WP SCG- 1: Recorded and Forecast Costs Workpaper

(2018 Direct $000)

RAMP Chapter ID	RAMP Chapter Name	Control/ Mitigation ID	Control/Mitigation Name	RECORDED O&M 2014	2015	2016	2017	2018	RECORDED Capital 2014	2015	2016	2017	2018	FORECAST O&M 2020 $ Low	$ High	2021 $ Low	$ High	2022 $ Low	$ High	FORECAST Capital 2020 $ Low	$ High	2021 $ Low	$ High	2022 $ Low	$ High	Notes:
SCG-1	Medium Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-1-C1	Cathodic Protection (CP)	$12,897	$13,327	$15,188	$13,701	$16,656	$4,867	$4,321	$6,093	$9,068	$7,133	$15,760	$20,138	$16,470	$21,046	$17,181	$21,953	$9,007	$11,509	$9,842	$12,577	$10,678	$13,644	
SCG-1	Medium Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-1-C2	Valve Inspections and Maintenance	$774	$792	$813	$840	$895	$0	$0	$0	$0	$0	$845	$1,080	$871	$1,113	$897	$1,146	$0	$0	$0	$0	$0	$0	
SCG-1	Medium Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-1-C3	Meter and Regulator (M&R) Maintenance	$13,592	$14,051	$14,584	$14,033	$14,689	$14,254	$13,278	$19,021	$10,516	$5,838	$20,934	$26,749	$21,130	$26,999	$21,325	$27,249	$4,270	$5,456	$2,506	$3,202	$743	$949	
SCG-1	Medium Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-1-C4	Meter Set Assembly (MSA) Inspection and Maintenance	$11,584	$9,326	$9,618	$11,576	$10,078	$23,487	$37,441	$30,885	$14,879	$18,593	$10,381	$13,264	$10,375	$13,257	$10,378	$13,261	$10,906	$13,935	$7,994	$10,215	$5,083	$6,495	
SCG-1	Medium Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-1-C5	Pipeline Patrol	$130	$141	$138	$140	$90	$0	$0	$0	$0	$0	$175	$223	$184	$235	$194	$248	$0	$0	$0	$0	$0	$0	
SCG-1	Medium Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-1-C6	Gas Infrastructure Protection Project (GIPP)	$468	$265	$248	$377	$1,778	$5,651	$5,310	$6,951	$4,226	$6,743	$746	$953	$746	$953	$746	$953	$4,861	$6,211	$4,861	$6,211	$4,861	$6,211	
SCG-1	Medium Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-1-C7-T1	DREAMS: Vintage Integrity Plastic Plan (VIPP)	$599	$252	$490	$2,307	$1,589	$6,434	$20,364	$42,049	$65,619	$103,706	$662	$846	$662	$846	$662	$846	$126,000	$161,000	$126,000	$161,000	$153,000	$195,500	
SCG-1	Medium Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-1-C7-T2	DREAMS: Bare Steel Replacement Program (BSRP)	$257	$108	$210	$989	$681	$2,758	$8,727	$18,021	$28,123	$44,445	$284	$363	$284	$363	$284	$363	$54,000	$69,000	$54,000	$69,000	$65,700	$83,950	
SCG-1	Medium Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-1-C8	Sewer Lateral Inspection Project (SLIP)	$5,091	$6,108	$8,704	$10,175	$9,583	$0	$0	$0	$0	$0	$9,065	$11,583	$9,065	$11,583	$9,065	$11,583	$0	$0	$0	$0	$0	$0	
SCG-1	Medium Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-1-C9	Distribution Riser Inspection Project (DRIP)	$7,990	$7,869	$16,227	$14,942	$14,839	$0	$0	$0	$0	$0	$15,108	$19,305	$15,108	$19,305	$15,108	$19,305	$0	$0	$0	$0	$0	$0	
SCG-1	Medium Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-1-C10	Distribution Operations Control Center (DOCC)	$0	$0	$0	$0	$0	$0	$0	$0	$63	$722	$0	$0	$0	$0	$0	$0	$4,491	$5,739	$28,408	$36,299	$32,205	$41,150	
SCG-1	Medium Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-1-C11	Leak Survey	$6,327	$5,709	$6,340	$7,459	$9,674	$0	$0	$0	$0	$0	$9,432	$12,052	$10,192	$13,023	$10,952	$13,994	$0	$0	$0	$0	$0	$0	
SCG-1	Medium Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-1-C12	Bridge & Span Inspections	$84	$60	$71	$70	$78	$0	$0	$0	$0	$0	$64	$82	$64	$82	$64	$82	$0	$0	$0	$0	$0	$0	
SCG-1	Medium Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-1-C13	Unstable Earth Inspection	$6	$7	$8	$7	$8	$0	$0	$0	$0	$0	$8	$11	$9	$11	$9	$12	$0	$0	$0	$0	$0	$0	
SCG-2	Employee Safety	SCG-2-C1	Mandatory employee health and safety training programs and standardized policies	$386	$373	$499	$451	$738	$0	$0	$0	$0	$0	$702	$807	$702	$807	$702	$807	$0	$0	$0	$0	$0	$0	
SCG-2	Employee Safety	SCG-2-C2	Drug and alcohol testing program	$693	$686	$650	$640	$629	$0	$0	$0	$0	$0	$615	$707	$615	$707	$615	$707	$0	$0	$0	$0	$0	$0	
SCG-2	Employee Safety	SCG-2-C3	Employee wellness programs	$3,711	$3,820	$3,886	$4,090	$2,234	$0	$0	$0	$0	$0	$3,008	$3,459	$3,008	$3,459	$3,008	$3,459	$0	$0	$0	$0	$0	$0	
SCG-2	Employee Safety	SCG-2-C4	Employee safety training and awareness programs	$7,354	$8,657	$7,842	$7,883	$7,369	$0	$0	$0	$0	$0	$7,775	$8,669	$7,881	$8,797	$7,941	$8,869	$0	$0	$0	$0	$0	$0	
SCG-2	Employee Safety	SCG-2-C5	Safe driving programs	$253	$265	$257	$317	$895	$0	$0	$0	$0	$0	$851	$979	$851	$979	$851	$979	$0	$0	$0	$0	$0	$0	
SCG-2	Employee Safety	SCG-2-C6	Personal protection equipment (PPE)	$1,226	$1,339	$1,351	$1,286	$1,165	$0	$0	$0	$0	$0	$1,231	$1,416	$1,231	$1,416	$1,231	$1,416	$0	$0	$0	$0	$0	$0	
SCG-2	Employee Safety	SCG-2-C7	Near Miss, Stop the Job and jobsite safety programs	$0	$250	$257	$245	$279	$0	$0	$0	$0	$0	$266	$306	$266	$306	$266	$306	$0	$0	$0	$0	$0	$0	
SCG-2	Employee Safety	SCG-2-C8	Safety culture	$505	$382	$441	$425	$518	$0	$0	$0	$0	$0	$497	$571	$497	$571	$497	$571	$0	$0	$0	$0	$0	$0	
SCG-2	Employee Safety	SCG-2-C9	Utilizing Occupational Safety and Health Administration (OSHA) and industry best practices and industry benchmarking	$951	$987	$1,030	$1,041	$1,109	$0	$0	$0	$0	$0	$1,054	$1,212	$1,054	$1,212	$1,054	$1,212	$0	$0	$0	$0	$0	$0	
SCG-2	Employee Safety	SCG-2-M1	OSHA 30-hour construction certification training	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$86	$108	$86	$108	$86	$108	$0	$0	$0	$0	$0	$0	
SCG-2	Employee Safety	SCG-2-M2	Industrial hygiene program refresh	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$291	$388	$291	$388	$291	$388	$0	$0	$0	$0	$0	$0	
SCG-2	Employee Safety	SCG-2-M3	Establish proactive monitoring for indoor air quality and chemicals of concern	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$54	$72	$54	$72	$54	$72	$0	$0	$0	$0	$0	$0	
SCG-2	Employee Safety	SCG-2-M4	Creation of a safety video library	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$48	$60	$48	$60	$48	$60	$0	$0	$0	$0	$0	$0	
SCG-2	Employee Safety	SCG-2-M5	Expanded Safety Congress and expanded Executive Safety Council	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$32	$42	$32	$42	$32	$42	$0	$0	$0	$0	$0	$0	
SCG-2	Employee Safety	SCG-2-M6	Expanded Safety Culture Assessments	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$45	$60	$45	$60	$45	$60	$0	$0	$0	$0	$0	$0	
SCG-3	Contractor Safety	SCG-3-C1	Contractor Safety Oversight	$315	$464	$1,167	$1,118	$949	$0	$0	$0	$0	$0	$1,596	$2,040	$1,596	$2,040	$1,596	$2,040	$0	$0	$0	$0	$0	$0	
SCG-3	Contractor Safety	SCG-3-C2	Contractual Requirements	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
SCG-3	Contractor Safety	SCG-3-C3	Stop the Job/Near Miss/Close Call Reporting Program	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
SCG-3	Contractor Safety	SCG-3-C4	Third-Party Administration Tools	$22	$23	$26	$40	$42	$0	$0	$0	$0	$0	$39	$50	$39	$50	$39	$50	$0	$0	$0	$0	$0	$0	
SCG-3	Contractor Safety	SCG-3-C5	Contractor Engagement	$0	$17	$17	$20	$21	$0	$0	$0	$0	$0	$35	$43	$35	$43	$35	$43	$0	$0	$0	$0	$0	$0	
SCG-3	Contractor Safety	SCG-3-M1	Expanded Contractor Safety Oversight	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$751	$959	$751	$959	$751	$959	$0	$0	$0	$0	$0	$0	
SCG-4	Customer & Public Safety	SCG-4-C1	Employee Formal Skills Training	$2,764	$2,938	$3,617	$2,960	$3,424	$0	$0	$0	$0	$0	$3,305	$4,001	$3,334	$4,036	$3,363	$4,071	$0	$0	$0	$0	$0	$0	
SCG-4	Customer & Public Safety	SCG-4-C2	Natural Gas and Appliance Testing	$2,108	$1,649	$1,489	$2,017	$2,176	$0	$0	$0	$0	$0	$2,100	$2,543	$2,118	$2,564	$2,137	$2,587	$0	$0	$0	$0	$0	$0	
SCG-4	Customer & Public Safety	SCG-4-C3	Leak and Emergency Order Response	$27,468	$27,925	$23,393	$29,565	$32,902	$0	$0	$0	$0	$0	$33,912	$41,051	$35,245	$42,665	$36,610	$44,317	$0	$0	$0	$0	$0	$0	
SCG-4	Customer & Public Safety	SCG-4-C4	Gas Consumption Analytics	$0	$0	$0	$0	$533	$0	$0	$0	$0	$0	$694	$887	$715	$913	$736	$941	$0	$0	$0	$0	$0	$0	
SCG-4	Customer & Public Safety	SCG-4-C5	Customer Services Field - Leak Detection Equipment	$0	$0	$0	$0	$4	$0	$0	$0	$0	$0	$11	$14	$11	$14	$11	$14	$0	$0	$0	$0	$0	$0	
SCG-4	Customer & Public Safety	SCG-4-C6	Quality Assurance	$1,621	$1,629	$2,142	$1,519	$1,992	$0	$0	$0	$0	$0	$2,008	$2,430	$2,052	$2,484	$2,092	$2,532	$0	$0	$0	$0	$0	$0	
SCG-4	Customer & Public Safety	SCG-4-C7	Policy, Procedures & Standards	$1,590	$1,433	$1,513	$1,551	$1,119	$0	$0	$0	$0	$0	$1,063	$1,287	$1,090	$1,319	$1,099	$1,331	$0	$0	$0	$0	$0	$0	
SCG-4	Customer & Public Safety	SCG-4-C8	Collect Customer Contact Data for Safety Communication	$0	$0	$0	$0	$191	$0	$0	$0	$0	$0	$185	$224	$187	$226	$188	$228	$0	$0	$0	$0	$0	$0	
SCG-4	Customer & Public Safety	SCG-4-C9	Safe Driving Programs	$0	$0	$0	$0	$895	$0	$0	$0	$0	$0	$851	$979	$851	$979	$851	$979	$0	$0	$0	$0	$0	$0	Costs also captured in Employee Safety chapter SCG-2
SCG-4	Customer & Public Safety	SCG-4-C10	Pole and Data Collector Unit (DCU) Inspections	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$150	$192	$153	$196	$155	$197	$0	$0	$0	$0	$0	$0	
SCG-4	Customer & Public Safety	SCG-4-M1	Underground Leak Detection Tool	$0	$0	$0	$0	$0	$0	$0	$0	$0	$41	$0	$0	$0	$0	$0	$0	$4,050	$5,175	$63	$81	$0	$0	
SCG-5	High Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-5-C1	Gas Infrastructure Protection Plan (GIPP)	$6	$0	$419	$663	$249	$607	$347	$870	$143	$731	$622	$795	$622	$795	$622	$795	$904	$1,155	$904	$1,155	$904	$1,155	
SCG-5	High Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-5-C2	Cathodic Protection	$5	$1	$1	$4	$1	$1,987	$1,821	$4,058	$6,177	$4,119	$1	$1	$1	$1	$1	$1	$3,929	$5,021	$3,929	$5,021	$3,929	$5,021	
SCG-5	High Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-5-C3-T1	Pipeline Safety Enhancement Plan – Pipeline Replacement: Phase 1A	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
SCG-5	High Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-5-C3-T2	Pipeline Safety Enhancement Plan – Pipeline Replacement: Phase 1B	$0	$0	$0	$0	$0	$21	$2,127	$7,949	$2,817	$1,974	$0	$0	$0	$0	$0	$0	$74,024	$94,586	$109,357	$139,734	$18,042	$23,054	
SCG-5	High Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-5-C3-T3	Pipeline Safety Enhancement Plan – Pipeline Replacement: Phase 2A	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$6,081	$7,771	$12,652	$16,167	$30,310	$38,730	
SCG-5	High Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-5-C4-T1	Pipeline Safety Enhancement Plan – Pressure Testing: Phase 1A	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
SCG-5	High Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-5-C4-T2	Pipeline Safety Enhancement Plan – Pressure Testing: Phase 1B	$0	$40	$348	$135	$0	$0	$6	$67	$0	$569	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
SCG-5	High Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-5-C4-T3	Pipeline Safety Enhancement Plan – Pressure Testing: Phase 2A	$0	$0	$2	$2,192	$1,440	$0	$0	$72	$1,133	$211	$32,523	$41,558	$99,079	$126,601	$71,708	$91,627	$10,786	$13,782	$24,464	$31,259	$31,139	$39,789	
SCG-5	High Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-5-C5	Pipeline Safety Enhancement Plan – Valve Automation	$0	$0	$0	$0	$0	$478	$1,890	$1,307	$4,130	$10,353	$0	$0	$0	$0	$0	$0	$48,563	$62,053	$32,970	$42,128	$5,470	$6,990	
SCG-5	High Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-5-C6	Transmission Integrity Management Program (TIMP)	$45,802	$41,124	$43,425	$47,223	$66,900	$41,074	$47,693	$47,209	$107,222	$191,219	$43,437	$55,503	$43,437	$55,503	$43,437	$55,503	$51,935	$66,362	$51,935	$66,362	$51,935	$66,362	
SCG-5	High Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-5-C7	Valve Maintenance	$0	$0	$0	$0	$0	$2,223	$6,220	$4,873	$13,276	$15,643	$0	$0	$0	$0	$0	$0	$19,805	$25,306	$23,166	$29,601	$27,033	$34,542	
SCG-5	High Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-5-C8	Gas Control supervisory control and data acquisition (SCADA) Operation	$2,637	$2,691	$2,609	$2,755	$3,266	$0	$0	$0	$0	$0	$2,540	$3,246	$2,564	$3,276	$2,574	$3,289	$0	$0	$0	$0	$0	$0	
SCG-5	High Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-5-C9	Right of Way	$1,674	$2,048	$2,286	$2,434	$2,288	$0	$0	$0	$0	$0	$2,512	$3,210	$2,658	$3,396	$2,803	$3,582	$0	$0	$0	$0	$0	$0	
SCG-5	High Pressure Gas Pipeline Incident (Excluding Dig-in)	SCG-5-C10	Pipeline Maintenance	$11,736	$9,166	$10,421	$11,981	$9,209	$0	$0	$0	$0	$0	$9,230	$11,794	$9,426	$12,045	$9,421	$12,038	$0	$0	$0	$0	$0	$0	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-C1	Locate and Mark Training	$121	$121	$143	$143	$143	$0	$0	$0	$0	$0	$643	$764	$643	$764	$643	$764	$0	$0	$0	$0	$0	$0	

Code	Category	ID	Activity	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20	C21	C22	Notes
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-C2	Locate and Mark Activities	$15,213	$16,180	$16,620	$15,865	$17,060	$0	$0	$0	$0	$0	$21,325	$25,590	$21,325	$25,590	$21,325	$25,590	$0	$0	$0	$0	$0	$0	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-C3	Locate and Mark Annual Refresher Training and Competency Program	$100	$95	$95	$95	$95	$0	$0	$0	$0	$0	$345	$520	$345	$520	$345	$520	$0	$0	$0	$0	$0	$0	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-C4	Locate and Mark Operator Qualification	$105	$105	$105	$105	$105	$0	$0	$0	$0	$0	$116	$210	$116	$210	$116	$210	$0	$0	$0	$0	$0	$0	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-C5	Locate and Mark Quality Assurance Program	$110	$110	$110	$110	$110	$0	$0	$0	$0	$0	$210	$321	$210	$321	$210	$321	$0	$0	$0	$0	$0	$0	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-C6	Damage Prevention Analyst Program	$0	$0	$0	$0	$485	$0	$0	$0	$0	$0	$872	$1,116	$872	$1,116	$872	$1,116	$0	$0	$0	$0	$0	$0	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-C7	Prevention and Improvements-Refreshed Laptops	$25	$5	$8	$16	$25	$0	$0	$0	$4,400	$0	$382	$852	$382	$852	$382	$852	$938	$1,079	$938	$1,079	$938	$1,079	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-C8-T1	Public Awareness Compliance - The Affected Public	$284	$323	$175	$328	$232	$0	$0	$0	$0	$0	$464	$812	$464	$812	$464	$812	$0	$0	$0	$0	$0	$0	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-C8-T2	Public Awareness Compliance - Emergency Officials	$23	$33	$18	$33	$23	$0	$0	$0	$0	$0	$46	$81	$46	$81	$46	$81	$0	$0	$0	$0	$0	$0	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-C8-T3	Public Awareness Compliance - Local Public Officials	$85	$97	$53	$99	$70	$0	$0	$0	$0	$0	$140	$245	$140	$245	$140	$245	$0	$0	$0	$0	$0	$0	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-C8-T4	Public Awareness Compliance - Excavators	$171	$194	$105	$197	$140	$0	$0	$0	$0	$0	$280	$490	$280	$490	$280	$490	$0	$0	$0	$0	$0	$0	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-C9	Increase Reporting of Unsafe Excavation	$110	$110	$110	$110	$110	$0	$0	$0	$0	$0	$110	$128	$110	$128	$110	$128	$0	$0	$0	$0	$0	$0	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-C10	Public Awareness - Secure Greater Enforcement through Legislation and California State Digging Board	$0	$0	$0	$0	$1	$0	$0	$0	$0	$0	$1	$27	$1	$27	$1	$27	$0	$0	$0	$0	$0	$0	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-C11	Public Awareness - Meet with the Cities with the Highest Damage Rates	$0	$0	$0	$0	$3	$0	$0	$0	$0	$0	$149	$294	$149	$294	$149	$294	$0	$0	$0	$0	$0	$0	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-C12	Public Awareness - Remain Active Members of the California Regional Common Ground Alliance	$22	$22	$22	$22	$22	$0	$0	$0	$0	$0	$22	$88	$22	$88	$22	$88	$0	$0	$0	$0	$0	$0	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-C13	Continue to Participate in the Gold Shovel Standard Program	$0	$0	$2	$2	$2	$0	$0	$0	$0	$0	$2	$3	$2	$3	$2	$3	$0	$0	$0	$0	$0	$0	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-C14	Locating Equipment	$18	$24	$24	$24	$40	$0	$0	$0	$0	$0	$44	$470	$44	$470	$44	$470	$0	$0	$0	$0	$0	$0	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-C15	Remain Active Members of the California 811 One-Call Centers	$577	$507	$640	$678	$740	$0	$0	$0	$0	$0	$1,325	$1,710	$1,325	$1,710	$1,325	$1,710	$0	$0	$0	$0	$0	$0	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-M1	Automate Third Party Excavation Incident Reporting	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,000	$3,000	$1,000	$3,000	$1,000	$3,000	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-M2	Establish a Program to Address the Area of Continual Excavation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$12	$30	$12	$30	$12	$30	$0	$0	$0	$0	$0	$0	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-M3	Recording Photographs for Each Locate & Mark Ticket Visited by Locator	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,125	$2,250	$1,125	$2,250	$1,125	$2,250	$0	$0	$0	$0	$0	$0	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-M4	Utilize Electronic Positive Response	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$100	$250	$100	$250	$100	$250	$0	$0	$0	$0	$0	$0	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-M5	Enhance process to leverage excavation technology to help with difficult locates (vacuum excavation technology)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,000	$3,000	$2,000	$3,000	$2,000	$3,000	$0	$0	$0	$0	$0	$0	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-M6	Promote Process and System Improvements in USA Ticket Routing and Monitoring	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$338	$432	$338	$432	$338	$432	$0	$0	$0	$0	$0	$0	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-M7	Leverage Data Gathered by Locating Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$169	$216	$169	$216	$169	$216	$0	$0	$0	$0	$0	$0	
SCG-6	Third Party Dig-in on a Medium Pressure Pipeline	SCG-6-M8	Install warning mesh above buried company facilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$51	$64	$51	$64	$51	$64	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-C1	Locate and Mark Training	$16	$16	$20	$20	$20	$0	$0	$0	$0	$0	$77	$92	$77	$92	$77	$92	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-C2	Locate and Mark Activities	$2,075	$2,206	$2,266	$3,966	$2,326	$0	$0	$0	$0	$0	$2,920	$3,489	$2,920	$3,489	$2,920	$3,489	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-C3	Locate and Mark Annual Refresher Training and Competency Program	$14	$13	$13	$13	$13	$0	$0	$0	$0	$0	$41	$62	$41	$62	$41	$62	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-C4	Locate and Mark Operator Qualification	$13	$13	$13	$13	$13	$0	$0	$0	$0	$0	$14	$16	$14	$16	$14	$16	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-C5	Locate and Mark Quality Assurance Program	$15	$15	$15	$15	$15	$0	$0	$0	$0	$0	$25	$39	$25	$39	$25	$39	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-C6	Damage Prevention Analyst Program	$0	$0	$0	$0	$66	$0	$0	$0	$0	$0	$110	$142	$110	$142	$110	$142	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-C7	Prevention and Improvements-Refreshed Laptops	$3	$1	$1	$2	$3	$0	$0	$0	$600	$0	$46	$102	$46	$102	$46	$102	$113	$129	$113	$129	$113	$129	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-C8-T1	Public Awareness Compliance - The Affected Public	$39	$44	$24	$45	$32	$0	$0	$0	$0	$0	$56	$97	$56	$97	$56	$97	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-C8-T2	Public Awareness Compliance - Emergency Officials	$3	$4	$2	$4	$3	$0	$0	$0	$0	$0	$6	$10	$6	$10	$6	$10	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-C8-T3	Public Awareness Compliance - Local Public Officials	$13	$13	$7	$13	$9	$0	$0	$0	$0	$0	$17	$29	$17	$29	$17	$29	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-C8-T4	Public Awareness Compliance - Excavators	$23	$26	$14	$23	$19	$0	$0	$0	$0	$0	$34	$59	$34	$59	$34	$59	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-C9	Increase Reporting of Unsafe Excavation	$15	$15	$15	$15	$15	$0	$0	$0	$0	$0	$15	$17	$15	$17	$15	$17	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-C10	Public Awareness - Secure Greater Enforcement through Legislation and California State Digging Board	$0	$0	$0	$0	$1	$0	$0	$0	$0	$0	$1	$3	$1	$3	$1	$3	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-C11	Public Awareness - Meet with the Cities with the Highest Damage Rates	$0	$0	$0	$0	$3	$0	$0	$0	$0	$0	$3	$12	$3	$12	$3	$12	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-C12	Public Awareness - Remain Active Members of the California Regional Common Ground Alliance	$2	$2	$2	$2	$2	$0	$0	$0	$0	$0	$3	$12	$3	$12	$3	$12	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-C13	Continue to Participate in the Gold Shovel Standard Program			$1	$1	$1	$0	$0	$0	$0	$0	$1	$2	$1	$2	$1	$2	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-C14	Locating Equipment	$2	$3	$3	$3	$5	$0	$0	$0	$0	$0	$5	$56	$5	$56	$5	$56	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-C15	Remain Active Members of the 811 California One-Call Centers	$79	$69	$87	$92	$101	$0	$0	$0	$0	$0	$159	$205	$159	$205	$159	$205	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-C16	Install warning mesh above buried company facilities	$0	$0	$0	$0	$51	$0	$0	$0	$0	$0	$51	$64	$51	$64	$51	$64	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-C17	Prevention and Improvements-Fiber Optics	$0	$0	$0	$0	$0	$0	$0	$0	$0	$6,000	$0	$0	$0	$0	$0	$0	$6,000	$7,500	$6,000	$7,500	$6,000	$7,500	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-M1	Automate Third Party Excavation Incident Reporting	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$120	$360	$120	$360	$120	$360	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-M2	Establish A Program To Address The Area Of Continual Excavation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$100	$250	$100	$250	$100	$250	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-M3	Recording Photographs For Each Locate & Mark Ticket Visited By Locator	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$135	$270	$135	$270	$135	$270	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-M4	Utilize Electronic Positive Response	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$12	$30	$12	$30	$12	$30	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-M5	Enhance process to leverage excavation technology to help with difficult locates (vacuum excavation technology)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$250	$400	$250	$400	$250	$400	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-M6	Promote Process and System Improvements in USA Ticket Routing and Monitoring	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$41	$52	$41	$52	$41	$52	$0	$0	$0	$0	$0	$0	
SCG-7	Third Party Dig-in on a High Pressure Pipeline	SCG-7-M7	Leverage Data Gathered by Locating Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$20	$26	$20	$26	$20	$26	$0	$0	$0	$0	$0	$0	
SCG-8	Storage Well Integrity Event	SCG-8-C1	Well Construction Requirements and Dual Barrier System	$0	$0	$0	$0	$0	$0	$0	$35,928	$59,840	$62,361	$0	$0	$0	$0	$0	$0	$60,300	$87,100	$51,300	$74,100	$43,875	$63,375	
SCG-8	Storage Well Integrity Event	SCG-8-C2	Well Abandonments	$0	$0	$0	$0	$0	$0	$0	$3,972	$8,394	$22,166	$0	$0	$0	$0	$0	$0	$12,825	$18,525	$4,050	$5,850	$4,050	$5,850	
SCG-8	Storage Well Integrity Event	SCG-8-C3	Pressure Monitoring and Alarming	$0	$0	$228	$211	$489	$0	$0	$0	$0	$0	$450	$650	$100	$250	$450	$650	$0	$0	$0	$0	$0	$0	
SCG-8	Storage Well Integrity Event	SCG-8-C4	Wellhead Leak Detection and Repair	$0	$0	$1,532	$2,767	$2,982	$0	$0	$0	$0	$0	$2,250	$3,250	$135	$270	$2,250	$3,250	$0	$0	$0	$0	$0	$0	
SCG-8	Storage Well Integrity Event	SCG-8-C5	Integrity Management for Gas Storage Operations	$0	$0	$4,057	$7,210	$6,257	$0	$0	$0	$789	$2,752	$4,950	$7,150	$12	$30	$4,950	$7,150	$1,350	$1,950	$1,350	$1,950	$1,350	$1,950	
SCG-8	Storage Well Integrity Event	SCG-8-C6	Integrity Demonstration, Verification, and Monitoring Practices	$0	$0	$5,725	$5,920	$3,793	$0	$0	$0	$0	$0	$7,420	$10,717	$250	$400	$7,096	$10,249	$0	$0	$0	$0	$0	$0	
SDG&E-10/SCG-9	Cybersecurity	SCG-9-C1	Perimeter Defenses	$109	$488	$495	$558	$61	$0	$0	$0	$0	$5,400	$160	$210	$41	$52	$160	$210	$0	$0	$0	$0	$6,100	$7,800	Capital forecast is combined 3-year total
SDG&E-10/SCG-9	Cybersecurity	SCG-9-C2	Internal Defenses	$327	$1,463	$1,486	$1,675	$180	$0	$0	$0	$0	$17,000	$500	$630	$20	$26	$500	$630	$0	$0	$0	$0	$36,000	$47,000	Capital forecast is combined 3-year total
SDG&E-10/SCG-9	Cybersecurity	SCG-9-C3	Sensitive Data Protection	$327	$1,463	$1,486	$1,675	$180	$0	$0	$0	$0	$0	$500	$630	$500	$630	$500	$630	$0	$0	$0	$0	$5,700	$7,300	Capital forecast is combined 3-year total
SDG&E-10/SCG-9	Cybersecurity	SCG-9-C4	Operational Technology (OT) Cybersecurity	$272	$1,219	$1,238	$1,396	$150	$2,456	$4,070	$5,709	$6,788	$2,800	$410	$520	$410	$520	$410	$520	$0	$0	$0	$0	$17,000	$21,000	Capital forecast is combined 3-year total
SDG&E-10/SCG-9	Cybersecurity	SCG-9-C5	Obsolete Information Technology (IT) Infrastructure and Application Replacement	$54	$244	$248	$279	$31	$0	$0	$0	$0	$3,300	$82	$110	$82	$110	$82	$110	$0	$0	$0	$0	$7,400	$9,500	Capital forecast is combined 3-year total

NOTES:

[1] The figures provided are direct charges and do not include company loaders, with the exception of vacation and sick time. The costs are also in 2018 dollars and have not been escalated to 2019 amounts.

[2] Internal labor (e.g., employee time spent to complete training courses, employee time spent to perform inspections) is not captured here.

[3] Costs are provided, where available, for all activities regardless of whether a RSE analysis was performed.

[4] SoCalGas does not currently track all O&M costs at the RAMP activity level and was unable to impute O&M historical costs for all activities.