

Company: Southern California Gas Company (U 904 G)
Proceeding: 2024 General Rate Case
Application: A.22-05-015
Exhibit: SCG-21-R-[E](#)

**PREPARED DIRECT TESTIMONY
OF BEN W. GORDON
(CHAPTER 1: INFORMATION TECHNOLOGY POLICY)**

**REVISED PREPARED DIRECT TESTIMONY OF
TIA L. BALLARD (O&M) AND WILLIAM J. EXON (CAPITAL)
(CHAPTER 2: INFORMATION TECHNOLOGY)**

[ERRATA](#)

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**



~~August 2022~~ [May 2023](#)

CHAPTER 1
PREPARED DIRECT TESTIMONY
OF BEN W. GORDON
(INFORMATION TECHNOLOGY MODERNIZATION POLICY)

TABLE OF CONTENTS

I.	Introduction.....	1
A.	Summary of Testimony.....	1
B.	Implementing the Strategy	2
II.	CONCLUSION.....	7
III.	WITNESS QUALIFICATIONS.....	8
I.	INTRODUCTION	1
A.	Summary of Information Technology Costs and Activities	1
B.	Support To and From Other Witnesses.....	2
C.	Organization of Testimony	3
IV.	RISK ASSESSMENT MITIGATION PHASE INTEGRATION	3
A.	RAMP Risk and Cross Functional Factor Overview	5
B.	GRC Risk and CFF Activities.....	7
C.	Changes from RAMP Report.....	9
V.	SUSTAINABILITY AND SAFETY CULTURE	9
VI.	NON-SHARED COSTS	11
A.	O&M Forecast Methodology	11
B.	Applications (Non-Shared).....	12
1.	Description of Costs and Underlying Activities	12
2.	RAMP Activities.....	12
C.	Cost Drivers	13
D.	Infrastructure (Non-Shared).....	13
1.	Description of Costs and Underlying Activities	13
2.	RAMP Activities.....	14
3.	Cost Drivers	14
E.	Support (Non-Shared).....	15
1.	Description of Costs and Underlying Activities	15
2.	Cost Drivers	15
VII.	SHARED COSTS	15
A.	O&M Forecast Methodology	16
B.	Applications (Shared)	16
1.	Description of Costs and Underlying Activities	16
2.	RAMP Activities.....	17
3.	Cost Drivers	18

C.	Infrastructure (Shared)	19
1.	Description of Costs and Underlying Activities	19
2.	RAMP Activities.....	19
3.	Cost Drivers	20
D.	IT Support (Shared)	20
1.	Description of Costs and Underlying Activities	20
2.	RAMP Activities.....	21
3.	Cost Drivers	21
VIII.	CAPITAL.....	22
A.	Introduction.....	22
B.	IT Capital Planning Process.....	23
1.	IT Division Capital Plan Development.....	24
2.	Concepts.....	24
3.	Project Prioritization and Approval	24
4.	Business Cases	24
5.	Cost Sharing Mechanisms.....	25
C.	Capital Forecast Methodology	25
D.	IT-Sponsored Capital Projects	25
1.	WP# 00721AJ – Application Monitoring Refresh (RAMP).....	28
2.	WP# 00721AM – Network Infrastructure Extension (RAMP)	29
3.	WP# 00721AO - Enterprise Radio Media Workstation Replacement.....	30
4.	WP# 00721AP – Identity and Access Management (IAM) Cloud (RAMP)	31
5.	WP# 00721AQ - Enterprise Voice System Refresh	32
6.	WP# 00721AR - Routine Small Cap 2022-2024.....	32
7.	WP# 00721AS – Cloud Foundation (RAMP)	33
8.	WP# 00721B – Compute Capacity Bulk Buy (RAMP).....	34
9.	WP# 00721C – Backup and Recovery Capacity Expansion 2022 (RAMP)	34
10.	WP# 00721D & 00721O – Recovery Vault Expansion 2023-2024 (RAMP).....	35
11.	WP# 00721E – Digital Workspace (RAMP).....	37
12.	WP# 00721G & 00721P – Network Attached Storage Cyber Vault Capacity Expansion 2023-2024 (RAMP)	38
13.	WP# 00721H & 00721AL – Compute Capacity Expansion 2022-2023 (RAMP).....	39

14.	WP# 00721I & 00721Q – Compute Database Hardware Capacity Expansion and Infrastructure Demand Management 2022-2023 (RAMP)	40
15.	WP# 00721K - Mobile Phone Refresh 2022	41
16.	WP# 00721L – Infrastructure Monitoring Implementation (RAMP)	42
17.	WP# 00721N – Backup and Recovery Hardware Refresh (RAMP)	43
18.	WP# 00721R – Compute Infrastructure Refresh 2024 (RAMP)	44
19.	WP# 00721W - Upgrade Legacy Environment Storage (RAMP)	45
20.	WP# 00721X - Hardware Refresh 2022 (RAMP)	45
21.	WP# 00743A – Wide Area Network (WAN) & Private Network Refresh (RAMP)	46
22.	WP# 00743B – Local Area Network Upgrade (RAMP)	48
23.	WP# 00743E – Microwave Radio Network Remediation (RAMP)	49
24.	WP# 00743F – Emergency Response Command Center Enhancement (RAMP)	50
25.	WP# 00743H – Remote Site Technology Refresh (RAMP)	51
26.	WP# 00743I – Call Recording System Refresh (RAMP)	52
27.	WP# 00743J – Supervisory Control and Data Acquisition Network Refresh (RAMP)	53
28.	WP# 00755M - Electronic Volume Correctors (EVC) and Gas Chromatographs (GC) Telecom Security Remediation	54
29.	WP# 00756AA - Business Adaptation Tech & Digitalization	54
30.	WP# 00756AI - System Enhancements and Workflow Management (RAMP)	55
31.	WP# 00756BA – Energy Transition Digital Twin (RAMP)	56
32.	WP# 00756E - Electronic Data Interface Exchange - Web Methods Modernization	57
33.	WP# 00756H & 00756V - App Modernization and Vulnerability Reduction	57
34.	WP# 00756Q - ServiceNow Service Mapping	58
35.	WP# 00756S - Content Server Replacement	58
36.	WP# 00756T - Foundation Analytics Service	59
37.	WP# 00756U – Situational Awareness Dashboards 2022-2023 (RAMP)	60
38.	WP# 00756Y – Microsoft Enterprise Agreement 2022-2025	61
39.	WP# 00756Z – Digital Integration (RAMP)	62
40.	WP# 00786A – Application Factory (RAMP)	63
41.	WP# 00786B - Digital Process Automation	64
42.	WP# 00786C - Decision Analytics and Automation (RAMP)	65
IX.	CONCLUSION	66
X.	WITNESS QUALIFICATIONS – Tia L. Ballard	67

XI. WITNESS QUALIFICATIONS – William J. Exon..... 68

APPENDICES

Appendix A – Glossary of Terms

Appendix B – Glossary of Definitions

Appendix C – Summary of Safety Related Risk Mitigation Costs by Workpaper – O&M

Appendix D – Summary of Safety Related Risk Mitigation Costs by Workpaper – Capital

Appendix E – Capital Expenditures List of IT and Business Projects

SoCalGas 2024 GRC Testimony Revision Log –August 2022

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29

**PREPARED DIRECT TESTIMONY
OF BEN W. GORDON
(INFORMATION TECHNOLOGY MODERNIZATION POLICY)**

I. INTRODUCTION

A. Summary of Testimony

The purpose of this testimony is to describe the transformation of Southern California Gas Company (SoCalGas) and San Diego Gas & Electric Company (SDG&E) (collectively, the Companies) information technology (IT) organization to a digital focused operating model, aligning to a goal of digitalization, which will enable faster, more resilient, and innovative technology solutions for the Companies and its customers. Digital enablement is a focus for businesses across many sectors. According to Gartner, one of the world's leading information technology research and advisory companies, “digital technology initiatives were identified as the top business priority for 2022 and 2023 by 58% of responding companies.”¹

IT has developed a strategy in line with the Company’s climate policy and sustainability goals. Digitalization is central to SoCalGas’s decarbonization and Net Zero goals by improving operational service, efficiency, and safety, through real-time information and cutting-edge analytics, benefiting operations, and customers. The strategy consists of four key pillars that align with the activities described in the IT Testimony Chapter 2:

- Simplify and Standardize the infrastructure and applications to increase efficiency and performance of the systems.
- Proactively Manage Risk through the disciplined management of the lifecycle and cyber risk of infrastructure and applications.
- Transform How We Work to increase speed, embrace a culture of innovation and constant learning.
- Accelerate Digital by establishing a center of excellence that focuses on delivering innovative, digital business solutions and insights.

These pillars support Company’s sustainability goals through technology investments further described in the O&M testimony of Tia L. Ballard and Capital testimony of William J.

¹ Gartner: An Executive’s Guide to Using Cloud for Business Enablement, Published November 10, 2021.

1 Exon. These goals include accelerating the transition to clean energy, protecting the climate and
2 improving air quality, increasing clean energy access and affordability, advancing a diverse,
3 equitable, and inclusive culture, and achieving world-class safety.

4 **B. Implementing the Strategy**

5 This IT initiative started in 2019 to transform the IT operations to provide technology
6 solutions that meet the fast-paced energy transition and customer expectations through
7 innovation and modern practices and technologies. To achieve this transformation, the IT
8 organization developed a plan aligning projects and initiatives to the strategy pillars and tracked
9 the progress towards these goals. These projects and their alignment to the strategy pillars are
10 discussed further in Section VI (Chapter 2) and Appendix E. The Simplify and Standardize pillar
11 includes the implementation of a modern, converged infrastructure platform to drive data center
12 and system consistency. A converged platform is an engineered infrastructure that includes
13 compute, storage and network connectivity as a single solution that simplifies the environment.
14 Basecamp, a program completed in 2021, included installation of the infrastructure, upgrade of
15 applications and migration to the new platform, creating a foundation for the future.
16 Applications were also rationalized resulting in some applications being decommissioned and
17 others migrated to a cloud platform.

18 Automation is also encompassed in Simplify and Standardize, which includes modern
19 practices such as DevSecOps,² the automation of application implementation, and Infrastructure
20 as Code,³ the automation of building infrastructure environments. These tools standardize the
21 application foundations and strive to simplify the technology environment, which can accelerate
22 technology delivery.

23 The pillar, Proactively Manage Risk, focuses on continuing to manage the technology
24 lifecycle, by replacing unsupported technologies, ensuring the resiliency and recovery of
25 technology systems and patching identified vulnerabilities. Additional initiatives in this area can

² DevSecOps stands for development, security, and operations. It is an approach to culture, automation, and platform design that integrates security as a shared responsibility throughout the entire IT lifecycle.

³ Infrastructure as Code (IaC) is the managing and provisioning of infrastructure through code instead of through manual processes. With IaC, configuration files are created that contain your infrastructure specifications, which makes it easier to edit and distribute configurations.

1 be found in the Cybersecurity testimony of Lance Mueller (Ex. SCG-22, Cybersecurity and
2 SDG&E-26 Cybersecurity).

3 The Transform How We Work pillar builds stronger alignment and collaboration
4 between business and technology teams through agile methods such as Scrum⁴ and Kanban.⁵
5 These modern practices create transparency and utilize continuous delivery, feedback, and
6 prioritization to ensure business priorities are quickly incorporated into technology delivery.

7 “Agile”⁶ practices are product-focused, meaning they look at groups of related
8 applications and technologies that deliver related business functions. To develop, enhance and
9 support these products, the organization is grouped into self-contained teams that bring together
10 all the skills required to address the product requirements. Requirements are managed
11 transparently with tools such as a Kanban board, that the technical team members and the
12 business product owner manage together. This provides continuous visibility to requirements
13 and their priority. Feedback is also provided continuously so that adjustments can be made as
14 needed.

15 To facilitate this new methodology, the IT employees are transforming how they are
16 organized which has resulted in more than 60 agile teams launched across IT. The IT
17 organization has a goal of 80% of IT teams to be agile by the end of 2022.

18 A new job framework was implemented that included refreshing 18 job groupings and
19 more than 70 job profiles to include modern digital skills. IT employees were transitioned to the
20 new job profiles in 2021. Modern skill development will be the focus in 2022 for employees to
21 continue to develop future-oriented digital skills that enable the IT strategy.

22 The pillar, Transform How We Work, is a cultural change for the IT organization. Being
23 more collaborative, having a growth mindset to always learn, continuously delivering and

⁴ Scrum is an agile project management methodology involving a small team led by a Scrum master, whose primary objective is to remove obstacles to getting work done. Work is done in short cycles called sprints, and the team meets daily to discuss current tasks and any roadblocks that need to be cleared.

⁵ Kanban is a lean workflow management method for defining, managing, and improving services that deliver work. It helps visualize work, maximize efficiency, and improve continuously. Work is represented on Kanban boards, allowing you to optimize work delivery across multiple teams and handle even the most complex projects in a single environment.

⁶ Agile software development refers to a group of software development methodologies based on iterative development, where requirements and solutions evolve through collaboration between self-organizing cross-functional teams.

1 innovating are the new cultural norms for the IT organization. Communications, tools and
2 training are helping to drive these new ways of working that will prepare the IT culture for the
3 future.

4 The Accelerate Digital pillar focuses on modernizing our technologies to prepare for the
5 future, which requires innovation that is delivered rapidly driving business insights and
6 decisions.

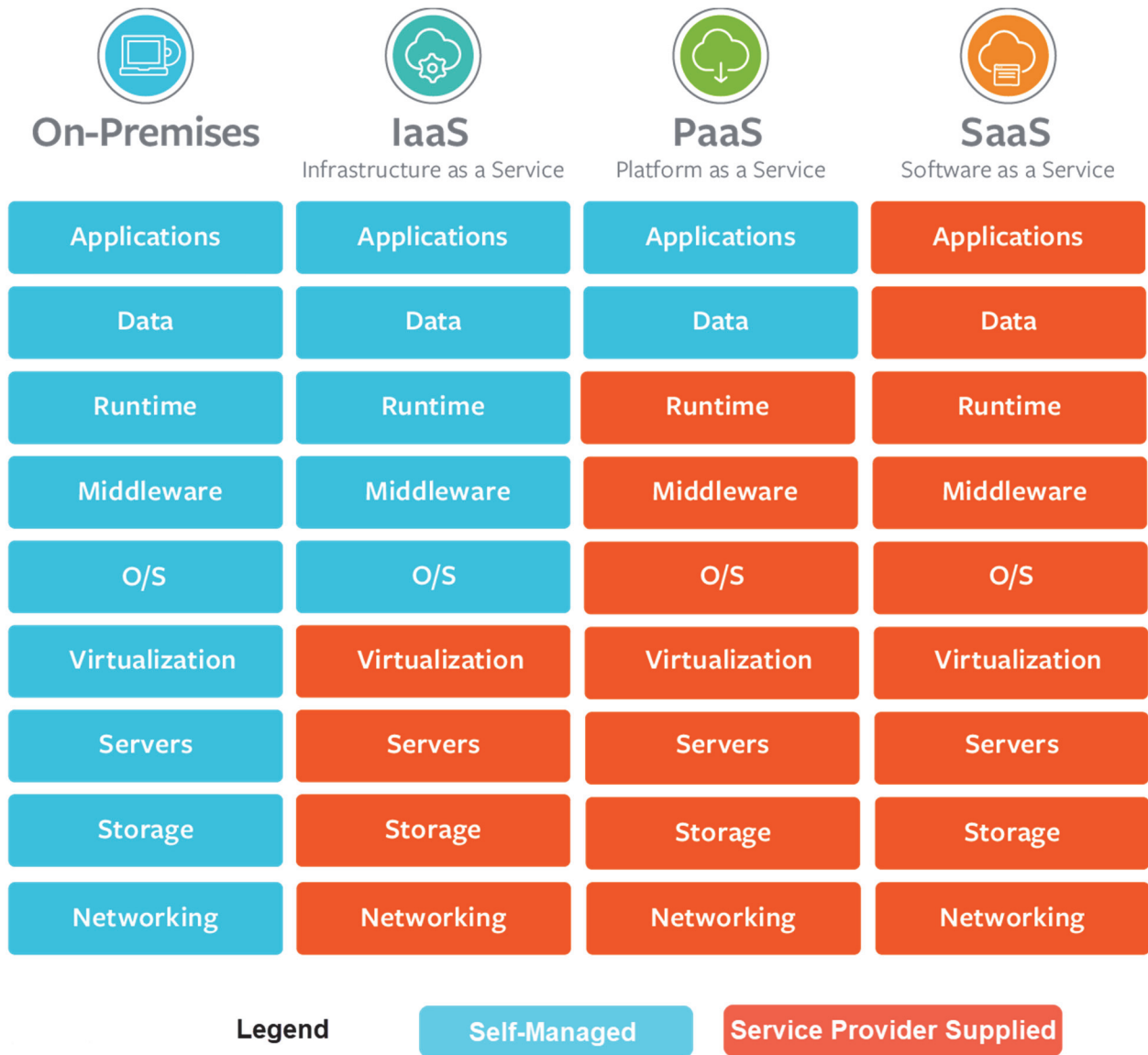
7 Innovation is enabled through modern technologies such as Cloud, Artificial Intelligence
8 (AI) and Machine Learning (ML). These technologies drive faster business solutions with
9 system mock-ups, pilots, enhancements, and implementations occurring in days and weeks rather
10 than months and years. With the shortened timeframe, business ideas can be explored quickly to
11 determine their viability.

12 Cloud technologies are a cornerstone for digital enablement. There are different Cloud
13 service models available depending on the services needed from the Cloud provider.
14 Infrastructure as a Service (IaaS) is one end of the spectrum where the servers, network, storage
15 and data center are acquired from the Cloud provider. At the other end of the spectrum is
16 Software as a Service (SaaS) where the application is acquired and will require configuration,
17 integration, and data to function, but all other components are provided on the Cloud. Figure
18 BG-1 below shows the various Cloud Service Models, identifying which services are provided
19 by the Cloud provider and which are self-managed.

20

1
2

Figure BG-1



3
4

As of 2021, 28% of the applications portfolio has moved to the Cloud. By the end of 2024, more than 50% of the portfolio is expected to be hosted on the cloud. Chapter 2 on IT expenditures will discuss how various programs and projects use Software as a Service (SaaS), Infrastructure as a Service (IaaS), and Platform as a Service (PaaS) solutions.

9
10
11
12

Building solutions in the Cloud, whether IaaS or PaaS, provides the opportunity to quickly create new environments and remove them just as quickly. As a result, Cloud enables us to rapidly experiment, innovate and develop new solutions to meet our business and customers' needs. Cloud platforms also provide high levels of availability, resiliency, and reduced risks due

1 to hardware and software versions remaining current. These characteristics make this an
2 attractive platform for solutions beyond innovation. Gartner estimates that 70% of enterprise
3 workloads will be in the cloud by 2024.⁷

4 The IT industry is moving towards Cloud-based solutions with software vendors, such as
5 Microsoft 365, Click and SAP, now offering only Software as a Service (SaaS) solutions. This
6 requires that on-premise technology environments have Cloud enablement and integration
7 capabilities available. Service management skills are also needed to ensure that usage is managed
8 and service levels from the vendor are met.

9 While digital and cloud solutions will be accelerated, on-premise solutions will continue
10 to be needed for systems with high-performance requirements. Investment in infrastructure,
11 cybersecurity tools and software housed within the IT data centers will continue, however, it is
12 expected to reduce over time.

13 The prepaid agreement costs such as Cloud Software as a Service (SaaS) license
14 arrangements, reserved Cloud capacity, and new software and/or hardware maintenance costs
15 associated with software and computer hardware are normally recorded as a prepaid expense.

16 Beginning in 2024, the Company is proposing to capitalize and amortize these costs for
17 regulatory recovery as long as the agreements meet Company's capitalization dollar thresholds.
18 These services are integral to the successful operation of new hardware or software and should
19 be considered an extension of the asset. The proposal is discussed in the Rate Base testimony of
20 Patrick Moersen (Ex. SCG-31) and the Summary of Earnings testimony of Ryan Hom (Ex. SCG-
21 39).

22 The Foundational Technology Systems (FTS) Cross Functional Factor (CFF) chapter
23 contained in 2021 RAMP report highlights Company's enterprise-wide technology framework
24 necessary to mitigate several Risk Assessment Mitigation Phase (RAMP) risks. The importance
25 of FTS and related forecasts are discussed below in Section III of Chapter II and throughout the
26 O&M testimony of Tia L. Ballard and Capital testimony of William J. Exon.

⁷ Gartner: An Executive's Guide to Using Cloud for Business Enablement, Published November 10,
2021.

1 **II. CONCLUSION**

2 The IT transformation that is underway will enable faster, more resilient, and innovative
3 technology solutions for SoCalGas, the customers, and communities that we serve.

4 This concludes my prepared direct testimony.

1 **III. WITNESS QUALIFICATIONS**

2 **Ben W. Gordon**

3 My name is Ben W. Gordon. My business address is 8330 Century Park Court, San
4 Diego, CA 92123. I am employed by SDG&E as the Senior Vice President, Chief Information
5 Officer, and Chief Digital Officer. In this role, I am responsible for applications, IT
6 infrastructure, networks, cybersecurity and analytics. I have served in this capacity since 2020,
7 and prior to this, I was the Vice President of IT Infrastructure and Operations from 2018-2020.

8 Prior to Joining SDG&E, I was the Vice President of Engineering at Molina Healthcare, a
9 Fortune 500 company, from 2015-2018. In this capacity, I was in charge of IT infrastructure and
10 operations, networks, cybersecurity, enterprise applications and analytics.

11 I also served as the Chief Technology Officer for Three-Dimensional Resourcing from
12 2013-2014. In this capacity I was responsible for the technology and strategic consulting
13 practice.

14 I also served in various positions from 1999-2013 at the Apollo Education Group, with
15 the final position of Vice President of Engineering from 2010-2013, and in that capacity had the
16 responsibility of managing cloud platforms, IT infrastructure, middleware, databases, student
17 platforms, networks, and IT operations.

18 I have a Ph. D in chemistry from the University of Florida and an American Chemical
19 Society certified Bachelor of Science from Northern Arizona University.

20 I have not previously testified before the California Public Utilities Commission.
21

CHAPTER 2

REVISED PREPARED DIRECT TESTIMONY OF

TIA L. BALLARD (O&M)

AND

WILLIAM J. EXON (CAPITAL)

(INFORMATION TECHNOLOGY)

SUMMARY

INFORMATION TECHNOLOGY (In 2021 \$)			
	2021 Adjusted- Recorded (000s)	TY2024 Estimated (000s)	Change (000s)
Total Non-Shared Services	24,010 24,460	29,521 29,972	5,511 5,512
Total Shared Services (Incurred)	25,699	27,263	1,564
Total O&M	49,709 50,159	56,784 57,235	7,075 7,076

INFORMATION TECHNOLOGY (In 2021 \$)			
	Estimated 2022 (000s)	Estimated 2023 (000s)	Estimated 2024 (000s)
Total CAPITAL	253,159	229,046	174,827

Summary of Requests

- Provide support services that directly contribute to Company’s ability to provide safe, secure, and reliable service at reasonable rates for our customers while maintaining a safe work environment for our employees.
- Respond and resolve technology operational incidents that require O&M and capital expenditures.
- Modernize applications by replacing, rearchitecting, refactoring, and transitioning to the Cloud, including lifecycle management to improve reliability, security, and performance.
- Position the Information Technology (IT) Division (IT Division or IT) to meet the continued growth in business demand.
- Support the transition to Cloud to provide high levels of availability, resiliency, scalability, and business continuity.
- Support digital innovation by implementing emerging technologies to drive faster business solutions and provide enhanced business capabilities that align with the Company's digital transformation and acceleration goals.

CHAPTER 2
REVISED PREPARED DIRECT TESTIMONY OF
TIA L. BALLARD (O&M)
AND
WILLIAM J. EXON (CAPITAL)
(INFORMATION TECHNOLOGY)

I. INTRODUCTION

A. Summary of Information Technology Costs and Activities

SoCalGas (or the Company) forecasted Test Year (TY) 2024 operations and maintenance (O&M) request for Information Technology (IT) is \$56.784 ~~\$57.235~~ million. The O&M request for non-shared services is \$29.521 ~~29.972~~ million and is \$27.263 million for O&M shared services. The capital requests for years 2022, 2023, and 2024 are \$253.159 million, \$229.046 million, and \$174.827 million, respectively. The O&M testimony is sponsored by Tia L. Ballard and the Capital testimony is sponsored by William J. Exon. Table TB/WE-1 summarizes our sponsored costs.

TABLE TB/WE-1
Test Year 2024 Summary of Total Costs

INFORMATION TECHNOLOGY (In 2021 \$)			
	2021 Adjusted-Recorded (000s)	TY2024 Estimated (000s)	Change (000s)
Total Non-Shared Services	<u>24,010</u> 24,460	<u>29,521</u> 29,972	<u>5,511</u> 5,512
Total Shared Services (Incurred)	25,699	27,263	1,564
Total O&M	<u>49,709</u> 50,159	<u>56,784</u> 57,235	<u>7,075</u> 7,076

INFORMATION TECHNOLOGY (In 2021 \$)			
	Estimated 2022 (000s)	Estimated 2023 (000s)	Estimated 2024 (000s)
Total CAPITAL	253,159	229,046	174,827

Information Technology is responsible for many of the technology-related services and activities for SoCalGas, SDG&E and Sempra Energy Corporate Center (Sempra or Corporate Center) (collectively, Companies). The services include supporting applications, hardware, and software, some of which are used for risk assessment and management across the Companies. Our business clients rely on IT to provide ongoing operational as well supporting transformation

1 initiatives for numerous business functions to deliver safe and reliable service to our customers.
2 The business functions include, but are not limited to, asset management, work management and
3 measurement, fuel and power, outage management, gas and electric facilities, transportation,
4 procurement and settlement, financial management, accounting, customer field operations, meter
5 reading, customer energy management, smart meter data management, routing, scheduling,
6 dispatching, revenue cycle, customer assistance, customer contact functions, operational
7 analytics, and process automation. This is accomplished through the IT Division's management
8 of cloud providers and operation of Company data centers that store and manage data, including
9 those used for risk assessments and development of related mitigation plans, as well as
10 foundational information security services to ensure security and privacy. The costs for these
11 services and activities, excluding cybersecurity, are attributed to cost centers at Company, which
12 are described herein, as well as to cost centers at SDG&E, which are described in the SDG&E IT
13 testimony (Ex. SDG&E-25, Ch. 2). Testimony related to cybersecurity services within IT is
14 sponsored by Lance Mueller (Ex. SCG-22 and Ex. SDG&E-26).

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

16 Our testimony also references the testimony and workpapers of several other witnesses, either in
17 support of their testimony or as referential support for ours. Those witnesses are Gregory Flores
18 (Ex. SCG-03, Ch 2, RAMP to GRC Integration), Mario Aguirre (Ex. SCG-04, Gas Distribution),
19 Neena Master (Ex. SCG-27, Safety & Risk Management Systems, Emergency Services and Risk
20 Management), Bernardita Sides (Ex. SCG-15, Customer Services – Office Operations), Daniel
21 Randler (Ex. SCG-14, Customer Services – Field and Advanced Meter Operations), Brian
22 Prusnek (Ex. SCG-16, Customer Services – Information), Maria Martinez (Ex. SCG-07, Gas
23 Engineering), Wallace Rawls (Ex. SCG-05, Gas System Staff & Technology), Joseph Chow (Ex.
24 SCG-17, Supply Management, Logistics, & Supplier Diversity), Sara Mijares (Ex. SCG-29,
25 Administrative & General), Abigail Nishimoto (Ex. SCG-28, People and Culture Department),
26 Rick Chiapa, Steve Hruby, and Aaron Bell (Ex. SCG-06, Gas Transmission) Angel Le (Ex.
27 SCG-30, Shared Services Billing, Shared Assets Billing, Segmentation, & Capital
28 Reassignments), Patrick Moersen (Ex. SCG-31, Rate Base), Ryan Hom (Ex. SCG-39, Summary
29 of Earnings)

1 **C. Organization of Testimony**

2 The costs presented in the remainder of our testimony are specific to IT costs charged to
3 Company cost centers. Tia L. Ballard sponsors the TY 2024 forecasts for O&M costs for both
4 non-shared and shared services for the estimated years 2022 and 2023, and TY 2024. William J.
5 Exon sponsors the TY 2024 forecasts for capital costs for the estimated years 2022 and 2023,
6 and TY 2024. Section II of our testimony details RAMP controls and mitigation activities and
7 addresses any changes from the RAMP report. Section III discusses SoCalGas’s sustainability
8 and safety culture. Section IV provides non-shared O&M costs that are incurred, and activities
9 performed solely for the benefit of SoCalGas. Section V sets forth the shared O&M costs and
10 activities that benefit SoCalGas, SDG&E, and/or Corporate Center. The O&M costs presented in
11 our testimony have been categorized into three areas:

- 12 1. Applications – Applications support the development, implementation, and
13 maintenance of computer software utilized by customers, employees, and/or
14 vendor partners. The Cloud service model SaaS aligns with this category.
- 15 2. Infrastructure – IT Infrastructure supports the design, implementation, and
16 operation of the Company’s computing infrastructure, including both hardware
17 (ranging from desktop computing systems and servers to storage systems) and
18 software (including middleware, production control, operating systems, and other
19 low-level software systems). The Cloud service model IaaS and PaaS align with
20 this category.
- 21 3. IT Support – This category of costs includes labor and non-labor for cost centers
22 that are not specifically aligned with the other IT areas described above.
23 Examples would include officer costs, budget and planning activities, and our
24 intern/associate program.

25 Section VI discusses IT capital costs. The IT Division is responsible for a variety of
26 technology-related services and activities for SoCalGas, SDG&E, and Corporate Center. Section
27 VII concludes with a recap of our requests. Section VIII sets forth our witness qualifications.

28 **IV. RISK ASSESSMENT MITIGATION PHASE INTEGRATION**

29 Certain costs supported in our testimony are driven by activities described in SoCalGas
30 and SDG&E’s respective 2021 Risk Assessment Mitigation Phase (RAMP) Reports (the 2021

RAMP Reports).⁸ The 2021 RAMP Reports presented an assessment of the key safety risks for SoCalGas and SDG&E and proposed plans for mitigating those risks. As discussed in the testimony of the RAMP to GRC Integration witnesses R. Scott Pearson and Gregory S. Flores (Ex. SCG-03/SDG&E-03, Chapter 2), the costs of risk mitigation projects and programs were translated from the 2021 RAMP Reports into the individual witness areas.

In the course of preparing the Information Technology (IT) GRC forecasts, SoCalGas continued to evaluate the scope, schedule, resource requirements, and synergies of RAMP-related projects and programs. Therefore, the final presentation of RAMP costs may differ from the ranges shown in the 2021 RAMP Reports. Table TB/WE-2 and TB/WE-3 provide summaries of the RAMP-related costs supported in our testimony.

TABLE TB/WE-2
Summary of RAMP O&M Costs*

INFORMATION TECHNOLOGY			
Summary of RAMP O&M Costs (In 2021 \$)			
	BY2021 Embedded Base Costs (000s)	TY2024 Estimated Total (000s)	TY2024 Estimated Incremental (000s)
RAMP Risk Chapter			
SCG-Risk-2 Excavation Damage (Dig-In) on the Gas System	83	83	0
Sub-total	83	83	0
RAMP Cross Functional Factor (CFF) Chapter			
SCG-CFF-1 Foundational Technology Systems	8,196	10,236	2,040
SCG-CFF-4 Foundational Technology Systems	9,203	9,821	618
Sub-total	17,399	20,057	2,658
Total RAMP O&M Costs	17,482	20,140	2,658

*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).

⁸ 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, Chapter 2) for more details regarding the 2021 RAMP Reports.

TABLE TB/WE-3
Summary of RAMP Capital Costs*

INFORMATION TECHNOLOGY				
Summary of RAMP Capital Costs (In 2021 \$)				
	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	2022-2024 Estimated RAMP Total (000s)
RAMP Cross Functional Factor (CFF) Chapter				
SCG-CFF-1 Asset and Records Management	16,178	12,654	10,462	39,294
SCG-CFF-4 Foundational Technology Systems	116,362	110,672	98,820	325,854
Sub-total	132,540	123,326	109,282	365,148
Total RAMP Capital Costs	132,540	123,326	109,282	365,148

*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).

A. RAMP Risk and Cross Functional Factor Overview

As summarized in Table TB/GE-2 and TB/WE-3 above, our testimony includes costs to mitigate the safety-related risks and Cross Functional Factors included in the RAMP report.

These risks and factors are further described in Table TB/WE-4 below:

TABLE TB/WE-4
RAMP [Risk and/or CFF] Chapter Description

SCG-CFF-1 Asset and Records Management	Enterprise Asset Management (EAM) is integrated at SoCalGas with the adoption of the national International Standards Organization (ISO) 55000 standard as a guide and is a core component of our Safety Management Systems (SMS) organization, aligned with the American Petroleum Institute (API) 1173 recommended practice for pipeline safety.
SCG-CFF-4 Foundational Technology Systems	Describes the need for developing and maintaining stable technology platforms. Foundational technology systems are used in every aspect of operations, customer engagement, and emergency response. Included are a significant portion of the Companies' software application systems, communication networks, monitoring systems, end-user systems, and hardware and software platforms hosted in the Companies' data centers and on internal and external cloud platforms.

SCG-Risk-2 Dig-In	Incidents involving a contractor Dig-in: Excavation damage on the gas system, which includes both medium and high-pressure pipelines upstream of the gas meter, regardless of the party (1st, 2nd, 3rd) that results in significant consequences including serious injuries and/or fatalities.
-------------------	--

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Cross Functional factors (CFF) refer to initiatives (drivers, consequences, and/or mitigations) that are associated with, but are not specific to, any specific RAMP risk. Foundational Technology Systems, one of the CFFs included in the 2021 RAMP filing, are necessary to provide safe and reliable service to the public. These systems are used in every aspect of operations, customer engagement, and emergency response. These systems include a significant portion of each company’s software application systems, communication networks, monitoring systems, end-user systems, and hardware and software platforms hosted in data centers and on internal and external cloud platforms. The safety and reliability of operations depend on Foundational Technology Systems; thus, it is critical for these systems to be resilient and recoverable.

Three factors create a continuing need to invest in Foundational Technology Systems:

- Technology systems have become the foundation for operational, business, and customer engagement needs across the enterprise, where even the most routine tasks rely on an interdependent network of systems and services.
- Technology can quickly become obsolete and often requires lifecycle management activities such as maintenance, upgrades, and replacements to remain reliable and secure. Neglecting these activities may result in downstream impacts, performance issues, and/or security vulnerabilities.
- The industry is faced with constantly evolving threats from both domestic and foreign adversaries, as well as supply chain risks, third-party and insider threats, and natural hazards. Collectively, the dependency on technology systems, the pace of technology obsolescence, and the dynamic nature of technology threats, hazards, and risks require that the Companies evaluate and leverage the latest solutions on the market and constantly adapt to provide services securely, safely, and reliably to the workforce and customers.

The initiatives associated with Foundational Technology Systems discussed in this chapter work to reduce the frequency and consequences of technology-related system outages.

1 Technology outages can be caused by drivers such as ineffective processes, hardware
2 malfunctions, legacy system infrastructure issues, natural disasters, power outages, software
3 failures, or human error. A technology outage can have varied consequences to safety, business
4 operations, customer service, and system reliability.

5 SoCalGas and SDG&E have identified three tenets – Resiliency, Recovery, and Lifecycle
6 Management – that represent the Foundational Technology Systems initiatives outlined in this
7 chapter, as described below:

- 8 • **Technology resiliency** includes architectures, technologies, and processes for
9 applications and infrastructure that focus on being prepared for any type of
10 disruption – planned or unplanned – to mitigate the risk of downtime.
- 11 • **IT disaster recovery** is the ability to quickly recover systems and data after a
12 disruption. Resilient systems and recovery work in tandem because increased
13 resiliency reduces potential impacts and diminishes recovery implications.
- 14 • **Lifecycle management** is the holistic approach to maintenance,
15 upgrades/replacement, and the planning process to ensure systems continue to
16 operate as intended or to transition or retire legacy systems.

17 In developing our request, priority was given to these key safety risks to assess which risk
18 mitigation activities Information Technology currently performs and what incremental efforts are
19 needed to further mitigate these risks. While developing the GRC forecasts, The Company
20 evaluated the scope, schedule, resource requirement, and synergies of RAMP-related projects
21 and programs to determine costs already covered in the base year and those that are incremental
22 increases expected in the test year.

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

25 **B. GRC Risk and CFF Activities**

26 Table TB/WE-5 below provides a narrative summary of the forecasted RAMP-related
27 activities that we sponsor in our testimony.
28

1
2

TABLE TB/WE-5
Summary of RAMP CFF Activities

RAMP ID	Mitigation	Mitigation Description
1	Datacenter Modernization	Modernizing datacenter infrastructure and applications improving resiliency, recoverability, and availability, reducing the risk of unplanned outages to key safety systems.
2	Network & Voice System Resiliency	Initiatives focused on network and enterprise voice system resiliency, recovery and end of life management to improve communication of key safety systems within the datacenter, remote sites and mobile field crews.
3	Monitoring Systems and Services	Focusing monitoring capabilities within the datacenter and remote sites improving early detection of issues reducing unplanned outages of key safety systems.
4	Gas Operations Systems Resiliency	Improve resiliency and replacement of end of life infrastructure and software that supports Gas Operations safety systems, reducing risk of outages and improving recoverability. (Systems such as Gas Control, MDT, GIS, Locate & Mark).
5	End User Access and Supporting Services	Projects focused on the resiliency and stability of end-user laptops, desktops and supporting services needed to support safety systems.
6	IT Service Continuity	Improvement of IT service continuity processes that result in improved technology resiliency and recovery for safety systems, reducing the risk of unplanned outages and inability of systems to recover.
7	Cloud Resiliency Services	Implement foundational Cloud capabilities needed as safety applications move to the cloud, making safety systems more resilient.
8	Emergency Operations Center (EOC) Technology Resiliency	Design/develop IT services that allow the EOC to continue to function regardless of the type and scale of emergency.

3
4
5

These activities are discussed within the O&M and Capital sections below. For additional information and a roadmap, please refer to Appendix B and C, which contains a table

1 identifying by workpaper the TY 2024 forecast dollars associated with activities in the 2021
2 RAMP Report that are discussed in this testimony.

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

11 Our incremental request supports the ongoing management of these risks that could pose
12 significant safety, reliability, and financial consequences.

13 **C. Changes from RAMP Report**

14 Other than as discussed below, the RAMP-related activities described in our GRC
15 testimony are consistent with the activities presented in the 2021 RAMP Report. General
16 changes to risks scores or Risk Spend Efficiency (RSE) values are primarily due to changes in
17 the Multi-Attribute Value Framework (MAVF) and RSE methodology, as discussed in the
18 RAMP to GRC Integration testimony.

19 The Foundational Technology Systems portfolio has changed from the 2021 RAMP
20 Report in scope, but we remain within range of estimated costs presented.

21 **V. SUSTAINABILITY AND SAFETY CULTURE**

22 Sustainability at SoCalGas focuses on continuous improvement, innovation, and
23 partnerships to advance California's climate objectives incorporating holistic and sustainable
24 business practices and approaches. SoCalGas's sustainability strategy, ASPIRE 2045, integrates
25 five key focus areas across the Company's operations to promote the public interest, and the
26 wellbeing of utility customers, employees, and other stakeholders. Please refer to the
27 Sustainability and Climate Change Policy testimony of Michelle Sim and Naim Jonathan Peress
28 (Ex. SCG-02) for a more detailed discussion of SoCalGas's sustainability and climate policies.

29 Safety is foundational to Company and SoCalGas's sustainability strategy. As the
30 nation's largest gas distribution utility, the safety of SoCalGas's customers, employees,
31 contractors, system, and the communities served has been – and will remain – a fundamental

1 value for the Company and is interwoven in everything SoCalGas does. This safety-first culture
2 is embedded in every aspect of SoCalGas's business. The tradition of providing safe and reliable
3 service spans 150 years of the Company's history and is summarized in SoCalGas's Leadership
4 Commitment statement, which is endorsed by the entire senior management team:

5 SoCalGas leadership is fully committed to safety as a core value. SoCalGas's
6 Executive Leadership is responsible for overseeing reported safety concerns and
7 promoting a strong, positive safety culture and an environment of trust that
8 includes empowering employees to identify risks and to "Stop the Job."

9 The IT Division works to fulfill that culture by providing the technology support required
10 for operations and business units to fulfill their objectives safely and efficiently. As processes
11 and operations become increasingly dependent on technology for efficiencies and safety, the IT
12 Division's business clients rely on IT to provide support.

13 Companies' approach to safety is one of continuous learning and improvement where all
14 employees and contractors are encouraged and expected to engage in areas of opportunity for
15 learning and promote open dialogue where learning can take place. To learn about Companies'
16 overall safety approach please see the Safety & Risk Management System testimony of Neena
17 Master (Ex. SCG-27) and Risk and Asset Management testimony of Kenneth Deremer (Ex.
18 SDG&E-31).

19 IT is dedicated to all aspects of providing safe and reliable energy delivery while
20 protecting customer information and ensuring compliance with regulations. IT employees
21 participate in all Company-mandated safety training and are responsible for the availability and
22 operability of the technology that business clients rely on to run their operations.

23 The activities described in this testimony advance the state's climate goals and align with
24 SoCalGas's sustainability priorities. Specifically, the activities described in the table below
25 TB/WE-6 will drive progress in the area(s) of Accelerating the Transition to Clean Energy,
26 Protecting the Climate and Improving Air Quality in Our Communities, Increasing Clean Energy
27 Access and Affordability, Advancing a Diverse, Equitable, and Inclusive Culture, and Achieving
28 World-Class Safety. These focus areas are defined in Ex. SCG-02.

TABLE TB/WE-6
SCG Projects with High Sustainability and Climate Impact

WP Number	Project Name	Focus Area(s)
00786A	Application Factory	<ul style="list-style-type: none"> Accelerating the Transition to Clean Energy
00786B	Digital Process Automation Platform	<ul style="list-style-type: none"> Achieving World-Class Safety
00756BA	Energy Transition Digital Twin	<ul style="list-style-type: none"> Accelerating the Transition to Clean Energy
00786C	Decision Analytics and Automation	<ul style="list-style-type: none"> Achieving World-Class Safety
00756T	Data Foundations Supporting Safety and Compliance	<ul style="list-style-type: none"> Achieving World-Class Safety, and Protecting the Climate and Improving Air Quality in Our Communities

VI. NON-SHARED COSTS

“Non-Shared Services” are activities that are performed by a utility solely for its own benefit. Corporate Center provides certain services to the utilities and to other subsidiaries. For purposes of this GRC, SoCalGas treats costs for services received from Corporate Center as Non-Shared Services costs, consistent with any other outside vendor costs incurred by the utility. Table TB/WEWE-7 summarizes the total non-shared O&M forecasts for the listed cost categories.

TABLE TB/WE-7
Non-Shared O&M Summary of Costs

INFORMATION TECHNOLOGY (In 2021 \$)			
Categories of Management	2021 Adjusted-Recorded (000s)	TY2024 Estimated (000s)	Change (000s)
	450	451	1
A. Applications	13,640	15,413	1,773
B. Infrastructure	8,391	11,891	3,500
C. Support	1,979	2,217	238
Total Non-Shared Services	24,010 24,460	29,521 29,972	5,511 5,512

A. O&M Forecast Methodology

The forecast methodology developed for IT costs is the base year (2021) recorded, plus

1 adjustments. The pace of change in the technology industry continues to accelerate when
2 compared to prior years. This is evidenced by growth in computing power at the hardware level
3 as well as the number and diversity of applications at the software level. Factoring in emerging
4 computing trends, such as cloud computing and the increasing commercialization of IT
5 capabilities, required us to use current data and adjustments rather than relying on historical
6 averages that do not include these types of trends in our computing environment. In addition, the
7 level of support provided by the IT Division continues to grow due to new systems and
8 capabilities being implemented to support business and customer needs, and these would not
9 have been reflected in our historical costs.

10 **B. Applications (Non-Shared)**

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

12 The non-shared SCG IT applications costs represent labor and non-labor for technology
13 systems where 100% of the activities directly support the objectives of operating and
14 maintaining Company infrastructure systems safely and reliably. This area includes customer
15 engagement and information systems operations, customer field operations, routing, scheduling
16 and dispatching, and system integration and architecture. This area also includes field
17 technology for customer services technicians, and advanced meter data management, technology,
18 and operations. Lastly, this area includes high-pressure Geographic Information System (GIS)
19 applications, work management and field technology, material management applications,
20 maintenance and inspection systems support, field technology services, and field mobile
21 applications support.

22 **2. RAMP Activities**

23 RAMP-related costs for non-shared applications include the costs for CFF-4
24 Foundational Technology Systems, which include the following activities described in Table
25 TB/WE-5 above: (1) Data Center Modernization, (2) Network and Voice System Resiliency, (3)
26 Monitoring Systems and Services, (4) Gas Operations System Resiliency, (5) End User Access
27 and Supporting Services, (6) IT Service Continuity, (7) Cloud Resilience Services, and (8)
28 Emergency Operations Center (EOC) Technology Resiliency.

29 Table TB/WE -8 below provides the RAMP activities, their respective cost forecasts, and
30 the RSEs for this workpaper. For additional details on these RAMP activities, please refer to our
31 workpapers SCG-21-WP 2IT002.000 and 2IT017.000.

1
2
3

**TABLE TB/WE-8
RAMP Activity O&M Forecasts by Workpaper
In 2021 Dollars (\$000)**

INFORMATION TECHNOLOGY 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*
2IT002.000	SCG-CFF-4 - CFF 1 - CFF 8	All Activities	2,859	2,428	(431)	0
2IT017.000	SCG-CFF-4 - CFF 1 - CFF 8	All Activities	132	144	12	0
2IT017.000	SCG-CFF 1 - 3	Information Mgt Systems	3033	3364	331	0
Total			6,024	5,936	(88)	

4 *An RSE was not calculated for this activity.

5 **C. Cost Drivers**

6 Table TB/WE-9 below lists the forecasted changes associated with non-shared O&M
7 related to Applications.

8
9

**TABLE TB/WE-9
Non-Shared O&M Cost Drivers – Applications (000’s)**

Cost Driver Descriptions	TY 2024 Estimated
Cloud Consumption	791
Additional labor	722
Additional Maintenance	330
Increase in contract labor	324
Decrease in prepaid maintenance	(394)
Total	1,773

10
11

D. Infrastructure (Non-Shared)

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

13 These non-shared Company IT infrastructure costs represent non-labor costs for
14 technology systems where 100% of the activities directly support the objectives of operating and
15 maintaining the Company infrastructure systems safely and reliably. The types of functions in

1 this area include IT operations outsourced services and hardware/software maintenance
 2 agreements supporting non-shared Company infrastructure.

3 **2. RAMP Activities**

4 RAMP-related costs for non-shared infrastructure include the costs for CFF-4
 5 Foundational Technology Systems, which includes the following activities described in Table
 6 TB/WE-5 above: (1) Data Center Modernization, (2) Network and Voice System Resiliency, (3)
 7 Monitoring Systems and Services, (4) Gas Operations System Resiliency, (5) End User Access
 8 and Supporting Services, (6) IT Service Continuity, (7) Cloud Resilience Services, and (8) EOC
 9 Technology Resiliency.

10 Table TB/WE-10 below provides the RAMP activities, their respective cost forecasts,
 11 and the RSEs for this workpaper. For additional details on these RAMP activities, please refer to
 12 our workpapers SCG-21-WP 2IT004.000

13 **TABLE TB/WE-10**
 14 **RAMP Activity O&M Forecasts by Workpaper**
 15 **In 2021 Dollars (\$000)**

INFORMATION TECHNOLOGY						
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*
2IT004.000	SCG-CFF-4 - CFF 1 - CFF 8	All Activities	2,240	2,584	344	0
Total			2,240	2,584	344	0

16 *An RSE was not calculated for this activity.

17 **3. Cost Drivers**

18 Table TB/WE-11 below lists the forecasted changes associated with non-shared O&M
 19 related to Infrastructure.
 20
 21

TABLE TB/WE-11
Non-Shared O&M Cost Drivers – Infrastructure (000’s)

Cost Driver Descriptions	TY 2024 Estimated
A. Mainframe transfer from SDGE to SCG	2,505
B. Increase in IT Operations Managed Services	984
C. Additional labor	11
Total	3,500

E. Support (Non-Shared)

1. Description of Costs and Underlying Activities

The non-shared Company IT applications costs represent labor and non-labor for technology systems where 100% of the activities directly support the objectives of operating and maintaining SCG infrastructure systems safely and reliably. This area includes IT quality assurance services, end user devices, service management and engineering support. This area also includes Business Intelligence (BI) & analytics engineering, industrial engineering & cost improvement, data science, Continuous Improvement (CI) Project Management Office (PMO), workforce management.

2. Cost Drivers

Table TB/WE-12 below lists the forecasted increases associated with non-shared O&M related to Support.

TABLE TB/WE-12
Non-Shared O&M Cost Drivers – Support (000’s)

Cost Driver Descriptions	TY 2024 Estimated
Additional labor	249
Redistribution of Labor	(11)
Total	238

VII. SHARED COSTS

As described in the testimony of Angel Le (Ex. SCG-30) Shared Services are activities performed by a utility shared services department (*i.e.*, functional area) for the benefit of: (i) SDG&E or SoCalGas, (ii) Corporate Center and/or (iii) any affiliate subsidiaries. The utility providing Shared Services allocates and bills incurred costs to the entity or entities receiving those services.

1 Table TB/WE-13 below summarizes the total shared O&M forecasts for the listed cost
 2 categories.

3 **TABLE TB/WE-13**
 4 **Shared O&M Summary of Costs**

INFORMATION TECHNOLOGY (In 2021 \$)			
(In 2021 \$) Incurred Costs (100% Level)			
Categories of Management	2021 Adjusted-Recorded (000s)	TY2024 Estimated (000s)	Change (000s)
A. Applications	12,701	18,867	6,166
B. Infrastructure	9,268	5,947	(3,321)
C. Support	3,730	2,449	(1,281)
Total Shared Services (Incurred)	25,699	27,263	1,564

5 We are sponsoring the forecasts on a total incurred basis, as well as the shared services
 6 allocation percentages related to those costs. Those percentages are presented in our shared
 7 services workpapers, along with a description explaining the activities being allocated. See Ex.
 8 SCG-30-WP. The dollar amounts allocated to affiliates are presented in our Shared Services
 9 Policy and Procedures testimony. See Ex. SCG-30 (Angel Le).

11 **A. O&M Forecast Methodology**

12 The forecast methodology developed for IT costs is the base year (2021) recorded, plus
 13 adjustments. The pace of change in the technology industry continues to accelerate when
 14 compared to prior years. This is evidenced by growth in computing power at the hardware level
 15 as well as the number and diversity of applications at the software level. Factoring in emerging
 16 computing trends, such as cloud computing and the increasing commercialization of IT
 17 capabilities, required us to use current data and adjustments rather than relying on historical
 18 averages that do not include these types of trends in our computing environment. In addition, the
 19 level of support required of IT continues to grow due to new systems and capabilities being
 20 implemented to support business and customer needs and these would not have been reflected in
 21 our historical costs.

22 **B. Applications (Shared)**

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

24 The shared SCG IT applications costs represent labor and non-labor for technology
 25 systems where costs are shared between multiple business units and support the objectives of

1 operating and maintaining the company infrastructure systems safely and reliably. The types of
2 systems supported in this area include business voice communication services such as managing
3 platforms and tools used by Customer Contact Center (CCC) to interact via voice technologies
4 with external customers. This area also supports applications responsible for facilitating and
5 billing of major markets gas services, business intelligence and analytics including data science
6 capabilities. Additionally, this area supports business intelligence analytics including data
7 science capabilities across the enterprise, through data, software, and platform engineering and
8 includes GIS portal, work management field technology, project and records management, work
9 management systems, and Records and Document Management System (RDMS) support. The
10 shared Company IT applications costs also support all other company-specific activities such as
11 financial systems and portfolio management services, communications and digital operations,
12 and cloud services.

13 **2. RAMP Activities**

14 RAMP-related costs for shared applications include the costs for CFF-4 Foundational
15 Technology Systems, which includes the following activities described in Table TB/WE 5
16 above: (1) Data Center Modernization, (2) Network and Voice System Resiliency, (3)
17 Monitoring Systems and Services, (4) Gas Operations System Resiliency, (5) End User Access
18 and Supporting Services, (6) IT Service Continuity, (7) Cloud Resilience Services, and (8) EOC
19 Technology Resiliency.

20 Table TB/WE-14 below provides the RAMP activities, their respective cost forecasts,
21 and the RSEs for this workpaper. For additional details on these RAMP activities, please refer to
22 our workpapers SCG-21- WP 2200-0302.00 and 2200-2272.000.
23

1
2
3

**TABLE TB/WE-14
RAMP Activity O&M Forecasts by Workpaper
In 2021 Dollars (\$000)**

INFORMATION TECHNOLOGY 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*
2200-0302.000	SCG-CFF-4 - CFF 1 - CFF 8	All Activities	910	835	(75)	0
2200-0302.000	SCG-Risk-2 - C31-C32	Ticket Risk Assessment	83	83	0	6
2200-2272.000	SCG-CFF-4 - CFF 1 - CFF 8	All Activities	32	65	33	0
2200-0302.000	SCG- CFF-1-3	Information Mgt Systems	5163	6872	1709	0
Total			6,188	7,855	1,667	

4 *An RSE was not calculated for this activity.

5 **3. Cost Drivers**

6 Table TB/WE-15 below lists the forecasted increases associated with shared O&M
7 related to Applications.

**TABLE TB/WE-15
Shared O&M Cost Drivers – Applications (000’s)**

Cost Driver Descriptions	TY 2024 Estimated
Transfer of Operational Costs to Applications from Support	2,746
Additional labor	1,334
Cloud consumption	1,054
Increase in prepaid Maintenance	1,032
Total	6,166

10

1 **C. Infrastructure (Shared)**

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

3 The shared Company IT infrastructure costs represent labor and non-labor for technology
4 systems where costs are shared between multiple business units and support the objectives of
5 operating and maintaining the company infrastructure systems safely and reliably. The types of
6 systems supported in this area include shared contracts, Cloud Office PaaS and IaaS,
7 telecommunications, contract and managed services, database services, data protection and
8 storage engineering, networks, portfolio management (PMO) and service continuity
9 management. The shared SCG IT infrastructure costs also support all other company-specific
10 activities such as end user computing (EUC) engineering, shared contracts for contract and
11 maintenance renewals, conference, and collaboration.

12 **2. RAMP Activities**

13 RAMP-related costs for shared infrastructure include the costs for CFF-4 Foundational
14 Technology Systems, which include the following activities described in Table TB/WE-5 above:
15 (1) Data Center Modernization, (2) Network and Voice System Resiliency, (3) Monitoring
16 Systems and Services, (4) Gas Operations System Resiliency, (5) End User Access and
17 Supporting Services, (6) IT Service Continuity, (7) Cloud Resilience Services, and (8) EOC
18 Technology Resiliency.

19 Table TB/WE-16 below provides the RAMP activities, their respective cost forecasts,
20 and the RSEs for this workpaper. For additional details on these RAMP activities, please refer to
21 our workpapers SCG-21-WP 2200-0619.000 and 2200-2453.000.

22

TABLE TB/WE-16
RAMP Activity O&M Forecasts by Workpaper
In 2021 Dollars (\$000)

INFORMATION TECHNOLOGY						
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*
2200-0619.000	SCG-CFF-4 - CFF 1 - CFF 8	All Activities	2,321	2,789	468	0
2200-2453.000	SCG-CFF-4 - CFF 1 - CFF 8	All Activities	145	151	6	0
Total			2,466	2,940	468	0

* An RSE was not calculated for this activity.

3. Cost Drivers

Table TB/WE-17 below lists the forecasted increases associated with shared O&M related to Infrastructure.

TABLE TB/WE-17
Shared O&M Cost Drivers – Infrastructure (000’s)

Cost Driver Descriptions	TY 2024 Estimated
A. Decrease in prepaid maintenance	(1,991)
B. Transfer of costs due to re-organization	(1,717)
C. Additional labor	387
Total	(3,321)

D. IT Support (Shared)

1. Description of Costs and Underlying Activities

The shared SCG IT support costs represent labor and non-labor for technology systems where costs are shared between multiple business units and support the objectives of operating and maintaining the company infrastructure systems safely and reliably. The types of systems supported in this area include financial management, architect support, and shared contracts.

The shared SCG IT support costs also support all other company-specific activities such as the IT Interns and Associates program and IT Organizational Change Management and Communications organizations.

2. RAMP Activities

RAMP-related costs for shared support include the costs for CFF-4 Foundational Technology Systems, which include the following activities described in Table TB/WE-5 above: (1) Data Center Modernization, (2) Network and Voice System Resiliency, (3) Monitoring Systems and Services, (4) Gas Operations System Resiliency, (5) End User Access and Supporting Services, (6) IT Service Continuity, (7) Cloud Resilience Services, and (8) EOC Technology Resiliency.

Table TB/WE-18 below provides the RAMP activities, their respective cost forecasts, and the RSEs for this workpaper. For additional details on these RAMP activities, please refer to our workpapers SCG-21-WP 2200-1220.000

**TABLE TB/WE-18
RAMP Activity O&M Forecasts by Workpaper
In 2021 Dollars (\$000)**

INFORMATION TECHNOLOGY 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*
2200-1220.000	SCG-CFF-4 - CFF 1 - CFF 8	All Activities	564	825	261	0
Total			564	825	261	0

*An RSE was not calculated for this activity.

3. Cost Drivers

Table TB/WE-19 below lists the forecasted increases associated with shared O&M related to Infrastructure.

**TABLE TB/WE-19
Shared O&M Cost Drivers – Support (000’s)**

Cost Driver Descriptions	TY 2024 Estimated
Transfer of Operational Costs from Support to Applications	(1,517)
Additional labor	183
Cloud consumption	53
Total	(1,281)

1 **VIII. CAPITAL**

2 **A. Introduction**

3 Table TB/WE-20 below summarizes the total Company IT capital forecasts for 2022,
4 2023, and 2024. Table TB/WE-20 shows the full complement of IT projects being proposed by
5 Company in this filing. In other words, Table TB/WE-20 is composed of both business unit-
6 sponsored IT capital projects, as well as IT Division-sponsored IT capital projects. The costs
7 depicted in Table TB/WE-20 are the total costs to be incurred by the proposed capital projects
8 and charged to Company cost centers. They do not reflect adjustments or allocations due to a
9 shared asset that may result in sharing of project costs across SDG&E and Corporate Center, if
10 appropriate.

11 Included in Table TB/WE-20 are projects sponsored by the business units that include IT
12 technology solutions to meet business demand. The business justifications for the business-
13 sponsored projects are included in the testimony of the associated business witnesses:

14 <i>Administrative and General</i>	Mijares (Ex. SCG-29)
15 <i>Customer Services – Field and Advanced Meter Operations</i>	Rendler (Ex. SCG-14)
16 <i>Customer Services – Information</i>	Prusnek (Ex. SCG-16)
17 <i>Customer Services – Office Operations</i>	Sides (Ex. SCG-15)
18 <i>Gas Engineering</i>	Martinez (Ex. SCG-07)
19 <i>Gas Distribution</i>	Aguirre (Ex. SCG-04)
20 <i>Gas System Staff & Technology</i>	Rawls (Ex. SCG-05)
21 <i>Gas Transmission Operations and Construction</i>	Rick Chiapa, Steve Hruby, 22 & Aaron Bell (Ex. SCG-06)
23 <i>People and Culture Department</i>	Nishimoto (Ex. SCG-28)
24 <i>Safety & Risk Management Systems</i>	Master (Ex. SCG – 27)
25 <i>Supply Management, Logistics, & Supplier Diversity</i>	Chow (Ex. SCG-17)

26 Our workpapers contain the cost justifications for the IT portion of these business unit
27 sponsored capital projects. We provide additional information about IT Division-sponsored IT
28 capital projects below in Section D. Table TB/WE-20 summarizes the total capital forecasts for
29 2022, 2023, and 2024.

1
2

TABLE TB/WE-20
Capital Expenditures Summary of Costs

INFORMATION TECHNOLOGY (In 2021 \$)			
Categories of Management	Estimated 2022 (000s)	Estimated 2023 (000s)	Estimated 2024 (000s)
A. Administrative & General	7,953	51,758	32,416
B. Customer Services – Field and Advanced Meter Opera	14,007	12,331	18,180
C. Customer Services – Office Operations	14,522	20,657	15,763
D. Customer Services – Information	3,586	2,565	0
E. Gas Distribution	0	1,835	1,835
F. Gas Engineering	1,053	0	0
G. Gas System Staff & Technology	26,295	41,959	34,399
H. Gas Transmission Operations and Construction	1,162	95	0
I. People and Culture Department	6,705	7,503	7,582
J. Information Technology	148,011	71,067	54,510
K. Safety & Risk Management Systems	12,168	8,911	8,439
L. Supply Management & Supplier Diversity	17,697	10,365	1,703
Total	253,159	229,046	174,827

3
4
5
6
7

B. IT Capital Planning Process

Before an IT capital project is funded and moves into development, it must go through Company’s capital project approval process, which has several distinct stages, as described below.

1 **1. IT Division Capital Plan Development**

2 The IT Division develops a proposed set of capital projects for the upcoming year by
3 working with business clients to identify new technology capabilities to meet business and
4 customer needs as well as working with the IT teams to identify technology lifecycle needs. IT
5 and business client teams develop a project Concept that is used to prioritize and approve
6 projects to proceed to developing a Business Case. Business Cases are reviewed and approved
7 by a functional capital committee to be funded and proceed to begin work.

8 **2. Concepts**

9 Concepts are high-level assessments developed for review during the capital planning
10 process. The concepts include typical project elements, such as cost estimates, business benefits,
11 and project schedules. It also provides delivery teams the opportunity to document alternative
12 options considered, as well as business risks and implications of not proceeding with the
13 project. All of these elements are available for consideration during project prioritization and
14 approval.

15 **3. Project Prioritization and Approval**

16 The concepts provided by delivery teams are utilized for prioritization
17 purposes. Rankings are determined based on various factors including, but not limited to, safety,
18 regulatory, technology lifecycle needs, and cost-benefit analyses. The annual capital planning
19 process for SCG is administered by the Capital and Operating Planning group and the process is
20 referenced in the testimony of SCG Rate Base testimony of Pat Moersen (Ex. SCG-31). Based
21 on the rankings, projects are approved for preliminary funding and to proceed to Business Case
22 development.

23 **4. Business Cases**

24 Once funding is approved by the Capital and Operating Planning group for a concept, a
25 complete business case must be prepared and approved before work begins. Business cases are
26 developed jointly by representative(s) from the sponsoring IT department, the sponsoring
27 business department (when applicable), and the IT Technology Investment team. Others may be
28 added to the team as required.

- 29 • The sponsoring IT department is primarily responsible for defining the project
30 scope, identifying the technical approach, and generating the basis of the estimate
31 for the capital costs and ongoing O&M support costs.

- The business representatives are primarily responsible for confirming the business requirements, calculating the business benefits, and ensuring that the proposed solution meets the business objectives.
- The IT Technology Investment team ensures that the templates are completed correctly, that the project costs are calculated and characterized correctly, and that the proposed scope is consistent with policy.

5. Cost Sharing Mechanisms

A cost-sharing mechanism must be determined for any project that will be utilized across SoCalGas, SDG&E, and/or Corporate Center. As part of the business case development, a project team will include a recommendation of how costs will be shared for consideration during the capital approval process based on its assessment of project scope.

C. Capital Forecast Methodology

SoCalGas capital projects use a zero-based forecast methodology. A zero-based estimate is a more accurate indicator of future costs for this category based on current and expected projects of this nature as the historical average does not inform the forecast due to changing technological advancements. Detailed cost estimates are provided by internal and external delivery teams (where applicable) experienced in estimating projects with similar scope, schedule, and resources such as FTE, systems, and environments.

D. IT-Sponsored Capital Projects

The remainder of the IT capital costs we are requesting are for Company IT-sponsored capital projects. Table TB/WE-21 below provides a summary of costs for the IT-sponsored capital projects. Summary descriptions of the projects are provided in the subsections below and details can be found in our capital workpapers for each project (Ex. SCG-21-CWP).

1
2
3

TABLE TB/WE-21
Capital Expenditures Summary of Costs
IT Projects Only

INFORMATION TECHNOLOGY (In 2021 \$)					
ID	Project Description	Work Paper	Estimated 2022	Estimated 2023	Estimated 2024
1	Application Monitoring Refresh	00721AJ	2,194	-	4,588
2	Network Infrastructure Extension	00721AM	3,900	3,900	-
3	Enterprise Radio Media Workstation Replacement	00721AO	1,232	-	-
4	Identity and Access Management (IAM) Cloud	00721AP	2,026	4,062	3,288
5	Enterprise Voice System Refresh	00721AQ	4,179	794	-
6	Routine Small Cap 2022-2024	00721AR	300	300	300
7	Cloud Foundation	00721AS	5,562	5,562	5,562
8	Compute Capacity Bulk Buy	00721B	54	-	-
9	Backup and Recovery Capacity Expansion 2022	00721C	1,138	-	-
	a. Recovery Vault Expansion 2023	00721D	-	1,106	-
10	b. Recovery Vault Expansion 2024	00721O	-	-	1,112
11	Digital Workspace	00721E	19,738	-	-
	a. Network Attached Storage Cyber Vault Capacity Expansion 2023	00721G	-	310	-
12	b. Network Attached Storage Cyber Vault Capacity Expansion 2024	00721P	-	-	295
	a. Compute Capacity Expansion 2022	00721H	-	3,467	-
13	b. Compute Capacity Expansion 2023	00721AL	-	6,035	-
	a. Compute Database Hardware Capacity Expansion and Infrastructure Demand Management 2022	00721I	3,141	-	-
14	b. Compute Database Hardware Capacity Expansion 2023	00721Q	-	2,130	-

INFORMATION TECHNOLOGY (In 2021 \$)

ID	Project Description	Work Paper	Estimated 2022	Estimated 2023	Estimated 2024
15	Mobile Phone Refresh 2022	00721K	6,388	-	-
16	Infrastructure Monitoring Implementation	00721L	1,927	2,777	205
17	Backup and Recovery Hardware Refresh	00721N	-	2,334	-
18	Compute Infrastructure Refresh 2024	00721R	-	-	8,390
19	Upgrade Legacy Environment Storage	00721W	7,318	-	-
20	Legacy Hardware Refresh 2022	00721X	2,965	-	-
21	Wide Area Network (WAN) and Private Network Refresh	00743A	2,691	1,718	2,475
22	Local Area Network Upgrade	00743B	6,680	6,054	6,137
23	Microwave Radio Network Remediation	00743E	3,739	125	-
24	Emergency Response Command Center Enhancement	00743F	332	-	-
25	Remote Site Technology Refresh	00743H	416	13	-
26	Call Recording System Refresh	00743I	321	-	-
27	Supervisory Control and Data Acquisition Network Refresh Project	00743J	1,078	491	495
28	Electronic Volume Correctors (EVC) and Gas Chromatographs (GC) Telecom Security Remediation	00755M	284	-	-
29	Business Adaptation Tech and Digitalization	00756AA	-	1,381	1,542
30	System Enhancements and Workflow Management	00756AI	700	-	-
31	Energy Transition Digital Twin	00756BA	2,347	1,434	1,434
32	Electronic Data Interface Exchange - Web Methods Modernization	00756E	4,029	3,154	1,673
	a. App Modernization and Vulnerability Reduction	00756H	1,124	-	-
33	b. App Modernization and Vulnerability Reduction Phase II	00756V	5,048	4,588	4,588
34	ServiceNow Service Mapping	00756Q	-	6,206	2,035

INFORMATION TECHNOLOGY (In 2021 \$)					
ID	Project Description	Work Paper	Estimated 2022	Estimated 2023	Estimated 2024
35	Content Server Replacement	00756S	4,907	-	-
36	Foundations Analytics Service	00756T	4,574	3,524	2,794
37	Situational Awareness Dashboards 2022-2023	00756U	880	1,760	-
38	Microsoft Enterprise Agreement 2022-2025	00756Y	28,000	-	-
39	Digital Integration	00756Z	2,050	1,161	1,360
40	Application Factory	00786A	3,749	-	-
41	Digital Process Automation	00786B	7,617	4,047	4,047
42	Decision Analytics and Automation	00786C	2,663	2,634	2,189

1. WP# 00721AJ – Application Monitoring Refresh (RAMP)

a. Description of Costs and Underlying Activities

The forecast for the Application Monitoring Refresh project for 2022, 2023, and 2024 are \$2.194 million, \$0, and \$4.588 million, respectively. The Company plans to build and place in service the Application Monitoring Refresh project by the Test Year. This project started in 2020. This project replaces end of support hardware and storage related to infrastructure and application monitoring to retain data for a longer period of time and improve IT operational efficiency by performing software upgrades. This project replaces end of support hardware, increases storage capacity to retain data for a longer period of time, and reduces risk by hosting infrastructure and application monitoring storage multiple data centers. The project also improves IT operational efficiency by performing software upgrades, enhances root cause analysis by reducing time spent on problem and incident identification, improves data-driven decision making, and improves the ability to recommend long-term solutions. These forecasted capital expenditures support the Company’s IT goal of Simplifying and Standardizing.

This is a project within the Monitoring Systems and Services CFF activity that mitigates safety risks identified in the 2021 RAMP Report: Foundational Technology Systems (FTS) CFF-4. Accordingly, this forecast in its entirety aligns with a RAMP activity.

1 Table TB/WE-22 below shows the TY 2024 forecast dollars associated with the activities
 2 in the 2021 RAMP Report.

3 **TABLE TB/WE-22**
 4 **RAMP Activity Capital Forecasts by Workpaper**
 5 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00721AJ.001	SCG-CFF-4	3	Monitoring Systems and Services	2,194	0	4,588	0

6 *An RSE was not calculated for this activity.
 7

8 **b. Cost Drivers**

9 The underlying cost drivers for this capital project relate to internal labor costs and non-
 10 labor costs including vendor services. Documentation of these cost drivers are included in our
 11 capital workpapers. See [SCG-CWP-21-WP 00721AJ].

12 **2. WP# 00721AM – Network Infrastructure Extension (RAMP)**

13 **a. Description of Costs and Underlying Activities**

14 The forecast for the Network Infrastructure Extension project for 2022, 2023, and 2024
 15 are \$3.9 million, \$3.9 million, and \$0, respectively. The Company plans to build and place in
 16 service the Network Infrastructure Extension project by the Test Year. This project started in
 17 2020 and extends existing infrastructure to improve network traffic monitoring capabilities,
 18 providing visibility into the primary and secondary data center networks. This includes visibility
 19 into all types of environments, including physical, virtual, and cloud environments. It also
 20 provides a platform to structure and analyze network traffic in real-time to improve network
 21 performance insights and detect anomalies. The project provides a platform to structure and
 22 analyze network traffic in real-time to improve network performance insights and detect
 23 anomalies. These forecasted capital expenditures support the Company’s IT goal of Simplifying
 24 and Standardizing.

25 This is a project within the Monitoring Systems and Services CFF activity that mitigates
 26 safety risks identified in the 2021 RAMP Report: Foundational Technology Systems (FTS) CFF-
 27 4. Accordingly, this forecast in its entirety aligns with a RAMP activity.

1 Table TB/WE-23 below shows the TY 2024 forecast dollars associated with the activities
 2 in the 2021 RAMP Report.

3 **TABLE TB/WE-23**
 4 **RAMP Activity Capital Forecasts by Workpaper**
 5 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00721AJ.001	SCG-CFF-4	3	Monitoring Systems and Services	3,900	3,900	0	0

6 *An RSE was not calculated for this activity.
 7

8 **b. Cost Drivers**

9 The underlying cost drivers for this capital project relate to non-labor costs including
 10 software, vendor services for installation and configuration, and software prepaid maintenance
 11 costs. Documentation of these cost drivers are included in our capital workpapers. See [SCG-
 12 CWP-21-WP 00721AM].

13 **3. WP# 00721AO - Enterprise Radio Media Workstation Replacement**

14 **a. Description of Costs and Underlying Activities**

15 The forecast for the Enterprise Radio Media Workstation Replacement project for 2022,
 16 2023, and 2024 are \$1.232 million, \$0, and \$0, respectively. The Company plans to build and
 17 place in service the Enterprise Radio Media Workstation Replacement project by the Test Year.
 18 This project upgrades existing enterprise radio media workstations positioned at Monterey Park,
 19 Pico Rivera and other remote locations. This upgrade provides continued operational support.
 20 These forecasted capital expenditures support the Company’s IT goal of simplifying and
 21 standardizing.

22 **b. Cost Drivers**

23 The underlying cost drivers for this capital project relate to internal labor costs and non-
 24 labor costs including hardware costs, and vendor services to support implementation.
 25 Documentation of these cost drivers are included in our capital workpapers. See [SCG-CWP-21-
 26 WP 00721AO].

1 **4. WP# 00721AP – Identity and Access Management (IAM) Cloud**
2 **(RAMP)**

3 **a. Description of Costs and Underlying Activities**

4 The forecast for the IAM Cloud project for 2022, 2023, and 2024 are \$2.026 million,
5 \$4.062 million, and \$3.288 million, respectively. The Company plans to build and place in
6 service the Identity and Access Management (IAM) Cloud project by the Test Year. The project
7 implements an IAM Cloud solution. The IAM Cloud platform enables productivity, provides
8 day-one access for all identities in the environment, and secures identity. It also centralizes the
9 identity lifecycle, minimizes redundant cost, supports IT-wide modernization and innovation,
10 and reduces complexities across platforms. This project provides software decommissioning for
11 redundant solutions and entails quicker identity lifecycle events, centralized platform
12 management, and improved security controls for Company Cloud identity presence. These
13 forecasted capital expenditures support the Company’s IT goal of simplifying and standardizing.

14 This is a project within the Cloud Resilience Services CFF activity that mitigates safety
15 risks identified in the 2021 RAMP Report: Foundational Technology Systems (FTS) CFF-4.
16 Accordingly, this forecast in its entirety aligns with a RAMP activity.

17 Table TB/WE-24 below shows the TY 2024 forecast dollars associated with the activities
18 in the 2021 RAMP Report.

19 **TABLE TB/WE-24**
20 **‘RAMP Activity Capital Forecasts by Workpaper**
21 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00721AP.001	SCG-CFF-4	7	Cloud Resiliency Services	2,026	4,062	3,288	0

22 *An RSE was not calculated for this activity.
23

24 **b. Cost Drivers**

25 The underlying cost drivers for this capital project relate to internal labor costs and non-
26 labor costs including vendor services, software, and SaaS subscription costs. Documentation of
27 these cost drivers are included in our capital workpapers. *See* [SCG-CWP-21-WP 00721AP].

1 **5. WP# 00721AQ - Enterprise Voice System Refresh**

2 **a. Description of Costs and Underlying Activities**

3 The forecast for the Enterprise Voice System Refresh project for 2022, 2023, and 2024
4 are \$4.179 million, \$0.794 million, and \$0, respectively. The Company plans to build and place
5 in service the Enterprise Voice System Refresh project by the Test Year. This project started in
6 2021. This project replaces an aging voice system to support Electric Grid, Gas Control, and
7 other business units needing complex voice applications. The system has reached end of support
8 and must be refreshed. This project provides continued software support and license add-on as
9 needed. These forecasted capital expenditures support the Company’s IT goal of Simplifying and
10 Standardizing.

11 **b. Cost Drivers**

12 The underlying cost drivers for this capital project relate to internal labor costs and non-
13 labor costs including hardware, software, software prepaid maintenance, and vendor services for
14 implementation. Documentation of these cost drivers are included in our capital workpapers.
15 See [SCG-CWP-21-WP 00721AQ].

16 **6. WP# 00721AR - Routine Small Cap 2022-2024**

17 **a. Description of Costs and Underlying Activities**

18 The forecast for the Routine Small Cap 2022-2024 project for 2022, 2023, and 2024 are
19 \$0.300 million, \$0.300 million, and \$0.300 million, respectively. The Company plans to build
20 and place in service the Routine Small Cap 2022-2024 project by the Test Year. This project
21 started in 2020. This project addresses routine customer operational issues, network
22 improvements, information security, faster service delivery, collaboration, and innovation. This
23 project makes improvements to the overall performance of the network, thereby making it easier
24 for employees to do their job more effectively and efficiently. These forecasted capital
25 expenditures support the Company’s IT goal of Simplifying and Standardizing.

26 **b. Cost Drivers**

27 The underlying cost drivers for this capital project relate to internal labor costs and non-
28 labor costs including hardware and prepaid maintenance. Documentation of these cost drivers
29 are included in our capital workpapers. See [SCG-CWP-21-WP 00721AR].

1 **7. WP# 00721AS – Cloud Foundation (RAMP)**

2 **a. Description of Costs and Underlying Activities**

3 The forecast for the Cloud Foundation project for 2022, 2023, and 2024 are \$5.562
4 million, \$5.562 million, and \$5.562 million, respectively. The Company plans to build and place
5 in service the Cloud Foundation project by the Test Year. This project establishes a bridge from
6 on-premise capabilities to cloud services. It provides a hybrid cloud environment capable of
7 quickly provisioning or recovering IT services to support business needs more efficiently.
8 Project aligns with data center modernization, offers greater breadth of IT services and delivery
9 agility through enhanced innovation, improves reliability through high availability of
10 applications for disaster recovery or performance spikes, and automates provisioning,
11 monitoring, cost allocation and deprovisioning of services and licenses. These forecasted capital
12 expenditures support the Company’s IT goal of simplifying and standardizing.

13 This is a project within the IT Service Continuity CFF activity that mitigates safety risks
14 identified in the 2021 RAMP Report: Foundational Technology Systems (FTS) CFF-4.
15 Accordingly, this forecast in its entirety aligns with a RAMP activity.

16 Table TB/WE-25 below shows the TY 2024 forecast dollars associated with the activities
17 in the 2021 RAMP Report.

18 **TABLE TB/WE-25**
19 **RAMP Activity Capital Forecasts by Workpaper**
20 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00721AS.001	SCG-CFF-4	6	IT Service Continuity	5,562	5,562	5,562	0

21 *An RSE was not calculated for this activity.
22

23 **b. Cost Drivers**

24 The underlying cost drivers for this capital project relate to internal labor costs and non-
25 labor costs including SaaS subscription and vendor services. Documentation of these cost
26 drivers are included in our capital workpapers. See [SCG-CWP-21-WP 00721AS].

1 **8. WP# 00721B – Compute Capacity Bulk Buy (RAMP)**

2 **a. Description of Costs and Underlying Activities**

3 The forecast for the Compute Capacity Bulk Buy project for 2022, 2023, and 2024 are
4 \$0.054 million, \$0, and \$0, respectively. The Company plans to build and place in service the
5 Compute Capacity Bulk Buy project by the Test Year. This project started in 2021. This project
6 addresses the growing demand for storage, capacity, and licensing to support infrastructure
7 workloads. This project meets existing and forecasted year over year growth of compute and
8 storage for technology and business systems needs. These forecasted capital expenditures
9 support the Company’s IT goal of Simplifying and Standardizing.

10 This is a project within the Data Center Modernization CFF activity that mitigates safety
11 risks identified in the 2021 RAMP Report: Foundational Technology Systems (FTS) CFF-4.
12 Accordingly, this forecast in its entirety, aligns with a RAMP activity.

13 Table TB/WE-26 below shows the TY 2024 forecast dollars associated with the activities
14 in the 2021 RAMP Report.

15 **TABLE TB/WE-26**
16 **RAMP Activity Capital Forecasts by Workpaper**
17 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00721B.001	SCG-CFF-4	1	Data Center Modernization	54	0	0	0

18 *An RSE was not calculated for this activity.

19 **b. Cost Drivers**

20 The underlying cost drivers for this capital project relate to internal labor costs and non-
21 labor costs including hardware prepaid maintenance and vendor services. Documentation of
22 these cost drivers are included in our capital workpapers. See [SCG-CWP-21-WP 00721B].

23 **9. WP# 00721C – Backup and Recovery Capacity Expansion 2022 (RAMP)**

24 **a. Description of Costs and Underlying Activities**

25 The forecast for the Backup and Recovery Capacity Expansion 2022 project for 2022,
26 2023, and 2024 are \$1.138 million, \$0, and \$0, respectively. The Company plans to build and
27
28

1 place in service the Backup and Recovery Capacity Expansion 2022 project by the Test Year.
 2 This project expands backup and recovery capacity. As the volume of data increases in
 3 production, we need to increase the backup storage correspondingly. This project includes the
 4 implementation of required software, associated licenses, and capacity to back up virtual
 5 machine containers. This project meets infrastructure demands and enables IT system resiliency.
 6 These forecasted capital expenditures support the Company’s IT goal of Simplifying and
 7 Standardizing.

8 This is a project within the Data Center Modernization CFF activity that mitigates safety
 9 risks identified in the 2021 RAMP Report: Foundational Technology Systems (FTS) CFF-4.
 10 Accordingly, this forecast in its entirety, aligns with a RAMP activity.

11 Table TB/WE-27 below shows the TY 2024 forecast dollars associated with the activities
 12 in the 2021 RAMP Report.

13 **TABLE TB/WE-27**
 14 **RAMP Activity Capital Forecasts by Workpaper**
 15 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00721B.001	SCG-CFF-4	1	Data Center Modernization	1,138	0	0	0

16 *An RSE was not calculated for this activity.

17
 18 **b. Cost Drivers**

19 The underlying cost drivers for this capital project relate to internal labor costs and non-
 20 labor costs including required software and associated licenses and vendor services to support
 21 implementation. Documentation of these cost drivers are included in our capital workpapers.
 22 See [SCG-CWP-21-WP 00721C].

23 **10. WP# 00721D & 00721O – Recovery Vault Expansion 2023-2024**
 24 **(RAMP)**

25 **a. Description of Costs and Underlying Activities**

26 The forecast for the Recovery Vault Expansion projects for 2022, 2023, and 2024 are \$0,
 27 \$1.106 million, and \$1.112 million, respectively. The Company plans to build and place in
 28 service the Recovery Vault Expansion projects by the Test Year. These projects expand back-up

1 vault capacity for improved cybersecurity protection. Cyber Vault technologies provide for
 2 immutable copies of backup data for security incident recovery purposes. Cyber recovery is
 3 intended to secure, isolate, and recover recent, clean copies of application and service data by
 4 utilizing this solution. The Cyber Vault capacity must account for current and forecasted capacity
 5 demands including organic system and data growth as well as the new systems being
 6 implemented.

7 Cyber Vault back-ups are different from the Network Attached Storage Cyber Vault
 8 Capacity Expansion in that this uses a different backup protocol, providing a backup for
 9 Company backups supporting system resiliency. These forecasted capital expenditures support
 10 the company’s IT goal of Managing Risk and Simplifying and Standardizing.

11 These two projects are within the Data Center Modernization CFF activity that mitigates
 12 safety risks identified in the 2021 RAMP Report: Foundational Technology Systems (FTS) CFF-
 13 4. Accordingly, these forecasts in their entirety, align with a RAMP activity.

14 Table TB/WE-28 below shows the TY 2024 forecast dollars associated with the activities
 15 in the 2021 RAMP Report.

16 **TABLE TB/WE-28**
 17 **RAMP Activity Capital Forecasts by Workpaper**
 18 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00721B.001	SCG-CFF-4	1	Data Center Modernization	0	1,106	0	0
00721B.001	SCG-CFF-4	1	Data Center Modernization	0	0	1,112	0

19 *An RSE was not calculated for this activity.

20 **b. Cost Drivers**

21 The underlying cost drivers for these capital projects relate to internal labor costs and
 22 non-labor costs including SaaS subscription, vendor services, software licenses, and hardware
 23 and software prepaid maintenance. Documentation of these cost drivers are included in our
 24 capital workpapers. See [SCG-CWP-21-WP 00721D & 00721O].
 25

1 **11. WP# 00721E – Digital Workspace (RAMP)**

2 **a. Description of Costs and Underlying Activities**

3 The forecast for the Digital Workspace project for 2022, 2023, and 2024 are \$19.738
4 million, \$0, and \$0, respectively. The Company plans to build and place in service the Digital
5 Workspace project by the Test Year. This project started in 2021 and procures, configures, and
6 deploys workstations to Company employees. These workstations include a combination of
7 desktops and laptops with a docking station. This project improves client experience, operational
8 efficiency and reduces the risk of technology obsolescence. The project also increases mobility
9 and flexibility for office workers by replacing some desktops with laptops. These forecasted
10 capital expenditures support the Company’s IT goal of transforming how we work.

11 This is a project within the End User Access and Supporting Services CFF activity that
12 mitigates safety risks identified in the 2021 RAMP Report: Foundational Technology Systems
13 (FTS) CFF-4. Accordingly, this forecast in its entirety, aligns with a RAMP activity.

14 Table TB/WE-29 below shows the TY 2024 forecast dollars associated with the activities
15 in the 2021 RAMP Report.

16 **TABLE TB/WE-29**
17 **RAMP Activity Capital Forecasts by Workpaper**
18 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00721E.001	SCG-CFF-4	5	End User Access and Supporting Services	19,738	0	0	0

19 *An RSE was not calculated for this activity.

20
21 **b. Cost Drivers**

22 The underlying cost drivers for this capital project relate to internal labor costs and non-
23 labor costs including hardware, software, vendor services, prepaid maintenance, and SaaS
24 subscription. Documentation of these cost drivers are included in our capital workpapers. See
25 [SCG-CWP-21-WP 00721E].

1 **12. WP# 00721G & 00721P – Network Attached Storage Cyber Vault**
 2 **Capacity Expansion 2023-2024 (RAMP)**

3 **a. Description of Costs and Underlying Activities**

4 The forecast for the Network Attached Storage Cyber Vault Capacity Expansion projects
 5 for 2022, 2023, and 2024 are \$0, \$0.310 million, and \$0.295 million, respectively. The Company
 6 plans to build and place in service the Network Attached Storage Cyber Vault Capacity
 7 Expansion projects by the Test Year. These projects expand capacity for improved Cybersecurity
 8 protection and implement Cyber Vault, providing a backup for Application File Services. The
 9 capacity of the vault needs to be expanded as data increases in Network Attached Storage (NAS).
 10 These projects meet infrastructure demands and enable other IT projects to move forward. This
 11 is different from the Recovery Vault Capacity Expansion in that this uses a different backup
 12 protocol, providing backups for files used by our business applications. These forecasted capital
 13 expenditures support the Company’s IT goal of Simplifying and Standardizing.

14 These two projects are within the Data Center Modernization CFF activity that mitigates
 15 safety risks identified in the 2021 RAMP Report: Foundational Technology Systems (FTS) CFF-
 16 4. Accordingly, these forecasts in their entirety, align with a RAMP activity.

17 Table TB/WE-30 below shows the TY 2024 forecast dollars associated with the activities
 18 in the 2021 RAMP Report.

19 **TABLE TB/WE-30**
 20 **RAMP Activity Capital Forecasts by Workpaper**
 21 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00721B.001	SCG-CFF-4	1	Data Center Modernization	0	310	0	0
00721B.001	SCG-CFF-4	1	Data Center Modernization	0	0	295	0

22 *An RSE was not calculated for this activity.
 23

24 **b. Cost Drivers**

25 The underlying cost drivers for these capital projects relate to internal labor costs and
 26 non-labor costs including SaaS subscription, hardware and software licenses, vendor services to

support implementation, and hardware and software maintenance. Documentation of these cost drivers are included in our capital workpapers. See [SCG-CWP-21-WP 00721G & 00721P].

13. WP# 00721H & 00721AL – Compute Capacity Expansion 2022-2023 (RAMP)

a. Description of Costs and Underlying Activities

The forecast for the Compute Capacity Expansion projects for 2022, 2023, and 2024 are \$0, \$9.502 million, and \$0, respectively. The Company plans to build and place in service the Compute Capacity Expansion projects by the Test Year. Compute related infrastructure is growing at a higher rate than initially planned. These projects expand IT infrastructure capacity to meet demand from new projects and future growth. The projects meet IT infrastructure demands and enable other IT projects to move forward. Keeping compute capacity above threshold values is critical for reliable business continuity to mitigate risk of outages and emergency purchases. These forecasted capital expenditures support the Company’s IT goal of simplifying and standardizing.

These two projects are within the Data Center Modernization CFF activity that mitigates safety risks identified in the 2021 RAMP Report: Foundational Technology Systems (FTS) CFF-4. Accordingly, these forecasts in their entirety, align with a RAMP activity.

Table TB/WE-31 below shows the TY 2024 forecast dollars associated with the activities in the 2021 RAMP Report.

**TABLE TB/WE-31
RAMP Activity Capital Forecasts by Workpaper
In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00721B.001	SCG-CFF-4	1	Data Center Modernization	0	3,467	0	0
00721B.001	SCG-CFF-4	1	Data Center Modernization	0	6,035	0	0

*An RSE was not calculated for this activity.

1 **b. Cost Drivers**

2 The underlying cost drivers for these capital projects relate to internal labor costs and
3 non-labor costs including required hardware and software license costs, hardware and software
4 prepaid maintenance costs, and vendor services to support implementation. Documentation of
5 these cost drivers are included in our capital workpapers. See [SCG-CWP-21-WP 00721H &
6 00721AL].

7 **14. WP# 00721I & 00721Q – Compute Database Hardware Capacity**
8 **Expansion and Infrastructure Demand Management 2022-2023**
9 **(RAMP)**

10 **a. Description of Costs and Underlying Activities**

11 The forecast for the Compute Database Hardware Capacity Expansion and Infrastructure
12 Demand Management projects for 2022, 2023, and 2024 are \$3.141 million, \$2.130 million, and
13 \$0, respectively. The Company plans to build and place in service the Compute Database
14 Hardware Capacity Expansion projects by the Test Year. These projects expand database related
15 hardware capacity to support additional storage and compute requirements for database servers.
16 Additionally, the 2022 project aims to build demand management capabilities through the
17 creation of tools to support infrastructure demand planning. These projects meet IT infrastructure
18 demands and enable other IT projects to move forward. Database capacity needs to be expanded
19 as databases grow organically with expanding business applications to mitigate the risk of
20 outages and emergency purchases. These forecasted capital expenditures support the Company’s
21 IT goal of Simplifying and Standardizing.

22 These two projects are within the Data Center Modernization CFF activity that mitigates
23 safety risks identified in the 2021 RAMP Report: Foundational Technology Systems (FTS) CFF-
24 4. Accordingly, these forecasts in their entirety, align with a RAMP activity.

25 Table TB/WE-32 below shows the TY 2024 forecast dollars associated with the activities
26 in the 2021 RAMP Report.

TABLE TB/WE-32
RAMP Activity Capital Forecasts by Workpaper
In 2021 Dollars (\$000s)

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00721B.001	SCG-CFF-4	1	Data Center Modernization	3,141	0	0	0
00721B.001	SCG-CFF-4	1	Data Center Modernization	0	2,130	0	0

*An RSE was not calculated for this activity.

b. Cost Drivers

The underlying cost drivers for these capital projects relate to internal labor costs and non-labor costs including required hardware and software license costs, hardware and software prepaid maintenance costs, and vendor services for installation of hardware. Documentation of these cost drivers are included in our capital workpapers. See [SCG-CWP-21-WP 00721I & 00721Q].

15. WP# 00721K - Mobile Phone Refresh 2022

a. Description of Costs and Underlying Activities

The forecast for the Mobile Phone Refresh 2022 project for 2022, 2023, and 2024 are \$6.388 million, \$0, and \$0, respectively. The Company plans to build and place in service the Mobile Phone Refresh 2022 project by the Test Year. The Company is discontinuing its personal phone use program. This project permits tighter security controls on phone devices used for business by purchasing company-owned devices for those currently receiving a mobile phone stipend for business use of a personal-owned device, which is being discontinued. These forecasted capital expenditures support the Company's IT goal of transforming how we work and reduces risk.

b. Cost Drivers

The underlying cost drivers for this capital project relate to internal labor costs and non-labor costs including hardware and vendor services. Documentation of these cost drivers are included in our capital workpapers. See [SCG-CWP-21-WP 00721K].

1 **16. WP# 00721L – Infrastructure Monitoring Implementation (RAMP)**

2 **a. Description of Costs and Underlying Activities**

3 The forecast for the Infrastructure Monitoring Implementation project for 2022, 2023,
4 and 2024 are \$1.927 million, \$2.777 million, and \$0.205 million, respectively. The Company
5 plans to build and place in service the Infrastructure Monitoring Implementation project by the
6 Test Year. IT monitoring is the process used to gather metrics on operations of the IT
7 environment's hardware and software to ensure assets function as expected to support
8 applications and services. This project enables infrastructure teams to have a comprehensive and
9 holistic view of their technology stack and how it impacts business outcomes. This project
10 identifies and mitigates issues proactively, keeps applications continually available by
11 minimizing downtime and maximizing operational performance, and improves end-user
12 experience and customer satisfaction. These forecasted capital expenditures support the
13 Company's IT goal of Simplifying and Standardizing.

14 This is a project within the Monitoring Systems and Services CFF activity that mitigates
15 safety risks identified in the 2021 RAMP Report: Foundational Technology Systems (FTS) CFF-
16 4. Accordingly, this forecast in its entirety, aligns with a RAMP activity.

17 Table TB/WE-33 below shows the TY 2024 forecast dollars associated with the activities
18 in the 2021 RAMP Report.

19 **TABLE TB/WE-33**
20 **RAMP Activity Capital Forecasts by Workpaper**
21 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00721AJ.001	SCG-CFF-4	3	Monitoring Systems and Services	1,927	2,777	205	0

22 *An RSE was not calculated for this activity.

23 **b. Cost Drivers**

24 The underlying cost drivers for this capital project relate to internal labor costs and non-
25 labor costs including vendor services. Documentation of these cost drivers are included in our
26 capital workpapers. See [SCG-CWP-21-WP 00721L].

1 **17. WP# 00721N – Backup and Recovery Hardware Refresh (RAMP)**

2 **a. Description of Costs and Underlying Activities**

3 The forecast for the Backup and Recovery Hardware Refresh project for 2022, 2023, and
4 2024 are \$0, \$2.334 million, and \$0, respectively. The Company plans to build and place in
5 service the Backup and Recovery Hardware Refresh project by the Test Year. This project
6 purchases new backup and recovery hardware to replace existing out of support hardware. This
7 enables data protection for both data centers. This project improves infrastructure reliability and
8 supportability and provides the ability for business applications to have a data backup solution to
9 meet their service continuity requirements. These forecasted capital expenditures support the
10 Company’s IT goal of Simplifying and Standardizing.

11 This is a project within the Data Center Modernization CFF activity that mitigates safety
12 risks identified in the 2021 RAMP Report: Foundational Technology Systems (FTS) CFF-4.
13 Accordingly, this forecast in its entirety, aligns with a RAMP activity.

14 Table TB/WE-34 below shows the TY 2024 forecast dollars associated with the activities
15 in the 2021 RAMP Report.

16 **TABLE TB/WE-34**
17 **RAMP Activity Capital Forecasts by Workpaper**
18 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00721B.001	SCG-CFF-4	1	Data Center Modernization	0	2,334	0	0

19 *An RSE was not calculated for this activity.

20 **b. Cost Drivers**

21 The underlying cost drivers for this capital project relate to internal labor costs and non-
22 labor costs including vendor services, hardware, and hardware prepaid maintenance costs. In
23 addition, the project will leverage a contractor project manager to support management of the
24 project. Documentation of these cost drivers are included in our capital workpapers. See [SCG-
25 CWP-21-WP 00721N].
26

1 **18. WP# 00721R – Compute Infrastructure Refresh 2024 (RAMP)**

2 **a. Description of Costs and Underlying Activities**

3 The forecast for the Compute Infrastructure Refresh 2024 project for 2022, 2023, and
4 2024 are \$0, \$0, and \$8.390 million, respectively. The Company plans to build and place in
5 service the Compute Infrastructure Refresh 2024 project by the Test Year. This project refreshes
6 the existing company infrastructure hardware to maintain supportability and reliability. As
7 compute and storage-related hardware ages, it eventually reaches its useful asset life and
8 subsequent end of support. This project offers a reliable and well-supported infrastructure
9 footprint by being proactive in managing technical debt and mitigates the risk of maintaining
10 unsupported hardware. These forecasted capital expenditures support the Company’s IT goal of
11 Simplifying and Standardizing.

12 This is a project within the Data Center Modernization CFF activity that mitigates safety
13 risks identified in the 2021 RAMP Report: Foundational Technology Systems (FTS) CFF-4.
14 Accordingly, this forecast in its entirety, aligns with a RAMP activity.

15 Table TB/WE-35 below shows the TY 2024 forecast dollars associated with the activities
16 in the 2021 RAMP Report.

17 **TABLE TB/WE-35**
18 **RAMP Activity Capital Forecasts by Workpaper**
19 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00721B.001	SCG-CFF-4	1	Data Center Modernization	0	0	8,390	0

20 *An RSE was not calculated for this activity.
21
22

23 **b. Cost Drivers**

24 The underlying cost drivers for this capital project relate to internal labor costs and non-
25 labor costs including required hardware and software, vendor services, and hardware and
26 software prepaid maintenance costs. Documentation of these cost drivers are included in our
capital workpapers. See [SCG-CWP-21-WP 00721R].

1 **19. WP# 00721W - Upgrade Legacy Environment Storage (RAMP)**

2 **a. Description of Costs and Underlying Activities**

3 The forecast for the Upgrade Legacy Environment Storage project for 2022, 2023, and
4 2024 are \$7.318 million, \$0, and \$0, respectively. The Company plans to build and place in
5 service the Upgrade Legacy Environment Storage project by the Test Year. This project replaces
6 the end of support Storage Area Network (SAN) solution with a modern cloud and on-premise
7 infrastructure solution. This project adds standard measurable capacity within storage and
8 enables the transition to cloud. These forecasted capital expenditures support the Company's IT
9 goal of Simplifying and Standardizing.

10 This is a project within the Data Center Modernization CFF activity that mitigates safety
11 risks identified in the 2021 RAMP Report: Foundational Technology Systems (FTS) CFF-4.
12 Accordingly, this forecast in its entirety, aligns with a RAMP activity.

13 Table TB/WE-36 below shows the TY 2024 forecast dollars associated with the activities
14 in the 2021 RAMP Report.

15 **TABLE TB/WE-36**
16 **RAMP Activity Capital Forecasts by Workpaper**
17 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00721B.001	SCG-CFF-4	1	Data Center Modernization	7,318	0	0	0

18 *An RSE was not calculated for this activity.

19 **b. Cost Drivers**

20 The underlying cost drivers for this capital project relate to internal labor costs and non-
21 labor costs including hardware costs, vendor services to support implementation, and hardware
22 prepaid maintenance costs. Documentation of these cost drivers are included in our capital
23 workpapers. See [SCG-CWP-21-WP 00721W].

24 **20. WP# 00721X - Hardware Refresh 2022 (RAMP)**

25 **a. Description of Costs and Underlying Activities**

26 The forecast for the Hardware Refresh 2022 project for 2022, 2023, and 2024 are \$2.965
27 million, \$0, and \$0, respectively. The Company plans to build and place in service the Hardware
28

1 Refresh 2022 project by the Test Year. Certain IBM hardware in the SAP legacy HANA
 2 environment reaches end of support in 2022, and must be refreshed to maintain vendor support
 3 for critical systems. This project provides a more reliable environment with supported hardware.
 4 These forecasted capital expenditures support the Company's IT goal of Simplifying and
 5 Standardizing.

6 This is a project within the Data Center Modernization CFF activity that mitigates safety
 7 risks identified in the 2021 RAMP Report: Foundational Technology Systems (FTS) CFF-4.

8 Accordingly, this forecast in its entirety, aligns with a RAMP activity.

9 Table TB/WE-37 below shows the TY 2024 forecast dollars associated with the activities
 10 in the 2021 RAMP Report.

11 **TABLE TB/WE-37**
 12 **RAMP Activity Capital Forecasts by Workpaper**
 13 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00721B.001	SCG-CFF-4	1	Data Center Modernization	2,965	0	0	0

14 *An RSE was not calculated for this activity.

15 **b. Cost Drivers**

16 The underlying cost drivers for this capital project relate to internal labor costs and non-
 17 labor costs including hardware and software, and software prepaid maintenance costs.

18 Documentation of these cost drivers are included in our capital workpapers. See [SCG-CWP-21-
 19 WP 00721X].

21 **21. WP# 00743A – Wide Area Network (WAN) & Private Network**
 22 **Refresh (RAMP)**

23 **a. Description of Costs and Underlying Activities**

24 The forecast for the Wide Area Network (WAN) and Private Network Refresh project for
 25 2022, 2023, and 2024 are \$2.691 million, \$1.718 million, and \$2.475 million, respectively. The
 26 Company plans to build and place in service the WAN & Private Network Refresh project by the
 27 Test Year. This project started in 2018. This project upgrades microwave radio backbone links
 28 and replaces aging WAN routers. This project lowers Mean Time to Resolution (MTTR) through

1 proactive monitoring and alerting and provides a higher level of service level agreement to end
 2 clients. It also decreases risk to the business by reducing outages caused by aging equipment and
 3 lowering site risk due to the possibility of a tower collapsing. The project provides additional
 4 bandwidth to existing microwave radio paths to support Internet Protocol (IP) intensive
 5 applications and facilities and replaces outdated microwave radio equipment and enables native
 6 IP connectivity at each of the sites to support Multi Protocol Label Switching (MPLS) protocol.
 7 Lastly, the project refreshes existing microwave radio equipment to vendor supportable levels
 8 and reduces complexity of operational support by implementing a single network management
 9 system. These forecasted capital expenditures support the Company's IT goal of Simplifying and
 10 Standardizing.

11 This is a project within the Network and Voice System Resiliency CFF activity that
 12 mitigates safety risks identified in the 2021 RAMP Report: Foundational Technology Systems
 13 (FTS) CFF-4. Accordingly, this forecast in its entirety, aligns with a RAMP activity.

14 Table TB/WE-38 below shows the TY 2024 forecast dollars associated with the activities
 15 in the 2021 RAMP Report.

16 **TABLE TB/WE-38**
 17 **RAMP Activity Capital Forecasts by Workpaper**
 18 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00743A.001	SCG-CFF-4	2	Network and Voice System Resiliency	2,691	1,718	2,475	0

19 *An RSE was not calculated for this activity.

20
 21 **b. Cost Drivers**

22 The underlying cost drivers for this capital project relate to internal labor costs and non-
 23 labor costs including hardware, hardware prepaid maintenance, and vendor services for project
 24 management and analyst support to install and upgrade microwave paths and tower retrofits.
 25 Documentation of these cost drivers are included in our capital workpapers. See [SCG-CWP-21-
 26 WP 00743A].

1 **22. WP# 00743B – Local Area Network Upgrade (RAMP)**

2 **a. Description of Costs and Underlying Activities**

3 The forecast for the Local Area Network Upgrade project for 2022, 2023, and 2024 are
4 \$6.680 million, \$6.054 million, and \$6.137 million, respectively. The Company plans to build
5 and place in service the Local Area Network Upgrade (LAN) project by the Test Year. This
6 project started in 2021 and replaces the existing LAN equipment including switches and
7 Wireless Access Points (WAP). The work includes new cabling, power, and WAPs for better site
8 coverage. The project will also replace end-of-support battery backup systems at remote sites.
9 This project enables proactive monitoring and alerting, improves wireless access points coverage
10 and service level agreements, reduces outages, and improves operational support and backup.
11 These forecasted capital expenditures support the Company’s IT goal of Simplifying and
12 Standardizing.

13 This is a project within the Network and Voice System Resiliency CFF activity that
14 mitigates safety risks identified in the 2021 RAMP Report: Foundational Technology Systems
15 (FTS) CFF-4. Accordingly, this forecast in its entirety aligns with a RAMP activity.

16 Table TB/WE-39 below shows the TY 2024 forecast dollars associated with the activities
17 in the 2021 RAMP Report.

18 **TABLE TB/WE-39**
19 **RAMP Activity Capital Forecasts by Workpaper**
20 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00743A.001	SCG-CFF-4	2	Network and Voice System Resiliency	6,680	6,054	6,137	0

21 *An RSE was not calculated for this activity.

22 **b. Cost Drivers**

23 The underlying cost drivers for this capital project relate to internal labor costs and non-
24 labor costs including hardware, software, hardware prepaid maintenance, and vendor services
25 under multiple contracts to support project management, network engineering, and to configure,

install, and implement infrastructure hardware. Documentation of these cost drivers are included in our capital workpapers. See [SCG-CWP-21-WP 00743B].

23. WP# 00743E – Microwave Radio Network Remediation (RAMP)

a. Description of Costs and Underlying Activities

The forecast for the Microwave Radio Network Remediation project for 2022, 2023, and 2024 are \$3.739 million, \$0.125 million, and \$0, respectively. The Company plans to build and place in service the Microwave Radio Network Remediation project by the Test Year. This project started in 2021. This project implements protections to the 6 GHz microwave radio communications network by adding, upgrading, and refreshing microwave paths, performing audit and correction, and implementing frequency assurance service tools to monitor interference actively across network. This project is essential to mitigating impending interference to the critical radio network. This project also enhances performance and reliability of critical radio network. These forecasted capital expenditures support the Company’s IT goal of Simplifying and Standardizing.

This is a project within the Network and Voice System Resiliency CFF activity that mitigates safety risks identified in the 2021 RAMP Report: Foundational Technology Systems (FTS) CFF-4. Accordingly, this forecast in its entirety, aligns with a RAMP activity.

Table TB/WE-40 below shows the TY 2024 forecast dollars associated with the activities in the 2021 RAMP Report.

**TABLE TB/WE-40
RAMP Activity Capital Forecasts by Workpaper
In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00743A.001	SCG-CFF-4	2	Network and Voice System Resiliency	3,739	125	0	0

*An RSE was not calculated for this activity.

b. Cost Drivers

The underlying cost drivers for this capital project relate to internal labor costs and non-labor costs including vendor hardware, prepaid maintenance costs, and vendor services for

1 project management. Documentation of these cost drivers are included in our capital
 2 workpapers. See [SCG-CWP-21-WP 00743E].

3 **24. WP# 00743F – Emergency Response Command Center Enhancement**
 4 **(RAMP)**

5 **a. Description of Costs and Underlying Activities**

6 The forecast for the Emergency Response Command Center Enhancement project for
 7 2022, 2023, and 2024 are \$0.332 million, \$0, and \$0, respectively. The Company plans to build
 8 and place in service the Emergency Response Command Center Enhancement project by the
 9 Test Year. This project enhances communications for Mobile Command Units (MCU) for
 10 emergency response. These enhancements include cellular internet, improved virtual private
 11 network and wide area network communications, switch upgrades, Wi-Fi access points, satellite
 12 communications and out of band Management for remote monitoring and support of said
 13 systems. This project provides improved, reliable and redundant communication systems for
 14 command centers. These forecasted capital expenditures support the Company’s IT goal of
 15 Simplifying and Standardizing.

16 This is a project within the Network and Voice System Resiliency CFF activity that
 17 mitigates safety risks identified in the 2021 RAMP Report: Foundational Technology Systems
 18 (FTS) CFF-4. Accordingly, this forecast in its entirety, aligns with a RAMP activity.

19 Table TB/WE-41 below shows the TY 2024 forecast dollars associated with the activities
 20 in the 2021 RAMP Report.

21 **TABLE TB/WE-41**
 22 **RAMP Activity Capital Forecasts by Workpaper**
 23 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00743A.001	SCG-CFF-4	2	Network and Voice System Resiliency	332	0	0	0

24 *An RSE was not calculated for this activity.

1 **b. Cost Drivers**

2 The underlying cost drivers for this capital project relate to internal labor costs and non-
3 labor costs including vendor services. Documentation of these cost drivers are included in our
4 capital workpapers. See [SCG-CWP-21-WP 00743F].

5 **25. WP# 00743H – Remote Site Technology Refresh (RAMP)**

6 **a. Description of Costs and Underlying Activities**

7 The forecast for the Remote Site Technology Refresh project for 2022, 2023, and 2024
8 are \$0.416 million, \$0.013 million, and \$0, respectively. The Company plans to build and place
9 in service the Remote Site Technology Refresh project by the Test Year. This project started in
10 2021. This project refreshes out-of-support hardware, software and data protection at remote
11 sites to improve reliability and resiliency. This project improves reliability and availability and
12 improves operational support. These forecasted capital expenditures support the Company’s IT
13 goal of Simplifying and Standardizing.

14 This is a project within the Network and Voice System Resiliency CFF activity that
15 mitigates safety risks identified in the 2021 RAMP Report: Foundational Technology Systems
16 (FTS) CFF-4. Accordingly, this forecast in its entirety aligns with a RAMP activity.

17 Table TB/WE-42 below shows the TY 2024 forecast dollars associated with the activities
18 in the 2021 RAMP Report.

19 **TABLE TB/WE-42**
20 **RAMP Activity Capital Forecasts by Workpaper**
21 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00743A.001	SCG-CFF-4	2	Network and Voice System Resiliency	416	13	0	0

22 *An RSE was not calculated for this activity.
23

24 **b. Cost Drivers**

25 The underlying cost drivers for this capital project relate to internal labor costs and non-
26 labor costs including hardware and vendor services for site assessment and analysis.

Documentation of these cost drivers are included in our capital workpapers. See [SCG-CWP-21-WP 00743H].

26. WP# 00743I – Call Recording System Refresh (RAMP)

a. Description of Costs and Underlying Activities

The forecast for the Call Recording System Refresh project for 2022, 2023, and 2024 are \$0.321 million, \$0, and \$0, respectively. The Company plans to build and place in service the Call Recording System Refresh project by the Test Year. This project started in 2021 and implements mandatory call recording capabilities. This would separate recordings by functional need and utilize the current system for the Company call center, while migrating compliance recording to the new platform. This project provides a more robust recording system to meet compliance requirements and has the ability to use dedicated recording servers where necessary. These forecasted capital expenditures support the Company’s IT goal of Simplifying and Standardizing.

This is a project within the Network and Voice System Resiliency CFF activity that mitigates safety risks identified in the 2021 RAMP Report: Foundational Technology Systems (FTS) CFF-4. Accordingly, this forecast in its entirety aligns with a RAMP activity.

Table TB/WE-43 below shows the TY 2024 forecast dollars associated with the activities in the 2021 RAMP Report.

**TABLE [TB/WE-43
RAMP Activity Capital Forecasts by Workpaper
In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00743A.001	SCG-CFF-4	2	Network and Voice System Resiliency	321	0	0	0

*An RSE was not calculated for this activity.

b. Cost Drivers

The underlying cost drivers for this capital project relate to internal labor costs and non-labor costs including vendor services. Documentation of these cost drivers are included in our capital workpapers. See [SCG-CWP-21-WP 00743I].

1 **27. WP# 00743J – Supervisory Control and Data Acquisition Network**
 2 **Refresh (RAMP)**

3 **a. Description of Costs and Underlying Activities**

4 The forecast for the Supervisory Control and Data Acquisition (SCADA) Network
 5 Refresh project for 2022, 2023, and 2024 are \$1.078 million, \$0.491 million, and \$0.495 million,
 6 respectively. The Company plans to build and place in service the SCADA Network Refresh
 7 project by the Test Year. This project started in 2020. This project upgrades SCADA
 8 infrastructure and replaces end-of-support services at numerous locations. This increases
 9 bandwidth capacity to better meet business needs. This project remediates audit findings of end
 10 of support hardware, reduces operational risk, and meets reliability standards using updated
 11 hardware and architecture. The project also meets increased demand for higher traffic on the
 12 network and improves security using standard network hardware. These forecasted capital
 13 expenditures support the Company’s IT goal of Simplifying and Standardizing.

14 This is a project within the Network and Voice System Resiliency CFF activity that
 15 mitigates safety risks identified in the 2021 RAMP Report: Foundational Technology Systems
 16 (FTS) CFF-4. Accordingly, this forecast in its entirety aligns with a RAMP activity.

17 Table TB/WE-44 below shows the TY 2024 forecast dollars associated with the activities
 18 in the 2021 RAMP Report.

19 **TABLE TB/WE-44**
 20 **RAMP Activity Capital Forecasts by Workpaper**
 21 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00743A.001	SCG-CFF-4	2	Network and Voice System Resiliency	1,078	491	495	0

22 *An RSE was not calculated for this activity.
 23

24 **b. Cost Drivers**

25 The underlying cost drivers for this capital project relate to internal labor costs and non-
 26 labor costs including hardware, hardware prepaid maintenance, and vendor services.

1 Documentation of these cost drivers are included in our capital workpapers. See [SCG-CWP-21-
2 WP 00743J].

3 **28. WP# 00755M - Electronic Volume Correctors (EVC) and Gas**
4 **Chromatographs (GC) Telecom Security Remediation**

5 **a. Description of Costs and Underlying Activities**

6 The forecast for the Electronic Volume Correctors (EVC) and Gas Chromatographs (GC)
7 Telecom Security Remediation project for 2022, 2023, and 2024 are \$0.284 million, \$0, and \$0,
8 respectively. The Company plans to build and place in service the EVC and GC Telecom
9 Security Remediation project by the Test Year. This project started in 2020. The primary
10 objective of the project is to leverage the Company's private secured network to remediate the
11 security vulnerabilities with our current dial-up and IP-based EVC and GC communications.
12 This project reduces the risk of a customer data security breach. It also enables continued IP-
13 based communications for noncore volumes and gas quality. These forecasted capital
14 expenditures support the Company's IT goal of proactively managing risk.

15 **b. Cost Drivers**

16 The underlying cost drivers for this capital project relate to internal labor costs and non-
17 labor costs including software and vendor services for development and implementation.
18 Documentation of these cost drivers are included in our capital workpapers. See [SCG-CWP-21-
19 WP 00755M].

20 **29. WP# 00756AA - Business Adaptation Tech & Digitalization**

21 **a. Description of Costs and Underlying Activities**

22 The forecast for the Business Adaptation Tech & Digitalization project for 2022, 2023,
23 and 2024 are \$0, \$1.381 million, and \$1.542 million, respectively. The Company plans to build
24 and place in service the Business Adaptation Tech & Digitalization project by the Test Year.
25 This project implements emerging technology to provide scalable business capabilities that align
26 with the Company's digital transformation and digital acceleration goals. This project enables
27 asset and operational data visualization to improve Company operational planning. This project
28 also modernizes the way the Company tracks customer transactions to support operations. These
29 forecasted capital expenditures support the Company's IT goal of accelerating digital.

1 **b. Cost Drivers**

2 The underlying cost drivers for this capital project relate to internal labor costs and non-
3 labor costs including vendor services for development, cloud implementation costs and some
4 SaaS licenses. Documentation of these cost drivers are included in our capital workpapers. See
5 [SCG-CWP-21-WP 00756AA].

6 **30. WP# 00756AI - System Enhancements and Workflow Management**
7 **(RAMP)**

8 **a. Description of Costs and Underlying Activities**

9 The forecast for the System Enhancements and Workflow Management project for 2022,
10 2023, and 2024 are \$0.7 million, \$0, and \$0, respectively. The Company plans to build and place
11 in service the System Enhancements and Workflow Management project by the Test Year. This
12 project focuses on enhancement, development, implementation, and support activities for
13 multiple systems. This project provides technical and functional application solutions and offers
14 the ability to complete regulatory reporting. These forecasted capital expenditures support the
15 Company's IT goal of proactively managing risk.

16 This is a project within the Information Management Systems CFF activity that mitigates
17 safety risks identified in the 2021 RAMP Report: Asset and Records Management (FTS) CFF-1.
18 Accordingly, this forecast in its entirety aligns with a RAMP activity.

19 Table TB/WE-45 below shows the TY 2024 forecast dollars associated with the activities
20 in the 2021 RAMP Report.

21 **TABLE TB/WE-45**
22 **RAMP Activity Capital Forecasts by Workpaper**
23 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00756AB.001	SCG-CFF-1	3	Information Management Systems	700	0	0	0

24 *An RSE was not calculated for this activity.

1 **b. Cost Drivers**

2 The underlying cost drivers for this capital project relate to non-labor costs including
3 vendor services for project management, development, and implementation. Documentation of
4 these cost drivers are included in our capital workpapers. See [SCG-CWP-21-WP 00756AI].

5 **31. WP# 00756BA – Energy Transition Digital Twin (RAMP)**

6 **a. Description of Costs and Underlying Activities**

7 The forecast for the Energy Transition Digital Twin project for 2022, 2023, and 2024 are
8 \$2.347 million, \$1.434 million, and \$1.434 million, respectively. The Company plans to build
9 and place in service the Energy Transition Digital Twin project by the Test Year. This project
10 drives company sustainability objectives for energy transition by establishing a capability that
11 leverages internal and external data sources to inform high-impact decisions on the path to net-
12 zero. This includes digital models of physical environments such as vehicles and buildings. The
13 machine learning and artificial intelligence (AI) technology will be utilized to determine ways to
14 reduce the carbon footprint of our fleet and industrial applications. This project enables company
15 alignment with net-zero goals by providing models that can be used to implement solutions that
16 will help reduce company emissions and carbon footprint. These forecasted capital expenditures
17 support the Company’s IT goal of accelerating digital.

18 This is a project within the Gas Operations System Resiliency CFF activity that mitigates
19 safety risks identified in the 2021 RAMP Report: Foundational Technology Systems (FTS)
20 CFF-4. Accordingly, this forecast in its entirety aligns with a RAMP activity.

21 Table TB/WE-46 below shows the TY 2024 forecast dollars associated with the activities
22 in the 2021 RAMP Report.

23 **TABLE TB/WE-46**
24 **RAMP Activity Capital Forecasts by Workpaper**
25 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00721A.001	SCG-CFF-4	4	Gas Operations Systems Resiliency	2,347	1,434	1,434	0

26 *An RSE was not calculated for this activity.

1 **b. Cost Drivers**

2 The underlying cost drivers for this capital project relate to internal labor costs and non-
3 labor costs including vendor services for development, Scrum managers, cloud implementation
4 costs and some SaaS licenses. Documentation of these cost drivers are included in our capital
5 workpapers. See [SCG-CWP-21-WP 00756BA].

6 **32. WP# 00756E - Electronic Data Interface Exchange - Web Methods**
7 **Modernization**

8 **a. Description of Costs and Underlying Activities**

9 The forecast for the Electronic Data Interface Exchange – Web Methods Modernization
10 project for 2022, 2023, and 2024 are \$4.029 million, \$3.154 million, and \$1.673 million,
11 respectively. The Company plans to build and place in service the Electronic Data Interface
12 Exchange – Web Methods Modernization project by the Test Year. This project started in 2020.
13 The software utilized by the Electronic Data Interchange (EDIX) team, is out of support and
14 needs to be upgraded. This project includes maintaining the ability to continue conducting
15 business with internal clients and external partners. Additionally, the project optimizes customer
16 experience as a reliable integration service provider. These forecasted capital expenditures
17 support the Company’s IT goal of Simplifying and Standardizing.

18 **b. Cost Drivers**

19 The underlying cost drivers for this capital project relate to internal labor costs and non-
20 labor costs including two vendor services contracts to support development, deployment,
21 technical change management and coordination. Documentation of these cost drivers are
22 included in our capital workpapers. See [SCG-CWP-21-WP 00756E].

23 **33. WP# 00756H & 00756V - App Modernization and Vulnerability**
24 **Reduction**

25 **a. Description of Costs and Underlying Activities**

26 The forecast for the App Modernization and Vulnerability Reduction projects for 2022,
27 2023, and 2024 are \$6.172 million, \$4.588 million, and \$4.588 million, respectively. The
28 Company plans to build and place in service the App Modernization and Vulnerability Reduction
29 projects by the Test Year. These projects focus on vulnerability reduction and modernization of
30 server operating systems including both Windows and Linux. These servers support many
31 business-critical applications. These projects allow for easy to manage software development by
32 providing common application components, support higher reusability, and allow for easy

1 upgrades with evolving user requirements on common frameworks. These projects also enable
2 an agnostic approach to support future technology trends, standardize user experiences for faster
3 adoption, and amplify the extensibility of common services and packaged products. These
4 forecasted capital expenditures support the Company's IT goal of Simplifying and Standardizing.

5 **b. Cost Drivers**

6 The underlying cost drivers for these capital projects relate to internal labor costs and
7 non-labor costs including vendor services for implementation and IT quality assurance.

8 Documentation of these cost drivers are included in our capital workpapers. See [SCG-CWP-21-
9 WP 00756H & 00756V].

10 **34. WP# 00756Q - ServiceNow Service Mapping**

11 **a. Description of Costs and Underlying Activities**

12 The forecast for the ServiceNow Service Mapping project for 2022, 2023, and 2024 are
13 \$0, \$6.206 million, and \$2.035 million, respectively. The Company plans to build and place in
14 service the ServiceNow Service Mapping project by the Test Year. This project implements a
15 service mapping solution, which allows us to provide a business-centric view of our systems
16 rather than at the component level. For example, creating financial reports through a web-based
17 application requires a computer, web server, application server, databases, middleware, and
18 network infrastructure. These applications and hosts are all configured to offer the service of
19 financial reporting. This project offers users the ability to self-serve connection to components,
20 such as servers, applications, and database, automatically without the need to interact with a live
21 agent. The project also enables performance analytics. These forecasted capital expenditures
22 support the Company's IT goal of Simplifying and Standardizing.

23 **b. Cost Drivers**

24 The underlying cost drivers for this capital project relate to internal labor costs and non-
25 labor costs including vendor services. Documentation of these cost drivers are included in our
26 capital workpapers. See [SCG-CWP-21-WP 00756Q].

27 **35. WP# 00756S - Content Server Replacement**

28 **a. Description of Costs and Underlying Activities**

29 The forecast for the Content Server Replacement project for 2022, 2023, and 2024 are
30 \$4.907 million, \$0, and \$0, respectively. The Company plans to build and place in service the
31 Content Server Replacement project by the Test Year. This project replaces SAP content server

1 with SAP OpenText solution, a leading content management platform. The SAP content server is
2 used to store document images for various business processes within SAP. The Company has
3 maximized the server's capabilities and requires a replacement solution. This project replaces
4 legacy technology to modernize and align with enterprise and vendor roadmap, provides required
5 document management capabilities and enhanced functionalities to support SAP users, and
6 improves the user experience. These forecasted capital expenditures support the Company's IT
7 goal of Simplifying and Standardizing.

8 **b. Cost Drivers**

9 The underlying cost drivers for this capital project relate to internal labor costs and non-
10 labor costs including hardware, software, and vendor services for implementation and IT quality
11 assurance. Documentation of these cost drivers are included in our capital workpapers. See
12 [SCG-CWP-21-WP 00756S].

13 **36. WP# 00756T - Foundation Analytics Service⁹**

14 **a. Description of Costs and Underlying Activities**

15 The forecast for the Foundation Analytics Service project for 2022, 2023, and 2024 are
16 \$4.574 million, \$3.524 million, and \$2.794 million, respectively. The Company plans to build
17 and place in service the Foundation Analytics Service project by the Test Year. This project
18 started in 2021 and provides a centralized data foundation for business self-service analytics and
19 a common dictionary across the Company. The project builds a solid data foundation and
20 provides analytics services in visualization and advanced analytics. The functional areas of focus
21 are Customer Services, Gas Operations and Engineering, Fleet, Environmental, Safety, Support
22 Services and Supply Management. This project builds the data foundation to support reporting
23 needed for safety and compliance. This project creates operational efficiencies by centralizing
24 data for reporting and analytics purposes and enabling self-service by implementing data catalog.
25 The project also builds out the data foundation with key data from various source systems to
26 accelerate data analytics and reporting, and enhances data insights and data-driven decision
27 support for Company leadership due to increased accessibility and timeliness of data foundation.
28 Lastly, the project broadens and secures access to data, remediates business risks by protecting

⁹ Transforming Our Business (TOB) is a process improvement effort at SoCalGas, undertaken to support SoCalGas' mission to build the cleanest, safest, most innovative energy company in America. This project supports the TOB effort.

1 sensitive data and managing data quality, and improves data-literacy and accelerated adoption of
2 advanced analytics for business stakeholders to address business challenges. These forecasted
3 capital expenditures support the Company’s IT goal of Simplifying and Standardizing.

4 **b. Cost Drivers**

5 The underlying cost drivers for this capital project relate to internal labor costs and non-
6 labor costs including vendor services for application development, Scrum managers, cloud
7 implementation costs and some software licenses. Documentation of these cost drivers are
8 included in our capital workpapers. See [SCG-CWP-21-WP 00756T].

9 **37. WP# 00756U – Situational Awareness Dashboards 2022-2023**
10 **(RAMP)¹⁰**

11 **a. Description of Costs and Underlying Activities**

12 The forecast for the Situational Awareness Dashboards 2022-2023 project for 2022,
13 2023, and 2024 are \$0.880 million, \$1.760 million, and \$0, respectively. The Company plans to
14 build and place in service the Situational Awareness Dashboards 2022-2023 project by the Test
15 Year. This project develops operational situational awareness and executive dashboards that
16 drive efficient operational decision making by focusing on high-value, near real-time dashboard
17 uses cases that are at the core of the utility operations with a goal of maximizing value and speed
18 to value. This project improves timeliness and completeness of data available to support decision
19 making and safety and compliance. These forecasted capital expenditures support the Company’s
20 IT goal of accelerating digital.

21 This is a project within the Gas Operations System Resiliency CFF activity that mitigates
22 safety risks identified in the 2021 RAMP Report: Foundational Technology Systems (FTS) CFF-
23 4. Accordingly, this forecast in its entirety aligns with a RAMP activity.

24 Table TB/WE-47 below shows the TY 2024 forecast dollars associated with the activities
25 in the 2021 RAMP Report.

26

¹⁰ TOB is a process improvement effort at SoCalGas, undertaken to support SoCalGas’ mission to build the cleanest, safest, most innovative energy company in America. This project supports the TOB effort.

TABLE TB/WE-47
RAMP Activity Capital Forecasts by Workpaper
In 2021 Dollars (\$000s)

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00721A.001	SCG-CFF-4	4	Gas Operations System Resiliency	880	1,760	0	0

*An RSE was not calculated for this activity.

b. Cost Drivers

The underlying cost drivers for this capital project relate to internal labor costs and non-labor costs including vendor services for development. Documentation of these cost drivers are included in our capital workpapers. See [SCG-CWP-21-WP 00756U].

38. WP# 00756Y – Microsoft Enterprise Agreement 2022-2025

a. Description of Costs and Underlying Activities

The forecast for the Microsoft Enterprise Agreement 2022-2025 project for 2022, 2023, and 2024 are \$28 million, \$0, and \$0, respectively. The Company plans to build and place in service the Microsoft Enterprise Agreement 2022-2025 project by the Test Year. This project covers licensing and subscriptions required for select Microsoft software products across the Company. A Microsoft license is essential and required for each employee and contractor to enable productivity and complete common digital tasks in the workplace. This project meets required licensing to promote collaboration, productivity, security, infrastructure, and monitoring. Licenses are subject to renewal prior to December 2022 to maintain continuity of product use. These forecasted capital expenditures support the Company’s IT goal of transforming how we work.

b. Cost Drivers

The underlying cost drivers for this capital project relate to non-labor costs including Microsoft product licensing and prepaid SaaS subscription. Documentation of these cost drivers are included in our capital workpapers. See [SCG-CWP-21-WP 00756Y].

1 **39. WP# 00756Z – Digital Integration (RAMP)**

2 **a. Description of Costs and Underlying Activities**

3 The forecast for the Digital Integration project for 2022, 2023, and 2024 are \$2.050
4 million, \$1.161 million, and \$1.360 million, respectively. The Company plans to build and place
5 in service the Digital Integration project by the Test Year. This project addresses the integration
6 of cloud-based capabilities with internal and other external systems while modernizing the
7 security and enhancing the performance of the integration platform. This project also implements
8 a self-service integration capability that expedites the deployment of new business solutions
9 across the Company. This project improves speed to business value, improves technology
10 reliability, reduces technical debt and risks that would be otherwise driven by each initiative
11 pursuing their own integration solutions. These forecasted capital expenditures support the
12 Company’s IT goal of accelerating digital.

13 This is a project within the Gas Operations System Resiliency CFF activity that mitigates
14 safety risks identified in the 2021 RAMP Report: Foundational Technology Systems (FTS) CFF-
15 4. Accordingly, this forecast in its entirety aligns with a RAMP activity.

16 Table TB/WE-48 below shows the TY 2024 forecast dollars associated with the activities
17 in the 2021 RAMP Report.

18 **TABLE TB/WE-48**
19 **RAMP Activity Capital Forecasts by Workpaper**
20 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00721A.001	SCG-CFF-4	4	Gas Operations System Resiliency	2,050	1,161	1,360	0

21 *An RSE was not calculated for this activity.
22

23 **b. Cost Drivers**

24 The underlying cost drivers for this capital project relate to internal labor costs and non-
25 labor costs including vendor services for development and implementation, as well as some SaaS
26 licenses. Documentation of these cost drivers are included in our capital workpapers. See
27 [SCG-CWP-21-WP 00756Z].

1 **40. WP# 00786A – Application Factory (RAMP)**

2 **a. Description of Costs and Underlying Activities**

3 The forecast for the Application Factory project for 2022, 2023, and 2024 are \$3.749
4 million, \$0, and \$0, respectively. The Company plans to build and place in service the
5 Application Factory project by the Test Year. This project started in 2021. This project includes
6 multiple applications to be developed including workflow automations and natural language
7 processing capabilities on the cloud. This project enables the rapid development and deployment
8 of new solutions, with enhanced security, resiliency, and accessibility, in support of transforming
9 the way we do business. This project enhances or implements new Company-developed
10 applications using mobile and/or Cloud technology in order to provide additional security
11 features, resiliency and performance. These forecasted capital expenditures support the
12 Company’s IT goal of accelerating digital.

13 This is a project within the Gas Operations System Resiliency CFF activity that mitigates
14 safety risks identified in the 2021 RAMP Report: Foundational Technology Systems (FTS) CFF-
15 4. Accordingly, this forecast in its entirety aligns with a RAMP activity.

16 Table TB/WE-49 below shows the TY 2024 forecast dollars associated with the activities
17 in the 2021 RAMP Report.

18 **TABLE TB/WE-49**
19 **RAMP Activity Capital Forecasts by Workpaper**
20 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00721A.001	SCG-CFF-4	4	Gas Operations System Resiliency	3,749	0	0	0

21 *An RSE was not calculated for this activity.
22

23 **b. Cost Drivers**

24 The underlying cost drivers for this capital project relate to internal labor costs and non-
25 labor costs including vendor services for application development, cloud implementation costs
26 and some SaaS subscription costs. Documentation of these cost drivers are included in our
27 capital workpapers. See [SCG-CWP-21-WP 00786A].

1 **41. WP# 00786B - Digital Process Automation¹¹**

2 **a. Description of Costs and Underlying Activities**

3 The forecast for the Digital Process Automation project for 2022, 2023, and 2024 are
4 \$7.617 million, \$ 4.047 million, and \$4.047 million, respectively. The Company plans to build
5 and place in service the Digital Process Automation project by the Test Year. This project
6 includes various system enhancements to address the backlog of opportunities to automate
7 company processes currently performed by staff through process automation technology. This
8 project improves process accuracy, timeliness, quality, standardization, security and compliance.
9 The project also enhances process controls and consistency, improves digitization and efficiency
10 of workflows, traceability and document storage, and provides secure access to online and
11 offline applications. This project automates high value business processes, which have been
12 performed manually, across the Company in order to standardize, expedite operational backlogs
13 and free up labor capacity for value-add work, supporting company digital acceleration goals and
14 transforming the way we work. Unlike the dashboard projects that create insight into company
15 performance and operations, these projects address the automation of manual processes. This
16 project further enables high volume data processing and provides access to business processes
17 through mobile devices. These forecasted capital expenditures support the Company's IT goal of
18 accelerating digital.

19 **b. Cost Drivers**

20 The underlying cost drivers for this capital project relate to internal labor costs and non-
21 labor costs including vendor services for development, persistent teams, Scrum managers, cloud
22 implementation costs and some SaaS licenses. Documentation of these cost drivers are included
23 in our capital workpapers. See [SCG-CWP-21-WP 00786B].

¹¹ TOB is a process improvement effort at SoCalGas, undertaken to support SoCalGas' mission to build the cleanest, safest, most innovative energy company in America. This project supports the TOB effort.

1 **42. WP# 00786C - Decision Analytics and Automation (RAMP)¹²**

2 **a. Description of Costs and Underlying Activities**

3 The forecast for the Decision Analytics and Automation project for 2022, 2023, and 2024
4 are \$2.663 million, \$2.634 million, and \$2.189 million, respectively. The Company plans to
5 build and place in service the Decision Analytics and Automation project by the Test Year. The
6 purpose of this project is to implement a cloud platform to deploy machine learning models at
7 scale. This project supports a variety of use cases across the Company in the areas of safety,
8 compliance and innovation, reduces security risk by centralizing deployment of analytics use-
9 cases on one platform, and enables a more rigorous and systematic way to evaluate models and
10 test hypotheses. The project also provides a mechanism to continuously monitor and evaluate
11 model integrity and minimizes the reliance on internal central IT teams to provision compute
12 resources to train or tune, deploy, and support models. Lastly, the project accelerates the
13 deployment of critical analytical use-cases so that the business can benefit from them and
14 reduces security risk by centralizing deployment of analytics use-cases on one platform. These
15 forecasted capital expenditures support the Company's IT goal of accelerating digital.

16 This is a project within the Gas Operations System Resiliency CFF activity that mitigates
17 safety risks identified in the 2021 RAMP Report: Foundational Technology Systems (FTS) CFF-
18 4. Accordingly, this forecast in its entirety aligns with a RAMP activity.

19 Table TB/WE-50 below shows the TY 2024 forecast dollars associated with the activities
20 in the 2021 RAMP Report.

21 **TABLE TB/WE-50**
22 **RAMP Activity Capital Forecasts by Workpaper**
23 **In 2021 Dollars (\$000s)**

Workpaper	Risk Chapter	ID	Description	2022 Estimated RAMP Total	2023 Estimated RAMP Total	2024 Estimated RAMP Total	GRC RSE*
00721A.001	SCG-CFF-4	4	Gas Operations System Resiliency	2,663	2,634	2,189	0

24 *An RSE was not calculated for this activity.

¹² TOB is a process improvement effort at SoCalGas, undertaken to support SoCalGas' mission to build the cleanest, safest, most innovative energy company in America. This project supports the TOB effort.

1
2
3
4
5
6

b. Cost Drivers

The underlying cost drivers for this capital project relate to internal labor costs and non-labor costs including vendor services for development. Documentation of these cost drivers are included in our capital workpapers. See [SCG-CWP-21-WP 00786C].

IX. CONCLUSION

This concludes our prepared direct testimony.

1 **X. WITNESS QUALIFICATIONS – TIA L. BALLARD**

2 My name is Tia L. Ballard. My primary work location is 8680 Balboa Ave, San Diego,
3 California, United States, 92123. I am currently employed by SDG&E as the Director of the
4 Digital Workspace and Automation department for SoCalGas, SDG&E, and Sempra. In this
5 role, I oversee the IT End User Experience, as well as Cloud transformation, data center
6 infrastructure, automation, and enablement for SoCalGas, SDG&E, and Sempra. I have been a
7 member of the IT department since 2004. I began my career with Sempra Global supporting
8 Network & Systems Engineering. In 2009, I transferred to SDG&E to manage IT Infrastructure
9 projects, managing large scale efforts focused on IT infrastructure resiliency. I have held various
10 roles with increased responsibility since then managing a 24x7 Network Operations Center,
11 delivering Network and Telecom field support, managing IT Service desk and Desktop
12 Engineering groups, managing and ensuring IT Compliance and IT Service Management as well
13 as taking on a role as Vendor Manager supporting IT Infrastructure major contracts. In 2019, I
14 became the Director of End User and Cybersecurity technologies, delivering End User
15 technologies and services to include conferencing and collaboration, service desk, desktop
16 support, enterprise monitoring, as well as Cybersecurity technology services. In 2021, my role
17 shifted to focus on End User Experience, Cloud transformation and Automation, ensuring there
18 is established governance in place as we continue our transformation and modernization to the
19 Cloud. In 2022, I also expanded my scope to include Data Center infrastructure, middleware,
20 and Cloud platform services.

21 I am a graduate of Pepperdine University, where I received a Bachelor of Science in
22 Management. I also earned a Master’s degree in Political Management from George Washington
23 University.

24 I have not previously testified before the California Public Utilities Commission.

1 **XI. WITNESS QUALIFICATIONS – WILLIAM J. EXON**

2 My name is Jamie Exon. My primary work location is 8680 Balboa Ave, San Diego,
3 California, United States, 92123. I am currently employed by SDG&E as the Director of the IT
4 Digital & SDG&E Customer department for SoCalGas, SDG&E, and Sempra. In this role, I
5 oversee the digital transformation for SoCalGas, SDG&E, Sempra and customer applications for
6 SDG&E.

7 I have been with SDG&E since 2001 and began my career within the IT
8 department. From 2001 through 2007, I supported Supply Chain and Logistics that integrated
9 with SAP. In 2008 through 2012, SDG&E and SoCalGas embarked on a large program to
10 modernization their major operations applications. During that timeframe, I managed two major
11 application modernization projects: Geographic Information System (GIS) and Condition Based
12 Maintenance (CBM). In 2012, I left IT and assumed responsibility of a Major Projects team in
13 Electric Distribution Operations that included Meteorology and Wildfire Mitigation projects. In
14 2015, my responsibilities were expanded and included SCADA operational technology team to
15 support the delivery of electricity to the customer. In 2017, I managed the business technology
16 teams that supported the SDG&E field technologies and gas and electric operations. I also
17 helped lead the technology strategy and vision for Asset Management. In 2019, I transferred
18 back to IT and became the director of the Digital Transformation for both SDG&E and
19 SoCalGas. In 2020, this responsibility was expanded to also include SDG&E customer
20 applications.

21 I am a graduate from California State University – San Marcos, where I received a Bachelor of
22 Science in Computer Science. I also earned a Master of Business Administration degree from
23 the University of Southern California.

24 I have not previously testified before the California Public Utilities Commission.

APPENDIX A

Glossary of Terms

APPENDIX A – Glossary of Terms

<u>Term</u>	<u>Description</u>
AI	Artificial Intelligence
AIM	Asset Integrity Management
AIP	Asset Investment Prioritization
AMS	Asset Management System
AP	Access Points
ARSO	Area Resource Service Operators
AUD	Automated Utility Design
BYOD	Bring Your Own Device
CAISO	California Independent System Operator
CBM	Condition Based Maintenance
CD	Continuous Delivery
CFF	Cross Functional Factor
CDM	Capital Delivery Model
CI	Continuous Improvement
CI	Continuous Integration
CIS	Customer Information Systems
CoF	Consequence of Failure
CPUC	California Public Utilities Commission
CT	Continuous Testing
CWP	Capital Work Paper
DCN	Data Center Network
DCU	Data Collector Unit
DevSecOps	Development, Security and Operations
ECS	Elastic Cloud Storage
EDIX	Electronic Data Interchange
EFC	Executive Finance Committee
EOC	Emergency Operations Center
ETS	Electrical Test System

<u>Term</u>	<u>Description</u>
EV	Electric Vehicle
EVC	Electric Volume Correctors
EVS	Enterprise Voice System
FAN	Field Area Network
FTS	Foundational Technology Systems
GC	Gas Chromatographs
GHG	Greenhouse Gas
GIS	Geographic Information System
GRC	General Rate Case
HW	Hardware
IaaS	Infrastructure as a Service
IaC	Infrastructure as Code
IIP	Intelligent Image Processing
IP	Internet Protocol
IT	Information Technology
IVR	Interactive Voice Response
LAN	Local Area Network
MAVF	Multi-Attribute Value Framework
ML	Machine Learning
MCS	Measurement Collection System
MW	Microwave
NAS	Network Attached Storage
NOC	Network Operations Center
NSP	Network Services Platform
NTP	Network Time Protocol
O&M	Operations and Maintenance
O/S	Operating System
OOBM	Out of Band Management
PaaS	Platform as a Service

<u>Term</u>	<u>Description</u>
PACER	Portable Automated Centralized Electronic Retrieval
PoF	Probability of Failure
RAMP	Risk Assessment Mitigation Phase
RI	Reserved Instances
RSE	Risk Spend Efficiency
SaaS	Software as a Service
SAP	Systems Applications and Products
SCADA	Supervisory Control and Data Acquisition
SCG	Southern California Gas Company
SCM	Source Code Management
SDG&E	San Diego Gas & Electric Company
SPD	Safety Policy Division
SD-WAN	Software Defined Wide Area Network
SLA	Service Level Availability
SMS	Safety Management System
SoCalGas	Southern California Gas Company
SW	Software
TAE	Test Acceleration Enablement
TCRI	Transmission Communications Reliability Improvement
TVM	Threat Vulnerability Management
TY	Test Year
VDI	Virtual Desktop Infrastructure
VPN	Virtual Private Network
VR	Virtual Reality
WAN	Wide Area Network
WLAN	Wireless Local Area Network
XR	Extended Reality

APPENDIX B

Glossary of Definitions

APPENDIX B – Glossary of Definitions

Term	Definition
Agile	A group of software development methodologies based on iterative development, where requirements and solutions evolve through collaboration between self-organizing cross-functional teams.
Cloud	Refers to software and services that run on the Internet, instead of locally on a computer. Most Cloud services can be accessed through a Web browser like Firefox or Google Chrome, and some companies offer dedicated mobile apps.
Container	A standard unit of software that packages up code and all its dependencies, so the application runs quickly and reliably from one computing environment to another.
DevSecOps	An approach to culture, automation, and platform design that integrates security as a shared responsibility throughout the entire IT lifecycle.
Infrastructure as Code (IaC)	The managing and provisioning of infrastructure through code instead of through manual processes. With IaC, configuration files are created that contain your infrastructure specifications, which makes it easier to edit and distribute configurations.
Infrastructure as a Service (IaaS)	A model in which a third-party provider hosts servers, storage, and other virtualized compute resources and makes them available to customers over the internet.
Kanban	A lean workflow management method for defining, managing, and improving services that deliver work. It helps visualize work, maximize efficiency, and improve continuously. Work is represented on Kanban boards, allowing you to optimize work delivery across multiple teams and handle even the most complex projects in a single environment.
Platform as a Service (PaaS)	A model in which a third-party provider hosts application development platforms and tools on its own infrastructure and makes them available to customers over the internet.
Refactoring	A systematic process of improving code without creating new functionality that can transform a mess into clean code and simple design.
Scrum	An Agile project management methodology involving a small team led by a Scrum master, whose primary objective is to remove obstacles to getting work done. Work is done in short cycles called sprints, and the team meets daily to discuss current tasks and any roadblocks that need to be cleared.

Term	Definition
Software as a Service (SaaS)	A software distribution model in which a third-party provider hosts applications and makes them available to customers over the internet.

APPENDIX C

Summary of Safety Related Risk Mitigation Costs by Workpaper – O&M

APPENDIX C - Summary of Safety Related Risk Mitigation Costs by Workpaper – O&M

INFORMATION TECHNOLOGY						
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*
2200-0302.000	SCG-CFF-4 - CFF 1 - CFF 8	All Activities	910	835	(75)	0
2200-0302.000	SCG-Risk-2 - C31-C32	Ticket Risk Assessment	83	83	0	6
2200-0619.000	SCG-CFF-4 - CFF 1 - CFF 8	All Activities	2,321	2,789	468	0
2200-1220.000	SCG-CFF-4 - CFF 1 - CFF 8	All Activities	564	825	261	0
2200-2272.000	SCG-CFF-4 - CFF 1 - CFF 8	All Activities	32	65	33	0
2200-2453.000	SCG-CFF-4 - CFF 1 - CFF 8	All Activities	145	151	6	0
2IT002.000	SCG-CFF-4 - CFF 1 - CFF 8	All Activities	2,859	2,428	(431)	0
2IT004.000	SCG-CFF-4 - CFF 1 - CFF 8	All Activities	2,240	2,584	344	0
2IT017.000	SCG-CFF-4 - CFF 1 - CFF 8	All Activities	132	144	12	0
2IT017.000	SCG-CFF-1-3	Information Mgt Systems	3032	3364	331	0
2200-0302.000	SCG- CFF-1-3	Information Mgt Systems	5163	6872	1709	0
Total			17,481	20,140	2,658	

*An RSE was not calculated for this activity.

APPENDIX D

Summary of Safety Related Risk Mitigation Costs by Workpaper – Capital

APPENDIX D

Summary of Safety Related Risk Mitigation Costs by Workpaper – Capital

INFORMATION TECHNOLOGY				
Summary of RAMP Capital Costs (In 2021 \$)				
	2022 Estimated RAMP Total (000s)	2023 Estimated RAMP Total (000s)	2024 Estimated RAMP Total (000s)	2022-2024 Estimated RAMP Total (000s)
RAMP Risk Chapter				
Sub-total	0	0	0	
RAMP Cross Functional Factor (CFF) Chapter				
SCG-CFF-1 Asset and Records Management	16,178	12,654	10,462	39,294
SCG-CFF-4 Foundational Technology Systems	116,362	110,672	98,820	325,854
Sub-total	132,540	123,326	109,282	365,148
Total RAMP Capital Costs	132,540	123,326	109,282	365,148

INFORMATION TECHNOLOGY						
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*
00721A.001	SCG-CFF-4 - 04	Gas Operations Systems Resiliency	46,970	55,338	62,869	0
00721AJ.001	SCG-CFF-4 - 03	Monitoring Systems and Services	8,021	6,677	4,793	0
00721AP.001	SCG-CFF-4 - 07	Cloud Resiliency Services	2,026	4,062	3,288	0
00721AS.001	SCG-CFF-4 - 06	IT Service Continuity	5,562	5,562	5,562	0
00721B.001	SCG-CFF-4 - 01	Datacenter Modernization	14,616	15,382	9,797	0

INFORMATION TECHNOLOGY
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*
00721E.001	SCG-CFF-4 - 05	End User Access and Supporting Services	19,738	0	0	0
00743A.001	SCG-CFF-4 - 02	Network & Voice System Resiliency	16,510	20,913	11,249	0
00756AB.001	SCG-CFF-1 - 03	Information Management Systems	11,772	8,223	7,374	0
00756AG.001	SCG-CFF-1 - 06	Asset Investment Planning (AIP) Tool	2,720	3,088	3,088	0
00756AX.001	SCG-CFF-4 - 08	Emergency Operations Center (EOC) Technology Resiliency	2,919	2,738	1,262	0
00756J.001	SCG-CFF-1 - 02	Operational Compliance and Oversight	1,686	1,343	0	0
Total			132,540	123,326	109,282	0

*An RSE was not calculated for this activity.

APPENDIX E

Capital Expenditures List of IT and Business Projects

APPENDIX E
Capital Expenditures List of IT and Business Projects

INFORMATION TECHNOLOGY				
Capital Expenditures List by Workpaper				
ID	Work Paper	Project Description	Categories of Management	IT Goal
1	00721A	RAMP - Electronic Leak Survey	Gas System Staff & Technology	Simplify and Standardize
2	00721AA	RAMP - Project and Portfolio Management System - Construction - Phase 1	Gas System Staff & Technology	Simplify and Standardize
3	00721AE	RAMP - Project and Portfolio Management System - Storage	Gas System Staff & Technology	Simplify and Standardize
4	00721AF	RAMP - Project and Portfolio Management System - Transmission	Gas System Staff & Technology	Simplify and Standardize
5	00721AJ	RAMP - Application Monitoring Refresh	Information Technology	Simplify and Standardize
6	00721AL	RAMP - Compute Capacity Expansion 2023	Information Technology	Simplify and Standardize
7	00721AM	RAMP - Network Infrastructure Extension	Information Technology	Simplify and Standardize
8	00721AO	Enterprise Radio Media Workstation Replacement	Information Technology	Transform How We Work
9	00721AP	RAMP - Identity and Access Management (IAM) Cloud	Information Technology	Proactively Manage Risk
10	00721AQ	Enterprise Voice System Refresh	Information Technology	Simplify and Standardize
11	00721AR	Routine Small Cap 2022-2024	Information Technology	Simplify and Standardize
12	00721B	RAMP - Compute Capacity Bulk Buy	Information Technology	Simplify and Standardize
13	00721C	RAMP - Backup and Recovery Capacity Expansion 2022	Information Technology	Simplify and Standardize
14	00721D	RAMP - Recovery Vault Expansion 2023	Information Technology	Simplify and Standardize
15	00721E	RAMP - Digital Workspace	Information Technology	Transform How We Work
16	00721G	RAMP - Network Attached Storage Cyber Vault Capacity Expansion 2023	Information Technology	Simplify and Standardize
17	00721H	RAMP - Compute Capacity Expansion 2022	Information Technology	Simplify and Standardize
18	00721I	RAMP - Compute Database Hardware Capacity Expansion and Infrastructure Demand Management 2022	Information Technology	Simplify and Standardize
19	00721K	Mobile Phone Refresh 2022	Information Technology	Transform How We Work
20	00721L	RAMP - Infrastructure Monitoring Implementation	Information Technology	Simplify and Standardize
21	00721N	RAMP - Backup and Recovery Hardware Refresh	Information Technology	Simplify and Standardize
22	00721O	RAMP - Recovery Vault Expansion 2024	Information Technology	Simplify and Standardize

**INFORMATION TECHNOLOGY
Capital Expenditures List by Workpaper**

ID	Work Paper	Project Description	Categories of Management	IT Goal
23	00721P	RAMP - Network Attached Storage Cyber Vault Capacity Expansion 2024	Information Technology	Simplify and Standardize
24	00721Q	RAMP - Compute Database Hardware Capacity Expansion 2023	Information Technology	Simplify and Standardize
25	00721R	RAMP - Compute Infrastructure Refresh 2024	Information Technology	Simplify and Standardize
26	00721T	RAMP - Electronic Leak Survey - Pipeline Patrol	Gas System Staff & Technology	Simplify and Standardize
27	00721U	RAMP - GIS Portal and Mobility Enhancements	Gas System Staff & Technology	Proactively Manage Risk
28	00721V	RAMP - Electronic Leak Survey - Transmission Survey and Patrol	Gas System Staff & Technology	Simplify and Standardize
29	00721W	RAMP - Upgrade Legacy Environment Storage	Information Technology	Simplify and Standardize
30	00721X	RAMP - Legacy Hardware Refresh 2022	Information Technology	Simplify and Standardize
31	00721Y	RAMP - Project and Portfolio Management System - Gas Distribution - Phase 1	Gas System Staff & Technology	Simplify and Standardize
32	00743A	RAMP - Wide Area Network (WAN) and Private Network Refresh	Information Technology	Simplify and Standardize
33	00743B	RAMP - Local Area Network Upgrade	Information Technology	Simplify and Standardize
34	00743E	RAMP - Microwave Radio Network Remediation	Information Technology	Simplify and Standardize
35	00743F	RAMP - Emergency Response Command Center Enhancement	Information Technology	Simplify and Standardize
36	00743H	RAMP - Remote Site Technology Refresh	Information Technology	Simplify and Standardize
37	00743I	RAMP - Call Recording System Refresh	Information Technology	Transform How We Work
38	00743J	RAMP - Supervisory Control and Data Acquisition Network Refresh Project	Information Technology	Simplify and Standardize
39	00754A	Speech Analytics and Workforce Management Upgrades	Customer Services – Office Operations	Simplify and Standardize
40	00754AI	Advanced Meter Pole Inspection Upgrade	Customer Services – Field and Advanced Meter Operations	Simplify and Standardize
41	00754AK	RAMP - PACER Workforce Management Replacement Project	Customer Services – Field and Advanced Meter Operations	Simplify and Standardize
42	00754B	RAMP - PACER Mobile Upgrade Phase 2	Customer Services – Field and Advanced Meter Operations	Simplify and Standardize
43	00754D	Senate Bill 711 Bill Volatility Project	Customer Services – Office Operations	Proactively Manage Risk

INFORMATION TECHNOLOGY
Capital Expenditures List by Workpaper

ID	Work Paper	Project Description	Categories of Management	IT Goal
44	00754E	RAMP - Advanced Meter Network Exceptions Management and Operations	Customer Services – Field and Advanced Meter Operations	Simplify and Standardize
45	00754G	Meter Set Assembly Inspection Enhancements Project	Customer Services – Field and Advanced Meter Operations	Proactively Manage Risk
46	00754H	Advanced Meter Web Portal for Third Party Attachments	Customer Services – Field and Advanced Meter Operations	Proactively Manage Risk
47	00754I	RAMP - Advanced Meter HeadEnd and Meter Data Management System (MDMS) Refresh	Customer Services – Office Operations	Proactively Manage Risk
48	00754J	Data Analysis Reporting Tool (DART) Upgrade	Customer Services – Field and Advanced Meter Operations	Simplify and Standardize
49	00754K	Gas Measurement and Analysis System (GMAS)	Customer Services – Office Operations	Simplify and Standardize
50	00754L	Envoy Polymer Upgrade	Gas Transmission Operations and Construction	Simplify and Standardize
51	00754M	Major Market to Cloud (M2C) - Billing Viewer	Customer Services – Office Operations	Simplify and Standardize
52	00754N	Envoy Renewable Natural Gas (RNG)	Gas Transmission Operations and Construction	Proactively Manage Risk
53	00754Q	Centralized Customer Data Management	Customer Services – Office Operations	Accelerate Digital
54	00754T	RAMP - Advanced Meter HeadEnd and Meter Data Management System Next-Generation (AclaraONE)	Customer Services – Office Operations	Simplify and Standardize
55	00754V	RAMP - Customer Contact Center (CCC) Technology Modernization	Customer Services – Office Operations	Simplify and Standardize
56	00754X	Advanced Meter Data Collector Unit Hardware Refresh	Customer Services – Field and Advanced Meter Operations	Proactively Manage Risk
57	00754Y	DART Upgrade Phase II	Customer Services – Field and Advanced Meter Operations	Simplify and Standardize
58	00755A	Customer Experience Phase 4 (CEP4)	Customer Services – Information	Accelerate Digital
59	00755D	Project Monaco	Customer Services – Office Operations	Simplify and Standardize
60	00755E	Call Ahead SMS Text-based Customer Notifications	Customer Services – Field and Advanced Meter Operations	Accelerate Digital

INFORMATION TECHNOLOGY
Capital Expenditures List by Workpaper

ID	Work Paper	Project Description	Categories of Management	IT Goal
61	00755F	Customer Experience Phase 5 (CEP5)	Customer Services – Information	Accelerate Digital
62	00755K	Intelligent Workload Distribution (IWD)	Customer Services – Office Operations	Simplify and Standardize
63	00755L	Help Center Virtual Assistant	Customer Services – Information	Accelerate Digital
64	00755M	Electronic Volume Correctors (EVC) and Gas Chromatographs (GC) Telecom Security Remediation	Information Technology	Proactively Manage Risk
65	00756A	Employee Care Services Workers Comp Refresh	People and Culture Department	Simplify and Standardize
66	00756AA	Business Adaptation Tech and Digitalization	Information Technology	Accelerate Digital
67	00756AB	RAMP - Records and Document Management System (RDMS) Phase V 2022 - 2026	Gas System Staff & Technology	Simplify and Standardize
68	00756AC	RAMP - Records and Document Management System (RDMS) - Gas Operations	Gas System Staff & Technology	Proactively Manage Risk
69	00756AE	RAMP - AVEVA and AutoCAD Enhancements - Phase 2	Gas System Staff & Technology	Proactively Manage Risk
70	00756AF	RAMP - Work Management and Safety and Regulatory 2022-2023	Gas System Staff & Technology	Proactively Manage Risk
71	00756AG	RAMP - Asset Investment Planning and Management (AIPM)	Information Technology	Accelerate Digital
72	00756AH	RAMP - Distributed Engineering Lifecycle Tracking Apps (DELTA)	Gas Engineering	Proactively Manage Risk
73	00756AI	RAMP - System Enhancements and Workflow Management	Information Technology	Proactively Manage Risk
74	00756AJ	RAMP - High Pressure Project Record (HPPR) Closeout	Gas System Staff & Technology	Proactively Manage Risk
75	00756AK	RAMP - Work Management Program Next Generation Field Service Delivery (FSD)	Gas System Staff & Technology	Proactively Manage Risk
76	00756AM	RAMP - Records and Documents Management System (RDMS) - Engineering Project Life Cycle	Gas System Staff & Technology	Proactively Manage Risk
77	00756AN	RAMP - Records and Document Management System (RDMS): Closeout Processes	Gas System Staff & Technology	Proactively Manage Risk
78	00756AO	RAMP - Pipeline Document Management System (PDMS) System of Record on OpenText	Gas System Staff & Technology	Proactively Manage Risk
79	00756AP	RAMP - Records and Document Management System (RDMS): TSR-CDM Integration	Gas System Staff & Technology	Proactively Manage Risk
80	00756AQ	RAMP - Records and Document Management System (RDMS):	Gas System Staff & Technology	Proactively Manage Risk

INFORMATION TECHNOLOGY
Capital Expenditures List by Workpaper

ID	Work Paper	Project Description	Categories of Management	IT Goal
		OpenText Upgrade and Enhancements		
81	00756AS	RAMP - Electronic Leak Survey - Special Leak Survey and Abnormal Operating Conditions (AOC)	Gas System Staff & Technology	Simplify and Standardize
82	00756AU	RAMP - New Business Management System (NBMS) Replacement	Gas Distribution	Proactively Manage Risk
83	00756AW	RAMP - Transmission - Gas Pipe Asset Management	Gas System Staff & Technology	Proactively Manage Risk
84	00756AX	RAMP - Noggin 2.0 Core Implementation	Safety & Risk Management Systems	Simplify and Standardize
85	00756AV	Financial Risk Management - Risk Based Decision Making	Administrative & General	Simplify and Standardize
86	00756BA	RAMP - Energy Transition Digital Twin	Information Technology	Accelerate Digital
87	00756BB	Project and Portfolio Management System - Construction - ES2P (Enterprise Source to Pay) Implementation	Gas System Staff & Technology	Simplify and Standardize
88	00756C	RAMP - Environmental Health and Safety (EH&S) Replacement Phase 1	Safety & Risk Management Systems	Accelerate Digital
89	00756E	Electronic Data Interface Exchange - Web Methods Modernization	Information Technology	Simplify and Standardize
90	00756F	RAMP - Process Information Methane Abatement and Monitoring Support	Gas System Staff & Technology	Proactively Manage Risk
91	00756G	Supply Management and Logistics Modernization	Supply Management & Supplier Diversity	Simplify and Standardize
92	00756H	App Modernization and Vulnerability Reduction Phase II	Information Technology	Simplify and Standardize
93	00756I	RAMP - Gas Materials QA/QC, Field Management and Traceability	Gas System Staff & Technology	Simplify and Standardize
94	00756J	RAMP - OpsQual Process Automation	Gas System Staff & Technology	Proactively Manage Risk
95	00756K	Enterprise Source to Pay ES2P	Supply Management & Supplier Diversity	Proactively Manage Risk
96	00756L	SAP Transformation	Administrative & General	Simplify and Standardize
97	00756M	GRC and Regulatory Complex Search	Administrative & General	Simplify and Standardize
98	00756N	RAMP - Measurement and Reliability Compliance (MRC)	Gas Engineering	Proactively Manage Risk
99	00756O	RAMP - Environmental Health and Safety Management Modernization Phase 2	Safety & Risk Management Systems	Simplify and Standardize
100	00756Q	ServiceNow Service Mapping	Information Technology	Simplify and Standardize

INFORMATION TECHNOLOGY
Capital Expenditures List by Workpaper

ID	Work Paper	Project Description	Categories of Management	IT Goal
101	00756R	RAMP - CLICK Modernization Phase II	Gas System Staff & Technology	Accelerate Digital
102	00756S	Content Server Replacement	Information Technology	Simplify and Standardize
103	00756T	Foundations Analytics Service	Information Technology	Simplify and Standardize
104	00756U	RAMP - Situational Awareness Dashboards 2022-2023	Information Technology	Accelerate Digital
105	00756V	App Modernization and Vulnerability Reduction Phase II	Information Technology	Proactively Manage Risk
106	00756W	Supplier Risk Management (SRM)	Supply Management & Supplier Diversity	Simplify and Standardize
107	00756X	HR and Sempra Data and Application Modernization	People and Culture Department	Proactively Manage Risk
108	00756Y	Microsoft Enterprise Agreement 2022-2025	Information Technology	Transform How We Work
109	00756Z	RAMP - Digital Integration	Information Technology	Accelerate Digital
110	00786A	RAMP - Application Factory	Information Technology	Accelerate Digital
111	00786B	Digital Process Automation	Information Technology	Accelerate Digital
112	00786C	RAMP - Decision Analytics and Automation	Information Technology	Accelerate Digital
113	00786D	Enterprise Source to Pay (ES2P) Analytics Solution	Supply Management & Supplier Diversity	Proactively Manage Risk
114	00786E	Diverse Business Enterprise (DBE) Spend Reporting Enhancements	Supply Management & Supplier Diversity	Simplify and Standardize
115	00786G	Enterprise Source to Pay (ES2P) Value Stream	Supply Management & Supplier Diversity	Proactively Manage Risk
116	00786H	RAMP - Records and Document Management System (RDMS): ProCore – RDMS Integration	Gas System Staff & Technology	Proactively Manage Risk
117	00786I	SAP S4/HANA - Business Optimization	Administrative & General	Simplify and Standardize
118	00721AS	Cloud Foundation	Information Technology	Simplify and Standardize
119	00756BC	Asset Investment Planning and Management - Phase 2 Transmission	Gas System Staff & Technology	Transform How We Work
120	00756BD	Asset Investment Planning and Management - Phase 3 Facilities	Gas System Staff & Technology	Transform How We Work
121	00786K	HR Employee Lifecycle	People and Culture Department	Proactively Manage Risk
122	00786L	CQMX Replacement	Customer Services – Office Operations	Simplify and Standardize
123	00786M	HR Workforce Planning Tool	People and Culture Department	Accelerate Digital

SoCalGas 2024 GRC Testimony Revision Log –August 2022

Exhibit	Witness	Page	Line or Table	Revision Detail
SCG-21	Ballard and Exon	TLB/WJE-4	Table TB/WE-2	Revised Summary of RAMP O&M Costs table.
SCG-21	Ballard and Exon	TLB/WJE-12	Line 31	Replaced Work Paper reference to “2200-2453” with Work Paper reference to “2IT017.000.”
SCG-21	Ballard and Exon	TLB/WJE-13	Table TB/WE-8	Revised RAMP Activity O&M Forecasts table.
SCG-21	Ballard and Exon	TLB/WJE-17	Line 22	Deleted redundant reference to WP 2200-0302.000.
SCG-21	Ballard and Exon	TLB/WJE-18	Table TB/WE-14	Revised SCG-Risk-2-C31-C32 GRC RSE line from Zero to 6; added SCG-CFF-1-3 line for 2200-0302.000, and revised RAMP Activity O&M Forecasts Total values.
SCG-21	Ballard and Exon	TLB/WJE-25	Line 13	Replaced “SDG&E” with “SoCalGas.”
SCG-21	Ballard and Exon	TLB/WJE -C-1	APPENDIX C - Summary of Safety Related Risk Mitigation O&M Costs Table	Revised SCG-Risk-2-C31-C32 line; added 2IT017.000 and 2200-0302.000, SCG-CFF-1-3 lines and revised Total values.
SCG-21	Ballard and Exon	TLB/WJE -D-1	APPENDIX D – Summary of Safety Related Risk Mitigation Capital Costs Table	Removed unnecessary introduction language and O&M table.