



# Risk Assessment and Mitigation Phase Cross-Functional Factor

(SCG-CFF-1)

Asset and Records Management

May 17, 2021

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## **CROSS-FUNCTIONAL FACTOR: ASSET & RECORDS MANAGEMENT**

### **I. INTRODUCTION**

The Asset & Records Management (EAM) Cross-Functional Factor (CFF) describes how Enterprise Asset Management and Records Management activities impact the risks described in SoCalGas's Risk Assessment Mitigation Phase (RAMP) risk chapters.

SoCalGas is presenting CFF information in this RAMP Report to provide the Commission and parties additional information regarding the risks and mitigations described in its RAMP risk chapters. CFFs are not in and of themselves RAMP risks. Rather, CFFs are drivers, triggers, activities or programs that may impact multiple RAMP risks. CFFs are also generally foundational in nature. Therefore, SoCalGas's CFF presentation differs from that of its RAMP risk chapters (e.g., no risk spend efficiency calculations or alternatives are provided). SoCalGas's CFF chapters provide narrative descriptions of the CFF projects and programs that impact multiple SoCalGas RAMP risk chapters through the 2022-2024 time frame. Related cost forecasts are provided as available, consistent with an expected test year (TY) 2024 general rate case (GRC) request.

As described below, EAM is an enterprise-wide framework that provides a standardized approach for managing risk and safety across assets and activities. The EAM CFF therefore spans multiple lines of business and helps to mitigate several RAMP risks in this Report.

### **II. OVERVIEW**

EAM at SoCalGas was integrated at the Company with the adoption of the International Standards Organization (ISO) 55000 standard as a guide. It is a core component of the Safety Management Systems (SMS) organization, aligned with the American Petroleum Institute (API) 1173 recommended practice for pipeline safety. The alignment with international, national, and industry standards promotes continued adherence to leading practices and continuous improvement across SoCalGas's asset and safety initiatives. By adopting the ISO 55000 as a guide, EAM enables SoCalGas to proactively mitigate asset-related risks by managing asset health and lifecycles in a strategic, data-driven method. As noted in ISO 55000,<sup>1</sup> asset management should be based on certain fundamentals:

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<sup>1</sup> International Standards Organization, ISO 55000:2014 Asset Management—Overview, Principles and Terminology (2014), at 3.

- Value: Assets exist to provide value to the organization and its stakeholders.
- Alignment: Asset management translates the organizational objectives into technical and financial decisions, plans, and activities.
- Leadership: Leadership and workplace culture are determinants of realization of value.
- Assurance: Asset management gives assurance that assets will fulfill their required purpose.

Consistent with these fundamentals, the five goals of SoCalGas’s EAM program are to (1) develop people, process and technology capabilities to integrate and assess asset data, (2) enable long term planning on asset health and criticality, (3) support capital investment prioritizations and risk reduction strategies, (4) prioritize investment decisions across the portfolio of company assets, and (5) provide information to evaluate the cost and risk reduction mitigations.

The ISO 55000 fundamentals align with SoCalGas’s asset management system mission (“Support leading records, data governance practices, controls and integration for the accessibility, accuracy, completeness, security, traceability and validity of all operational records”). SoCalGas’s planned asset management system is to be made up of four key components: (1) a foundational asset information data lake, (2) an asset investment planning system, (3) an operating model, and (4) a records management process and system. Consistent with ISO 55000, SoCalGas defines an “asset” as an item, entity, or person that has potential to add value to an organization. This definition covers the following five sections: Human Assets, Financial Assets, Information Assets, Physical Assets, and Intangible Assets. Following the guidance from ISO 55000, SoCalGas defines “Enterprise Asset Management System” as the systematic and coordinated activities and practices through which an organization optimally and sustainably manages its assets and asset systems, and their associated performance, risks, and expenditures over their life cycles, for the purpose of supporting the organization’s strategic plan.

EAM is also a structural component directly influenced by SoCalGas’s risk management and investment management practices. Specifically, by understanding asset health and criticality based on data, EAM can mitigate the likelihood, frequency, and impacts from asset failure. Asset management therefore informs investment prioritization to ensure SoCalGas makes strategic and focused commitments to mitigate risks.

## **A. Current State of EAM**

EAM's commitment to continue developing a comprehensive enterprise-wide asset management system has evolved out of SoCalGas's Integrity Management Programs (IMPs). These programs focus on the integrity of essential operational functions and facilities. The following section provides a brief overview of the current-state IMPs, followed by the transition and adoption towards a holistic enterprise-wide asset management system. Embracing an enterprise asset management program does not overlap with existing integrity management initiatives, but rather complements them through a more comprehensive, data and analysis-driven approach towards mitigating asset-related risks.

The Transmission Integrity Management Program (TIMP) was developed in accordance with Code of Federal Regulations (CFR) 192, Subpart O - Gas Transmission Pipeline Integrity Management, in order to perform assessments and integrity improvements on transmission pipelines by outlining responsible parties, timelines for each process element, incorporating lessons learned, and a best practices methodology.<sup>2</sup> The Distribution Integrity Management Program (DIMP) was developed in accordance with 49 CFR 192, Subpart P - Gas Distribution Pipeline Integrity Management. The program's purpose is to improve pipeline safety by having operators identify and reduce risks on distribution pipelines.<sup>3</sup> The Storage Integrity Management Program (SIMP) was established to mitigate safety-related risks and validate and enhance storage surface assets, well, and reservoir integrity.<sup>4</sup> SoCalGas is developing a Facilities Integrity Management Program (FIMP) based on principles developed by the Canadian Energy Pipeline Association and the Pipeline Research Council International. The FIMP is not intended to duplicate any systems or processes that may already exist; rather, it is intended to supplement the already existing programs (e.g., SIMP, Transmission Integrity Management Program (TIMP), and Distribution Integrity Management Program (DIMP)) to enhance the safety and

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<sup>2</sup> See SCG-1 Incident Related to the High Pressure System (Excluding Dig-In) for more information about the TIMP program and corresponding mitigations.

<sup>3</sup> See SCG-3 Incident Related to the Medium Pressure System (Excluding Dig-In) for more information about the DIMP program and corresponding mitigations.

<sup>4</sup> See SCG-4 Incident Related to the Storage System (Excluding Dig-In) for more information about the SIMP program and the corresponding mitigations.

integrity of SoCalGas’s facility assets. FIMP will apply integrity management principles to facilities assets to reduce risks and promote operational excellence.<sup>5</sup>

SoCalGas’s EAM program, while meeting or exceeding compliance requirements, lacks advanced data analytics on asset health and lifecycle projections, as well as integration of additional data sources across operational platforms. As SoCalGas matures its asset management capabilities, outlined in the next section, SoCalGas will have a more targeted and proactive approach to mitigate risk, creating a safer work environment and reducing costs associated with asset failure or unnecessary maintenance and replacement.

The current EAM operating model is limited because the implementation of the ISO 55000 guidelines and EAM processes are in nascent stages. The existing EAM organization is responsible for developing a vision, mission, objectives and project budgets for SoCalGas’s implementation of EAM. To fulfill today’s EAM plans the organization has had to work across SoCalGas with the departments mentioned above. This approach has allowed EAM to identify existing gaps in source data, processes, and systems. It is intended that the existing operating model will have to evolve to support the implementation of a future, more comprehensive SoCalGas EAM.

## **B. Future State**

SoCalGas’s vision for the future state of the EAM program is aimed at adding capabilities through advanced technologies and analytics to increase the knowledge and accountability of asset owners through a more robust and comprehensive operating model. EAM’s mission is to:

- Support leading records and data governance practices, controls and integration for improving all operational records by:
  - Creating a comprehensive risk informed approach to integrate pipeline assets and work management using core enterprise systems;
  - Replacing single business applications with an integrated set of systems and capabilities; and

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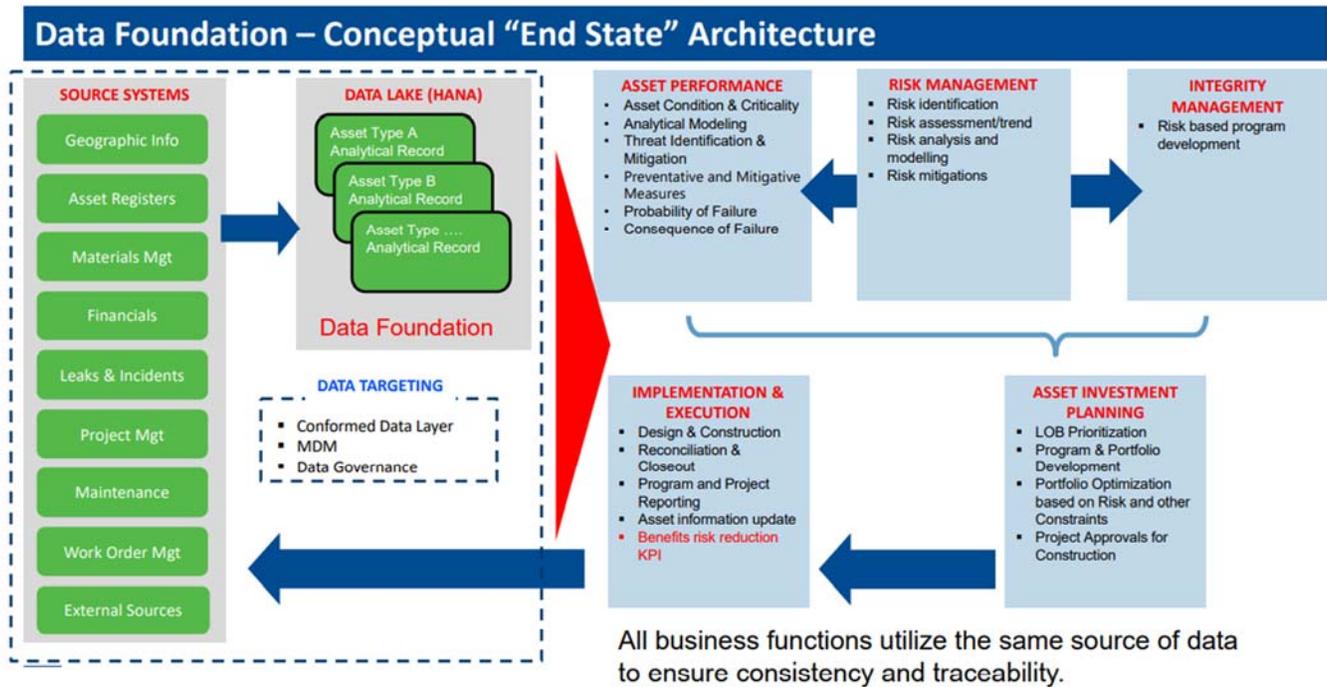
<sup>5</sup> Based on industry definitions, there are a variety of types of facilities. Facilities are highly complex. a variety of equipment/asset types exist within facilities, and in this context facilities are not considered building structures. *See* SCG-4 Incident Related to the Storage System (Excluding Dig-In) for more information about the FIMP program.

- Continuing the journey to improve business performance and for meeting regulatory compliance requirements.

The specific EAM objectives are:

- Enhance the completeness, accuracy, and accessibility of operational records and associated records;
- Enhance pipeline data analytics to support continuous improvement;
- Replace paper records and manual data entry with electronic forms and foster increased automation;
- Provide secure anytime, anywhere access to integrated critical pipeline information associated data capture, reporting, and analysis tools;
- Enhance compliance through work standardization and documentation; and
- Enhance existing records and data governance practices by embedding these practices and controls into the EAM operating model, systems, and applications.

SoCalGas's EAM initiative will provide asset health indices and additional analytics to support the IMPs and provide asset information not addressed within the IMPs. The EAM initiatives include: (1) creation of a data lake to capture the asset data, (2) incorporating a tool for asset investment planning to optimize the expenditures, (3) creating an operating model to govern asset management activities, and (4) further implementation of records management to enhance documentation of criteria used to make decisions. The graphic below provides an overview of the planned EAM initiatives.



SoCalGas is focused on utilizing data-driven analytical processes across the EAM organization and envisions having a foundational data lake, as the repository, to capture data from the following asset sources: Geographical Information, Asset Registers, Materials Management, Financials, Leaks/Incident Reports, Project Management, Work Orders, and External Sources. The data lake will aggregate the data by asset class, to identify risks and, ultimately, allocate resources to mitigate the likelihood, frequency, and/or impact from asset failure risks. Implementing a repository composed of integrated asset data and lifecycle attributes is necessary to form comprehensive analytical records and asset health histories.

Asset Investment Planning, which includes process, people, and technology, provides SoCalGas with an increased ability to optimize investments, on an as-needed basis (but no less than annually). Historically, asset decisions have been based on each integrity management program’s analytics. SoCalGas’s AIP tool will use the multi-attribute models referenced above, thereby allowing for the creation of a risk-based cross functional portfolio of projects.

The third initiative being implemented as part of EAM is an enterprise operating model that will address interactions across SoCalGas including: Asset Management, Enterprise Risk Management, Integrity Management/Engineering, Planning, Capital Planning, Capital Project Management, Operations, Operations Project Management, Accountability Reporting, and

Regulatory. The adoption of ISO 55000 and the implementation of an enterprise asset management solution affects numerous SoCalGas departments, systems, and processes. Therefore, it is critical to have a well-established operating model and governance structure to assist in documenting how data management and decision-making processes are made.

Finally, SoCalGas has existing Records Management policies and practices which are largely de-centralized. Integrating data systems and creation of common taxonomy are activities the Company is looking to implement. There are a variety of risks that can be attributed to inconsistent records management policies and practices in critical areas associated with RAMP chapters (including those concerning gas incidents). Records management is considered an extension of larger procedures and protocols that must be followed in order to reduce risk.

### **III. ASSOCIATED RISK EVENTS**

As noted above, enterprise asset management affects most of the risk events discussed in other chapters. For example, having a comprehensive records management system where asset data is readily accessed will reduce the likelihood of employees or contractors having inaccurate information when undertaking a repair on a pipe or other facility including storage assets. Similarly, asset information will support more accurate pipeline locating activities, thereby reducing the potential for dig-ins. EAM is a CFF affecting several risks including Incident Related to the Medium Pressure System, Incident Related to the High Pressure System, Incident Related to the Storage System (Excluding Dig-In), and Excavation Damage (Dig-In) on Gas System. EAM is an enterprise-wide framework that provides a standardized approach for managing risk and safety across assets and activities. The EAM CFF therefore spans multiple lines of business and helps to mitigate several RAMP risks.

### **IV. 2020 PROJECTS AND PROGRAMS**

EAM is a program that will leverage data and records to enhance the safety culture at SoCalGas and provide tools to make risk informed decisions associated with asset management. SoCalGas operates and maintains numerous record management systems that contain multitudes of various data and information. These systems serve to collect, store, and provide access to information, and allow for reporting as needed.

**A. Administration of Records Management Policies**

SoCalGas has a Records and Information Management (RIM) program in place that administers corporate policy and procedure and acts as a steward for individuals and assigned records coordinators in each workgroup to apply and adhere to policy and practices in their own organization. The RIM program policies include topics such as Information Management, Information Classification, Information Protection, Legal Hold, Storage Media, and Record Retention Schedule. The RIM Program is an important element of SoCalGas's safety culture because it provides a consistent and structured way to manage SoCalGas's safety related information. SoCalGas conducts activities and implements policies that promote individual accountability for all levels of employees from entry level to executive leadership.

**B. Training on Records Management Policies and Procedures**

All employees are required to complete annual records management training. Since every employee is responsible for records management, including administrative records, this training reinforces guidelines about SoCalGas's records management policies and procedures. It is a web-based training curriculum that is automatically assigned to each employee through an individual My Learning account. The topics included in the training are record management policies and systems containing records, definition and identification of records, organizing records (both paper and electronic), retention and disposal, among other topics. Also included is a comprehension assessment to validate understanding of the policy with a minimum passing grade required. All newly hired employees are required to complete training during the calendar year they were hired. The departmental Information Management (IM) Coordinators receive additional training to assist their groups in maintaining compliance with policies and administering the records management procedures.

Costs are not included in Table 1 for this activity due to the inability to identify the labor costs associated with Training on Records Management Policies and Procedures. The costs identified with this program are generally included in the overheads of O&M training. Training on Records Management Policies and Procedures costs are not individually and specifically tracked.

**C. Annual Monitoring and Self-Verification**

An annual Record Retention and clean up/disposal effort is organized through the Enterprise Risk & Compliance group and the local IM Coordinators. Both onsite and offsite

records must be reviewed and aligned with the corporate-approved master and departmental retention schedule. This department-level effort focuses on the retention timeframe for the department's records and allows the record owners the opportunity to review and evaluate the records retention period to determine proper disposition. The IM Coordinators may also use this time to review their department's record retention schedule and update as needed. The annual records cleanup effort leads up to the annual leadership compliance certification questionnaire that confirms each workgroup has completed its due diligence to clean up records in compliance with corporate policy. In addition, the annual review and clean-up supports the need for employees and contractors to safely perform their duties.

Departmental records retention schedule owners (VP, director, and manager) are required to certify that they have complied with the Sempra Energy IM policy. If any certification includes an "In-Process," or "No" response, the record owner must include a corrective action plan that includes the reason and a targeted completion date. The records owner follows up with them until they have completed their responsibilities and the appropriate certification is provided. Subsequent certification cannot be completed until all prior certifications have been completed.

Costs for this activity are not included in Table 1 due to the inability to identify the labor costs associated with Annual Monitoring and Self-Verification. The costs identified in this program are included in the overheads of O&M training. Annual Monitoring and Self-Verification costs are not individually and specifically tracked.

#### **D. Operational Compliance and Oversight**

SoCalGas has established an Information Governance (IG) group to continue executing on the records management element of EAM, and to improve records management capabilities and oversight of day-to-day activities. In alignment with SoCalGas's safety culture, this organization provides operational oversight for records management processes in specific operational areas. For example, the IG group has launched an IG Steering Committee comprised of representatives from various business areas as a forum to address IG questions and concerns and to provide guidance and interpretation on corporate and regulatory policies and requirements.

In addition, the IG group initiated an effort to evaluate current policies and procedures and develop a detailed strategy for improving program maturity, reducing risk, and achieving IG

and records management goals by implementing recommended changes and improvements. The program seeks to develop policies, guidelines, and job aids to foster consistent practices to manage corporate information for use by all employees and contractors for the safe performance of their day-to-day work.

#### **E. Information Management Systems**

SoCalGas hosts a variety of information systems to fulfill the unique needs of all workgroups, including critical records, maintenance, safety, legal, fiscal, and contractual records. Applications maintained on foundational technology systems allow employees to track and retain accurate records and complete their day-to-day tasks. To make more effective use of and enable more integrated data analytics and decision-making capabilities, an EAM department has been established to evaluate existing systems and processes in a more holistic manner, to determine more effective ways to manage the operational information, to leverage technology to enhance the value of the data, to identify other potential opportunities to improve the records management program, and to perform oversight of day-to-day activities. To this end, one of the efforts underway is to consolidate various data in a common platform. This involves developing a more common set of metadata and taxonomy to allow for efficient data searches and integration.

### **V. 2022-2024 PROJECTS AND PROGRAMS**

Many of the activities discussed in the 2020 Projects and Program section above are expected to continue during the TY 2024 GRC. For purposes of this RAMP, ongoing projects or programs for which the size and/or scope of that activity will be substantively modified are included and further described for 2022-2024 below.

#### **A. Enhancements of Continuing Records Management Activities**

The Information Governance (IG) program team (Section IV(D), above) intends to further assess the maturity of the current IG procedures and practices, and maps out the path to the future state in areas needing improvement or adjustment. As SoCalGas's EAM team proceeds with the new projects and programs listed below, specifically, establishing the data lake and an AIP tool, the team working on the IG program will collaborate with EAM to define records and data management requirements and practices, and the implementation of these requirements in the records management platform. This work is critical to continuing safe performance of work activities. For example, without accurate records, crews dispatched to address leaks or other system issues may present an unnecessary safety risk to themselves or the

public. The IG team will also collaborate with the corporate RIM Program to refine roles and responsibilities of records and information management as the new programs are developed. The IG team is to provide additional training and guidelines to allow for a more systematic and consistent approach to the management of the records throughout their lifecycle.

#### **B. Establish a Data Lake**

Although all new initiatives are important, SoCalGas's primary focus will initially be on developing and implementing the data lake and compiling the source data being used to populate the data lake. This first step is critical for capturing data that is accurate and can be used to enhance SoCalGas's risk-based decision making. SoCalGas envisions having a foundational data lake as the repository to capture data from the following asset sources: Geographical Information, Asset Registers, Materials Management, Financials, Leaks/Incident Reports, Project Management, Work Orders, and External Sources. The data lake will aggregate the data by asset class to identify risks and, ultimately, allocate resources to mitigate the likelihood, frequency, and/or impact from asset failure risks.

The data lake will allow SoCalGas to have one source for data gathered through all systems and processes to assess asset health. This approach is consistent with the statements made by the Commission in recognizing the value of adopting ISO 55000:

We reviewed the forecast for Asset Management and find it to be reasonable and supported by the evidence. The benefits of applying ISO 55000 standards include: (a) greater optimal balance of asset cost, asset risk, and asset performance; (b) greater internal consistency; and (c) helps ensure that employees at all levels understand their role in supporting the goals of the organization.<sup>6</sup>

The foundational data lake will support the creation of an enterprise portal that will be the single source of pipeline data. The portal will provide customized map views of the system, highlight compliance needs, integrate spatial and non-spatial data, enhance real-time analytics and create a platform for enterprise-wide collaboration on safety and reliability issues. Thus, the foundational data lake and portal will allow for one source of asset data to address asset condition and criticality, and likelihood of failure and consequence of failure. They will also support innovative solutions when evaluating failing assets in terms of safety, reliability, and financial impact. SoCalGas's goal is to augment existing cross-functional coordination through an

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<sup>6</sup> D.19-09-051 at 265.

effective approach of analytical modeling, where dashboards are maintained by data scientists supported by data integrity management staff, and data accountability leads.

### **C. Asset Investment Planning (AIP) Tool**

An AIP tool and decision-making processes are needed to evaluate risk and optimize investments at SoCalGas. The assessments provided by the AIP tool will provide risk quantification criteria to enhance risk-based decision making capabilities. This will allow for the mitigation of potential asset failures and allow SoCalGas to respond to new business challenges and opportunities. The output from asset investment planning mitigation will allow SoCalGas and its ratepayers to receive the maximum benefit for the dollars invested.

SoCalGas plans to implement an AIP tool to optimize SoCalGas's portfolio because of the number and complexity of projects/programs and because of the associated complexity of the risk frameworks and modeling. This tool would enable SoCalGas to create asset lifecycle plans to meet risk-based EAM objectives, use a risk-based approach to managing assets, and document asset investment decision-making criteria.

SoCalGas will also create an EAM Organization to implement an asset investment prioritization process for evaluation of projects and programs across SoCalGas. The process will be required to provide, among other things, decision-making transparency and accessibility. This will formalize governance of asset management and support meeting the requirements of ISO 55000.

### **D. Establish an Enterprise Asset Management Operating Model**

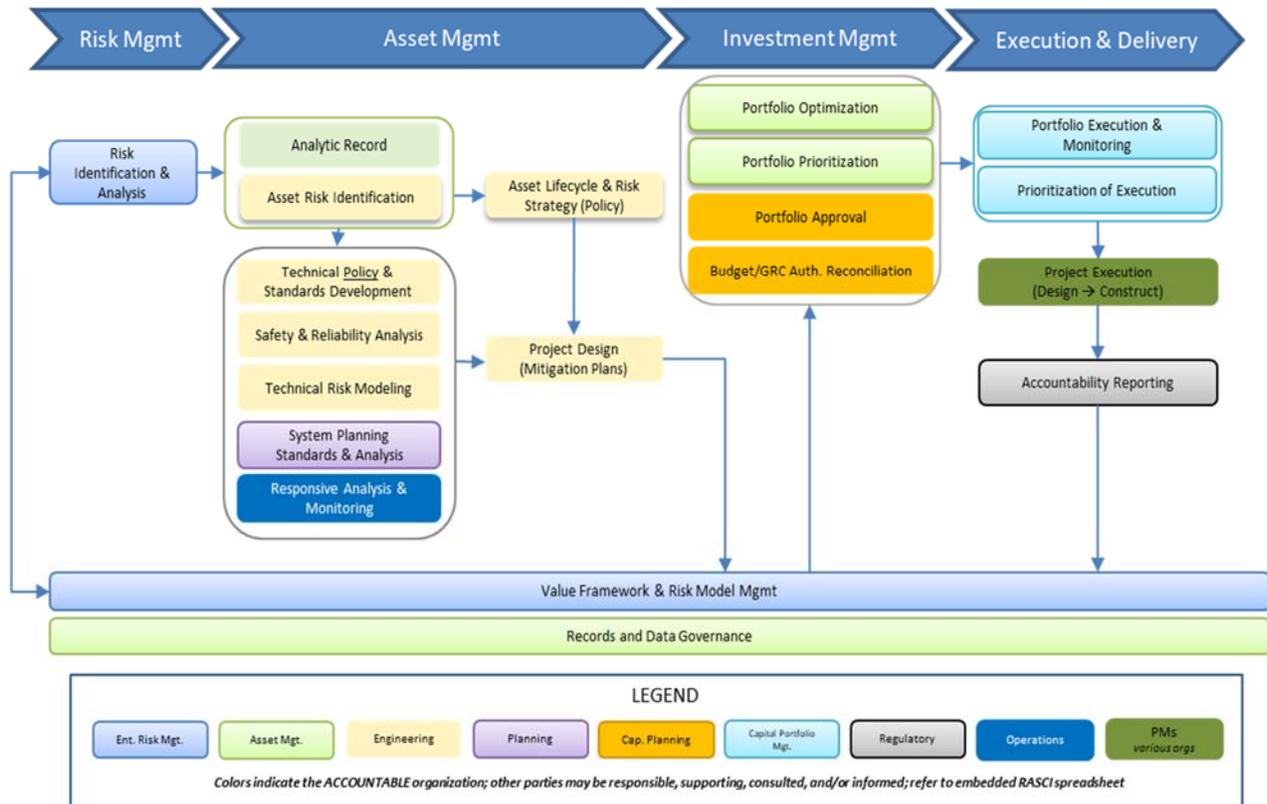
The current EAM operating model is limited because the implementation of the ISO 55000 guidelines and EAM processes are in nascent stages. The future EAM operating model will be required to:

- Further engage SoCalGas leadership in the implementation of the EAM;
- Establish an EAM organization;
- Develop the strategic EAM plan, including asset health indices and asset life cycle management in collaboration with the IMPs and Enterprise Risk Management (ERM);
- Develop algorithms for recommended intervals based upon risk management, health indices, and life cycle management;

- Coordinate the development and implementation of new systems (e.g. Data Lake, Asset Investment Planning, Records Management);
- Create processes that improve the accuracy and rigor of source information and related data;
- Develop and implement a change management strategy including communications and training regarding new process and structures;
- Coordinate with the IMPs and ERM organizations to support the further implementation of risk-based decision-making including alignment of risk models to support day-to-day management and regulatory processes; and
- Establish processes for capturing lessons learned, accountability report, and continuous improvement.

In order to accomplish these objectives, the existing EAM organization will expand to provide the policy direction, program management, coordination management, and change management required to implement the EAM.

With an expanded EAM organization, the operating model will ultimately be structured as described below:



## VI. COSTS

Table 1 contains the 2020 recorded and forecast dollars for the programs and projects discussed in this CFF.

**Table 1: Costs (Direct After Allocations, in 2020 \$000)<sup>7</sup>**

Line No.	Description	Recorded		Forecast			
		2020 Capital	2020 O&M	2022-2024 Capital (Low)	2022-2024 Capital (High)	TY 2024 O&M (Low)	TY 2024 O&M (High)
1	Administration of Records Management Policies	0	42	0	0	38	48
2	Operational Compliance & Oversight	0	239	0	0	215	275
3	Information Management Systems	19,838	12,371	59,100	75,517	12,889	16,469
4	Continuous Improvement of Records Management	0	0	0	0	Included in Lines 1-3	Included in Lines 1-3
5	Establishing a Data Lake	0	0	8,867	12,808	2,925	4,225
6	Asset Investment Planning (AIP) Tool	0	0	6,743	9,740	686	991
7	Establish an Enterprise Asset Management Operating Model	0	0	10,530	15,210	1,890	2,730

<sup>7</sup> The figures provided are direct charges and do not include Company loaders, with the exception of vacation and sick. The costs are also in 2020 dollars and have not been escalated in forecasts beyond 2020.