
2022 Explanation:	-160 Reduced forecasts for	-2,369 OH Dist Fire Ha	0 ardening Ba	-2,529 re Conductor.	-1.6	1-Sided Adj	
2022 Total	90	998	0	1,088	0.9		
2023	36	636	0	672	0.4	1-Sided Adj	
Explanation:	Increased forecast for	Hotline Clamp	program to al	ign forecast wit	h filed WMP 2	2022 plan.	
2023	-167	-2,486	0	-2,653	-1.7	1-Sided Adj	
Explanation:	Reduced forecasts for	OH Dist Fire Ha	ardening Ba	re Conductor.			
2023	0	1,731	0	1,731	0.0	1-Sided Adj	
Explanation:	Increased forecast for forecast.	WMP O&M rel	ated to Strate	egic Undergrou	nding based c	n 1% of total capital	
2023	0	159	0	159	0.0	1-Sided Adj	
Explanation:	Increased forecast in 2 forecast.	2023 for WMP C	0&M related t	o Covered Con	ductor based	on 1% of capital	
2023	0	-745	0	-745	0.0	1-Sided Adj	
Explanation:	Increased forecast for backup battery units a					ed forecasts for	
2023	0	1,416	0	1,416	0.0	1-Sided Adj	
Explanation:	Increased forecast for WMP 2022 plan.	WMP O&M rela	ited to Stand	by Power Progr	rams and aligi	nment with the filed	
2023	214	870	0	1,084	2.1	1-Sided Adj	
Explanation:	Increased forecast for filed WMP 2022 plan.	WMP O&M rela	ted to Resilie	ency Assistance	e Program and	d alignment with the	
2023	0	115	0	115	0.0	1-Sided Adj	
Explanation:	Increased forecast for	Microgrid O&M	program to a	lign forecast wi	ith filed WMP	2022 plan.	
2023	0	1,467	0	1,467	0.0	1-Sided Adj	
Explanation:	WMP O&M forecast for decommissioning of ro					-	
2023	0	134	0	134	0.0	1-Sided Adj	

Note: Totals may include rounding differences. SDG&E/WILDFIRE MITIGATION & VEGETATION MANAGEMENT/Exh No:SDG&E-13-WP-2R-E/Witness: J. Woldemariam Page 31 of 165

2024 GRC - SECOND REVISED ERRATA

Non-Shared Service Workpapers

Area:	WILDFIRE MITIO	ATION & VEGE		NAGEMENT		
Witness:	Jonathan Woldemariam					
Category:	C. Grid Design & System Hardening					
Category-Sub:	1. Grid Design &	System Hardeni	ng			
Workpaper:	1WM003.000 - G	rid Design & Sys	tem Hardeni	ng		
Year	Labor	<u>NLbr</u>	NSE	Total	FTE	Adj_Type
Explanation:	Cost estimates for Cle O&M Cost -Recovery \$1,757,680 over 5 yea with the Agency. (2) C based upon past CNF programmatic agreem obtained for the CNF Transmission and exc	Agreement: The ars = \$351,536. CNF O&M Plan Ir projects. (3) CN eents (PA) for O& PLRP project. 38	e annual esti The cost rec nplementatic IF O&M Prog M to minimiz 3% of total co	mate is based to overy agreeme n (\$105k in 200 grammatic Agre ze agency revie	upon the total ent is subject to 22): Costs for ement (\$75k i ew timeframes	project cost of o further negotiation estimated mitigation n 2022): New similar to what was
2023	0	4	0	4	0.0	1-Sided Adj
Explanation:	BLM Land Manageme O&M), 29% Transmis		-		o of total costs	are distribution (WMP
2023 Total	83	3,301	0	3,384	0.8	
2024	-180	-3,104	0	-3,284	-1.8	1-Sided Adj
Explanation:	Decreased forecast for	or Hotline Clamp	program to a	align forecast w	ith filed WMP	2022 plan.
2024	-168	-2,491	0	-2,659	-1.7	1-Sided Adj
Evolonetion						
Explanation:	Reduced forecasts for	r OH Dist Fire Ha	ardening Ba	re Conductor		
2024	Reduced forecasts for 0	r OH Dist Fire Ha 2,831	ardening Ba 0	re Conductor 2,831	0.0	1-Sided Adj
-		2,831	0	2,831		•
2024	0 Increased forecast fo	2,831	0	2,831		•
2024 Explanation:	0 Increased forecast fo forecast.	2,831 r WMP O&M rela 58	0 ated to Strate 0	2,831 egic Undergrou 58	nding based o 0.0	n 1% of total capital 1-Sided Adj
2024 Explanation: 2024	0 Increased forecast fo forecast. 0 Increased forecast in	2,831 r WMP O&M rela 58	0 ated to Strate 0	2,831 egic Undergrou 58	nding based o 0.0	n 1% of total capital 1-Sided Adj
2024 Explanation: 2024 Explanation:	0 Increased forecast for forecast. 0 Increased forecast in forecast.	2,831 r WMP O&M rela 58 2024 for WMP C -342 r WMP O&M rela	0 ated to Strate 0 0&M related t 0 ted to Resilie	2,831 egic Undergrou 58 o Covered Cor -342 ency Grant Pro	nding based o 0.0 iductor based 0.0 grams increas	n 1% of total capital 1-Sided Adj on 1% of capital 1-Sided Adj
2024 Explanation: 2024 Explanation: 2024	0 Increased forecast for forecast. 0 Increased forecast in forecast. 0 Increased forecast for	2,831 r WMP O&M rela 58 2024 for WMP C -342 r WMP O&M rela	0 ated to Strate 0 0&M related t 0 ted to Resilie	2,831 egic Undergrou 58 o Covered Cor -342 ency Grant Pro	nding based o 0.0 iductor based 0.0 grams increas	n 1% of total capital 1-Sided Adj on 1% of capital 1-Sided Adj
2024 Explanation: 2024 Explanation: 2024 Explanation:	0 Increased forecast for forecast. 0 Increased forecast in forecast. 0 Increased forecast for backup battery units a	2,831 r WMP O&M rela 58 2024 for WMP C -342 r WMP O&M rela and alignment wir 1,416	0 ated to Strate 0 0&M related t 0 ted to Resilie th the filed W 0	2,831 egic Undergrou 58 o Covered Cor -342 ency Grant Pro /MP 2022 plan. 1,416	0.0 0.0 nductor based 0.0 grams increas 0.0	n 1% of total capital 1-Sided Adj on 1% of capital 1-Sided Adj ed forecasts for 1-Sided Adj
2024 Explanation: 2024 Explanation: 2024 Explanation: 2024	0 Increased forecast for forecast. 0 Increased forecast in forecast. 0 Increased forecast for backup battery units a 0 Increased forecast for	2,831 r WMP O&M rela 58 2024 for WMP C -342 r WMP O&M rela and alignment wir 1,416	0 ated to Strate 0 0&M related t 0 ted to Resilie th the filed W 0	2,831 egic Undergrou 58 o Covered Cor -342 ency Grant Pro /MP 2022 plan. 1,416	0.0 0.0 nductor based 0.0 grams increas 0.0	n 1% of total capital 1-Sided Adj on 1% of capital 1-Sided Adj ed forecasts for 1-Sided Adj
2024 Explanation: 2024 Explanation: 2024 Explanation: 2024 Explanation:	0 Increased forecast for forecast. 0 Increased forecast in forecast. 0 Increased forecast for backup battery units a 0 Increased forecast for backup battery units a 0	2,831 r WMP O&M rela 58 2024 for WMP O -342 r WMP O&M rela and alignment wir 1,416 r WMP O&M rela	0 ated to Strate 0 0&M related t 0 ted to Resilie th the filed W 0 ted to Stand 0	2,831 egic Undergrou 58 o Covered Cor -342 ency Grant Pro /MP 2022 plan. 1,416 by Power Prog 1,084	nding based o 0.0 nductor based 0.0 grams increas 0.0 rams and aligr 2.1	In 1% of total capital 1-Sided Adj on 1% of capital 1-Sided Adj ed forecasts for 1-Sided Adj I-Sided Adj 1-Sided Adj 1-Sided Adj
2024 Explanation: 2024 Explanation: 2024 Explanation: 2024 Explanation: 2024	0 Increased forecast for forecast. 0 Increased forecast in forecast. 0 Increased forecast for backup battery units a 0 Increased forecast for WMP 2022 plan. 214 Increased forecast for	2,831 r WMP O&M rela 58 2024 for WMP O -342 r WMP O&M rela and alignment wir 1,416 r WMP O&M rela	0 ated to Strate 0 0&M related t 0 ted to Resilie th the filed W 0 ted to Stand 0	2,831 egic Undergrou 58 o Covered Cor -342 ency Grant Pro /MP 2022 plan. 1,416 by Power Prog 1,084	nding based o 0.0 nductor based 0.0 grams increas 0.0 rams and aligr 2.1	In 1% of total capital 1-Sided Adj on 1% of capital 1-Sided Adj ed forecasts for 1-Sided Adj I-Sided Adj 1-Sided Adj 1-Sided Adj
2024 Explanation: 2024 Explanation: 2024 Explanation: 2024 Explanation: 2024 Explanation:	0 Increased forecast for forecast. 0 Increased forecast in forecast. 0 Increased forecast for backup battery units a 0 Increased forecast for WMP 2022 plan. 214 Increased forecast for filed WMP 2022 plan.	2,831 r WMP O&M rela 58 2024 for WMP O -342 r WMP O&M rela and alignment wir 1,416 r WMP O&M rela 870 r WMP O&M rela	0 ated to Strate 0 %M related t 0 ted to Resilie th the filed W 0 ted to Stand 0 ted to Resilie	2,831 egic Undergrou 58 o Covered Cor -342 ency Grant Pro MP 2022 plan. 1,416 by Power Prog 1,084 ency Assistance 115	nding based o 0.0 nductor based 0.0 grams increas 0.0 rams and aligr 2.1 e Program and 0.0	In 1% of total capital 1-Sided Adj on 1% of capital 1-Sided Adj ed forecasts for 1-Sided Adj nment with the filed 1-Sided Adj d alignment with the 1-Sided Adj

Note: Totals may include rounding differences. SDG&E/WILDFIRE MITIGATION & VEGETATION MANAGEMENT/Exh No:SDG&E-13-WP-2R-E/Witness: J. Woldemariam Page 32 of 165

2024 GRC - SECOND REVISED ERRATA

Non-Shared Service Workpapers

Area:	WILDFIRE MITIGATION & VEGETATION MANAGEMENT						
Witness:	Jonathan Woldemariam						
Category:	C. Grid Design & S	C. Grid Design & System Hardening					
Category-Sub:	1. Grid Design & S	ystem Hardeni	ng				
Workpaper:	1WM003.000 - Gric	d Design & Sys	stem Hardenir	ng			
Year	Labor	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	Adj_Type	
Explanation:	Cost estimates for Cleve O&M Cost -Recovery A \$1,757,680 over 5 years with the Agency. (2) CN based upon past CNF p programmatic agreemen obtained for the CNF PI Transmission and exclu	greement: The s = \$351,536. F O&M Plan I projects. (3) CN nts (PA) for O& _RP project. 3	e annual estin The cost reco mplementatior VF O&M Progr &M to minimiz 8% of total cos	nate is based o overy agreeme n (\$105k in 20 rammatic Agre e agency revie	upon the total p ent is subject to 22): Costs for eement (\$75k in ew timeframes	project cost of further negotiation estimated mitigation n 2022): New similar to what was	
2024	0	4	0	4	0.0	1-Sided Adj	
Explanation:	BLM Land Managemen O&M), 29% Transmissio		-		of total costs	are distribution (WMP	
2024 Total	-134	-510	0	-644	-1.4		

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

Determination of Adjusted-Recorded (Incurred Costs):

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

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

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				
	Total	1,051	1,270	2,774	12,951	1,093				
FTE		0.4	0.3	1.5	2.7	0.4				

Detail of Adjustments to Recorded:

Year	Labor	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	Adj Type
2017	1	0	0	0.1	CCTR Transf From 2100-0119.000
Explanation:	Transfer wildfire related O&M Engineering to Workpaper 1V costs where they are reflected	VM003 Grid Design	& System Ha	rdening in c	ost center 2100-3932 to align
2017	0	298	0	0.0	CCTR Transf From 2100-0218.000
Explanation:	Management & Inspections to	Workpaper 1WM0	03 Grid Desig	n & System	n Workpaper 1WM005 Vegetation Hardening in cost center Plan (WMP) Initiative Categories.
2017	20	523	0	0.1	CCTR Transf From 2100-4089.000
Explanation:	Resource Allocation Methodo	logy to Workpaper	1WM003 Grid	Design & S	dening from Workpaper 1WM007 System Hardening in cost center Plan (WMP) Initiative Categories.
2017	0	6	0	0.0	CCTR Transf From 2100-0222.000
Explanation:	Transfer wildfire related O&M Engineering to Workpaper 1V costs where they are reflected	VM003 Grid Design	& System Ha	rdening in c	ost center 2100-3932 to align
2017	0	0	0	0.1	CCTR Transf From 2100-0223.000
Explanation:	Transfer wildfire related O&M Engineering to Workpaper 1V	VM003 Grid Design		•	
	costs where they are reflected	d in the Wildfire Miti	-	VMP) Initiat	5
2017	costs where they are reflected 0	d in the Wildfire Miti 199	-	VMP) Initiati 0.1	5
2017 Explanation:	0 Transfer wildfire related O&M	199 associated with Sy VM003 Grid Design	gation Plan (V 0 stem Hardeni & System Ha	0.1 ng from Wo rdening in c	ve Categories. CCTR Transf From 2100-0225.000 rkpaper 1ED012 Electric ost center 2100-3932 to align

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

<u>Year</u>	La	lbor	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	Adj Type
xplanation:		s to Workpape	r 1WM003 Grid	Design & S	ystem Harder	orkpaper 1WM006 Grid hing in cost center 2100-3932 hitiative Categories.
2017 Total		20	1,030	0	0.4	
2018		0	0	0	0.1	CCTR Transf From 2100-0119.000
Explanation:	Transfer wildfire relate Engineering to Workpa costs where they are r	aper 1WM003	Grid Design & S	system Hard	ening in cost	center 2100-3932 to align
2018		0	117	0	0.0	CCTR Transf From 2100-0166.000
Explanation:	Management & Inspec	ctions to Workp	aper 1WM003 (Grid Design	& System Ha	orkpaper 1WM005 Vegetation Irdening in cost center an (WMP) Initiative Categories.
2018		0	2	0	0.0	CCTR Transf From 2100-0218.000
Explanation:	Management & Inspec	ctions to Workp	aper 1WM003 (Grid Design	& System Ha	orkpaper 1WM005 Vegetation Irdening in cost center an (WMP) Initiative Categories.
2018		0	31	0	0.0	CCTR Transf From 2100-0222.000
Explanation:	Transfer wildfire relate Engineering to Workpa costs where they are r	aper 1WM003	Grid Design & S	system Hard	ening in cost	center 2100-3932 to align
2018		0	0	0	0.1	CCTR Transf From 2100-0223.000
Explanation:	Transfer wildfire relate Engineering to Workpa costs where they are r	aper 1WM003	Grid Design & S	system Hard	ening in cost	center 2100-3932 to align
2018		0	15	0	0.0	CCTR Transf From 2100-0224.000
Explanation:	Transfer wildfire relate Engineering to Workpa costs where they are r	aper 1WM003	Grid Design & S	system Hard	ening in cost	center 2100-3932 to align
2018		0	1,108	0	0.1	CCTR Transf From 2100-0225.000
Explanation:	Transfer wildfire relate Engineering to Workpa costs where they are r	aper 1WM003	Grid Design & S	system Hard	ening in cost	center 2100-3932 to align
2018		0	0	0	0.0	CCTR Transf From 2100-3773.000
Explanation:		s to Workpape	r 1WM003 Grid	Design & S	ystem Harder	orkpaper 1WM006 Grid ning in cost center 2100-3932 nitiative Categories.
2010		0	-2	0	0.0	1-Sided Adj
2018		0	-2	0	0.0	I-Slueu Auj

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

Year	Labor	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	
2018 Total	0	1,270	0	0.3		
2019	0	0	0	0.1	CCTR Transf Fror	n 2100-0166.000
Explanation:	Transfer Labor and Non-La Vegetation Management & center 2100-3932 to align of Categories.	Inspections to Wo	rkpaper 1WN	003 Grid De	sign & System Hardening	in cost
2019	0	0	0	0.0	CCTR Transf Fror	n 2100-0222.000
Explanation:	Transfer wildfire related O8 Engineering to Workpaper costs where they are reflect	1WM003 Grid Des	ign & System	Hardening in	n cost center 2100-3932 t	
2019	0	-29	0	0.0	CCTR Transf Fror	n 2100-0225.000
Explanation:	Transfer wildfire related O8 Engineering to Workpaper costs where they are reflect	1WM003 Grid Des	ign & System	Hardening in	n cost center 2100-3932 t	
2019	0	17	0	0.0	CCTR Transf Fror	n 2100-3773.000
Explanation:	Transfer Non-Labor associa Operations & Protocols to V to align costs where they a	Norkpaper 1WM00	3 Grid Desig	n & System H	lardening in cost center 2	
2019	0	0	0	0.0	CCTR Transf Fror	n 2100-3854.000
Explanation:	Transfer Non-Labor associa Planning & Preparedness t 2100-3932 to align costs w	o Workpaper 1WM	1003 Grid Des	sign & Syster	n Hardening in cost cente	r
2019	0	1	0	0.0	CCTR Transf Fror	n 2100-0218.000
Explanation:	Transfer Non-Labor associa Management & Inspections 2100-3932 to align costs w	to Workpaper 1W	M003 Grid D	esign & Syste	em Hardening in cost cen	ter
2019	321	2,464	0	1.4	CCTR Transf Fror	n 2100-4089.000
Explanation:	Transfer Labor, FTEs, and 1WM007 Resource Allocati cost center 2100-3932 to a Categories.	on Methodology to	Workpaper	1WM003 Grid	d Design & System Harde	ning in
2019	0	-1	0	0.0	CCTR Transf To 2	100-4089.002
Explanation:	Transfer Non-Labor associa Design & System Hardenin 2100-4089.002 to align cos Categories.	g to Workpaper 1\	VM004 Asset	Managemer	it & Inspections in cost ce	nter
2019 Total	321	2,453	0	1.5		

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>FTE</u>	Adj Type
2020		0	-81	0	0.0	1-Sided Adj
Explanation:	Incremental costs t Memorandum Acco	-	ated to be reque	sted for recov	very through	a non-GRC Catastrophic Event
2020		0	-1	0	0.0	1-Sided Adj
Explanation:	Incremental COVIE Catastrophic Event		-		uested for re	ecovery through a non-GRC
2020		0	9	0	0.0	CCTR Transf From 2100-3773.000
Explanation:	Operations & Proto	cols to Workpa	aper 1WM003 G	rid Design &	System Har	n Workpaper 1WM006 Grid dening in cost center 2100-3932) Initiative Categories.
2020		1	0	0	0.1	CCTR Transf From 2100-0166.000
Explanation:	Vegetation Manage	ement & Inspec	tions to Workpa	per 1WM003	Grid Desig	dening from Workpaper 1WM005 n & System Hardening in cost igation Plan (WMP) Initiative
2020		0	1	0	0.0	CCTR Transf From 2100-0218.000
Explanation:	Management & Ins	pections to Wo	orkpaper 1WM00	3 Grid Desig	n & System	n Workpaper 1WM005 Vegetation Hardening in cost center Plan (WMP) Initiative Categories.
2020		441	12,578	0	2.6	CCTR Transf From 2100-4089.000
Explanation:	1WM007 Resource	Allocation Me	thodology to Wo	rkpaper 1WN	/1003 Grid D	em Hardening from Workpaper esign & System Hardening in e Mitigation Plan (WMP) Initiative
2020		0	-12	0	0.0	CCTR Transf To 2100-4089.002
Explanation:	Design & System ⊦	lardening to W	orkpaper 1WM0	04 Asset Ma	nagement &	n Workpaper 1WM003 Grid Inspections in cost center ation Plan (WMP) Initiative
2020		0	11	0	0.0	CCTR Transf From 2100-0222.000
Explanation:		rkpaper 1WM0	03 Grid Design	& System Ha	rdening in co	kpaper 1ED012 Electric ost center 2100-3932 to align ve Categories.
2020		0	5	0	0.0	CCTR Transf From 2100-0225.000
2020 Explanation:		lated O&M ass rkpaper 1WM0	ociated with Sys 03 Grid Design a	tem Hardenii & System Ha	ng from Wor rdening in co	kpaper 1ED012 Electric ost center 2100-3932 to align

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>	Labo	<u>or 1</u>	NLbr N	<u>SE</u>	<u>FTE</u>	Adj Type	
2021		0	-4	0	0.0	1-Sided Adj	
Explanation:	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	
Explanation:	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	
Explanation:	One-sided adjustment to Settlement order.	include Labor,	Non-Labor and	FTE direc	t costs for the	e Covered Conductor O&M	
2021		20	555	0	0.2	1-Sided Adj	
Explanation:	One-sided adjustment to System Hardening Settle		Non-Labor and	FTE direc	t costs for the	e O&M associated with	
2021 Total	:	37 1	,056	0	0.4		

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 # 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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inc	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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 fro Within RAMP range.	om RAMP:					

GRC Work Unit/Activity Level Estimates

Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 R/ Range Ac	
Measure	Activities	Activities	Activities	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 RAM Within RAMP range.	P:					

isk Spend Efficiency (RSE)		
	GRC RSE	RAMP RSE
Tranche 1	179.000	0.000
Tranche 2	47.000	0.000

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:C. Grid Design & System HardeningCategory-Sub:1. Grid Design & System HardeningWorkpaper: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)

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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inc	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	Low	High
Tranche 1 Cost Estimate	57	794	1,204	1,840	5,993	7,324
Tranche 2 Cost Estimate	33	466	707	1,081	3,596	4,395

Cost Estimate Changes from RAMP:

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

Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RA Range Ac	
Measure	Activities	Activities	Activities	Activities	Low	High
Tranche 1 # of Miles UG (Capital)	19.50	41.00	50.00	79.00	84.00	103.00
Tranche 2 # of Miles UG (Capital)	11.50	24.00	30.00	46.00	51.00	62.00

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

k Spend Efficiency (RSE)		
	GRC RSE	RAMP RSE
Tranche 1	153.000	156.000
Tranche 2	69.000	54.000

Non-Shared Service Workpapers

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:C. Grid Design & System HardeningCategory-Sub:1. Grid Design & System HardeningWorkpaper: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)

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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inc	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	Low	High
Tranche 1 Cost Estimate	445	642	568	485	2,962	3,620
Tranche 2 Cost Estimate	73	144	124	107	650	795

Cost Estimate Changes from RAMP:

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

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

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

	GRC RSE	RAMP RSE
Tranche 1	27.000	32.000
Tranche 2	16.000	14.000

Non-Shared Service Workpapers

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:C. Grid Design & System HardeningCategory-Sub:1. Grid Design & System HardeningWorkpaper: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).

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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inc	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	Low	High
Tranche 1 Cost Estimate	2,938	1,715	2,517	2,658	2,370	2,897
Tranche 2 Cost Estimate	4,954	3,185	4,630	4,892	4,740	5,793
Cost Estimate Changes fro Within RAMP range.	m RAMP:					

GRC Work Unit/Activity Level Estimates

2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 R Range Ao	
Activities	Activities	Activities	Activities	Low	High
860.00	245.00	500.00	500.00	600.00	733.00
1,450.00	455.00	920.00	920.00	1,200.00	1,467.00
	Embedded Activities 860.00	Embedded ActivitiesForecast Activities860.00245.00	Embedded ActivitiesForecast ActivitiesForecast Activities860.00245.00500.00	Embedded ActivitiesForecast ActivitiesForecast ActivitiesForecast Activities860.00245.00500.00500.00	Embedded ActivitiesForecast ActivitiesForecast ActivitiesForecast ActivitiesRange Activities860.00245.00500.00500.00600.00

Work Unit Changes from RAMP:

Lower than RAMP range due to reduced targets for backup battery units.

	GRC RSE	RAMP RSE
Tranche 1	264.000	76.000
Tranche 2	114.000	38.000

SCG-03/SDG&E-03, Chapter 2).

WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Jonathan Woldemariam
C. Grid Design & System Hardening
1. Grid Design & System Hardening
1WM003.000 - Grid Design & System Hardening

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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inci	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 R/ Range Ac	
Measure	Activities	Activities	Activities	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.

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

Non-Shared Service Workpapers

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:C. Grid Design & System HardeningCategory-Sub:1. Grid Design & System HardeningWorkpaper: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).

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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inci	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 R/ Range Act	
Measure	Activities	Activities	Activities	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.

	GRC RSE	RAMP RSE
Tranche 1	240.000	569.000
Tranche 2	47.000	284.000

Non-Shared Service Workpapers

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:C. Grid Design & System HardeningCategory-Sub:1. Grid Design & System HardeningWorkpaper: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).

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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inci	Range curred \$)	
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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.

Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RA Range Act	
Measure	Activities	Activities	Activities	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

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

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

San Diego Gas & Electric Company

2024 GRC - SECOND REVISED ERRATA

Non-Shared Service Workpapers

WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Jonathan Woldemariam
C. Grid Design & System Hardening
1. Grid Design & System Hardening
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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inci	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RA Range Act	
Measure	Activities	Activities	Activities	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.

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000
SE Changes from RAMP:		
•	RSE values are primarily due to changes egration testimony of R. Scott Pearson a	

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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inc	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	Low	High
Tranche 1 Cost Estimate	0	202	134	134	0	0
Cost Estimato Changos fro						

Cost Estimate Changes from RAMP:

New item not included in original RAMP filing.

GRC Work Unit/Activity Level Estimates

Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RA Range Act	
Measure	Activities	Activities	Activities	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 RAM New item not included in origina						

<u>Risk Spend Efficiency (RSE)</u>		
	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 in	tegration testimony of R. Scott Pearson ar	nd Gregory S. Flores (Ex.
SCG-03/SDG&E-03, Chapter 2).	5 ,	3 9

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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inci	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	Low	High
Tranche 1 Cost Estimate	0	231	4	4	0	0
Coat Fatimate Changes for						

Cost Estimate Changes from RAMP:

New item not included in original RAMP filing.

GRC Work Unit/Activity Level Estimates

Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RA Range Act	
Measure	Activities	Activities	Activities	Activities	Low	High
Tranche 1 # plans	0.00	1.00	1.00	1.00	0.00	0.00
Work Unit Changes from New item not included in c						

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).

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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Incu	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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 orginal RAMP report.

Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RA Range Act	
Measure	Activities	Activities	Activities	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 orginal RAMP report.

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)

	GRC RSE	RAMP RSE	
Tranche 1	28.000	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).

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:D. Asset Management & InspectionsWorkpaper:1WM004.000

Summary for Category: D. Asset Management & Inspections

		In 2021\$ (000) Incu	urred Costs		
	Adjusted-Recorded	Adjusted-Forecast			
	2021	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	
Total	36,949	85,912	48,751	15,375	
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
Total	36,949	85,912	48,751	15,375
FTE	10.2	21.4	13.9	7.9

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

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								
		Adju	isted-Recor	ded		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	
Total	2	9	16,661	58,448	36,949	85,911	48,750	15,374	
FTE	0.0	0.0	5.1	13.2	10.2	21.4	13.9	7.9	

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									
Forecas	t Method	Bas	se Foreca	st	Forecast Adjustments			Adjusted-Forecast		
Years	s	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
Tota	al	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
Explanation:	2022-2024 increase pr Inspection – Drone Ins See supplemental wor	pections.	C C		d repair costs fo	or Dist System
2022	-28	-6	0	-34	-0.3	1-Sided Adj
Explanation:	Reduced forecast for V	VMP O&M relat	ed to Dist Sy	stem Inspection	on – HFTD Tier	3 Inspections.
2022	33	15	0	48	0.3	1-Sided Adj
Explanation:	Increased forecast for	WMP O&M rela	ted to Dist S	ystem Inspect	– CMP – Annu	al Patrol.
2022	-12	-767	0	-779	-0.1	1-Sided Adj
Explanation:	Decreased forecast for	WMP O&M rel	ated to Intrus	sive Poles		
2022	141	77	0	218	1.4	1-Sided Adj
Explanation:	Increased forecast for	WMP O&M rel	ated to Dist S	Syst Inspect–C	MP –5 Yr Deta	il Inspect.
2022	28	1	0	29	0.3	1-Sided Adj
Explanation:	Increased forecast for	WMP O&M rela	ted to Dist S	ystem Inspect	ion – IR/Corona	a
2022	0	1,849	0	1,849	0.0	1-Sided Adj
Explanation:	Increased forecast for	WMP O&M rela	ated to LiDAR	Flights.		
2022	0	-313	0	-313	0.0	1-Sided Adj
Explanation:	Decreased forecast for expected 2022-2024.	WMP O&M re	lated to Enha	nced Steel Po	ble Insp. No fore	ecasted spend
2022	0	278	0	278	0.0	1-Sided Adj
Explanation:	Increased 2022 foreca 2023-2024.	st for WMP O&	M related to (Cross-Arm Re	mediation. No e	expected spend
2022 Total	1,115	47,848	0	48,963	11.2	
2023	260	12,750	0	13,010	2.6	1-Sided Adj

Note: Totals may include rounding differences. SDG&E/WILDFIRE MITIGATION & VEGETATION MANAGEMENT/Exh No:SDG&E-13-WP-2R-E/Witness: J. Woldemariam Page 61 of 165

San Diego Gas & Electric Company

2024 GRC - SECOND REVISED ERRATA

Non-Shared Service Workpapers

Area:	WILDFIRE MITIG	ATION & VEGE	TATION MA	NAGEMENT				
Witness:	Jonathan Woldemariam							
Category:	D. Asset Manager	D. Asset Management & Inspections						
Category-Sub:	1. Asset Manager	nent & Inspectio	ons					
Workpaper:	1WM004.000 - As	set Manageme	nt & Inspecti	ons				
Year	Labor	<u>NLbr</u>	<u>NSE</u>	Total	<u>FTE</u>	Adj_Type		
Explanation:	2022-2024 increase pr Inspection – Drone Ins See supplemental wor	pections.	-		repair costs f	or Dist System		
2023	-44	-10	0	-54	-0.4	1-Sided Adj		
Explanation:	Reduced forecast for \	VMP O&M relat	ted to Dist Sy	stem Inspectio	n – HFTD Tie	r 3 Inspections.		
2023	33	15	0	48	0.3	1-Sided Adj		
Explanation:	Increased forecast for	WMP O&M rela	ated to Dist S	System Inspect -	– CMP – Anni	ual Patrol.		
2023	-13	-786	0	-799	-0.1	1-Sided Adj		
Explanation:	Decreased forecast fo	r WMP O&M re	lated to Intru	sive Poles				
2023	100	54	0	154	1.0	1-Sided Adj		
Explanation:	Increased forecast for	WMP O&M rela	ated to Dist S	Syst Inspect CM	P –5 Yr Detai	l Inspect		
2023	28	1	0	29	0.3	1-Sided Adj		
Explanation:	Increased forecast for	WMP O&M rela	ated to Dist S	System Inspection	on – IR/Coron	а		
2023	0	349	0	349	0.0	1-Sided Adj		
Explanation:	Increased forecast for	WMP O&M rela	ated to LiDAF	R Flights.				
2023	0	-313	0	-313	0.0	1-Sided Adj		
Explanation:	Decreased forecast fo expected 2022-2024.	r WMP O&M re	lated to Enha	anced Steel Pol	e Insp. No for	ecasted spend		
2023	0	-622	0	-622	0.0	1-Sided Adj		
Explanation:	Decreased forecast fo	r WMP O&M re	lated to Cros	s-Arm Remedia	tion. No expe	ected spend 2023-2024.		
2023 Total	364	11,438	0	11,802	3.7			
2024	-411	-20,162	0	-20,573	-4.1	1-Sided Adj		
Explanation:	2022-2024 decrease p Inspection – Drone Ins See supplemental wor	pections.	-		l repair costs	for Dist System		
2024	31	7	0	38	0.3	1-Sided Adj		
Explanation:	Increased forecast for	WMP O&M rela	ated to Dist S	System Inspection	on – HFTD Tie	er 3 Inspections.		
2024	33	15	0	48	0.3	1-Sided Adj		
Explanation:	Increased forecast for	WMP O&M rela	ated to Dist S	System Inspect -	– CMP – Annu	ual Patrol.		
2024	-11	-666	0	-677	-0.1	1-Sided Adj		
Explanation:	Decreased forecast fo	r WMP O&M re	lated to Intru	sive Poles				
2024	95	52	0	147	1.0	1-Sided Adj		
Explanation:	Increased forecast for	WMP O&M rela	ated to Dist S	Syst Inspect CM	P –5 Yr Detai	l Inspect		
2024	28	1	0	29	0.3	1-Sided Adj		
Explanation:	Increased forecast for	WMP O&M rela	ated to Dist S	System Inspection	on – IR/Coron	а		
2024	0	349	0	349	0.0	1-Sided Adj		

Note: Totals may include rounding differences.

SDG&E/WILDFIRE MITIGATION & VEGETATION MANAGEMENT/Exh No:SDG&E-13-WP-2R-E/Witness: J. Woldemariam

Non-Shared Service Workpapers

Area: Witness:		WILDFIRE MITIGATION & VEGETATION MANAGEMENT				
Category:	D. Asset Managen	nent & Inspecti	ons			
Category-Sub:	1. Asset Managem	nent & Inspectio	ons			
Workpaper:	1WM004.000 - As	set Manageme	nt & Inspectio	ons		
Year	Labor	<u>NLbr</u>	<u>NSE</u>	Total	<u>FTE</u>	Adj_Type
Explanation:	Increased forecast for	WMP O&M rela	ated to LiDAR	RFlights.		
2024	0	-313	0	-313	0.0	1-Sided Adj
Explanation:	Decreased forecast for expected 2022-2024.	WMP O&M re	lated to Enha	nced Steel Pol	e Insp. No for	ecasted spend
2024	0	-622	0	-622	0.0	1-Sided Adj
Explanation:	Decreased forecast for	WMP O&M re	lated to Cross	s-Arm Remedia	ation. No expe	cted spend 2023-2024.
2024 Total	-235	-21.339	0	-21.574	-2.3	

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

Determination of Adjusted-Recorded (Incurred Costs):

·····,	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
ecorded (Nominal \$)*					
Labor	0	0	0	101	1,235
Non-Labor	0	0	0	9,216	35,528
NSE	0	0	0	0	0
Total	0	0	0	9,317	36,763
FTE	0.0	0.0	0.0	0.5	8.7
djustments (Nominal \$) **					
Labor	0	0	671	1,607	0
Non-Labor	1	8	14,676	42,953	0
NSE	0	0	0	0	0
Total	1	8	15,347	44,559	0
FTE	0.0	0.0	4.4	10.9	0.0
ecorded-Adjusted (Nomina	ll \$)				
Labor	0	0	671	1,708	1,235
Non-Labor	1	8	14,676	52,168	35,528
NSE	0	0	0	0	0
Total	1	8	15,347	53,876	36,763
FTE	0.0	0.0	4.4	11.4	8.7
acation & Sick (Nominal \$)					
Labor	0	0	96	242	186
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	96	242	186
FTE	0.0	0.0	0.7	1.8	1.5
scalation to 2021\$					
Labor	0	0	45	62	0
Non-Labor	0	1	1,173	4,266	0
NSE	0	0	0	0	0
Total	0	1	1,217	4,329	0
FTE	0.0	0.0	0.0	0.0	0.0
ecorded-Adjusted (Constar	nt 2021\$)				
Labor	0	0	811	2,013	1,421
Non-Labor	2	9	15,849	56,435	35,528
NSE	0	0	0	0	0
Total	2	9	16,661	58,448	36,949
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

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 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	
	Total	1	8	15,347	44,559	0	
FTE		0.0	0.0	4.4	10.9	0.0	

Detail of Adjustments to Recorded:

Year		abor	NLbr	NSE	FTE	Adi Type
2017		0	1	0	0.0	CCTR Transf From 2100-3773.000
Explanation:	Operations & Protocol	s to Workpaper	1WM004 Asse	et Managem	ent & Inspect	Workpaper 1WM006 Grid tions in cost center n Plan (WMP) Initiative
2017 Total		0	1	0	0.0	
2018		0	8	0	0.0	CCTR Transf From 2100-0225.000
Explanation:		4 Asset Manag	ement & Inspec	ctions in cos	t center 2100	1ED012 Electric Engineering -4089.002 to align costs ories.
2018 Total		0	8	0	0.0	
2019		6	31	0	0.1	CCTR Transf From 2100-0225.000
Explanation:		4 Asset Manag	ement & Inspec	ctions in cos	t center 2100	1ED012 Electric Engineering -4089.002 to align costs ories.
2019		0	1	0	0.0	CCTR Transf From 2100-3932.000
Explanation:	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
Explanation:	1WM007 Resource All	ocation Methdo	ology to Workpa	aper 1WM00)4 Asset Man	Inspections from Workpaper agement & Inspections in cost litigation Plan (WMP) Initiative
2019 Total		671	14,676	0	4.4	

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

<u>Year</u>	ļ	<u>_abor</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
Explanation:	Design & System Ha	ardening to Wo	rkpaper 1WM00	4 Asset Ma	inagement &	Workpaper 1WM003 Grid Inspections in cost center tion Plan (WMP) Initiative
2020		1,584	42,699	0	10.7	CCTR Transf From 2100-4089.000
Explanation:	1WM007 Resource	Allocation Meth	dology to Work	paper 1WM	004 Asset M	& Inspections from Workpaper anagement & Inspections in cost Mitigation Plan (WMP) Initiative
2020		0	179	0	0.0	CCTR Transf From 2100-4114.000
Explanation:		04 Asset Mana	agement & Inspe	ections in c	ost center 21	er 1ED012 Electric Engineering 00-4089.002 to align costs egories.
2020		0	53	0	0.0	CCTR Transf From 2100-0225.000
Explanation:		04 Asset Mana	agement & Inspe	ections in c	ost center 21	er 1ED012 Electric Engineering 00-4089.002 to align costs egories.
2020		23	9	0	0.2	CCTR Transf From 2100-0099.000
Explanation:		04 Asset Mana	agement & Inspe	ections in c	ost center 21	er 1ED012 Electric Engineering 00-4089.002 to align costs egories.
2020 Total		1,607	42,953	0	10.9	
2021 Total		0	0	0	0.0	

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 # 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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inci	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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 Le	evel Estimates					
Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities		RAMP Activities 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.

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

Risk Spend Efficiency (RSE)			
	GRC RSE	RAMP RSE	
Tranche 1	22.000	194.000	
Tranche 2	9.000	9.000	
DOE ON STATES (STATES DAMP)			

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).

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 # 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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inci	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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 fre						

Cost Estimate Changes from RAMP:

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

Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 F Range A	
Measure	Activities	Activities	Activities	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.	:					

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

Non-Shared Service Workpapers

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:D. Asset Management & InspectionsCategory-Sub:1. Asset Management & InspectionsWorkpaper: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).

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 # 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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inci	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP Range Activities	
Measure	Activities	Activities	Activities	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 RAN Within range	IP:					

	GRC RSE	RAMP RSE
anche 1	564.000	684.000
ranche 2	0.000	373.000

San Diego Gas & Electric Company 2024 GRC - SECOND REVISED ERRATA

Non-Shared Service Workpapers

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:D. Asset Management & InspectionsCategory-Sub:1. Asset Management & InspectionsWorkpaper:1WM004.000 - Asset Management & Inspections

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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Incu	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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.

Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RA Range Act	
Measure	Activities	Activities	Activities	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	

San Diego Gas & Electric Company

2024 GRC - SECOND REVISED ERRATA

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		
Tranche 2	10.000	2.000	

RSE Changes from RAMP:

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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inci	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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 fro Within range	m RAMP:					

GRC Work Unit/Activity Level Estimates

Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 F Range A	
Measure	Activities	Activities	Activities	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.	:					

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

San Diego Gas & Electric Company 2024 GRC - SECOND REVISED ERRATA

Non-Shared Service Workpapers

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:D. Asset Management & InspectionsCategory-Sub:1. Asset Management & InspectionsWorkpaper:1WM004.000 - Asset Management & Inspections

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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inci	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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 fro Within range	m RAMP:					

GRC Work Unit/Activity Level Estimates

Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 F Range A	
Measure	Activities	Activities	Activities	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	:					

isk Spend Efficiency (RSE)			
	GRC RSE	RAMP RSE	
Tranche 1	0.000	0.000	
Tranche 2	372.000	322.000	

San Diego Gas & Electric Company 2024 GRC - SECOND REVISED ERRATA

Non-Shared Service Workpapers

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:D. Asset Management & InspectionsCategory-Sub:1. Asset Management & InspectionsWorkpaper:1WM004.000 - Asset Management & Inspections

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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inci	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RA Range Act	
Measure	Activities	Activities	Activities	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 RAM Initiative will be removed from V due to redundancy with other av	VMP in 2022. This ir	•		•	er necessary	

San Diego Gas & Electric Company 2024 GRC - SECOND REVISED ERRATA

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

Risk Spend Efficiency (RSE)			
	GRC RSE	RAMP RSE	
Tranche 1	0.000	0.000	
Tranche 2	0.000	0.000	

RSE Changes from RAMP:

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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inci	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RA Range Act	
Measure	Activities	Activities	Activities	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).					

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:E. Vegetation Mgmt & InspWorkpaper:1WM005.000

Summary for Category: E. Vegetation Mgmt & Insp

	In 2021\$ (000) Incurred Costs					
	Adjusted-Recorded	Adjusted-Forecast				
	2021	2022	2023	2024		
Labor	362	435	457	473		
Non-Labor	10,003	6,683	6,913	7,152		
NSE	0	6,059	6,439	6,676		
Total	10,365	13,177	13,809	14,301		
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	6,683	6,913	7,152
NSE	0	6,059	6,439	6,676
Total	10,365	13,177	13,809	14,301
FTE	3.9	5.5	5.7	6.1

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

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 vegetation restoration 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	6,683	6,913	7,152	
NSE	0	0	0	0	0	6,059	6,439	6,676	
Total	3,474	4,176	9,738	12,182	10,365	13,177	13,809	14,301	
FTE	2.9	2.1	4.0	4.3	3.9	5.5	5.7	6.1	

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	t Method	Bas	Base Forecast			ast Adjust	ments	Adjusted-Forecast		
Years	6	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	-3,320	-3,090	-2,851	6,683	6,913	7,152
NSE	Base YR Rec	0	0	0	6,059	6,439	6,676	6,059	6,439	6,676
Tota	I	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:

<u>Year</u>	Labor	<u>NLbr</u>	NSE	<u>Total</u>	<u>FTE</u>	Adj Type
2022	14	1,370	0	1,384	1.0	1-Sided Adj
Explanation:	Increased forecast for V Forester hired March 20 related to increased fue	021, Adds 1 F1	E for 9 montl	hs (Apr-Dec) f	for 2022-2024.	Non-Labor increase
2022	41	0	780	821	0.4	1-Sided Adj
Explanation:	Increased forecast for V increase of 3% annually			•		
2022	18	589	0	607	0.2	1-Sided Adj
Explanation:	Increased costs for WM	IP vegetation r	estoration init	iative, not inc	luded in origina	I RAMP report.
2022	0	-5,279	5,279	0	0.0	1-Sided Adj
Explanation:	Costs not subject to eso	calation, reclas	s costs from	non-labor to N	ISE.	
2022 Total	73	-3,320	6,059	2,812	1.6	
2023	16	1,600	0	1,616	1.0	1-Sided Adj
2023 Explanation:	16 Increased forecast for V Forester hired March 20 related to increased fue	VMP O&M rela 021, Adds 1 FT	ated to Fuels	Management hs (Apr-Dec) f	based on 1 Fu for 2022-2024.	els Mgmt Lead Non-Labor increase
	Increased forecast for V Forester hired March 20	VMP O&M rela 021, Adds 1 FT	ated to Fuels	Management hs (Apr-Dec) f	based on 1 Fu for 2022-2024.	els Mgmt Lead Non-Labor increase
Explanation:	Increased forecast for V Forester hired March 20 related to increased fue	WMP O&M rela 021, Adds 1 FT els reduction gr 0 WMP O&M rela	ated to Fuels I FE for 9 montl ants and align 1,160 ated to Pole B	Management ns (Apr-Dec) f ning 22-24 for 1,221 rushing based	based on 1 Fu for 2022-2024. recast with fileo 0.6 d on expected	els Mgmt Lead Non-Labor increase I WMP 2022 plan. 1-Sided Adj contractor rate
Explanation: 2023	Increased forecast for V Forester hired March 20 related to increased fue 61 Increased forecast for V	WMP O&M rela 021, Adds 1 FT els reduction gr 0 WMP O&M rela	ated to Fuels I FE for 9 montl ants and align 1,160 ated to Pole B	Management ns (Apr-Dec) f ning 22-24 for 1,221 rushing based	based on 1 Fu for 2022-2024. recast with fileo 0.6 d on expected	els Mgmt Lead Non-Labor increase I WMP 2022 plan. 1-Sided Adj contractor rate
Explanation: 2023 Explanation:	Increased forecast for V Forester hired March 20 related to increased fue 61 Increased forecast for V increase of 3% annually	WMP O&M rela D21, Adds 1 FT els reduction gr 0 WMP O&M rela y and to align 2 589	ated to Fuels TE for 9 montl ants and align 1,160 ated to Pole B 22-24 forecas 0	Management ns (Apr-Dec) f ning 22-24 for 1,221 rushing based ted spend with 607	based on 1 Fu for 2022-2024. recast with filed 0.6 d on expected h the filed WMI 0.2	els Mgmt Lead Non-Labor increase I WMP 2022 plan. 1-Sided Adj contractor rate 2 2022 plan. 1-Sided Adj
Explanation: 2023 Explanation: 2023	Increased forecast for V Forester hired March 20 related to increased fue 61 Increased forecast for V increase of 3% annually 18	WMP O&M rela D21, Adds 1 FT els reduction gr 0 WMP O&M rela y and to align 2 589	ated to Fuels TE for 9 montl ants and align 1,160 ated to Pole B 22-24 forecas 0	Management ns (Apr-Dec) f ning 22-24 for 1,221 rushing based ted spend with 607	based on 1 Fu for 2022-2024. recast with filed 0.6 d on expected h the filed WMI 0.2	els Mgmt Lead Non-Labor increase I WMP 2022 plan. 1-Sided Adj contractor rate 2 2022 plan. 1-Sided Adj
Explanation: 2023 Explanation: 2023 Explanation:	Increased forecast for V Forester hired March 20 related to increased fue 61 Increased forecast for V increase of 3% annually 18 Increased costs for WM	WMP O&M rela D21, Adds 1 FT els reduction gr 0 WMP O&M rela y and to align 2 589 IP vegetation r -5,279	ated to Fuels I TE for 9 montl ants and align 1,160 ated to Pole B 22-24 forecas 0 estoration init 5,279	Management hs (Apr-Dec) f ning 22-24 for 1,221 trushing based ted spend with 607 iative, not incl	based on 1 Fu for 2022-2024. recast with filed 0.6 d on expected h the filed WMI 0.2 luded in origina 0.0	els Mgmt Lead Non-Labor increase I WMP 2022 plan. 1-Sided Adj contractor rate P 2022 plan. 1-Sided Adj I RAMP report.
Explanation: 2023 Explanation: 2023 Explanation: 2023	Increased forecast for V Forester hired March 20 related to increased fue 61 Increased forecast for V increase of 3% annually 18 Increased costs for WM 0 Costs not subject to esc	WMP O&M rela D21, Adds 1 FT els reduction gr 0 WMP O&M rela y and to align 2 589 IP vegetation r -5,279	ated to Fuels I TE for 9 montl ants and align 1,160 ated to Pole B 22-24 forecas 0 estoration init 5,279	Management hs (Apr-Dec) f ning 22-24 for 1,221 trushing based ted spend with 607 iative, not incl	based on 1 Fu for 2022-2024. recast with filed 0.6 d on expected h the filed WMI 0.2 luded in origina 0.0	els Mgmt Lead Non-Labor increase I WMP 2022 plan. 1-Sided Adj contractor rate P 2022 plan. 1-Sided Adj I RAMP report.

Note: Totals may include rounding differences.

SDG&E/WILDFIRE MITIGATION & VEGETATION MANAGEMENT/Exh No:SDG&E-13-WP-2R-E/Witness: J. Woldemariam

WILDFIRE MITIGATION & VEGETATION MANAGEMENT Area: Witness: Jonathan Woldemariam E. Vegetation Mgmt & Insp Category: 1. Vegetation Mgmt & Insp Category-Sub: 1WM005.000 - Vegetation Mgmt & Insp Workpaper: Year Labor NLbr NSE Total **FTE** Adj_Type **Explanation:** 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 0 1,397 1,471 1.0 1-Sided Adj **Explanation:** 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. 2024 18 589 0 607 0.2 1-Sided Adj Increased costs for WMP vegetation restoration initiative, not included in original RAMP report. **Explanation:** 2024 0 -5,279 5,279 0 0.0 1-Sided Adj Costs not subject to escalation, reclass costs from non-labor to NSE. Explanation: 2024 Total 111 -2,851 6,676 3,936 2.2

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

Determination of Adjusted-Recorded (Incurred Costs):

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

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
	Total	2,696	-118	8,965	11,090	899
FTE		2.5	0.0	3.4	3.7	0.0

Detail of Adjustments to Recorded:

Year	Labo	<u>NLbr</u>	NSE	<u>FTE</u>	Adj Type
2017	0	-298	0	0.0	CCTR Transf To 2100-3932.000
Explanation:	Management & Inspections	s to Workpaper 1W	VM003 Grid D	esign & Sys	from Workpaper 1WM005 Vegetation tem Hardening in cost center tion Plan (WMP) Initiative Categories.
2017	212	2,782	0	2.5	CCTR Transf From 2100-4089.000
Explanation:	1WM007 Resource Allocat	ion Methdology to	Workpaper 1	NM005 Veg	t & Inspections from Workpaper etation Management & Inspections in Idfire Mitigation Plan (WMP) Initiative
2017 Total	212	2,484	0	2.5	
2018	0	0	0	0.0	CCTR Transf To 2100-3962.000
Explanation:	Vegetation Mgmt & Insp to	Workpaper 1WM	001 Emergenc	y Planning 8	ess from Workpaper 1WM005 & Preparedness in cost center tion Plan (WMP) Initiative Categories.
2018	0	-117	0	0.0	CCTR Transf To 2100-3932.000
Explanation:	Management & Inspections	s to Workpaper 1W	VM003 Grid D	esign & Sys	from Workpaper 1WM005 Vegetation tem Hardening in cost center tion Plan (WMP) Initiative Categories.
2018	0	-2	0	0.0	CCTR Transf To 2100-3932.000
Explanation:	Management & Inspections	to Workpaper 1W	VM003 Grid D	esign & Sys	from Workpaper 1WM005 Vegetation tem Hardening in cost center tion Plan (WMP) Initiative Categories.
2018 Total	0	-118	0	0.0	
2019	0	0	0	-0.1	CCTR Transf To 2100-3932.000

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

Year		<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	Adj Type
Explanation:	Vegetation Manage	ment & Inspect	ions to Workpa	per 1WM003	Grid Desig	dening from Workpaper 1WM005 n & System Hardening in cost tigation Plan (WMP) Initiative
2019		0	-1	0	0.0	CCTR Transf To 2100-3932.000
Explanation:	Management & Insp	pections to Wor	kpaper 1WM00	3 Grid Desig	n & System	n Workpaper 1WM005 Vegetation Hardening in cost center Plan (WMP) Initiative Categories.
2019		321	8,645	0	3.5	CCTR Transf From 2100-4089.000
Explanation:	1WM007 Resource	Allocation Met	ndology to Work	paper 1WM	005 Vegetat	Inspections from Workpaper tion Management & Inspections in re Mitigation Plan (WMP) Initiative
2019 Total		321	8,643	0	3.4	
2020		0	-132	0	0.0	1-Sided Adj
Explanation:	Incremental costs th Memorandum Acco		ted to be reques	sted for recov	very through	n a non-GRC Catastrophic Event
2020		0	-3	0	0.0	1-Sided Adj
Explanation:	Incremental COVID Catastrophic Event		-	-	uested for r	ecovery through a non-GRC
2020		-1	0	0	-0.1	CCTR Transf To 2100-3932.000
Explanation:	Vegetation Manage	ment & Inspect	ions to Workpa	per 1WM003	Grid Desig	dening from Workpaper 1WM005 n & System Hardening in cost tigation Plan (WMP) Initiative
2020		0	-1	0	0.0	CCTR Transf To 2100-3932.000
Explanation:	Management & Insp	pections to Wor	kpaper 1WM00	3 Grid Desig	n & System	n Workpaper 1WM005 Vegetation Hardening in cost center Plan (WMP) Initiative Categories.
2020		361	10,865	0	3.8	CCTR Transf From 2100-4089.000
Explanation:	1WM007 Resource	Allocation Met	ndology to Work	paper 1WM	005 Vegetat	Inspections from Workpaper tion Management & Inspections in re Mitigation Plan (WMP) Initiative
2020 Total		361	10,730	0	3.7	
2021		0	0	0	0.0	1-Sided Adj
Explanation:	Incremental costs th Memorandum Acco		ted to be reques	sted for recov	very through	n a non-GRC Catastrophic Event

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

Year	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	Adj Type	
2021	0	-6	0	0.0	1-Sided Adj	
Explanation:	Incremental COVID-related Catastrophic Event Memora		-	requested for	or recovery through a non-GRC	2
2021	0	905	0	0.0	1-Sided Adj	
Explanation:	One-sided adjustment to inc Accounting Adj CE 6900200		irect costs for	⁻ Fuels Mana	agement related associated to	
2021 Total	0	899	0	0.0		

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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inci	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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.

Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 R/ Range Ac	
Measure	Activities	Activities	Activities	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

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

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

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:E. Vegetation Mgmt & InspCategory-Sub:1. Vegetation Mgmt & InspWorkpaper:1WM005.000 - Vegetation Mgmt & Insp

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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inci	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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 2021 Historical 2022 2023 2024 2024 RAMP Unit of Embedded Forecast Forecast Forecast **Range Activities** Measure Activities Activities Activities Activities Low High Tranche 1 # of poles brushed 17,234.00 15,266.00 14,751.00 14,752.00 14,752.00 14,101.00 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	73.000	261.000					
Tranche 2	53.000	152.000					

Area: Witness:	WILDFIRE MITIGATION & VEGETATION MANAGEME Jonathan Woldemariam	NT	
Category:	E. Vegetation Mgmt & Insp		
Category-Sub:	1. Vegetation Mgmt & Insp		
Workpaper:	1WM005.000 - Vegetation Mgmt & Insp		
Tranche 3	0.000	0.000	

RSE Changes from RAMP:

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: Vegetation Restoration Initiative

Tranche(/s): Tranche1: NA

GRC Forecast Cost Estimates (\$000)

					2024	1
	2021 Historical	2022	2023	2024	RAMP R	ange
	Embedded Cost	Forecast	Forecast	Forecast	(2020 Inc	urred \$)
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	Low	High
Tranche 1 Cost Estimate	393	1,000	1,000	1,000	0	0

Cost Estimate Changes from RAMP:

Cost estimates for WMP Vegetation Restoration Initiative, not included in original RAMP report.

GRC Work Unit/Activity Level Estimates								
Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RA Range Act			
Measure	Activities	Activities	Activities	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 RAM	MP:							

Cost estimates for WMP Vegetation Restoration Initiative, 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 in	tegration testimony of R. Scott Pearson ar	nd Gregory S. Flores (Ex.	
SCG-03/SDG&E-03, Chapter 2).			

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				
	2021	2022	2023	2024			
Labor	1,716	1,716	1,716	1,716			
Non-Labor	50,479	0	0	0			
NSE	0	54,364	52,659	53,906			
Total	52,195	56,080	54,375	55,622			
FTE	18.9	18.9	18.9	18.9			

Workpapers belonging to this Category:

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

1,716	1,716	1,716	1,716
50,479	0	0	0
0	54,364	52,659	53,906
52,195	56,080	54,375	55,622
18.9	18.9	18.9	18.9
	50,479 0 52,195	50,479 0 0 54,364 52,195 56,080	50,479 0 0 0 54,364 52,659 52,195 56,080 54,375

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

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.

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				Ad	cast		
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	0	0	0
NSE	0	0	0	0	0	54,364	52,659	53,906
Total	26,502	31,538	37,238	73,692	52,195	56,080	54,375	55,622
FTE	14.5	14.5	14.4	12.8	18.9	18.9	18.9	18.9

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			st	Forecast Adjustments			Adjusted-Forecast				
Years	s	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	-50,479	-50,479	-50,479	0	0	0	
NSE	Base YR Rec	0	0	0	54,364	52,659	53,906	54,364	52,659	53,906	
Tota	al	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	0	280	280	0.0	1-Sided Adj
Explanation:	Increased forecast fo	r Enhanced Veg	etation Mana	gement RAMP	' item.	
2022	0	0	2,163	2,163	0.0	1-Sided Adj
Explanation:	Increased forecast fo Electric Infastructure	-	-	count (60% of	totals, 40% of	totals tracked as
2022	0	0	1,442	1,442	0.0	1-Sided Adj
Explanation:	Increased forecast fo Integrity RAMP chapt		rim Balancing	Account (TTB	A) tracked in E	lectric Infastructure
2022	0	-50,479	50,479	0	0.0	1-Sided Adj
Explanation:	Costs not subject to e	escalation, recla	ss costs from	non-labor to N	ISE.	
2022 Total	0	-50,479	54,364	3,885	0.0	
2023	0	0	280	280	0.0	1-Sided Adj
Explanation:	Increased forecast fo	r Enhanced Veg	etation Mana	gement RAMP	' item.	
2023	0	0	1,140	1,140	0.0	1-Sided Adj
Explanation:	Increased forecast fo Electric Infastructure	•	•	count (60% of	totals, 40% of	totals tracked as
2023	0	0	760	760	0.0	1-Sided Adj
Explanation:	Increased forecast fo Integrity RAMP chapt		rim Balancing	Account (TTB	A) tracked in E	lectric Infastructure
2023	0	-50,479	50,479	0	0.0	1-Sided Adj
Explanation:	Costs not subject to e	escalation, recla	ss costs from	non-labor to N	ISE.	
2023 Total	0	-50,479	52,659	2,180	0.0	
2024	0	0	280	280	0.0	1-Sided Adj
Explanation:	Increased forecast fo	r Enhanced Veg	etation Mana	gement RAMP	' item.	
2024	0	-50,479	50,479	0	0.0	1-Sided Adj
Explanation:	Costs not subject to e	escalation, recla	ss costs from	non-labor to N	ISE.	

Note: Totals may include rounding differences.

SDG&E/WILDFIRE MITIGATION & VEGETATION MANAGEMENT/Exh No:SDG&E-13-WP-2R-E/Witness: J. Woldemariam

Area: Witness: Category: Category-Sub: Workpaper:	WILDFIRE MITIGATION & VEGETATION MANAGEMENT Jonathan Woldemariam F. Vegetation Mgmt & Insp Tree Trimming Only 1. Vegetation Mgmt & Insp Tree Trimming Only 1WM005.001 - Vegetation Mgmt & Insp Tree Trimming Only						
Year	<u>Labor</u>	<u>NLbr</u>	NSE	<u>Total</u>	<u>FTE</u>	Adj_Type	
2024 Explanation:		0 0 1,888 1,888 0.0 1-Sided Adj acreased forecast for Tree Trimming Balancing Account (60% of totals, 40% of totals tracked as lectric Infastructure Integrity RAMP item).					
2024 Explanation:	0 0 1,259 1,259 0.0 1-Sided Adj Increased forecast for 40% of Tree Trim Balancing Account (TTBA) tracked in Electric Infastructure Integrity RAMP chapter.						
2024 Total	0	-50,479	53,906	3,427	0.0		

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)
ecorded (Nominal \$)*					
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
Total	23,032	28,357	34,345	68,026	51,971
FTE	12.4	12.4	12.4	11.0	16.1
djustments (Nominal \$) **					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
ecorded-Adjusted (Nomin	al \$)				
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
Total	23,032	28,357	34,345	68,026	51,971
FTE	12.4	12.4	12.4	11.0	16.1
acation & Sick (Nominal \$)				
Labor	161	167	164	151	224
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	161	167	164	151	224
FTE	2.1	2.1	2.0	1.8	2.8
scalation to 2021\$					
Labor	145	109	76	39	0
Non-Labor	3,164	2,904	2,653	5,476	0
NSE	0	0	0	0	0
Total	3,309	3,013	2,729	5,515	0
FTE	0.0	0.0	0.0	0.0	0.0
ecorded-Adjusted (Consta	ant 2021\$)				
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
Total	26,502	31,538	37,238	73,692	52,195
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

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		

Year	Labor	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>

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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inc	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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 fro						

GRC Work Unit/Activity Level Estimates

Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 F Range A	
Measure	Activities	Activities	Activities	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.

	GRC RSE	RAMP RSE
anche 1	155.000	111.000
anche 2	103.000	61.000

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

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	2022 Forecast	2023 Forecast	2024 Forecast	202 RAMP F (2020 Inc	Range
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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.

Unit of	2021 Historical 2022 2023 2024 Embedded Forecast Forecast Forecast			2024 RAMP Range Activities		
Measure	Activities	Activities	Activities	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

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

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

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	2022 Forecast	2023 Forecast	2024 Forecast	202 RAMP F (2020 Inc	Range
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast		RAMP Activities
Measure	Activities	Activities	Activities	Activities	Low	High
Tranche 1 # of trees inspected	242,140.00	234,645.00	234,645.00	218,822.00	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 values are primarily due to changes tegration testimony of R. Scott Pearson ar		

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						
	2021	2022	2023	2024					
Labor	0	0	0	0					
Non-Labor	10,079	12,554	13,792	14,769					
NSE	0	0	0	0					
Total	10,079	12,554	13,792	14,769					
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
Total	10,079	12,554	13,792	14,769
FTE	0.0	0.0	0.0	0.0

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

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.

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									
		Adju	isted-Recor	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			
Total	2,321	5,593	8,454	10,136	10,079	12,554	13,792	14,769			
FTE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

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	Forecast Method Base Forecast			Forec	ast Adjust	tments	Adjusted-Forecast			
Years	S	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
Tota	ıl	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>	FTE	Adj Type
2022	0	158	0	158	0.0	1-Sided Adj
Explanation:	Increased forecast prir contract firefighting res	-	higher Wildla	nd Infastructu	ure Protection T	eam expenses for
2022	0	2,317	0	2,317	0.0	1-Sided Adj
Explanation:	Increased forecast for	Aviation Firefigh	nting Program	based on ex	pected flight ho	urs.
2022 Total	0	2,475	0	2,475	0.0	
2023	0	3,555	0	3,555	0.0	1-Sided Adj
Explanation:	Increased forecast prir for new aviation assets	-	higher Aviatio	n Program fli	ight hours and i	naintenance expenses
2023	0	158	0	158	0.0	1-Sided Adj
Explanation:	Increased forecast for resources.	Wildfire Infastru	cture Protection	on Teams ba	sed on number	of expected
2023 Total	0	3,713	0	3,713	0.0	
2024	0	4,532	0	4,532	0.0	1-Sided Adj
Explanation:	Increased forecast prir for new aviation assets	-	higher Aviatio	n Program fli	ight hours and i	naintenance expenses
2024	0	158	0	158	0.0	1-Sided Adj
Explanation:	Increased forecast for resources.	Wildfire Infastru	cture Protection	on Teams ba	sed on number	of expected
2024 Total	0	4,690	0	4,690	0.0	

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)
ecorded (Nominal \$)*					
Labor	0	0	0	0	0
Non-Labor	2,050	5,403	324	79	10,143
NSE	0	0	0	0	0
Total	2,050	5,403	324	79	10,143
FTE	0.0	0.0	0.0	0.0	0.0
djustments (Nominal \$) *	*				
Labor	0	0	0	0	0
Non-Labor	-21	-348	7,504	9,290	-64
NSE	0	0	0	0	0
Total	-21	-348	7,504	9,290	-64
FTE	0.0	0.0	0.0	0.0	0.0
ecorded-Adjusted (Nomi	nal \$)				
Labor	0	0	0	0	0
Non-Labor	2,029	5,054	7,829	9,369	10,079
NSE	0	0	0	0	0
Total	2,029	5,054	7,829	9,369	10,079
FTE	0.0	0.0	0.0	0.0	0.0
acation & Sick (Nominal	\$)				
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
scalation to 2021\$					
Labor	0	0	0	0	0
Non-Labor	292	539	626	766	0
NSE	0	0	0	0	0
Total	292	539	626	766	0
FTE	0.0	0.0	0.0	0.0	0.0
ecorded-Adjusted (Const	tant 2021\$)				
Labor	0	0	0	0	0
Non-Labor	2,321	5,593	8,454	10,136	10,079
NSE	0	0	0	0	0
Total	2,321	5,593	8,454	10,136	10,079
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

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		
	Total	-21	-348	7,504	9,290	-64		
FTE		0.0	0.0	0.0	0.0	0.0		

Detail of Adjustments to Recorded:

Year		<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	Adj Type
2017		0	-8	0	0.0	1-Sided Adj
Explanation:	Incremental costs th Memorandum Accou	-	ated to be reque	sted for reco	very through	a non-GRC Catastrophic Event
2017		0	-8	0	0.0	CCTR Transf To 2100-3962.000
Explanation:		Norkpaper 1V	VM001 Emerger	icy Planning	& Preparedr	from Workpaper 1WM006 Grid less in cost center 2100-3962 to hitiative Categories.
2017		0	-4	0	0.0	CCTR Transf To 2100-3932.000
Explanation:	Operations & Protoc	ols to Workpa	aper 1WM003 G	rid Design &	System Har	i Workpaper 1WM006 Grid dening in cost center 2100-3932) Initiative Categories.
2017		0	-1	0	0.0	CCTR Transf To 2100-4089.002
Explanation:	Transfer Non-Labo	r associated w	ith Asset Manad	omont & Inc	nantiona from	m Warkmanar 1W/MOOG Crid
	Operations & Protoc	ols to Workpa	aper 1WM004 A	sset Manage	ment & Insp	tion Plan (WMP) Initiative
2017 Total	Operations & Protoc 2100-4089.002 to al Categories.	ols to Workpa	aper 1WM004 A	sset Manage	ment & Insp	ections in cost center
2017 Total 2018	Operations & Protoc 2100-4089.002 to al Categories.	cols to Workpa lign costs whe	aper 1WM004 A re they are refle	sset Manage cted in the V	ment & Inspo Vildfire Mitiga	ections in cost center
2018	Operations & Protoc 2100-4089.002 to al Categories.	cols to Workpa ign costs whe 0 at are anticipa	aper 1WM004 Å re they are refle -21 -134	sset Manage cted in the W 0 0	iment & Inspo Vildfire Mitiga 0.0 0.0	ections in cost center tion Plan (WMP) Initiative
2018	Operations & Protoc 2100-4089.002 to al Categories.	cols to Workpa ign costs whe 0 at are anticipa	aper 1WM004 Å re they are refle -21 -134	sset Manage cted in the W 0 0	iment & Inspo Vildfire Mitiga 0.0 0.0	ections in cost center tion Plan (WMP) Initiative 1-Sided Adj
2018 Explanation:	Operations & Protoc 2100-4089.002 to al Categories.	ols to Workpa ign costs whe 0 at are anticipa unt (CEMA). 0 associated wi Workpaper 1W	aper 1WM004 Å re they are refle -21 -134 ated to be reque -214 th Emergency F VM001 Emerger	sset Manage cted in the W 0 sted for reco 0 Planning & Pr ncy Planning	vildfire Mitiga 0.0 0.0 very through 0.0 reparedness & Preparedr	ections in cost center tion Plan (WMP) Initiative 1-Sided Adj a non-GRC Catastrophic Event CCTR Transf To 2100-3962.000 from Workpaper 1WM006 Grid tess in cost center 2100-3962 to

San Diego Gas & Electric Company

2024 GRC - SECOND REVISED ERRATA

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

Explanation: 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 2018 Total 0 -348 0 0.0 Explanation: 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 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 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 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 Explanation: Transfer Non-Labor associated with Grid Operations & Protocols in cost center 2100-3932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories. 2020 0 -36 0.0 0.0 CCTR Transf To 2100-4089.000<	Year	Lab	<u>or</u>	NLbr M	ISE	<u>FTE</u>	Adj Type
20190-400.0CCTR Transf To 2100-3962.000Explanation:Transfer Non-Labor associated with Emergency Planning & Preparedness from Workpaper 1VM006 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.20190-1700.0CCTR Transf To 2100-3932.000Explanation:Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1VM006 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.201907,52600.0CCTR Transf From 2100-4089.000Explanation:Transfer Non-Labor associated with Grid Operations & Protocols In cost center 2100-3932. to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.201907,52600.0Explanation:Transfer Non-Labor associated with Grid Operations & Protocols In cost center 2100-4089.001 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.20200-900.020200-90020200-900.0Explanation:Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM006 Grid Operations & Protocols In cost center 2100-3932.000Explanation:Transfer Non-Labor associated with Grid Design & System Hardening in cost center 2100-3932.000<	Explanation:	Operations & Protocols	to Workpaper	1WM003 Grid E	esign & Sy	stem Harden	ing in cost center 2100-3932
Explanation: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.20190-1700.0CCTR Transf To 2100-3932.000Explanation: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.201907.52600.0CCTR Transf From 2100-4089.000Explanation:Transfer Non-Labor associated with Grid Operations & Protocols from Workpaper 1WM007 Resource Allocation Methology 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.201907.50400.020200-3600.020200-3600.020200-900.020200-900.0Explanation:Transfer Non-Labor associated with Grid Design & System Hardening in cost center 2100-3932.000Explanation: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 2100-3932.000Explanation:Transfer Non-Labor associated with Grid Design & System Hardening in cost center 2	2018 Total		0	-348	0	0.0	
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 Explanation: Transfer Non-Labor associated with 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 Explanation: Transfer Non-Labor associated with Grid Operations & Protocols from Workpaper 1WM007 Resource Allocation Methodogy 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 Total 0 7,504 0 0.0 1-Sided Adj 2019 Total 0 -36 0 0.0 1-Sided Adj 2020 0 -36 0.0 0 1-Sided Adj 2020 0 -9 0 0.0 CCTR Transf To 2100-3932.000 Explanation: Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA). 0 0.0 CCTR Transf To 2100-3932.000 0 0.0 CCTR Tra	2019		0	-4	0	0.0	CCTR Transf To 2100-3962.000
Explanation: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.201907,52600.0CCTR Transf From 2100-4089.000Explanation:Transfer Non-Labor associated with Grid Operations & Protocols from Workpaper 1WM007 Resource Allocation Methology 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 Total07,50400.020200-3600.01-Sided Adj20200-900.0CCTR Transf To 2100-3932.000Explanation:Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM006 Grid Operations & Protocols for Recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).20200-900.0CCTR Transf To 2100-3932.000Explanation:Transfer Non-Labor associated with Grid Design & System Hardening in cost center 2100-30932 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.20200-900.0CCTR Transf To 2100-3932.000Explanation:Transfer Non-Labor associated with Grid Design & System Hardening in cost center 2100-4089.001 to align costs where they are reflected in the Wildfire Mitigation PlanVMOP Resource Allocation Methology to Workpaper 1WM003 Grid Design & System Hardening in cost center	Explanation:	Ops & Protocols to Worl	kpaper 1WM0	01 Emergency F	Planning & F	Preparedness	s in cost center 2100-3962 to
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.201907,52600.0CCTR Transf From 2100-4089.000Explanation:Transfer Non-Labor associated with Grid Operations & Protocols from Workpaper 1WM007 Resource Allocation Methdology 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 Total07,50400.020200-36600.01-Sided Adj20200-36600.01-Sided AdjExplanation:Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).00.0CCTR Transf To 2100-3932.00020200-900.0CCTR Transf To 2100-3932.000Explanation:Transfer Non-Labor associated with Grid Design & System Hardening in cost center 2100-4089.001202009,33500.0202009,33500.0202009,33500.0CTR Transf From 2100-4089.001202009,33500.0CTR Transf From 2100-4089.001202009,33500.0CTR Transf From 2100-4089.001202009,33500.0CTR Transf From 2100-4089.001202009,33500.0CTR Transf From	2019		0	-17	0	0.0	CCTR Transf To 2100-3932.000
Explanation:Transfer Non-Labor associated with Grid Operations & Protocols from Workpaper 1WM007 Resource Allocation Methdology 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 Total07,50400.020200-3600.01-Sided AdjExplanation:Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).00.0CCTR Transf To 2100-3932.00020200-900.0CCTR Transf To 2100-3932.000Explanation: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.202009,33500.0202009,33500.0202009,33500.0202009,33500.0202009,29000.0202009,29000.0202009,29000.020200-6400.020200-6400.020210-6400.020210-6400.020210-6400.020210-6400.0 </th <th>Explanation:</th> <td>Operations & Protocols</td> <td>to Workpaper</td> <td>1WM003 Grid E</td> <td>esign & Sy</td> <td>stem Harden</td> <td>ing in cost center 2100-3932</td>	Explanation:	Operations & Protocols	to Workpaper	1WM003 Grid E	esign & Sy	stem Harden	ing in cost center 2100-3932
Allocation Methdology 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 Total 0 7,504 0 0.0 2020 0 -36 0 0.0 1-Sided Adj Explanation: Incremental costs that are anticipated to be requested for recovery through a no-GRC Catastrophic Event Memorandum Account (CEMA). 2020 0 -9 0 0.0 CCTR Transf To 2100-3932.000 Explanation: Transfer Non-Labor associated with Grid Design & System Hardening from Workpaper 1WM006 Grid Operations & Protocols to Workpaper 1WM003 Grid Design & System Hardening from Sected Part 2100-3932.000 Explanation: Transfer Non-Labor associated with Grid Design & System Hardening in cost center 2100-3932.000 Explanation: Transfer Non-Labor associated with Grid Design & System Hardening in cost center 2100-3932.000 Explanation: Transfer Non-Labor associated with Grid Design & System Hardening in cost center 2100-3932.000 Explanation: Transfer Non-Labor associated with Grid Deprations & Protocols from Workpaper 1WM007 Resource Allocation Methdology 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 Total 0 9,290 0 0.0 2021 0 -64 0 0.0 Explanation: Incremental costs that are anticipated to be requested for recovery through a no-GRC Catastrophic Event Memorandum Account (CEMA).	2019		0	7,526	0	0.0	CCTR Transf From 2100-4089.000
20200-3600.01-Sided AdjExplanation:Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).Non-GRC Catastrophic Event 202020200-900.0CCTR Transf To 2100-3932.000Explanation: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.202009,33500.0CCTR Transf From 2100-4089.000Explanation:Transfer Non-Labor associated with Grid Operations & Protocols from Workpaper 1WM007 Resource Allocation Methology 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 Total09,29000.020210-6400.01-Sided AdjExplanation:Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).00.01-Sided Adj	Explanation:	Allocation Methdology to	Workpaper ?	WM006 Grid O	perations &	Protocols in	cost center 2100-4089.001 to
Explanation:Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).20200-900.0CCTR Transf To 2100-3932.000Explanation: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.202009,33500.0CCTR Transf From 2100-4089.000Explanation:Transfer Non-Labor associated with Grid Operations & Protocols in Cost center 2100-4089.000Transfer Non-Labor associated with Grid Operations & Protocols in cost center 2100-4089.000Explanation:09,33500.0CCTR Transf From 2100-4089.000Incremental costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.2020CTR Transf From 2100-4089.001 to align costs where they are reflected in the Wildfire Mitigation Plan (WMP) Initiative Categories.2020 Total09,29000.02021 Total0-6400.01-Sided AdjExplanation:Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event wemorandum Account (CEMA).Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).	2019 Total		0	7,504	0	0.0	
Memorandum Account (CEMA). Vertical Content of the temperature of temperature of the temperature of temperate of	2020		0	-36	0	0.0	1-Sided Adj
Explanation: 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 Explanation: Transfer Non-Labor associated with Grid Operations & Protocols from Workpaper 1WM007 Resource Allocation Methdology 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 Total 0 9,290 0 0.0 2021 0 -64 0 0.0 1-Sided Adj Explanation: Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA). 0 9,290 0 0.0	Explanation:		•	to be requested	for recover	ry through a r	on-GRC Catastrophic Event
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 Explanation: Transfer Non-Labor associated with Grid Operations & Protocols from Workpaper 1WM007 Resource Allocation Methdology 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 Total 0 9,290 0 0.0 2021 0 -64 0 0.0 1-Sided Adj Explanation: Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA). 0 0.0 1-Sided Adj	2020		0	-9	0	0.0	CCTR Transf To 2100-3932.000
Explanation: Transfer Non-Labor associated with Grid Operations & Protocols from Workpaper 1WM007 Resource Allocation Methology 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 Total 0 9,290 0 0.0 2021 0 -64 0 0.0 1-Sided Adj Explanation: Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA). Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event	Explanation:	Operations & Protocols	to Workpaper	1WM003 Grid E	esign & Sy	stem Harden	ing in cost center 2100-3932
Allocation Methology 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 Total 0 9,290 0 0.0 2021 0 -64 0 0.0 1-Sided Adj Explanation: Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA). Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).	2020		0	9,335	0	0.0	CCTR Transf From 2100-4089.000
2021 0 -64 0 0.0 1-Sided Adj Explanation: Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).	Explanation:	Allocation Methdology to	Workpaper ?	WM006 Grid O	perations &	Protocols in	cost center 2100-4089.001 to
Explanation: Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).	2020 Total		0	9,290	0	0.0	
Memorandum Account (CEMA).	2021		0	-64	0	0.0	1-Sided Adj
2021 Total 0 -64 0 0.0	Explanation:			to be requested	for recover	ry through a r	oon-GRC Catastrophic Event
	2021 Total		0	-64	0	0.0	

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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inc	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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 fro Within RAMP range (max).	m RAMP:					

GRC Work Unit/Activity Level Estimates

Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RA Range Act	
Measure	Activities	Activities	Activities	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 RAM Qualified firefighters join electric multiple different types of units	c crews to serve in a	•	0 0			

unit of measure.

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)

	GRC RSE	RAMP RSE	
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).

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	2022 Forecast	2023 Forecast	2024 Forecast	202 RAMP R (2020 Inc	lange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RA Range Act	
Measure	Activities	Activities	Activities	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				

San Diego Gas & Electric Company

2024 GRC - SECOND REVISED ERRATA

Non-Shared Service Workpapers

Trouch a O		0.000
Workpaper:	1WM006.000 - Grid Operations & Operating Protocols	
Category-Sub:	1. Grid Operations & Operating Protocols	
Category:	G. Grid Operations & Operating Protocols	
Witness:	Jonathan Woldemariam	
Area:	WILDFIRE MITIGATION & VEGETATION MANAGEMENT	

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).

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:H. Resource Allocation MethodologyWorkpaper:1WM007.000

Summary for Category: H. Resource Allocation Methodology

		In 2021\$ (000) Incu	urred Costs	
	Adjusted-Recorded Adjusted-Forecast			
	2021	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
Total	3,823	5,761	7,748	7,748
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
Total	3,823	5,761	7,748	7,748
FTE	10.1	23.0	42.9	42.9

Beginning of Workpaper 1WM007.000 - Resource Allocation Methodology

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.

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

Summary of Results:

	In 2021\$ (000) Incurred Costs							
		Adju	isted-Recor	ded		Ad	justed-Fore	cast
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
Total	0	0	310	3,182	3,823	5,762	7,749	7,749
FTE	0.0	0.0	5.4	17.0	10.1	23.0	42.9	42.9

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

Summary of Adjustments to Forecast:

	In 2021 \$(000) Incurred Costs									
Forecas	t Method	Base Forecast Forecast Adjustment				cast Adjustments Adju			sted-Forecast	
Years	S	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
Tota	I	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>	Adj Type		
2022	1,288	650	0	1,938	12.9	1-Sided Adj		
Explanation:	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.							
2022 Total	1,288	650	0	1,938	12.9			
2023	3,275	650	0	3,925	32.8	1-Sided Adj		
Explanation:	Increased forecast for W and FTE's 100% to WMF advanced analytics, inde Risk Analysis contract su See supplemental workp	PO&M. Non-L pendent Eval pport, and As	abor increase uator and PSI set Mgmt O&	es include fore PS Studies, J M.	ecasts for data	foundation licenses,		
2023 Total	3,275	650	0	3,925	32.8			
2024	3,275	650	0	3,925	32.8	1-Sided Adj		
20243,27565003,92532.81-Sided AdjExplanation: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.								
2024 Total	3,275	650	0	3,925	32.8			

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

Determination of Adjusted-Recorded (Incurred Costs):

j	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
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
Total	5,685	0	45,186	105,642	5,264
FTE	8.1	0.0	36.7	73.7	11.1
djustments (Nominal \$) *	*				
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
Total	-5,685	0	-44,923	-102,839	-1,619
FTE	-7.6	0.0	-32.0	-59.1	-2.4
Recorded-Adjusted (Nomi	nal \$)				
Labor	0	0	203	1,555	1,189
Non-Labor	0	0	60	1,248	2,456
NSE	0	0	0	0	0
Total	0	0	263	2,803	3,645
FTE	0.5	0.0	4.7	14.6	8.6
acation & Sick (Nominal	\$)				
Labor	0	0	29	221	179
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	29	221	179
FTE	0.1	0.0	0.7	2.4	1.5
scalation to 2021\$					
Labor	0	0	13	57	0
Non-Labor	0	0	5	102	0
NSE	0	0	0	0	0
Total	0	0	18	159	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Const	tant 2021\$)				
Labor	0	0	245	1,833	1,367
Non-Labor	0	0	65	1,350	2,456
NSE	0	0	0	0	0
Total	0	0	310	3,182	3,823
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

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

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	
	Total	-5,685	0	-44,923	-102,839	-1,619	
FTE		-7.6	0.0	-32.0	-59.1	-2.4	

Detail of Adjustments to Recorded:

Year		<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	Adj Type
2017		-916	-1,233	0	-5.0	CCTR Transf To 2100-3962.000
Explanation:	1WM007 Resourc	e Allocation Meth	nodology to Wor	kpaper 1W	M001 Emerg	g & Preparedness from Workpaper ency Planning & Preparedness in e Mitigation Plan (WMP) Initiative
2017		-20	-523	0	-0.1	CCTR Transf To 2100-3932.000
Explanation:	Resource Allocatio	on Methodology t	o Workpaper 1\	VM003 Grid	l Design & S	dening from Workpaper 1WM007 ystem Hardening in cost center Plan (WMP) Initiative Categories.
2017		-212	-2,782	0	-2.5	CCTR Transf To 2100-0166.000
Evaloation	Transfor Labor E	TEo and Non Lo	har appaainted y	with Vagatat	ion Mamt 8	Inanactiona from Warkpapar
Explanation: 2017 Total	1WM007 Resourc	e Allocation Meth	ndology to Work	paper 1WM	005 Vegetat	Inspections from Workpaper ion Management & Inspections in e Mitigation Plan (WMP) Initiative
	1WM007 Resourc cost center 2100-0	e Allocation Meth 0166 to align cos	ndology to Work ts where they ar	paper 1WM re reflected i	005 Vegetat n the Wildfin	ion Management & Inspections in
	1WM007 Resourc cost center 2100-0	e Allocation Meth 166 to align cos -1,148	ndology to Work ts where they ar -4,537	paper 1WM e reflected i 0	005 Vegetat n the Wildfin -7.6	ion Management & Inspections in
2017 Total 2018 Total	1WM007 Resourc cost center 2100-0 Categories. Transfer Labor, F ⁻ 1WM007 Resourc	e Allocation Meth 0166 to align cos -1,148 0 -2,895 TEs, and Non-La e Allocation Meth	ndology to Work ts where they ar -4,537 0 -1,638 bor associated v nodology to Wor	paper 1WM re reflected i 0 0 with Emerge kpaper 1WI	005 Vegetat n the Wildfin -7.6 0.0 16.7 ency Planning M001 Emerg	ion Management & Inspections in e Mitigation Plan (WMP) Initiative
2017 Total 2018 Total 2019	1WM007 Resource cost center 2100-0 Categories. Transfer Labor, F ⁻¹ 1WM007 Resource cost center 2100-3	e Allocation Meth 0166 to align cos -1,148 0 -2,895 TEs, and Non-La e Allocation Meth	ndology to Work ts where they ar -4,537 0 -1,638 bor associated v nodology to Wor	paper 1WM re reflected i 0 0 with Emerge kpaper 1WI	005 Vegetat n the Wildfin -7.6 0.0 16.7 ency Planning M001 Emerg	ion Management & Inspections in e Mitigation Plan (WMP) Initiative CCTR Transf To 2100-3962.000 g & Preparedness from Workpaper ency Planning & Preparedness in

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:H. Resource Allocation MethodologyCategory-Sub:1. Resource Allocation MethodologyWorkpaper:1WM007.000 - Resource Allocation Methodology

		<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
Explanation:	1WM007 Resource	e Allocation Met	hodology to Wo	orkpaper 1WN	1003 Grid D	em Hardening from Workpaper esign & System Hardening in e Mitigation Plan (WMP) Initiative
2019		-665	-14,644	0	-4.3	CCTR Transf To 2100-4089.002
Explanation:	1WM007 Resource	Allocation Met	hdology to Wor	kpaper 1WM	004 Asset M	& Inspections from Workpaper anagement & Inspections in cost Mitigation Plan (WMP) Initiative
2019		-321	-8,645	0	-3.5	CCTR Transf To 2100-0166.000
Explanation:	1WM007 Resource	e Allocation Met	hdology to Wor	kpaper 1WM	005 Vegetati	Inspections from Workpaper on Management & Inspections in e Mitigation Plan (WMP) Initiative
2019		0	-7,526	0	0.0	CCTR Transf To 2100-4089.001
Explanation:	Allocation Methdolo	ogy to Workpap	er 1WM006 Gr	id Operations	& Protocols	kpaper 1WM007 Resource in cost center 2100-4089.001 to nitiative Categories.
2019		-67	-3,777	0	-0.5	CCTR Transf To 2100-4089.006
	from Workpaper 1W	Es, and Non-La WM007 Resource agement in cost	bor associated ce Allocation M center 2100-40	with Stakeho ethdology to 089.006 to ali	older Cooper Workpaper 1	CCTR Transf To 2100-4089.006 ation & Community Engagement WM008 Stakeholder Cooperation ere they are reflected in the
	from Workpaper 1V & Community Enga	Es, and Non-La WM007 Resource agement in cost	bor associated ce Allocation M center 2100-40	with Stakeho ethdology to 089.006 to ali	older Cooper Workpaper 1	ation & Community Engagement WM008 Stakeholder Cooperation
Explanation: 2019	from Workpaper 1V & Community Enga Wildfire Mitigation F	Es, and Non-La WM007 Resource agement in cost Plan (WMP) Init -2 ests related to De orkpaper 1WM0	bor associated ce Allocation M center 2100-40 iative Categoria -232 ata Governanc 07.002 Data G	with Stakeho ethdology to V 089.006 to ali es. 0 ce from Worky overnance in	-0.1 cost center	ation & Community Engagement WM008 Stakeholder Cooperation ere they are reflected in the CCTR Transf To 2100-4089.005 007 Resource Allocation 2100-4089.005 to align costs
Explanation:	from Workpaper 1V & Community Enga Wildfire Mitigation F Transfer wildfire co Metholodogy to Wo	Es, and Non-La WM007 Resource agement in cost Plan (WMP) Init -2 ests related to De orkpaper 1WM0	bor associated ce Allocation M center 2100-40 iative Categoria -232 ata Governanc 07.002 Data G	with Stakeho ethdology to V 089.006 to ali es. 0 ce from Worky overnance in	-0.1 cost center	ation & Community Engagement WM008 Stakeholder Cooperation ere they are reflected in the CCTR Transf To 2100-4089.005 007 Resource Allocation 2100-4089.005 to align costs
2019 Zonation:	from Workpaper 1V & Community Enga Wildfire Mitigation F Transfer wildfire co Metholodogy to Wo	Es, and Non-La WM007 Resource agement in cost Plan (WMP) Init -2 orkpaper 1WM0 ected in the Wile	bor associated ce Allocation M center 2100-40 iative Categorie -232 ata Governanc 07.002 Data G dfire Mitigation	with Stakeho ethdology to V 089.006 to ali es. 0 ce from Worky overnance in Plan (WMP)	-0.1 -0.1 cost center 1 -0.1 cost center 1 Initiative Cat	ation & Community Engagement WM008 Stakeholder Cooperation ere they are reflected in the CCTR Transf To 2100-4089.005 007 Resource Allocation 2100-4089.005 to align costs
2019 Explanation: 2019 Total 2020	from Workpaper 1V & Community Enga Wildfire Mitigation F Transfer wildfire co Metholodogy to Wo where they are refle	Es, and Non-La WM007 Resource agement in cost Plan (WMP) Init -2 orkpaper 1WM0 ected in the Wile -4,919 0 D-related costs t	bor associated ce Allocation M center 2100-40 iative Categoria -232 ata Governand 07.002 Data G dfire Mitigation -40,003 -2 hat are anticipa	with Stakeho ethdology to V 089.006 to ali es. 0 ce from Worky overnance in Plan (WMP) 0 0 ated to be req	-0.1 baper 1WM0 cost center 3 Initiative Cat -32.0 0.0	ation & Community Engagement WM008 Stakeholder Cooperation ere they are reflected in the CCTR Transf To 2100-4089.005 007 Resource Allocation 2100-4089.005 to align costs regories.
Explanation: 2019 Explanation: 2019 Total 2020	from Workpaper 1W & Community Enga Wildfire Mitigation F Transfer wildfire co Metholodogy to Wo where they are reflect Incremental COVIE	Es, and Non-La WM007 Resource agement in cost Plan (WMP) Init -2 orkpaper 1WM0 ected in the Wile -4,919 0 D-related costs t	bor associated ce Allocation M center 2100-40 iative Categoria -232 ata Governand 07.002 Data G dfire Mitigation -40,003 -2 hat are anticipa	with Stakeho ethdology to V 089.006 to ali es. 0 ce from Worky overnance in Plan (WMP) 0 0 ated to be req	-0.1 baper 1WM0 cost center 3 Initiative Cat -32.0 0.0	ation & Community Engagement WM008 Stakeholder Cooperation ere they are reflected in the CCTR Transf To 2100-4089.005 007 Resource Allocation 2100-4089.005 to align costs egories. 1-Sided Adj
Explanation: 2019 Explanation: 2019 Total 2020 Explanation:	from Workpaper 1W & Community Enga Wildfire Mitigation F Transfer wildfire co Metholodogy to Wo where they are refle Incremental COVIE Catastrophic Event Transfer Labor, FT 1WM007 Resource	Es, and Non-La WM007 Resource agement in cost Plan (WMP) Init -2 ests related to De orkpaper 1WM0 ected in the Wile -4,919 0 D-related costs to t Memorandum - -4,555 Es, and Non-La e Allocation Met	bor associated ce Allocation M center 2100-40 iative Categorie -232 ata Governand 07.002 Data G dfire Mitigation -40,003 -2 hat are anticipa Account (CEM -7,369 bor associated hodology to Wo	with Stakeho ethdology to V 089.006 to ali es. 0 ce from Worky overnance in Plan (WMP) 0 ated to be req A). 0 with Emerge orkpaper 1WM	-0.1 order 1000 -0.1 oaper 1000 cost center 1 Initiative Cat -32.0 0.0 uested for re -28.2 ncy Planning M001 Emerg	ation & Community Engagement WM008 Stakeholder Cooperation ere they are reflected in the CCTR Transf To 2100-4089.005 007 Resource Allocation 2100-4089.005 to align costs egories. 1-Sided Adj ecovery through a non-GRC

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

<u>Year</u>	Labor	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	Adj Type		
Explanation:	Workpaper 1WM007 Resour	ce Allocation Method er 2100-3963 to aligr	lology to Work	kpaper 1WN	ate Adaptation Department from /002.000 Situational Awareness lected in the Wildfire Mitigation		
2020	-441	-12,578	0	-2.6	CCTR Transf To 2100-3932.000		
Explanation:	1WM007 Resource Allocation	n Methodology to Wo	orkpaper 1WM	1003 Grid D	em Hardening from Workpaper esign & System Hardening in e Mitigation Plan (WMP) Initiative		
2020	-1,584	-42,699	0	10.7	CCTR Transf To 2100-4089.002		
Explanation:	1WM007 Resource Allocation	n Methdology to Wor	kpaper 1WM	004 Asset M	& Inspections from Workpaper lanagement & Inspections in cost e Mitigation Plan (WMP) Initiative		
2020	-361	-10,865	0	-3.8	CCTR Transf To 2100-0166.000		
Explanation:		n Methdology to Wor	kpaper 1WM	005 Vegetat	Inspections from Workpaper ion Management & Inspections in e Mitigation Plan (WMP) Initiative		
2020	0	-9,335	0	0.0	CCTR Transf To 2100-4089.001		
Explanation:	Transfer Non-Labor associate Allocation Methdology to Wor align costs where they are re	kpaper 1WM006 Gr	rid Operations	& Protocols	s in cost center 2100-4089.001 to		
2020	-602	-8,157	0	-5.0	CCTR Transf To 2100-4089.006		
Explanation:		esource Allocation M a cost center 2100-4	ethdology to V 089.006 to aliç	Vorkpaper	ration & Community Engagement 1WM008 Stakeholder Cooperation ere they are reflected in the		
2020	-192	-677	0	-1.3	CCTR Transf To 2100-4089.005		
Explanation:	Transfer wildfire costs related to Data Governance from Workpaper 1WM007 Resource Allocation Metholodogy 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.						
2020 Total	-8,604	-94,234	0	-59.1			
2021	0	-2	0	0.0	1-Sided Adj		
Explanation:	Incremental COVID-related c Catastrophic Event Memorar			uested for r	ecovery through a non-GRC		
2021	-322	-695	0	-2.4	CCTR Transf To 2100-4089.005		

San Diego Gas & Electric Company

2024 GRC - SECOND REVISED ERRATA

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

Year	Labor	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	Adj Type		
Explanation:	Transfer wildfire costs related to Data Governance from Workpaper 1WM007 Resource Allocation Metholodogy 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		
Explanation:	Transfer wildfire costs related to Risk Assessment & Mapping from Workpaper 1WM007 Resource Allocation Metholodogy 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.						
2021 Total	-322	-1,297	0	-2.4			

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 # 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)

					2024	1
	2021 Historical	021 Historical 2022		2024	RAMP Range	
	Embedded Cost	Forecast	Forecast	Forecast	(2020 Incurred \$)	
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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.

Measure Activities Activities Activities	Activities	Low	
		LOW	High
Tranche 1 Track and report 0.00 0.00 0.00 on wildfire mitigation programs through quarterly 0.00 0.00 reports and annual WMP. 0.00 0.00 0.00	0.00	0.00	0.00

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:								

Non-Shared Service Workpapers

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:H. Resource Allocation MethodologyCategory-Sub:1. Resource Allocation MethodologyWorkpaper: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).

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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP Range (2020 Incurred \$)	
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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.

Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP Range Activities			
Measure	Activities	Activities	Activities	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:								

Non-Shared Service Workpapers

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:H. Resource Allocation MethodologyCategory-Sub:1. Resource Allocation MethodologyWorkpaper: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

Wildfire Mitigation O&M - Forecast Adjustments

									2022			2023			2024			
							Unit Metric											
Line Item	Workpaper	Wkp Name	WMP Initiative	Labor/Non-Labor	RAMP/Non-RAMP	Unit Description	(ea./ft./mile)	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	Total Cost	Explanation
																		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
1	1WM007.000	Resource Allocation Method	Wildfire Mitigation Personnel	Labor	RAMP	FTE's	FTE	8	\$ 125,000	\$ 500,00)	8 \$ 125,000	\$ 1,000,000	8	\$ 125,000	\$ 1,000,000	\$ 2,500,000	halfway through 2022.
			-															·
																		Wildfire Mitigation Strategy is requesting seven additional
																		employees to address increasing work around risk modeling,
																		including RSEs. Additional employees are slated to start
2	1WM007.000	Resource Allocation Method	New FTE requests (PSPS/Risk management)	Labor		FTE's	FTE	7	\$ 125,000			7 \$ 125,000	\$ 875,000	7	\$ 125,000	\$ 875,000		halfway through 2022.
3	1WM007.000	Resource Allocation Method	PSPS Department (1 Dir)	Labor	RAMP	FTE's	FTE	1	\$ 200,000	\$ 50,00		1 \$ 200,000	\$ 200,000	1	\$ 200,000	\$ 200,000	\$ 450,000	New Director of PSPS beginning September 2022.
																		Three managers beginning September 2022: PSPS
4	1WM007.000	Resource Allocation Method	PSPS Department (3 Mgrs)	Labor	RAMP	FTE's	FTE	3	\$ 150,000	\$ 112,50)	3 \$ 150,000	\$ 450,000	3	\$ 150,000	\$ 450,000	\$ 1,012,500	Compliance, PSPS Strategy, and PSPS Programs.
																		Six project managers beginning September 2022. Two for
																		each manager: PSPS Compliance, PSPS Strategy, and PSPS
5	1WM007.000	Resource Allocation Method	PSPS Department (6 PM's)	Labor	RAMP	FTE's	FTE	6	\$ 125,000	\$ 187,50)	6 \$ 125,000	\$ 750,000	6	\$ 125,000	\$ 750,000	\$ 1,687,500	Programs.
																		Non-labor costs to address increased spend associated with
																		the Independent Evaluator. 2021 engagement was short,
																		and expected future engagements will include additional
6	1WM007.000	Resource Allocation Method	Independent Evaluator	Non-Labor	RAMP	# of Reports	Reports	1	\$ 400,000	\$ 400,00)	1 \$ 400,000	\$ 400,000	1	\$ 400,000	\$ 400,000	\$ 1,200,000	
																		Third-party vendor costs to assist with project management
																		and data analysis of the OEIS ordered joint IOU Enhanced
7	1WM007.000	Resource Allocation Method	Joint IOU - Enhanced Veg Analysis	Non-Labor	RAMP			1	\$ 250,000	\$ 250,00)	1 \$ 250,000	\$ 250,000	1	\$ 250,000	\$ 250,000	\$ 750,000	Vegetation Managament study.
Summary																		
							RAMP			\$ 1,287,50			\$ 3,275,000			\$ 3,275,000		
							RAMP			\$ 650,00			\$ 650,000			\$ 650,000		
						Subtotal RAMP				\$ 1,937,50)		\$ 3,925,000			\$ 3,925,000	\$ 9,787,500	
1						Labor	Non-RAMP			s -			s -	1		s -	ś -	
							Non-RAMP			s -	1		s -	1		, \$-	s -	
						Subtotal Non-RAMP				\$ -			\$ -			\$ -	\$ -	1
						Total Historical Adius	stments			\$ 1.937.50			\$ 3.925.000			\$ 3.925.000	\$ 9,787,500	
L						rotar motorical Aujus	Juncing			× 1,557,50	· ·		- 3,323,000	1		\$ 3,523,000	- 3,787,500	

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:I. Risk Assessment & MappingWorkpaper:1WM007.001

Summary for Category: I. Risk Assessment & Mapping

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

Workpapers belonging to this Category:

1WM007.001	Risk Assessment	&	Mapping
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Labor	0	125	125	125
Non-Labor	608	1,888	2,202	2,288
NSE	0	0	0	0
Total	608	2,013	2,327	2,413
FTE	0.0	1.3	1.3	1.3

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

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 utilitized 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.

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							
		Adju	isted-Recor	ded		Ad	justed-Fore	cast
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
Total	0	0	0	0	608	2,013	2,327	2,413
FTE	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3

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	t Method	Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years	6	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
Tota	I	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>	Labor	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	Adj Type		
2022	125	1,280	0	1,405	1.3	1-Sided Adj		
Explanation:	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.							
2022 Total	125	1,280	0	1,405	1.3			
2023	125	1,594	0	1,719	1.3	1-Sided Adj		
Explanation:	Increased forecast for W and FTE's 100% to WMI advanced analytics, inde Risk Analysis contract su See supplemental workp	P O&M. Non-L pendent Eval upport, applica	abor increase uator and PSI able Asset Mg	es include for PS Studies, J mt O&M.	ecasts for data	foundation licenses,		
2023 Total	125	1,594	0	1,719	1.3			
2024	125	1,680	0	1,805	1.3	1-Sided Adj		
Explanation:								
2024 Total	125	1,680	0	1,805	1.3			

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)
Recorded (Nominal \$)*					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	9
NSE	0	0	0	0	0
Total	0	0	0	0	9
FTE	0.0	0.0	0.0	0.0	0.0
djustments (Nominal \$) **					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	599
NSE	0	0	0	0	0
Total	0	0	0	0	599
FTE	0.0	0.0	0.0	0.0	0.0
ecorded-Adjusted (Nomina	al \$)				
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	608
NSE	0	0	0	0	0
Total	0	0	0	0	608
FTE	0.0	0.0	0.0	0.0	0.0
acation & Sick (Nominal \$))				
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
scalation to 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
ecorded-Adjusted (Consta	ant 2021\$)				
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	608
NSE	0	0	0	0	0
Total	0	0	0	0	608
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

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			
	Total	0	0	0	-0.250	599			
FTE		0.0	0.0	0.0	0.0	0.0			

Detail of Adjustments to Recorded:

Year	Labor	NLbr	NSE	FTE	Adj Type
2017 Total	0	0	0	0.0	
2018 Total	0	0	0	0.0	
2019 Total	0	0	0	0.0	
2020	0	0	0	0.0	1-Sided Adj
Explanation:	Incremental COVID-related Catastrophic Event Memora		•	requested f	or recovery through a non-GRC
2020 Total	0	0	0	0.0	
2021	0	-1	0	0.0	1-Sided Adj
Explanation:	Incremental COVID-related Catastrophic Event Memora		•	requested f	or recovery through a non-GRC
2021	0	600	0	0.0	CCTR Transf From 2100-4089.000
Explanation:		Vorkpaper 1WM00	7.001 Risk A	ssessment	rkpaper 1WM007 Resource & Mapping in cost center 2100-4097 VMP) Initiative Categories.
2021 Total	0	599	0	0.0	

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	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inci	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RA Range Act	
Measure	Activities	Activities	Activities	Activities	Low	High
Tranche 1 N/A	0.00	0.00	0.00	0.00	0.00	0.00
Work Unit Changes fro	m RAMP:					

Risk Spend Efficiency (RSE)		
	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000
SE Changes from RAMP:		
5	RSE values are primarily due to changes	63
discussed in the RAMP to GRC in	egration testimony of R. Scott Pearson a	nd Gregory S. Flores (Ex.
SCG-03/SDG&E-03. Chapter 2).		

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:J. Data GovernanceWorkpaper:1WM007.002

Summary for Category: J. Data Governance

	In 2021\$ (000) Incurred Costs							
	Adjusted-Recorded		Adjusted-Forecast					
	2021	2022	2023	2024				
Labor	380	568	755	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
		- aca	001011101100

Labor	380	568	755	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

Beginning of Workpaper 1WM007.002 - Data Governance

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:J. Data GovernanceCategory-Sub1. Data GovernanceWorkpaper: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								
		Adju	usted-Recor	Ad	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		
Tota	I 0	0	254	959	1,082	1,425	1,631	1,650		
FTE	0.0	0.0	0.1	1.5	2.9	4.8	6.7	6.7		

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 202	1 \$(000) Ir	ncurred Co	sts				
Forecast Method		Bas	se Foreca	st	Forec	ast Adjust	ments	Adjus	ted-Forec	ast
Years	S	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
Tota	I	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>	Adj Type	
2022	188	155	0	343	1.9	1-Sided Adj	
Explanation:	Increased forecast for W and FTE's 100% to WM advanced analytics, inde Risk Analysis contract so See supplemental works	P O&M. Non-L ependent Evalu upport, applica	abor increas uator and PS ble Asset Mg	es include for PS Studies, J Imt O&M.	ecasts for data	foundation licenses,	
2022 Total	188	155	0	343	1.9		
2023	375	174	0	549	3.8	1-Sided Adj	
Explanation:	Increased forecast for W and FTE's 100% to WM advanced analytics, inde Risk Analysis contract so See supplemental works	P O&M. Non-L ependent Evalu upport, applica	abor increas uator and PS ble Asset Mg	es include for PS Studies, J Imt O&M.	ecasts for data	foundation licenses,	
2023 Total	375	174	0	549	3.8		
2024	375	193	0	568	3.8	1-Sided Adj	
Explanation: 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.							
2024 Total	375	193	0	568	3.8		

Note: Totals may include rounding differences. SDG&E/WILDFIRE MITIGATION & VEGETATION MANAGEMENT/Exh No:SDG&E-13-WP-2R-E/Witness: J. Woldemariam Page 147 of 165

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:J. Data GovernanceCategory-Sub:1. Data GovernanceWorkpaper:1WM007.002 - Data Governance

Determination of Adjusted-Recorded (Incurred Costs):

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	0	0	0	0	9
Non-Labor	0	0	0	0	7
NSE	0	0	0	0	0
Total	0	0	0	0	16
FTE	0.0	0.0	0.0	0.0	0.1
djustments (Nominal \$) **					
Labor	0	0	2	192	322
Non-Labor	0	0	232	677	695
NSE	0	0	0	0	0
Total	0	0	235	869	1,017
FTE	0.0	0.0	0.1	1.3	2.4
Recorded-Adjusted (Nomina	al \$)				
Labor	0	0	2	192	331
Non-Labor	0	0	232	677	702
NSE	0	0	0	0	0
Total	0	0	235	869	1,032
FTE	0.0	0.0	0.1	1.3	2.5
acation & Sick (Nominal \$)					
Labor	0	0	0	27	50
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	27	50
FTE	0.0	0.0	0.0	0.2	0.4
scalation to 2021\$					
Labor	0	0	0	7	0
Non-Labor	0	0	19	55	0
NSE	0	0	0	0	0
Total	0	0	19	62	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant	nt 2021\$)				
Labor	0	0	3	227	380
Non-Labor	0	0	251	732	702
NSE	0	0	0	0	0
Total	0	0	254	959	1,082
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

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 Recorded:

		In Nominal	\$ (000) Incurred Co	osts		
	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
	Total	0	0	235	869	1,017
FTE		0.0	0.0	0.1	1.3	2.4

Detail of Adjustments to Recorded:

Year	Labor	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	Adj Type
2017 Total	0	0	0	0.0	
2018 Total	0	0	0	0.0	
2019	2	232	0	0.1	CCTR Transf From 2100-4089.000
Explanation:	Transfer wildfire costs related to Data Governance from Workpaper 1WM007 Resource Allocation Metholodogy 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.				
2019 Total	2	232	0	0.1	
2020	192	677	0	1.3	CCTR Transf From 2100-4089.000
Explanation:	Transfer wildfire costs related Metholodogy to Workpaper 1 they are reflected in the Wildf	WM007.002 Data	Governance	in cost cent	ter 2100-4097 to align costs where
2020 Total	192	677	0	1.3	
2021	322	695	0	2.4	CCTR Transf From 2100-4089.000
Explanation:	Transfer wildfire costs related Metholodogy to Workpaper 1 where they are reflected in th	WM007.002 Data	Governance	in cost cent	ter 2100-4089.005 to align costs
2021 Total	322	695	0	2.4	

Area:	WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness:	Jonathan Woldemariam
Category:	J. Data Governance
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	2022	2023	2024	2024 RAMP R	
	Embedded Cost	Forecast	Forecast	Forecast	(2020 Inci	.,
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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.

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

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000
RSE Changes from RAMP:		

SCG-03/SDG&E-03, Chapter 2).

Area:WILDFIRE MITIGATION & VEGETATION MANAGEMENTWitness:Jonathan WoldemariamCategory:K. Stakeholder Cooperation & Community EngagementWorkpaper:1WM008.000

Summary for Category: K. Stakeholder Cooperation & Community Engagement

		In 2021\$ (000) Inc.	urred Costs	
	Adjusted-Recorded		Adjusted-Forecast	
	2021	2022	2023	2024
Labor	1,497	1,968	1,968	1,968
Non-Labor	9,488	9,597	9,597	9,597
NSE	0	0	0	0
Total	10,985	11,565	11,565	11,565
FTE	12.8	16.8	16.8	16.8

Workpapers belonging to this Category:

1WM008.000 Stakeholder Cooperation & Community Engagement

NSE n n n	0,001 0,001 0,001	0,001 0,001 0,001	Non-Labor 9,488 9,597 9,597 9,5		0,100	0,001	0,001	0,001
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Beginning of Workpaper 1WM008.000 - Stakeholder Cooperation & Community Engagement

Non-Shared Service Workpapers

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:

[ln 2021\$ (00	0) Incurred (Costs		
		Adju	isted-Recor	ded		Ad	justed-Fore	cast
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
Total	125	214	4,171	9,534	10,985	11,565	11,565	11,565
FTE	0.1	0.0	0.6	5.8	12.8	16.8	16.8	16.8

Non-Shared Service Workpapers

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			Forec	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
Explanation:	Increased forecast for V	VMP O&M rela	ted to WMP C	Communicatio	on Practices.	
2022	0	48	0	48	0.0	1-Sided Adj
Explanation:	Increased forecast for V	VMP O&M rela	ted to WMP N	lylar Balloon:	S.	
2022	250	13	0	263	2.0	1-Sided Adj
Explanation:	Increased costs for WM adds 2 FTE's in 2022 10				n original RAM	^o report. Forecast
2022	96	48	0	144	1.0	1-Sided Adj
Explanation:	Increased costs for WM adds 1 FTE's in 2022 10				in original RAM	/IP report. Forecast
2022 Total	471	109	0	580	4.0	
2023	125	0	0	125	1.0	1-Sided Adj
Explanation:	Increased forecast for V	VMP O&M rela	ted to WMP C	Communicatio	on Practices.	
2023	0	48	0	48	0.0	1-Sided Adj
Explanation:	Increased forecast for V	VMP O&M rela	ted to WMP N	lylar Balloon:	S.	
2023	250	13	0	263	2.0	1-Sided Adj
Explanation:	Increased costs for WM adds 2 FTE's in 2022 10		• •		n original RAMF	Preport. Forecast
2023	96	48	0	144	1.0	1-Sided Adj
Explanation:	Increased costs for WM adds 1 FTE's in 2022 10				in original RAN	//P report. Forecast
2023 Total	471	109	0	580	4.0	
2024	125	0	0	125	1.0	1-Sided Adj
Explanation:	Increased forecast due	to increased in	iterest in Stak	eholder & Co	mmunity Enga	gement programs .
2024	0	48	0	48	0.0	1-Sided Adj
Explanation:	Increased forecast for V	VMP O&M rela	ted to WMP N	lylar Balloon	S.	

Note: Totals may include rounding differences.

SDG&E/WILDFIRE MITIGATION & VEGETATION MANAGEMENT/Exh No:SDG&E-13-WP-2R-E/Witness: J. Woldemariam

San Diego Gas & Electric Company

2024 GRC - SECOND REVISED ERRATA

Non-Shared Service Workpapers

Area: Witness: Category: Category-Sub: Workpaper:	WILDFIRE MITIGATION & VEGETATION MANAGEMENT Jonathan Woldemariam K. Stakeholder Cooperation & Community Engagement 1. Stakeholder Cooperation & Community Engagement 1WM008.000 - Stakeholder Cooperation & Community Engagement								
Year	Labor	<u>NLbr</u>	NSE	<u>Total</u>	<u>FTE</u>	Adj_Type			
2024	250	13	0	263	2.0	1-Sided Adj			
Explanation:		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			
Explanation:	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.								
2024 Total	471	109	0	580	4.0				

Non-Shared Service Workpapers

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

Determination of Adjusted-Recorded (Incurred Costs):

·····,	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
ecorded (Nominal \$)*					
Labor	0	0	0	0	1,302
Non-Labor	0	0	0	0	9,489
NSE	0	0	0	0	0
Total	0	0	0	0	10,790
FTE	0.0	0.0	0.0	0.0	10.9
djustments (Nominal \$) *	*				
Labor	6	0	67	602	0
Non-Labor	103	193	3,788	8,157	-1
NSE	0	0	0	0	0
Total	109	193	3,855	8,760	-1
FTE	0.1	0.0	0.5	5.0	0.0
ecorded-Adjusted (Nomir	nal \$)				
Labor	6	0	67	602	1,302
Non-Labor	103	193	3,788	8,157	9,488
NSE	0	0	0	0	0
Total	109	193	3,855	8,760	10,789
FTE	0.1	0.0	0.5	5.0	10.9
acation & Sick (Nominal \$	\$)				
Labor	1	0	10	85	195
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	1	0	10	85	195
FTE	0.0	0.0	0.1	0.8	1.9
scalation to 2021\$					
Labor	1	0	4	22	0
Non-Labor	15	21	303	667	0
NSE	0	0	0	0	0
Total	16	21	307	689	0
FTE	0.0	0.0	0.0	0.0	0.0
ecorded-Adjusted (Const	ant 2021\$)				
Labor	8	0	81	710	1,497
Non-Labor	118	214	4,090	8,825	9,488
NSE	0	0	0	0	0
Total	125	214	4,171	9,534	10,985
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

Non-Shared Service Workpapers

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 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			
	Total	109	193	3,855	8,760	-0.765			
FTE		0.1	0.0	0.5	5.0	0.0			

Detail of Adjustments to Recorded:

<u>Year</u>		<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	Adj Type		
2017		6	3	0	0.1	CCTR Transf From 2100-0622.000		
Explanation:	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		
Explanation:	Transfer WMP rela 1WM008.000 Stak	•				-4089.006 in WMP workpaper activity resides.		
2017 Total		6	103	0	0.1			
2018		0	193	0	0.0	CCTR Transf From 2100-0058.000		
Explanation:	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.							
2018 Total		0	193	0	0.0			
2019		67	3,777	0	0.5	CCTR Transf From 2100-4089.000		
Explanation:	Transfer Labor, FTEs, and Non-Labor associated with Stakeholder Cooperation & Community Engagement from Workpaper 1WM007 Resource Allocation Methdology 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		
Explanation:	Transfer WMP rela 1WM008.000 Stak	•				-4089.006 in WMP workpaper activity resides.		
		67	2 700	•	0.5			
2019 Total		07	3,788	0	0.5			

San Diego Gas & Electric Company

2024 GRC - SECOND REVISED ERRATA

Non-Shared Service Workpapers

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

Year	Labor	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	Adj Type			
Explanation:	Transfer Labor, FTEs, and Non-Labor associated with Stakeholder Cooperation & Community Engagement from Workpaper 1WM007 Resource Allocation Methology 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 Total	602	8,157	0	5.0				
2021	0	-1	0	0.0	1-Sided Adj			
Explanation:	One-sided adjustment to exclud	e \$765 related to E	Events and T	Fickets.				
2021 Total	0	-1	0	0.0				

Non-Shared Service Workpapers

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

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)

					2024	L .
	2021 Historical	2022	2023	2024	RAMP Range (2020 Incurred \$)	
	Embedded Cost	Forecast	Forecast	Forecast		
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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.

Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP Range Activities	
Measure	Activities	Activities	Activities	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 RAI Program that improves coordir multiple different types of units unit of measure.	nation and customer a		•			

Risk Spend Efficiency (RSE)						
	GRC RSE	RAMP RSE				
Tranche 1	0.000	0.000				
RSE Changes from RAMP:						

Non-Shared Service Workpapers

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

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).

Non-Shared Service Workpapers

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

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	2022	2023	2024	2024 RAMP R	
	Embedded Cost (2021 \$)	Forecast (2021 \$)	Forecast (2021 \$)	Forecast (2021 \$)	(2020 Inci	.,
	(2021 \$)	(2021 ३)	(2021 \$)	(2021 ३)	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.

Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP Range Activities	
Measure	Activities	Activities	Activities	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

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:			

Non-Shared Service Workpapers

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

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).

Non-Shared Service Workpapers

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

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	2022	2023	2024	2024 RAMP R	
	Embedded Cost (2021 \$)	Forecast (2021 \$)	Forecast (2021 \$)	Forecast (2021 \$)	(2020 Inci Low	•
Tranche 1 Cost Estimate	1,127	1,390	1,390	1,390	0	0

Cost Estimate Changes from RAMP:

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

Unit of	2021 Historical Embedded			2024 RAMP Range Activities		
Measure	Activities	Activities	Activities	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

Risk Spend Efficiency (RSE)			
	GRC RSE	RAMP RSE	
Tranche 1	0.000	0.000	
RSE Changes from RAMP:			
8	RSE values are primarily due to changes egration testimony of R. Scott Pearson ar	87	

Non-Shared Service Workpapers

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

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	2022	2023	2024	2024 RAMP R	
	Embedded Cost	Forecast	Forecast	Forecast	(2020 Incurred \$)	
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	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.

Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RA Range Act	
Measure	Activities	Activities	Activities	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

<u> Risk Spend Efficiency (RSE)</u>		
	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000
RSE Changes from RAMP:	0.000	0.000
-	RSE values are primarily due to changes	in the MAVF and RSE methodology as
discussed in the RAMP to GRC in	egration testimony of R. Scott Pearson a	nd Gregory S. Flores (Ex.

SCG-03/SDG&E-03, Chapter 2).

Area:	WILDFIRE MITIGATION & VEGETATION MANAGEMENT
Witness:	Jonathan Woldemariam

Appendix A: List of Non-Shared Cost Centers

Cost Center	<u>Sub</u>	Description
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
2100-4191	000	VP WILDFIRE AND CLIMATE SCIENCE