



2025 Risk Assessment Mitigation Phase

APPENDIX 5

Cost Benefit Ratio Ranking

May 15, 2025

APPENDIX 5

SoCalGas Mitigation Cost Benefit Ratios (2028-2031) Societal Discount Rate: CBRs Ranked Highest to Lowest			
RISK CHAPTER NAME	ID	CONTROL/MITIGATION NAME	CBR
Cybersecurity	C803	Sensitive Data Protection	236.7
Cybersecurity	C804	Operational Technology (OT) Cybersecurity	220.1
Cybersecurity	C805	IT Infrastructure Modernization	197.0
Cybersecurity	C801	Perimeter Defenses	104.0
High Pressure Gas System	C103	Cathodic Protection Base Activities	50.2
Cybersecurity	C802	Internal Defenses	33.7
High Pressure Gas System	C123	Regulator Station Replacement	32.9
High Pressure Gas System	C116	M&R Station and EPM Inspection and Maintenance	21.4
High Pressure Gas System	C108	Cathodic Protection - Maintenance	21.0
High Pressure Gas System	C132	Pipeline Maintenance	18.8
Excavation Damage	C002	Damage Prevention Activities - Gas	18.2
High Pressure Gas System	C019	Storage HP Retrofits and Upgrades to Purification Equip	14.7
High Pressure Gas System	C174	Service Replacements- Leakage Abnormal Op. Conditions CP Related	12.8
Medium Pressure Gas System	C174	Service Replacements- Leakage Abnormal Op. Conditions CP Related	12.5
Underground Gas Storage	C408	Storage Field Maintenance - Underground Components	10.3
Medium Pressure Gas System	C135	EPM Installations & Replacements	8.7
Medium Pressure Gas System	C177	Main Replacements- Leakage Abnormal Op. Conditions CP Related	8.3
Medium Pressure Gas System	C170	CP Install/Replace Impressed Current Systems	7.3
Medium Pressure Gas System	C103	Cathodic Protection Base Activities	6.6
Underground Gas Storage	C402	Well Abandonment/Replacement/Demo Verification and Monitor	4.0
High Pressure Gas System	C171	Integrity Assessments & Remediation	4.0
High Pressure Gas System	C135	EPM Installations & Replacements	3.8
High Pressure Gas System	C136	Compressor Stations - Capital	3.7
High Pressure Gas System	C104	Cathodic Protection - Capital	3.7
High Pressure Gas System	C113	Leak Repair	3.3
High Pressure Gas System	C177	Main Replacements- Leakage Abnormal Op. Conditions CP Related	2.8
Medium Pressure Gas System	C182	Distribution Risk Evaluation & Monitoring System (DREAMS)	2.3
Medium Pressure Gas System	C134	Pipeline Monitoring	1.9
Excavation Damage	C001	Damage Prevention Strategies	1.9
High Pressure Gas System	C105	SCADA Operations	1.8

SoCalGas Mitigation Cost Benefit Ratios (2028-2031) Societal Discount Rate: CBRs Ranked Highest to Lowest			
RISK CHAPTER NAME	ID	CONTROL/MITIGATION NAME	CBR
Underground Gas Storage	C401	Storage Integrity Management Program (SIMP)	1.8
Contractor Safety	C349	Contractor Safety Program	1.7
High Pressure Gas System	C170	CP Install/Replace Impressed Current Systems	1.5
High Pressure Gas System	C155	Measurement & Instrumentation Maintenance	1.5
High Pressure Gas System	C117	Leak Survey & Patrol	1.5
High Pressure Gas System	C010	Pipeline Monitoring Technologies	1.5
Medium Pressure Gas System	C116	M&R Station and EPM Inspection and Maintenance	1.4
High Pressure Gas System	C179	Distribution Main & Service Leak Repair	1.4
High Pressure Gas System	C157	PSEP Phase 1A	1.2
Employee Safety	C345	Safety & Health - Operations	1.0
High Pressure Gas System	C156	Quality Assurance Transmission Assets	1.0
Employee Safety	C342	Safety Technology & Analytics	1.0
Employee Safety	C347	Event Learning & Continuous Improvement	1.0
Employee Safety	C343	Safety Strategy	0.8
High Pressure Gas System	C151	Measurement & Regulation Station Capital	0.8
Excavation Damage	C003	Damage Prevention - Public Awareness	0.8
Medium Pressure Gas System	C106	Cathodic Protection- CP10 Activities	0.8
Employee Safety	C346	Safety & Health - Programs	0.8
High Pressure Gas System	C109	Control Room Monitoring Operation and Fatigue Management	0.7
High Pressure Gas System	C126	Shallow/Exposed Pipe Remediations	0.7
High Pressure Gas System	C134	Pipeline Monitoring	0.5
High Pressure Gas System	C185	PSEP Phase 1B	0.5
Medium Pressure Gas System	C179	Distribution Main & Service Leak Repair	0.5
High Pressure Gas System	C145	Class Location (Hydrotest)	0.5
Employee Safety	C312	Drug and Alcohol Testing Programs	0.4
High Pressure Gas System	C142	Compressor Station - Maintenance	0.4
High Pressure Gas System	C013	Gas Transmission Safety Rule - MAOP Reconfirmation	0.4
High Pressure Gas System	C014	Storage HP Field Maintenance – Aboveground Facilities	0.3
High Pressure Gas System	C016	Storage HP Field Maintenance – Aboveground Piping	0.3
Medium Pressure Gas System	C129	Cathodic Protection System Improvement	0.3
High Pressure Gas System	C118	Rupture Mitigation Valve Installation - Valve Rule	0.3
High Pressure Gas System	C186	PSEP Phase 2A	0.2
Medium Pressure Gas System	C159	Quality Assurance Gas Distribution Assets	0.2

SoCalGas Mitigation Cost Benefit Ratios (2028-2031) Societal Discount Rate: CBRs Ranked Highest to Lowest			
RISK CHAPTER NAME	ID	CONTROL/MITIGATION NAME	CBR
High Pressure Gas System	C125	Pipeline Relocation/Replacement	0.2
Medium Pressure Gas System	C130	MSA Inspection and Maintenance	0.1
Medium Pressure Gas System	C123	Regulator Station Replacement	0.1
Medium Pressure Gas System	C120	Distribution Riser Inspection Program (DRIP)	0.1
Medium Pressure Gas System	C124	Regulator Station Installation Replacement & Enhancement	0.1
High Pressure Gas System	C160	Odorization	0.1
Employee Safety	C326	Workplace Violence Prevention Programs	0.0
Excavation Damage	C004	Damage Prevention Mapping	0.0
Medium Pressure Gas System	C175	Residential Meter Protection	0.0
Medium Pressure Gas System	C121	Gas Infrastructure Protection Program (GIPP)	0.0
Medium Pressure Gas System	C122	Sewer Lateral Inspection Project (SLIP)	0.0

***Bold** font indicates this control/mitigation includes mandated programs/activities.*

SoCalGas Mitigation Cost Benefit Ratios (2028-2031) Hybrid Discount Rate: CBRs Ranked Highest to Lowest			
RISK CHAPTER NAME	ID	CONTROL/MITIGATION NAME	CBR
Cybersecurity	C803	Sensitive Data Protection	227.1
Cybersecurity	C804	Operational Technology (OT) Cybersecurity	213.2
Cybersecurity	C805	IT Infrastructure Modernization	182.0
Cybersecurity	C801	Perimeter Defenses	97.5
High Pressure Gas System	C103	Cathodic Protection Base Activities	50.1
Cybersecurity	C802	Internal Defenses	32.5
High Pressure Gas System	C116	M&R Station and EPM Inspection and Maintenance	22.6
High Pressure Gas System	C108	Cathodic Protection - Maintenance	22.4
High Pressure Gas System	C132	Pipeline Maintenance	19.8
Excavation Damage	C002	Damage Prevention Activities - Gas	19.5
High Pressure Gas System	C019	Storage HP Retrofits and Upgrades to Purification Equip	15.8
High Pressure Gas System	C123	Regulator Station Replacement	15.5
Underground Gas Storage	C408	Storage Field Maintenance - Underground Components	10.4
Medium Pressure Gas System	C135	EPM Installations & Replacements	8.7
Medium Pressure Gas System	C170	CP Install/Replace Impressed Current Systems	7.3
Medium Pressure Gas System	C103	Cathodic Protection Base Activities	6.6
High Pressure Gas System	C104	Cathodic Protection - Capital	3.9
High Pressure Gas System	C135	EPM Installations & Replacements	3.9
High Pressure Gas System	C171	Integrity Assessments & Remediation	3.8
High Pressure Gas System	C113	Leak Repair	3.3
Excavation Damage	C001	Damage Prevention Strategies	2.0
High Pressure Gas System	C174	Service Replacements- Leakage Abnormal Op. Conditions CP Related	1.9
Medium Pressure Gas System	C134	Pipeline Monitoring	1.9
High Pressure Gas System	C105	SCADA Operations	1.9
Contractor Safety	C349	Contractor Safety Program	1.8
High Pressure Gas System	C136	Compressor Stations - Capital	1.7
Underground Gas Storage	C402	Well Abandonment/Replacement/Demo Verification and Monitor	1.7
High Pressure Gas System	C155	Measurement & Instrumentation Maintenance	1.6
High Pressure Gas System	C117	Leak Survey & Patrol	1.6
High Pressure Gas System	C170	CP Install/Replace Impressed Current Systems	1.5

SoCalGas Mitigation Cost Benefit Ratios (2028-2031) Hybrid Discount Rate: CBRs Ranked Highest to Lowest			
RISK CHAPTER NAME	ID	CONTROL/MITIGATION NAME	CBR
Medium Pressure Gas System	C116	M&R Station and EPM Inspection and Maintenance	1.4
High Pressure Gas System	C179	Distribution Main & Service Leak Repair	1.4
Medium Pressure Gas System	C174	Service Replacements- Leakage Abnormal Op. Conditions CP Related	1.4
Employee Safety	C345	Safety & Health - Operations	1.1
High Pressure Gas System	C010	Pipeline Monitoring Technologies	1.1
High Pressure Gas System	C156	Quality Assurance Transmission Assets	1.1
Employee Safety	C342	Safety Technology & Analytics	1.0
Employee Safety	C347	Event Learning & Continuous Improvement	1.0
Employee Safety	C343	Safety Strategy	1.0
Excavation Damage	C003	Damage Prevention - Public Awareness	0.9
Medium Pressure Gas System	C177	Main Replacements- Leakage Abnormal Op. Conditions CP Related	0.9
Employee Safety	C346	Safety & Health - Programs	0.8
Medium Pressure Gas System	C106	Cathodic Protection- CP10 Activities	0.8
High Pressure Gas System	C109	Control Room Monitoring Operation and Fatigue Management	0.8
Underground Gas Storage	C401	Storage Integrity Management Program (SIMP)	0.7
High Pressure Gas System	C134	Pipeline Monitoring	0.5
High Pressure Gas System	C145	Class Location (Hydrotest)	0.5
Medium Pressure Gas System	C179	Distribution Main & Service Leak Repair	0.5
Employee Safety	C312	Drug and Alcohol Testing Programs	0.5
High Pressure Gas System	C142	Compressor Station - Maintenance	0.4
High Pressure Gas System	C177	Main Replacements- Leakage Abnormal Op. Conditions CP Related	0.4
High Pressure Gas System	C014	Storage HP Field Maintenance – Aboveground Facilities	0.4
High Pressure Gas System	C016	Storage HP Field Maintenance – Aboveground Piping	0.3
High Pressure Gas System	C151	Measurement & Regulation Station Capital	0.3
High Pressure Gas System	C157	PSEP Phase 1A	0.3
High Pressure Gas System	C013	Gas Transmission Safety Rule - MAOP Reconfirmation	0.3
Medium Pressure Gas System	C182	Distribution Risk Evaluation & Monitoring System (DREAMS)	0.2
Medium Pressure Gas System	C159	Quality Assurance Gas Distribution Assets	0.2

SoCalGas Mitigation Cost Benefit Ratios (2028-2031) Hybrid Discount Rate: CBRs Ranked Highest to Lowest			
RISK CHAPTER NAME	ID	CONTROL/MITIGATION NAME	CBR
Medium Pressure Gas System	C129	Cathodic Protection System Improvement	0.2
Medium Pressure Gas System	C130	MSA Inspection and Maintenance	0.2
High Pressure Gas System	C126	Shallow/Exposed Pipe Remediations	0.1
High Pressure Gas System	C185	PSEP Phase 1B	0.1
High Pressure Gas System	C125	Pipeline Relocation/Replacement	0.1
High Pressure Gas System	C118	Rupture Mitigation Valve Installation - Valve Rule	0.1
High Pressure Gas System	C160	Odorization	0.1
Medium Pressure Gas System	C123	Regulator Station Replacement	0.1
High Pressure Gas System	C186	PSEP Phase 2A	0.0
Medium Pressure Gas System	C124	Regulator Station Installation Replacement & Enhancement	0.0
Employee Safety	C326	Workplace Violence Prevention Programs	0.0
Medium Pressure Gas System	C120	Distribution Riser Inspection Program (DRIP)	0.0
Medium Pressure Gas System	C175	Residential Meter Protection	0.0
Excavation Damage	C004	Damage Prevention Mapping	0.0
Medium Pressure Gas System	C122	Sewer Lateral Inspection Project (SLIP)	0.0
Medium Pressure Gas System	C121	Gas Infrastructure Protection Program (GIPP)	0.0

***Bold** font indicates this control/mitigation includes mandated programs/activities.*

SoCalGas Mitigation Cost Benefit Ratios (2028-2031) WACC Discount Rate: CBRs Ranked Highest to Lowest			
RISK CHAPTER NAME	ID	CONTROL/MITIGATION NAME	CBR
Cybersecurity	C803	Sensitive Data Protection	204.6
Cybersecurity	C804	Operational Technology (OT) Cybersecurity	192.0
Cybersecurity	C805	IT Infrastructure Modernization	164.0
Cybersecurity	C801	Perimeter Defenses	87.8
High Pressure Gas System	C103	Cathodic Protection Base Activities	50.0
Cybersecurity	C802	Internal Defenses	29.3
High Pressure Gas System	C116	M&R Station and EPM Inspection and Maintenance	21.4
High Pressure Gas System	C108	Cathodic Protection - Maintenance	21.0
High Pressure Gas System	C132	Pipeline Maintenance	18.8
Excavation Damage	C002	Damage Prevention Activities - Gas	18.3
High Pressure Gas System	C019	Storage HP Retrofits and Upgrades to Purification Equip	14.7
High Pressure Gas System	C123	Regulator Station Replacement	12.0
Underground Gas Storage	C408	Storage Field Maintenance - Underground Components	10.4
Medium Pressure Gas System	C135	EPM Installations & Replacements	8.7
Medium Pressure Gas System	C170	CP Install/Replace Impressed Current Systems	7.2
Medium Pressure Gas System	C103	Cathodic Protection Base Activities	6.6
High Pressure Gas System	C135	EPM Installations & Replacements	3.8
High Pressure Gas System	C104	Cathodic Protection - Capital	3.7
High Pressure Gas System	C171	Integrity Assessments & Remediation	3.4
High Pressure Gas System	C113	Leak Repair	3.3
High Pressure Gas System	C174	Service Replacements- Leakage Abnormal Op. Conditions CP Related	1.9
Medium Pressure Gas System	C134	Pipeline Monitoring	1.9
Excavation Damage	C001	Damage Prevention Strategies	1.9
High Pressure Gas System	C105	SCADA Operations	1.9
Contractor Safety	C349	Contractor Safety Program	1.7
Underground Gas Storage	C402	Well Abandonment/Replacement/Demo Verification and Monitor	1.6
High Pressure Gas System	C170	CP Install/Replace Impressed Current Systems	1.5

SoCalGas Mitigation Cost Benefit Ratios (2028-2031) WACC Discount Rate: CBRs Ranked Highest to Lowest			
RISK CHAPTER NAME	ID	CONTROL/MITIGATION NAME	CBR
High Pressure Gas System	C155	Measurement & Instrumentation Maintenance	1.5
High Pressure Gas System	C117	Leak Survey & Patrol	1.5
Medium Pressure Gas System	C116	M&R Station and EPM Inspection and Maintenance	1.4
High Pressure Gas System	C179	Distribution Main & Service Leak Repair	1.4
Medium Pressure Gas System	C174	Service Replacements- Leakage Abnormal Op. Conditions CP Related	1.3
High Pressure Gas System	C136	Compressor Stations - Capital	1.3
Employee Safety	C345	Safety & Health - Operations	1.0
High Pressure Gas System	C156	Quality Assurance Transmission Assets	1.0
Employee Safety	C342	Safety Technology & Analytics	1.0
Employee Safety	C347	Event Learning & Continuous Improvement	1.0
Employee Safety	C343	Safety Strategy	0.9
High Pressure Gas System	C010	Pipeline Monitoring Technologies	0.9
Excavation Damage	C003	Damage Prevention - Public Awareness	0.8
Medium Pressure Gas System	C177	Main Replacements- Leakage Abnormal Op. Conditions CP Related	0.8
Medium Pressure Gas System	C106	Cathodic Protection- CP10 Activities	0.8
Employee Safety	C346	Safety & Health - Programs	0.8
Underground Gas Storage	C401	Storage Integrity Management Program (SIMP)	0.7
High Pressure Gas System	C109	Control Room Monitoring Operation and Fatigue Management	0.7
High Pressure Gas System	C134	Pipeline Monitoring	0.5
Medium Pressure Gas System	C179	Distribution Main & Service Leak Repair	0.5
High Pressure Gas System	C145	Class Location (Hydrotest)	0.5
Employee Safety	C312	Drug and Alcohol Testing Programs	0.4
High Pressure Gas System	C142	Main Replacements- Leakage Abnormal Op. Conditions CP Related	0.4
High Pressure Gas System	C142	Compressor Station - Maintenance	0.4
High Pressure Gas System	C014	Storage HP Field Maintenance – Aboveground Facilities	0.3
High Pressure Gas System	C016	Storage HP Field Maintenance – Aboveground Piping	0.3
High Pressure Gas System	C151	Measurement & Regulation Station Capital	0.2

SoCalGas Mitigation Cost Benefit Ratios (2028-2031) WACC Discount Rate: CBRs Ranked Highest to Lowest			
RISK CHAPTER NAME	ID	CONTROL/MITIGATION NAME	CBR
Medium Pressure Gas System	C159	Quality Assurance Gas Distribution Assets	0.2
Medium Pressure Gas System	C129	Cathodic Protection System Improvement	0.2
High Pressure Gas System	C013	Gas Transmission Safety Rule - MAOP Reconfirmation	0.2
Medium Pressure Gas System	C182	Distribution Risk Evaluation & Monitoring System (DREAMS)	0.2
High Pressure Gas System	C157	PSEP Phase 1A	0.2
Medium Pressure Gas System	C130	MSA Inspection and Maintenance	0.1
High Pressure Gas System	C126	Shallow/Exposed Pipe Remediations	0.1
High Pressure Gas System	C185	PSEP Phase 1B	0.1
High Pressure Gas System	C118	Rupture Mitigation Valve Installation - Valve Rule	0.1
High Pressure Gas System	C160	Odorization	0.1
High Pressure Gas System	C125	Pipeline Relocation/Replacement	0.1
Medium Pressure Gas System	C123	Regulator Station Replacement	0.1
High Pressure Gas System	C186	PSEP Phase 2A	0.0
Medium Pressure Gas System	C124	Regulator Station Installation Replacement & Enhancement	0.0
Employee Safety	C326	Workplace Violence Prevention Programs	0.0
Medium Pressure Gas System	C120	Distribution Riser Inspection Program (DRIP)	0.0
Medium Pressure Gas System	C175	Residential Meter Protection	0.0
Excavation Damage	C004	Damage Prevention Mapping	0.0
Medium Pressure Gas System	C122	Sewer Lateral Inspection Project (SLIP)	0.0
Medium Pressure Gas System	C121	Gas Infrastructure Protection Program (GIPP)	0.0

***Bold** font indicates this control/mitigation includes mandated programs/activities.*