

Application of SOUTHERN CALIFORNIA GAS)
COMPANY for authority to update its gas revenue)
requirement and base rates)
effective January 1, 2016 (U 904-G))

Application No. 14-11-____
Exhibit No.: (SCG-08-CWP)

CAPITAL WORKPAPERS TO
PREPARED DIRECT TESTIMONY
OF MARIA T. MARTINEZ
ON BEHALF OF SOUTHERN CALIFORNIA GAS COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

NOVEMBER 2014



2016 General Rate Case - APP
INDEX OF WORKPAPERS

Exhibit SCG-08-CWP - TIMP & DIMP

DOCUMENT	PAGE
Overall Summary For Exhibit No. SCG-08-CWP	1
Category: A. TIMP	2
..002760 - PROJS TO SUP TRANS. - PIP	3
..P03120 - GT PL RPLS / EXTERNALLY DRIVEN	17
Category: B. DIMP	28
..002770 - DISTRIBUTION INTEGRITY MANAGEMENT	29

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Overall Summary For Exhibit No. SCG-08-CWP

Area:	TIMP & DIMP
Witness:	Maria T. Martinez

In 2013 \$ (000)			
Adjusted-Forecast			
	2014	2015	2016
A. TIMP	37,882	23,317	50,801
B. DIMP	15,160	25,320	74,383
Total	53,042	48,637	125,184

Note: Totals may include rounding differences.

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Area: TIMP & DIMP
Witness: Maria T. Martinez
Category: A. TIMP
Workpaper: VARIOUS

Summary for Category: A. TIMP

	In 2013\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2013	2014	2015	2016
Labor	4,162	3,800	3,872	4,209
Non-Labor	52,707	34,082	19,445	46,592
NSE	0	0	0	0
Total	56,869	37,882	23,317	50,801
FTE	38.6	43.0	44.0	48.0

002760 Projs to Sup Trans. - PIP

Labor	84	346	346	577
Non-Labor	4,524	2,702	2,702	4,503
NSE	0	0	0	0
Total	4,608	3,048	3,048	5,080
FTE	0.8	4.0	4.0	7.0

P03120 GT PL Rpls / Externally Driven

Labor	4,078	3,454	3,526	3,632
Non-Labor	48,183	31,380	16,743	42,089
NSE	0	0	0	0
Total	52,261	34,834	20,269	45,721
FTE	37.8	39.0	40.0	41.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
002760 - Projs to Sup Trans. - PIP**

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Area: TIMP & DIMP
Witness: Maria T. Martinez
Budget Code: 00276.0
Category: A. TIMP
Category-Sub: 1. TIMP - Dist
Workpaper Group: 002760 - Projs to Sup Trans. - PIP

Summary of Results (Constant 2013 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2009	2010	2011	2012	2013	2014	2015	2016
Years									
Labor	Zero-Based	343	977	1,266	1,458	84	346	346	577
Non-Labor	Zero-Based	5,964	17,125	17,421	25,425	4,524	2,702	2,702	4,503
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		6,307	18,102	18,686	26,884	4,608	3,048	3,048	5,080
FTE	Zero-Based	3.3	9.8	12.8	14.8	0.8	4.0	4.0	7.0

Business Purpose:

On December 17, 2002 the Pipeline Safety Improvement Act of 2002 (PSIA 2002) was signed into law, and subsequently 49 C.F.R. Part 192 Subpart O was published. The final rule was effective January 14, 2004. Under this rule, operators of gas transmission pipelines are required to identify the threats to their pipelines, analyze the risk posed by these threats, assess the physical condition of their pipelines and take actions to address applicable threats and integrity concerns before pipeline incidents can occur.

This project addresses the regulatory requirements set forth by the implementation of PSIA 2002. All DOT transmission pipeline work generated to address these regulatory requirements will be captured in Budget Category (BC) 312 for pipelines operated by the Transmission department and (BC) 276 for pipelines operated by the Distribution department.

Physical Description:

The assessment of this pipeline will be completed using In-Line Inspection (ILI) tools. The ILI tools will traverse internally along the route of the pipeline to collect information that will be used to complete the assessment of the pipeline. The tools are inserted into the pipelines by installing a temporary or permanent launcher and receiver typically installed near the time of inspection.

Following the completion of the inspection excavations to validate or remediate the inspection findings will be needed. When possible, multiple pipelines may be combined into a single run, and conversely, a single pipeline may require multiple launcher and receiver points.

Project Justification:

All DOT Transmission Pipeline Integrity assessments are in response to the Federal Pipeline Safety Improvement Act of 2002 and are required to comply with the subsequent rule making. Capital repairs and replacements are constructed in accordance with 49 C.F.R. Part 192, ASME B31.8, and other codes and standards as appropriate. Assessments need to be completed on continual basis using In-Line Inspection (ILI) tools, Pressure Testing or Direct Assessment to address the identified threats on each pipeline. The assessment of transmission pipelines located in High Consequence Area (HCA) requires an assessment to be completed at a minimum every 7 years. 49 C.F.R § 192.939 establishes the requirements for determining the reassessment interval for covered pipelines but goes on to stipulate " the maximum reassessment interval by an allowable reassessment method is seven years".

Note: Totals may include rounding differences.

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Area: TIMP & DIMP
Witness: Maria T. Martinez
Budget Code: 00276.0
Category: A. TIMP
Category-Sub: 1. TIMP - Dist
Workpaper Group: 002760 - Projs to Sup Trans. - PIP

Forecast Methodology:

Labor - Zero-Based

See supplemental workpapers for details.

Non-Labor - Zero-Based

See supplemental workpapers for details.

NSE - Zero-Based

There are no Non-Standard Escalation expenses in this work group.

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Area: TIMP & DIMP
 Witness: Maria T. Martinez
 Budget Code: 00276.0
 Category: A. TIMP
 Category-Sub: 1. TIMP - Dist
 Workpaper Group: 002760 - Projs to Sup Trans. - PIP

Adjustments to Forecast

In 2013 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2014	2015	2016	2014	2015	2016	2014	2015	2016
Labor	Zero-Based	346	346	577	0	0	0	346	346	577
Non-Labor	Zero-Based	2,702	2,702	4,503	0	0	0	2,702	2,702	4,503
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		3,048	3,048	5,080	0	0	0	3,048	3,048	5,080
FTE	Zero-Based	4.0	4.0	7.0	0.0	0.0	0.0	4.0	4.0	7.0

Forecast Adjustment Details

<u>Year/Explanation</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>RefID</u>
2014 Total	0	0	0	0	0.0	
2015 Total	0	0	0	0	0.0	
2016 Total	0	0	0	0	0.0	

Note: Totals may include rounding differences.

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Area: TIMP & DIMP
Witness: Maria T. Martinez
Budget Code: 00276.0
Category: A. TIMP
Category-Sub: 1. TIMP - Dist
Workpaper Group: 002760 - Projs to Sup Trans. - PIP

Determination of Adjusted-Recorded:

	2009 (\$000)	2010 (\$000)	2011 (\$000)	2012 (\$000)	2013 (\$000)
Recorded (Nominal \$)*					
Labor	0	0	0	25	0
Non-Labor	1,754	-1	0	42	4
NSE	0	0	0	0	0
Total	1,754	-1	0	67	4
FTE	0.0	0.0	0.0	0.2	0.0
Adjustments (Nominal \$)**					
Labor	236	706	1,009	1,236	72
Non-Labor	3,102	14,543	16,192	25,465	4,520
NSE	0	0	0	0	0
Total	3,338	15,249	17,201	26,701	4,592
FTE	2.8	8.3	10.9	12.5	0.7
Recorded-Adjusted (Nominal \$)					
Labor	236	706	1,009	1,261	72
Non-Labor	4,856	14,542	16,192	25,507	4,524
NSE	0	0	0	0	0
Total	5,092	15,249	17,201	26,768	4,596
FTE	2.8	8.3	10.9	12.7	0.7
Vacation & Sick (Nominal \$)					
Labor	43	123	168	202	12
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	43	123	168	202	12
FTE	0.5	1.5	1.9	2.1	0.1
Escalation to 2013\$					
Labor	64	147	89	-5	0
Non-Labor	1,108	2,582	1,228	-81	0
NSE	0	0	0	0	0
Total	1,172	2,730	1,317	-86	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2013\$)					
Labor	343	977	1,266	1,458	84
Non-Labor	5,964	17,125	17,421	25,425	4,524
NSE	0	0	0	0	0
Total	6,307	18,102	18,686	26,884	4,608
FTE	3.3	9.8	12.8	14.8	0.8

* After company-wide exclusions of Non-GRC costs

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

Note: Totals may include rounding differences.

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Area: TIMP & DIMP
 Witness: Maria T. Martinez
 Budget Code: 00276.0
 Category: A. TIMP
 Category-Sub: 1. TIMP - Dist
 Workpaper Group: 002760 - Projs to Sup Trans. - PIP

Adjustments to Recorded:

In Nominal \$(000)					
Years	2009	2010	2011	2012	2013
Labor	236	706	1,009	1,236	72
Non-Labor	3,102	14,543	16,192	25,465	4,520
NSE	0	0	0	0	0
Total	3,338	15,249	17,201	26,701	4,592
FTE	2.8	8.3	10.9	12.5	0.7

Detail of Adjustments to Recorded in Nominal \$:

Year/Explanation	Labor	NLbr	NSE	Total	FTE	RefID
2009	236	3,102	0	3,338	2.8	TPDLB201410090806468
adding amounts previously in PO276 so that now workpapers will reflect all 276 in 00276						
2009 Total	236	3,102	0	3,338	2.8	
2010	706	14,543	0	15,249	8.3	TPDLB201410090809083
moving in amounts from PO276 into 00276 so that workpapers will reflect all amounts in 276 in 00276						
2010 Total	706	14,543	0	15,249	8.3	
2011	1,009	16,192	0	17,201	10.9	TPDLB201410090817049
adding amounts previously in PO276 into 00276 so that workpapers will reflect all 276 amounts in 00276						
2011 Total	1,009	16,192	0	17,201	10.9	
2012	1,236	25,467	0	26,703	12.5	TPDLB201410090817560
moving amounts previously shown in PO276 into 00276 so that workpapers will reflect all 276 in 00276						
	0	-2	0	-2	0.0	TPDLB201410090820568
adj Nonlabor by -2000 to match recorded provided						
2012 Total	1,236	25,465	0	26,701	12.5	
2013	72	4,520	0	4,592	0.7	TPDLB201410090818433
moving amounts previously in PO276 into 00276 so that workpapers will reflect all 276 in 00276						
2013 Total	72	4,520	0	4,592	0.7	

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 002760**

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Area: TIMP & DIMP
 Witness: Maria T. Martinez
 Budget Code: 00276.0
 Category: A. TIMP
 Category-Sub: 1. TIMP - Dist
 Workpaper Group: 002760 - Projs to Sup Trans. - PIP
 Workpaper Detail: 002760.001 - Various TIMP projects BC 276
 In-Service Date: Not Applicable
 Description:

Forecast In 2013 \$(000)				
Years		<u>2014</u>	<u>2015</u>	<u>2016</u>
Labor		346	346	577
Non-Labor		2,702	2,702	4,503
NSE		0	0	0
	Total	<u>3,048</u>	<u>3,048</u>	<u>5,080</u>
FTE		4.0	4.0	7.0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 002760

SoCalGas Capital Workpaper
BC 276 & BC 312

Business Purpose

On December 17, 2002 the Pipeline Safety Improvement Act of 2002 (PSIA 2002) was signed into law, and subsequently 49 C.F.R. Part 192 Subpart O was published. The final rule was effective January 14, 2004. Under this rule, operators of gas transmission pipelines are required to identify the threats to their pipelines, analyze the risk posed by these threats, assess the physical condition of their pipelines and take actions to address applicable threats and integrity concerns before pipeline incidents can occur.

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Physical Description

The assessment of this pipeline will be completed using In-Line Inspection (ILI) tools. The ILI tools will traverse internally along the route of the pipeline to collect information that will be used to complete the assessment of the pipeline. The tools are inserted into the pipelines by installing a temporary or permanent launcher and receiver typically installed near the time of inspection.

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Forecast Methodology

The cost to assess a pipeline is forecast using the following four components:

1. Retrofit of the pipeline and capital replacement
2. Installation of launcher and receiver facilities
3. In-Line Inspection
4. Excavations & remediation

The retrofit and installation of launcher and receiver is a capitalized cost while the in-line inspection and excavation and minor repairs (components 3 and 4 above) are expense.

To forecast the cost of this assessment project, the methodology is using the average cost of ILI per site and minor repairs. The methodology for capital costs is to use the average cost of installing a launcher/receiver facilities and average cost for retrofit/repairs.

Capital Component:

The cost to complete this component is based upon the average cost incurred during 2013 for the retrofit, installation launch/receiver materials of a typical project including radiography and equipment expenses and capital replacements. The resulting total average cost for capital is \$1,062,415 per site. For projects denoted with an asterisk below additional cost for retrofit and replacement are expected based on similar projects.

O&M Component:

The cost to complete this component is based upon the average cost incurred during 2013 for data collection, ILI inspection and excavations required for validation and minor repairs. The resulting total average cost for O&M is \$1,008,791 per ILI run.

Distribution of Labor /Non Labor:

The majority of work required to accomplish in projects is contractor work and materials which is pooled into the non-labor category. Labor based on 2013 actual cost and inflated each year by labor factor of 3.5%.

Based upon the methodology described above, the projected costs for capital are:

		<u>2014</u>	<u>2015</u>	<u>2016</u>
1	BC 276	\$2,390,434	\$1,699,864	\$159,362
2	BC 312	\$34,496,566	\$17,954,814	\$47,742,691
3	Total	<u>\$36,887,000</u>	<u>\$19,654,678</u>	<u>\$47,902,054</u>

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Task	Avg Cost
Avg Capital Cst per ILI Site	\$1,062,415

Year 2014				
BC 312	<u>Pipeline</u>	<u>Launch (start)</u>	<u>Receive (end)</u>	<u>Miles</u>
1	1010	Gaviota Reg Sta	Divide Sta	31.59
2	235 E	Kelso Compr Sta	Newberry Springs Compr Sta	58.79
3	404	Olive St Sta	Santa Clara Rivera	12.5
4	1024 & 1176	LeCouver Reg Sta	Del Amo & Wilmington	5.45
5	404	Somis Meter Sta	Haskell Sta	24.14
6	800	Kettleman City - Henrietta Peaker Plnt	LeMoore Ca	25.93
7	1016	Yorba Reg Sta	Chestnut & Grand	13.4
8	765	Ph 1 & Ph4 TwYrd / ArroyoSeco	Spence Street/ATS Tow Yard	6.0
9	765	PH 3 Spence Station	Willow Station	17.13
10	765	Ph2 Fairmnt & 134 Frwy	Cypress & Arroyo Seco	6.26
11	765	Ph5 Cargo Container Yrd - South of PCH	Casings # 8001313 to 8001314	0.49
12	127 & 1004	Goleta Compr Sta	Parsons (1004S3)	22.64
13	406	Ventura Compr Sta	Burbank & Lindley	51.00
14	235 W	Newberry Springs Compr Sta	Victorville Base	46.77
15	3001	Burbank Blvd	Noble Ave	5.23
16	6916	29 Palms	Morengo	60.12
			ILI Sites: 16	\$16,998,640
			Carryover into 2015	\$4,249,660
			Subtotal BC 312 Capital 2014	\$12,748,980
			add'l charge for Retrofit/Repair	\$0
			2013 Carryover into 2014	\$21,747,586
			Total BC 312 Capital 2014	\$34,496,566
			Labor BC 312	\$3,354,500
			Non-Labor BC 312	\$31,142,066

BC 276	<u>Pipeline</u>	<u>Launch (start)</u>	<u>Receive (end)</u>	<u>Miles</u>
1	35-20	Bristol St & Red Hill (Conta Mesa)	Dana Point Station	21.25
2	45-1106	Alamed St	Casing #8000564	0.13
3	31-09	Barranca - South Garvey	Casing # 8000027	0.13
			ILI Sites: 3	\$3,187,245
			Carryover into 2015	\$796,811
			Subtotal BC 276 Capital 2014	\$2,390,434
			add'l charge for Retrofit/Repair	\$0
			2013 Carryover into 2014	\$0
			Total BC 276 Capital 2014	\$2,390,434
			Labor BC 276	\$346,030
			Non-Labor BC 276	\$2,044,404
			Total Capital 2014	\$36,887,000
			Total Labor	\$3,700,530
			Total Non-Labor	\$33,186,470

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Year 2015				
Pipeline	Launch (start)	Receive (end)	Miles	
1	1027	Moreno Comp Sta	Rainbow Mater Sta	34.45
2	1019	Almond St & Parker Ave	Haynes Reg Sta	14.50
3	3001	Burbank Blvd & Lindley	Noble Ave & Valley Heart	5.19
4	1200	Eubank & Q Street	Bell Porte & 257th Street	3.29
5	1020	Lakewood Ca (Del Amo & State St)	Haynes Reg Sta	6.04
6	1172	Duley Sta	NRG Steam Power Plant	3.37
7	247	Goleta Comp Sta	Gaviota Reg Sta	24.21
8	7039	L7200	Kern River	16.98
9	5000-2	Blythe Compr Sta.	Cactus Cit Compr Sta	50.44
10	20000	Santa Fe Springs Sta	Spence Sta	3.52
11	235 W	Victorville Base	Quigley Sta	72.00
12	1173	400" w/o Aviation & El Segundo	Grand Ave East of Vista Del Mar	2.85
13	325	Willow Sta	Alameda	1.35
14	5000-4 *	MLV 19B	MLV 20B (Chino Airport)	7.19
			ILI Sites: 14	\$14,873,810
			Carryover into 2016	\$2,231,072
			Subtotal BC 312 Capital 2015	\$12,642,739
			add'l charge for Retrofit/Repair	\$1,062,415
			2014 Carryover into 2015	\$4,249,660
			Total BC 312 Capital 2015	\$17,954,814
			Labor BC 312	\$3,159,750
			Non-Labor BC 312	\$14,795,064
BC 276				
1	38-504	Hanford Base	LeMoore Junction	10.18
			ILI Sites: 1	\$1,062,415
			Carryover into 2016	\$159,362
			Subtotal BC 276 Capital 2015	\$903,053
			add'l charge for Retrofit/Repair	\$0
			2014 Carryover into 2015	\$796,811
			Total BC 276 Capital 2015	\$1,699,864
			Labor BC 276	\$346,030
			Non-Labor BC 276	\$1,353,834
			Total Capital 2015	\$19,654,678
			Total Labor	\$3,505,780
			Total Non-Labor	\$16,148,898

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Year 2016					
	<u>Pipeline</u>	<u>Launch (start)</u>	<u>Receive (end)</u>	<u>Miles</u>	
1	5000-3	Whitewater Sta Beaumont	Moreno Comp Sta	31.42	
2	2001 W	Cactus City Compr Sta	Mnoreno Sta	75.64	
3	160 & 1005	More Ranch Rd Sta	Ventura Comp Sta	0.52	
4	6905	Kramer Junction	Adelanto Comp Sta	31.71	
5	80	UCSB Miller Well Site	California Freeway 217	0.8	
6	80	UCSB Miller Well Site	California Freeway 217	0.55	
7	6916	Essex	Twentynine Palms	52.41	
8	1185 & 4002	Adelanto Compr Sta	Fontana Base	30.6	
9	1005	Taylor Ranch Rd Crossover Vlave	Ventura Compr Sta	0.52	
10	1017	Santa Ana (Grand Ave & Chestnut)	Costa Mesa (Red Hill Ave)	6.48	
11	325	Willow Sta	Alameda	1.35	
12	2000	Cactus City Compr Sta	Moreno Compr Sta	75.1	
13	3600	Harvest Road Sta	Santee Sta	29.86	
14	3002	Glen Oaks & Estelle	Glendale & Fairmont	0.35	
15	235 W *	Kelso	Newberry Springs	56.71	
16	3000 E *	El Paso Gas / River Sta	Needles Compr Sta	8.27	
17	3000 E *	Needles Compr Sta	Newberry Compr Sta	116.43	
18	8109 *	Ph 1Cuyama Meter Sta	Apache Valve Sta	18.21	
19	8109 *	Ph 2 Apache Valve Sta	Live Oaks Valve - Santa Ana Rd	22.55	
20	8109 *	Ph 3 Live Oaks Valve - Santa Ana Rd	Mandalay Steam Plant	16.7	
21	7000/293 **	Delamo Jnc Sta	Visilia Sta	39.45	
				ILI Sites: 21	\$22,310,715
				Carryover into 2017	\$3,346,607
				Subtotal BC 312 Capital 2016	\$18,964,108
				add'l charge for Retrofit/Repair	\$26,547,512
				2015 Carryover into 2016	\$2,231,072
				Total BC 312 Capital 2016	\$47,742,691
				Labor BC 312	\$3,919,150
				Non-Labor BC 312	\$43,823,541
BC 276					
0	na				
				ILI Sites: 0	\$0
				Carryover into 2017	\$0
				Subtotal BC 276 Capital 2016	\$0
				add'l charge for Retrofit/Repair	\$0
				2015 Carryover into 2016	\$159,362
				Total BC 276 Capital 2016	\$159,362
				Labor BC 276	\$0
				Non-Labor BC 276	\$159,362
				Total Capital 2015	\$47,902,054
				Total Labor	\$3,919,150
				Total Non-Labor	\$43,982,904

**Beginning of Workpaper Group
P03120 - GT PL Rpls / Externally Driven**

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Area: TIMP & DIMP
 Witness: Maria T. Martinez
 Budget Code: P0312.0
 Category: A. TIMP
 Category-Sub: 2. TIMP - Trans
 Workpaper Group: P03120 - GT PL Rpls / Externally Driven

Summary of Results (Constant 2013 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2009	2010	2011	2012	2013	2014	2015	2016
	Years								
Labor	Zero-Based	3,293	3,000	3,305	3,494	4,078	3,454	3,526	3,632
Non-Labor	Zero-Based	31,489	37,263	68,442	40,451	48,183	31,380	16,743	42,089
NSE	Zero-Based	0	0	0	0	0	0	0	0
	Total	34,782	40,263	71,747	43,946	52,261	34,834	20,269	45,721
FTE	Zero-Based	29.4	26.8	32.6	34.2	37.8	39.0	40.0	41.0

Business Purpose:

On December 17, 2002 the Pipeline Safety Improvement Act of 2002 (PSIA 2002) was signed into law, and subsequently 49 C.F.R. Part 192 Subpart O was published. The final rule was effective January 14, 2004. Under this rule, operators of gas transmission pipelines are required to identify the threats to their pipelines, analyze the risk posed by these threats, assess the physical condition of their pipelines and take actions to address applicable threats and integrity concerns before pipeline incidents can occur.

This project addresses the regulatory requirements set forth by the implementation of PSIA 2002. All DOT transmission pipeline work generated to address these regulatory requirements will be captured in Budget Category (BC) 312 for pipelines operated by the Transmission department and (BC) 276 for pipelines operated by the Distribution department.

Physical Description:

See supplemental workpapers for details.

Project Justification:

See supplemental workpapers for details.

Note: Totals may include rounding differences.

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Area: TIMP & DIMP
Witness: Maria T. Martinez
Budget Code: P0312.0
Category: A. TIMP
Category-Sub: 2. TIMP - Trans
Workpaper Group: P03120 - GT PL Rpls / Externally Driven

Forecast Methodology:

Labor - Zero-Based

See supplemental workpapers for details.

Non-Labor - Zero-Based

See supplemental workpapers for details.

NSE - Zero-Based

There are no Non-Standard Escalation expenses in this work group

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Area: TIMP & DIMP
 Witness: Maria T. Martinez
 Budget Code: P0312.0
 Category: A. TIMP
 Category-Sub: 2. TIMP - Trans
 Workpaper Group: P03120 - GT PL Rpls / Externally Driven

Adjustments to Forecast

In 2013 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2014	2015	2016	2014	2015	2016	2014	2015	2016
Labor	Zero-Based	3,113	3,113	5,189	341	413	-1,557	3,454	3,526	3,632
Non-Labor	Zero-Based	24,319	24,319	40,531	7,061	-7,576	1,558	31,380	16,743	42,089
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		27,432	27,432	45,720	7,402	-7,163	1	34,834	20,269	45,721
FTE	Zero-Based	39.0	39.0	65.0	0.0	1.0	-24.0	39.0	40.0	41.0

Forecast Adjustment Details

<u>Year/Explanation</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>RefID</u>
2014	341	7,061	0	7,402	0.0	TPDLB2014022612
REVISED FORECAST 02/26. Revised the Labor to Nonlabor split 5/09.						
2014 Total	341	7,061	0	7,402	0.0	
2015	413	-7,576	0	-7,163	1.0	TPDLB2014022612
REVISED FORECAST 02/26. Revised the Labor to Nonlabor split 5/09.						
2015 Total	413	-7,576	0	-7,163	1.0	
2016	-1,557	1,558	0	1	-24.0	TPDLB2014022612
REVISED FORECAST 02/26. Revised Labor to Nonlabor split 5/09. Revised 5/15 to reflect P&M capital work forecasted at \$2.485M in 2016 to bring total capital in BC 312 to \$45.721M						
2016 Total	-1,557	1,558	0	1	-24.0	

Note: Totals may include rounding differences.

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Area: TIMP & DIMP
Witness: Maria T. Martinez
Budget Code: P0312.0
Category: A. TIMP
Category-Sub: 2. TIMP - Trans
Workpaper Group: P03120 - GT PL Rpls / Externally Driven

Determination of Adjusted-Recorded:

	2009 (\$000)	2010 (\$000)	2011 (\$000)	2012 (\$000)	2013 (\$000)
Recorded (Nominal \$)*					
Labor	2,271	2,168	2,635	3,022	3,497
Non-Labor	25,638	31,644	63,616	40,581	48,183
NSE	0	0	0	0	0
Total	27,909	33,812	66,251	43,602	51,679
FTE	24.7	22.7	27.8	29.3	32.3
Adjustments (Nominal \$)**					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	2,271	2,168	2,635	3,022	3,497
Non-Labor	25,638	31,644	63,616	40,581	48,183
NSE	0	0	0	0	0
Total	27,909	33,812	66,251	43,602	51,679
FTE	24.7	22.7	27.8	29.3	32.3
Vacation & Sick (Nominal \$)					
Labor	410	379	438	484	581
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	410	379	438	484	581
FTE	4.7	4.1	4.8	4.9	5.5
Escalation to 2013\$					
Labor	612	452	233	-11	0
Non-Labor	5,851	5,619	4,825	-129	0
NSE	0	0	0	0	0
Total	6,462	6,072	5,058	-141	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2013\$)					
Labor	3,293	3,000	3,305	3,494	4,078
Non-Labor	31,489	37,263	68,442	40,451	48,183
NSE	0	0	0	0	0
Total	34,782	40,263	71,747	43,946	52,261
FTE	29.4	26.8	32.6	34.2	37.8

* After company-wide exclusions of Non-GRC costs

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

Note: Totals may include rounding differences.

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Area: TIMP & DIMP
 Witness: Maria T. Martinez
 Budget Code: P0312.0
 Category: A. TIMP
 Category-Sub: 2. TIMP - Trans
 Workpaper Group: P03120 - GT PL Rpls / Externally Driven

Adjustments to Recorded:

		In Nominal \$(000)				
Years		2009	2010	2011	2012	2013
Labor		0	0	0	0	0
Non-Labor		0	0	0	0	0
NSE		0	0	0	0	0
Total		0	0	0	0	0
FTE		0.0	0.0	0.0	0.0	0.0

Detail of Adjustments to Recorded in Nominal \$:

Year/Explanation	Labor	NLbr	NSE	Total	FTE	RefID
2009 Total	0	0	0	0	0.0	
2010 Total	0	0	0	0	0.0	
2011 Total	0	0	0	0	0.0	
2012 Total	0	0	0	0	0.0	
2013 Total	0	0	0	0	0.0	

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group P03120**

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Area: TIMP & DIMP
 Witness: Maria T. Martinez
 Budget Code: P0312.0
 Category: A. TIMP
 Category-Sub: 2. TIMP - Trans
 Workpaper Group: P03120 - GT PL Rpls / Externally Driven
 Workpaper Detail: P03120.001 - Various TIMP projects BC 312 - 2014
 In-Service Date: Not Applicable
 Description:

Forecast In 2013 \$(000)				
Years		2014	2015	2016
Labor		3,454	3,526	3,632
Non-Labor		31,380	16,743	42,089
NSE		0	0	0
	Total	34,834	20,269	45,721
FTE		39.0	40.0	41.0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group P03120

SoCalGas Capital Workpaper BC 312

Preventative and Mitigative

Business Purpose

The Transmission Integrity Management Program has set requirements to evaluate data and pipeline threats to determine if additional Preventive and Mitigation (P&M) measures are required to reduce risk or address specific issues or threats. The requirements for identifying and completing P&M measures are spelled out in 49 C.F.R. § 192.935. As a result of the information and evaluations completed during our Baseline and Reassessment period several P&M projects have been identified and prioritized in order to address issues on transmission pipelines.

Physical Description

The majority of P&M projects involve the further evaluation of pipeline coating and cathodic protection (CP) systems, and the installation of additional CP current sources, monitoring tools, and pipeline coating remediation. The projects include electrical line surveys to identify and prioritize locations for mitigation and the installation of additional CP rectifiers, pipeline surface recoating, pipe inspection digs, and CP monitoring probe and test sites.

Project Justification

As required under CFR regulations (part 192.935) and our Pipeline Integrity Management Plan P&M projects to address threats such as external corrosion, etc. have been identified and scheduled.

Forecast Methodology

P&M project costs are estimated based on our history and experience with survey and repair projects over several years. Typical costs for these type projects are \$200 per foot for pipeline coating remediation, \$150,000 per rectifier and \$35,000 per mile for above ground survey inspections. It's expected that a minimum of 500 feet will need to be recoated upon completion of the line survey. All P&M capital work is contained in Budget Code 312.

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

	Task	Average Cost	
1	Line Survey	\$35,000	per mile
2	Coating Remediation	\$200	per foot
3	Rectifiers	\$150,000	each

2014					
	Line Number	Line Survey	Coating Remediation	Rectifiers	Total Cost
4	1011	\$95,030	\$100,000	\$200,000	\$395,030
5	1030	\$450,000			\$450,000
6	1028	\$150,000			\$150,000
7	Total				\$995,030
8	(10%)Labor				\$99,500
9	(90%)NonLabor				\$895,530

2015					
	Line Number	Line Survey	Coating Remediation	Rectifiers	Total Cost
10	4000	\$600,000		\$400,000	\$1,000,000
11	1030	\$400,000		\$400,000	\$800,000
12	1027	\$252,523	\$200,000		\$452,523
13	1028	\$100,000	\$150,000	\$160,000	\$410,000
14	235	\$900,000	\$100,000		\$1,000,000
15	Total				\$3,662,353
16	(10%)Labor				\$366,250
17	(90%)NonLabor				\$3,296,103

2016					
	Line Number	Line Survey	Coating Remediation	Rectifiers	Total Cost
18	4000	\$450,000	\$750,000		\$1,200,000
19	1027	\$425,000		\$160,000	\$585,000
20	235	\$213,997	\$900,000		\$1,113,997
21	Total				\$2,898,997
22	(10%)Labor				\$289,900
23	(90%)NonLabor				\$2,609,097

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Area: TIMP & DIMP
Witness: Maria T. Martinez
Category: B. DIMP
Workpaper: 002770

Summary for Category: B. DIMP

	In 2013\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2013	2014	2015	2016
Labor	608	1,103	1,324	1,588
Non-Labor	6,249	14,057	23,996	72,795
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	6,857	15,160	25,320	74,383
FTE	7.1	13.0	15.0	18.0

002770 Distribution Integrity Management

Labor	608	1,103	1,324	1,588
Non-Labor	6,249	14,057	23,996	72,795
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	6,857	15,160	25,320	74,383
FTE	7.1	13.0	15.0	18.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
002770 - Distribution Integrity Management

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Area: TIMP & DIMP
 Witness: Maria T. Martinez
 Budget Code: 00277.0
 Category: B. DIMP
 Category-Sub: 1. DIMP
 Workpaper Group: 002770 - Distribution Integrity Management

Summary of Results (Constant 2013 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2009	2010	2011	2012	2013	2014	2015	2016
Years									
Labor	Zero-Based	0	0	0	115	608	1,103	1,324	1,588
Non-Labor	Zero-Based	0	0	0	2,463	6,249	14,057	23,996	72,795
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	2,578	6,857	15,160	25,320	74,383
FTE	Zero-Based	0.0	0.0	0.0	1.5	7.1	13.0	15.0	18.0

Business Purpose:

PHMSA published a final rule that amended the federal pipeline safety regulations to require operators of gas distribution pipelines to develop and implement a pipeline integrity management program by August 2, 2011. On December 4, 2009, the Distribution Integrity Management Program (DIMP) rule was posted as: Pipeline Safety: Final Rule, 74 Fed. Reg. 63,906-63,936 (codified 49 C.F.R. Part 192 Subpart P). PHMSA's purpose for DIMP is to enhance pipeline safety by having operators identify and reduce pipeline integrity risks specifically for distribution pipelines. As noted by PHMSA, DIMP requires activities beyond those required by traditional regulation. SoCalGas therefore has created individualized DIMP activities such as the Distribution Risk Evaluation and Monitoring System (DREAMS) that are above and beyond its core regulatory requirements. It has also created another individualized DIMP activity called Gas Infrastructure Protection Program (GIPP).

Physical Description:

The Distribution Risk Evaluation And Monitoring System (DREAMS) has been developed to address early vintage pipelines and manage their replacement. Using DREAMS, SoCalGas will identify, evaluate, risk rank and then implement the pipe replacement for both steel and plastic. The risk ranking algorithm is based on known segment information, reported pipe condition, segment specific leak history and known operating conditions contributing to the risk of failure and the location of the pipeline contributing to the consequence of a failure. The risk ranking will update as pipe age, condition, leak history and surrounding area changes. Recent incidents such as Sissonville, WV (NTSB# PAR-14-01), San Bruno, CA (NTSB#PAR-11-01) and Palm City, FL (PAB-13-01) in the gas industry support the need for a proactive approach in replacing early vintage pipelines installed or manufactured with non-state technology.

Vehicular damage is a threat and while the projected incident rate is low, the consequences can be high. This low-frequency, high-consequence event is the type of threat PHMSA intended to address when it developed DIMP regulations. SoCalGas has implemented a program to address vehicular damage to company facilities. SoCalGas has and will continue to identify, evaluate, recommend and then implement a damage prevention solution. SoCalGas developed a collection of mitigation measures to effectively address this threat. The collection of mitigation measures include, constructing barriers, relocating the facility or installing an Excess Flow Valve (EFV) to mitigate the threat.

Project Justification:

See supplemental workpapers for details.

Note: Totals may include rounding differences.

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Area: TIMP & DIMP
Witness: Maria T. Martinez
Budget Code: 00277.0
Category: B. DIMP
Category-Sub: 1. DIMP
Workpaper Group: 002770 - Distribution Integrity Management

Forecast Methodology:

Labor - Zero-Based

See supplemental workpapers for details.

Non-Labor - Zero-Based

See supplemental workpapers for details.

NSE - Zero-Based

There are no Non-Standard Escalation expenses in this BC

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Area: TIMP & DIMP
 Witness: Maria T. Martinez
 Budget Code: 00277.0
 Category: B. DIMP
 Category-Sub: 1. DIMP
 Workpaper Group: 002770 - Distribution Integrity Management

Adjustments to Forecast

In 2013 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2014	2015	2016	2014	2015	2016	2014	2015	2016
Labor	Zero-Based	1,577	1,577	3,004	-474	-253	-1,416	1,103	1,324	1,588
Non-Labor	Zero-Based	34,934	34,934	65,004	-20,877	-10,938	7,791	14,057	23,996	72,795
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		36,511	36,511	68,008	-21,351	-11,191	6,375	15,160	25,320	74,383
FTE	Zero-Based	20.0	20.0	38.0	-7.0	-5.0	-20.0	13.0	15.0	18.0

Forecast Adjustment Details

<u>Year/Explanation</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>RefID</u>
2014	-474	-20,877	0	-21,351	-7.0	TPDLB2014022612

Revising forecast to reflect longer period to ramp up DREAMS activity including planners specifically working on DREAMS

2014 Total	-474	-20,877	0	-21,351	-7.0	
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2015	-253	-10,938	0	-11,191	-5.0	TPDLB2014022612
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Revising forecast to reflect longer period to ramp up DREAMS activity including planners specifically working on DREAMS

2015 Total	-253	-10,938	0	-11,191	-5.0	
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2016	0	30,000	0	30,000	0.0	TP1JMY201407111
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Revising forecast to add \$30M DIMP DREAMS. Increasing the amount of miles to around 55 miles per year replacement of non state of the art pipe.

	-1,416	-22,209	0	-23,625	-20.0	TPDLB2014022612
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Revising forecast to reflect longer period to ramp up DREAMS activity including planners specifically working on DREAMS

2016 Total	-1,416	7,791	0	6,375	-20.0	
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Note: Totals may include rounding differences.

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Area: TIMP & DIMP
Witness: Maria T. Martinez
Budget Code: 00277.0
Category: B. DIMP
Category-Sub: 1. DIMP
Workpaper Group: 002770 - Distribution Integrity Management

Determination of Adjusted-Recorded:

	2009 (\$000)	2010 (\$000)	2011 (\$000)	2012 (\$000)	2013 (\$000)
Recorded (Nominal \$)*					
Labor	0	0	0	99	521
Non-Labor	0	0	0	2,471	6,249
NSE	0	0	0	0	0
Total	0	0	0	2,570	6,770
FTE	0.0	0.0	0.0	1.3	6.1
Adjustments (Nominal \$)**					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	0	0	0	99	521
Non-Labor	0	0	0	2,471	6,249
NSE	0	0	0	0	0
Total	0	0	0	2,570	6,770
FTE	0.0	0.0	0.0	1.3	6.1
Vacation & Sick (Nominal \$)					
Labor	0	0	0	16	87
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	16	87
FTE	0.0	0.0	0.0	0.2	1.0
Escalation to 2013\$					
Labor	0	0	0	0	0
Non-Labor	0	0	0	-8	0
NSE	0	0	0	0	0
Total	0	0	0	-8	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2013\$)					
Labor	0	0	0	115	608
Non-Labor	0	0	0	2,463	6,249
NSE	0	0	0	0	0
Total	0	0	0	2,578	6,857
FTE	0.0	0.0	0.0	1.5	7.1

* After company-wide exclusions of Non-GRC costs

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

Note: Totals may include rounding differences.

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Area: TIMP & DIMP
 Witness: Maria T. Martinez
 Budget Code: 00277.0
 Category: B. DIMP
 Category-Sub: 1. DIMP
 Workpaper Group: 002770 - Distribution Integrity Management

Adjustments to Recorded:

		In Nominal \$(000)				
Years		2009	2010	2011	2012	2013
Labor		0	0	0	0	0
Non-Labor		0	0	0	0	0
NSE		0	0	0	0	0
	Total	0	0	0	0	0
FTE		0.0	0.0	0.0	0.0	0.0

Detail of Adjustments to Recorded in Nominal \$:

Year/Explanation	Labor	NLbr	NSE	Total	FTE	RefID
2009 Total	0	0	0	0	0.0	
2010 Total	0	0	0	0	0.0	
2011 Total	0	0	0	0	0.0	
2012 Total	0	0	0	0	0.0	
2013 Total	0	0	0	0	0.0	

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 002770**

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

Area: TIMP & DIMP
 Witness: Maria T. Martinez
 Budget Code: 00277.0
 Category: B. DIMP
 Category-Sub: 1. DIMP
 Workpaper Group: 002770 - Distribution Integrity Management
 Workpaper Detail: 002770.001 - Various DIMP projects BC 277 - 2014
 In-Service Date: Not Applicable
 Description:

Forecast In 2013 \$(000)				
Years		<u>2014</u>	<u>2015</u>	<u>2016</u>
Labor		1,103	1,324	1,588
Non-Labor		14,057	23,996	72,795
NSE		0	0	0
	Total	15,160	25,320	74,383
FTE		13.0	15.0	18.0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 002770

SoCalGas Capital Workpaper BC 277
Distribution Risk Evaluation and Monitoring System (DREAMS)
Gas Infrastructure Protection Program (GIPP)

Business Purpose

PHMSA published a final rule that amended the federal pipeline safety regulations to require operators of gas distribution pipelines to develop and implement a pipeline integrity management program by August 2, 2011. On December 4, 2009, the Distribution Integrity Management Program (DIMP) rule was posted as: Pipeline Safety: Final Rule, 74 Fed. Reg. 63,906-63,936 (codified 49 C.F.R. Part 192 Subpart P). PHMSA's purpose for DIMP is to enhance pipeline safety by having operators identify and reduce pipeline integrity risks specifically for distribution pipelines. As noted by PHMSA, DIMP requires activities beyond those required by traditional regulation. SoCalGas therefore has created individualized DIMP activities such as the Distribution Risk Evaluation and Monitoring System (DREAMS) that are above and beyond its core regulatory requirements. It has also created another individualized DIMP activity called Gas Infrastructure Protection Program (GIPP).

Physical Description

The Distribution Risk Evaluation And Monitoring System (DREAMS) has been developed to address early vintage pipelines and manage their replacement. Using DREAMS, SoCalGas will identify, evaluate, risk rank and then implement the pipe replacement for both steel and plastic. The risk ranking algorithm is based on known segment information, reported pipe condition, segment specific leak history and known operating conditions. The risk ranking will update as pipe age, condition, and leakage history changes. Recent incidents such as Sissonville, WV (NTSB# PAR-14-01), San Bruno, CA (NTSB#PAR-11-01) and Palm City, FL (PAB-13-01)¹ in the gas industry support the need for a proactive approach in replacing early vintage pipelines installed or manufactured with non-state technology.

Vehicular damage is a threat and while the projected incident rate is low, the consequences can be high. This low-frequency, high-consequence event is the type of threat PHMSA intended to address when it developed DIMP regulations. SoCalGas has implemented a program to address vehicular damage to company facilities. SoCalGas has and will continue to identify, evaluate, recommend and then implement a damage prevention solution. SoCalGas developed a collection of mitigation measures to effectively address this threat. The collection of mitigation measures include, constructing barriers, relocating the facility or installing an Excess Flow Valve (EFV) to mitigate the threat.

Forecast Methodology

SoCalGas has 25,957 miles of non-state of the art pipe (unprotected steel and vintage plastic) in the system. Since the ratio of the steel population is twice as large as the plastic population the replacement ratio is 2:1. The following assumptions were used in the forecast. Based on historic data the average cost of replacement per foot for both steel and plastic is about \$225. There will be 26 planners dedicated to the DREAMS replacement project. On average each planner can plan 1 job every 2 months. The result is 150 jobs per year for both plastic and steel. Each job has an

¹ http://www.nts.gov/investigations/reports_pipeline.html

average length of approximately 2,000 feet. Taking into account the ratio of unprotected steel to vintage plastic, a manageable 10 year replacement forecast includes 365 miles for steel and 185 miles for plastic. This equates to an average yearly replacement of about 55 miles for steel and plastic at a cost of approximately \$65.8 million. The criterion for determining the 365 miles of unprotected steel is based on the number of pending leaks per segment. For the 185 miles of vintage plastic, the number of total leaks per segment was used. A summary of the forecast is shown below.

Costs for GIPP projects are estimated based on historical costs incurred up to March 2014. Average costs were used for the various O&M tasks of Site Inspections, Non Standard Mitigation, and FSR Vault Mitigation.

Total SoCalGas BC 277		Total	Labor	Non-Labor
1	DREAMS	\$10,384,214	\$503,000	\$9,881,214
2	GIPP	\$4,775,786	\$600,000	\$4,175,786
3	Total 2014	<u>\$15,160,000</u>	<u>\$1,103,000</u>	<u>\$14,057,000</u>
4				
5	DREAMS	\$20,032,884	\$703,000	\$19,329,884
6	GIPP	\$5,287,116	\$621,000	\$4,666,116
7	Total 2015	<u>\$25,320,000</u>	<u>\$1,324,000</u>	<u>\$23,996,000</u>
8				
9	DREAMS	\$65,775,00	\$868,000	\$64,907,000
10	GIPP	\$8,608,000	\$720,000	\$7,888,000
11	Total 2016	<u>\$74,383,000</u>	<u>\$1,588,000</u>	<u>\$72,795,000</u>

DREAMS Average Cost

	Task	Avg Cost
12	Total Length (ft)	2,923,330
13	Total Length (Miles)	554
14	Jobs per year	150
15	Years to complete	10
16	Miles per year (starting in 2016)	55
17	Cost per ft (\$)	\$225
18	Total Cost (\$)	\$657,749,250

DREAMS Cost per Year

		2014	2015	2016
19	Feet per year	46,152	89,035	292,333
20	Total Cost	\$10,384,214	\$20,032,884	\$65,775,000
21	Non-Labor	\$9,881,214	\$19,329,884	\$64,907,000
22	Labor	\$503,000	\$703,000	\$868,000

Southern California Gas Company
2016 GRC - APP
Capital Workpapers

GIPP Average Cost

	Task	Avg Cost
23	Standard Mitigation	\$744
24	Non Std Mitigation	\$6,302
25	FSR Vault Mitigation	\$6,000

GIPP Cost Per Year

		Standard Mitigations	Non Std Mitigations	FSR Vault Mitigations	Total Non-Labor	Labor	Total Capital
26	Year 2014	4,500	36	100			
27		\$3,348,900	\$226,886	\$600,000	\$4,175,786	\$600,000	\$4,775,786
28	Year 2015	4,500	90	125			
29		\$3,348,900	\$567,216	\$750,000	\$4,666,116	\$621,000	\$5,287,116
30	Year 2016	5,668	430	160			
31		\$4,217,968	\$2,710,032	\$960,000	\$7,888,000	\$720,000	\$8,608,000