

Company: San Diego Gas & Electric Company (U 902 M)
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Application: A.22-05-016
Exhibit: SDG&E-04-R-E

REVISED
PREPARED DIRECT TESTIMONY OF
L. PATRICK KINSELLA
(GAS DISTRIBUTION)

ERRATA

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA



May 2023

TABLE OF CONTENTS

I.	INTRODUCTION	1
A.	Summary of Gas Distribution Costs and Activities.....	1
B.	Support To and From Other Witnesses.....	8
1.	Small Meter and Regulator Purchases	9
2.	New Meter Set Forecast.....	9
3.	Incremental Vehicles	9
4.	Electric Support	10
5.	Economic Growth.....	10
6.	Environmental Services	10
7.	Asset Integrity Management.....	10
8.	SoCalGas Gas System Staff & Technology.....	10
C.	Organization of Testimony	11
II.	RISK ASSESSMENT MITIGATION PHASE (RAMP) INTEGRATION	11
A.	RAMP Risk and Cross-Functional Overview.....	13
B.	GRC Risk and CFF Activities.....	15
C.	Changes from RAMP Report.....	18
III.	SUSTAINABILITY AND SAFETY CULTURE	19
A.	Sustainability.....	19
B.	Safety Culture	21
IV.	NON-SHARED COSTS	24
A.	Other Services (1GD000)	27
1.	Description of Costs and Activities	28
2.	Forecast Method.....	28
3.	Cost Drivers	28
B.	Leak Survey (1GD001).....	28
1.	Description of Costs and Activities	29
2.	Forecast Method.....	30
3.	Cost Drivers	31
C.	R-Locate & Mark (1GD002)	31
1.	Description of Costs and Activities	32
2.	Forecast Method.....	34
3.	Cost Drivers	34
D.	Main Maintenance (1GD003).....	35

1.	Description of Costs and Activities	35
2.	Forecast Method.....	37
3.	Cost Drivers	38
E.	Service Maintenance (1GD004)	38
1.	Description of Costs and Activities	39
2.	Forecast Method.....	41
3.	Cost Drivers	42
F.	Tools, Fitting, and Materials (1GD005)	42
1.	Description of Costs and Activities	43
2.	Forecast Method.....	44
3.	Cost Drivers	45
G.	Electric Support (1GD006).....	45
1.	Description of Costs and Activities	45
2.	Forecast Method.....	46
3.	Cost Drivers	46
H.	Measurement & Regulation (1GD007).....	46
1.	Description of Costs and Activities	47
2.	Forecast Method.....	49
3.	Cost Drivers	50
I.	Cathodic Protection (1GD008).....	51
1.	Description of Costs and Activities	51
2.	Forecast Method.....	52
3.	Cost Drivers	53
J.	Asset Management (1GD009)	54
1.	Description of Costs and Activities	54
2.	Forecast Method.....	56
3.	Cost Drivers	59
K.	Operations Management, Supervision, and Training (1GD010)].....	59
1.	Description of Costs and Activities	60
2.	Forecast Method.....	63
3.	Cost Drivers	64
V.	CAPITAL.....	66
A.	New Business (500)	70

1.	Description	71
2.	Forecast Method.....	72
3.	Cost Drivers	73
B.	System Minor Additions, Relocations, and Retirements (501)	74
1.	Description	74
2.	Forecast Method.....	76
3.	Cost Drivers	77
C.	Gas Meters & Regulators (502).....	77
1.	Description	78
2.	Forecast Method.....	79
3.	Cost Drivers	79
D.	Gas System Reinforcement (503).....	80
1.	Description	80
2.	Forecast Method.....	81
3.	Cost Drivers	81
E.	Street & Highway Relocation (505)	82
1.	Description	82
2.	Forecast Method.....	83
3.	Cost Drivers	84
F.	Tools & Equipment (506).....	84
1.	Description	84
2.	Forecast Method.....	86
3.	Cost Drivers	87
G.	Code Compliance (507).....	88
1.	Description	88
2.	Forecast Method.....	91
3.	Cost Drivers	91
H.	Leak Repair (508).....	92
1.	Description	92
2.	Forecast Method.....	93
3.	Cost Drivers	94
I.	Cathodic Protection Program (509).....	94
1.	Description	94

	2.	Forecast Method.....	96
	3.	Cost Drivers	96
J.		Cathodic Protection System Enhancements (12551).....	97
	1.	Description.....	97
	2.	Forecast Method.....	99
	3.	Cost Drivers	99
K.		System Reliability & Safety (510).....	100
	1.	Description.....	100
	2.	Forecast Method.....	101
	3.	Cost Drivers	102
L.		Underperforming Steel Replacement Program – Thread Main (Pre-1934 Vintage) (19565).....	103
	1.	Description.....	103
	2.	Forecast Method.....	104
	3.	Cost Drivers	104
M.		Underperforming Steel Replacement Program – 1934-1965 Vintage (19564)	105
	1.	Description.....	105
	2.	Forecast Method.....	106
	3.	Cost Drivers	106
N.		Underperforming Steel Replacement Program – Other Steel (Post 1965 vintage) (514).....	107
	1.	Description.....	107
	2.	Forecast Method.....	108
	3.	Cost Drivers	108
O.		Early Vintage Program (Components) – Dresser Mechanical Coupling Removal (19566)	109
	1.	Description.....	109
	2.	Forecast Method.....	110
	3.	Cost Drivers	110
P.		Early Vintage Program (Components) – Oil Drip Piping Removal (19567).....	111
	1.	Description.....	111
	2.	Forecast Method.....	112
	3.	Cost Drivers	112

Q.	Early Vintage Program (Components) – Removal of Closed Valves between High/Medium Pressure Zones (19569).....	113
	1. Description.....	113
	2. Forecast Method.....	114
	3. Cost Drivers	114
R.	Piping in Vaults Replacement Program (19568)	115
	1. Description.....	115
	2. Forecast Method.....	116
	3. Cost Drivers	116
S.	Control Center Modernization (CCM) Project (21574).....	117
	1. Description.....	117
	2. Forecast Method.....	118
	3. Cost Drivers	119
T.	Curb Valve Replacement (21575)	119
	1. Description.....	119
	2. Forecast Method.....	121
	3. Cost Drivers	121
U.	CNG Station Upgrades (14553).....	121
	1. Description.....	122
	2. Forecast Method.....	122
	3. Cost Drivers	122
V.	Local Engineering Pool (902).....	122
	1. Description.....	123
	2. Forecast Method.....	126
	3. Cost Drivers	129
W.	Gas Distribution Over Head Pool (905).....	129
	1. Description.....	129
	2. Forecast Method.....	130
	3. Cost Drivers	131
X.	Gas Distribution Contract Administration Pool (906).....	132
	1. Description.....	132
	2. Forecast Method.....	132
	3. Cost Drivers	133

Y.	Gas Ops Tool Tracker SAP Enhancement (920G)	134
	1. Description	134
VI.	Mobile Home project – reasonableness review	134
	A. Introduction.....	135
	1. Summary of the MHP Utility Upgrade Program	135
	B. Procedural Background.....	135
	1. Safety Culture	138
	2. Standard of Review and Other Commission Guidance	139
	C. Program Organization and Governance Controls	140
	1. Master Meter Balancing Account (MMBA) and Nature of Recorded Costs.....	140
	2. Program Management.....	141
	3. Preliminary Cost Summary.....	146
	D. Conclusion	149
VII.	CONCLUSION.....	149
VIII.	WITNESS QUALIFICATIONS.....	151

APPENDICES

Appendix A – Glossary of Terms	LPK-A-1
Appendix B – RAMP Risk Chapter and Activity to Workpaper Matrix.....	LPK-B-1
Appendix C – 2021 Mobilehome Park Utility Upgrade Program Report	LPK-C-1

SUMMARY

GAS DISTRIBUTION (In 2021 \$)			
	2021 Adjusted-Recorded (000s)	TY2024 Estimated (000s)	Change (000s)
Total Non-Shared Services	36,545	41,843	5,298
Total Shared Services (Incurred)	0	0	0
Total O&M	36,545	41,843	5,298

GAS DISTRIBUTION (In 2021 \$)				
	2021 Adjusted-Recorded (000s)	Estimated 2022 (000s)	Estimated 2023 (000s)	Estimated 2024 (000s)
Total Capital	140,158	132,585	135,392	122,799

GAS DISTRIBUTION (In 2021 \$)			
	Estimated 2022 (000s)	Estimated 2023 (000s)	Estimated 2024 (000s)
Total IT Capital	371	632	0

Summary of Requests

In total, San Diego Gas & Electric Company (SDG&E or the Company) requests the California Public Utilities Commission (CPUC or Commission) adopt its Test Year 2024 (TY 2024) General Rate Case (GRC) forecast of \$41,843,000 for Gas Distribution operations and maintenance (O&M) expenses. SDG&E further requests the Commission adopt its forecast for capital expenditures in 2022, 2023, and 2024 of \$132,585,000, \$135,392,000, and \$122,799,000, respectively. SDG&E’s O&M and capital requests are reasonable and fully justified in that the activities:

- Maintain and enhance the delivery of sustainable, safe, and reliable service to customers;
- Are consistent with operational laws, codes, and standards established by local, state, and federal authorities;
- Support SDG&E’s commitment to mitigate risks associated with hazards to customer/public and employee/contractor safety, infrastructure integrity, and system reliability as evident in SDG&E’s 2021 Risk Assessment and Mitigation

Phase (RAMP) Report¹ which includes activities discussed throughout this Gas Distribution filing;

- Respond to operations, maintenance, and construction needs associated with projected customer and system growth and the demands of city, county, and state agencies under the Company's franchise agreements;
- Maintain and strengthen a diverse and qualified workforce;
- Support new field technologies and GHG reductions through implementation of Renewable Natural Gas (RNG), Green Hydrogen (H2) and other sustainability opportunities; and
- Support SDG&E's commitment to adapt to more extreme climate fueled events and build a system that will be resilient in the face of these risks.

Also, provided in the capital testimony is the business justification for one information technology (IT) project.

The activities described in my testimony are consistent with local, state, and federal laws, codes, and standards.² This work safeguards the long-term safety and integrity of the system and includes compliance, or public safety activities, such as system wide leak surveys, facility inspections, cathodic protection maintenance, pipeline facility maintenance, and monitoring odorant levels. SDG&E anticipates this work to continue to increase as it manages an aging infrastructure and responds to changing regulatory and legislative requirements.

The activities in my testimony maintain the delivery of sustainable, safe, and reliable service to SDG&E's customers. SDG&E prioritizes work to comply with laws and regulations and provide system integrity and reliability, in accordance with SDG&E's commitment to safety:

San Diego Gas and Electric's longstanding commitment to safety focuses on three primary areas – employee safety, customer safety and public safety. This safety focus is embedded in what we do and is the foundation for who we are – from initial employee training, to the installation, operation and maintenance of our utility infrastructure, and to our commitment to provide safe and reliable service to our customers.³

¹ A.21-05-011 SDG&E 2021 Risk Assessment and Mitigation Phase (RAMP) Report (May 17, 2021), available at: <https://www.sdge.com/proceedings/2021-sdge-ramp-report>.

² Transportation of Natural and Other Gas By Pipeline: Minimum Federal Safety Standards, 49 C.F.R. § 192 et seq.; Cal. Gov't Code § 4216 et seq.; General Order (GO) 112-F; and GO 58-A.

³ SDG&E, *2021 Gas Safety Plan* (March 15, 2021) at 9, available at: https://www.sdge.com/sites/default/files/regulatory/2021_SDGE%20GasSafetyPlan_Final.pdf.

In addition, my testimony establishes the reasonableness of the cost incurred in executing the ongoing Mobilehome Park Utility Conversion Program (MHP Program). As directed by the Commission in D.14-03-021, SDG&E submits the costs in the Mobilehome Park Utility Conversion Program Report annually and supports the reasonableness in my testimony. Reasonableness review of costs is limited to recorded costs and excludes any program cost forecasts.

**REVISED PREPARED DIRECT TESTIMONY OF
L. PATRICK KINSELLA
(GAS DISTRIBUTION)**

I. INTRODUCTION

A. Summary of Gas Distribution Costs and Activities

My testimony supports the TY 2024 forecasts for O&M costs for non-shared services and capital costs, and the business justification for IT capital costs for the forecast years 2022, 2023, and 2024, associated with the Gas Distribution area for SDG&E. In total, SDG&E requests the Commission adopt its TY 2024 forecast of \$41,843,000 for non-shared service Gas Distribution O&M expenses. SDG&E further requests the Commission adopt its forecast of capital expenditures for 2022, 2023, and 2024 of \$132,585,000, \$135,392,000, and \$122,799,000, respectively. In addition, my testimony establishes the reasonableness of \$195,755,449 (\$192,245,123 in capital expenditures and \$3,510,326 in O&M expenditures) incurred through 2021 in executing the pilot and now ongoing and Commission approved⁴ Mobilehome Park Utility Conversion Program (MHP Program).

Table LPK-1 summarizes my sponsored costs. Table LPK-1A summarizes the IT Capital project costs for which I sponsor the business justification.

**TABLE LPK-1
Test Year 2024 Summary of Total Costs**

GAS DISTRIBUTION (In 2021 \$)			
O&M	2021 Adjusted-Recorded (000s)	TY2024 Estimated (000s)	Change (000s)
Total Non-Shared Services	36,545	41,843	5,298
Total Shared Services (Incurred)	0	0	0
Total O&M	36,545	41,843	5,298

⁴ On April 16, 2020, the Commission issued D.20-04-004, approving a ten-year Mobilehome Park Utility Conversion Program beginning in 2021 through 2030.

GAS DISTRIBUTION (In 2021 \$)				
CAPITAL	2021 Adjusted-Recorded (000s)	Estimated 2022 (000s)	Estimated 2023 (000s)	Estimated 2024 (000s)
Non-collectible (NC)		107,929	118,134	117,915
Collectible (CO)		22,025	14,399	2,157
Total CAPITAL	140,158	132,585	135,392	122,799

TABLE LPK-1A
Summary of Total Gas Distribution IT Capital Costs

GAS DISTRIBUTION (In 2021 \$)			
	Estimated 2022 (000s)	Estimated 2023 (000s)	Estimated 2024 (000s)
Total IT CAPITAL	371	632	0

The purpose of this testimony is to demonstrate the reasonableness of SDG&E’s Gas Distribution capital expenditure and expense forecasts to operate and maintain the gas distribution system and construct new gas distribution facilities. SDG&E’s philosophy is to provide sustainable, safe, and reliable delivery of natural gas through its pipeline infrastructure to customers at reasonable rates. This commitment requires that SDG&E continue to invest in its employees, pipeline assets, and support services to mitigate risks associated with the safety of the public and employees, system reliability, and infrastructure integrity. Specifically, the activities discussed herein:

- Maintain and enhance the delivery of sustainable, safe, and reliable service to customers;
- Are consistent with operational laws, codes, and standards established by local, state, and federal authorities;
- Support SDG&E’s commitment to mitigate risks associated with hazards to customer/public and employee/contractor safety, infrastructure integrity, and system reliability as evident in SDG&E’s 2021 Risk Assessment and Mitigation Phase (RAMP) Report which includes activities discussed throughout this Gas Distribution filing;
- Respond to operations, maintenance, and construction needs associated with projected customer and system growth and the demands of city, county, and state agencies under the Company’s franchise agreements;

- 1 • Maintain and strengthen a diverse and qualified workforce;
- 2 • Support new technologies and GHG reductions through implementation of
- 3 Renewable Natural Gas (RNG), Green Hydrogen (H2) and other sustainability
- 4 opportunities; and
- 5 • Support SDG&E's commitment to adapt to more extreme climate fueled events
- 6 and build a system that will be resilient in the face of these risks.

7 This testimony discusses non-shared expenses in support of O&M functions for gas
8 distribution mains and services, measurement and regulator stations, customer meters, regulators,
9 and supporting electronic equipment and includes the associated engineering, supervision, and
10 technical support. The capital expenditures presented herein are in support of the installation,
11 replacement, and relocation of gas distribution pipeline infrastructure. All costs in this testimony
12 are shown in 2021 dollars, unless otherwise noted.

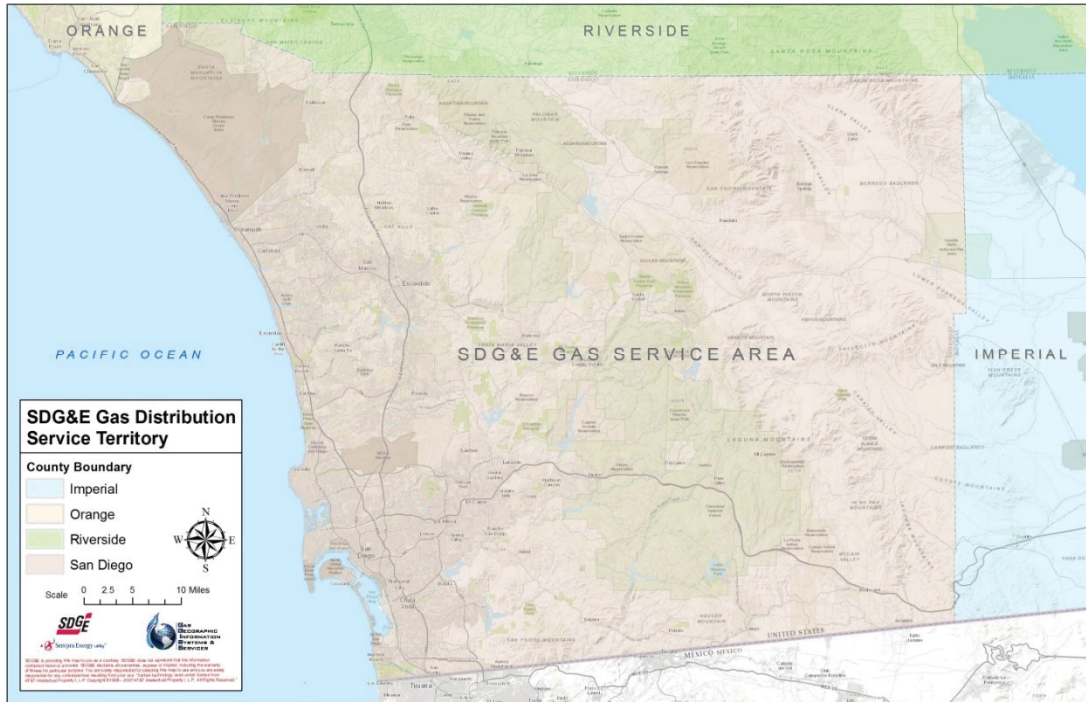
13 In addition to this testimony, please refer to my workpapers, Exhibit (Ex.) SDG&E-04-
14 WP (O&M) and SDG&E-04-CWP (Capital) for additional information about the activities
15 described herein.

16 SDG&E's gas distribution system consists of a network of approximately 15,328 miles⁵
17 of interconnected gas mains, services, and associated pipeline facilities. These mains and
18 services, constructed of both steel and plastic materials in varying diameters, are located in most
19 streets within SDG&E's service territory. The primary function of this distribution pipeline
20 network is to deliver natural gas from SDG&E's transmission system to approximately 900,000
21 customers in an area of over 1,400 square miles, stretching from Orange County in the north to
22 the Mexico border in the south, as depicted in Figure LPK-01, below.

⁵ Total mileage from U.S. Department of transportation Pipeline and Hazardous Material Safety Administration 2021 Annual Report for Calendar Year 2021 Gas Distribution System, OMB NO: 2137-0629.

1
2
3

Figure LPK-01
SDG&E Gas Distribution Service Territory



4

5 SDG&E’s Distribution network is composed of approximately 8,247 miles of gas mains,
6 which operate at either high pressure (over 60 pounds per square inch (psi)) or medium pressure
7 (60 psi and below). This system contains numerous valves capable of isolating the total system
8 into smaller areas for operational, construction, and emergency purposes. SDG&E operates
9 regulator stations located throughout the system to maintain gas pressure, regulate the
10 distribution system, and provide adequate capacity to meet customer needs. In addition, SDG&E
11 maintains approximately 7,081 miles of service lines. The gas service lines connect the high-
12 and medium- pressure mains to each customer meter set assembly (MSA) and “house pipeline.”

13 SDG&E routinely performs work to maintain the daily operation of the system, connect
14 new customers, maintain the necessary capacity to serve all customers, replace damaged or
15 deteriorating facilities, and relocate facilities to meet customer and governmental agency needs.
16 This workforce ranges from front-line construction crews to technical planners and engineers.
17 There are approximately 596 distribution employees located at five operating bases and one

1 technical office throughout SDG&E's service territory. These employees are responsible for
2 maintaining safe and reliable operation of the gas distribution system.

3 My cost forecasts support the Company's goals of continuous improvement while having
4 the ability to provide sustainable, safe, and reliable service of natural gas to customers at
5 reasonable rates, while mitigating risks associated with hazards to customer/public and
6 employee/contractor safety, infrastructure integrity, and system reliability.

7 SDG&E is committed to continued long-term investment in its pipeline infrastructure to
8 maintain the integrity of its distribution system and comply with applicable local, state, and
9 federal laws and regulations. The Company actively evaluates the condition of its pipeline
10 system through maintenance and operations activities, and replaces pipeline segments to preserve
11 the safe and reliable system customers expect. With the forecasted level of funding, and by
12 continuing to identify ways to improve gas distribution system installation, operation, and
13 maintenance activities, SDG&E anticipates that it can continue to manage these business and
14 operational challenges, and will continue to provide sustainable, safe, and reliable natural gas
15 service at reasonable rates.

16 SDG&E faces challenges affecting both the physical operation of the pipeline system and
17 cost management aspects of its business that contribute to the forecasts presented in this
18 testimony. These challenges include:

19 **Trained and Qualified Workforce**

20 Safety is rooted in all phases of Gas Distribution training. Maintaining a skilled,
21 qualified, and dedicated workforce is critical to SDG&E's continued success. It is through the
22 efforts of these employees that SDG&E can continue to deliver reliable service to customers and
23 maintain the integrity of its pipeline infrastructure at reasonable cost. SDG&E is experiencing
24 increasing pressure associated with maintaining a highly trained and qualified workforce.

25 Within the workforce there is turnover, due primarily to retirements and employee
26 movement as a result of promotions and transfers, which continue to pose challenges to SDG&E.
27 In particular, SDG&E is experiencing these challenges in the areas of knowledge transfer, skills
28 development, and overall proficiency of the replacement workforce. Gas Distribution is taking
29 appropriate measures to maintain its highly skilled workforce, recognizing that safety and system
30 reliability cannot be sacrificed during times of employee transition. As new and less experienced
31 employees step in to replace highly skilled employees, SDG&E is mindfully training and

1 mentoring them, giving them on-the-job experience, and providing greater levels of supervision
2 and quality assurance to instill a continued focus on proficiency and safety.

3 Furthermore, SDG&E is continuously refining its Operator Qualification (OpQual)
4 program to better align with recommendations by CPUC auditors and industry leading practices,
5 as well as to maintain compliance with GO 112-F. This includes adding new qualification
6 elements, developing qualification materials, managing an electronic recordkeeping process,
7 developing a computer-based training environment to include virtual reality training for difficult-
8 to-replicate real life scenarios, and conducting training to qualify impacted employees.

9 **Aging Infrastructure**

10 SDG&E has a long history of delivering safe and reliable natural gas service,
11 notwithstanding the fact that a significant portion of its pipeline infrastructure has been in service
12 for more than 50 years. Good maintenance practices have allowed SDG&E to safely and reliably
13 operate these pipeline facilities for this extended period. As the Company's pipeline
14 infrastructure continues to age, it requires higher levels of maintenance, which results in higher
15 costs. SDG&E attempts to maintain a reasonable balance between increased maintenance needs
16 and eventual replacement.

17 In addition to aging pipelines, SDG&E is also addressing the aging of other pipeline
18 infrastructure, such as Measurement and Regulation (M&R) equipment, electronic systems
19 including pressure monitoring and pressure control, and cathodic protection system components,
20 such as anode beds and rectifiers. All components of the gas distribution system have a finite
21 useful life that must be observed, and repairs must be anticipated to avoid service interruptions,
22 non-compliance situations, or adverse safety conditions.

23 **System Expansion**

24 As discussed in the Cost Escalation testimony of Scott Wilder's (Ex. SDG&E-39) gas
25 customer growth is continuing to increase and as such SDG&E's pipeline system continues to
26 expand to meet the needs of the customer base and the need for pipeline infrastructure. New
27 facilities add to the inventory of assets that require operations and maintenance attention.
28 Pipelines must be leak surveyed to monitor asset condition and any identified deficiencies must
29 be corrected. Facilities must be located and marked to minimize potential damage from outside
30 sources. System valves, meters, and regulators must be inspected, operated, and maintained.

1 Each of these actions must be completed in accordance with federal and state regulations and are
2 critical to maintaining a safe and reliable distribution system.

3 **Customer and Load Demands**

4 As a public utility, SDG&E has an obligation to provide natural gas service to customers
5 within its service territory. As the customer base grows and expands, new demands are placed
6 on existing infrastructure. For example, customer load growth creates the need for facility
7 upgrades; increasing customer density can require the relocation of existing infrastructure; and
8 general business improvements require the Company to protect its infrastructure from potential
9 damage due to third-party construction. Field experience indicates that more favorable economic
10 conditions lead to increases in various work requirements. SDG&E anticipates that as the
11 economy continues to grow with housing demand remaining high,⁶ this will impact activities
12 related to customer and load demands.

13 **State and Municipal Agency Construction Requirements**

14 The construction, operation, and maintenance of SDG&E's vast pipeline system requires
15 interaction and compliance with numerous agencies. These agencies continue to impose new
16 and often more stringent administrative, planning, and field construction operating conditions
17 that can result in increased cost pressures to maintain the gas distribution system. This includes
18 increased costs associated with permits, traffic control plans, paving repair requirements, and
19 restricted work hours. SDG&E works diligently with these agencies to find solutions that are in
20 the best interest of customers and agencies. Nevertheless, these rules often result in cost
21 increases.

22 **Regulatory Requirements**

23 The activities described in my testimony are consistent with the operational laws, codes,
24 and standards established by local, state, and federal authorities.⁷ These requirements continue
25 to increase, necessitating changes in work processes and the addition of resources to complete

⁶ IHS/Markit Global Insight's November 2021 Regional Forecast for San Diego Metro area [San Diego County].

⁷ Transportation of Natural and Other Gas By Pipeline: Minimum Federal Safety Standards, 49 C.F.R. § 192 et seq.; Cal. Gov't Code § 4216 et seq.; GO 112-F; and GO 58-A.

1 impacted operations, maintenance, and construction work. Some of these continued pressures
2 are associated with the continued compliance with GO 112-F and implementation of SB 297.

3 In 2017, GO 112-F, the State of California's code governing the design, construction,
4 testing, operation, and maintenance of natural gas lines became effective. Some of the upward
5 pressures still being experienced today from the updated General Order include:

- 6 • Increase leak survey frequency for high-pressure pipelines (DOT-defined 2
7 transmission lines) from every year to every 6 months. In Gas Distribution, these
8 lines are known as supply lines.
- 9 • Additional requirements for managing encroachments, including notifications and
10 development of written plans.
- 11 • Additional monitoring, reporting, and recordkeeping, including parsing of leak
12 repair and response time data (*e.g.*, response time to make safe and arrive on
13 scene captured in 5-minute intervals up to 45 minutes, 45-60 minutes, and greater
14 than 60 minutes); continued monitoring and reporting of timeliness to update
15 maps; criteria and notification for over-pressure incidents; and parsing of
16 excavation damage data (*e.g.*, damages and costs related to homeowners).

17 In addition, SB 661 (Dig Safe Act of 2016) added enforcement to the digging laws by
18 establishing the California Underground Facilities Safe Excavation Board to act against those
19 parties who violate the excavation law under California Government Code Section 4216. In
20 2021, the California Governor signed SB 297, named the Wade Kilpatrick Gas Safety and
21 Workforce Adequacy Act of 2021. The law makes any contractor that causes damage to a
22 subsurface installation as a result of failing to provide notice of the need for a gas corporation to
23 locate and mark its subsurface installations or commencing excavation before a gas corporation
24 marks its subsurface installations subject to a civil penalty in an amount not to exceed \$100,000
25 and possible suspension or revocation of the contractor's license if specified conditions are met.
26 The State's added enforcement and SB 297's amendments increasing the maximum penalties are
27 expected to compel more excavators to call Underground Service Alert (USA), which will add
28 upward pressure to an already increasing ticket volume in the State.

29 SDG&E anticipates that the level of funding requested in this testimony will provide the
30 resources needed to comply with these incremental regulatory requirements.

31 **B. Support To and From Other Witnesses**

32 My testimony also references the testimony and workpapers of several other witnesses,
33 either in support of their testimony or as referential support for mine. Those witnesses are Estela
34 de Llanos (Ex. SDG&E-02, Sustainability Policy), Rick Chiapa, Steve Hruby, Aaron Bell

1 (Ex. SCG-06, Gas Transmission Operations and Construction), Rick Chiapa and Steve Hruby
2 (Ex. SDG&E-06, Gas Transmission Operations and Construction), Amy Kitson and Travis Sera
3 (Ex. SDG&E-09, Gas Integrity Management Programs), Tyson Swetek (Ex. SDG&E-12,
4 Electric Distribution O&M), David H. Thai (Ex. SDG&E-17, Customer Services – Field
5 Operations), Arthur Alvarez (Ex. SDG&E-22, Fleet Services), Kenneth J. Deremer
6 (Ex. SDG&E-31 Safety, Risk & Asset Management Systems), Neena N. Master (Ex. SCG-27,
7 Safety & Risk Management Systems), Wallace Rawls (Ex. SDG&E-05, Gas System Staff &
8 Technology), Brittany Applestein Syz (Ex. SDG&E-24, Environmental Services and San Onofre
9 Nuclear Generating Station (SONGS)), Daniel Castillo (Ex. SDG&E-20, Supply Management,
10 Logistics, & Supplier Diversity), Jason Kupfersmid (Ex. SDG&E-43, Regulatory Accounts),
11 Angel N. Le and Paul D. Malin (Ex. SDG&E-34, Shared Services Billing, Shared Assets Billing,
12 Segmentation, & Capital Reassignments), William J. Exon (Ex. SDG&E-25, Ch 2, Information
13 Technology), Scott Wilder (Ex. SDG&E-39, Gas Customer Forecast), Scott Wilder (Ex.
14 SDG&E-41, Cost Escalation), Greg S. Flores and R. Scott Pearson (Ex. SCG-03/SDG&E-03, Ch
15 2, RAMP to GRC Integration), and Dane A. Watson (Ex. SDG&E-36, Depreciation).

16 **1. Small Meter and Regulator Purchases**

17 I sponsor the capital costs associated with the purchase of both Gas Distribution and
18 Customer Services meters and regulators. The labor costs associated with the replacement of
19 small meters and regulators, typically at residential and small commercial sites, is addressed by
20 Mr. Thai (Ex. SDG&E-17). Additional information about these capital purchases may be found
21 in Section V.C. (Gas Meters & Regulators (502)) of my testimony.

22 **2. New Meter Set Forecast**

23 Gas Distribution's New Business construction capital costs, and related meter and
24 regulator unit purchases, are driven by the number of new customer meter set installations.
25 Details on the forecast of new meter set installations can be found in the workpapers of
26 Mr. Wilder, Ex. SDG&E-39-WP. Additional information about the forecasts of new meter sets
27 may be found in Section V.C (New Business (500)) of my testimony.

28 **3. Incremental Vehicles**

29 In order to perform the incremental work associated with the forecasted level of O&M
30 and capital activities, SDG&E is adding vehicles, as required, within applicable workgroups and

1 capital budget codes. The costs associated with these vehicles are addressed in Mr. Alvarez's
2 testimony (Ex. SDG&E-22).

3 **4. Electric Support**

4 Labor and non-labor expenses are incurred by Gas Distribution crews that have been
5 specially trained to provide traffic control support services for Electric Distribution crews
6 performing Corrective Maintenance Program Inspections. Additional information about the
7 electric Corrective Maintenance Program is addressed by Mr. Swetek (Ex. SDG&E-12).

8 **5. Economic Growth**

9 Gas Distribution relied on total employment growth, as reported by IHS Global Insight,
10 as a directional indicator for general economic conditions and potential economic growth. This
11 IHS Global Insight⁸ employment forecast is shown in the workpapers of Mr. Wilder (Ex.
12 SDG&E-39-WP).

13 **6. Environmental Services**

14 Gas Distribution plays a key role in the SDG&E Sustainability goals as covered by Ms.
15 Estela de Llanos, Ex. SDG&E-02. Leak surveys to find and repair leaks in a timely manner help
16 to reduce fugitive emissions from the natural gas distribution system.

17 **7. Asset Integrity Management**

18 Labor expenses are incurred in my witness area in support of Asset Integrity
19 Management's drive towards an enterprise-wide system. Additional information about the Asset
20 Integrity Management Program is addressed by Mr. Kenneth Deremer (Ex. SDG&E-31).

21 **8. SoCalGas Gas System Staff & Technology**

22 Gas Distribution receives support from a centralized staff organization within Gas
23 System Staff & Technology. The support activities provided by this group are discussed by Mr.
24 Wallace Rawls (Ex. SDG&E-05 and SCG-05). These activities include Gas Standards
25 development and maintenance; Damage Prevention and Public Awareness Programs
26 management; and tool and technology research and implementation.

⁸ IHS/Markit Global Insight's November 2021 Regional Forecast for San Diego Metro area [San Diego County].

1 **C. Organization of Testimony**

2 My testimony is organized as follows:

- 3 • Introduction;
- 4 • Risk Assessment Mitigation Phase (RAMP) Integration;
- 5 • Sustainability and Safety Culture;
- 6 • Non-Shared Costs;
- 7 • Capital;
- 8 • Mobilehome Park Utility Conversion Program Recovery;
- 9 • Conclusion;
- 10 • Witness Qualifications.

11 **II. RISK ASSESSMENT MITIGATION PHASE (RAMP) INTEGRATION**

12 Certain costs supported in my testimony are driven by activities described in SoCalGas
13 and SDG&E’s respective 2021 Risk Assessment Mitigation Phase (RAMP) Reports (the 2021
14 RAMP Reports).⁹ The 2021 RAMP Reports presented an assessment of the key safety risks for
15 SoCalGas and SDG&E and proposed plans for mitigating those risks. As discussed in the
16 testimony of the RAMP to GRC Integration witnesses R. Scott Pearson and Gregory S. Flores
17 (Ex. SCG-03/SDG&E-03, Chapter 2), the costs of risk mitigation projects and programs were
18 translated from the 2021 RAMP Reports into the individual witness areas.

19 In the course of preparing the Gas Distribution GRC forecasts, SDG&E continued to
20 evaluate the scope, schedule, resource requirements, and synergies of RAMP-related projects and
21 programs. Therefore, the final presentation of RAMP costs may differ from the ranges shown in
22 the 2021 RAMP Reports. Table LPK-2 and Table LPK-3 provide summaries of the RAMP-
23 related costs supported in my testimony.

⁹ See Application (A.) 21-05-011/-014 (cons.) (RAMP Proceeding). Please refer to the RAMP to GRC Integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Ch. 2) for more details regarding the 2021 RAMP Reports.

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TABLE LPK-2
Summary of RAMP O&M Costs (In 2021 \$)*

GAS DISTRIBUTION			
	BY2021 Embedded Base Costs (000s)	TY2024 Estimated Total (000s)	TY2024 Estimated Incremental (000s)
RAMP Risk Chapter			
SDG&E-Risk-7 Excavation Damage (Dig-In) on the Gas System	7,862	10,843	2,981
SDG&E-Risk-8 Incident Involving an Employee	441	441	0
SDG&E-Risk-9 Incident Related to the Medium Pressure System (Excluding Dig-in)	14,672	15,998	1,326
Sub-total	22,975	27,282	4,307
RAMP Cross-Functional Factor (CFF) Chapter			
SDG&E-CFF-1 Asset Management	0	110	110
SDG&E-CFF-6 Records Management	591	649	58
Sub-total	591	759	168
Total RAMP O&M Costs	23,566	28,041	4,475

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*CFF-related information, in accordance with the March 30, 2022 Assigned Commissioner Ruling in A.21-05-011/-014 (cons.), is provided in the RAMP to GRC Integration testimony of R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

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TABLE LPK-3
Summary of RAMP Capital Costs (In 2021 \$)*

GAS DISTRIBUTION				
	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	2022-2024 Estimated RAMP Total (000s)
RAMP Risk Chapter				
SDG&E-Risk-3 Incident Related to the High-Pressure System (Excluding Dig-in)	2,192	1,891	0	4,083
SDG&E-Risk-7 Excavation Damage (Dig-In) on the Gas System	225	225	225	675
SDG&E-Risk-9 Incident Related to the Medium Pressure System (Excluding Dig-in)	46,695	51,344	51,902	150,166
Sub-total	49,112	53,460	52,127	154,924
RAMP Cross-Functional Factor (CFF) Chapter				
SDG&E-CFF-6 Records Management	1,298	1,395	1,385	4,078
Sub-total	1,298	1,395	1,385	4,078
Total RAMP Capital Costs	50,410	54,855	53,512	159,002

3 *CFF-related information in accordance with the March 30, 2022 Assigned Commissioner
4 Ruling in A.21-05-011/-014 (cons.) is provided in the RAMP to GRC Integration testimony of R.
5 Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Ch. 2).

6 **A. RAMP Risk and Cross-Functional Overview**

7 As summarized in Table LPK-2 and Table LPK-3 above, my testimony includes costs to
8 mitigate the risks and cross-functional factors (CFFs) included in the 2021 RAMP Report.¹⁰
9 These risks and CFFs are further described in Table LPK-4 below:

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¹⁰ Unless otherwise indicated, references to the 2021 RAMP Report refer to SDG&E’s respective RAMP Report.

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TABLE LPK-4
RAMP Risk and CFF Chapter Descriptions

SDG&E-Risk-3 – Incident Related to the High-Pressure System (Excluding Dig-in)	This chapter addresses the risk of incident related to the high-pressure system resulting in serious injuries or fatalities and/or damage to infrastructure and/or private property.
SDG&E-Risk-7 – Excavation Damage (Dig-In) on the Gas System	This chapter addresses the risk of Excavation damage on the Gas System resulting in serious injuries or fatalities and/or damage to infrastructure and/or private property.
SDG&E-Risk-8 – Incident Involving an Employee	This addresses the risk of an incident, involving one or more on-duty employees, that causes serious injury or fatality to a company employee.
SDG&E-Risk-9 – Incident Related to the Medium-Pressure System (Excluding Dig-in)	This chapter addresses the risk of incident related to the medium-pressure system resulting in serious injuries or fatalities and/or damage to infrastructure and/or private property.
SDG&E-CFF-1 Asset Management	An enterprise-wide framework that provides a standardized approach for managing risk and safety across assets and activities. The framework integrates people, processes, data, and technology to enable data-driven decision making through governance, strategy, data consolidation and analytics, and continuous improvement.
SDG&E-CFF-6 Records Management	Describes how inadequately maintained records can have impacts on employee and public safety as well as reliability.

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In developing my request, priority was given to these key safety risks to assess which risk mitigation activities Gas Distribution currently performs and what incremental efforts are needed to further mitigate these risks. While developing the GRC forecasts, SDG&E evaluated the scope, schedule, resource requirement, and synergies of RAMP-related projects and programs to

determine costs already covered in the base year and those that are incremental increases expected in the test year.

Messrs. Pearson and Flores (Ex. SCG-03/SDG&E-03, Chapter 2) discuss all risks and CFFs included in the 2021 RAMP Reports and the RAMP to GRC integration process.

B. GRC Risk and CFF Activities

Table LPK-5 below provides a narrative summary of the forecasted RAMP-related activities that I sponsor in my testimony.

**TABLE LPK-5
Summary of RAMP and CFF Activities**

RAMP ID	Activity	Description
SDG&E-Risk-3-M04	Adobe Falls Relocation Project	The Adobe Falls Relocation Project will eliminate steep and risky paths for mandated periodic leak survey, and access for maintenance or response for emergency repairs.
SDG&E-Risk-7-C01	Locate and Mark Training	Locate and Mark (L&M) Training covers training for employees who perform the L&M activities, Annual refresher, Operator Qualification, and Company Excavator Training
SDG&E-Risk-7-C03	Locate and Mark Activities – MP	L&M Activities involves locating and marking underground medium-pressure gas and electric facilities before excavation occurs.
SDG&E-Risk-7-C04	Locate and Mark Activities – HP	L&M Activities involves locating and marking underground high-pressure gas facilities before excavation occurs and observing (stand-by) pipeline excavation activities.
SDG&E-Risk-7-C09	Locate and Mark Quality Assurance	L&M Quality Assurance Program is to validate locators are following processes and procedures when performing locating tasks.
SDG&E-Risk-7-C04	Locating Equipment	Locating Equipment is providing hardware that is appropriate for the rugged outdoor environment and updated with the latest software to run efficiently and provide correct information to locate underground pipelines accurately
SDG&E-Risk-8-C10	Personal Protective Equipment	Personal Protective Equipment protects employees from the risk of injury by creating a barrier against workplace hazards.
SDG&E-Risk-9-C01	Cathodic Protection – O&M	Cathodic Protection (CP) constitutes the O&M activities that provide compliance to regulations and supports the safety and integrity of the gas system.

RAMP ID	Activity	Description
SDG&E-Risk-9-C02	Cathodic Protection – Capital	CP constitutes the capital expenditures associated with the installation of new and replacement CP infrastructure systems and equipment in accordance with regulations.
SDG&E-Risk-9-C03	Piping in Vaults Replacement Program	Piping in Vaults Replacement Program is the replacement of piping located in underground vaults.
SDG&E-Risk-9-C04	Regulator Station, Valve, and Large Meter Set Inspection	Regulator Station, Valve, and Large Meter Set Inspection is for inspections and maintenance to regulator stations, critical valves, and large meter sets.
SDG&E-Risk-9-C05	Regulator Station Replacements	Regulator Station Replacements is the proactive replacement of regulator stations prior to the end of their useful life in order to reduce overall system risk.
SDG&E-Risk-9-C06	Leak Repair	Leak Repair is the repair of natural gas leaks in the system.
SDG&E-Risk-9-C07	Pipeline Monitoring (Leak Mitigation, Bridge & Span, Unstable Earth, and Pipeline Patrol)	Pipeline Monitoring (Leak Mitigation, Bridge & Span, Unstable Earth, and Pipeline Patrol) is conducting pipeline monitoring and inspection activities to proactively target risk factors before operation and safety issues arise.
SDG&E-Risk-9-C08-T1	Underperforming Steel Replacement Program – Threaded Main (pre-1934 vintage)	Underperforming Steel Replacement Program – Threaded Main (pre-1934 vintage) mitigates the potential for gas leakage due to the proactive replacement of vintage threaded steel mains and services.
SDG&E-Risk-9-C08-T2	Underperforming Steel Replacement Program (1934-1965 vintage)	Underperforming Steel Replacement Program (1934-1965 vintage) focuses on the proactive replacement of poorly performing steel installed between 1934 and 1965.
SDG&E-Risk-9-C08-T3	Underperforming Steel Replacement Program – Other Steel (Post 1965 vintage)	Underperforming Steel Replacement Program – Other Steel (Post 1965 vintage) focuses on the proactive replacement of poorly performing steel post 1965.
SDG&E-Risk-9-C09-T1	Early Vintage Program (Components) – Oil Drip Piping Removal	Early Vintage Program (Components) – Oil Drip Piping Removal is the removal of Oil Drip Piping that is no longer necessary and is at risk of excavation damage.
SDG&E-Risk-9-C09-T2	Early Vintage Program (Components) – Dresser Mechanical Coupling Removal	Early Vintage Program (Components) – Dresser Mechanical Couplings Removal is the removal of Dresser Coupling with welded pipe. These couplings are typically located in highly populated areas.
SDG&E-Risk-9-C09-T3	Early Vintage Program (Components) – Removal of Closed Valves between High/Medium Pressure Zones	Early Vintage Program (Components) – Removal of Closed Valves between High/Medium Pressure Zones is the removal of closed valves between high pressure (HP) and medium pressure (MP) system. Having a closed valve between HP and MP system is no longer an accepted practice.
SDG&E-Risk-9-C10	Code Compliance Mitigation	Code Compliance Mitigation consists of upgrades or additions to facilities to maintain compliance with

RAMP ID	Activity	Description
		minimum federal safety standards for gas pipelines in 49 C.F.R. § 192 and state safety standards in GO 112-F.
SDG&E-Risk-9-C11	Gas Distribution Emergency Department	Gas Distribution Emergency Department is an organization consisting of two person crews dedicated to responding to gas emergencies to improve gas emergency response and control times.
SDG&E-Risk-9-C12	Cathodic Protection System Enhancements	Cathodic Protection (CP) System Enhancements tracks projects specifically associated with creating dedicated high-pressure and medium-pressure distribution pipeline CP systems.
SDG&E-Risk-9-C13	Human Factors Mitigations – Gas Handling Plans	Human Factors Mitigations – Gas Handling Plans are site specific documents with detailed procedures and graphical flow depictions describing the step-by-step processes, to “handle” the diversion of gas flow.
SDG&E-Risk-9-C14	Human Factors Mitigations – Operator Qualification Training and Certification	Human Factors Mitigations – Operator Qualification Training and Certification promotes adherence to proper company policy and procedures and therefore mitigates the risk of hazardous conditions developing and increases the overall awareness and response to unsafe activities
SDG&E-Risk-9-C15	Human Factors Mitigations - QA/QC Program – Mandated Compliance Activities	Human Factors Mitigations - QA/QC Program – Mandated Compliance Activities are performed on various pipeline operational activities as mandated by 49 CFR § 192.605 (b8) (c4).
SDG&E-Risk-9-C17	Control Center Modernization (CCM) Distribution Field Asset Real Time Monitoring and Control Site Installations/Upgrades & New Control Room Technologies	Control Center Modernization (CCM) Distribution Field Asset Real Time Monitoring and Control Site Installations/Upgrades & New Control Room Technologies will enhance distribution field assets by installing control and real time pressure monitoring capabilities, increase operational awareness to quickly identify abnormal operating pressures, and improve remote control functionality.
SDG&E-Risk-9-C19	Field and Public Safety	Field and Public Safety involves the purge orders to promote customer safety by confirming customer owned gas house lines are safe and leak-free and odorant is readily detectable.
SDG&E-Risk-9-M02	Cathodic Protection System Enhancements – Real Time Monitoring	Cathodic Protection System Enhancements – Real Time Monitoring involves the installation of remote monitoring units (RMUs) to monitor the level of CP provided by rectifier stations to the steel pipeline system.
SDG&E-Risk-9-M03	Replace Curb Valves with Excess Flow Valves (EFV)	Replace Curb Valves with EFVs involves the replacement of curb valves with EFV’s based on inaccessibility issues.
SDG&E-Risk-9-New	Meter Set Assemblies (MSA) Inside Buildings and Alcoves	MSA’s Inside Buildings and Alcoves is a result of new federal guidance to move all MSA’s out of buildings and alcoves.

RAMP ID	Activity	Description
SDG&E-CFF-1	Gas Asset Integrity Management	Gas Asset Integrity Management is focused on the development of gas operation models and asset management plans that align with various functional areas of risk, gas planning and operations, financial planning, asset management and portfolio management.
SDG&E-CFF-6	Geographic Information System	Geographic Information System is the gas system of record for pipeline mapping data.

1 These activities are discussed further below in Section IV.B through Section V.W, as
2 well as in my workpapers. For additional information and a roadmap, please refer to Appendix
3 B, which contains a table identifying by workpaper the TY 2024 forecast dollars associated with
4 activities in the 2021 RAMP Report that are discussed in this testimony.

5 The RAMP risk mitigation efforts are associated with specific actions, such as programs,
6 projects, processes, and utilization of technology. For each of these mitigation efforts, an
7 evaluation was made to determine the portion, if any, that was already performed as part of
8 historical activities (*i.e.*, embedded base costs) and the portion, if any, that was incremental to
9 base year activities. Furthermore, for the incremental activities, a review was completed to
10 determine if any portion of incremental activity was part of the workgroup’s base forecast
11 methodology. The result is what SDG&E considers to be a true representation of incremental
12 increases over the base year.

13 My incremental request supports the ongoing management of these risks that could pose
14 significant safety, reliability, and financial consequences.

15 **C. Changes from RAMP Report**

16 As discussed in more detail in the RAMP to GRC Integration testimony of Messrs.
17 Pearson and Flores (Ex. SCG-03/SDG&E-03, Chapter 2), in the RAMP Proceeding, the
18 Commission’s Safety Policy Division (SPD) and intervenors provided feedback on the
19 Companies’ 2021 RAMP Report. Appendix B in Ex. SCG-03/SDG&E-03, Ch. 2 provides a
20 complete list of the feedback and recommendations received and the Companies’ responses.

21 Other than as discussed below, the RAMP-related activities described in my GRC
22 testimony are consistent with the activities presented in the 2021 RAMP Report. General
23 changes to risks scores or Risk Spend Efficiency (RSE) values are primarily due to changes in
24 the Multi-Attribute Value Framework (MAVF) and RSE methodology, as discussed in the
25 RAMP to GRC Integration testimony.

1 Changes from the 2021 RAMP Report presented in my testimony, including updates to
2 forecasts and the amount and timing of planned work are summarized as follows:

- 3 • In response to stakeholder feedback received in the RAMP Proceeding, SDG&E
4 performed additional “tranching” analysis at a more granular level for some of the
5 risk mitigations described in my testimony.¹¹ SDG&E identified six new tranches
6 in this GRC for high-pressure, medium-pressure, mains, services, steel, and
7 plastic, as compared to the 2021 RAMP Report.
- 8 • Four of the Locate and Mark training activities (SDG&E-07, C01; C05; C07; and
9 C25) were presented as discrete controls in the 2021 RAMP Report. However,
10 for purposes of the GRC, SDG&E has incorporated those into one activity (C01).
11 Please see Table LPK-26.
- 12 • Two of the Locate and Mark activities (SDG&E-07-C03 and C21) were presented
13 as discrete controls in the 2021 RAMP Report. However, for purposes of the
14 GRC, SDG&E has incorporated those into one activity (C03). Please see Table
15 LPK-11.
- 16 • Two of the Locate and Mark activities (SDG&E-07-C23 and C27) were presented
17 as discrete controls in the 2021 RAMP Report. However, for purposes of the
18 GRC, SDG&E has incorporated those into the Underperforming Steel pipe
19 replacement activities (SDG&E-09-C08-T1, T2, T3). Please see Table LPK-50,
20 52, and 54.
- 21 • RAMP Mitigation SDG&E-09-M02 was presented as a discrete new mitigation in
22 the 2021 RAMP Report. However, for purposes of the GRC, SDG&E has
23 incorporated those dollars into SDG&E-09-C12 Cathodic Protection
24 Enhancements (12551).
- 25 • After the 2021 RAMP Report had been filed, SDG&E performed a detailed
26 review of its risk mitigation programs. SDG&E determined that one additional
27 program, the mitigation of MSA’s in Buildings and Alcoves, was warranted.
28 Accordingly, this project is included in my testimony. Further, for one activity
29 that was presented in the 2021 RAMP Report (SDG&E-Risk-9-M01), SDG&E is
30 not seeking funding in this GRC.

31 **III. SUSTAINABILITY AND SAFETY CULTURE**

32 **A. Sustainability**

33 Sustainability, safety, and reliability are the cornerstones of SDG&E’s core business
34 operations and are central to SDG&E’s GRC presentation. SDG&E is committed to not only
35 deliver clean, safe, and reliable electric and natural gas service, but to do so in a manner that

¹¹ “Tranching” refers to a logical disaggregation of a group of assets (physical or human) or systems into subgroups with like characteristics for purposes of risk assessment. D.18-12-014 at 18.

1 supports California’s climate policy, adaptation, and mitigation efforts. In support of the legal
2 and regulatory framework set by the state, SDG&E has set a goal to reach Net Zero greenhouse
3 gas (GHG) emissions by 2045, adopted a Sustainability Strategy to facilitate the integration of
4 GHG emission reduction strategies into SDG&E’s day-to-day operations and long-term
5 planning, and published an economy-wide GHG Study that recommends a diverse approach for
6 California leveraging clean electricity, clean fuels, and carbon removal to achieve the 2045 goals
7 through the lens of reliability, affordability, and equity. The Sustainability Strategy serves as
8 SDG&E’s guide to enable a more just and equitable energy future in SDG&E’s service territory
9 and beyond. As a “living” strategy, SDG&E will continue to update the goals and objectives as
10 technologies, policies, and stakeholder preferences change. See the Sustainability Policy
11 testimony of Estela de Llanos (Ex. SDG&E-02).

12 In this GRC, SDG&E focuses on three major categories that underpin the Sustainability
13 Strategy: mitigating climate change, adapting to climate change, and modernizing the gas
14 infrastructure to be a reliable and resilient catalyst for clean energy. SDG&E's goal is to
15 contribute to the decarbonization of the economy by way of diversifying energy resources,
16 collaborating with regional partners, and providing customer choice that enables an affordable,
17 flexible, and resilient grid.

18 Nearly all of the activities described in further detail in this testimony advance the state’s
19 climate goals and align with SDG&E’s Sustainability Strategy. Specifically, Locate & Mark,
20 Leak Repair, Cathodic Protection, Underperforming Steel Replacement Programs, Early Vintage
21 Program (Components) and Control Center Modernization (CCM)¹² drive progress in the areas
22 of Climate Mitigation and Modernizing the Gas Infrastructure. Execution of these programs
23 remains consistent with SDG&E’s Sustainability and Safety Culture goals. The safety benefits
24 of these programs are well-established as SDG&E is currently implementing these programs in
25 response to federal and state regulatory requirements. While these initiatives were originally
26 driven by safety, these activities reduce fugitive emissions associated with leaks on the system,
27 including the significant emissions resulting from potential excavation damage (Dig-In);
28 maintain the integrity of SDG&E gas infrastructure; and modernize the natural gas infrastructure

¹² See Gas Transmission Operations and Construction testimony of Messrs. Chiapa and Hruby (Ex. SDG&E-06) and Measurement & Regulation (1GD007) and Control Center Modernization (CCM) Project (21574) work group in L. Patrick Kinsella’s testimony (Ex. SDG&E-04).

1 (e.g., steel pipe replacements, component replacements and CCM) to develop a comprehensive,
2 real-time view of this infrastructure with enhanced remote monitoring, control, automation, and
3 analytic capabilities.

4 **B. Safety Culture**

5 SDG&E's longstanding commitment to safety focuses on three primary areas: (1)
6 employee/contractor safety, (2) customer/public safety, and (3) the safety of the gas delivery
7 system. This safety focus is embedded in what SDG&E does. Through this focus and the recent
8 addition of the Gas Safety Center, Gas Distribution has built a Culture of Safety which is the
9 foundation for who SDG&E is— from initial employee training, to the installation, operation, and
10 maintenance of SDG&E's utility infrastructure, and to its commitment to provide resilient, safe,
11 and reliable service to customers at reasonable rates. SDG&E regularly assesses its safety
12 culture and encourages two-way communication between employees and management as a
13 means of identifying and managing safety risks. In addition to the reporting of pipeline and
14 occupational safety incidents, there are multiple methods for employees to report close calls/near
15 misses. At SDG&E, safety is a core value. The Company provides all employees with the
16 training necessary to safely perform their job responsibilities, such as the continuous Smith
17 Driving System refresher course, regular discussion on Illness Prevention, regular enforcement
18 of "Stop the Job, Stop the Task", close call reporting, and the importance of using Personal
19 Protection Equipment.

20 With Safety at its core, in 2020, SDG&E commenced development and deployment of a
21 Safety Management System (SMS) which better aligns and integrates safety management, risk
22 management, asset management, and emergency management across the entire
23 organization. The SMS takes a holistic approach to "safety" and expands beyond traditional
24 occupational safety principles to include public safety, asset safety, system safety, cyber safety,
25 and psychological safety for improved safety performance and culture. SDG&E's SMS is a
26 systematic, enterprise-wide framework to collectively manage and reduce risk and promote
27 continuous improvement in safety performance through deliberate, routine, and intentional
28 processes. SDG&E adopted a de-centralized SMS organizational structure where risk and
29 accountability is retained at the operational level. The SMS Executive-level and Director-level
30 teams bring cross-functional leaders together to share safety best practices, lessons learned and
31 opportunities for improvement. The Director – Gas Operations serves as a SMS Governance

1 Team member and has identified operational support across the districts and departments within
2 the organization to operationalize the SMS processes.

3 Risk- and safety-related activities discussed within my witness testimony are further
4 enhanced within SDG&E's SMS. Business ownership, accountability, and support provide the
5 foundation for the SMS framework. The SMS affirms, aligns, integrates, and brings further
6 awareness and engagement to such programs by providing increased leadership safety
7 engagement, awareness, communication, and transparency; the broad sharing of information and
8 utilization of lessons learned; enhanced documentation in the form of standardized processes
9 with widely accessible document and data repositories; strengthened employee feedback
10 mechanisms with consistent processes for follow-up and remediation; early identification of risks
11 with increased data analytics; and on-going review and assessment to determine program
12 effectiveness and identify opportunities for continuous safety improvement. Refer to the
13 testimony of Ken Deremer (Ex. SDG&E-31) for additional details of SDG&E's SMS.

14 As noted in the 2021 RAMP Report, excavation damages pose a great hazard to the
15 system and the safety of the communities SDG&E serves. As explained above, public safety is a
16 top priority for SDG&E. Gas Distribution O&M covers the management of the programs
17 designed to mitigate the frequency and impact of excavation damages. Additionally, SDG&E
18 responds to any emergencies to its infrastructure. The Emergency Operations Center, the
19 Distribution Emergency Centers, and the Transmission Command Center activate as needed to
20 monitor, coordinate, communicate, and support the field crews and personnel responding to
21 emergencies.

22 SDG&E takes an integrated approach to pipeline safety and integrity, beginning with the
23 design and the construction of facilities, followed by continual evaluation and improvement of
24 operations and maintenance activities, public communication and awareness, emergency
25 response, safety programs and practices, the implementation of new technologies, the defined
26 procurement processes that facilitate materials traceability, and a workplace that encourages
27 continual open and informal discussion of safety-related issues. On a daily basis, O&M and
28 capital work elements are managed based on a variety of risk factors and work drivers, such as
29 federal and state regulatory requirements, customer and pipeline growth expectations, franchise
30 obligations, permitting requirements, and conditions found during inspections. These work
31 elements are prioritized first based on immediate safety and compliance considerations, and then,

1 work is actively prioritized considering factors such as regulatory compliance deadlines,
2 customer scheduling requirements, and overall infrastructure condition. Safety and compliance
3 considerations are captured throughout the Company's policies and procedures.

4 Generally, examples of O&M activities categorized as safety and compliance include:
5 leak survey and patrols; leak repairs; locate and mark, and stand-by observations; inspections of
6 valves, bridges, spans, and M&R facilities; and maintenance of CP systems. These elements are
7 generally prioritized ahead of work that can be safely managed to occur within a more flexible
8 schedule. For example, in the case of Code 1 (hazardous) leaks, Gas Emergency Department
9 crews are required to take immediate and continuous action until the hazard has been mitigated.
10 Activities with more flexible schedules that are also required to safeguard the integrity of the
11 pipeline system include: main and service alterations; compliance work self-audits; and
12 employee training. Additionally, there are a number of support activities necessary to complete
13 work, including dispatch and work scheduling; supervision; technical support; tools; technology
14 systems; and quality assurance.

15 In addition to O&M activities, to maintain safe and reliable service, SDG&E makes a
16 variety of capital improvements, including pressure betterment projects to improve areas of low
17 pressure, pipeline renewals to replace deteriorated pipelines or obsolete equipment, installations
18 and replacements of cathodic protection systems, and the purchase of electronic monitoring
19 devices for pressure tracking. The specific factors considered in the prioritization process of
20 capital work that is performed to mitigate these risks may vary depending on the type of project.
21 The prioritization of pipeline projects (*e.g.*, mains, services, cathodic protection, valves, and
22 regulator station replacements) is driven by a review of maintenance activities and findings,
23 results of field workforce inspections, and records of condition. These inspection evaluation
24 elements coupled with computational modeling are used to help mitigate risk and determine
25 replacement needs.

26 Other factors considered for the replacement of assets include the age of the
27 infrastructure, general equipment reliability, and/or design obsolescence. In addition, during the
28 evaluation of distribution main and service replacements, field and technical staff consider the
29 results from a computational model used to help assess the risk rank of pipeline segments.

30 Since capital work is dynamic, ongoing assessment of system operations is necessary.
31 For example, construction timelines can be affected by permitting, material availability,

1 customer schedules, other construction-related factors, and/or additional work requirements that
2 may arise throughout the year in response to maintenance, inspection, and other routine
3 activities. These real-time operational situations are considered when evaluating and
4 subsequently addressing daily distribution pipeline safety and reliability risks.

5 Not only does an effective safety culture make known its responsibilities and objectives,
6 it requires tangible acts to build and maintain a qualified workforce and to mitigate risks
7 associated with public and employee safety hazards, system integrity, and reliability. The
8 Operator Qualification (OpQual) program in Gas Distribution addresses employee training,
9 qualifications, and work quality. It is an integral part of an overall workforce proficiency effort
10 and key to SDG&E's safety culture. OpQual compliance is closely monitored and employees
11 are trained whenever significant changes occur. The OpQual program aligns with the
12 recommendations by the CPUC auditors and industry leading practices, and it complies with SB
13 705, which requires pipeline operators to establish and update a Gas Safety Plan that is consistent
14 with leading practices and federal statutes.

15 SDG&E remains focused on identifying and implementing the most cost-effective
16 solutions with the potential to make the greatest impact on reducing GHG emissions, while
17 maintaining a safe and reliable energy system. SDG&E believes that safety, reliability, and
18 sustainability are inextricably linked and fundamental to the Company's ability to continue to
19 successfully operate. Please see the Sustainability Policy testimony of Ms. Llanos (Ex. SDG&E-
20 02) for additional detail on SDG&E's Sustainability Strategy and the Safety, Risk and Asset
21 Management testimony of Mr. Deremer (Ex. SDG&E-31) for additional detail of SDG&E's
22 Safety Policy.

23 **IV. NON-SHARED COSTS**

24 "Non-Shared Services" are activities that are performed by a utility solely for its own
25 benefit. Corporate Center provides certain services to the utilities and to other subsidiaries. For
26 purposes of this general rate case, SDG&E treats costs for services received from Corporate
27 Center as Non-Shared Services costs, consistent with any other outside vendor costs incurred by
28 the utility.

29 Operations and Maintenance (O&M) activities are routinely performed on over 15,328
30 miles of gas distribution main and service pipeline and associated facilities in response to federal

1 and state regulatory agency codes and standards,¹³ customer and pipeline growth expectations,
2 franchise obligations, and to sustain safe and reliable operation of the pipeline system. This
3 work includes leakage surveys, leak repairs, maintenance on mains and services, application of
4 corrosion control measures, valve maintenance, regulator station maintenance, monitoring meter
5 accuracy, gas odorant monitoring, supervision, and training for these O&M activities, and
6 locating and marking buried infrastructure to avoid damage caused from excavation by others.
7 In addition, there is a variety of supporting work necessary to complete this field operations and
8 maintenance work. Examples of support work include: maintaining pipeline maps and related
9 gas system attribute information, administering and implementing city permitting and traffic
10 control requirements, and maintaining engineering models of system flows and pressures.
11 Investment in these activities supports SDG&E's commitment to mitigate risks associated with
12 hazards to public and employee safety, infrastructure integrity, and system reliability.

13 The level of funding requested in this testimony is consistent with continuing compliance
14 with the pipeline safety regulations and the continued safe and reliable operation of SDG&E's
15 gas distribution pipeline system.

16 Spending to comply with federal Distribution Integrity Management Program (DIMP)
17 regulations governing distribution pipeline integrity is addressed by Ms. Kitson and Mr. Sera
18 (Ex. SDG&E-09).

19 Spending associated with gas operations staff support, Gas Standards development and
20 maintenance; the management of the Damage Prevention and Public Awareness Programs; and
21 tools and technology research and implementation is addressed by Mr. Rawls (Ex. SG&E-05).

22 Unique cost centers are used to record the cost of O&M activities performed within Gas
23 Distribution operations. Collectively, more than 45 cost centers are used in recording the costs
24 presented within this testimony. To facilitate the analysis of historical spending and to complete
25 an evaluation of the projected expenditures, these cost centers are aggregated into 11
26 "workgroups" representing similar functions and/or having similar cost drivers.

27 Included in this section of my testimony are the activities and the associated O&M
28 expenses to address the physical condition of the gas distribution system. Gas distribution

¹³ Transportation of Natural and Other Gas By Pipeline: Minimum Federal Safety Standards, 49 C.F.R. §192 *Et seq.*; Cal. Gov't Code §4216 *et seq.*; GO 112-F; and GO 58-A.

1 activities are performed from a regional organizational structure. Similar activities are
2 completed at five operating bases located throughout the 1,400 square-mile service territory.
3 These activities can be described as preventative, corrective, or supportive in nature.
4 Preventative work is generally completed on a scheduled basis. It includes the activities and
5 associated costs presented within the workgroups of Locate and Mark, Leak Survey, and M&R.
6 Corrective work is generally reactive to a situation or a facility condition. This includes the
7 activities and the associated costs presented in the workgroups of Cathodic Protection, Main
8 Maintenance, and Service Maintenance. Finally, supportive elements are necessary to complete
9 work assignments and include the activities and the associated costs discussed in Operations
10 Management and Training, Electric Support, Tools, Materials and Fittings, and other Services
11 workgroups.

12 In preparing projections of the TY 2024 requirements, SDG&E Gas Distribution
13 reviewed historical spending levels, including units of work, and developed an assessment of
14 future requirements and associated risks. This analysis entailed a review of the historical 2017
15 through 2021 spending with consideration of the underlying cost drivers. Depending on future
16 expectations for the underlying cost drivers, a primary forecast methodology was selected.
17 Selected methodologies include forecasting based on historical averages, simple linear trending
18 of historical data, and 2021 adjusted recorded base year spending. In addition, work
19 requirements that are incremental to levels of historical spending and necessary to maintain the
20 safe and reliable operation of the distribution system and supporting work processes were
21 identified. An analysis was then performed to determine the funding requirement of these new
22 or more-extensive work elements. The overall result is a forecast that has its foundation based
23 on the historical representation, to which incremental expense requirements have been added.

24 In summary, Gas Distribution requests the Commission adopt a TY 2024 forecast of
25 O&M expenses for non-shared services of \$41,843,000, as summarized in Table LPK-6 below.
26 This is an increase of \$5,298,000 over the 2021 adjusted recorded base. This increase is driven
27 by Locate and Mark, system expansion, infrastructure renewal, field technical skills and training,
28 improved documentation and control of pipeline materials, and the integration of new
29 technology. Table LPK-6 below summarizes the total non-shared O&M forecasts for the listed
30 cost categories.

**TABLE LPK-6
Non-Shared O&M Summary of Costs**

GAS DISTRIBUTION (In 2021 \$)			
Categories of Management	2021 Adjusted-Recorded (000s)	TY2024 Estimated (000s)	Change (000s)
A. Other Services	69	90	21
B. Leak Survey	2,067	2,067	0
C. R-Locate & Mark	7,116	10,096	2,980
D. Main Maintenance	5,009	5,822	813
E. Service Maintenance	3,293	4,116	823
F. Tools	1,708	1,667	-41
G. Electric Support	514	495	-19
H. Measurement & Regulation	4,638	5,153	515
I. Cathodic Protection	2,050	1,834	-216
J. Asset Management	1,078	1,375	297
K. Operations Management, Supervision, & Training	9,003	9,128	125
Total Non-Shared Services	36,545	41,843	5,298

The Commission should find this forecast reasonable and fully justified in that: (1) the activities support continued delivery of safe and reliable service; (2) activities are consistent with local, state, and federal regulations; (3) activities respond to operations, maintenance, and construction needs associated with projected growth and demands of city, county, and state agencies; (4) the forecast amounts are reasonable in light of historical spending and anticipated work increases, and (5) the activities support SDG&E's commitment to mitigate risks associated with hazards to public and employee safety, infrastructure integrity, and system reliability.

A. Other Services (1GD000)

The Other Services workgroup consists of miscellaneous expenses associated with Gas Distribution field operations not captured in other major workgroups. Table LPK-7 below summarizes Gas Distribution O&M costs associated with Other Services activities.

**TABLE LPK-7
Other Services**

GAS DISTRIBUTION (In 2021 \$)			
A. Other Services	2021 Adjusted-Recorded (000s)	TY2024 Estimated (000s)	Change (000s)
1. Other Services	69	90	21
Total	69	90	21

1 **1. Description of Costs and Activities**

2 Other Services workgroup activities include leak investigations of customers’ house
3 lines, leak surveys of transmission mains, landscaping repair, and support of the installation of
4 cathodic test stations for high-pressure main evaluation.

5 **2. Forecast Method**

6 In developing this forecast, historical expenditures for 2017 through 2021 were
7 evaluated. Because of the wide range of activities recorded in this workgroup, as well as the cost
8 fluctuations from year to year, a five-year average was selected to forecast future costs. The
9 selection of the five-year average methodology results in an increase of \$21,000 from the 2021
10 adjusted recorded base in TY 2024.

11 **3. Cost Drivers**

12 As indicated above, this group captures a wide array of activities. Therefore, the cost
13 drivers are also diverse and have few, if any, common traits. Examples of cost drivers include:

- 14 • The number of leak investigation calls requiring customer houseline evaluation,
15 which can be driven by unseasonable weather conditions or homeowner
16 construction activity;
- 17 • Minor meter relocation and modification work and associated planning;
- 18 • Transmission main special leak surveys or patrols, which can be driven by
19 regulatory requirement changes or Company policy changes; and
- 20 • General level of construction activity on services that requires landscaping repair,
21 which is driven by changing economic or new business conditions.

22 **B. Leak Survey (1GD001)**

23 Recorded to this all RAMP workgroup are the labor and non-labor expenses associated
24 with federal and state pipeline safety regulation,¹⁴ which requires SDG&E to survey its gas
25 distribution system for leakage. Table LPK-8 below summarizes Gas Distribution O&M costs
26 associated with Leak Survey activities.

¹⁴ 49 C.F.R. § 192.723 (Distribution systems: Leakage surveys); GO 112-F.

1
2

**TABLE LPK-8
Leak Survey**

GAS DISTRIBUTION (In 2021 \$)			
B. Leak Survey	2021 Adjusted-Recorded (000s)	TY2024 Estimated (000s)	Change (000s)
1. Leak Survey	2,067	2,067	0
Total	2,067	2,067	0

3

1. Description of Costs and Activities

4

5 These pipelines are routinely surveyed for leaks at intervals of six month, one, and three-
6 year intervals as determined by the pipe material involved (*i.e.*, plastic or steel), the operating
7 pressure, whether the pipe is under cathodic protection, and the proximity of the pipe to various
8 population densities. For example, a six-month survey cycle is typically used on high-pressure
9 distribution mains and services. Annual surveys are scheduled in business districts, which are
10 defined as a principal business area in a community where large numbers of people regularly
11 congregate to engage in business activities, and near public service establishments, such as
12 schools, churches, and hospitals. A one-year survey cycle is performed on Aldyl-A mains and
13 services. Three-year survey cycles are typically used for state of the art (SOTA) plastic and
14 cathodically protected steel mains and services installed in residential areas.¹⁵

14

15 In addition to routine leak surveys, the Company performs special leak surveys, as
16 needed, and on more frequent cycles than those discussed above (*e.g.*, two or three months).
17 Special leak surveys occur at various times, including ahead of street improvements to address
18 pending leaks prior to street moratoriums; after the occurrence of any significant incident (*e.g.*,
19 train derailment, explosion, earthquake, flooding, landslides, etc.) adjacent to high-pressure
20 pipelines or related facilities; when increasing the maximum allowable operating pressure of a
21 pipeline; when routine survey requirements are not considered adequate because of pipe
22 condition or limited opportunity for gas to vent safely; or when there is a need to monitor pipe
23 condition for special situations, such as material evaluations. Additional special leak surveys are
also conducted on pipeline spans, pipelines through/on bridges, and areas of unstable earth.

¹⁵ See 49 C.F.R. § 192.723(b)(1)(2).

1 During the survey, the field employee patrols above the identified location of SDG&E’s
 2 distribution subsurface main and service pipelines with a leak detector to identify, classify, and
 3 generate an immediate repair work order, when necessary. SDG&E currently has 15,328 miles
 4 of main and service pipeline that require leak survey.

5 The leak survey cost supports the safety and reliability of SDG&E’s system by
 6 performing the fundamental compliance and safety process of leak surveying pipelines to
 7 monitor for leakage in the pipeline system. Furthermore, this activity supports SDG&E’s
 8 commitment to mitigate risks associated with hazards to public and employee safety,
 9 infrastructure integrity, and system reliability.

10 The Leak Survey workgroup mitigates safety risks identified in the 2021 RAMP Report.
 11 Accordingly, this budget code in its entirety, aligns with a RAMP activity.

12 Table LPK-9 below provides the RAMP activities, their respective cost forecasts, and the
 13 RSEs for this workpaper. For additional details on these RAMP activities, please refer to my
 14 workpaper SDG&E-04-WP (1GD001).

15 **TABLE LPK-9**
 16 **RAMP Activities O&M Forecasts by Workpaper**
 17 **In 2021 Dollars (\$000)**

GAS DISTRIBUTION – 1GD001					
RAMP Activity O&M Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	BY2021 Embedded Base Costs (000s)	TY2024 Estimated Total (000s)	TY2024 Estimated Incremental (000s)	GRC RSE*
SDG&E- Risk-9 - C07	Pipeline Monitoring (Leak Mitigation, Bridge & Span, Unstable Earth, and Pipeline Patrol	2,067	2,067	0	-

18 *Tranche level RSEs and additional details are available in SDG&E-04-WP.

19 **2. Forecast Method**

20 To reflect the most current conditions for leak survey, SDG&E’s base year forecast for
 21 this workgroup is the 2021 adjusted recorded level of spending. This method is appropriate
 22 because labor and non-labor expenses increased collectively in 2021 due to recent changes in
 23 survey cycle activities, organizational changes, introduction of the Gas Emergency Department

1 to support leak responses, and the reposition of Leak Survey regionally based on the surveys they
 2 perform. Due to these recent changes in operation, a historical average would not represent
 3 future business needs. Therefore, 2021 was chosen as the base level of expense for future years.
 4 This forecast results in no change in expense over the 2021 adjusted recorded base in TY 2024.

5 **3. Cost Drivers**

6 The cost drivers supporting this forecast are the compliance requirement for the three-
 7 year atmospheric corrosion monitoring survey, and the six-month, one-year, and three-year
 8 frequency leak surveys, as well as special leak survey activities, and follow-up leak
 9 investigations. Follow-up leak investigation orders are issued to leak survey personnel by a
 10 service technician unable to locate the source of a possible customer reported leak. In order to
 11 close the leak investigation order, leak survey personnel must survey all underground gas
 12 facilities within 150 feet of initial location where the leak or odor was reported. Leak survey is a
 13 risk prevention activity and supports the RAMP¹⁶ mitigation elements. Those elements include
 14 basic code mandated periodic leak surveys, inspections of bridges and spans and unstable earth,
 15 pipeline patrolling, as well as repairing leaks as a result of these inspections and patrols.

16 **C. R-Locate & Mark (1GD002)**

17 Locate and Mark is the process mandated by 49 C.F.R. § 192.614 and the California One
 18 Call Statute,¹⁷ where the owner of underground facilities, when notified by the USA One-Call
 19 Center of a planned excavation, must respond within two working days and mark the location of
 20 those underground facilities that conflict with the planned excavations. Table LPK-10 below
 21 summarizes the Gas Distribution O&M costs associated with Locate and Mark activities.

22 **TABLE LPK-10**
 23 **R-Locate and Mark**

GAS DISTRIBUTION (In 2021 \$)			
C. R-Locate & Mark	2021 Adjusted-Recorded (000s)	TY2024 Estimated (000s)	Change (000s)
1. R-Locate & Mark	7,116	10,096	2,980
Total	7,116	10,096	2,980

¹⁶ See SDG&E’s 2021 RAMP Report, SDG&E-Risk-9, Incident Related to the Medium Pressure System (Excluding Dig-in).

¹⁷ Cal. Gov’t Code § 4216, *et seq.*

1 **1. Description of Costs and Activities**

2 The activities completed under this cost workgroup are all RAMP, preventative in nature
3 and are required to avert damages caused by third-party excavators working near gas and/or
4 electric underground substructures. To comply with the Locate and Mark regulatory and legal
5 requirements cited above, employees use an electronic pipe-locating device to identify the
6 location of SDG&E’s underground pipelines and utilize substructure maps and service history
7 records to aid in verifying the location of the underground infrastructure.

8 Included in this workgroup is the Locate and Mark (L&M) Quality Assurance (QA)
9 Program.¹⁸ The L&M QA Program provides a variety of benefits to reduce the number of and
10 potential for damage to gas infrastructure by a third party. By evaluating locate and mark
11 activities that have been completed or are being performed, SDG&E can address gaps in
12 performance with additional training, by updating company documentation, or by recording
13 company assets. Locator errors can result in a mismark, or a ticket not completed within the
14 required timeframe. Additionally, the QA review can highlight errors in the timely and/or
15 accurate documentation of utility assets. Adherence to proper company policy and procedures
16 reduces the percentage of locate and mark mismarks, increases the overall awareness of unsafe
17 activity, and expedites response times.

18 Conducting stand-by observations of other entities excavating near SDG&E’s pipelines is
19 another important damage prevention activity included in this workgroup. Generally, this
20 involves an employee inspecting construction job sites to confirm that excavators are aware of
21 the location of critical SDG&E gas facilities. The State of California enacted regulations in 2007
22 that mandate a preconstruction meeting with excavators requesting Locate and Mark support and
23 require continuous monitoring of all excavations within ten feet of high-pressure pipelines.¹⁹

24 In 2021, the California Governor signed SB 297 into law, which enacted the Wade
25 Kilpatrick Gas Safety and Workforce Adequacy Act of 2021. The law makes any contractor
26 causing damage to a subsurface installation subject to a civil penalty in an amount not to exceed
27 \$100,000 and possible suspension or revocation of the contractor’s license if specified conditions

¹⁸ Building a Better Business (BBB) is an ongoing business optimization and continuous improvement initiative at SDG&E, undertaken to support our mission to improve lives and communities by building the cleanest, safest, and most reliable energy infrastructure company in America.

¹⁹ See Cal. Code Regs., tit. 8, § 1541(b)(1)(B) (2007).

1 are met. Specified conditions include failing to provide notice of the need for a gas corporation
 2 to locate and mark its subsurface installations or commencing excavation before a gas
 3 corporation marks its subsurface installations. The State’s added enforcement and SB 297’s
 4 amendments increasing the maximum penalties are expected to compel more excavators to call
 5 USA, which will add upward pressure to an already increasing ticket volume in the State. Thus,
 6 the increased ticket volume will directly increase membership fees for Underground Service
 7 Alert of Southern California (DigAlert).

8 The impact on ticket volume resulting from SB 297, increased public awareness
 9 campaigns such as the Gold Shovel Program, and current regulations, will increase response
 10 demand from SDG&E as required by California Government Code Section 4216. The extent of
 11 increased expenses for Locate and Mark activities are difficult to accurately predict, thus
 12 SDG&E is requesting authorization for the Locate and Mark Balancing Account (LMBA), a two-
 13 way balancing account for this workpaper. Please refer to Regulatory Accounts testimony by
 14 Mr. Jason Kupfersmid for more details on the LMBA (Ex. SDG&E-43). The Locate and Mark
 15 workgroup mitigates safety risks identified in the 2021 RAMP Report. Accordingly, this budget
 16 code in its entirety aligns with a RAMP activity.

17 Table LPK-11 below provides the RAMP activities, their respective cost forecasts, and
 18 the RSEs for this workpaper. For additional details on these RAMP activities, please refer to my
 19 workpaper SDG&E-04-WP (1GD002).

20 **TABLE LPK-11**
 21 **RAMP Activities O&M Forecasts by Workpaper**
 22 **In 2021 Dollars (\$000)**

GAS DISTRIBUTION – 1GD002					
RAMP Activity O&M Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	BY2021 Embedded Base Costs (000s)	TY2024 Estimated Total (000s)	TY2024 Estimated Incremental (000s)	GRC RSE*
SDG&E-Risk-7 - C03	Locate & Mark Activities (MP)	6,538	9,436	2,898	368
SDG&E-Risk-7 - C04	Locate & Mark Activities (HP)	185	268	83	482
SDG&E-Risk-7 - C09	Locate & Mark Quality Assurance	393	393	0	2

23 *Tranche level RSEs and additional details are available in SDG&E-04-WP.

1 **2. Forecast Method**

2 In developing the TY 2024 forecast, historical expenditures and work units for 2017
 3 through 2021 were evaluated. The cumulative expense trend of labor and non-labor increased
 4 from 2017 to 2021 fueled by a broadening recognition of improved safety outcomes afforded by
 5 locate and mark services. One indicator of service need is year-over-year ticket counts. Over
 6 the last 5 years, SDG&E has seen total USA tickets increase by 10.4%, see Table 12A below.
 7 Ticket counts for the first quarter of 2022 indicate a similar trend. Standby requirements and
 8 after-hour service window needs also indicate a pattern of growth that is expected to continue.

9 **TABLE LPK-11A**
 10 **Gas Distribution USA Ticket Volume by Year**

YEAR	2017	2018	2019	2020	2021
USA Ticket Volume by Year – MP	135,460	133,304	148,350	163,174	151,106
USA Ticket Volume by Year – HP	7548	7702	8339	8,517	6,837

11 For these reasons, the Locate and Mark forecast is based on the linear trend observed
 12 from the last five years (2017 through 2021). Using a historical average or base year forecast
 13 would not appropriately account for the increase in work anticipated over the forecast period.
 14 Thus, to reflect these changing conditions and increase in Locate and Mark work, a five-year
 15 (2017 through 2021) linear trend was used to calculate the cumulative labor and non-labor
 16 request for this group. This forecast methodology results in an increase of \$2,980,000 over the
 17 2021 adjusted recorded base in TY 2024.

18 **3. Cost Drivers**

19 The cost drivers supporting this forecast are primarily driven by construction,
 20 infrastructure, and maintenance activities in the public and private sectors, public and private
 21 excavator awareness, increase of overhead electric to underground electric conversions,
 22 additional legislation (SB 297) which includes consequences for those who damage SDG&E
 23 underground infrastructure, and oftentimes changing landscape of legislation regarding
 24 excavation. Examples of these types of construction activities include private construction
 25 projects, such as commercial and industrial centers, strip malls, residential remodeling projects,
 26 and city projects such as street improvements and storm drain, water, and sewer pipeline

1 relocation work. These cost drivers support the safety and reliability of SDG&E’s gas and
 2 electric underground system. Properly locating and marking gas and electric facilities, as well as
 3 performing stand-by observations, are activities completed to avert damage by third-party
 4 excavators that can interrupt gas service and pose a risk to public and employee safety.

5 **D. Main Maintenance (1GD003)**

6 Recorded to this workgroup are the labor and non-labor costs associated with
 7 investigating and repairing leaks in distribution mains and moving, lowering, and raising short
 8 sections of gas distribution mains, vaults, and related structures. The main maintenance work in
 9 this workgroup is designed to meet federal (49 C.F.R. §192) and state (GO 112-F) pipeline safety
 10 regulations and to extend the life of distribution main pipelines and related infrastructure. Table
 11 LPK-12 summarizes Gas Distribution O&M costs associated with Main Maintenance activities.

12 **TABLE LPK-12**
 13 **Main Maintenance**

GAS DISTRIBUTION (In 2021 \$)			
D. Main Maintenance	2021 Adjusted-Recorded (000s)	TY2024 Estimated (000s)	Change (000s)
1. Main Maintenance	5,009	5,822	813
Total	5,009	5,822	813

14 **1. Description of Costs and Activities**

15 As required by GO 112-F, SDG&E periodically surveys its entire pipeline system for
 16 leaks using specialized leak detection equipment. Information on all leaks identified must be
 17 recorded and classified and hazardous leaks repaired promptly. Also recorded to this workgroup
 18 is the Gas Distribution Emergency Department (GED). The costs in this work group are specific
 19 to gas emergencies on mains. These two core Main Maintenance activities, Leak Repair and Gas
 20 Emergency Department, are also identified in this work group as RAMP mitigations. Further
 21 details on these RAMP activities can be found below in the RAMP Activities Section.

22 In addition to leak repairs and GED, improvements by municipalities and other outside
 23 agencies can trigger the requirement to perform maintenance on gas mains and related
 24 equipment. This includes street widening, sewer and water line maintenance or replacement, and
 25 street resurfacing. In the case of street resurfacing, SDG&E’s crews must locate buried gas
 26 facility vault lids that have been paved over, then uncover them or raise them so they are flush

1 with the new street surface. Municipality and local/state agency improvements are normally a
2 function of availability of local funding, often a sign of stronger economic conditions. The cost
3 associated with main maintenance supports SDG&E’s commitment to providing sustainable,
4 safe, and reliable natural gas to its customers.

5 **a. RAMP Activities**

6 There are two core activities in this work group which are RAMP mitigations. Leak
7 Repair and Gas Emergency Department. These are two activities that SDG&E performs to drive
8 sustainability, safety, and reliability.

9 Leak Repair – SDG&E’s maintenance crews investigate leak indications and make
10 repairs as needed. Completing leak repairs generally requires excavating in paved streets and
11 landscaped areas to determine the exact location of the leak. This work often involves pavement
12 cutting, trenching, and then repair of pipe facilities, followed by backfilling the excavation,
13 compacting the soil, and making permanent repairs to pavement and landscaping as needed.
14 Main leak evaluation and repair work is generally completed to mitigate risks associated with
15 hazards to public safety, and to address infrastructure condition, and material degradation.

16 Gas Emergency Department – When SDG&E is notified of a gas emergency, it is critical
17 to respond immediately and take measures to control escaping gas in the interest of public safety.
18 To improve gas emergency response time, SDG&E established the GED. The GED is organized
19 as two person crews dedicated to gas emergency response. The GED operates 24/7 in
20 overlapping shifts to provide ample coverage during peak periods allowing for rapid response to
21 calls of escaping gas. These dedicated “specialist” crews responding to gas emergencies reduce
22 the risk of injuries and property damage to both the public and crew responding to the incident.

23 Table LPK-13 below provides the RAMP activities, their respective cost forecasts, and
24 the RSEs for this workpaper. For additional details on these RAMP activities, please refer to my
25 workpaper SDG&E-04-WP (1GD003).

1
2
3

TABLE LPK-13
RAMP Activities O&M Forecasts by Workpaper
In 2021 Dollars (\$000)

GAS DISTRIBUTION – 1GD003					
RAMP Activity O&M Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	BY2021 Embedded Base Costs (000s)	TY2024 Estimated Total (000s)	TY2024 Estimated Incremental (000s)	GRC RSE*
SDG&E-Risk-9 - C06	Leak Repair – Main Portion	956	1,158	202	-
SDG&E-Risk-9 - C11	Gas Distribution Emergency Department – Main Portion	1,230	1,734	504	-

4

*Tranche level RSEs and additional details are available in SDG&E-04-WP.

5

2. Forecast Method

6

A variety of factors influence the level of spending on main maintenance in any given

7

year. These factors include: increasing government regulations, maintaining an aging

8

infrastructure, ensuring public safety, meeting municipality requirements, and unplanned

9

material failure. Activities which illuminate additional maintenance required, such as increased

10

leak survey cycle frequency resulting in increased miles of pipe surveyed per year and the

11

introduction of an Aerial Methane Mapping (AMM) pilot²⁰ as part of the 2022 SB1371

12

Compliance Plan also impacts spending levels. The labor and non-labor Main Maintenance costs

13

have experienced an upward trend in costs associated with multiple work drivers, as discussed in

14

the Cost Drivers section below. SDG&E anticipates this trend will continue.

15

Regulatory/legislative pressures continue to increase, the infrastructure is getting older,

16

and municipality work and general construction costs continue to increase. Therefore, a five-

17

year (2017 through 2021) linear trend was used to forecast base expense for this workgroup.

18

Using a simple average forecasting method would not be appropriate for this work category, as it

19

would not sufficiently fund critical compliance and maintenance work for the anticipated

20

growing work requirements.

²⁰ See SDG&E's 2022 SB 1371 Compliance Plan.

1 This five-year linear forecast results in an increase of \$813,000 over the 2021 adjusted
2 recorded base in TY 2024.

3 **3. Cost Drivers**

4 The work completed in this workgroup is driven by federal and state pipeline safety
5 regulatory requirements and SDG&E's efforts to protect the integrity of the pipeline system
6 through activities that extend its life. These activities support SDG&E's commitment to mitigate
7 risks associated with hazards to public safety, infrastructure integrity, and system reliability. As
8 outlined above, a variety of factors influence the level of spending on main maintenance in any
9 given year. These factors include:

- 10 • The number of leaks evaluated and repaired each year – This work is generally
11 completed to address public safety, infrastructure condition, and material
12 degradation. As previously discussed, leaks are found by employees conducting
13 leak surveys and other field activities, or by customers who call reporting a gas
14 odor.
- 15 • The level of repairs associated with damages to pipeline facilities by third parties
16 – This cost is driven by the number and severity of the damage. For example,
17 damage to a service line is less costly than damage to a high-pressure line which
18 may require multiple days of work and many personnel to address. Damages are
19 driven by the level of construction in the private and public sector, which is
20 typically driven by economic conditions.
- 21 • The level of work completed by municipalities – Typical municipality projects
22 include street resurfacing, widening or reconstruction, and sewer and water
23 pipeline maintenance, replacement, or new installations. Per applicable franchise
24 agreements, SDG&E is required to complete associate maintenance, such as
25 raising or lowering valve casings and lids; altering the elevation of pipeline
26 segments in their present locations; or relocating pipeline segments or related
27 facilities completely. The impact to SDG&E can vary significantly, depending on
28 the availability of municipality funds, which are typically driven by economic
29 conditions. As economic conditions continue to improve, construction by
30 municipal agencies is likely to increase.

31 **E. Service Maintenance (1GD004)**

32 Recorded to this workgroup are the labor and non-labor costs associated with service
33 alterations, investigating, and repairing leaks in distribution services. The service maintenance
34 work in this workgroup is designed to meet federal (49 C.F.R. §192) and state (GO 112-F)
35 pipeline safety regulations and to extend the life of distribution main pipelines and related
36 infrastructure. Table LPK-14 summarizes Gas Distribution O&M costs associated with Service
37 Maintenance activities.

TABLE LPK-14
Service Maintenance

GAS DISTRIBUTION (In 2021 \$)			
E. Service Maintenance	2021 Adjusted-Recorded (000s)	TY2024 Estimated (000s)	Change (000s)
1. Service Maintenance	3,293	4,116	823
Total	3,293	4,116	823

1. Description of Costs and Activities

Service Maintenance work is generally corrective in nature and is required to provide resilient, safe, and reliable natural gas service. Recorded to this workgroup are the labor and non-labor costs associated with service alterations, investigating, and repairing leaks in distribution services. The work in this workgroup is designed to meet federal (49 C.F.R. §192) and state (GO 112-F) pipeline safety regulations, extend the life of the distribution service pipeline system, and mitigate risks associated with hazards to public safety.

Also recorded to this workgroup is the GED. The costs in this work group are specific to gas emergencies on services. These two core Service Maintenance activities, Leak Repair and Gas Emergency Department, are also identified in this work group as RAMP mitigations. Further details on these RAMP activities can be found below in the RAMP Activities Section.

In addition, expenses associated with the repair of service risers—the portion of the pipeline segment located above ground just below the meter and connected to the service pipe—are recorded to this service maintenance workgroup. Repairs to the riser are often required due to atmospheric corrosion of the piping system.

Service Maintenance includes costs for moving, lowering, and raising shorter sections of distribution services, vaults, and related structures. Changing the location of an existing service may be required due to alterations in buildings or grounds, and municipal improvements, such as street widening or sewer or water system work. These activities typically involve excavation in paved or landscaped areas, for which there must be a corresponding restoration effort as part of completing the work. The cost associated with Service Maintenance supports SDG&E’s commitment to mitigate risks associated with hazards to public safety, infrastructure integrity and system reliability.

1 **a. RAMP Activities**

2 There are two core activities in this work group which are RAMP mitigations. Leak
3 Repair and Gas Emergency Department are two activities that SDG&E performs to drive
4 sustainability, safety, and reliability. Detailed descriptions of these RAMP activities are
5 described below:

6 Leak Repairs - One RAMP control that helps mitigate the risk on service lines is the
7 investigation of leak indications and making repairs as needed. This RAMP activity was
8 identified in the 2021 RAMP Report: Incident Related to Medium Pressure System: Leak
9 Repair.²¹ This includes excavating to determine the exact source of a leak, changing service
10 valves, checking the condition of coating at the MSA, testing service pipe for leaks, inspecting
11 and testing service pipe after repairs have been made, and installing, maintaining, and removing
12 temporary feeds such as “by-passes” or temporary supply sources. In addition, included in
13 RAMP are expenses associated with the repair of service risers—the portion of the pipeline
14 segment located above ground just below the meter and connected to the service pipe. Repairs to
15 the riser are often required due to atmospheric corrosion of the piping system.

16 Gas Emergency Department - Another RAMP activity identified in this work group is
17 Chapter 9, Incident Related to Medium Pressure System: Gas Distribution Emergency
18 Department (GED).²² In this work group, the costs are specific to gas emergencies on services,
19 but the activities and structure of the GED is the same as explained in Section IV. D (Main
20 Maintenance) above.

21 Table LPK-15 below provides the RAMP activities and their respective cost forecasts for
22 this workpaper. For additional details on these RAMP activities, please refer to my workpaper
23 SDG&E-04-WP (1GD004).

²¹ See SDG&E’s 2021 RAMP Report, SDG&E-Risk-9, Incident Related to the Medium Pressure System (Excluding Dig-in).

²² *Id.*

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TABLE LPK-15
RAMP Activities O&M Forecasts by Workpaper
In 2021 Dollars (\$000)

GAS DISTRIBUTION – 1GD004					
RAMP Activity O&M Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	BY2021 Embedded Base Costs (000s)	TY2024 Estimated Total (000s)	TY2024 Estimated Incremental (000s)	GRC RSE*
SDG&E- Risk-9 - C06	Leak Repair – Service Portion	1,561	1,622	61	-
SDG&E- Risk-9 - C11	Gas Distribution Emergency Department – Service Portion	820	1,155	335	-

4 *Tranche level RSEs and additional details are available in SDG&E-04-WP.

5 **2. Forecast Method**

6 In developing the TY 2024 forecast, historical expenditures and work units for 2017
7 through 2021 were evaluated. A variety of factors influence the level of spending on Service
8 Maintenance in any given year. These factors include increasing government regulations, aging
9 infrastructure, public safety, municipality requirements, material failure, infrastructure, economic
10 conditions, and through increased leak survey cycle frequency resulting in increased miles of
11 pipe surveyed per year and the introduction of an Aerial Methane Mapping (AMM) pilot²³ as
12 part of the 2022 SB1371 Compliance Plan. The labor and non-labor Service Maintenance costs
13 have experienced an upward trend in costs associated with multiple work drivers, as discussed in
14 the Cost Drivers section below. SDG&E anticipates this trend continuing.

15 Regulatory/legislative pressures continue to increase, the infrastructure is getting older,
16 and municipality work and general construction continues to increase. Therefore, a five-year
17 (2017 through 2021) historical linear trend was used to forecast base expense for this workgroup.
18 Using a simple average forecasting method would not be appropriate for this work category, as it

²³ See SDG&E's 2022 SB1371 Compliance Plan, available at:
<https://www.sdge.com/sites/default/files/regulatory/2022%20SDGE%20SB%201371%20Compliance%20Plan.pdf>.

1 would not sufficiently fund critical compliance and maintenance work for the anticipated
2 growing work requirements.

3 This five-year linear forecast results in an increase of \$823,000 over the 2021 adjusted
4 recorded base in TY 2024.

5 **3. Cost Drivers**

6 The work completed in this workgroup is driven by the requirement to meet federal and
7 state pipeline safety regulations and to protect the integrity of the pipeline system through
8 activities that extend its life. These activities support SDG&E's commitment to mitigate risks
9 associated with hazards to public safety, infrastructure integrity, and system reliability. As
10 outlined above, multiple factors influence the level of spending on service maintenance in a
11 given year. These factors include:

- 12 • The number of leaks evaluated and repaired each year - This work is generally
13 completed to address public safety, infrastructure condition, and material failure.
14 As discussed previously, leaks are found by employees conducting leak survey,
15 and other field activities or by customers who call reporting a gas odor.
- 16 • The level of repairs associated with damages to pipeline facilities by third parties,
17 outside sources, or causes such as fire or flooding - This cost is driven by the
18 number and severity of the damage. Damages are typically driven by the level of
19 construction in the private and public sector, which is typically driven by
20 economic conditions.
- 21 • Requirements to alter gas service lines and MSAs to correct unsafe conditions or
22 changes in customer load usage - This also includes work to change, raise, or
23 lower service valves; and repair or replace curb valves or meter boxes.
- 24 • The level of work completed by municipalities - Typical municipality projects
25 include street resurfacing, widening or reconstruction; and sewer and water
26 pipeline maintenance, replacement or new installations. Per applicable franchise
27 agreements, SDG&E is required to complete associated maintenance, such as:
28 raising or lowering valve casings and lids; altering the elevation of pipeline
29 segments in their present locations; or relocating pipeline segments or related
30 facilities completely. The impact to SDG&E can vary significantly, depending on
31 the availability of municipality funds, which are typically driven by economic
32 conditions. As economic conditions continue to improve, construction by
33 municipal agencies is likely to increase.

34 **F. Tools, Fitting, and Materials (1GD005)**

35 Recorded to this workgroup is the purchase of small tools, small pipe fittings,
36 miscellaneous pipeline materials, and miscellaneous installation materials used during
37 construction and maintenance activities and those held in inventory as vehicle truck stock. Table

1 LPK-16 summarizes Gas Distribution O&M costs associated with Tools, Fittings and Materials
2 activities.

3 **TABLE LPK-16**
4 **Tools, Fitting, and Materials**

GAS DISTRIBUTION (In 2021 \$)			
F. Tools	2021 Adjusted-Recorded (000s)	TY2024 Estimated (000s)	Change (000s)
1. Tools	1,708	1,667	-41
Total	1,708	1,667	-41

5 **1. Description of Costs and Activities**

6 The tools, fittings and materials purchased under this workgroup are necessary to obtain
7 complete and safe work results. Included within each category of materials are items, such as:

- 8 • Small tools, including screw drivers and wrenches;
- 9 • Pipe materials used in maintenance and construction activities, such as service
10 alterations, service leak repairs, riser repairs and replacements, and maintenance
11 of meter and regulator facilities on distribution services;
- 12 • Miscellaneous installation and pipeline materials, such as pipe wrap, gaskets,
13 washers, bolts, stakes, and pipe straps used by field employees to complete
14 pipeline maintenance and replacement activities; and
- 15 • Pipe fittings, two-inch pipe size and smaller, commonly used during construction
16 and maintenance work; and coveralls, uniforms, and charges for rental and
17 laundering of these garments.

18 **a. RAMP Activities**

19 One RAMP control that is called out in the 2021 RAMP Report is identified in this work
20 group is Chapter 8: Incident Involving an Employee: Personal Protective Equipment (PPE) –
21 C10²⁴ which applies to Gas Distribution’s flame-resistant PPE (clothing) program. This PPE is
22 to protect employees from the risk of injury by creating a barrier against flammable workplace
23 hazards. All employees who are required to use PPE are trained on when PPE is necessary,
24 which PPE is necessary, how to properly don/remove/adjust/wear PPE, limitations of PPE, and
25 the proper care/maintenance/life/disposal of PPE.

²⁴ See SDG&E’s 2021 RAMP Report, SDG&E-Risk-8: Incident Involving an Employee.

1 Table LPK-17 below provides the RAMP activities, their respective cost forecasts, and
 2 the RSEs for this workpaper. For additional details on these RAMP activities, please refer to my
 3 workpaper SDG&E-04-WP (1GD005).

4 **TABLE LPK-17**
 5 **RAMP Activities O&M Forecasts by Workpaper**
 6 **In 2021 Dollars (\$000)**

GAS DISTRIBUTION – 1GD005					
RAMP Activity O&M Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	BY2021 Embedded Base Costs (000s)	TY2024 Estimated Total (000s)	TY2024 Estimated Incremental (000s)	GRC RSE*
SDG&E- Risk-8 - C10	Personal Protective Equipment	441	441	0	0

7 * An RSE was not calculated for this activity.

8 **2. Forecast Method**

9 The forecast method developed for this cost category is a three-year average for the
 10 period 2019 through 2021. Years 2017 and 2018 were not included in the average as they are
 11 considerably lower than recent years which did not include the Gas Emergency Department, the
 12 100% conversion of Locate and Mark to internal resources, and changes in Cal-OSHA FR
 13 calorie requirements for clothing. This method is most appropriate because this is a grouping of
 14 expenses that can fluctuate from year to year, depending on the level of construction and
 15 maintenance activities.

16 Included in the forecast are incremental work elements necessary to support the work of
 17 Field Utility Specialists. These elements are described below:

- 18 • Thirty-Five handheld range finders - Thirty-Five handheld range finders are
 19 required for Field Utility Specialist personnel to be used to determine electric wire
 20 heights for electric conflict checks and above proposed gas construction activity
 21 to determine safe locations for gas handling requirements. See Section V.V Local
 22 Engineering Pool (902) for additional information. There are no added expense
 23 over the base forecast for this upward pressure for TY 2024.
- 24 • Thirty-Five field capable tablets - Thirty-Five field capable tablets are requested
 25 for Field Utility Specialist personnel to be used to help with efficiency and

1 accuracy with design of gas infrastructure while in the field.²⁵ There is no added
2 expense over the base forecast for this upward pressure for TY 2024.

3 The total funding required represents a change from the 2021 adjusted-recorded base,
4 including the incremental additions in this workgroup, of (\$41,000) in TY 2024.

5 3. Cost Drivers

6 The rate of consumption of the materials covered in this workgroup is primarily driven by
7 construction and maintenance activity, which in turn, is often a reflection of economic
8 conditions. Other drivers include the level of field workforce that requires tools and materials, as
9 well as the cost at which SDG&E can obtain tools, fittings, improvements in technology and
10 materials used by its employees. As these cost pressures increase, they impact the overall cost for
11 this activity.

12 G. Electric Support (1GD006)

13 Recorded to this workgroup is the labor and non-labor expense incurred by Gas
14 Distribution crews and supervisory management to provide support for Electric Distribution
15 crews during inspections under the Corrective Maintenance Program and general construction
16 activities. Table LPK-18 summarizes Gas Distribution O&M costs associated with Electric
17 Support activities.

18 **TABLE LPK-18**
19 **Electric Support**

GAS DISTRIBUTION (In 2021 \$)			
G. Electric Support	2021 Adjusted-Recorded (000s)	TY2024 Estimated (000s)	Change (000s)
1. Electric Support	514	495	-19
Total	514	495	-19

20 1. Description of Costs and Activities

21 GO 165 mandates specific inspection cycles for electric distribution facilities. Other
22 inspections are covered by GO 95 (Overhead Electric Line Construction) and GO 128
23

²⁵ BBB is an ongoing business optimization and continuous improvement initiative at SDG&E, undertaken to support our mission to improve lives and communities by building the cleanest, safest, and most reliable energy infrastructure company in America.

1 (Underground Electric Supply Construction), which direct utilities to frequently and thoroughly
2 inspect electric distribution equipment. These inspections are part of SDG&E’s Electric
3 Distribution Corrective Maintenance Program (CMP) and require some trenching and excavation
4 support from the Gas Distribution workforce. The CMP is further described by Mr. Swetek (Ex.
5 SDG&E-12). In addition, Gas Distribution field crews provide electric tooling and excavation
6 support to the Electric Distribution organization.

7 **2. Forecast Method**

8 In preparing the forecast for this workgroup, SDG&E reviewed 2017 through 2021
9 historical spending levels for gas crews and supervisory support in assisting Electric Distribution
10 maintenance and storm damage recovery activities. The forecast method developed for this cost
11 category is a three-year average for the period 2019 through 2021. This method is appropriate
12 because the level of activity in this workgroup can fluctuate from year to year, depending on the
13 level of the Electric Distribution Corrective Maintenance Program work and general construction
14 activities. Years 2019-2021 were considered appropriate to include in an average because these
15 years most accurately represent the level of support Gas Distribution provides Electric
16 Distribution.

17 The total funding required represents a change from the 2021 adjusted recorded base of
18 (\$19,000) in TY 2024.

19 **3. Cost Drivers**

20 The cost drivers behind this forecast are electric Corrective Maintenance Program
21 activities utilizing Gas Distribution resources for support activities including small modifications
22 or repairs to Electric Distribution facilities.

23 **H. Measurement & Regulation (1GD007)**

24 Recorded to the Measurement & Regulation (M&R) workgroup are labor and non-labor
25 expenses for inspection and maintenance of distribution regulator stations, gas system valves,
26 large meter set assemblies (MSA), electronic instrumentation, company Compressed Natural Gas
27 (CNG) station, and meter removals for accuracy checks to maintain compliance with GO 58-A.
28 Table LPK-19 summarizes Gas Distribution O&M costs associated with M&R activities.

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2

**TABLE LPK-19
Measurement & Regulation**

GAS DISTRIBUTION (In 2021 \$)			
H. Measurement & Regulation	2021 Adjusted-Recorded (000s)	TY2024 Estimated (000s)	Change (000s)
I. Measurement & Regulation	4,638	5,153	515
Total	4,638	5,153	515

3

1. Description of Costs and Activities

4

Included in this work group is SDG&E’s request for the inspection and maintenance of regulator stations, critical valves, and large meter sets.²⁶ Regulator stations reduce the pressure of gas entering the distribution system from high-pressure supply pipelines to the lower pressures used in the distribution pipeline network. This core Measurement & Regulation activity; Regulator Station, Valve, and Large Meter Set Inspections; is also identified in this work group as a RAMP mitigation. Additionally considered as a RAMP mitigation in this workgroup is the support of the Control Center Modernization (CCM) Distribution Field Asset Real Time Monitoring and Control Site Installations/Upgrades & New Control Room Technologies. Further details on these RAMP activities can be found below in the RAMP Activities Section.

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Some additional activities in the M&R work group are more service based, which are inspection and calibration of gas volume correctors used to record gas consumption, and ten-year rotary meter changes or calibrations to comply with GO 58-A for large customers.

13
14
15
16

Overall, the activities covered in this workgroup support SDG&E’s commitment to mitigate risks while providing resilient, safety and reliable service.

17
18

a. RAMP Activities

19

There are two activities in this work group which are RAMP mitigations – Regulator Station, Valve, and Large Meter Set Inspections and support of the Control Center Modernization (CCM) Project. These are two activities that SDG&E performs to drive sustainability, safety, and reliability. These RAMP activities are described below:

20
21
22

²⁶ See SDG&E’s 2021 RAMP Report, SDG&E-Risk-9, Incident Related to the Medium Pressure System (Excluding Dig-in) - C04.

1 Regulator Station, Valve, and Large Meter Set Inspections²⁷ – SDG&E has
2 approximately 490 regulator stations. Federal pipeline safety regulation 49 C.F.R. §192.739(a)
3 requires annual inspections and maintenance of all regulator stations, including both
4 underground vaults and above-ground regulator station enclosures. Pressure checks are made to
5 verify that the station is operating as intended and that the station’s over- and under- pressure
6 protection devices perform as designed. If a station does not perform properly, internal
7 maintenance and inspections are performed, consisting of disassembling the regulator devices
8 and inspecting the internal components for worn or damaged parts. Any faulty parts are replaced
9 and the regulator is cleaned and inspected for corrosion. Activities for repairing damage to
10 regulator station vaults caused by general deterioration or long-term exposure to heavy traffic,
11 and rebuilding pressure regulators and pressure relief valves, are additionally charged within this
12 workgroup.

13 Regulator stations are critical control elements in the gas distribution system. Failure of a
14 regulator station could result in under- or over-pressurization of the gas distribution system,
15 resulting in reduced service to customers and/or jeopardizing public safety. Therefore, proactive
16 maintenance of these facilities is a priority. In addition, regulator stations are part of our aging
17 infrastructure. Presently 71% of our operating regulator stations are 24 years or older. The
18 average age of a distribution regulator station is 32 years. This aging will translate into increased
19 maintenance expense over future years.

20 Furthermore, valves maintained within this workgroup have several important purposes
21 including: fire valves at regulator stations to isolate the high- and medium-pressure systems;
22 emergency valves to isolate segments of pipelines in case of pipe damage or for operational
23 purposes; and isolation valves to segment portions of the system in the event of a widespread
24 emergency, such as an earthquake. Expenses for the inspection and calibration of electronic
25 pressure monitors used to measure and record distribution system pressures are also included.

26 Support of the Control Center Modernization (CCM) Project – The second major RAMP
27 activity included in this workgroup outside of the traditional M&R activities is the support of the
28 CCM Distribution Field Asset Real Time Monitoring and Control Site Installations/Upgrades &

²⁷ *Id.*

1 New Control Room Technologies Project.²⁸ Support of the CCM project is an incremental add,
 2 which includes the addition of gas distribution field employees to support the deployment of
 3 electronic pressure monitors (EPM), inspection and calibration of EPMs used to measure and
 4 record distribution system pressures. Further description of the CCM project will be included in
 5 the Gas Transmission Operations and Construction testimony of Messrs. Chiapa, Hruby, and
 6 Bell. (Ex. SCG-06).

7 Table LPK-20 below provides the RAMP activities, their respective cost forecasts, and
 8 the RSEs for this workpaper. For additional details on these RAMP activities, please refer to my
 9 workpaper SDG&E-04-WP (1GD007).

10 **TABLE LPK-20**
 11 **RAMP Activities O&M Forecasts by Workpaper**
 12 **In 2021 Dollars (\$000)**

GAS DISTRIBUTION – 1GD007					
RAMP Activity O&M Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	BY2021 Embedded Base Costs (000s)	TY2024 Estimated Total (000s)	TY2024 Estimated Incremental (000s)	GRC RSE*
SDG&E- Risk-9 - C04	Regulator Station, Valve, and Large Meter Set Inspection	4,028	3,987	-41	-
SDG&E- Risk-9 - C17	Control Center Modernization - Incremental add of personnel	0	480	480	-

13 *Tranche level RSEs and additional details are available in SDG&E-04-WP.

14 **2. Forecast Method**

15 In developing the TY 2024 forecast, SDG&E evaluated the historical expenditures for
 16 2017 through 2021 for the M&R workgroup. Labor and non-labor expenses stayed fairly at a
 17 flat level of expense from 2017 to 2021 due to the wide range of activities included in this group
 18 and without major regulatory or compliance drivers over this timeframe. Therefore, a five-year

²⁸ See SDG&E's 2021 RAMP Report, SDG&E-Risk-9, Incident Related to the Medium Pressure System (Excluding Dig-in) - C17.

1 historical average best represents the level of funding needed to support inspection and
2 maintenance activities for this workgroup.

3 Added to this base is an incremental work element necessary to support the CCM Project
4 as described below.

5 CCM Support – This incremental funding provides operational support to the RAMP
6 CCM project, operation, and maintenance of communication equipment necessary to monitor the
7 distribution gas system. Added will be one CCM Supervisor, starting in 2022 and continuing
8 thereafter. In addition, four Regulator technicians will be added starting in 2023 and continuing
9 thereafter. An additional vehicle requirement will be added to support these additional positions.
10 This incremental vehicle requirement is included in the Fleet Services Testimony of Mr. Alvarez,
11 (Ex. SDG&E-22). The incremental funding needed over the base forecast for this upward
12 pressure is \$480,000 for TY 2024.

13 The total funding required over the 2021 adjusted recorded base including the
14 incremental addition in this workgroup is \$515,000 in TY 2024.

15 **3. Cost Drivers**

16 Work activities within the M&R workgroup are driven by regulatory requirements, as
17 well as the need to mitigate risks associated with hazards to public and employee safety and
18 system resilience and reliability. Cost drivers associated with this workgroup include:

- 19 • The number of inspections and follow-up maintenance that must be completed at
20 each of the facilities maintained by the M&R team. These facilities include
21 regulation stations, valves, MSAs, pressure/volumetric correctors, and electronic
22 pressure monitors.
- 23 • The volume of recurring routine, scheduled maintenance work, and unscheduled
24 maintenance work. Unplanned work includes, for example, work driven as a
25 result of the malfunction of a device.
- 26 • Emergency support requirements. This includes the activities for responding to a
27 shutdown caused by pipeline damage, a pressure incident, or major event as in the
28 case of an earthquake, and support of general operations requirements, for
29 example, test shutdowns to determine system behavior under specific conditions.
- 30 • The age and type of equipment installed. Generally, older or obsolete equipment
31 requires more frequent and more extensive maintenance work.
- 32 • Other cost drivers. These include customer requests associated with measurement
33 issues at MSAs and regulatory requirements for additional or stricter standards.

1 These efforts are undertaken to maintain the longevity and performance of SDG&E’s
 2 distribution steel pipeline system and are performed by system protection specialists responsible
 3 for maintaining compliance with appropriate regulations. Inspection, evaluation, and monitoring
 4 of the pipelines’ CP system can include: checking rectifiers for proper operation, identifying the
 5 location of interface bonds, evaluating “short circuits,” identifying locations for installation of
 6 anodes for continued pipe protection, and taking pipe-to-soil reads to evaluate electric current
 7 levels. Based on the results of these monitoring activities, replacement, upgrade, or alteration of
 8 the CP system components may be planned. Diminished CP effectiveness could lead to
 9 increased corrosion, a more rapid deterioration of the steel pipeline and subsequently increased
 10 leakage, thus leading to potential risks associated with public safety, risk of methane gas release,
 11 and infrastructure integrity.

12 The Cathodic Protection workgroup mitigates safety risks identified in the 2021 RAMP
 13 Report. Accordingly, this budget code in its entirety, aligns with a RAMP activity.

14 Table LPK-22 below provides the RAMP activities, their respective cost forecasts, and
 15 the RSEs for this workpaper. For additional details on these RAMP activities, please refer to my
 16 workpaper SDG&E-04-WP (1GD008).

17 **TABLE LPK-22**
 18 **RAMP Activities O&M Forecasts by Workpaper**
 19 **In 2021 Dollars (\$000)**

GAS DISTRIBUTION – 1GD008					
RAMP Activity O&M Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	BY2021 Embedded Base Costs (000s)	TY2024 Estimated Total (000s)	TY2024 Estimated Incremental (000s)	GRC RSE
SDG&E- Risk-9 - C01	Cathodic Protection - O&M	2,049	1,834	-215	-

20 *Tranche level RSEs and additional details are available in SDG&E-04-WP.

21 **2. Forecast Method**

22 SDG&E’s forecast for this compliance workgroup is a five-year historical average.
 23 Labor and non-labor expenses have collectively remained level over the historical years 2017-
 24 2021. Although the Company has seen a slight increase in maintenance work to meet code

1 compliance requirements as the system ages and gaps in the cathodic protection system are
2 assessed through the Company's Geographic Information System (GIS). However, this increase
3 will be offset by the installation of Realtime Monitoring Units (RMU's) (SDG&E-9-M02). The
4 RMU installation effort will help to streamline the monitoring and data capture of CP rectifier
5 compliance activities without the need for addition labor support.³⁰ A five-year historical
6 average would best represent anticipated work level and future resource needs.

7 The total funding required represents a change from the 2021 adjusted recorded base of
8 (\$215,000) in TY 2024.

9 3. Cost Drivers

10 The basic cost drivers for this workgroup include the number of inspections and
11 associated evaluations (troubleshooting) that must be completed, to meet compliance
12 requirements each year, for each CP area and isolated CP segment. Based on the results of these
13 monitoring activities, follow-up maintenance action is often necessary. These maintenance
14 activities may include replacing, upgrading, or altering components of the CP system, such as
15 anodes, rectifiers, beds, bonds, test points, electric drops, anode wells, and insulators. Many of
16 these activities are driven by the age of the system components, with older elements generally
17 requiring more maintenance.

18 Furthermore, the typical life of anodes, a critical component of the CP system, can vary
19 depending on a number of drivers including the weather, soil conditions, the pipeline length it is
20 protecting, and the effectiveness of the pipe's coating. Anode depletion is accelerated by
21 drought conditions, as dry soil does not allow the current to travel as far and protect as much
22 pipe. In addition, some soils are more resistive than others, causing anodes to deplete at a higher
23 rate.

24 CP maintenance work is often reactive to activities of municipalities, other utilities, and
25 construction firms as they complete projects of street reconstruction, widening, or resurfacing; or
26 sewer and water line maintenance and replacement as these activities can lead to CP component
27 damage. In addition, pipes can come into contact with water lines or with third-party grounding
28 systems that can drain current from the pipeline, thus reducing the level of protection and

³⁰ BBB is an ongoing business optimization and continuous improvement initiative at SDG&E, undertaken to support our mission to improve lives and communities by building the cleanest, safest, and most reliable energy infrastructure company in America.

depleting anodes. Customers placing metal objects against an MSA riser can have the same effect as shorting out the CP current.

J. Asset Management (1GD009)

Asset Management includes activities and associated O&M expenses incurred in the evaluation of the condition of the distribution system. This includes maintaining asset records, identifying corrective maintenance solutions, and coordinating with field personnel on completion and recording of O&M activities. Table LPK-23 summarizes Gas Distribution O&M costs associated with Asset Management activities.

**TABLE LPK-23
Asset Management**

GAS DISTRIBUTION (In 2021 \$)			
J. Asset Management	2021 Adjusted-Recorded (000s)	TY2024 Estimated (000s)	Change (000s)
1. Asset Management	1,078	1,375	297
Total	1,078	1,375	297

1. Description of Costs and Activities

Recorded to this workgroup are labor and non-labor expenses for pipeline maintenance technical planning office personnel, regional engineering, pipeline mapping personnel, various analytical and administrative support positions, quality assurance, and associated supervision. SDG&E’s Asset Management groups provides many of the technical and administrative services needed for the successful and timely completion of the O&M activities discussed in Section IV.A-I above. Activities performed by this planning office include items such as:

- Identify construction design requirements;
- Evaluate pressure specifications;
- Coordinate pipeline planning;
- Provide project drawings;
- Identify material selection;
- Prepare work order estimates;
- Acquire third party contract services (e.g. paving, traffic control plans, and operated equipment);

- 1 • Obtain permits for construction from city, county, state, and federal agencies; and
- 2 • Verify that services provided by third parties meet Company standards.

3 The organizations in this work group also support the regions' emergency response
4 efforts by managing the Gas Emergency Center (GEC). The GEC is activated during a
5 significant event (*e.g.*, fire, earthquake, pipeline damage, customer outage) to support field
6 operations with engineering, pipeline planning, mapping, logistics, and office resources that are
7 vital in returning SDG&E's facilities back to normal operations.

8 This workgroup additionally includes expenses to map the pipeline facilities. As gas
9 system construction projects are completed throughout SDG&E's service territory, accurate
10 pipeline data must be captured and records kept for the life of the pipeline, consistent with GO
11 112-F and 58-A. Projects requiring mapping and database records work include all new business
12 activity, pipeline relocations, main extensions, pressure betterment projects, pipeline
13 replacements, and various other operational activities that change the gas system configuration.
14 GIS based mapping system adds the capability to capture pipeline attribute data, and this data is
15 added to the facilities when mapped in GIS. GIS mapping personnel are responsible for updating
16 all distribution infrastructure maps whenever facilities in the field are constructed, modified, or
17 replaced. The timely maintenance of these Gas Distribution system records is a critical risk
18 mitigation measure in preventing hazards to public and employee safety, infrastructure integrity,
19 and to the reliable delivery of natural gas to SDG&E's customers.

20 Included in this workgroup is an incremental add for the cross functional support of asset
21 management and the enterprise Asset Integrity Management team. The incremental add for these
22 workgroups are included in the forecast methodology section below.

23 a. RAMP Activities

24 The RAMP activities in this work group are two-fold: (1) complete and accurate maps of
25 the gas infrastructure data, and (2) the incremental addition of the Gas Asset Management
26 Advisor. The entirety of the accurate and complete GIS records of the Gas Distribution system
27 is a critical risk mitigation measure in preventing hazards to public and employee safety,
28 infrastructure sustainability, and also supports the reliable delivery of natural gas to SDG&E's
29 customers. The Gas Asset Management Advisor is to provide support to sustainably manage gas
30 assets and asset systems and their associated performance, risks, and expenditures over their life
31 cycles.

1 Table LPK-24 below provides the RAMP activities, their respective cost forecasts for this
 2 workpaper. For additional details on these RAMP activities, please refer to my workpaper
 3 SDG&E-04-WP (1GD009).

4 **TABLE LPK-24**
 5 **RAMP Activities O&M Forecasts by Workpaper**
 6 **In 2021 Dollars (\$000)**

GAS DISTRIBUTION – 1GD009					
RAMP Activity O&M Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	BY2021 Embedded Base Costs (000s)	TY2024 Estimated Total (000s)	TY2024 Estimated Incremental (000s)	GRC RSE*
SDG&E- CFF-1 - 1	AIM (Gov, Strat, AIP)	0	110	110	-
SDG&E- CFF-6 - New 02	Gas Geographic Information System	591	591	0	-
SDG&E- CFF-6 - New 03	Gas Geographic Information System	0	58	58	-

7 *Tranche level RSEs were not calculated for these CFFs. Additional details are available in
 8 SDG&E-04-WP.

9 **2. Forecast Method**

10 Planning, engineering, and facility mapping activities, their expenses, vary as the level of
 11 maintenance work, general construction activity, municipality work, customer generated activity,
 12 and expense allocations change. Due to recent cost drivers for these activities, a historical
 13 average would not represent future business needs. Therefore, 2021 was chosen as the base level
 14 of expense for future years. Added to this base are incremental work elements necessary to
 15 support the growth in activity in the GIS workgroup, the workgroup responsible for SDG&E's
 16 GIS system, and Compliance/QA/Engineering workgroup. These elements are described
 17 below. The total funding required over the 2021 adjusted recorded base including the
 18 incremental additions in this workgroup is \$297,000 in TY 2024.

1 maintenance, verification of training effectiveness, provide insight into accuracy of work
2 performed in accordance with Company standards, proactively address trends, and share findings
3 with impacted stakeholders to facilitate continuous improvement. This position will charge 33%
4 of their time to O&M. An incremental vehicle ask will be included in Fleet Services Testimony
5 of Mr. Alvarez (Ex. SDG&E-22) for this incremental add. The total incremental funding needed
6 for this workgroup element is \$33,000 over the base forecast for TY 2024.

7 **c. Additional Field Operations QA Inspector**

8 One Field Ops QA Inspector will be added starting in 2022 to review the work done by
9 the company Gas Field Operations personnel in the field, determining the effectiveness and
10 adequacy of the processes and procedures used in normal operation and maintenance,
11 verification of training effectiveness, provide insight into accuracy of work performed in
12 accordance to Company standards, proactively address trends and share findings with impacted
13 stakeholders to facilitate continuous improvement. This position will charge 50% of their time
14 to O&M. An additional vehicle requirement will be added to support this additional position.
15 This incremental vehicle requirement is included in the Fleet Services Testimony of Mr. Alvarez,
16 (Ex. SDG&E-22). The total incremental funding needed for this workgroup element is \$50,000
17 over the base forecast for TY 2024.

18 **d. Additional Engineers**

19 Engineer for Hydrogen Projects – One Engineer will be added starting in 2022 to focus
20 on hydrogen blending in natural gas pipeline systems. This position will charge 10% of their
21 time to O&M. In addition, two Engineer I/II will be added beginning in TY 2024
22 for implementing 3D M&R facility design and support Gas Operations Control
23 Center monitoring, and control retrofit projects at regulator station and pressure monitoring
24 sites. These positions will charge 10% of their time to O&M. The total incremental funding
25 needed for this workgroup element is \$46,000 over the base forecast for TY 2024.

26 **e. Asset Integrity Management**

27 Consistent with RAMP Cross Functional Factors: Asset Management Incremental,³³ one
28 Gas Asset Strategy Advisor will be added in 2022 to encompass Gas Distribution into the

³³ A.21-05-011 SDG&E-CFF-1 Asset Management.

1 enterprise-wide Asset Integrity Management (AIM) Program.

2 The Asset Integrity Management (AIM) program advances the development and
3 implementation of a comprehensive, sustainable and risk informed Asset Management System
4 (AMS), which encompasses people, process, data, analytics, and technology. The AIM
5 program's Integrated Operating Model and Asset Management Plan alignment establish
6 systematic and coordinated activities and practices through which the Company optimally and
7 sustains and asset systems and their associated performance, risks, and expenditures over their
8 life cycles to effectively allocate resources. For further details, please refer to Mr. Deremer's
9 (Ex. SDG&E-31) testimony.

10 This position will charge 100% of their time to O&M. The total incremental funding
11 needed for this workgroup element is \$110,000 over the base forecast for TY 2024.

12 **3. Cost Drivers**

13 As discussed above, Asset Management work is driven by the level of operations and
14 maintenance activity in other workgroups covered in this testimony. Field O&M planning is
15 experiencing an increase in general construction and customer-generated activity, which requires
16 additional planning time. In addition, work in the public right-of-way requires the technical
17 services offices to perform more planning work required for pipeline relocations.

18 Additional planning section labor is required to respond to regulatory agencies, including
19 the National Transportation Safety Board (NTSB), Pipeline and Hazardous Materials Safety
20 Administration (PHMSA), and the Commission. These agencies continue to require pipeline
21 operators to provide and retain documentation for all aspects of gas pipeline design, construction,
22 pressure test records, project close out, inspection and mapping. This directs operators of gas
23 pipelines to verify that the records are traceable, verifiable, and complete. As the volume of
24 documentations increases, so does the need for personnel to manage, generate, validate, and
25 verify that adequate documentation is accessible and retained.

26 **K. Operations Management, Supervision, and Training (1GD010)**

27 Described in this section of testimony are activities representing leadership and
28 operations support providing vision and guidance to the organization responsible for gas
29 distribution. Within this workgroup are labor and non-labor expenses associated with
30 developing and maintaining distribution construction standards; evaluating new field
31 technologies; field training; training distribution welders; providing code required welder testing;

1 providing welding inspection; managing the OpQual program; managing the Welding School,
 2 supervision/management/administrative, and miscellaneous expenses related to Gas Distribution
 3 O&M. Table LPK-25 summarizes Gas Distribution O&M costs associated with Operations
 4 Management, Supervision, and Training.

5 **TABLE LPK-25**
 6 **Operations Management, Supervision, and Training**

GAS DISTRIBUTION (In 2021 \$)			
K. Operations Management, Supervision, & Training	2021 Adjusted-Recorded (000s)	TY2024 Estimated (000s)	Change (000s)
1. Operations Management, Supervision & Training	9,003	9,128	125
Total	9,003	9,128	125

7 **1. Description of Costs and Activities**

8 Field training for SDG&E’s Gas Distribution personnel accounts for the majority of the
 9 2021 adjusted-recorded base spending in this workgroup. Gas construction employees attend
 10 training because they are new to their job, require operator qualification, need refresher training,
 11 are promoted to a position requiring additional technical skills, and/or need additional training
 12 due to the deployment of new equipment with new technology or changes in regulations. These
 13 field expenses include general training costs for SDG&E District Operating Centers and
 14 technical services personnel.

15 Another significant source of expenditure in this workgroup is in field supervision. Field
 16 managers and supervisors have one of the most challenging and critical positions at SDG&E.
 17 They are responsible for the supervision and inspection of field construction and maintenance
 18 work performed by both SDG&E crews and by contractor crews. They are in a position of
 19 influence with front-line employees and are responsible for coaching and mentoring these
 20 employees to work safely, follow Company procedures, and maintain and build a safe and
 21 reliable natural gas delivery system.

22 An additional area of expense in this workgroup is comprised of miscellaneous operating
 23 expenses. These non-labor expenses include office supplies, telephone expenses, mileage
 24 expenses, and professional dues.

1 This workgroup also includes three RAMP items: Excavation Damage (Dig-In) on the
2 Gas System – Locate and Mark Training,³⁴ Incident Related to the Medium Pressure System
3 (Excluding Dig-in) – Human Factors Mitigations – Operator Qualification Training and
4 Certification,³⁵ and Incident Related to the Medium Pressure System (Excluding Dig-in) –
5 Human Factors Mitigations – QA/QC Program – Mandated Compliance Activities.³⁶

6 **a. RAMP Activities**

7 The activities in this work group which are mitigation measures supporting safety risks
8 are:

9 Locate and Mark Training - This RAMP control includes all of the training, OpQual,
10 excavation, and refresher/competency training for a locator to perform the Locate and Mark
11 Activity. The Locate and Mark Activity is to prevent damage to the SDG&E infrastructure. The
12 activity includes (1) locating and marking underground gas, electric, fiber optic facilities before
13 excavation occurs; (2) observing (stand-by) pipeline excavation activities; and (3) providing staff
14 support for compliance and improvement.

15 Human Factors Mitigations – Operator Qualification Training and Certification - All gas
16 pipeline operators are required to create and maintain a written Op Qual program to establish
17 compliance policies for the Department of Transportation (DOT) Operator Qualification
18 Program as required by 49 CFR Subpart N – Qualification of Pipeline Personnel. All employees
19 and contractors performing DOT-covered tasks are required to be pre-qualified per this Op Qual
20 program. Such programs are reviewed by the Operator Qualification department prior to
21 performing work on pipelines or pipeline facilities. The Op Qual program requires that
22 employees are trained, initially qualified and subsequently re-qualified every three or five years
23 depending on the task. SDG&E’s training frequency conforms to these requirements and the
24 results of the evaluations are recorded, demonstrating employees’ knowledge, skills, and abilities
25 of the job requirements and that they are qualified to perform the required tasks. Qualification
26 promotes adherence to proper Company policy and procedures and therefore mitigates the risk of

³⁴ A.21-05-011 SDG&E-Risk-7 Excavation Damage (Dig-In) on the Gas System.

³⁵ A.21-05-011 SDG&E-Risk-9 Incident Related to the Medium Pressure System (Excluding Dig-in).

³⁶ *Id.*

1 hazardous conditions developing and increases the overall awareness and response to unsafe
2 activities.

3 Human Factors Mitigations – QA/QC Program – Mandated Compliance Activities - In
4 addition to SDG&E’s Operator Qualification program to promote operations are performed in a
5 safe and proficient manner, SDG&E performs quality control checks for various pipeline
6 operational activities as mandated by 49 CFR § 192.605 (b8) (c4). During these quality control
7 checks; internal assessors review the work performed by gas pipeline personnel to determine the
8 effectiveness and adequacy of the procedures used in normal operations and maintenance. In
9 addition, the assessors validate the conformance of employees to these policies and procedures.
10 The assessors identify if abnormal operating conditions (AOCs) are present and that the
11 employees respond to the AOCs and take appropriate corrective actions. SDG&E performs
12 quality control assessments on the Company’s regulator station, valve, and large meter set
13 inspection and maintenance activities, as well as on pipeline monitoring activities, and cathodic
14 protection activities. These assessments are tracked and recorded to communicate lessons
15 learned and to help develop refresher training. Adherence to proper company policy and
16 procedures mitigates the risk of hazardous conditions developing and increases the overall
17 awareness and response to unsafe activities.

18 Table LPK-26 below provides the RAMP activities and their respective cost forecasts, for
19 this workpaper. For additional details on these RAMP activities, please refer to my workpaper
20 SDG&E-04-WP (1GD010).

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TABLE LPK-26
RAMP Activities O&M Forecasts by Workpaper
In 2021 Dollars (\$000)

GAS DISTRIBUTION – 1GD010					
RAMP Activity O&M Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	BY2021 Embedded Base Costs (000s)	TY2024 Estimated Total (000s)	TY2024 Estimated Incremental (000s)	GRC RSE*
SDG&E-Risk-7 - C01	Locate & Mark Training Groupings	746	746	0	0
SDG&E-Risk-9 - C14	Human Factors Mitigations - Ops Qual Training	1,661	1,661	0	0.5
SDG&E-Risk-9 - C15	Human Factors Mitigation - QA/QC Program	300	300	0	0

4 * RSEs were not calculated for activities with a 0 value.

5 **2. Forecast Method**

6 In projecting the future expense requirements for these functions, SDG&E reviewed the
7 2017 through 2021 historical spending for this entire workgroup. In general, operations
8 leadership, field management, operations support, and personnel training increase as levels of
9 work and workforce increase; as new programs, processes, and technologies are implemented;
10 and as regulatory or compliance requirements change. An increase in training and OpQual
11 program development and expansion began in 2017 and continued through 2021. This increased
12 level of training and operator qualifications activity is expected to continue in the forecast years.
13 Because of these recent work elements and associated expense level changes, a historical average
14 would not represent future resource needs. For this reason, the 2021 base year was selected as
15 the appropriate forecast methodology. Added to this 2021 base expenditure level are incremental
16 additions necessary to adequately fund the activities in this workgroup in TY 2024.

17 Incremental additions for this workgroup include:

18 **a. Night Welding Class**

19 Incremental costs for a Night Welding Class – A night welding class will be established
20 to provide preparation instruction as a pre-school for the day welding classes. Labor charges to

1 this class will be 30% O&M. The total incremental funding needed for this workgroup element
2 is \$10,000 over the base forecast for TY 2024.

3 **b. Instructional Additions – Two Senior Welding Instructors**

4 Incremental additions will be added to meet increased O&M and capital demands on
5 welding, welding training, and welding inspection. These positions will also help promote
6 training competencies. These positions will charge 25% of their time to O&M. The total
7 incremental funding needed for this workgroup element is \$58,000 over the base forecast for TY
8 2024.

9 **c. Technical Advisor Addition - One Operator Qualification
10 Compliance Advisor**

11 An incremental addition of One Operator Qualification Compliance Advisor is required
12 to provide necessary span of control oversight due to the growth in the number of Company and
13 contract employees requiring compliance with Operator Qualification. In addition, one Non-
14 Destructive Examination (NDE) Program Supervisor is required to mitigate any compliance
15 issues directly pertaining to the Company’s NDE Program. These positions will charge 10% of
16 their time to O&M. The total incremental funding needed for this workgroup element is \$27,000
17 over the base forecast for TY 2024.

18 **d. Develop Virtual Training**

19 Incremental cost associated with virtual training will be established to provide enhanced
20 training for field activities that present a greater risk and are difficult to replicate in real-life
21 scenarios, but that can be safely simulated within Virtual Reality applications. This training will
22 charge 30% to O&M. There is no labor expense. The total incremental funding needed for this
23 workgroup element is \$30,000 over the base forecast for TY 2024.

24 The selection of the base year recorded, including incremental additions, results in an
25 increase of \$125,000 from the 2021 adjusted recorded base in TY 2024.

26 **3. Cost Drivers**

27 The forecast for the Operations Management, Supervision, and Training workgroup is
28 driven by costs in four major areas: operations leadership, field management, operations support,
29 and personnel training. In general, costs in these areas increase as levels of work and workforce
30 increase; as new programs, processes and technologies are implemented; and as regulatory or

1 compliance requirements change. As such, the work environment within Operations
2 Management, Supervision, and Training is increasingly influenced by, and evolving with
3 multiple drivers:

- 4 • Continued compliance with current regulations. Since the San Bruno incident in
5 Northern California, SDG&E has experienced continual regulatory pressure to
6 establish more strict compliance assurance mechanisms. This was evidenced by
7 the issuance of GO 112-F and several federal regulations including 49 CFR §
8 192.607³⁷. This continues to drive costs associated with emergency response,
9 more quality assurance oversight into operations, and a need for additional
10 compliance technical advisors and assistants for analysis and implementation of
11 the regulations into operation procedures and standards.
- 12 • The need to maintain a trained and qualified workforce. SDG&E is taking
13 proactive action to address employee training and qualification through the
14 continued expansion of its OpQual program; additional instructors, established
15 subject matter experts, and instructional designers for training program
16 development.
- 17 • The need to support new field technologies and to facilitate the integration of
18 these tools within the field and overall management practices. This drives costs
19 associated with increased technical business support and identification and
20 implementation of system enhancements. Included in this is the GO 112-F
21 requirement that equipment and facilities used by an operator for training and
22 qualification of employees must be identical, or very similar in operation to the
23 equipment and facilities which the employee will use, or on which the employee
24 will perform the covered task.
- 25 • The need to maintain data integrity and leverage new information depositories.
26 This drives costs associated with reports and tools that will gather, consolidate,
27 and summarize newly available data to develop compliance reports and to
28 monitor the effectiveness of operations and identify future business
29 improvements. It should be noted here that requirements of GO 112-F added 25
30 additional reporting requirements.
- 31 • Increased workforce turnover. Workforce turnover presents issues of knowledge
32 transfer, skills development, and overall proficiency of the replacement
33 workforce. This drives costs related to training, Operator Qualification, technical
34 support, and Quality Assurance.
- 35 • Introduction of new construction and maintenance methods into office and field
36 functions drive costs associated with the personnel needed to revise Gas
37 Standards and training materials, conduct refresher training, project management

³⁷ See 49 CFR § 192.607 - Verification of Pipeline Material Properties and Attributes: Onshore steel transmission pipelines.

1 and controls, provide technical support, and conduct assessments and
2 enhancements of business processes.

3 Furthermore, the SDG&E's 2021 RAMP Report identified the need to provide additional
4 job skills, training and qualification, welding construction training, and quality control
5 inspections on pipeline systems.

6 **V. CAPITAL**

7 The driving philosophy behind SDG&E's capital investment plan is to provide safe,
8 reliable delivery of natural gas to customers at reasonable cost. This commitment requires that
9 SDG&E invests in its infrastructure and support services to mitigate risks associated with the
10 safety of the public and employees, service reliability, and gas system integrity. SDG&E installs
11 new pipeline mains, service lines, and meter set assemblies (MSA) to meet the needs of the
12 growing population in the service territory. To maintain system reliability and safety, SDG&E
13 makes a variety of other capital improvements, including pressure betterment projects to improve
14 areas of low pressure, pipeline renewals to replace deteriorated pipelines or obsolete equipment,
15 installation and replacement of Cathodic Protection (CP) systems, the purchase of electronic
16 pressure monitoring devices for pressure tracking and monitoring, and proactively address risk
17 mitigations identified in the 2021 RAMP report, and throughout this testimony, including
18 completing pipeline replacements/removals to reduce operational risks in the overall gas system.
19 Other improvements include pipeline relocations to accommodate public infrastructure
20 improvements such as street and highway widening, and relocations caused by the construction
21 of new water, sewer, and railway facilities. To accomplish these activities, SDG&E
22 continuously monitors the condition of approximately 15,328³⁸ miles of distribution main and
23 service pipelines. By using technology and the professional judgment of experienced, skilled,
24 and well-trained employees, SDG&E utilizes capital in a prudent, responsible manner consistent
25 with local, state, and federal codes and regulations.

26 In preparing the forecast for capital expenditures, SDG&E Gas Distribution reviewed
27 2017 through 2021 historical spending levels, including work units, and developed an assessment
28 of future requirements and associated risks. This analysis considered underlying cost drivers to

³⁸ Total mileage from U.S. Department of transportation Pipeline and Hazardous Material Safety Administration 2021 Annual Report for Calendar Year 2021 Gas Distribution System, OMB NO: 2137-0629.

1 determine if historical patterns of spending should be expected to continue, as well as the degree
2 of impact of associated RAMP risk mitigations. Additionally, where the capital improvement
3 project was new without prior history, or a separate forecast calculation method was used, a zero
4 base methodology was chosen. Forecasting was based on recent experience in construction, units
5 of construction or work activity, while adding recent experiences to modernize the gas
6 infrastructure to support California's climate policy and SDG&E's goal of Net Zero GHG
7 emissions by 2045. Gas Distribution also evaluated future work requirements that were
8 incremental to levels of historical spending, yet necessary to maintain the safe and reliable
9 operations of the distribution system.

10 Thus, the forecasting methodologies varied depending on the type of activity being
11 analyzed and the expectations of future system needs. These methods included forecasts based
12 on historical averages, on historical growth and estimated future growth, on identified projects or
13 materials, zero based, and a combination of project specific justification and analysis.

14 SDG&E's Gas Distribution capital expenditure forecasts are rooted in a historical review
15 of spending and are adjusted, where appropriate, for elements of new work or changes in
16 operating conditions and RAMP risk mitigation which would not have been reflected in the past
17 spending patterns. As such, forecasts address actions that must be taken to manage risks
18 associated with the safety of the public and employees, service reliability, and gas system
19 integrity.

20 SDGE requests approval of a Litigated Project Cost Memorandum Account (LPCMA) to
21 record the capital-related costs associated with projects that are intended to qualify as a
22 collectible project to be recovered from third-party customers (*e.g.*, Contributions in Aid of
23 Construction from a local government entity) instead of ratepayers, but later are deemed by a
24 court to be non-collectible from third-party customers. Collectible costs are costs that SDG&E
25 expects to collect from third parties (*i.e.*, not to be collected from ratepayers). For example, in
26 some situations, a local governmental entity (*e.g.*, San Diego) may be responsible for certain
27 costs associated with relocating utility infrastructure as part of a development project. In this
28 example, such costs are considered collectible because they are to be collected from the
29 city. Non-collectible costs are costs that are not expected to be collected from a third party and
30 instead are treated as costs to be collected from ratepayers. A situation may arise in the context
31 of utility disputes with public entities over who should pay for the relocation of utility facilities

1 necessitated by municipal or other public entity projects, such as water, sewer, or transit projects.
2 For instance, while the utility may argue in a litigated proceeding that the public entity should
3 bear the relocation costs, courts may rule otherwise.

4 If a court rules that a utility must bear the costs of the activity – effectively deeming the
5 costs as non-collectible -- SDG&E will record to the LPCMA any historical capital-related costs
6 (*i.e.*, depreciation, return, and taxes) based on the timing of when the project went into service,
7 no earlier than the effective date of SDG&E’s TY 2024 GRC Decision. For example, if a court
8 rules a project is non-collectible in late 2024 and it had gone into service in 2023, capital-related
9 costs would be recorded to the LPCMA as of January 1, 2024, or the effective date of the TY
10 2024 GRC. Memorandum account treatment for these costs is reasonable and just as it will
11 allow SDG&E the opportunity to litigate, where appropriate, whether the third-party customer
12 should bear the costs at issue, while preserving the ability to later seek recovery of the
13 incremental capital-related costs from ratepayers associated with projects that can no longer be
14 collected from a third-party customer, if the litigation proves unsuccessful.

15 SDG&E would not record revenue requirement prior to any ruling for tracking purposes
16 and would treat as a collectible project consistent with its understanding. If thereafter a project is
17 deemed non-collectible, SDG&E proposes to record any historical revenue requirement
18 associated with the project based on the timing of when the project went into service, no earlier
19 than January 1, 2024. Any costs recorded to the memo account would be subject to a
20 reasonableness review prior to inclusion in rates and rate base. Additionally, costs recorded in
21 the LPCMA may be addressed in a GRC or other applicable proceeding. SDG&E seeks
22 authorization for the LPCMA in this GRC to avoid the prohibition against retro-active
23 ratemaking, and therefore, requests Commission approval of the LPCMA. Refer to Mr.
24 Kupfersmid’s Regulatory Accounts testimony for details on the LPCMA (Ex. SDG&E-43).

25 To continue to provide safe and reliable service, while mitigating associated risks,
26 SDG&E requests the Commission adopt forecast capital costs of \$132,585,000, \$135,392,000,
27 and \$122,799,000 for 2022, 2023, and 2024 respectively.

28 Table LPK-29 summarizes the total capital forecasts for the forecast years.

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TABLE LPK-29
Capital Expenditures Summary of Costs

GAS DISTRIBUTION (In 2021 \$)				
Categories of Management	2021 Adjusted-Recorded (000s)	Estimated 2022 (000s)	Estimated 2023 (000s)	Estimated 2024 (000s)
A. New Business	8,613	19,658	13,042	9,928
B. System Minor Additions, Relocations, and Retirement	5,412	5,221	5,221	5,221
C. Gas Meters & Regulators	8,374	8,598	9,348	9,348
D. Gas System Reinforcement	1,610	529	529	529
E. Street & Highway Relocation	6,733	14,596	15,008	5,776
F. Tools & Equipment	3,659	5,006	4,006	3,936
G. Code Compliance	3,101	2,712	3,087	3,087
H. Leak Repair	10,082	11,935	12,973	14,010
I. Cathodic Protection Program	4,409	4,493	4,493	4,493
J. Cathodic Protection System Enhancements	2,919	1,996	1,996	1,996
K. System Reliability & Safety	645	1,956	3,456	1,956
L. Underperforming Steel Replacement Program – Threaded Main (Pre-1934 Vintage)	13,682	7,000	7,000	7,000
M. Underperforming Steel Replacement Program (1934-1965 Vintage)	14,712	3,000	3,000	3,000
N. Underperforming Steel Replacement Program – Other (Post-1965 Vintage)	4,207	3,001	3,001	3,001
O. Early Vintage Program – Dresser Mechanical Coupling Removal	3,934	2,000	2,000	2,000

GAS DISTRIBUTION (In 2021 \$)				
Categories of Management	2021 Adjusted-Recorded (000s)	Estimated 2022 (000s)	Estimated 2023 (000s)	Estimated 2024 (000s)
P. Early Vintage Program – Oil Drip Piping Removal	3,668	1,500	1,500	1,500
Q. Early Vintage Program – Removal of Closed Valves between High/Medium Pressure Zones	893	1,500	1,500	1,500
R. Piping in Vaults Replacement Program	2,925	1,500	1,500	1,500
T. Control Center Modernization (CCM) Project	0	449	3,235	4,080
U. Curb Valve Replacement	0	1,000	1,750	1,750
V. CNG Station Upgrades	0	137	137	137
W. Local Engineering Pool	23,764	22,990	25,112	24,574
X. Gas Distribution Overhead Pool	8,097	5,342	5,695	5,893
Y. Gas Distribution Contract Administration Pool	8,717	6,466	6,803	6,584
Total	140,158	132,585	135,392	122,799

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A. New Business (500)

**TABLE LPK-30
New Business (500)**

GAS DISTRIBUTION (In 2021 \$)				
A. New Business (500)	2021 Adjusted-Recorded	Estimated 2022(000s)	Estimated 2023(000s)	Estimated 2024(000s)
1. New Business (NC)	8,613	7,749	9,172	9,068
2. Collectable (CO)		11,909	3,870	860
Total	8,613	19,658	13,042	9,928

1 **1. Description**

2 The New Business budget code provides for changes and additions to the existing gas
3 distribution system to connect new residential, commercial, and industrial customers. This
4 includes installations of gas mains and services, meter sets, purging of customer house lines
5 which is a RAMP activity, Field and Public Safety, and the associated regulator stations
6 necessary to provide service to the customer. The material cost of meters and regulators are
7 addressed under Section V.C (Gas Meters & Regulators (502)).

8 This budget code also captures two large collectible new business projects that the
9 Company is installing at Camp Pendleton base for the Marine Corps. The first is a conversion of
10 Marine Corps owned gas pipe to SDG&E owned, operated, and maintained state of the art pipe
11 at the Stuart Mesa housing community. The second is the install of new high pressure and
12 medium pressure distribution equipment and approximately 16,000’ of 6” plastic pipe along
13 Cristianitos road.

14 These forecasted capital expenditures support the Company’s goals of providing a safe
15 and reliable gas distribution system and responding to its obligation to serve the growing
16 customer base, thus mitigating the risk of reduced service reliability.

17 For this cost category, SDG&E’s proposed LPCMA, discussed in the introduction of the
18 Capital Section above, would apply if associated costs are later deemed to be non-collectible.

19 **a. RAMP Activities**

20 The RAMP mitigation measure that supports the mitigation of safety risks in this work
21 group is Field and Public Safety. Field and Public Safety includes the purging of customer
22 houselines. Purge orders are issued to promote customer safety by confirming customer owned
23 gas houselines are safe and leak-free and odorant is readily detectable. Purge orders usually
24 involve large gas meter installations and customer owned gas systems for multifamily
25 residential, commercial, and industrial customers. These jobs usually relate to new construction
26 projects where Gas Distribution Pipeline Operations sets a large gas meter and the Company
27 schedules a date for Customer Service Field to test and purge the houseline.

28 Table LPK-31 below lists the RAMP activities and their respective cost forecasts, and the
29 RSE for this workpaper. For additional details on this RAMP activity, please refer to my
30 workpaper SDG&E-04-CWP (500).

**TABLE LPK-31
RAMP Activities O&M Forecasts by Workpaper
In 2021 Dollars (\$000)**

GAS DISTRIBUTION – New Business (500) RAMP Activity Capital Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	GRC RSE
SDG&E- Risk-9 - C19	Field and Public Safety	569	569	569	0.03

*Tranche level RSEs and additional details are available in SDG&E-04-CWP.

2. Forecast Method

A zero-based forecast for New Business expenditures was developed using the projected number of new meter sets added to the Gas Distribution system. SDG&E forecasts a continued growth in new customer meter installations. Table LPK-32 below shows the quantity of new meter sets SDG&E installed in the period 2017 through 2021 and the new meter installation forecasts for the years 2022 through 2024. For additional details on the calculation of new meter set installations, please refer to the workpaper of Mr. Wilder, Ex. SDG&E-39-CWP.

**Table LPK-32
San Diego Gas & Electric Company
New Business Meter Installation History and Forecast**

Year	2017	2018	2019	2020	2021	2022	2023	2024
Number of New Meter Set Installations	6836	6701	6398	6740	4789	6201	7340	7256

The expenditures for this budget code were forecasted by multiplying a three-year average (2019 through 2021) adjusted recorded labor and non-labor cost per meter installation by the meter forecast quantities in years 2022, 2023, and 2024. The gross forecast of expenditures was separated into two components: the “non-collectable” construction cost for labor and non-labor necessary to install new business additions, and the “collectable cost” (CO) or Contributions In Aid of Construction (CIAC) portion that supports these installations. The collectable cost of a project (CO or CIAC) is an amount of money collected from the customer that is applied toward the cost of construction for services rendered and/or facilities installed.

1 The collectable costs for a project vary from project to project. Therefore, in order to forecast
2 this fluctuating portion of new business expenditures, it is necessary to derive a factor that
3 represents the average percentage of direct CIAC per direct construction costs.

4 This CIAC factor was developed by dividing the annual direct CIAC credits collected by
5 the total direct construction costs in a given year and averaged over the 2019 through 2021-time
6 period. This factor was applied to the 2022 through 2024 gross forecast of construction costs,
7 yielding the New Business Collectable component of the forecast. The forecasted collectable
8 expenditures for New Business in 2022, 2023, and 2024 include the labor and non-labor costs for
9 installations of new large distribution gas mains or upgrades in size of existing distribution gas
10 main to serve new loads for any new customers.

11 The forecasted non-collectible expenditures for New Business in 2022, 2023, and 2024
12 include the labor and non-labor costs of the RAMP Field and Public Safety Mitigation. This
13 includes the purging of customer houelines. Purge orders are issued to promote customer safety
14 by confirming customer owned gas houelines are safe and leak-free and odorant is readily
15 detectable. Purge orders usually involve large gas meter installations and customer owned gas
16 systems for multifamily residential, commercial, and industrial customers. These jobs usually
17 relate to new construction projects where Gas Distribution Pipeline Operations sets a large gas
18 meter and the Company schedules a date for Customer Service Field to test and purge the
19 houeline.

20 Forecasted total (gross) expenditures for New Business in years 2022, 2023, and 2024 are
21 \$19,658,000, \$13,042,000, and \$9,928,000 respectively. The forecasted collectable expenditures
22 for New Business in years 2022, 2023, and 2024 are \$11,909,000, \$3,870,000, and \$860,000,
23 respectively. The remaining forecasted non-collectable expenditures for New Business in years
24 2022, 2023, and 2024 are \$7,749,000, \$9,172,000, and \$9,068,000, respectively. For additional
25 details refer to Ex. SDG&E-04-CWP.

26 **3. Cost Drivers**

27 New Business work is driven by the volume and type of new construction required to
28 provide service to new residential, commercial, and industrial customers, thus mitigating the risk
29 of reduced service reliability and complying with the Company's obligation to serve. As
30 described above, this includes the installation of new mains and services to bring gas to new

1 developments, meter sets, and purging customer housetines. In some cases, it is also necessary
 2 to build high-pressure supply lines and associated regulator stations.

3 In SDG&E’s experience, new construction increases as the economy improves. As
 4 referenced in Mr. Wilder’s testimony (Ex. SDG&E-39-WP), SDG&E forecasts an increase in
 5 new business growth in the next several years, and it is therefore reasonably anticipated that
 6 demand for construction resources and material will increase. The underlying cost drivers for
 7 this capital category relate to Company labor, contractor services, third party services, paving
 8 services, and materials such as pipe and fittings.³⁹

9 All or a combination of these construction elements are necessary for performing New
 10 Business facility installations.

11 **B. System Minor Additions, Relocations, and Retirements (501)**

12 **TABLE LPK-33**

GAS DISTRIBUTION (In 2021 \$)				
B. System Minor Additions, Relocations, and Retirements (501)	2021 Adjusted-Recorded	Estimated 2022(000s)	Estimated 2023(000s)	Estimated 2024(000s)
1. System Minor Additions, Relocations, and Retirements (NC)	5,412	3,924	3,924	3,924
2. Collectable (CO)		1,297	1,297	1,297
Total	5,412	5,221	5,221	5,221

13
 14 **1. Description**

15 This budget code captures expenditures not covered in other work categories that are
 16 required to maintain the continued integrity of SDG&E’s Gas Distribution system. Examples of
 17 expenditures include gas distribution main and service additions, main and service abandonment,
 18 and main and service relocations due to customer requests or Company requirements.

³⁹ On November 16, 2021, Energy Division staff issued a proposal recommending the elimination of gas line extension allowances, refunds, and discounts for new customers and all customer classes effective July 1, 2023 (sunset date) in the Order Instituting Rulemaking Regarding Building Decarbonization (Rulemaking 19-01-011) (Building Decarb OIR). If necessary, SDG&E will submit revised testimony in accordance with the outcome of this proposal.

1 For this cost category, SDG&E proposed that LPCMA, discussed in the introduction of
2 the Capital Section above, would apply if costs associated with customer requests are later
3 deemed to be non-collectible.

4 **a. RAMP Activities**

5 There are two activities in this work group supporting the mitigation of safety risk: The
6 Adobe Falls Relocation project and the RAMP Incremental-Mitigate MSA's inside Buildings
7 and Alcoves.

8 Adobe Falls Relocation Project – Involves supply line SL-49-17-H which is a 6" 400
9 PSIG maximum allowable operating pressure (MAOP) pipeline crossing the Interstate Highway-
10 8 along the Alvarado Canyon. The alignment of the pipe, which runs through several residential
11 properties, down a very difficult to access steep hillside, and through an environmentally
12 sensitive creek bed (Alvarado Canyon), make it very challenging to meet the required 49 C.F.R.
13 § 192.723 leak survey, maintenance, and potential repair activities for this high pressure pipeline.
14 To mitigate concerns, this pipeline will be retired from service and a new distribution high
15 pressure supply line will be installed within franchise along Alvarado Road and Canyon Crest
16 Drive. This will be done in order to maintain service to the San Diego State University facilities,
17 which includes the University's independent cogeneration facility and the surrounding residential
18 area.

19 Mitigate MSAs inside Buildings and Alcoves – The MSAs inside Buildings and Alcoves
20 project came as a result of a recommendation from the National Transportation Safety Board
21 (NTSB) following a natural gas explosion in Silver Spring Maryland on August 10th, 2016.⁴⁰

22 The recommendations include:

- 23 • Require that all new service regulators be installed outside occupied structures.⁴¹
- 24 • Require existing interior service regulators be relocated outside occupied
25 structures whenever the gas service line, meter, or regulator is replaced. In
26 addition, multifamily structures should be prioritized over single-family
27 dwellings. To help mitigate this risk, SDG&E plans to verify all identified

⁴⁰ Pipeline and Hazardous Materials Safety Administration (PHMSA); DOT. Agency/Docket Number:
Docket No. PHMSA-2020-0115, Document Number: 2020-21507.

⁴¹ *Id.*

MSA’s that are enclosed or could potentially be enclosed, and remediate any hazards found.⁴²

Table LPK-34 below lists the RAMP activities and their respective cost forecasts for this workpaper. For additional details on these RAMP activities, please refer to my workpaper SDG&E-04-CWP (501).

**TABLE LPK-34
RAMP Activities O&M Forecasts by Workpaper
In 2021 Dollars (\$000)**

GAS DISTRIBUTION – System Minor Additions, Relocations, and RFS (501) RAMP Activity Capital Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	GRC RSE*
SDG&E- Risk-3 - M04	Adobe Falls Relocation Project	2,192	1,891	0	-
SDG&E- Risk-9 - M04 (New)	RAMP Incremental: MSAs inside Buildings & Alcoves	1,400	1,400	0	-

*Tranche level RSEs and additional details are available in SDG&E-04-CWP.

2. Forecast Method

In developing the forecast, historical expenditures from 2019 through 2021 were evaluated. Due to the wide range of activities recorded in this workgroup, as well as the cost fluctuations from year to year, a three-year (2019 through 2021) average was selected as the best method to forecast future costs.

In developing the base forecast for this budget code, labor and non-labor components were evaluated separately. The labor component contains the historical Company labor charges associated with construction projects within this budget category. A three-year average (2019 through 2021) was utilized as the forecasting methodology for this component.

Within non-labor, there are two distinct cost components: (1) construction materials and services, and (2) CIAC credits. The first non-labor component, construction materials and services, was forecasted using a three-year average (2019 through 2021). The second

⁴² *Id.*

1 component, CIAC credits, was also calculated based on a three-year average (2019 through
2 2021). As previously discussed in the New Business budget code, the collectable cost portion of
3 a project (or CIAC credits), is an amount of money collected from the customer that is applied
4 toward the cost of construction for services rendered and/or facilities installed.

5 The forecasted gross expenditures for budget code 501 in years 2022, 2023, and 2024 are
6 \$5,221,000, \$5,221,000, and \$5,221,000 respectively. The forecasted collectible expenditures
7 for Budget Code 501 in years 2022, 2023, and 2024 are \$1,297,000 per year. The forecasted
8 non-collectible expenditures for Budget Code 501 in years 2022, 2023, and 2024 are \$3,924,000
9 per year. For additional details refer to Ex. SDG&E-04-CWP.

10 Included in the base level of expenses, are the embedded costs associated with the 2021
11 RAMP Report: Incident Related to the High Pressure System (Excluding Dig-in) –M04⁴³ and
12 2021 RAMP Report: Incident Related to the Medium Pressure System (Excluding Dig-in)
13 Incremental (NEW)–M04.

14 **3. Cost Drivers**

15 The costs included in this budget code relate to expenditures not covered in other work
16 categories that are required to maintain the continued integrity of SDG&E’s Gas Distribution
17 system. Costs are primarily driven by the volume and type of construction required to address
18 the needs of property owners requesting SDG&E to move its facilities from their property; or to
19 meet the Company’s need for minor additions, facility relocations or abandonments to address
20 conflicts, integrity, or reliability concerns. Examples include the number of customer house-
21 lines or gas service lines to be relocated and/or abandoned, which is generally driven by
22 economic conditions.

23 The underlying cost drivers for this capital work category relate to Company labor,
24 contractor service, third-party services, paving services, and materials, such as pipe and fittings.
25 All or a combination of these construction elements are necessary for performing pipeline
26 installations for this budget category.

27 **C. Gas Meters & Regulators (502)**

28 **TABLE [LPK]-35**

⁴³ See SDG&E’s 2021 RAMP Report, SDG&E-Risk-3, Incident Related to the High Pressure System (Excluding Dig-in).

1 **Gas Meters & Regulators (502)**

GAS DISTRIBUTION (In 2021 \$)				
C. Gas Meters & Regulators	2021 Adjusted- Recorded	Estimated 2022(000s)	Estimated 2023(000s)	Estimated 2024(000s)
1. Gas Meters & Regulators	8,374	8,598	9,348	9,348
Total	8,374	8,598	9,348	9,348

2
3 **1. Description**

4 This budget code provides for the capital material expenses for purchasing new
5 residential, commercial, and industrial gas meters and pressure regulators. Meters and regulators
6 installed or replaced are grouped in three general categories:

- 7 • New business installations;
- 8 • Routine replacements; and
- 9 • Planned meter and regulator replacements.

10 These purchases, and the subsequent installations, are necessary for accurate billing,
11 reliability, and safe operation. The expenditures included here are for the materials costs only.
12 The associated installation expense is covered in other applicable budget categories (*e.g.*, New
13 Business (500) and Code Compliance (507)).

14 Meters and regulators are purchased for installation at new customers' premises.
15 Purchases in this category are consistent with forecasts discussed in Section V.A (New Business
16 (500)) of this testimony.

17 A routine replacement is a reactive replacement of the meter resulting from either a
18 Company or customer-identified problem with meter accuracy or operation such as customer
19 trouble calls, customer billing complaints, and replacements due to meter failures or damage.
20 Routine meter changes have remained relatively constant from year to year. Small meter routine
21 replacement labor is addressed by Mr. Thai (Ex. SDG&E-17).

22 Planned meter and regulator replacements are proactive replacements based on results of
23 a statistical sampling of meter accuracy, age, and performance. These replacements are targeted
24 based on a program to achieve gas measurement accuracy. GO 58-A requires that gas meters
25 employed by SDG&E measure gas volume to a certain level of accuracy or be removed from

1 service for repair or replacement. Meters are removed consistent with the Gas Meter
2 Performance Control Program.

3 **2. Forecast Method**

4 Forecasted expenditures for meters and regulators are based on forecasted quantities for
5 new business, the trending of usage for routine replacements, as well as planned meter
6 replacements and therefore is a zero-based forecast. The forecasted usage is multiplied by the
7 current meter and regulator contract prices to estimate future expenditures. Small meter routine
8 replacements and planned meter replacements are based on the information covered by Mr. Thai
9 (Ex. SDG&E-17).

10 Forecasted expenditures for Meter and Regulator Material in years 2022, 2023, and 2024
11 are \$8,598,000, \$9,348,000, and \$9,348,000, respectively. For additional details refer to
12 Ex. SDG&E-04-CWP.

13 **3. Cost Drivers**

14 The main cost drivers for this capital work category consist of meeting projected new
15 business requirements, routine meter replacements, and planned meter replacements. New
16 business meter and regulator purchases in this category are consistent with installations discussed
17 in Section V.A. (New Business (500)). Meters purchased for routine replacements are in
18 response to Company or customer-identified problems due to meter accuracy, age, or operation.
19 Planned meter replacements are meter families in the Gas Meter Performance Control Program
20 that fail accuracy limits, based on meter statistical sampling.

D. Gas System Reinforcement (503)

**TABLE LPK-35
Gas System Reinforcement (503)**

GAS DISTRIBUTION (In 2021 \$)				
D. Gas System Reinforcement	2021 Adjusted- Recorded	Estimated 2022(000s)	Estimated 2023(000s)	Estimated 2024(000s)
1. Gas System Reinforcement	1,610	529	529	529
Total	1,610	529	529	529

1. Description

Recorded in this budget code are expenditures for Gas Distribution pressure betterment projects performed on an ongoing basis to maintain system reliability and service to all customers. Gas System Reinforcement projects are performed in areas where there is insufficient capacity or pressure to meet load growth and in areas where a strategic pipeline backtie would be beneficial for system reliability. Gas System Reinforcement projects are necessary to maintain reliable service to existing customers as new gas load is added to the gas distribution system.

Once a pipeline system is designed and installed, the capacity remains relatively fixed. However, as load increases from new business activities or from expansion of existing customer loads, over time the existing pressure decreases which reduce the available volume for new and existing customers. If the diminishing pressure is not addressed, gas service to customers could be interrupted.

To determine areas in need of system reinforcement, growth information is gathered from customers, builders, city, county, and state agencies. In addition, SDG&E collects data from electronic pressure data recorders. This information is used to run model simulations on system flow and identify capacity constraints. Based on analysis of these constraints, region engineering personnel identify specific system reinforcement projects and the estimated year in which the project will need to be constructed. The projects are constantly reprioritized as the timelines for new developments change and economic conditions fluctuate. These projects typically involve installing new mains and, when necessary, regulator stations, or upgrading existing mains and regulator stations.

1 Gas System Reinforcement capital expenditures support the Company's goals of
2 providing safe, reliable service to customers, thus mitigating the risk of adverse impacts to
3 system reliability. This work category addresses critical areas of the distribution pipeline
4 network that are most susceptible to pressure drops to alleviate the potential risk of loss of
5 service to customers.

6 **2. Forecast Method**

7 SDG&E's gas infrastructure is a large dynamic system of pipelines and pipeline
8 connections, with continual changes in customer load and construction activity. System
9 reinforcement projects are prioritized utilizing the latest load and growth information available.
10 In addition, the timing to complete each project can be unpredictable due to the need for detailed
11 planning requirements, acquiring the required permits, and coordination and scheduling of
12 resources. Therefore, the cost forecast for the years 2022 through 2024 is based on a historical
13 four-year average of recorded expenditures for the years 2018 through 2021. This average
14 captures the yearly variations in system reinforcement requirements which vary with constantly
15 changing new construction development schedules, economic conditions, and large customer
16 system impacts.

17 Forecasted expenditures for Gas System Reinforcement in years 2022, 2023, and 2024
18 are \$529,000 per year.

19 **3. Cost Drivers**

20 The main drivers for Gas System Reinforcement projects are the growth in gas load as a
21 result of new customers and the increased gas usage of the existing customers and to improve the
22 reliability of the gas system by installing strategic gas pipeline ties. This work supports the
23 Company's need to mitigate system reliability risk and to comply with the Company's obligation
24 to serve. After years of customer growth, portions of the gas system operate close to their
25 maximum capacity and additional gas load creates system constraints increasing the need for
26 system reinforcement thus mitigating reliability risk and the potential for customer outages.

27 As discussed in Mr. Wilder's testimony (Ex. SDG&E-39), a driver of new customer
28 growth is economic conditions. Thus, as the economic conditions continue to improve over the
29 forecast period, it is reasonable to expect a continued need for system reinforcement
30 improvements.

The underlying cost drivers for the Gas System Reinforcement capital budget code relate to company labor, contractor services, third party services, paving services, and material cost. All or a combination of these construction elements are necessary for performing facility installations.

E. Street & Highway Relocation (505)

**TABLE LPK-36
Street & Highway Relocation (505)**

GAS DISTRIBUTION (In 2021 \$)				
E. Street & Highway Relocation (505)	2021 Adjusted-Recorded	Estimated 2022(000s)	Estimated 2023(000s)	Estimated 2024(000s)
1. Street & Highway Relocation (NC)	6,733	5,776	5,776	5,776
2. Collectible (CO)		8,820	9,232	
Total	6,733	14,596	15,008	5,776

1. Description

The Pipe Relocation-Franchise and Freeway budget code provides funding for the required relocation of existing gas facilities when necessitated by public improvements. Generally, the work involves a change in alignment or elevation of existing gas pipelines and associated facilities and is driven by local and state agency requirements. At the local level, SDG&E has franchise agreements that require the gas infrastructure to be moved if it conflicts with city and county projects. These agreements obligate SDG&E to perform this work.

The City of San Diego has been one of the largest drivers of funding required for this budget code. The level of typical relocation work driven by city projects, outside of major, one time only, large relocation projects have remained reasonably stable during the 2019 through 2021 timeframe. One exception to this will be the City of San Diego Pure Water project slated to begin major construction in 2022.

Pure Water San Diego is the City of San Diego's phased, multi-year program that will provide more than 40% of San Diego's water supply locally by the end of 2035.⁴⁴ As a result of the Pure Water Project, SDG&E will be required to relocate portions of existing high pressure

⁴⁴ The City of San Diego Public Utilities, *Pure Water San Diego*, available at: <https://www.sandiego.gov/public-utilities/sustainability/pure-water-sd>.

1 and medium pressure gas pipelines currently in conflict with the proposed water pipeline
2 alignment.

3 In addition to the City of San Diego’s projects, SDG&E serves 17 additional cities and
4 one county within its service territory that also impact this budget code with relocation projects.
5 Future improvement projects from these municipalities are anticipated to continue to impact the
6 expenditures in this capital account.

7 These forecasted capital expenditures support compliance with the provisions of
8 applicable third-party utility agreements.

9 For this cost category, SDG&E’s proposed LPCMA, discussed in the introduction of the
10 Capital Section above, would apply if associated costs are later deemed to be non-collectible.

11 **2. Forecast Method**

12 The timing and the number of franchise pipeline projects is driven by outside agencies;
13 therefore, expenditures in this budget category are dependent on the number, extent, and timing
14 of these requests, and are largely outside of the Company’s control. A three-year average best
15 represents the base forecast for the GRC period, 2022 to 2024. This average captures the yearly
16 variations in franchise and freeway relocation requirements without the one-time major
17 collectible projects impacting the average and as economic conditions, city, and Pure Water
18 funding fluctuate.

19 However, when projects do occur, SDG&E must complete its portion of the work while
20 minimizing schedule delays for the agencies involved. This budget code incorporates the
21 collectible cost portions associated with the Pure Water project. This cost, as previously
22 discussed in the New Business budget code, is an amount of money collected from the customer
23 that is applied toward the cost of construction for services rendered and/or facilities installed. In
24 response to the Pure Water project there is expected to be an increase in required medium
25 pressure and high-pressure distribution pipeline relocations, associated with customer driven
26 conflicts.

27 The forecasted expenditures, including collectible and non-collectible costs, for budget
28 code 505 in years 2022, 2023, and 2024 are \$14,596,000, \$15,008,000, and \$5,776,000
29 respectively.

1 but that can be safely simulated within Virtual Reality applications.⁴⁵ This allows trainees to
2 repeatedly practice crucial scenarios while preventing damage to equipment and avoiding bodily
3 harm. Virtual Reality training allows for real-time feedback, improves the efficiency of skills
4 transfer, increases knowledge retention, and better captures enterprise knowledge within an
5 organization. This portion of the training will charge 70% to Capital, the balance to O&M.

6 Kleiss Emergency Pipeline Plugging Equipment (Balloon Stopper) for Pipe flow control
7 – To reduce the medium pressure system control time from 3rd party dig-ins and leak repairs, the
8 Kleiss Emergency Pipeline Plugging Equipment will be introduced to the SDG&E Gas
9 Emergency Response Crews (GERC) to supplement the ability to control 3” to 8” diameter
10 medium pressure distribution gas main when valves are not readily available to use.⁴⁶

11 **a. RAMP Activities**

12 There are two activities in this work group that are mitigation measures supporting the
13 mitigation of safety risk: Locating Equipment and Human Factor Mitigations – Operator
14 Qualification Training & Certification.

15 Locating Equipment – The purpose of the Locating Equipment Program is to utilize
16 technology to standardize locating tools to locate and mark underground infrastructures
17 accurately. The Locating Equipment program will provide employees with standardized locating
18 devices. Employee locating equipment will be replaced as new technology becomes available.
19 Reducing the potential for damage to underground facilities caused by excavation activities
20 requires correct facility markings. Excavators use these markings to know when hand-digging
21 and other safe digging practices should be followed. Finally, providing employees standardized
22 equipment allows for consistent training and use of the equipment to improve locate accuracy.

23 Human Factor Mitigations – Operator Qualification (OpQual) Training & Certification –
24 All gas pipeline operators are required to create and maintain a written OpQual program to
25 establish compliance policies for the Department of Transportation (DOT) Operator
26 Qualification Program as required by 49 CFR Subpart N – Qualification of Pipeline Personnel.
27 All employees and contractors performing DOT-covered tasks are required to be pre-qualified

⁴⁵ BBB is an ongoing business optimization and continuous improvement initiative at SDG&E, undertaken to support our mission to improve lives and communities by building the cleanest, safest, and most reliable energy infrastructure company in America.

⁴⁶ *Id.*

per this OpQual program. Such programs are reviewed by the Operator Qualification department prior to performing work on pipelines or pipeline facilities. The OpQual program requires that employees are trained, initially qualified and subsequently re-qualified every three or five years depending on the task. SDG&E’s training frequency conforms to these requirements and the results of the evaluations are recorded, demonstrating employees’ knowledge, skills, and abilities of the job requirements and that they are qualified to perform the required tasks. Qualification promotes adherence to proper Company policy and procedures and therefore mitigates the risk of hazardous conditions developing and increases the overall awareness and response to unsafe activities.

Table LPK-38 below lists the RAMP activities, their respective cost forecasts, and RSE values for this workpaper. For additional details on this RAMP activity, please refer to my workpaper SDG&E-04-CWP (506).

TABLE LPK-38
RAMP Activities Capital Forecasts by Workpaper
In 2021 Dollars (\$000)

GAS DISTRIBUTION – Tools & Equipment (506)					
RAMP Activity Capital Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	GRC RSE
SDG&E- Risk-7 - C13	Locating Equipment	225	225	225	2
SDG&E- Risk-9 - C14	Human Factor Mitigations - OpQual Training & Cert	440	440	440	0.5

*Tranche level RSEs and additional details are available in SDG&E-04-CWP.

2. Forecast Method

In developing the forecast, historical expenditures for 2017 through 2021 were evaluated. Tool purchase requirements vary from year to year and are identified during the year, as part of the regular course of maintenance and construction activities. SDG&E expects routine tool purchases to continue as existing tools and equipment reach their useful life expectancies and the level of construction and maintenance activities increase, adding to the number of new employees that must be equipped with tools and equipment. In addition, increases in other capital and O&M work categories drive the need for personnel and therefore, the tools they use

1 to perform their job. SDG&E evaluates field tools and equipment based on safety, functionality,
2 cost, and quality. Costs are minimized by encouraging sharing between employees and crews
3 when appropriate, and by repairing tools when it is safe to do so. A five-year average was
4 chosen for the base forecast as this average captures the year-to-year variations in tool purchase
5 requirements.

6 The five-year base forecasted expenditures for budget code 506 in years 2022, 2023, and
7 2024 are \$3,866,000, \$3,866,000, and \$3,866,000 respectively. Added to this base expenditure
8 level are incremental additions necessary to adequately fund the activities in this workgroup.
9 These incremental additions are the Kleiss Emergency Pipeline Equipment and the Virtual
10 Training described in the Description Section above.

11 Forecasted expenditures for the capital portion of Virtual Training in years 2022, 2023,
12 and 2024 are \$140,000, \$140,000, and \$70,000 respectively. Forecasted expenditures for the
13 Kleiss Emergency Pipeline Plugging Equipment in years 2022, 2023, and 2024 is \$1,000,000,
14 \$0, and \$0 respectively.

15 Included in the base level of expenses, are the embedded costs associated with the 2021
16 RAMP Report: Incident Related to the Medium Pressure System (Dig-in) – C13⁴⁷ and 2021
17 RAMP Report: Incident Related to the Medium Pressure System (Excluding Dig-in) – C14.⁴⁸

18 **3. Cost Drivers**

19 The main driver for capital tools and equipment purchases is the need to continuously
20 equip SDG&E's employees with safe and reliable tools and equipment. Tools and equipment are
21 used by the distribution field personnel for the maintenance and repair of gas pipeline systems.
22 As previously discussed, SDG&E's tools and equipment are exposed to rigorous environments
23 which impact their useful life. Many of the tools and equipment being utilized in the field and
24 training facilities contain sensitive components that are subject to shock, vibration, rain, and
25 dusty conditions which are factors that contribute to the deterioration of the equipment.
26 Furthermore, work increases in other Capital and O&M work categories increase the need for
27 personnel and therefore the tools needed to perform their job.

⁴⁷ See SDG&E's 2021 RAMP Report, SDG&E-Risk-7, Excavation Damage (Dig-in) on the Gas System.

⁴⁸ See SDG&E's 2021 RAMP Report, SDG&E-Risk-9, Incident Related to the Medium Pressure System (Excluding Dig-in).

Additional cost drivers for this capital work category include expenditures associated with the purchase of capital tools to replace existing tools due to condition, failure, age, and to improve safety and ergonomics. In addition, SDG&E invests in new tools that provide, through new technology, innovative ways of completing the maintenance and repair of its facilities to minimize customer disruptions, minimize natural gas emission, improve pipeline facility documentation, improve gas system safety, and improve employee safety.

G. Code Compliance (507)

**TABLE LPK-39
Code Compliance (507)**

GAS DISTRIBUTION (In 2021 \$)				
G. Code Compliance	2021 Adjusted-Recorded	Estimated 2022(000s)	Estimated 2023(000s)	Estimated 2024(000s)
1. Code Compliance	3,101	2,712	3,087	3,087
Total	3,101	2,712	3,087	3,087

1. Description

This budget code provides funds for upgrades or additions to facilities to maintain compliance with minimum federal safety standards for gas pipelines, 49 C.F.R. § 192 and state safety standards under GO 112-F.

There are four main areas that comprise the expenditures represented by the base portion of this budget code. In addition, one other component, respectively, reflects an incremental add to the base forecast. These components include the following:

- Labor for the Regulator Replacement Program for pre-1982 American Meter Type K-Regulators to be removed in compliance with 49 C.F.R. § 192.197(b);
- Labor and materials necessary for the installation of barricades to protect MSAs from vehicular traffic in compliance with 49 C.F.R. § 192.353(a);
- Isolation valves necessary for safe operation of the gas distribution system in compliance with 49 C.F.R. § 192.747; and
- Electronic Pressure Monitors and Electronic Pressure Correctors Replacements.

The four main components of budget code 507 are described in more detail below:

Regulator Replacement Program – Since 1983, SDG&E has been installing regulators that contain an over pressure protection feature. When the regulator senses pressure building within the customer’s houseline (*i.e.*, should the pressure level coming out of the regulator

1 increase beyond acceptable levels), this feature allows the regulator to release the excess pressure
2 through a vent while maintaining an acceptable level of houseline pressure. Regulators installed
3 prior to 1983 (also known as Type K) did not generally possess this feature. In an effort to
4 minimize inconvenience to customers, SDG&E currently replaces these regulators when an
5 employee is on a customer's premises to change the gas meter or when a gas service has been
6 isolated for house pest fumigation as scheduled by the pest control company. The labor cost
7 associated with these regulator replacements are accounted for within this budget code in the
8 historical expenditures. The cost of the regulator material is included in the Meter and Regulator
9 Materials budget code (BC 502).

10 Barricades to Protect MSAs – Another contribution to this budget code's expenditures is
11 the installation of barricades to protect meter sets from vehicular damage. Barricades are
12 installed to protect the MSA from vehicular traffic at existing customer locations in accordance
13 with 49 C.F.R. § 192.353(a) and GO 112-F. The installation of meter barricades creates a more
14 secure environment at the MSA location, which in addition to increasing public safety, results in
15 increased longevity and performance of the MSA equipment. Furthermore, the increased growth
16 in the SDG&E service territory brings increased population density, creating a higher probability
17 for conflicts with vehicular traffic at MSA locations. Recent trends in architecture to maximize
18 saleable square footage have resulted in less room for MSAs, increasing the demand for meter
19 barricades to protect MSAs.

20 Isolation Valve Installations – The distribution system continues to grow with the
21 installation of gas mains due to new business. With this comes the need for installation of
22 isolation valves for emergency response or safe operation of the system. Frequently these valves
23 are installed with the installation of the new business main. However, due to the complexity of
24 the network of interconnected gas mains, it is necessary to periodically evaluate the system to
25 provide for adequate valve installations for proper system isolation. If a valve is identified
26 through this process to be necessary for safe operation of a distribution system, a valve is
27 installed, and expenditures accounted for within this budget code.

28 Electronic Pressure Monitors and Electronic Pressure Correctors – Labor and materials
29 necessary for the installation/replacement of distribution system electronic pressure monitoring
30 devices in compliance with 49 C.F.R. § 192.741(a)-(b); and replacement of aging electronic
31 pressure correctors for core and non-core high volume customers.

1 In addition to the base forecasted activities above, one additional incremental work
2 element is described below.

3 Electronic Pressure Monitors and Electronic Pressure Correctors Replacements –
4 Incremental – EPMs are used by SDG&E to remotely monitor distribution pipeline pressures in
5 support of gas system capacity analysis and as a warning system to communicate pipeline system
6 gas pressures that may be outside of normal limits supporting SDG&E’s capability to recognize
7 abnormal operating conditions and meet regulatory reporting timeline requirements should
8 overpressure or under pressure conditions occur. The primary purpose of the electronic pressure
9 monitor network is system safety and compliance with 49 C.F.R. § 192.741. SDG&E has
10 approximately 140 pressure districts, or hydraulically independent systems operating at a
11 common pressure downstream of a single or multiple pressure regulator station. EPMs are a
12 vital safety component to provide notification of over/under-pressurization events. When gas
13 pressure rises above or falls below a designated pressure, the EPM triggers an alarm so that
14 SDG&E can take action to correct the pressure issue.

15 Electronic Correctors (ECs) are connected to core and non-core high volume customers
16 and help to correct the gas meter volume and record the customer’s usage information. Because
17 natural gas is a compressible fluid, it changes volume with changes in pressure and temperature.
18 The EC helps to correct the variation in volume thereby ensuring utility bills are accurate.

19 The EPMs and ECs in SDG&E’s infrastructure are aging and require considerable
20 maintenance. New equipment is more reliable, and calibration is more stable. Longer battery
21 life within the units allows for 1-year maintenance schedule to move to a 5-year maintenance
22 schedule.

23 With exception of the EC and EPM replacements, all of the activities in this work group
24 are RAMP mitigation measures supporting safety risks

25 Table LPK-40 below lists the RAMP activities and their respective cost forecasts for this
26 workpaper. For additional details on these RAMP activities, please refer to my workpaper
27 SDG&E-04-CWP (507).

TABLE LPK-40
RAMP Activities Capital Forecasts by Workpaper
In 2021 Dollars (\$000)

GAS DISTRIBUTION – Code Compliance (507)					
RAMP Activity Capital Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	GRC RSE*
SDG&E-Risk-9 - C10	Code Compliance Mitigation	2,662	2,662	2,662	1

*Tranche level RSEs and additional details are available in SDG&E-04-CWP.

2. Forecast Method

In developing this forecast, historical expenditures for 2018 through 2021 were evaluated. Because of the wide range of activities recorded in BC 507, as well as the cost fluctuations from year to year, a four-year average was selected to forecast future costs. The four-year base forecasted expenditures for budget code 507 in years 2022, 2023, and 2024 are \$2,662,000, \$2,662,000, and \$2,662,000 respectively. Added to this base expenditure level is the incremental addition described below necessary to adequately fund the activities in this workgroup.

Electronic Pressure Monitors and Electronic Pressure Correctors Replacements – As mentioned above, the EPMs and ECs in SDG&E’s infrastructure are aging and require considerable maintenance. SDG&E plans to replace these devices with newer, more efficient equipment. The SDG&E system currently contains approximately 350 EPMs and over 250 ECs that are within scope of replacement over the next several years.

Forecasted expenditures for the EPM and EC replacements for years 2022, 2023, and 2024 are \$50,000, \$425,000, and \$425,000 respectively.

3. Cost Drivers

The Code Compliance budget code is driven by costs associated with each of its principal work components. The main drivers for electronic pressure monitor installations are the need to provide coverage at sites where system pressure is under monitored; and the need to replace existing electronic pressure monitors due to aging and electronic component malfunctions. The main drivers for electronic corrector installations are the need to correct the variation in volume

for large customers thereby ensuring accurate utility billing. Meter barricade installation work is driven by conditions surrounding the location of an existing meter set assembly. Meter barricades are installed to protect the MSA when it is apparent that activity on the property creates a potentially hazardous environment to the MSA. The driver for replacing Type-K regulators is the number found while employees perform other work at the MSA. The driver for isolation valves is the number needed for emergency response and for the safe operation of the system.

The underlying cost drivers for this capital work category relate to company labor, contractor services, third-party services, paving services, and materials such as pipe and fittings. All or a combination of these construction elements are necessary for performing upgrades or additions to facilities to maintain compliance with minimum federal safety standards for gas pipelines.

H. Leak Repair (508)

**TABLE LPK-41
Leak Repair (508)**

GAS DISTRIBUTION (In 2021 \$)				
H. Leak Repair	2021 Adjusted- Recorded	Estimated 2022(000s)	Estimated 2023(000s)	Estimated 2024(000s)
1. Leak Repair	10,082	11,935	12,973	14,010
Total	10,082	11,935	12,973	14,010

1. Description

Funding in this all RAMP budget code is required to address compliance requirements for the elimination of potentially hazardous conditions due to leaking or deteriorated gas pipelines. This budget code provides for the replacement of deteriorated Gas Distribution system pipelines to maintain public safety and system reliability. Expenditures in this budget code range from minor pipe replacements to more complex projects. Most minor projects are completed in association with leak investigation and repair work. When the pipe condition is found to be hazardous or the pipeline has conditions, such as a history of leaks, the field and/or technical staff determines replacement options.

The forecasted capital expenditures support the Company’s goals of maintaining system integrity and reliability, thus mitigating safety and loss of service risks. Additional main

1 replacement funding required in response to federal DIMP regulations is addressed by Ms.
 2 Kitson and Mr. Sera (Ex. SDG&E-09).

3 The Leak Repair workgroup mitigates safety risks identified in the 2021 RAMP Report.
 4 Accordingly, this budget code in its entirety, aligns with a RAMP activity.

5 Table LPK-42 below lists the RAMP activities and their respective cost forecasts for this
 6 workpaper. For additional details on these RAMP activities, please refer to my workpaper
 7 SDG&E-04-CWP (508).

8 **TABLE LPK-42**
 9 **RAMP Activities Capital Forecasts by Workpaper**
 10 **In 2021 Dollars (\$000)**

GAS DISTRIBUTION – Leak Repair (508)					
RAMP Activity Capital Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	GRC RSE*
SDG&E- Risk-9 - C06	Leak Repair (Capital)	11,935	12,973	14,010	-

11 *Tranche level RSEs and additional details are available in SDG&E-04-CWP.

12 **2. Forecast Method**

13 In developing the main and services replacements forecast, historical expenditures for
 14 2017 through 2021 were evaluated. Spending in this budget category has continually increased
 15 over this period due to multiple factors. A variety of factors influence the level of spending on
 16 leak repair in a given year. These factors include increasing government regulations, aging
 17 infrastructure, public safety, municipality requirements, material failure, infrastructure, economic
 18 conditions, and the changes to leak patrol cycles.

19 Following the discovery of a leak during a survey of the gas distribution system, SDG&E
 20 takes steps to either remediate or monitor the situation depending on the type of leak
 21 classification. A leak will be remediated immediately if there is a hazardous condition. If the leak
 22 does not create a hazardous situation, SDG&E will monitor the leak. SDG&E has shortened the
 23 prescribed timeframe for which leaks are monitored and scheduled for remediation. The leak
 24 survey program has increased leak survey cycle frequency resulting in increased miles of pipe

1 surveyed per year. In addition, the introduction of an Aerial Methane Mapping (AMM) pilot⁴⁹ as
 2 part of the 2022 SB 1371 Compliance Plan, will increase the number of miles of pipe surveyed
 3 each year. Given the overall upward trend observed in the historical expenses for this work
 4 category, SDG&E selected the five-year linear approach. This forecast methodology best
 5 represents the anticipated increasing volume of work on an annual basis and captures the various
 6 challenges encountered during leak repair maintenance activities.

7 Forecasted expenditures for budget code 508 for years 2022, 2023, and 2024 are
 8 \$11,935,000, \$12,973,000, and \$14,010,000 respectively.

9 **3. Cost Drivers**

10 The primary cost drivers in this category are the number of leak indications that can
 11 impact the integrity of the pipe leading to pipeline repairs and replacements. The additional cost
 12 drivers for this capital work category relate to Company labor, contractor services, third-party
 13 services, paving services, material cost, and survey cycles. All or a combination of these
 14 construction elements are necessary for performing pipeline installations for main replacement
 15 work. Regulatory/legislative pressures continue to increase, the infrastructure is getting older,
 16 and municipality work, which includes increasing requirements, and general construction
 17 continues to increase.

18 **I. Cathodic Protection Program (509)**

19 **TABLE LPK-43**
 20 **Cathodic Protection Program (509)**

GAS DISTRIBUTION (In 2021 \$)				
I. Cathodic Protection Program	2021 Adjusted-Recorded	Estimated 2022(000s)	Estimated 2023(000s)	Estimated 2024(000s)
1. Cathodic Protection Program	4,409	4,493	4,493	4,493
Total	4,409	4,493	4,493	4,493

21 **1. Description**

22 This all RAMP Cathodic Protection (CP) budget code includes expenditures associated
 23 with the installation of new and replacement CP systems and equipment in accordance with state
 24 and federal pipeline corrosion control standards 49 C.F.R. § 192, Subpart I – Requirements for

⁴⁹ See SDG&E's 2022 SB1371 Compliance Plan

1 Corrosion Control and GO 112-F. Examples include the installation of impressed current
2 stations, deep well anode beds, magnesium anode systems, and the purchase of CP
3 instrumentation and monitoring equipment.

4 Buried steel pipelines that are not well protected, will corrode and revert to their natural
5 state as iron oxide without proper intervention. Corrosion on pipelines increases the risk for
6 leaks and may reduce the useful lives of the pipelines. In addition to the application of coating
7 and electrical isolation, CP is one method for mitigating external corrosion on steel pipelines.
8 CP combats corrosion by imposing an electric current flow toward the surface of the pipeline,
9 which keeps the pipeline negatively charged (cathodic) with respect to the surrounding soil. This
10 results in reduced corrosion on the pipeline system.

11 CP system shorts and current interference typically occur as SDG&E's pipeline
12 components come into contact with water lines or with third-party grounding systems that can
13 drain current from the pipeline; or near customer meter set assemblies and risers, from
14 improperly grounded customer owned electrical systems and dog or bicycle chains wrapped
15 around risers and meter sets, thus reducing the level of protection and depleting anodes. SDG&E
16 continues to identify necessary modifications to CP systems to accomplish this effort.
17 Associated work includes the installation of insulating unions separating CP systems, new
18 rectifiers, anode beds and test points allowing the CP technician to take CP reads.

19 These forecasted capital expenditures support the Company's goal of preserving the
20 integrity of steel pipelines by protecting them from external corrosion, thus supporting the
21 mitigation of risks associated with infrastructure integrity, system reliability, and public safety.

22 The Cathodic Protection Program mitigates safety risks identified in the 2021 RAMP
23 Report. Accordingly, this budget code in its entirety, aligns with a RAMP activity.

24 Table LPK-44 below lists the RAMP activities and their respective cost forecasts for this
25 workpaper. For additional details on these RAMP activities, please refer to my workpaper
26 SDG&E-04-CWP (509).

TABLE LPK-44
RAMP Activities Capital Forecasts by Workpaper
In 2021 Dollars (\$000)

GAS DISTRIBUTION – Cathodic Protection (509)					
RAMP Activity Capital Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	GRC RSE
SDG&E- Risk-9 - C02	Cathodic Protection Program - Capital	4,493	4,493	4,493	-

*Tranche level RSEs and additional details are available in SDG&E-04-CWP.

2. Forecast Method

SDG&E has approximately 3,564 miles of steel main and approximately 278,000 steel services that are cathodically protected. Expenditures in this work category are associated with new installation and replacement of major CP components and equipment to maintain the integrity of the CP system on these mains and services. Expenditures in this area tend to fluctuate depending on the health of surrounding CP stations, soil conditions, and effective resolution of system shorts. The piping infrastructure continues to age, permitting fees are increasing, drilling prices continue to increase, anode material costs increase, and the need for new or renewed CP stations continues to rise. Furthermore, expenditures in the Cathodic Protection budget code continue to steadily increase as many stations originally installed in the 1975-1995 era are approaching the end of their useful life. CP station splits, renewals, or new additions are required to provide an adequate level of cathodic protection to the aging steel pipeline system.

Given the continuing need to invest in an aging system, a five-year average was selected to forecast future costs.

The forecasted expenditures based on the five-year average for Cathodic Protection in years 2022, 2023, and 2024, is \$4,493,000, \$4,493,000, and \$4,493,000 per year respectively.

3. Cost Drivers

As previously discussed, the main driver for Cathodic Protection work is compliance with DOT Regulation 49 C.F.R. § 192, Subpart I, and GO 112-F, which sets forth the minimum

standards or regulations for corrosion control as well as the need to safeguard the integrity of the pipeline system thus mitigating risks associated with infrastructure integrity, system reliability, and public safety.

The age of the CP system component is also an important cost driver for this work category. As the system components age, their effectiveness decreases, driving the need for additional replacement work. Another work driver is the rate at which anodes deplete, which is impacted by a number of factors including soil moisture and type, electric current interference, and pipe coating effectiveness.

The underlying cost driver for this capital work category relates to municipal requirements, Company labor, contractor services, third-party services, paving services, and materials. This includes new rectifier (impressed current) sites along with associated anode installations including the necessary CP instrumentation; anode bed well replacements for existing rectifier systems; as well as installation of surface bed magnesium anode systems. All or a combination of these construction elements are necessary for cathodic protection projects and to maintain the integrity of the pipeline system.

J. Cathodic Protection System Enhancements (12551)

**TABLE LPK-45
Cathodic Protection System Enhancements (12551)**

GAS DISTRIBUTION (In 2021 \$)				
J. Cathodic Protection System Enhancements	2021 Adjusted-Recorded	Estimated 2022(000s)	Estimated 2023(000s)	Estimated 2024(000s)
1. Cathodic Protection System Enhancements	2,919	1,996	1,996	1,996
Total	2,919	1,996	1,996	1,996

1. Description

The all RAMP CP System Enhancement budget code tracks projects specifically associated with creating dedicated high-pressure and medium-pressure distribution pipeline CP system enhancements and the installation of real time monitoring units (RMU) for CP rectifiers.

Currently, SDG&E CP stations cover areas that often include a mixture of high-pressure and medium-pressure pipelines. Typically, CP systems protecting medium-pressure pipelines are more susceptible to shorts compromising CP protection levels. SDG&E has embarked on

1 creating dedicated CP systems for high-pressure pipelines where any adverse conditions due to
2 corrosion pose a higher risk.

3 Real Time Monitoring for Cathodic Protection System – The real time monitoring for CP
4 is an embedded expense that is required to continue the installation of equipment for real-time
5 monitoring of the CP system. Electronic monitoring of CP rectifier stations on a real time basis
6 will assist in verifying that the steel pipeline system has an adequate level of protection provided
7 by the rectifier stations in each CP zone. The real-time monitoring unit (RMU) equipment would
8 electronically monitor the rectifier stations on a continuous real-time basis to verify that the level
9 of current from the rectifiers is adequately protecting steel pipelines. The RMUs send alarm
10 notifications through landline or wireless communication to the department monitoring these
11 devices when key parameters such as current levels are below or above a pre-set tolerance. In
12 this way, CP protection can be monitored continuously rather than manually on a bi-monthly
13 basis by employees under the current mandated periodic inspection program.

14 This budget code also was created to track projects specifically dedicated to other
15 specialty CP system work including, improvement surveys above and beyond the typical
16 activities in budget code 509 such as renewals of magnesium anode bags, and remediation of CP
17 isolated services and steel risers on distribution pipelines. This effort to continually provide CP
18 system enhancements is an ongoing long-term effort.

19 Cathodic protection equipment and facilities are required to achieve and maintain
20 corrosion control on wrapped steel gas-carrying pipelines and components as required under 49
21 CFR 192 Subpart I, and CPUC GO 112-F. Cathodic protection extends the steel pipeline system
22 life. For additional details on the function of basic cathodic protection, please see the description
23 of budget code 509.

24 Cathodic Protection system enhancements mitigate safety risks identified in the 2021
25 RAMP Report. Accordingly, this budget code in its entirety, aligns with a RAMP activity.

26 Table LPK-46 below provides the RAMP activities and their respective cost forecasts for
27 this workpaper. For additional details on these RAMP activities, please refer to my workpaper
28 SDG&E-04-CWP (12551).

TABLE LPK-46
RAMP Activities Capital Forecasts by Workpaper
In 2021 Dollars (\$000)

GAS DISTRIBUTION – CP System Enhancements (12551)					
RAMP Activity Capital Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	GRC RSE*
SDG&E- Risk-9 - C12	Cathodic Protection System Enhancements	1,996	1,996	1,996	-

*Tranche level RSEs and additional details are available in SDG&E-04-CWP.

2. Forecast Method

Expenditures in this work category are associated with the installation of major CP components and equipment for the purpose of separating high-pressure and medium-pressure distribution pipeline CP systems as well as the installation of remote monitoring equipment. This therefore provides for cathodic protection (CP) reliability improvements on the DOT transmission and supply line pipeline systems.

A review of historical expenditures from 2017 through 2021 revealed, other than an increase in work activity in 2018 from one large CP enhancement project, a stable trend in work activity over the past three years. This is expected to continue through the forecast years, therefore budget code 12551 was forecast using a three year average methodology for labor and non-labor as it best represents the required base level of routine work for CP enhancement projects.

The forecasted expenditures based on the three-year average trend for the Cathodic Protection System Enhancement in years 2022, 2023, and 2024, are \$1,996,000, \$1,996,000, and \$1,996,000 respectively.

3. Cost Drivers

As previously discussed, the main driver for Cathodic Protection work is compliance with DOT Regulation 49 C.F.R. § 192, Subpart I, and GO 112-F, which sets forth the minimum standards or regulations for corrosion control as well as the need to safeguard the integrity of the

1 pipeline system thus mitigating risks associated with infrastructure integrity, system reliability,
 2 and public safety.

3 Expenditures in this area tend to fluctuate depending on the health of surrounding CP
 4 stations, soil conditions, and effective resolution of system shorts. As the piping infrastructure
 5 continues to age, expenses for municipal requirements, Company labor, contractor services,
 6 third-party services, paving services, and materials continue to remain as a cost driver.
 7 Furthermore, expenditures in the Cathodic Protection System Enhancement budget code are
 8 required as CP station splits, renewals, or CP remediation work is performed. This is necessary
 9 to provide an adequate level of cathodic protection to the aging steel pipeline system.

10 **K. System Reliability & Safety (510)**

11 **TABLE LPK-47**
 12 **System Reliability & Safety (510)**

GAS DISTRIBUTION (In 2021 \$)				
K. System Reliability & Safety	2021 Adjusted-Recorded	Estimated 2022(000s)	Estimated 2023(000s)	Estimated 2024(000s)
1. System Reliability & Improvements	645	1,956	3,456	1,956
Total	645	1,956	3,456	1,956

13 **1. Description**

14 The System Reliability and Safety budget code provides funding for capital projects (not
 15 captured under other budget codes) that improve safety, provide required code compliance, and
 16 improve gas system performance or reliability through the replacement of aging gas pipeline
 17 system operating equipment. Projects completed under this budget code typically involve
 18 upgrades to distribution fittings, valves, regulator stations, relocating regulator stations out of
 19 traffic due to growth, and other safety improvements to gas distribution facilities.

20 Regulator Stations are critical components of control equipment on the SDG&E pipeline
 21 network that support the mitigation of risks associated with infrastructure integrity, system
 22 reliability, and public safety. Regulator stations, consisting of valves and regulators, reduce and
 23 control the pressure of the gas entering the distribution system from higher pressure pipelines to
 24 provide the lower pressures required on the distribution pipeline network. Failure of a regulator
 25 station could over-pressure or shut down the gas distribution system which may impact customer

1 service and/or public safety. SDG&E currently operates and maintains approximately 491
 2 regulator stations and installs or replaces approximately three to five stations annually. These
 3 forecasted capital expenditures support the Company’s goals of maintaining the safety, integrity,
 4 and reliability of the gas distribution system.

5 **a. RAMP Activities**

6 There is one activity within this work group that is a RAMP mitigation measure
 7 supporting the mitigation of safety risk: the Regulator Station Replacement Program. SDG&E
 8 will continue its current practice of replacing deteriorating stations with funding from this budget
 9 code before operations and safety issues arise. Presently 71% of our operating regulator stations
 10 are 24 years or older. The average age of a distribution regulator station is 32 years. This aging
 11 will translate into increased replacement expense over future years.

12 Table LPK-48 below provides the RAMP activities, their respective cost forecasts for this
 13 workpaper. For additional details on this RAMP activity, please refer to my workpaper SDG&E-
 14 04-CWP (510).

15 **TABLE LPK-48**
 16 **RAMP Activities Capital Forecasts by Workpaper**
 17 **In 2021 Dollars (\$000)**

GAS DISTRIBUTION – System Reliability & Safety (510)					
RAMP Activity Capital Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	GRC RSE*
SDG&E- Risk-9 - C05	Reg Station Replacement Program	1,956	1,956	1,956	-

18 *Tranche level RSEs and additional details are available in SDG&E-04-CWP.

19 **2. Forecast Method**

20 Spending in this budget category fluctuates from year to year due to the variation in the
 21 number, complexity, and timing of identified aging regulator stations and required system
 22 component improvement projects. Given the aging of regulator stations and system components,
 23 it is anticipated that the general spending trend observed from 2017 through 2021 will continue
 24 in the GRC forecast period of 2022 to 2024. Furthermore, the timing of individual projects is
 25 based on several factors including the need for review of operating conditions, detailed planning

1 requirements, acquiring the required permits, risk assessment, and coordination and scheduling
2 of resources. To account for the variation and complexity of projects and associated costs and
3 the continuing need for system equipment renewals, a five-year average of recorded expenditures
4 methodology for the years 2017 through 2021 was selected to forecast base costs in years 2022
5 to 2024. The forecasted base level expenditures based on a five-year average for the System
6 Reliability and Safety budget code in years 2022, 2023, and TY 2024 is estimated to be
7 \$1,956,000, \$1,956,000, and \$1,956,000 respectively.

8 In addition, added to this five-year average base level forecast is an incremental addition
9 necessary to improve the safety and reliability of the gas distribution system. This incremental
10 addition is described below:

11 San Diego (Coronado) Bay Crossing Remediation Project – SDG&E’s 6” Line 49-132-G
12 and 8” Line 49-132-H are two high pressure gas distribution pipelines that cross the San Diego
13 Bay in between Seaport Village and Coronado Island. SDG&E standards require a minimum of
14 24” of cover over their pipelines. Recent sonar surveys completed by SDG&E have identified
15 several locations with inadequate cover along sections of each pipeline in the bay. SDG&E
16 plans to remediate the diminishing cover by installing either additional rock and/or revetment
17 mats over the pipelines at specified locations. Forecasted expenditures for this addition in years
18 2022, 2023, and 2024 are \$0, \$1,500,000, and \$0, respectively.

19 **3. Cost Drivers**

20 Work activities within the System Reliability & Safety budget category are driven by
21 regulatory requirements as well as the need to safeguard the safety and integrity of the pipeline
22 system and mitigate risks associated with infrastructure integrity, system reliability, and the
23 safety of employees and the public.

24 The underlying cost driver for this capital work category relates to Company labor,
25 contractor services, third-party services, paving services, and materials such as controls,
26 electronics, valves, pipe, and fittings. In addition, regulator stations are part of SDG&E’s aging
27 infrastructure. Presently 71% of SDG&E’s operating regulator stations are 24 years or older.
28 The average age of a distribution regulator station is 32 years. This aging will translate into
29 increased replacement expense over future years. All or a combination of these construction
30 elements are necessary for performing regulator station improvements.

1 This program mitigates the potential for gas leakage due to the replacement of vintage
 2 threaded steel mains and services. The program mitigates safety risks identified in the 2021
 3 RAMP Report. Accordingly, this budget code in its entirety, aligns with a RAMP activity.

4 Table LPK-50 below provides the RAMP activities, their respective cost forecasts for this
 5 workpaper. For additional details on these RAMP activities, please refer to my workpaper
 6 SDG&E-04-CWP (19565).

7 **TABLE LPK-50**
 8 **RAMP Activities Capital Forecasts by Workpaper**
 9 **In 2021 Dollars (\$000)**

GAS DISTRIBUTION – Underperforming Steel Replacement Program - Threaded (Pre-1934 Vintage) (19565)					
RAMP Activity Capital Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	GRC RSE*
SDG&E- Risk-9 - C8-T1	Underperforming Steel Replacement Program - Threaded (Pre-1934 Vintage)	7,000	7,000	7,000	0.2

10 *Tranche level RSEs and additional details are available in SDG&E-04-CWP.

11 **2. Forecast Method**

12 This forecast is based on the goal of removing approximately 165 miles of early vintage
 13 medium-pressure steel pipelines over a multi-year period, the targeted mileage to be removed
 14 can vary slightly from year-to-year. Based on the annual removal target, the forecasted mileage
 15 is then multiplied by an estimated cost per mile to get the annual forecast.

16 Due to the limited historical data available, a zero-base forecast methodology was
 17 selected. This forecast is based on the 165 miles of pre-1934 and earlier vintage pipe that needs
 18 to be replaced over the life of this program.

19 The projected expenditures for budget code 19565 for 2022, 2023, and 2024 are
 20 \$7,000,000, \$7,000,000, and \$7,000,000, respectively. For additional details refer to
 21 Ex. SDG&E-04-CWP (19565).

22 **3. Cost Drivers**

23 The underlying cost driver for this capital work category relate to increased municipal
 24 requirements, Company labor, contractor services, third-party services, paving services, and

1 materials such as valves, pipe and fittings and asbestos abatement. All or a combination of these
2 construction elements are necessary for pipe replacement.

3 **M. Underperforming Steel Replacement Program – 1934-1965 Vintage (19564)**

4 **TABLE LPK-51**
5 **Underperforming Steel Replacement Program – 1934-1965 Vintage**

GAS DISTRIBUTION (In 2021 \$)				
M. Underperforming Steel Replacement Program (1934-1965 Vintage)	2021 Adjusted-Recorded	Estimated 2022(000s)	Estimated 2023(000s)	Estimated 2024(000s)
1. Underperforming Steel Replacement Program (1934-1965 Vintage)	14,712	3,000	3,000	3,000
Total	14,712	3,000	3,000	3,000

6 **1. Description**

7 This all RAMP Underperforming Steel Replacement Program focuses on the replacement
8 of poor performing steel pipe. In early vintage steel mains, coal-tar asphaltic wrap was used as
9 the first layer of corrosion protection. Over time, this early generation pipe wrap degrades and
10 disbonds from the pipe, causing any cathodic protection current to leave the pipe around the
11 disbonded coating thereby not providing adequate cathodic protection. Ultimately, this lack of
12 corrosion protection will lead to increased leakage. SDG&E anticipates continuing this program
13 while monitoring performance thereby continually reviewing the benefits and risk reduction
14 accomplished. Examples of Early Vintage Steel Replacement indicators include but are not
15 limited to steel pipe leak repairs and incident leak rates, coating type and condition, historical CP
16 protection, population density, pipe diameter, any active reported leak codes in the segment, and
17 CP area performance. This pipe is replaced with state of the art (SOTA) pipe using industry best
18 practices and current regulations. Along with the installation of SOTA pipe, this activity would
19 include safety mitigations such as warning mesh over the pipe and excess flow valves on the
20 services.

21 The program mitigates safety risks identified in the 2021 RAMP Report. Accordingly,
22 this budget code in its entirety, aligns with a RAMP activity.

23 Table LPK-52 below provides the RAMP activities, their respective cost forecasts for this
24 workpaper. For additional details on these RAMP activities, please refer to my workpaper
25 SDG&E-04-CWP (19564).

TABLE LPK-52
RAMP Activities Capital Forecasts by Workpaper
In 2021 Dollars (\$000)

GAS DISTRIBUTION – Underperforming Steel Replacement Program – 1934-1965 Vintage (19564)					
RAMP Activity Capital Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	GRC RSE*
SDG&E-Risk-9 - C08-T2	Underperforming Steel Replacement Program (1934-1965 Vintage)	3,000	3,000	3,000	0.2

*Tranche level RSEs and additional details are available in SDG&E-04-CWP.

2. Forecast Method

SDG&E plans to proactively remove poorly performing early vintage steel pipe. Ultimately, pipe replacement is dependent on monitoring overall pipeline performance for the years 1934-1965. This program proactively prioritizes the replacement of early vintage steel pipe based on monitoring performance thereby continually reviewing the benefits and risk reduction accomplished. Determination of what constitutes poorly performing pipe is dependent on the analysis of the indicators discussed in the description above.

Due to the limited historical data available, a zero-base forecast methodology was selected. Based on the annual removal target, the forecasted mileage is multiplied by an estimated cost per mile to get the annual forecast.

The projected expenditures for underperforming steel replacement for 2022, 2023, and 2024 are \$3,000,000, \$3,000,000, and \$3,000,000 respectively. For additional details refer to Ex. SDG&E-04-CWP (19564).

3. Cost Drivers

The underlying cost drivers for this capital work category relate to municipal requirements, Company labor, contractor services, third-party services, paving services, and materials such as valves, pipe and fittings and asbestos abatement. All or a combination of these construction elements are necessary for pipe replacement.

N. Underperforming Steel Replacement Program – Other Steel (Post 1965 vintage) (514)

TABLE LPK-53
Underperforming Steel Replacement Program – Other Steel (Post 1965 vintage)

GAS DISTRIBUTION (In 2021 \$)				
N. Underperforming Steel Replacement Program – Other (Post-1965 Vintage)	2021 Adjusted-Recorded	Estimated 2022(000s)	Estimated 2023(000s)	Estimated 2024(000s)
1. Underperforming Steel Replacement Program – Other (Post 1965 Vintage)	4,207	3,001	3,001	3,001
Total	4,207	3,001	3,001	3,001

1. Description

This Underperforming Steel Replacement Program is all RAMP. SDG&E currently replaces underperforming steel pipe based on an analysis that prioritizes pipe replacement. The process for selecting pipelines requiring replacement considers various replacement indicators. These indicators include, but are not limited to, steel pipe leak repairs and incident leak rates, coating type and condition, historical CP protection, population density, pipe diameter, any reported active leak codes in the segment, and CP area performance. This pipe is replaced with state of the art (SOTA) pipe using industry best practices and current regulations. Along with the installation of SOTA pipe, this activity would include safety mitigations such as warning mesh over the pipe and excess flow valves on each of the services.

These planned pipeline replacements processed in this manner will therefore result in identifying pipeline replacement candidates in priority order. Pipeline replacements can then be planned, with strong emphasis on removing pipelines with a recurring leak history. Identifying these pipeline replacement candidates, in priority order, will be used in this budget code for replacement funding decisions resulting in removal of the highest priority risks to the public.

The program mitigates safety risks identified in the 2021 RAMP Report. Accordingly, this budget code in its entirety, aligns with a RAMP activity.

Table LPK-54 below provides the RAMP activities, their respective cost forecasts for this workpaper. For additional details on these RAMP activities, please refer to my workpaper SDG&E-04-CWP (514).

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TABLE LPK-54
RAMP Activities Capital Forecasts by Workpaper
In 2021 Dollars (\$000)

GAS DISTRIBUTION – Underperforming Steel Replacement Program - Other (Post-1965 Vintage) (514)					
RAMP Activity Capital Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	GRC RSE*
SDG&E- Risk-9 - C08-T3	Underperforming Steel Replacement Program - Other (Post 1965 Vintage)	3,001	3,001	3,001	1

4 *Tranche level RSEs and additional details are available in SDG&E-04-CWP.

5 **2. Forecast Method**

6 Due to the limited historical data available, a zero-base forecast methodology was
7 selected. The pipeline or pipeline segment replacement candidates in priority order (discussed in
8 the section above) is used to determine an annual removal target. Based on the annual removal
9 target, the forecasted mileage is multiplied by an estimated cost per mile to get the annual
10 forecast.

11 The projected expenditures for underperforming steel replacement for 2022, 2023, and
12 2024 are \$3,001,000, \$3,001,000, and \$3,001,000 respectively. For additional details refer to
13 Ex. SDG&E-04-CWP (514).

14 **3. Cost Drivers**

15 The underlying cost driver for this capital work category relate to municipal
16 requirements, Company labor, contractor services, third-party services, paving services, and
17 materials such as valves, pipe and fittings, and asbestos abatement. All or a combination of these
18 construction elements are necessary for pipe replacement.

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TABLE LPK-56
RAMP Activities Capital Forecasts by Workpaper
In 2021 Dollars (\$000)

GAS DISTRIBUTION – Early Vintage Program (Components) – Dresser Mech Coupling Removal (19566)					
RAMP Activity Capital Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	GRC RSE*
SDG&E-Risk-9 - C09-T2	Early Vintage Program (Components) – Dresser Mech Coupling Removal	2,000	2,000	2,000	1

4 *Tranche level RSEs and additional details are available in SDG&E-04-CWP.

5 **2. Forecast Method**

6 Due to the limited historical data available, a zero-base forecast methodology was
7 developed. This forecast is based on the estimated 85 known Dresser mechanical couplings that
8 need to be removed or encapsulated in the San Diego service territory. Based on the annual
9 removal target, the forecasted number of Dresser mechanical coupling removals is multiplied by
10 an estimated cost per removal to get the annual forecast.

11 Anticipated expenditures for the Dresser mechanical coupling removal effort for the
12 years 2022, 2023, and 2024 are expected to be \$2,000,000, \$2,000,000, and \$2,000,000,
13 respectively. For additional details refer to Ex. SDG&E-04-CWP.

14 **3. Cost Drivers**

15 The underlying cost driver for this capital work category relate to municipal
16 requirements, Company labor, contractor services, third-party services, paving services, and
17 materials such as valves, pipe and fittings and asbestos abatement. All or a combination of these
18 construction elements are necessary for Dresser coupling removals.

1 The program mitigates safety risks identified in the 2021 RAMP Report. Accordingly,
2 this budget code in its entirety, aligns with a RAMP activity.

3 Table LPK-58 below provides the RAMP activities, their respective cost forecasts for this
4 workpaper. For additional details on these RAMP activities, please refer to my workpaper
5 SDG&E-04-CWP (19567).

6 **TABLE LPK-58**
7 **RAMP Activities Capital Forecasts by Workpaper**
8 **In 2021 Dollars (\$000)**

GAS DISTRIBUTION – Early Vintage Program (Components) – Oil Drip Piping Removal RAMP Activity Capital Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	GRC RSE*
SDG&E- Risk-9 - C09-T1	Early Vintage Program (Components) – Oil Drip Piping Removal	1,500	1,500	1,500	10

9 *Tranche level RSEs and additional details are available in SDG&E-04-CWP.

10 **2. Forecast Method**

11 Due to the limited historical data available, a zero-base forecast methodology was
12 selected. It is estimated that approximately 36 oil drip lines and/or associated containers that are
13 no longer necessary will be removed from the system thus improving the safety and reliability of
14 the system as identified in the RAMP Report. Based on the annual removal target, the forecasted
15 number of oil drip removals is multiplied by an estimated cost per removal to get the annual
16 forecast.

17 Anticipated expenditures for the oil drip removal effort for the years 2022, 2023, and
18 2024 are expected to be \$1,500,000, \$1,500,000, and \$1,500,000, respectively. For additional
19 details refer to Ex. SDG&E-04-CWP.

20 **3. Cost Drivers**

21 The underlying cost driver for this capital work category relate to municipal
22 requirements, Company labor, contractor services, third-party services, paving services, and
23 materials such as valves, pipe and fittings and asbestos abatement. All or a combination of these
24 construction elements are necessary for oil drip removals.

Q. Early Vintage Program (Components) – Removal of Closed Valves between High/Medium Pressure Zones (19569)

**TABLE LPK-59
Early Vintage Program (Components) – Removal of Closed Valves between High/Medium Pressure Zones (19569)**

GAS DISTRIBUTION (In 2021 \$)				
Q. Early Vintage Program (Components) – Removal of Closed Valves between High/Medium Pressure Zones	2021 Adjusted-Recorded	Estimated 2022(000s)	Estimated 2023(000s)	Estimated 2024(000s)
1. Early Vintage Program (Components) – Removal of Closed Valves between High/Medium Pressure Zones	893	1,500	1,500	1,500
Total	893	1,500	1,500	1,500

1. Description

This Early Vintage Component Program is all RAMP. SDG&E has identified approximately 35 valves which separate high-pressure from medium-pressure systems. These valves are permanently locked out and tagged out, in the closed position, to serve as a physical barrier between high pressure and medium pressure pipelines. This condition is typically a result of an MAOP uprate of a pipeline which was previously interconnected to a distribution system and operated at a lower MAOP. Simply closing and locking the valve between high-and medium pressure systems is no longer an acceptable practice as there is inherent risk should the valve be operated in error, operated in an act of sabotage, or the valve leaks pressure downstream to the lower MAOP system potentially causing an overpressure condition of the downstream system.

This project will verify valve locations in the field, excavate, and remove the closed and locked valves currently connecting high-pressure piping to medium pressure piping thus improving the safety and reliability of the system.

The program mitigates safety risks identified in the 2021 RAMP Report. Accordingly, this budget code in its entirety, aligns with a RAMP activity.

Table LPK60 below provides the RAMP activities, their respective cost forecasts for this workpaper. For additional details on these RAMP activities, please refer to my workpaper SDG&E-04-CWP (19569).

TABLE LPK-60
RAMP Activities Capital Forecasts by Workpaper
In 2021 Dollars (\$000)

GAS DISTRIBUTION – Early Vintage Program (Components) – Remove Closed Valves between HP/MP Zones (19569)					
RAMP Activity Capital Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	GRC RSE*
SDG&E-Risk-9 - C09-T3	Early Vintage Program (Components) – Remove Closed Valves between HP/MP Zones	1,500	1,500	1,500	1

*Tranche level RSEs and additional details are available in SDG&E-04-CWP.

2. Forecast Method

Due to the limited historical data available, a zero-base forecast methodology was selected. SDG&E has identified approximately 35 valves in the closed position, which separate high-pressure from medium-pressure systems, that need to be removed from the SDG&E service territory. Based on the annual removal target, the forecasted number of valve removals is multiplied by an estimated cost per removal to get the annual forecast. Anticipated expenditures for the removal of Closed Valves between High/Medium Pressure Zone for the years 2022, 2023, and 2024 are \$1,500,000, \$1,500,000, and \$1,500,000, respectively. For additional details refer to Ex. SDG&E-04-CWP.

3. Cost Drivers

The underlying cost driver for this capital work category relates to Company labor, Municipal requirements, contractor services, third-party services, paving services, and materials such as valves, pipe, and fittings. All or a combination of these construction elements are necessary for performing high pressure to medium pressure valve replacements.

1 **R. Piping in Vaults Replacement Program (19568)**

2 **TABLE LPK-61**
3 **Piping in Vaults Replacement Program (19568)**

GAS DISTRIBUTION (In 2021 \$)				
R. Piping in Vaults Replacement Program	2021 Adjusted-Recorded	Estimated 2022(000s)	Estimated 2023(000s)	Estimated 2024(000s)
1. Piping in Vaults Replacement Program	2,925	1,500	1,500	1,500
Total	2,925	1,500	1,500	1,500

4
5 **1. Description**

6 This all RAMP project is for the replacement of piping located in underground vaults.
7 SDG&E has a number of locations where piping and valves are surrounded by a concrete vault to
8 provide access to the valve for emergency operations. Any pipe segment, fitting, or valve
9 exposed within a below grade vault is at risk for accelerated atmospheric corrosion due to the
10 potential for water accumulation, pipe coating failure, and decreased cathodic protection.
11 Decreased CP protection effectiveness occurs as these components within the vault are not
12 protected for buried conditions and are exposed to the atmosphere.

13 This on-going activity follows the review of existing work orders determining the
14 locations of all vaults containing medium and high-pressure facilities. Once a vault with
15 exposed valves and piping is fielded and identified, the valve(s) and piping will be replaced and
16 the vault removed and backfilled so that the new buried facilities will be cathodically protected.
17 There are approximately 350 locations that SDG&E will assess the coating and the condition of
18 the facilities within the vaults and prioritize them for replacement.

19 The program mitigates safety risks identified in the 2021 RAMP Report. Accordingly,
20 this budget code in its entirety, aligns with a RAMP activity.

21 Table LPK-62 below provides the RAMP activities, their respective cost forecasts for this
22 workpaper. For additional details on these RAMP activities, please refer to my workpaper
23 SDG&E-04-CWP (19568).

TABLE LPK-62
RAMP Activities Capital Forecasts by Workpaper
In 2021 Dollars (\$000)

GAS DISTRIBUTION – Piping in Vaults Replacement Program (19568)					
RAMP Activity Capital Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	GRC RSE*
SDG&E- Risk-9 - C03	Piping in Vaults Replacement Program	1,500	1,500	1,500	3

*Tranche level RSEs and additional details are available in SDG&E-04-CWP.

2. Forecast Method

Due to the limited historical data available, a zero-base forecast methodology was developed. Following the review of approximately 1,850 work orders, it was determined that there are approximately 350 locations that SDG&E will assess and prioritize for potential replacement. Based on the annual removal target, the forecasted number of piping in vault project removals is multiplied by an estimated cost per removal to get the annual forecast.

Anticipated expenditures for the Piping in Vaults Replacement Program for the years 2022, 2023, and 2024 are, \$1,500,000, \$1,500,000, and \$1,500,000, respectively. For additional details refer to Ex. SDG&E-04-CWP (19568).

3. Cost Drivers

The underlying cost driver for this capital work category relate to municipal requirements, Company labor, contractor services, third-party services, paving services, and materials such as valves, pipe and fittings and asbestos abatement. All or a combination of these construction elements are necessary for performing piping in vault replacements.

S. Control Center Modernization (CCM) Project (21574)

TABLE LPK-63
Control Center Modernization (CCM) Project (21574)

GAS DISTRIBUTION (In 2021 \$)				
T. Control Center Modernization (CCM) Project	2021 Adjusted-Recorded	Estimated 2022(000s)	Estimated 2023(000s)	Estimated 2024(000s)
1. Control Center Modernization (CCM) Project	0	449	3,235	4,080
Total	0	449	3,235	4,080

1. Description

The Control Center Modernization (CCM) project is an all RAMP mitigation activity. This project will enhance distribution field assets by installing control and real time pressure monitoring capabilities.⁵⁰ Increased operational awareness through the implementation of a centralized data management system and real time monitoring capabilities will help Gas Control personnel to quickly identify abnormal operating pressures within the system and will provide them with remote control functionality to help prevent an overpressure. With the introduction of these new field assets and capabilities, the CCM project will introduce new processes, training, and increase workforce. Additionally, these field assets will be supported by the implementation of new control room, operations technology (OT) system, and network technologies. The new control room technology features will focus on employee safety, security, ergonomics, training, and decision making while the CCM OT functionality will integrate both new and existing OT platforms to provide system-wide viewing of daily health and alarm information from the Company’s new field pipeline technologies. Operators and region personnel will be able to leverage these new systems and data analytics to troubleshoot issues and/or perform proactive mitigations to prevent abnormal operating conditions. The installation and deployment of these CCM field assets and technology will be on-going through 2028. The specific details regarding the CCM project are in the Gas Transmission Operations and Construction testimony of Messrs. Chiapa, Hruby, and Bell (Ex. SCG-06).

⁵⁰ BBB is an ongoing business optimization and continuous improvement initiative at SDG&E, undertaken to support our mission to improve lives and communities by building the cleanest, safest, and most reliable energy infrastructure company in America.

1 This program mitigates safety risks identified in the 2021 RAMP Report. Accordingly,
 2 this budget code in its entirety, aligns with a RAMP activity.

3 Table LPK-64 below provides the RAMP activities, their respective cost forecasts for this
 4 workpaper. For additional details on these RAMP activities, please refer to my workpaper
 5 SDG&E-04-CWP (21574).

6 **TABLE LPK-64**
 7 **RAMP Activities Capital Forecasts by Workpaper**
 8 **In 2021 Dollars (\$000)**

GAS DISTRIBUTION – CCM (21574)					
RAMP Activity Capital Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	GRC RSE*
SDG&E- Risk-9 - C17	CCM Distribution Field Asset Real Time Monitoring and Control Site Installations/Upgrades & New Control Room Technologies	449	3,235	4,080	-

9 *An RSE was not calculated for this activity. Additional details are available in SDG&E-04-
 10 CWP.

11 **2. Forecast Method**

12 The forecast method developed for this cost category is zero based. A zero-base forecast
 13 was used due to insufficient historical costs to adequately reflect the full deployment schedule
 14 from 2022 through 2024. Annual costs were developed using the forecasted number of units to
 15 be installed, replaced, or enhanced each year multiplied by the cost per unit values. This was
 16 done for each of three major components of the project, each of which had a slightly different
 17 goal to achieve for that project component. Forecast cost details for these major components are
 18 described more fully in my workpapers, SDG&E-04-CWP (21574) for additional details on
 19 development of the zero-based costs for these major project components along with resulting
 20 total costs, please refer to the workpapers of Messrs. Chiapa, Bell and Hruby, joint witnesses for
 21 Gas Transmission Operations and Construction (SCG-06-CWP).

1 Anticipated expenditures for the CCM Project in years 2022, 2023, and 2024 are,
 2 \$449,000, \$3,235,000, and \$4,080,000, respectively. For additional details refer to Ex. SDG&E-
 3 04-CWP (21574).

4 **3. Cost Drivers**

5 The underlying cost driver for this capital work category relates to Company labor,
 6 contractor services, third-party services, paving services, and materials such as controls,
 7 electronics, valves, pipe, and fittings. All or a combination of these construction elements are
 8 necessary for the design, development, and deployment of the CCM Modernization Project.

9 **T. Curb Valve Replacement (21575)**

10 **TABLE LPK-65**
 11 **Curb Valve Replacement (21575)**

GAS DISTRIBUTION (In 2021 \$)				
U. Curb Valve Replacement	2021 Adjusted- Recorded	Estimated 2022(000s)	Estimated 2023(000s)	Estimated 2024(000s)
1. Curb Valve Replacement	0	1,000	1,750	1,750
Total	0	1,000	1,750	1,750

12 **1. Description**

13 The all RAMP budget code covers costs associated with Curb Valve Replacements. All
 14 newly installed or replaced service lines with installed meter capacity exceeding 1000 standard
 15 cubic feet per hour (SCFH), must have installed either a manual service line shut-off valve (a
 16 “curb” valve or other manually operated valve) or an excess flow valve (EFV)⁵¹. This mitigation
 17 project will survey the gas system for installed curb valves, prioritize their replacement based on
 18 inaccessibility issues and schedule the replacement of these valves with EFVs.

19 In the past, if a curb valve was chosen, requirements for these manually operated valves
 20 from 49 CFR 192.385, include that they “be located near the service that is safely accessible to
 21 operator personnel or other personnel authorized to manually shut off gas flow to the service
 22 line, if needed.” In addition, if a manual curb valve was chosen to comply with the service line
 23 shut off requirement, 49 CFR 192.385 also requires that it must be “installed in such a way to
 24 allow accessibility during emergencies.” “[they are]..subject to regular scheduled

⁵¹ See 49 CFR § 192.385 – Manual service line shut-off valve installation.

1 maintenance.” If an EFV was chosen as the shut off device, it is buried as near as practical to the
2 service to main connection. The EFV has an advantage over a curb valve (which requires
3 periodic inspection and maintenance) in that it is designed to automatically shut off the service if
4 a high flow is detected (such as that associated with a broken service line).

5 When there is a broken service line incident, based on the location requirements
6 discussed above, the EFV (with automatic response) will protect the majority of the service line
7 to the customer as opposed to the curb valve (requiring manual operation) located closer to the
8 customers property will protect only a smaller portion of the service line. The EFV also does not
9 have the location accessibility constraints that manually operated curb valves have in order to be
10 operated.

11 Prior to the mandate to install EFVs on services, manually operated curb valves were
12 installed on services, for various reasons, to remotely shut off a service line. Some of these
13 valves, accessible from inside a curb valve box, may still be inaccessible due to their location in
14 a parking strip where they could be covered with a parked vehicle, or located within high traffic
15 areas. In addition, these curb valve boxes, which have not required inspection in the past, may
16 have filled with street sand, or have been covered with street paving or sidewalk construction
17 limiting access to the valve.

18 Because EFVs are automated and do not require manual operation, the response time to
19 shut off a curb valve is much longer than the auto-shut off response time of an EFV. In addition,
20 EFVs are not subject to street and sidewalk location inaccessibility issues. This will significantly
21 mitigate risk to the public and the affected customer by decreasing the response time to shut
22 down a customer service, when required, due to damage of the service line from outside forces.

23 This program mitigates safety risks identified in the 2021 RAMP Report. Accordingly,
24 this budget code in its entirety, aligns with a RAMP activity.

25 Table LPK-66 below provides the RAMP activities, their respective cost forecasts for this
26 workpaper. For additional details on these RAMP activities, please refer to my workpaper
27 SDG&E-04-CWP (21575).

TABLE LPK-66
RAMP Activities Capital Forecasts by Workpaper
In 2021 Dollars (\$000)

GAS DISTRIBUTION – Curb Valve Replacements with EFV’s (21575)					
RAMP Activity Capital Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	GRC RSE*
SDG&E- Risk-9 - M03	Replace Curb Valves with EFVs	1,000	1,750	1,750	11

*Tranche level RSEs and additional details are available in SDG&E-04-CWP.

2. Forecast Method

Due to the limited historical data available, a zero-base forecast methodology was developed. Based on the annual removal target, the forecasted number of curb valve replacements is multiplied by an estimated cost per replacement to get the annual forecast.

The forecasted expenditures for this budget code in years 2022, 2023, and 2024 are, \$1,000,000, \$1,750,000, and \$1,750,000, respectively. For additional details refer to Ex. SDG&E-04-CWP.

3. Cost Drivers

The underlying cost driver for this capital work category relate to Company labor, contractor services, third-party services, paving services, and materials such as excess flow valves, pipe, and fittings. All or a combination of these construction elements are necessary for curb valve replacements.

U. CNG Station Upgrades (14553)

TABLE LPK-67
CNG Station Upgrades (14553)

GAS DISTRIBUTION (In 2021 \$)				
V. CNG Station Upgrades	2021 Adjusted- Recorded	Estimated 2022(000s)	Estimated 2023(000s)	Estimated 2024(000s)
1. CNG Station Upgrades	0	137	137	137
Total	0	137	137	137

1. Description

This budget code provides funds for upgrades or installations of company public access CNG stations. SDG&E does not plan to install any new CNG stations but plans to continue the maintenance of existing public access CNG fill stations.

Company owned public access CNG stations serve the existing customer base of CNG vehicles throughout Southern California in the private, business, and industrial sectors. These stations are used by private vehicle owners, the City of San Diego refuse trucks, military base vehicles, University of California San Diego buses, and companies such as Red Bull, Republic Services, and several taxi companies.

2. Forecast Method

Spending in this budget category will consist of small facility capital upgrades needed to maintain the CNG station’s serviceability to the public. The historical average over the years 2017-2021 was analyzed to determine the expenses necessary to provide small facility upgrades. In the historical analysis it was seen that some years had zero spend while other years there could be significant spend. To capture both the spend and zero spend years, a five-year average forecast methodology was selected. The forecasted expenditure in years 2022, 2023, and 2024 is \$137,000, \$137,000, \$137,000 respectively.

3. Cost Drivers

The underlying cost driver for this capital work category relate to Company labor, contractor services, third-party services, and materials such as compressor components, valves, pressure vessels, pipe, and fittings.

V. Local Engineering Pool (902)

**TABLE LPK-68
Local Engineering Pool (902)**

GAS DISTRIBUTION (In 2021 \$)				
W. Local Engineering Pool	2021 Adjusted-Recorded	Estimated 2022(000s)	Estimated 2023(000s)	Estimated 2024(000s)
I. Local Engineering Pool	23,764	22,990	25,112	24,574
Total	23,764	22,990	25,112	24,574

1. Description

The Local Engineering Pool work category provides the labor and non-labor funding for a broad range of services to support Gas Distribution field capital asset construction. This budget code represents the forecasted costs associated with the Gas Distribution Local Engineering Pool. Certain costs are incurred by capital projects that originate from central activities which are subsequently distributed to those capital projects. These central activity costs are also called “pooled” or “indirect” costs. The distribution of these costs is based on a number of factors such as Company labor, contracted services, and applicant installations. The mechanics of the distribution of indirect costs to project direct costs, resulting in total project costs, is addressed by Mr. Paul Malin (Ex. SDG&E-34).

The Local Engineering Pool is composed of three cost categories: technical planning, project management, and engineering activities.

Technical Planning and Project Management – Technical planning refers to all activities that take place in the region technical and project management office in support of capital projects. These support work activities include, but are not limited to, the following:

- Planning the Project – This includes conducting field visits to assess job site requirements; retrieving available drawings for the proposed site to determine construction options; coordination with customers, municipalities, and government agencies; selecting material, job specifications, and method of installation; developing traffic control procedures and obtaining the required permits.
- Producing Project Drawings – This includes completing drawings required to obtain construction permits that are used by SDG&E and contractor field crews for asset installation and documenting the project in SDG&E records. It also includes updating drawing information following project completion necessary for documenting accurate records in SDG&E’s electronic and physical archives.
- Acquiring and Managing Third Party Services – Construction oversight for acquiring third-party services such as paving, steel plates and equipment. This is necessary to provide oversight of third-party services to maintain compliance with Company specifications.
- Estimating Work Order Cost – This includes providing work order cost estimates and cost analysis for each capital project.
- Program Management Office (PMO) – activities which include program strategy, project controls during the project life cycle, regulatory reporting, and Gas Distribution’s finance, budgeting, accounting functions, and analysis and

1 implementation of operational continuous improvement.⁵² PMO activities also
2 include communicating progress to various stakeholders.

3 Engineering Activities – Included in this pool’s expenditures are the activities performed
4 by local engineering personnel to support capital projects. Examples of those activities include
5 but are not limited to, gas network analysis, the review and development of construction designs,
6 pressure control specifications, gas handling plans, identification of regulatory and code
7 requirements, and conduct assessments of construction impacts on the reliability of the gas
8 distribution system.

9 Adequate funding for personnel charging time to the Local Engineering budget code is
10 critical to the execution of capital projects. To prepare a project for field construction, personnel
11 charging this work category initiate, plan, design, and schedule the project for field construction.

12 Once the job is in construction, field management oversees the crews and is responsible
13 for making field decisions that are compliant with Company standards and policies. After the
14 project has been constructed, there is the remaining task of reconciling the construction as-built
15 information, which also involves the personnel charging to this work category. These forecasted
16 capital expenditures support the Company’s goals of promoting sustainability, safety, and
17 reliability of the natural gas system.

18 **a. RAMP Activities**

19 The RAMP activities in this work group which are mitigation measures supporting safety
20 risks are Gas Handling Plans, the GGIS group, and GGIS Growth. These activities are described
21 below:

22 Gas Handling Plans⁵³ – Responding to recommendations from the National
23 Transportation Safety Board (NTSB), SDG&E developed a process called a gas handling plan
24 (GHP) and required a GHP be created as part of the design process for all high-pressure mains
25 and mains operating at or less than 60 psig and services using any fitting larger than a 2” service
26 tee at the service-to-main connection. The GHP is a site-specific document with detailed

⁵² BBB is an ongoing business optimization and continuous improvement initiative at SDG&E, undertaken to support our mission to improve lives and communities by building the cleanest, safest, and most reliable energy infrastructure company in America.

⁵³ A.21-05-011, SDG&E’s 2021 RAMP Report SDG&E-Risk-9 Incident Related to the Medium Pressure System (Excluding Dig-in).

1 procedures and graphical flow depictions describing the step-by-step processes, to “handle” the
2 diversion of gas flow internal to the piping system. The GHP is developed, reviewed, and signed
3 by design, engineering, and construction supervisory personnel. A GHP provided for the
4 applicable gas system pipeline construction projects can reduce the risk of an incident occurring
5 due to a miscommunication or human error.

6 GGIS Records Management – This item, discussed in the 2021 RAMP Report is tied to
7 the CFF- Records management.⁵⁴ The GGIS department in Gas Distribution is key in
8 maintaining compliance, helping with damage prevention, and assisting with fugitive emissions.
9 These activities support SDG&E’s goal of providing resilient, safe, and reliable service to all
10 customers.

11 GGIS Growth – one GIS Technician will be added in the Gas GIS workgroup beginning
12 in 2022 and another in 2023 to support an increase in projects requiring mapping and records
13 work driven by new business activity, pipeline relocations, main extensions, system
14 reinforcement projects, pipeline replacements, main and service maintenance, GO 112-F
15 reporting requirements, and various other operational activities that impact the gas system
16 configuration. GIS is the system of record for Gas Distribution facilities, containing a graphical
17 representation of the facility location and facility attributes.

18 The continued compliance with GO 112-F requires that:

19 At the same time [annually] that copies of reports required by Section 123.1 are
20 submitted, the following information shall be submitted to demonstrate to the
21 Commission and the public and Operator’s efforts towards minimizing the risk
22 from system leaks and failures: ... the amount of time it takes for changes,
23 repairs, or new facilities to be finalized and updated, per the Operator’s
24 procedures, to the Operator’s facilities maps segregated into less than 14 days, 14
25 to 30 days, 30 to 90 days, 90 to 180 days, 180 to 360 days, and more than 360
26 days.⁵⁵

27
28 The addition of GIS Technicians will allow SDG&E to meet the Company’s goal of
29 capturing attributes and mapping the facilities or changes within 180 days. The GIS Technicians
30 capture and catalogue up to 30 attributes into a GIS database for each mapped facility. Examples
31 of recorded attributes include pipe diameter, material, installation year, installation work order,

⁵⁴ See SDG&E’s 2021 RAMP Report, SDG&E-CFF-6 Records Management-M01.

⁵⁵ GO 112-F, Section 123.1

1 maximum allowable operating pressure, leak survey cycles, pressure district number, and
 2 cathodic protection system attributes.

3 Table LPK-69 below provides the RAMP activities, their respective cost forecasts for this
 4 workpaper. For additional details on these RAMP activities, please refer to my workpaper
 5 SDG&E-04-CWP (902).

6 **TABLE LPK-69**
 7 **RAMP Activities Capital Forecasts by Workpaper**
 8 **In 2021 Dollars (\$000)**

GAS DISTRIBUTION – Local Engineering (902)					
RAMP Activity Capital Forecasts by Workpaper (In 2021 \$)					
RAMP ID	Description	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	GRC RSE*
SDG&E- Risk-9 - C13	Human Factors Mitigations - Gas Handling Plans	294	369	445	-
SDG&E-CFF- 6 - New	Gas Geographic Information System (GGIS) Group	1,191	1,191	1,191	-
SDG&E-CFF- 6 - New	GGIS Growth	107	204	194	-

9 *Tranche level RSEs and additional details are available in SDG&E-04-CWP.

10 **2. Forecast Method**

11 Collectively, the level of support activities in the Local Engineering pool can fluctuate
 12 with the level of capital construction activity. Generally, the greater the volume of construction
 13 activity, the larger the support costs. Because of this relationship, a zero-based forecast was
 14 selected by evaluating the Local Engineering pool’s historic capital expenditures with respect to
 15 the total direct expenditure across all Gas Distribution capital budget codes except for the Gas
 16 Meter and Regulators (502) and the Tools and Equipment (506) budget codes. This produced an
 17 annual relationship of the percentage of Local Engineering to total direct capital expenditures.
 18 The five-year (2017 through 2021) average of this historical ratio was then applied to the
 19 forecasted total capital expenditures (less those budget codes discussed above) to determine the
 20 2022, 2023, and TY 2024 forecast for Local Engineering.

1 In addition, the following incremental activities are also included in this forecast for the
2 902 budget code:

3 Night Welding Class – A night welding class will be established to provide preparation
4 instruction as a pre-school for the day welding classes. This portion of the training will charge
5 70% to Capital, the balance to O&M.

6 The incremental funding needed over the base forecast for this upward pressure is
7 \$53,000 for TY 2024.

8 Capital Project Management – Three Project Managers will be added as a result of capital
9 project growth starting in 2022. These positions will provide project control leadership for the
10 planning, development, and implementation of large-scale, major strategic projects and portfolio
11 of projects. Effectively collaborate with internal departments, stakeholders, cross-functional
12 teams, and vendors to define requirements, assess alternatives, and present solutions to business
13 challenges. Will also be responsible for budget and resource planning. The incremental funding
14 needed over the base forecast for this upward pressure is \$375,000 for TY 2024.

15 Capital Construction Growth – Two Field Utility Specialists will be added as a result of
16 capital growth starting in 2022. These positions will provide project planning support, produce
17 project drawings, acquire, and manage third-party services, estimate work order costs, complete
18 conflict checks, conduct field visits, and coordinate with customers, municipalities, and
19 government agencies. An additional vehicle requirement will be added to support these
20 additional positions. This incremental vehicle requirement is included in the Fleet Services
21 Testimony of Mr. Alvarez (Ex. SDG&E-22). The incremental funding needed over the base
22 forecast for this upward pressure is \$180,000 for TY 2024.

23 Construction Management Specialist & Advisor – Two construction advisors will be
24 added as a result of capital growth, one Construction Management Specialist starting in 2022 and
25 one Document Control Advisor starting in 2024. The Construction Management Specialist will
26 specialize in construction management. The Document Control Advisor will specialize in
27 advising on document control. Both positions are needed to assist with the documentation of
28 compliance activities of new construction both in the field and the office. The incremental
29 funding needed over the base forecast for this upward pressure is \$198,000 for TY 2024.

30 Engineering Additions – Three Engineers will be added starting in 2022 as a result of
31 capital growth and in support of SDG&E's gas distribution system sustainability goals. These

1 positions will provide leadership for major or complex engineering and construction projects and
2 studies. They will also provide technical advice, training and guidance to clerical, technical and
3 operating personnel. Additionally, they will drive innovative and creative solutions for business
4 and technical challenges by improving processes, streamlining documentation, and increasing
5 client satisfaction. Two Engineers will support the implementation of 3D M&R facility designs
6 and support CCM monitoring, and control retrofit projects at regulator stations and pressure
7 monitoring sites. One Engineer will support projects on hydrogen blending in natural gas
8 pipeline systems. These positions will charge 90% to Capital, the balance to O&M.

9 The incremental funding needed over the base forecast for this upward pressure is
10 \$344,000 for TY 2024.

11 GGIS Growth – This RAMP incremental add is described in the RAMP Activities
12 Section above. These positions will charge 77% to Capital, the balance to O&M.

13 The incremental funding needed over the base forecast for this upward pressure is
14 \$194,000 for TY 2024.

15 QA/Compliance Field Ops and CP QA Inspectors – One Field Ops QA Inspector will be
16 added starting in 2022 to review the work done by the company Gas Field Operations personnel,
17 determining the effectiveness and adequacy of the processes and procedures used in normal
18 operation and maintenance. One CP QA Technical Specialist will be added starting in 2022 to
19 review the work done by the company System Protection personnel, determining the
20 effectiveness and adequacy of the processes and procedures used in normal operation and
21 maintenance and verify training effectiveness. Additional vehicle requirements will be added to
22 support these additional positions. These incremental vehicle requirements are included in the
23 Fleet Services Testimony of Mr. Alvarez, (Ex. SDG&E-22). The incremental funding needed
24 over the base forecast for this upward pressure is \$117,000 for TY 2024.

25 Certified Crane Operator Training – Certified Crane Operator classes will provide the
26 necessary certification for operations personnel to safely operate company owned equipment.
27 There is no incremental funding needed over the base forecast for this upward pressure in TY
28 2024.

29 The total forecasted expenditures for these incremental additions in years 2022, 2023, and
30 2024 are \$1,134,000, \$1,125,000, and \$1,461,000 respectively.

1 Forecasted Local Engineering base level of expenditures, including embedded RAMP
 2 activities, necessary to support routine capital work in years 2022, 2023, and 2024 are
 3 \$21,856,000, \$23,987,000, and \$23,113,000, respectively.

4 The total forecasted expenditures for (BC 902), including incremental additions, in 2022,
 5 2023, and 2024 are \$22,990,000, \$25,112,000, and \$24,574,000, respectively. For additional
 6 details refer to SDG&E-04-CWP (902).

7 **3. Cost Drivers**

8 As discussed above, collectively, the level of support activities for field capital support
 9 can fluctuate with the level of capital construction activity. Generally, the greater the volume of
 10 construction activity, the larger the support costs. The underlying cost drivers for this capital
 11 budget relate to the necessary capital project support personnel contributing to capital
 12 construction. Given this relationship, the cost drivers impacting construction in other Gas
 13 Distribution budget codes, as described in the capital section in this testimony, will also impact
 14 the Local Engineering pool.

15 **W. Gas Distribution Over Head Pool (905)**

16 **TABLE LPK-70**
 17 **Gas Distribution Overhead Pool (905)**

GAS DISTRIBUTION (In 2021 \$)				
X. Gas Distribution Overhead Pool	2021 Adjusted-Recorded	Estimated 2022(000s)	Estimated 2023(000s)	Estimated 2024(000s)
I. Gas Distribution Overhead Pool	8,097	5,342	5,695	5,893
Total	8,097	5,342	5,695	5,893

18 **1. Description**

19 This budget provides funding for Department Overheads. Costs included in this budget
 20 are for supervision and administration of crews in the SDG&E Construction and Operation
 21 (C&O) districts. Department Overhead is charged for expenses that are not attributable to one
 22 project, but benefit many projects, or the C&O districts. Construction managers, construction
 23 supervisors, dispatchers, operations assistants, and other clerical C&O employees charge this
 24 account. Construction field employees charge this account when meeting on multiple projects.
 25 The non-labor piece consists of administrative expenses such as: office supplies, telephone

1 expenses, mileage, employee uniforms, and professional dues. This pool includes the costs that
2 will be allocated to distribution gas capital activities. These capital overhead pool forecast values
3 are referenced in the testimony of Mr. Malin (Ex. SDG&E-34, under budget code 905). Typical
4 activities included in this account are:

- 5 • Management and supervision of construction personnel; and
- 6 • Scheduling, material ordering, and dispatching for construction personnel.

7 Additional details regarding the Department Overhead Pool (905) budget can be found in
8 the capital workpapers. See SDG&E-04-CWP at section 00905 – Department Overhead Pool.

9 **2. Forecast Method**

10 Collectively, the level of funding for department overheads can fluctuate with the level of
11 capital construction activity. Generally, the greater the volume of construction activity, the
12 larger the support costs. Because of this relationship, a zero-based forecast was selected by
13 evaluating the Department Overhead Pool historic capital expenditures with respect to the total
14 direct expenditure across all applicable Gas Distribution capital budget codes. This produced an
15 annual relationship of the percentage of Department Overhead to total direct capital
16 expenditures. The five-year (2017 through 2021) average of this historical ratio was then applied
17 to the forecasted applicable capital expenditures to determine the 2022, 2023, and TY 2024
18 forecast for Department Overheads.

19 The resulting zero-based base forecast for the Department Overhead Pool for 2022, 2023,
20 and 2024 are \$5,251,000, \$5,404,000, and \$5,517,000, respectively.

21 In addition to the base OH pool forecast, incremental additions were added to the base
22 forecast amounts. These incremental additions are described below:

23 Instructional Additions – Two Senior Welding Instructors will be added to meet
24 increased O&M and capital demands on welding, welding training, and welding inspection.
25 These positions will also help promote training competencies. These positions will charge 75%
26 of their time to Capital. An additional vehicle requirement will be added to support these
27 additional positions. This incremental vehicle requirement is included in the Fleet Services
28 Testimony of Mr. Alvarez (Ex. SDG&E-22). Forecasted expenditures for this incremental
29 addition in years 2022, 2023, and 2024 are \$91,000, \$178,000 and \$173,000 respectively.

30 Technical Advisors – One Operator Qualification Compliance Advisor to provide
31 necessary span of control oversight due to the growth in the number of Company and contract

1 employees requiring compliance with Operator Qualification. In addition, one NDE Program
2 Supervisor to mitigate any compliance issues directly pertaining to the Company's NDE
3 Program. These positions will charge 90% of their time to Capital. An additional vehicle
4 requirement will be added to support these additional positions. This incremental vehicle
5 requirement is included in the Fleet Services Testimony of Mr. Alvarez (Ex. SDG&E-22).
6 Forecasted expenditures for this incremental addition in years 2022, 2023, and 2024 are \$0,
7 \$113,000, and \$203,000 respectively.

8 The total forecasted expenditures for these incremental additions in years 2022, 2023, and
9 2024 are \$91,000, \$291,000, and \$376,000 respectively.

10 The total forecasted expenditures for (BC 905), including incremental additions, in 2022,
11 2023, and 2024 are \$5,342,000, \$5,695,000, and \$5,893,000, respectively. For additional details
12 refer to SDG&E-04-CWP.

13 3. Cost Drivers

14 As discussed above, collectively, the level of support activities for field capital support
15 can fluctuate with the level of capital construction activity. Generally, the greater the volume of
16 construction activity, the larger the support costs. The underlying cost drivers for this capital
17 budget relate to the necessary capital project support personnel contributing to capital
18 construction. Given this relationship, the cost drivers impacting construction in other Gas
19 Distribution budget codes, as described in the capital section in this testimony, will also impact
20 the Gas Distribution Overhead pool.

1 capital budget codes. This produced an annual relationship of the percentage of Contract
2 Administration to total direct capital expenditures. The five-year (2017 through 2021) average
3 of this historical ratio was then applied to the forecasted total capital expenditures (less those
4 budget codes discussed above) to determine the 2022, 2023, and TY 2024 forecast for Contract
5 Administration Pool.

6 The resulting base forecasts for the Contract Administration Pool for 2022, 2023, and
7 2024 are \$6,466,000, \$6,803,000, and \$6,254,000, respectively

8 In addition to the base Contract Administration pool forecast, an incremental addition
9 was added to the base forecast described below:

10 Capital Construction Growth – Incremental expenses are required for three Field
11 Construction Advisors to be added starting in 2024. These advisors will work with contractors to
12 develop fixed price bids, approve contractor invoices, oversees contractor work, and verify that
13 work is completed and complies with Company standards. An additional vehicle requirement
14 will be added to support these additional positions. This incremental vehicle requirement is
15 included in the Fleet Services Testimony of Mr. Alvarez, (Ex. SDG&E-22). Forecasted
16 expenditures for this incremental addition in years 2022, 2023, and TY 2024 are \$0, \$0, and
17 \$330,000 respectively.

18 Forecasted Contract Administration pool base level of expenditures, necessary to support
19 routine capital work in years 2022, 2023, and 2024 are \$6,466,000, \$6,803,000, and
20 \$6,254,000, respectively.

21 The total forecasted expenditures for (BC 906), including incremental additions, in 2022,
22 2023, and 2024 are \$6,466,000, \$6,803,000, and \$6,584,000 respectively. For additional details
23 refer to Ex. SDG&E-04-CWP.

24 **3. Cost Drivers**

25 As discussed above, collectively, the level of support activities for field capital support
26 can fluctuate with the level of capital construction activity. Generally, the greater the volume of
27 construction activity, the larger the support costs. The underlying cost drivers for this capital
28 budget relate to the necessary capital project support personnel contributing to capital
29 construction. Given this relationship, the cost drivers impacting construction in other Gas
30 Distribution budget codes, as described in the capital section in this testimony, will also impact
31 the Contract Administration Overhead pool.

1 **Y. Gas Ops Tool Tracker SAP Enhancement (920G)**

2 **1. Description**

3 In order to safely maintain gas carrying pipe, fittings, and components, SDGE tracks,
4 repairs, and calibrates tooling used to detect gas and gas leaks, measure gas pressure, determine
5 cathodic protection on underground steel piping, and perform plastic pipe joining. In order to
6 maintain this tooling so that it is functioning within manufacturer specified parameters, tooling
7 information needs to be housed in a system that will store all pertinent tool information including
8 automated features that provide a notification when tooling requires maintenance and calibration.
9 An SAP Tool Tracker system will be needed to efficiently track calibrated tools and maintain
10 compliance.

11 Capital costs for the forecast years 2022, 2023, and 2024 for IT projects that support, Gas
12 Distribution, are sponsored by Mr. Exon (Ex. SDGE-25, Ch. 2). The purpose of this section of
13 my testimony is to describe the business rationale for these projects. Refer to Mr. Exon’s
14 workpapers (Ex. SDGE-25-CWP) for cost details.

15 **VI. MOBILE HOME PROJECT – REASONABLENESS REVIEW**

16 **Capital and O&M Mobilehome Park Utility Upgrade (MHP) Program through 2021**

17 **TABLE LPK-72**

MHP Program (2021 \$)	Gas Costs Incurred for MHP Projects Completed through 2021 (000s)	Electric Costs Incurred for MHP Projects Completed through 2021 (000s)	Total (000s)
Capital	93.0	99.2	192.2
O&M	1.7	1.8	3.5
Total	94.8	101.0	195.8

18 The purpose of this section of my testimony is to establish the reasonableness of \$195.8
19 million (\$192.2 million in capital expenditures and \$3.5 million in O&M expenditures) incurred
20 during the period January 2017 through December 2021 in executing the Mobilehome Park
21 Utility Upgrade Program (MHP Program). These costs were incurred for activities related to the
22 conversion of MHP Program projects through 2021 pursuant to the MHP Pilot Program Decision
23 (D.) 14-03-021 (“MHP Decision”). Pursuant to D.14-03021, these costs are presented in

1 SDG&E’s General Rate Case (GRC) for reasonableness. These costs are reasonable and
2 justified in that:

- 3 • The activities are consistent with the Commission’s approved MHP Decision and
4 tariffs, applicable codes and standards established by local, state, and federal
5 authorities and SDG&E’s standards;
- 6 • The activities enhance the safety and reliability of MHP communities;
- 7 • The activities are conducted by qualified employees and contractors; and
- 8 • The activities support SDG&E’s commitment to enhance public safety and system
9 reliability.

10 **A. Introduction**

11 **1. Summary of the MHP Utility Upgrade Program**

12 My testimony (1) describes the activities and reasonableness of costs recorded by
13 SDG&E in executing the MHP Program as directed by the Commission in D.14-03-021 (MHP
14 Decision), and (2) in accordance with Ordering Paragraph (OP) 8 of the MHP Decision, submits
15 as reasonable the costs reported in SDG&E’s 2022 MHP Utility Upgrade Program Report.⁵⁶
16 Reasonableness review of costs is limited to recorded costs and excludes any program cost
17 forecasts.

18 As of December 31, 2021, SDG&E converted 54 MHPs, which is approximately 19% of
19 the eligible mobilehome spaces within SDG&E’s service territory. The 54 MHPs represent a
20 combined total of 6,578 permitted spaces.

21 **B. Procedural Background**

22 Rulemaking (R.) 11-02-018 was commenced to “examine what the Commission can and
23 should do to encourage the replacement by direct utility service of the master-meter / submeter
24 systems that supply electricity, natural gas, or both to mobile home parks and manufactured
25 housing communities located within the franchise areas of investor owned electric and/or gas
26 corporations.”⁵⁷ The rulemaking “grapple[d] with issues that have proven intractable for

⁵⁶ See SDG&E Mobilehome Utility Upgrade Program, February 1, 2022, Report, appended hereto as Appendix C.

⁵⁷ R.11-02-018, Decision Granting Petition in Part and Instituting Rulemaking into Issues Concerning Transfer of Electric and Natural Gas Master-Metered Service at Mobilehome Parks and Manufactured Housing Communities to Direct Service by Electric and/or Natural Gas Corporations (February 25, 2011), at 1.

1 decades”⁵⁸ and, “[a]fter three years of review,”⁵⁹ the Commission ordered SDG&E and other
2 investor owned utilities to execute the MHP Program.

3 The MHP Program was ordered to be a three-year pilot program (2015-2017) to convert
4 master-metered/sub-metered natural gas and/or electric services to direct utility services for
5 approximately ten percent (10%) of spaces in MHPs and manufactured housing communities
6 (collectively, MHPs) in SDG&E’s service territory. The focus of the conversions is primarily on
7 safety and secondarily on system reliability/capacity.⁶⁰

8 On September 28, 2017, Resolution E-4878 authorized the investor-owned utilities
9 (“IOUs”) to continue their MHP Pilot Programs through December 31, 2019 (“Pilot Program
10 Extension). SDG&E was authorized to complete the initial 10% scope of eligible spaces and
11 convert up to an additional 5% of eligible spaces, bringing the total scope of the three-year Pilot
12 Program and Pilot Program Extension to 15% of eligible MHP spaces.

13 On March 18, 2019, the Commission issued Resolution E-4958, authorizing SDG&E to
14 continue its Program for eligible MHPs until the earlier of either December 31, 2021, or the
15 issuance of a Commission Decision for the continuation, expansion, or modification of the
16 program beyond December 31, 2021, in Rulemaking (R.) 18-04-018. Eligible MHPs were
17 defined as those where SDG&E and/or MHP owners had incurred “financial obligations” on or
18 before November 1, 2018. Resolution E-4958 further determined the number of spaces
19 converted in each of years 2020 and 2021 may not exceed 3.33% of the total master-metered
20 spaces in a utility’s service territory, excluding MHPs that are already under conversion or
21 scheduled for conversion. It further clarified that if a single MHP upgrade would result in the
22 utility exceeding the 3.33% maximum requirement, the utility is authorized to proceed with that
23 upgrade.

24 On April 16, 2020, the Commission issued D.20-04-004, approving a ten-year
25 Mobilehome Park Utility Conversion Program beginning in 2021 through 2030. Following a
26 new application period established by the Commission during the 1st quarter of 2020, the

⁵⁸ D.14-03-021 at 3-6. The Commission also discussed efforts commenced in the 1990s to encourage California MHPs with master-metered service to convert to direct utility service, noting that over a period of 17 years little more than two dozen conversions occurred.

⁵⁹ *Id.* at 2.

⁶⁰ *Id.* at 3.

1 Commission will provide SDG&E, on an annual basis, with a list of MHPs comprising
2 approximately 3.33% of eligible master-metered spaces within its service territory for a target
3 50% conversion by the end of 2030. This Decision also recommends a second evaluation of the
4 MHP utility conversion program in 2025 following the first four-year application cycle (2021-
5 2024) to decide whether to continue or modify the program.

6 On December 23, 2020, the Commission issued a Phase 2 Scoping Memo to further
7 examine ways to protect residents of participating MHPs from unreasonable rent increase or
8 eviction and determine whether the development of an electrification ready service standard for
9 participating MHPs was feasible. On August 20, 2021, the Commission issued D.21-08-025,
10 which adopted consumer protection requirements to keep residents of MHPs that participate in
11 the Commission’s MHP Program from experiencing unreasonable rent increases or evictions
12 based on infrastructure improvements funded through the Program. Pursuant to D.21-08-025,
13 SDG&E submitted Advice Letter (AL) 3859-E/3020-G on October 4, 2021, to: (1) update each
14 utility’s Sample Forms - Contracts, Mobilehome Park Utility Conversion Program (Program)
15 Agreement (Form 189-1000) to include consumer protection measures for residents of
16 mobilehome parks participating in the Program: and (2) include a description of the specific
17 information that participating MHP owners are to provide to residents, as well as a discussion of
18 methods the mobilehome park owners may use to communicate these protections to their
19 residents. AL 3859-E/3020-G was approved by the Commission as of October 25, 2021.

20 The MHP Decision ordered those conversions must be completed on a “to the meter”
21 (TTM) and “beyond the meter” (BTM) basis.⁶¹

22 Regarding cost recovery for this Commission -mandated safety and reliability program,
23 the Commission stated:

24 Utilities will be authorized to fully recover the reasonably incurred, actual costs of
25 the conversion program in distribution rates. Reasonable incremental expenses
26 for program development and administration, not otherwise recovered in rates,
27 should be entered as incurred for annual recovery in the utility’s pilot program
28 balancing account. Reasonable expenditures for actual construction costs should
29 be entered as incurred and recovered in the year following cut over to direct utility
30 service. “To the meter” construction costs will be capitalized at the utility’s then-
31 current authorized rate of return on rate base, based on actual (not forecast)
32 expenditures. “Beyond the meter” construction costs also will be capitalized

⁶¹ *Id.* at 75 (OP 2).

1 based on actual (not forecast) expenditures but, consistent with their status as a
2 regulatory asset, will be amortized over ten years at the utility’s then-current
3 authorized return on rate base.⁶²

4 The Commission made provisions for program oversight: annual reports that include
5 specific information are required to be filed in the first quarter of every year, and the
6 reasonableness of program costs are to be reviewed by the Commission in an after-the-fact
7 reasonableness review. Specifically, the Commission ordered:

8 Each electric and/or gas corporation is authorized to fully recover in distribution
9 rates the costs of the conversion program approved in Ordering Paragraph 2,
10 subject to reasonableness review. The following ratemaking is approved: actual,
11 prudently incurred program costs shall be entered in a balancing account for
12 recovery in the first year following cut over of service; “to the meter”
13 construction costs must be capitalized based on actual (not forecast) expenditures
14 at the utility’s then-current authorized return on rate base; “beyond the meter”
15 construction costs must be capitalized based on actual (not forecast) expenditures
16 and consistent with their status as a regulatory asset, these costs must be
17 amortized over ten years at a rate equivalent to the utility’s then-current
18 authorized return on rate base. Review for reasonableness of “to the meter” costs
19 will occur in the general rate case where those costs are put into rate base.
20 Review for reasonableness of “beyond the meter” costs will occur in the first
21 general rate case after service cut over.⁶³

22 **1. Safety Culture**

23 In D.14-03-021, the Commission states:

24 This rulemaking grapples with issues that have proven intractable for decades.
25 Central to them all is how to ensure the safe, reliable and fairly-priced delivery of
26 electricity, natural gas, or both, to the residents of mobilehome parks and
27 manufactured housing communities (collectively, MHPs) located within the
28 franchise areas of electric and/or natural gas corporations, those Commission-
29 regulated entities commonly referred to as public utilities.⁶⁴

30 SDG&E’s longstanding commitment to safety focuses on three primary areas – (1)
31 employee/contractor safety, (2) customer/public safety, and (3) the safety of the gas delivery
32 system.

33 Based on the results to date, the Commission-approved MHP Program has been
34 successful in enhancing the safety and reliability of the delivery of natural gas and electricity to

⁶² *Id.* at 3.

⁶³ *Id.* at 77 (OP 8).

⁶⁴ *Id.* at 3-4.

1 the residents of mobilehome parks and manufactured housing communities that have participated
2 in the MHP Program. The MHP Program has been an effective means for significantly
3 increasing the number of conversions to direct utility service. Moreover, the program team
4 establishes a safety policy that achieves the Program’s safety objectives and is consistent with
5 SDG&E’s safety-first foundation. From 2014 through 2019, SDG&E maintained a high safety
6 standard with no reportable incidents over approximately 430,000 hours of labor logged between
7 contractors and MHP program employees combined. In 2020, SDG&E continued to maintain a
8 high safety standard with one reportable contractor first-aid incident over approximately 81,000
9 hours. In 2021, SDG&E was incident free over approximately 74,000 hours of labor for
10 contractors and MHP program employees combined.

11 **2. Standard of Review and Other Commission Guidance**

12 This section of my testimony summarizes the applicable standard of review and other
13 applicable Commission guidance.

14 **a. Preponderance of the Evidence Standard**

15 The standard of proof to be applied by the Commission in an after-the-fact
16 reasonableness review is preponderance of the evidence.⁶⁵ Preponderance of the evidence is
17 defined “in terms of probability of truth, *e.g.*, ‘such evidence as, when weighed with that
18 opposed to it, has more convincing force and the greater probability of truth.’”⁶⁶ In other words,
19 SDG&E “must present more evidence that supports the requested result than would support an
20 alternative outcome.”⁶⁷

21 **b. Reasonable Manager Standard**

22 To assess the reasonableness of incurred costs, the Commission applies the reasonable
23 manager standard.⁶⁸ To meet this standard, “[t]he act of the utility should comport with what a
24 reasonable manager of sufficient education, training, experience and skills using the tools and

⁶⁵ A. 14-12-016, Assigned Commissioner and Administrative Law Judges’ Scoping Memo and Ruling, filed April 1, 2015, at 5; *see also* D.14-06-007 at 13.

⁶⁶ D.14-06-007 at 13 (citing Witkin, *Calif. Evidence*, 4th Edition, Vol. 1, 184).

⁶⁷ *Id.*

⁶⁸ A.14-12-016, Assigned Commissioner and Administrative Law Judges’ Scoping Memo and Ruling, filed April 1, 2015, at 5-6.

1 knowledge at his disposal would do when faced with a need to make a decision and act.”⁶⁹ As
2 explained by the Commission, “reasonable and prudent acts do not require perfect foresight or
3 optimum outcomes, but may fall within a spectrum of possible acts consistent with utility needs,
4 ratepayer interests, and regulatory requirements.”⁷⁰ Under this standard, the Commission holds
5 utilities to “a standard of reasonableness based upon the facts that are known or should be known
6 at the time.”⁷¹ In so doing, the Commission looks to the decision-making process and
7 information available to the manager to assess whether the course of action was within the
8 “bounds of reasonableness, even if it turns out not to have led to the best possible outcome.”⁷²
9 As explained by the Commission, this is to “avoid the application of hindsight in reviewing the
10 reasonableness of a utility decision.”⁷³

11 In the case of the MHP Pilot Program, the Commission recognized that “the physical
12 conditions at MHP master-meter / submeter systems will vary greatly, depending upon age, type
13 of materials used in prior construction, existing MHP design, terrain and other factors,”⁷⁴ and
14 thus “numerous uncertainties”⁷⁵ existed before the MHP Pilot Program commenced and will
15 remain true for the duration of the MHP Program.

16 **C. Program Organization and Governance Controls**

17 **1. Master Meter Balancing Account (MMBA) and Nature of Recorded** 18 **Costs**

19 The MMBA was authorized through Advice Letter 2601-E/2292-G on June 25, 2014.
20 SDG&E records to the MMBA “To The Meter” (TTM) costs, which include costs for utility and
21 contracted labor, purchased services and materials, and trenching and paving. Utility labor costs
22 include civil construction, setting meters, gas and electric service turn-on, purging of gas legacy
23 systems, removal of master meters, and the procurement and warehousing of materials. TTM

⁶⁹ D.90-09-088 at 23.

⁷⁰ D.97-08-055 at 109.

⁷¹ D.90-09-088 at 22 (citing D.88-03-036 at 5).

⁷² D.89-02-074 at 267 (Conclusion of Law 3).

⁷³ D.90-09-088 at 22.

⁷⁴ D.14-03-021 at 49.

⁷⁵ *Id.*

1 costs also include MHP Program management costs, which are inclusive of: Program Outreach,
2 such as primary customer contact and coordination before, during, and after construction
3 activities in accordance with the Commission-reviewed statewide Outreach Plan; Program
4 Construction Management, which includes construction management (CM) and planning; and
5 Program Management Office (PMO) activities which include program strategy, project controls
6 during the project life cycle, regulatory reporting, and the MHP Program’s finance, budgeting,
7 and accounting functions. PMO activities also include communicating progress to various
8 stakeholders.

9 SDG&E also records to the MMBA “Beyond The Meter” (BTM) costs, which include
10 work related to the connection of new utility services from the utility meter to the mobile home.
11 BTM work is performed by contractors selected by the MHP owners/operators.⁷⁶ As such, BTM
12 costs are not directly managed or under the control of SDG&E.

13 The regulatory accounting treatment of costs recorded to the MMBA is discussed in the
14 Regulatory Accounts testimony of Mr. Kupfersmid (Ex. SDG&E-43).

15 **2. Program Management**

16 SDG&E’s MHP Pilot Program management team implemented a series of tools and
17 controls to enable early identification of risks and issues which could negatively impact scope,
18 schedule, or cost. These practices include the below.

19 **a. Experienced Management Staff**

20 To implement the MHP Pilot Program, SDG&E formed an organization led by
21 management personnel experienced in each of the core competencies required by the MHP Pilot
22 Program (*i.e.*, Program Outreach, Planning and Construction, PMO Governance, and Finance).
23 Initially, certain roles, including the Program Directors, PMO Manager, Governance Manager,
24 and Finance Manager, were shared across SDG&E’s and Southern California Gas Company’s
25 (SoCalGas) MHP Pilot Programs.

26 The responsibilities of each workstream in the MHP Pilot Program organization were
27 briefly described as follows:

- 28 • Customer Outreach and MHP Account Management – The SDG&E
29 Outreach team is responsible for outreach and education to impacted

⁷⁶ *Id.* at 47 (Construction).

1 communities, MHPs, and residents before, during, and after execution of
2 the program and individual projects. To promote efficient and
3 streamlined project execution, the Outreach team works closely with the
4 Planning and Construction Management (CM) team to assess and resolve
5 project risks and issues. Additionally, the Account Management
6 executives work closely with MHP Owners/Operators to implement
7 project-driven outreach and education plans compliant with the statewide
8 MHP Utility Upgrade Program Outreach and Education Plan.

- 9 • Planning and CM – The SDG&E Planning and Construction team
10 manages the design through construction components of the MHP utility
11 upgrades.
- 12 • Planning – The Planning team assesses each individual project and
13 designs the new gas and electric distribution systems per SDG&E
14 standards.
- 15 • CM – The CM team consists of project managers and Field Construction
16 Advisors responsible for reviewing and assessing TTM work performed
17 in the MHPs. The construction management team manages the schedule,
18 scope, and budget of each individual project. While the construction
19 management team does not manage the BTM construction work
20 performed by MHP owner/operator selected contractors, it reviews the
21 scope and costs of BTM bids. This team also coordinates with the BTM
22 contractor to ensure that the interconnection with the SDG&E meters is
23 consistent with utility standards.
- 24 • PMO – The PMO defines and maintains standards of project management
25 and compliance within the MHP Pilot Program.
 - 26 o Governance – As part of the PMO, the Governance team is responsible for
27 establishing and implementing program controls and processes needed to
28 execute the MHP Pilot Program. This includes risk management, issue
29 management, schedule management, change management, monitoring of
30 key performance indicators (KPIs), project reporting, and business process
31 design.
 - 32 o Finance – The Finance team, also part of the PMO, is responsible for
33 establishing and implementing cost and budget controls to confirm
34 accurate cost tracking. Activities include cost accounting and invoice
35 processing, change management, budgeting, and financial reporting.

1 Since approval of the ten-year program, the organizational structure has been separated
2 between SDG&E and SoCalGas and the costs are therefore no longer shared. The current
3 organizational structure represents the maturity of the program and ongoing management needs.

4 **b. MHP Program’s Ongoing Efforts to Minimize Project**
5 **Execution Costs**

6 The procurement of services (construction contractors, field construction advisors, etc.) is
7 the largest individual category of MHP Program expenditures. Approximately 58% of MHP
8 Program costs are for purchased services and materials. As such, an important aspect of the
9 prudent execution of the MHP Program is sourcing and retaining capable contractors and
10 vendors at reasonable rates. In an effort to control program costs through pre-negotiated rates,
11 SDG&E conducts a competitive solicitation for to-the-meter construction activities within its
12 service territory to identify and select qualified and licensed construction contractors.
13 Contractors known to perform the type of work needed for MHP projects are selected by an
14 experienced team of construction management and sourcing employees.

- 15 • Partnerships/Cost Saving/Trench Splitting – When allowed due to service
16 territory overlap, SDG&E works with SoCalGas or willing
17 Communication Infrastructure Providers (CIPs) to share the costs for
18 relevant MHP conversion costs, such as trenching costs, which enables
19 utilities to share the civil construction costs.
- 20 • Project Monitoring – SDG&E’s MHP Gas Capital Construction team
21 oversees to-the-meter construction activities to confirm that work is safely
22 performed in accordance with project scope, schedule, and budget. Each
23 project is assigned a project manager responsible for reviewing and
24 assessing the activities of the TTM contractor. At the onset of each
25 project, the project manager and program advisor hold a pre-construction
26 meeting with the selected TTM and BTM contractors to review project
27 details, reporting, safety, and other deliverables. Frequent monitoring is
28 performed by the contract administrator and changes, issues, or questions
29 that arise are timely addressed.
- 30 • Estimation – SDG&E tracks the costs of construction for each project
31 through internal Work Order Authorizations (WOAs) which are used to
32 track actual costs against the original estimate of total project costs. Costs
33 in excess of estimates require further review and approval through
34 reauthorizations.

- 1 • Invoice Validation – Each invoice for TTM or BTM work is reviewed by
2 the program’s Finance group and Construction Project Managers to
3 validate that work has been completed in accordance with contractual
4 agreements at the negotiated rates and within authorized limits.

- 5 • Project Close-Out/Quality Assurance – SDG&E performs reconciliation
6 and quality assurance following completion of every project to affirm
7 that: (1) records in support of both program and project compliance are
8 reviewed; (2) oversight was provided for project decisions and/or
9 associated changes that occurred; (3) documents are stored in centralized
10 repositories for proper records management; and (4) when final costs have
11 been recorded, total project financial records are reviewed for validity and
12 compared against estimates.

- 13 • Diverse Business Enterprises (DBE) – The MHP Pilot Program supports
14 SDG&E’s commitments consistent with GO 156 through inclusion of
15 DBE participation as a KPI of the program. During the TTM construction
16 contractor competitive solicitation process, expanding opportunities to
17 DBE contractors was a consideration in the evaluation of contractors. The
18 Project is performing at an approximate 44% DBE level.

- 19 • Program Monitoring – SDG&E produces periodic financial and schedule
20 reporting for its management teams to allow continuous oversight over
21 the program, to monitor project progress, and enable early identification
22 of risks and issues impacting schedule and costs.

- 23 • Policies and Procedures – SDG&E established a Program Governance
24 Plan (PGP) to document the MHP Program’s guidelines and core
25 processes and to facilitate uniformity of repeatable processes. The PGP
26 and supporting documentation are periodically modified and updated to
27 reflect lessons learned through MHP Program activities. In addition, the
28 PGP documents major decisions, including alternatives contemplated, that
29 affect program activities.

- 30 • Clarity of Engagement Scope – SDG&E strives to maintain clearly
31 defined program goals with contributing and impacted program
32 stakeholders by working closely with MHP owners/operators through
33 focused outreach efforts to clarify MHP Program components and the
34 commitments required to reduce the risk of ambiguity in covered and
35 non-covered costs. Through outreach efforts, SDG&E works with MHP
36 owners/operators to seek multiple bids for BTM activities, thereby
37 promoting cost awareness and competition. SDG&E also provides
38 workshops to BTM contractors to promote awareness of the program,
39 including its components and goals, and engages BTM contractors

1 throughout the planning processes, including inviting participation in
2 MHP site walks to more accurately estimate scope, schedule, and budget.

- 3 • Communication and Guidance – SDG&E fosters open channels of
4 communication with external program stakeholders, including the
5 Commission’s Safety and Enforcement Division (SED), the California
6 Department of Housing and Community Development (HCD), and other
7 local and state entities to promote awareness of the program, share
8 observations and findings, seek guidance, and provide information to
9 better coordinate activities such as inspections.

- 10 • Zero Incident Safety Record – Safety is a primary driver of the SDG&E
11 MHP Program and one of its KPIs. The program team consulted with
12 SDG&E’s Gas Capital Construction team and Safety Advisor, as well as
13 other Major Projects teams, to establish a safety policy that achieves the
14 program’s safety objectives and is consistent with SDG&Es’ safety-first
15 foundation. Additionally, SDG&E continues to work with SED to review
16 projects, as requested. To date, all MHP Program projects have been
17 executed with a zero-incident safety record for both internal employees
18 and contractor crews. SDG&E’s annual safety statistics are summarized
19 in Table LPK-73 below.

20 **Table LPK-73**
21 **SDG&E Company SDG&E MHP Utility Upgrade Program Safety Statistics**

INCIDENT TYPE	2017	2018	2019	2020	2021	2022
Lost Time Injury (LTI)	0	0	0	0	0	0
OSHA-Recordable	0	0	0	0	0	0

- 22
23 • Continuous Improvement – Consistent with SDG&E’s ongoing
24 commitment to continuous improvement, SDG&E continually evaluates
25 and implements improvements to its MHP Program processes. Though
26 not exhaustive, the following are examples of continuous improvements
27 applied through program implementation:
 - 28 o Organizational changes to improve planning and estimation at the onset of
29 individual projects; Organizational changes to support sufficient regional
30 coverage and address workload and geographical spread;
 - 31 o Improving cost controls through adoption and improvement of unit-based
32 tasking with TTM contractors and bid and bid-review templates for BTM
33 contractors;

- 1 o Introduction and adaptation of change management and close-out
2 processes;
- 3 o Working closely with each MHP owner/operator to adapt the Outreach
4 and Education Plan to best suit their needs and minimize project issues;
- 5 o Regularly cadenced joint meetings with partner utilities to discuss project
6 schedules, risks, and issues; and
- 7 o Development of multiple MHP owner/operator funding options for BTM
8 costs (*i.e.*, payment assignment) to further encourage participation.

9 Through continuous efforts to improve existing processes and the implementation of each
10 of these changes, the efficiency and cost effectiveness of future MHP Program projects are also
11 improved.

12 **3. Preliminary Cost Summary**

13 As directed by the MHP Decision, on February 1, 2022, SDG&E filed its seventh Annual
14 MHP Utility Upgrade Program Report,⁷⁷ which summarizes the MHP Program’s preliminary
15 findings and includes: (1) a program timeline and progress towards that timeline, and (2) a
16 preliminary quantification of construction costs recorded per space, with TTM and BTM costs of
17 conversions incurred through December 31, 2021, identified separately. These costs are
18 summarized in Table LPK-74 below.

⁷⁷ See SDG&E MHP Utility Upgrade Program Annual Report, February 2, 2022, included herein as Appendix C; also see D.14-03-021 at 78 (OP 10). Appendix C is a public redacted version. Redacted confidential information is not related to costs in the GRC request.

1
2

**Table LPK-74
SDG&E Company MHP Conversion Preliminary Costs through 12/31/2021**

SDG&E Preliminary Costs to 12/31/2021			
TTM			
Contractor Costs	Gas	Electric	Total
Civil / Trenching	50,309,959	36,140,183	86,450,142
Gas/Electric System			
Labor			
Materials/Structures	3,400,463	4,395,515	7,795,977
Program Management Costs (PMC)			
PMO	4,579,738	4,741,778	9,321,516
Outreach	899,129	943,997	1,843,126
CM	8,208,405	8,943,531	17,151,936
Other TTM Costs			
Labor	223,166	168,022	391,188
Non-Labor	7,920,438	12,542,382	20,462,820
Property Taxes	385,592	475,488	861,079
AFUDC	1,192,584	1,732,679	2,925,263
Subtotal TTM Costs	77,119,473	70,083,575	147,203,048

3

BTM Contractor Costs			
Civil / Trenching	907,473	289,284	1,190,757
Gas/Electric System			
Labor	8,678,523	10,975,174	19,653,697
Materials/Structures	3,254,293	8,508,282	11,762,574
Other	6,356,627	9,588,745	15,945,373
Subtotal BTM Costs	19,190,916	29,361,485	48,552,407

4

Total (Preliminary Costs) to 12/31/2021	96,310,389	99,445,060	195,755,449
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5

Table LPK-74 details preliminary costs for each of the following categories:

6

- TTM Contractor Costs, which include trenching and paving.

7

- Other TTM Costs – This includes the costs of Company labor in support of the program, including TTM work for selected MHPs, setting meters and turning on

8

1 gas and electric service, purging the legacy system, removal of the master meter,
2 and the procurement and warehousing of materials.

- 3 • Beyond-the-Meter Contractor Costs, which are costs reimbursed to the MHP
4 owner/operator to perform BTM construction work. BTM contractors are
5 selected by the MHP owner/operator.
- 6 • Program Management Costs (PMC), which are comprised of:
 - 7 o PMO Costs, which include overall Program Management (*e.g.*, Program
8 strategy, risk management, change management, schedule management)
9 and the Program's Finance functions;
 - 10 o CM Costs, which include: construction project management; preliminary
11 planning and full design activities; planners and designers who perform
12 work for multiple parks; Project Managers, Construction Contractor
13 Administration staff, and other support personnel who also perform work
14 at multiple construction sites; and
 - 15 o Outreach activities, which include primary customer and stakeholder
16 contact and coordination before, during and after construction, consistent
17 with the Commission-approved statewide Outreach Plan.

18 PMC are tracked separately from TTM costs and BTM contractor costs and allocated to
19 each MHP as part of the project close-out process based on the number of spaces converted.

20 The above costs are fully loaded and include Company Overheads consisting of Payroll
21 Tax, Incentive Compensation Plan, Pension and Benefits, Worker's Compensation, Vacation and
22 Sick, Personal Liability and Property Damage Overhead, Purchasing, Warehouse, Shop
23 Overhead, Small Tools, and Administrative and General capital. The overheads applied to the
24 Program are driven by incremental costs incurred as a result of implementing the MHP Pilot
25 Program.

26 Please see Appendix C for additional information regarding recorded MHP Program
27 costs.

28 The observed preliminary average per-space costs for the period ending December 31,
29 2021, are summarized in Table LPK-75. The Average Cost Per Space is impacted by a variety
30 of issues, including but not limited to cultural and environmental impacts, hard digging and
31 material price fluctuation.

Table LPK-75
SDG&E Company MHP Utility Upgrade Preliminary Average Per-Space Cost as of
December 31, 2021

SDG&E	Average Cost Per Space (GAS)	Average Cost Per Space (ELECTRIC)	Overall Average Cost Per Space	Spaces Converted Gas	Spaces Converted Electric
TTM	\$11,631	\$10,136	\$21,498	6,788	6,914
BTM	\$3,002	\$4,397	\$7,399	6,393	6,677
Total Average Cost Per Space	\$14,363	\$14,534	\$28,897		

D. Conclusion

This section of my testimony demonstrates that the \$195.8 million in costs recorded by SDG&E from January 1, 2017, through December 31, 2021, in the ongoing execution of the MHP Program have been reasonably incurred. These costs directly support achievement of the Commission’s stated objective to convert higher risk master-meter/submeter systems that supply natural gas to MHPs or manufactured housing communities to enhance the safety and reliability of MHP communities.⁷⁸

In accordance with the reasonable manager standard, SDG&E designed and executed the MHP Program to enhance the safety and reliability of utility service to the many MHP communities that have participated in the MHP Program while maintaining reasonable conversion costs through prudent planning and oversight.

VII. CONCLUSION

SDG&E requests the Commission adopt its TY 2024 forecast of \$41,843,000 for Gas Distribution O&M expenses. This increase is driven by increased agency regulations and requirements, economic conditions, system expansion, infrastructure renewal, field technical skills training and qualification, risk mitigation activities, and integration and support of new tools.

SDG&E further requests the Commission adopt its capital forecast of \$132,585,000, \$135,392,000, and \$122,799,000, in 2022, 2023, and 2024, respectively and IT projects

⁷⁸ D.14-03-021 at 75 (OP 3).

1 presented in this testimony. The primary factors influencing the capital forecast are anticipated
2 increases in new business-related activity and pipeline system renewal work.

3 These forecast expenditures support Gas Distribution's fundamental philosophy of
4 maintaining operational excellence while providing safe, reliable delivery of gas energy at a
5 reasonable cost to customers. The Commission should find this request reasonable in that:

- 6 • The activities maintain and enhance the delivery of sustainable, safe, and reliable
7 service that SDG&E has been providing customers for many years;
- 8 • The activities are consistent with laws, operational codes and standards
9 established by local, state, and federal legislators and agencies;
- 10 • The activities respond to operations, maintenance, and construction needs
11 associated with projected customer and system growth and demands of cities,
12 counties, and state agencies under the Company's franchise agreements; and
- 13 • The forecast amounts are reasonable in light of historical spending and anticipated
14 work increases.

15 SDG&E faces several challenges affecting both the physical operation of the pipeline
16 system and cost management aspects of its business. Operations and maintenance requirements
17 increase as the system expands; additional maintenance and replacement work is required to
18 continue to maintain reliability of an aging infrastructure; agencies and regulatory bodies
19 continue to impose operating conditions that increase the cost of doing business; and with this all
20 employees must be trained and ready to respond. The forecast presented in this testimony
21 reflects SDG&E's best judgment of work and the associated costs required to:

- 22 • Operate and maintain its gas distribution system in a manner that safeguards the
23 safety of the public and employees.
- 24 • Construct new gas distribution facilities in accordance with the Company's
25 obligation to serve and to maintain system reliability.
- 26 • Replace existing facilities that are experiencing deterioration to safeguard
27 infrastructure integrity and public safety.
- 28 • Respond to customer and governmental agency requests to remain in compliance.

29 Accordingly, SDG&E's TY 2024 forecast is a reasonable estimate of future requirements
30 and should be adopted by the Commission.

31 This concludes my prepared direct testimony.

1 **VIII. WITNESS QUALIFICATIONS**

2 My name is L. Patrick Kinsella. My business address is 8335 Century Park Court, San
3 Diego, California, 92123. I am employed by SDG&E as Director, Gas Operations. I have been
4 employed by SDG&E since 1982. I have 40 years of experience in the utility industry. While at
5 SDG&E, I have held various staff and line positions in the functional areas of Gas Distribution,
6 Electric Regional Operations, and Mobile Home Park Upgrade Program.

7 My present responsibilities include providing leadership to a team of professionals
8 responsible for the safe and reliable delivery of natural gas energy through the distribution
9 pipeline network, including the operation, maintenance, installation, and replacement of the gas
10 distribution system at SDG&E. I also provide leadership for a group that provides technical
11 support for gas distribution project management and construction activities. This includes gas
12 distribution planning and system design; emergency preparedness, response, and recovery; the
13 preparation and management of O&M and capital budgets; and implementing large-scale
14 distribution integrity projects.

15 I earned a Bachelor of Science Degree in 2015 from University of Phoenix, San Diego. I
16 sponsor the TY 2024 GRC testimony for SDG&E's Gas Distribution O&M expenses and capital
17 spending plan.

18 I have not previously testified before the Commission.

APPENDIX A
Glossary of Terms

APPENDIX A
Glossary of Terms

Acronym	Definition
BC	Budget Code
C&O	Construction and Operations
Caltrans	California Department of Transportation
CBT	Computer terminal based training
CFF	Cross-Functional Factor
C.F.R.	Code of Federal Regulations
CIAC	Contributions In Aid of Construction
CMP	Corrective Maintenance Program
CNG	Compressed Natural Gas
CO	Collectible
CP	Cathodic protection
CPUC	California Public Utilities Commission
DIMP	Distribution Integrity Management Program
DOT	Department of Transportation
EFV	Excess Flow Valve
EPC	Electronic Pressure Corrector
EPM	Electronic pressure monitors
Ex	Exhibit
FUS	Field Utility Specialist
GGIS	Gas Graphical Information Systems
GHP	Gas Handling Plan
GIS	Geographic Information System
GO	General Order
GRC	General Rate Case
ICS	Incident Command System
L&M	Locate and Mark
LPCMA	Litigated Project Costs Memorandum Account
M&R	Measurement and Regulation
MAOP	Maximum allowable operating pressure
MDT	Mobile Device Terminal
MHP	Mobilehome Park Utility Upgrade Program
MSA	Meter set assembly
NC	Non-Collectible
NDE	Non-Destructive Examination
NGV	Natural Gas Vehicle
NRF	National Response Framework
NTSB	National Transportation Safety Board
O&M	Operations and Maintenance
OpQual	Operator Qualification

Acronym	Definition
PHMSA	Pipeline and Hazardous Materials Safety Administration
PMC	Planned Meter Changeouts
PPE	Personal Protective Equipment
psi	Pounds per square inch
PSMS	Pipeline Safety Management System
QA	Quality Assurance
QC	Quality Control
RAMP	Risk Assessment Mitigation Phase
RMU	Remote Monitoring Unit
SB	Senate Bill
SCFH	Standard Cubic Feet per Hour
SDG&E	San Diego Gas & Electric Company
SED	Safety and Enforcement Division
SME	Subject matter expert
SMYS	Specified Minimum Yield Strength
SoCalGas	Southern California Gas Company
TY	Test Year
USA	Underground Service Alert

APPENDIX B

RAMP Risk Chapter and Activity to Workpaper Matrix

**APPENDIX B
RAMP Risk Chapter and Activity to Workpaper Matrix**

**TABLE LPK-76
RAMP Risk Chapter and Activity to O&M Work Paper Matrix**

GAS DISTRIBUTION						
RAMP Activity O&M Forecasts by Workpaper (In 2021 \$)						
Workpaper	RAMP ID	Description	BY2021 Embedded Base Costs (000s)	TY2024 Estimated Total (000s)	TY2024 Estimated Incremental (000s)	GRC RSE
1GD001.000	SDG&E- Risk-9 - C07	Pipeline Monitoring (Leak Mitigation, Bridge & Span, Unstable Earth, and Pipeline Patrol	2,067	2,067	0	-
1GD002.000	SDG&E- Risk-7 - C03	Locate & Mark Activities (MP)	6,538	9,436	2,898	7
1GD002.000	SDG&E- Risk-7 - C04	Locate & Mark Activities (HP)	185	268	83	482
1GD002.000	SDG&E- Risk-7 - C09	Locate & Mark Quality Assurance	393	393	0	2
1GD003.000	SDG&E- Risk-9 - C06	Leak Repair – Main Portion	956	1,158	202	-
1GD003.000	SDG&E- Risk-9 - C11	Gas Distribution Emergency Department - Main Portion	1,230	1,734	504	-
1GD004.000	SDG&E- Risk-9 - C06	Leak Repair – Service Portion	1,561	1,622	61	-
1GD004.000	SDG&E- Risk-9 - C11	Gas Distribution Emergency Department - Service Portion	820	1,155	335	-
1GD005.000	SDG&E- Risk-8 - C10	Personal Protective Equipment	441	441	0	-
1GD007.000	SDG&E- Risk-9 - C04	Regulator Station, Valve,	4,028	3,987	-41	-

GAS DISTRIBUTION						
RAMP Activity O&M Forecasts by Workpaper (In 2021 \$)						
Workpaper	RAMP ID	Description	BY2021 Embedded Base Costs (000s)	TY2024 Estimated Total (000s)	TY2024 Estimated Incremental (000s)	GRC RSE
		and Large Meter Set Inspection				
1GD007.000	SDG&E- Risk-9 - C17	Control Center Modernization	0	480	480	-
1GD008.000	SDG&E- Risk-9 - C01	Cathodic Protection - O&M	2,049	1,834	-215	-
1GD009.000	SDG&E- CFF-1 - 1	AIM (Gov, Strat, AIP)	0	110	110	-
1GD009.000	SDG&E- CFF-6 - New 02	Gas Geographic Information System	591	591	0	-
1GD009.000	SDG&E- CFF-6 - New 03	Gas Geographic Information System	0	58	58	-
1GD010.000	SDG&E- Risk-7 - C01	Locate & Mark Training Groupings	746	746	0	-
1GD010.000	SDG&E- Risk-9 - C14	Human Factors Mitigations - Ops Qual Training	1,661	1,661	0	0.5
1GD010.000	SDG&E- Risk-9 - C15	Human Factors Mitigation - QA/QC Program	300	300	0	-
Total			23,566	28,041	4,475	

TABLE LPK-77
RAMP Risk Chapter and Activity to Capital Work Paper Matrix

GAS DISTRIBUTION						
RAMP Activity Capital Forecasts by Workpaper (In 2021 \$)						
Workpaper	RAMP ID	Description	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	GRC RSE
005000.003	SDG&E- Risk-9 - C19	Field and Public Safety	569	569	569	0.3
005010.003	SDG&E- Risk-3 - M04	Adobe Falls Relocation Project	2,192	1,891	0	-
005010.004	SDG&E- Risk-9 - M04 (New)	RAMP Incremental: MSAs inside Bldgings and Alcoves	1,400	1,400	0	-
005060.002	SDG&E- Risk-7 - C13	Locating Equipment	225	225	225	181
005060.003	SDG&E- Risk-9 - C14	Human Factor Mitigations - OpQual Training & Cert	440	440	440	0.5
005070.001	SDG&E- Risk-9 - C10	Code Compliance Mitigation	2,662	2,662	2,662	1
005080.001	SDG&E- Risk-9 - C06	Leak Repair (Capital)	11,935	12,973	14,010	-
005090.001	SDG&E- Risk-9 - C02	Cathodic Protection Program - Capital	4,493	4,493	4,493	-
005100.001	SDG&E- Risk-9 - C05	Reg Station Replacement Program	1,956	1,956	1,956	-
005140.001	SDG&E- Risk-9 - C08- T3	Underperforming Steel Replacement Program - Other Steel (Post-1965 Vintage)	3,001	3,001	3,001	1
125510.001	SDG&E- Risk-9 - C12	Cathodic Protection System Enhancements	1,996	1,996	1,996	-
125510.002	SDG&E- Risk-9 - M2	Cathodic Protection System Enhancements – Real Time Monitoring	225	0	0	0
195640.001	SDG&E- Risk-9 - C08- T2	Underperforming Steel Replacement Program (1934-1965 Vintage)	3,000	3,000	3,000	0.2

GAS DISTRIBUTION						
RAMP Activity Capital Forecasts by Workpaper (In 2021 \$)						
Workpaper	RAMP ID	Description	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	GRC RSE
195650.001	SDG&E- Risk-9 - C8- T1	Underperforming Steel Replacement Program – Threaded (Pre-1934 Vintage)	7,000	7,000	7,000	0.2
195660.001	SDG&E- Risk-9 - C09- T2	Early Vintage Program (Components) – Dresser Mech Coupling Removal	2,000	2,000	2,000	1
195670.001	SDG&E- Risk-9 - C09- T1	Early Vintage Program (Components) – Oil Drip Piping Removal	1,500	1,500	1,500	10
195680.001	SDG&E- Risk-9 - C03	Piping in Vaults Replacement Program	1,500	1,500	1,500	3
195690.001	SDG&E- Risk-9 - C09- T3	Early Vintage Program (Components) – Remove Closed Valves b/w HP/MP Zones	1,500	1,500	1,500	1
215740.001	SDG&E- Risk-9 - C17	CCM Distribution Field Asset Real Time Monitoring and Control Site Installations/Upgrades & New Control Room Technologies	449	3,235	4,080	-
215750.001	SDG&E- Risk-9 - M03	Replace Curb Valves with EFVs	1,000	1,750	1,750	11
G09020.002	SDG&E- Risk-9 - C13	Human Factors Mitigations - Gas Handling Plans	294	369	445	-
G09020.003	SDG&E- CFF-6 - New	RAMP: SDG&E- CFF-6, New: Gas Geographic Information System Group	1,191	1,191	1,191	-
G09020.009	SDG&E- CFF-6 - New	GGIS Growth	107	204	194	-

GAS DISTRIBUTION						
RAMP Activity Capital Forecasts by Workpaper (In 2021 \$)						
Workpaper	RAMP ID	Description	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	GRC RSE
Total			50,635	54,855	53,512	

APPENDIX C

2021 Mobilehome Park Utility Upgrade Program Report

APPENDIX C
2021 Mobilehome Park Utility Upgrade Program Report

On February 1, 2022, in accordance with Ordering Paragraph 10 of the Decision, SDG&E filed its Annual Report, which summarizes the MHP Program’s preliminary quantification of construction costs incurred per space identified separated by To-the-Meter (TTM) and Beyond-the-Meter (BTM) costs for mobilehome park (MHP) conversions through December 31, 2021.¹

¹ The SDG&E Mobilehome Park Utility Conversion Program Annual Report (February 1, 2022), and served in accordance with D. 14-03-021 Ordering Paragraph 10, is a public redacted version. Redacted confidential information is not related to costs in this GRC request.



**Mobilehome Park Utility Conversion Program
Annual Report**

PUBLIC VERSION

February 1, 2022

SDG&E MOBILEHOME PARK UTILITY CONVERSION PROGRAM

FEBRUARY 1, 2022 ANNUAL REPORT

TABLE OF CONTENTS

Page	
1.	Executive Summary 2
2.	Procedural History 2
3.	Cost Accounting 4
4.	Program Timeline 9
5.	Program Assessment 11
6.	Conclusion 12

SDG&E MOBILEHOME PARK UTILITY CONVERSION PROGRAM

FEBRUARY 1, 2022 ANNUAL REPORT

1. Executive Summary

As detailed in this Report, San Diego Gas and Electric (“SDG&E”) continues to successfully implement the extended Mobilehome Park (“MHP”) Pilot Program. As of December 31, 2021, SDG&E has converted¹ 54 mobilehome parks (6,578 permitted spaces), which is 19% of the eligible mobilehome spaces within SDG&E’s service territory.

2. Procedural History

On March 13, 2014, the California Public Utilities Commission (“Commission”) approved and authorized San Diego Gas and Electric Company (“SDG&E”) to execute the MHP Utility Conversion Program (“Program”) through Decision (D.) 14-03-021 (“Decision”). The Program was initiated as a three-year pilot (2015-2017) (“Pilot Program”) to convert master-metered/sub-metered natural gas and/or electric services to direct utility services for qualified mobilehome parks and manufactured housing communities (collectively “MHPs”). On September 28, 2017, Resolution E-4878 authorized the investor-owned utilities (“IOUs”) to continue their MHP Pilot Programs through December 31, 2019 (“Pilot Program Extension”).² SDG&E was authorized to complete the initial 10% scope of eligible spaces and convert up to an additional 5% of eligible spaces, bringing the total scope of the three-year Pilot Program and Pilot Program Extension to 15% of eligible MHP spaces.

On March 18, 2019, the Commission issued Resolution E-4958, authorizing SDG&E to continue its Program for eligible MHPs until the earlier of either December 31, 2021 or the issuance of a Commission Decision for the continuation, expansion or modification of the program beyond December 31, 2021 in Rulemaking (R.) 18-04-018.³ Eligible MHPs were defined as those where SDG&E and/or MHP owners had incurred “financial obligations” on or before November 1, 2018. Resolution E-4958 further determined the number of spaces converted in each of years 2020 and 2021 may not exceed 3.33% of the total master-metered spaces in a utility’s service territory, excluding MHPs that are already under conversion or scheduled for conversion. It further clarified that if a single MHP upgrade would result in the utility exceeding the 3.33% maximum requirement, the utility is authorized to proceed with that upgrade.

¹ “Converted” MHPs are those where System Cutover has occurred and the Master Meter has been removed.

² Resolution E-4878, ordering paragraph (OP) 7.

³ Resolution E-4958, OP 1.

On April 16, 2020, the Commission issued Decision 20-04-004, approving a ten-year Mobilehome Park Utility Conversion Program from 2021 through 2030. Following a new application period established by the Commission during the 1st quarter of 2020, SED is to provide SDG&E, on an annual basis, with a list of MHPs comprising approximately 3.33% of eligible master-metered spaces within its service territory for a target 50% conversion by the end of 2030. This Decision also recommends a second evaluation of the MHP utility conversion program in 2025 following the first four-year application cycle (2021-2024) to decide whether to continue or modify the program.

On December 23, 2020, the Commission issued a Phase 2 Scoping Memo to further examine ways to protect residents of participating MHPs from unreasonable rent increase or eviction, based on program participation, and determine whether the development of an electrification ready service standard for participating MHPs was appropriate or feasible. On August 20, 2021, the Commission issued D.21-08-025, which adopted consumer protection requirements to keep residents of MHPs that participate in the Commission's MHP Program from experiencing unreasonable rent increases or evictions based on infrastructure improvements funded through the Program. Pursuant to D.21-08-025, SDG&E submitted Advice Letter (AL) 3859-E/3020-G on October 4, 2021, to: 1) update each utility's Sample Forms - Contracts, Mobilehome Park Utility Conversion Program (Program) Agreement (Form 189-1000) to include consumer protection measures for residents of mobilehome parks participating in the Program; and 2) include a description of the specific information that participating MHP owners are to provide to residents, as well as a discussion of methods the mobilehome park owners may use to communicate these protections to their residents. AL 3859-E/3020-G was approved by the Commission as of October 25, 2021.

This report is submitted in the format requested by the Commission's Safety and Enforcement Division ("SED").⁴ Previous reports were submitted in accordance with D.14-03-021OP 10, which directs each electric and/or gas utility to prepare a status report for the Program on February 1 of each year. SDG&E filed status reports on February 1 of 2016, 2017, 2018, 2019, 2020, and 2021. In SDG&E's February 1, 2016 report, SDG&E provided a timeline for implementation of the three-year Pilot Program, its status on the timeline, the number of initial applications received, information on the MHPs that would be converted, and the number of spaces to be converted. SDG&E also provided an update on progress made against the timeline for implementation, as well as a preliminary cost assessment and/or cost accounting of to-the-meter ("TTM") and beyond-the-meter ("BTM") construction costs in its February 1, 2017, February 1, 2018, February 1, 2019, February 1, 2020, and February 1, 2021 reports. This report

⁴ The request was made in a December 21, 2018 e-mail from Fred Hanes of the CPUC's SED to the official service list for R.18-04-018.

includes information on the following: (1) a cost accounting for both TTM and BTM construction, and (2) an optional narrative assessment of the Program.

3. Cost Accounting

Table 1 below (“Annual Report Template”) reflects the space counts, costs, revenue requirements, and rate impacts of projects through December 31, 2021 for which final costs have been recorded.⁵ Classification of costs within each category are defined within the table, which was provided by SED to the IOUs. These costs should be considered final, with the notation that there may be additional trailing costs.⁶ Table 2 below shows the associated revenue requirements and rate impacts.

TABLE 1: ANNUAL REPORT TEMPLATE

- Bolded words in "Descriptor" column were added by SDG&E to clarify the reported data.
- All dollar amounts in Table 1 are rounded to the nearest dollar.
- Per the SED instructions accompanying the template, Table 1 costs have been grouped by project and included in the year in which financial closure for each project was completed, with financial closure defined as when all costs have been recorded for a project. Using this methodology has resulted in a shift in reporting year for certain projects where there have been unforeseen issues requiring remediation or trailing costs within the allowable threshold in a year different than previously reported as the year of financial closure.

Annual Report Template		Per-year costs; (not cumulative)						
	Descriptor	2015	2016	2017	2018	2019	2020	2021
Program Participation								
CARE/FERA enrollment	Number of individuals enrolled in CARE/FERA after the conversion; the data provided is not final as a process for capturing all CARE enrollments is still in development	-	-	255	1,374	689	455	544
Medical Baseline	Number of individuals enrolled in Medical Baseline after the conversion; the data provided is not final as a process for capturing all MB enrollments is still in development	-	-	20	129	116	64	43

⁵ Per SED’s email, as well as the instructions applicable to the Supplemental Cost Data template sent on November 13, 2018, the template captures projects for which final costs have been recorded. Trailing costs may follow, but they are not expected to exceed approximately 5% of a project’s total cost.

⁶ “Trailing costs” may include, but are not limited to, final contractor invoices or internal cost allocations that have not been recorded; such costs are not expected to be more than approximately 5% of the total project cost.

Disadvantaged Community	Number of converted spaces (i.e., PTO count, not directly corresponding with the costs below) within geographic zones defined by SB 535 map.	-	-	-	-	-	-	-
Rural Community	Number of converted spaces (i.e., PTO count, not directly corresponding with the costs below) within rural community	-	-	-	-	-	-	-
Urban Community	Number of converted spaces (i.e., PTO count, not directly corresponding with the costs below) within urban community	-	-	397	2,725	0	1,010	1,181
Leak Survey (Optional)	Number of Leaks identified during preconstruction activity (if known)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Completed Spaces	Spaces converted that correspond to the project costs reported below (TTM includes common areas). If a project incurs costs over multiple years, report all project costs and spaces converted in the year the project closes.							
Number of TTM MH and Covered Common Area Locations Converted (Gas)		-	-	183	-	2,845	750	3,010
Number of TTM MH and Covered Common Area Locations Converted (Electric)		-	-	187	-	2,893	986	2,848
Number of BTM MH Converted Register Spaces (Gas)		-	-	180	-	2605	734	2,874
Number of BTM MH Converted Register Spaces (Electric)		-	-	180	-	2801	946	2,750
Cost Information								
To The Meter - Capital Costs								
Construction Direct Costs								
Civil/Trenching	To the Meter Construction costs for civil related activities (e.g., trench/cut excavation & backfill [joint trench], paving [temp & final], and distribution system installation - including contractor labor and materials)							
Electric		-	-	787,030	0	13,699,385	5,531,451	16,122,318
Gas		-	-	1,153,053	0	20,543,778	5,581,843	23,031,284
Gas System								

Labor	Cost for installation of distribution Gas assets, pre-inspection testing, decommissioning of legacy system (Gas Design cost was previously incorporated here) (Specific to SDG&E, no gas design costs were previously incorporated in this line item)	-	-	-	0	-	-	-
Material / Structures	Pipes, fittings and other necessary materials required for gas construction	-	-	56,502	0	1,087,792	289,745	970,092
Electric System								
Labor	Cost for installation of distribution Electric assets, pre-inspection testing, decommissioning of legacy system (Electric Design cost was previously incorporated here) (Specific to SDG&E, no gas design costs were previously incorporated in this line item)	-	-	-	0	-	-	-
Material / Structures	Cables, conduits, poles, transformers and other necessary materials for electrical construction	-	-	120,459	0	1,376,521	424,151	1,153,664
Design/Construction Management	Cost for engineering, design and construction inspection cost	-	-	619,570	0	9,469,196	2,018,263	4,956,764
Other								
Labor (Internal)	Meter installation, gas relights, easements, environmental desktop reviews and other support organizations, including legacy system decommissioning internal labor	-	-	3,883	0	80,226	14,281	221,998
Other Labor (Internal)		-	-	-	0	-	-	-
Non-Labor	Permits, vehicle utilization, consultant support (e.g., environmental monitoring)	-	-	55,909	0	1,298,345	116,627	612,504
Materials	meters, modules and regulators	-	-	63,206	0	1,067,990	254,056	931,798
Program - Capital Costs	Costs that are inconsistent among the other IOUs, driven by utility specific business models or cost accounting practices. These costs should be separated out so that others do not compare costs that are not comparable with others.							
Project Management Costs								

Project Management Office (PMO)	Program management office costs (Project Management, Program Management, schedulers, cost analysts and field engineers)	-	-	222,033	0	4,012,454	1,318,691	2,813,051
Outreach		-	-	-	0	-	-	-
Other								
Property Tax	Property tax on capital spending not yet put into service	-	-	13,438	0	359,016	110,158	378,467
AFUDC	AFUDC is a mechanism in which the utility is allowed to recover the financing cost of its construction activities. AFUDC starts when the first dollar is recorded on the project and ends when HCD complete the first inspection so that the new assets are in use by the residents.	-	-	32,754	0	1,082,953	243,024	1,566,532
Labor (Internal)		-	-	-	0	-	-	-
Non-Labor	Utility specific overhead driven by corporate cost model	-	-	575,576	0	7,374,105	3,541,361	6,335,422
Sub-Total Capital Cost		-	-	3,703,414	0	61,451,761	19,443,651	59,093,895
To The Meter - Expense Costs								
Project Management Costs								
Project Management Office (PMO)	Program startup cost, program management activities associated with Outreach or other non-capital activities	-	-	19,212	0	300,471	324,565	311,039
Outreach	Outreach efforts to educate MHP Owners, residents, government and local agencies about the program	-	-	61,681	0	958,721	339,256	483,468
Other								
Labor (Internal)	Program startup cost for supporting organizations, meter removal	-	-	-	0	32,438	3,677	34,685
Other Labor (Internal)	Construction management expenses costs (e.g., training, supplies)	-	-	5,077	0	74,457	3,548	5,061
Non-Labor	Cancelled Project Costs from MHPs that have failed to complete the MHP agreement or have cancelled the project, vehicle utilization, and overheads associated with meter removal	-	-	12,731	0	353,020	65,886	121,334
Sub-Total To The Meter		-	-	98,701	0	1,719,106	736,933	955,586

Beyond The Meter - Capital	Pass through cost where the MHP Owner is responsible for overseeing the vendor's work and IOU to reimburse per D.14-02-021							
Civil/Trenching	All civil labor for BTM construction, such as landscaping (does not include trenching work)	-	-	34,810	0	1,081,236	35,996	38,715
Electric System								
Labor	Labor and material for installing BTM Electric infrastructure (e.g. Pedestal, foundation, meter protection, grounding rods, conduit)	-	-	463,588	0	5,137,733	2,513,892	2,859,961
Material / Structures		-	-	245,442	0	4,205,085	1,820,104	2,237,651
Gas System								
Labor	Labor and material for installing BTM Gas infrastructure (e.g. houselines, meter protection, foundation)	-	-	324,953	0	4,713,546	1,554,274	2,085,751
Material / Structures		-	-	83,822	0	1,575,335	694,480	900,656
Other								
Other Labor (Internal)		-	-	-	-	-	-	-
Other Non Labor	BTM Permits, including HCD fees	-	-	135,988	0	3,749,990	322,522	11,736,873
Sub-Total Beyond The Meter		-	-	1,288,602	0	20,462,925	6,941,267	19,859,607
Total TTM & BTM		-	-	5,090,717	0	83,633,791	27,121,852	79,909,089

TABLE 2: RATE IMPACT AND REVENUE REQUIREMENT

- Rate impact and revenue requirements are reported based on actual revenue requirement filings for 2015-2022 (i.e., not based on year of financial closure); 2023-2027 revenue requirements and rate impacts are forecasted based on actual filings (i.e., not forecasted program costs).
- Regulatory interest is applicable to the entire Master Meter Balancing Account (MMBA) balance which includes both TTM and BTM costs. Since the MMBA does not include subaccounts to separate the TTM and BTM balances, regulatory interest for these components of the MMBA is not available. For purposes of this response, regulatory interest is included in the “Gas Revenue Requirement – TTM” line in this table.
- The Present Value Revenue Requirement was calculated as the sum of 1) actual revenue requirements from 2015-2021 and 2) the Present Value of revenue requirements for 2022-2027 discounted to 2021 nominal dollars using SDG&E's rate of return (7.55%). SDG&E does not typically calculate present value of total revenue requirements for rate-making purposes.

Although amortization amounts will be collected in rates over a 12-month period, this exercise assumed simplified collection at year-end

- Revenue requirements are in millions of dollars.
- Gas rate impact dollar amounts are rounded to the nearest hundred thousandths of a dollar to illustrate a visible rate change.

Rate Impact and Revenue Requirement														
Rate Impact	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
Gas														
Average Rate w/o MMBA recovery - Core	N/A	\$0.75407	\$0.77261	\$0.65949	\$0.66627	\$1.04484	\$1.08594	\$1.08664	\$1.08664	\$1.08664	\$1.08664	\$1.08664	\$1.08664	\$1.08664
Average Rate w/ MMBA recovery - Core	N/A	\$0.75490	\$0.72707	\$0.66139	\$0.67733	\$1.05978	\$1.09673	\$1.10564	\$1.11448	\$1.12115	\$1.12683	\$1.13245	\$1.13731	
Rate Change - Core	N/A	\$0.00083	\$0.00093	\$0.00190	\$0.01106	\$0.01494	\$0.01079	\$0.01900	\$0.02784	\$0.03451	\$0.04019	\$0.04581	\$0.05067	
% Rate Change - Core	N/A	0.11%	0.13%	0.29%	1.66%	1.43%	1.00%	1.75%	2.56%	3.18%	3.70%	4.22%	4.66%	
Average Rate w/o MMBA recovery - Non-Core	N/A	\$0.02262	\$0.02427	\$0.02992	\$0.03122	\$0.05073	\$0.05263	\$0.05409	\$0.05409	\$0.05409	\$0.05409	\$0.05409	\$0.05409	
Average Rate w/ MMBA recovery - Non-Core	N/A	\$0.02263	\$0.02429	\$0.02998	\$0.03144	\$0.05096	\$0.05290	\$0.05442	\$0.05462	\$0.05472	\$0.05481	\$0.05488	\$0.05492	
Rate Change - Non-Core	N/A	\$0.00001	\$0.00001	\$0.00006	\$0.00021	\$0.00023	\$0.00027	\$0.00033	\$0.00053	\$0.00063	\$0.00072	\$0.00079	\$0.00083	
% Rate Change - Non-Core	N/A	0.06%	0.05%	0.19%	0.69%	0.45%	0.50%	0.60%	0.97%	1.16%	1.33%	1.47%	1.54%	
Electric														
Average Rate w/o MMBA recovery - Total System	N/A	\$20.364	\$21.781	\$23.991	\$23.735	\$24.596	\$23.993	\$31.059	\$31.059	\$31.059	\$31.059	\$31.059	\$31.059	
Average Rate w/ MMBA recovery - Total System	N/A	\$20.366	\$21.783	\$23.997	\$23.761	\$24.614	\$24.031	\$31.132	\$31.132	\$31.134	\$31.141	\$31.148	\$31.153	
Rate Change - Total System	N/A	\$0.002	\$0.002	\$0.006	\$0.026	\$0.018	\$0.038	\$0.073	\$0.073	\$0.075	\$0.082	\$0.089	\$0.094	
% Rate Change - Total System	N/A	0.01%	0.01%	0.03%	0.11%	0.07%	0.16%	0.24%	0.23%	0.24%	0.26%	0.29%	0.30%	
Revenue Requirement (In Millions)														
Gas Revenue Requirement-TTM	\$0.000	\$0.424	\$0.192	\$0.124	\$3.952	\$5.593	\$3.900	\$6.160	\$11.217	\$14.158	\$16.630	\$19.035	\$21.540	\$80.564
Electric Revenue Requirement-TTM	\$0.000	\$0.243	\$0.185	\$0.170	\$2.924	\$4.979	\$4.120	\$6.496	\$6.924	\$7.184	\$8.241	\$9.232	\$10.151	\$49.553
Gas Revenue Requirement-BTM	\$0.000	\$0.000	\$0.299	\$0.863	\$1.827	\$2.207	\$1.781	\$3.921	\$3.524	\$4.130	\$4.675	\$5.265	\$5.361	\$27.603
Electric Revenue Requirement-BTM	\$0.000	\$0.000	\$0.231	\$0.925	\$2.076	\$2.921	\$2.771	\$5.995	\$5.414	\$5.504	\$5.731	\$5.912	\$5.902	\$35.806

4. Program Timeline

Pursuant to Resolution E-4878, SDG&E planned to achieve its initial Pilot Program target of 10% in 2018 and continue conversion of up to an additional 5% of MHP spaces by December 31, 2019. As of December 31, 2021, SDG&E has converted 54 MHPs (6,578 permitted spaces), which is nearly 19% of eligible the mobilehome spaces within SDG&E’s service territory.⁷

SDG&E has measured its progress against the timeline shown in Figure 1 (“SDG&E’s Tentative Timeline for Implementation of the Extended Pilot and Current Status”) below. In developing the timeline, SDG&E has assumed certain conditions, including, but not limited to, the following: 1) there are no constraints that may delay MHP participation, such as TTM contractor availability or a MHP Owner/Operator’s ability to move forward with a project, secure a BTM contractor, or resolve environmental issues; 2) MHP data provided by the MHP

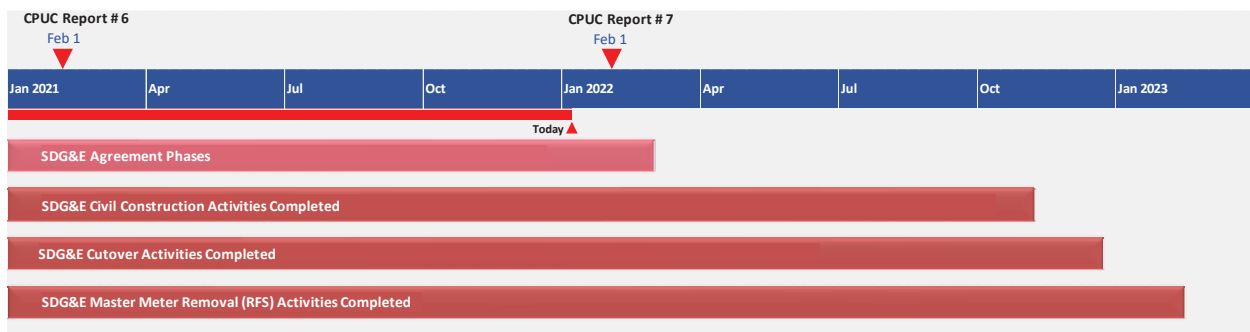
⁷ The scope excludes MHPs that declined to participate in the Program and the corresponding space total was calculated from the MHP’s permit-to-operate, rather than the SED-prioritized list of eligible MHPs. A confidential list of completed and in-progress projects has been provided to the CPUC’s Energy Division and Safety and Enforcement Division.

Owner/Operator in the Form of Intent (“FOI”) and at the beginning of a project is accurate; 3) there are no joint construction schedule constraints for any of the IOUs involved; and 4) the California Department of Housing and Community Development (“HCD”) or other Local Enforcement Agencies will have sufficient resources to perform timely inspections on projects.

Pursuant to Resolution E-4958 and the extension limitations set forth therein, SDG&E has substantially completed all eligible MHP upgrades in the fourth quarter of 2021. With the issuance of a Commission Decision for the continuation of the program and the new Form of Intent (FOI) application period between January 1 – March 30, 2021, a new list of eligible parks was required from SED within the second quarter of 2021

On August 20, 2021, in accordance with the Decision, SED provided a new priority list of eligible parks. The list comprised Category 1 projects, comprised of parks estimated to be contacted by the utilities before the application period in 2025, and Category 2 projects that may be contacted before the new period but may be re-prioritized for the 2025 list. SDG&E is currently in the process of developing a comprehensive schedule with the outlined Category 1 projects to support the overall objective of converting 50 percent of master meters by 2030. Currently, it has secured Applications for projects through 2023, and it will continue to develop its schedule through 2025 to incorporate all Category 1 MHP’s moving forward, reprioritizations requested by SED, and request replacements for MHP’s declining to move forward.

FIGURE 1: SDG&E’s Tentative Timeline for Implementation of the MHP Program and Current Status



4. Program Assessment

In March of 2020, the World Health Organization (WHO) declared COVID-19 a pandemic and in response, SDG&E has instituted various hygiene measures, social distancing protocols, and alternate outreach and education methods in support of safety, and the Program goals and objectives. With the COVID-19 restrictions and regulations, the Program has experienced a variety of impacts including but not limited to:

- a decrease in inspection resources with longer than average permit and inspection turn-around times;
- additional need for outreach collateral and mailers as we shifted away from in-person townhalls, meetings, and events;
- lengthened construction durations due to the quarantining of various crew members; and
- mobile home access challenges faced by beyond-the-meter contractors.

Despite the issues faced in 2020 and 2021, the SDG&E Mobilehome Park Utility Conversion Program continues to be successful, as noted in Decision 20-04-004 and demonstrated by the following performance indicators:

Program Penetration

SDG&E has successfully partnered with MHP Owners/Operators and, as of December 31, 2021, completed nearly 19% of the eligible mobilehome spaces in SDG&E's service territory.

Safety Performance

From 2014 through 2019, SDG&E maintained a high safety standard with no reportable incidents over approximately 430,000 hours of labor logged between contractors and MHP program employees combined. In 2020, SDG&E continued to maintain a high safety standard with one reportable contractor first-aid incident over approximately 81,000 hours. SDG&E was incident free in 2021 over approximately 74,000 hours of labor for contractors and MHP program employees combined. Additionally, 59 MHPs with systems older than 40 years have received – or are in the process of receiving – new utility-owned and maintained distribution systems that meet current SDG&E standards.

Customer Satisfaction

In response to customer satisfaction surveys in 2021, , SDG&E achieved a satisfaction rate of 100% with MHP owners/operators/Managers, and 56% with MHP residents.

5. Conclusion

This concludes the seventh annual filing in accordance with SED's instructions. Additional Program information can be found online on SDG&E's website at <https://www.sdge.com/mobilehome-conversion>.

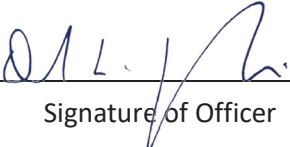
This annual report may be accessed at: <https://www.sdge.com/regulatory-filing/21081/mobilehome-park-utility-upgrade-program>.⁸

⁸ D.20-04-004, OP 10 requires the utilities to post copies of their Annual Report on their respective websites.

California Public Utilities Commission (CPUC) Decision (D.) 14-03-021 Ordering Paragraph 11 requires that all reports be verified by an officer of the utility.

As an officer of San Diego Gas & Electric Company (SDG&E), I hereby certify that the Mobilehome Park Utility Upgrade Program Annual Report generated in compliance with D.14-03-021 is accurate.

Reporting Period: 1/1/2021 to 12/31/2021
Start Date End Date

 Executed on: 1/31/2022
Signature of Officer Month, Day, Year

David Buczkowski
Print Name

Vice President of Gas Distribution
Title

SDG&E 2022 Annual Report List of Active Parks

*Financial Completion: project costs have been recorded and any remaining costs not recorded are estimated to fall within 5% of total project costs
 **Construction Completion: cutover completed and master meter removed; final costs have not been recorded
 ***PTO (Permit to Operate) counts may not represent actual spaces in scope for conversion

HCD ID	NAME	STATUS	CITY	COUNTY	PTO COUNT***	GAS IOU	ELECTRIC IOU
1	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
2	Financially complete*	Financially complete*	ORANGE	ORANGE	1	SoCalGas	SDG&E
3	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
4	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
5	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
6	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
7	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
8	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
9	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
10	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
11	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
12	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
13	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
14	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
15	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
16	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
17	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
18	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
19	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
20	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
21	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
22	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
23	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
24	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
25	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
26	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
27	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
28	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
29	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
30	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
31	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
32	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
33	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
34	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
35	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
36	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
37	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
38	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
39	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
40	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
41	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
42	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
43	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
44	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
45	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
46	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
47	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
48	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
49	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E
50	Financially complete*	Financially complete*	SAN DIEGO	SAN DIEGO	1	SDG&E	SDG&E

**BEFORE THE PUBLIC UTILITIES
COMMISSION OF THE STATE OF CALIFORNIA**

**DECLARATION OF ROBERT PISANESCHI
REGARDING CONFIDENTIALITY OF CERTAIN DATA PURSUANT TO D.17-09-023**

I, Robert Pisaneschi, do declare as follows:

1. I am the MHP & Capital Gas Construction Manager for San Diego Gas & Electric Company (“SDG&E”). I have been delegated authority to sign this declaration by David Buczkowski, Vice President of Gas Distribution. I have reviewed the document titled “SDGE 2021 Annual Rpt – List of Active Parks.xlsx” (the “SDG&E Active Park List”). In addition, I am personally familiar with the facts and representations in this Declaration and, if called upon to testify, I could and would testify to the following based upon my personal knowledge and/or information and belief.

2. I hereby provide this Declaration in accordance with Decision (“D.”) D-17-09-023 to demonstrate that the yellow-highlighted confidential information (“Protected Information”) provided in the SDG&E Active Park List is within the scope of data protected as confidential under applicable law, and pursuant to Public Utilities (“PUC”) Code § 583 and General Order (“GO”) 66-D, as described in Attachment A below.

3. In accordance with the legal authority described herein, the Protected Information should be protected from public disclosure.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct to the best of my knowledge.

Executed this 31st day of January, 2022 at Los Angeles, California.

Robert B Pisaneschi

Robert Pisaneschi
MHP & Capital Gas Construction Manager

ATTACHMENT A

SDG&E Request for Confidentiality on the following information contained in SDG&E Active Park List

Location of Protected Information	Legal Authority	Narrative Justification
<p>Yellow-highlighted cells in the SDG&E Active Park List.</p>	<p>California Public Records Act (CPRA) Exemption, Gov't Code § 6254(k) ("Records, the disclosure of which is exempted or prohibited pursuant to federal or state law")</p> <ul style="list-style-type: none"> • Cal. Civil Code § 1798.21 (requiring agencies to "ensure the security and confidentiality of" personal data) • Cal. Civil Code § 1798.24 (limiting disclosure of personal information) • Cal. Civil Code §§ 1798.80 <i>et seq.</i> (process for protecting customer records) <p>CPRA Exemption, Gov't Code § 6254(c) ("disclosure of which would constitute an unwarranted invasion of personal privacy")</p>	<p>The yellow-highlighted cells contain MHP names. This is market-sensitive information that, if revealed, could put the MHP at an unfair business disadvantage because it provides nonpublic information regarding MHP program participation.</p> <p>Disclosure may also constitute an "unwarranted invasion of personal privacy."</p>