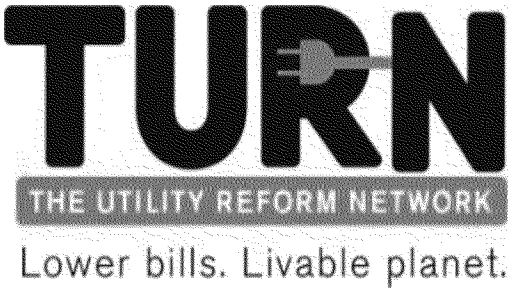
ATTACHMENT TO

MOTION OF THE UTILITY REFORM NETWORK

FOR ACCEPTANCE OF A PROPOSED EXHIBIT INTO THE RECORD

R.11-02-019



R.11-02-019
PG&E's Pipeline Safety Implementation Plan

TURN Cross Examination Exhibit
Exhibit Number: 155

PACIFIC GAS AND ELECTRIC COMPANY
Gas Pipeline Safety OIR
Rulemaking 11-02-019
Data Response

PG&E Data Request No.:	TURN_029-01Supp01		
PG&E File Name:	GasPipelineSafetyOIR_DR_TURN_029-Q01Supp01		
Request Date:	March 13, 2012	Requester DR No.:	029
Date Sent:	April 9, 2012	Requesting Party:	The Utility Reform Network (TURN)
PG&E Witness:	n/a	Requester:	Tom Long

Please note that one attachment to this response contains sensitive personal information pertaining to PG&E employees, such as employee names and identifications. For these reasons only, the attachment to this response is submitted to TURN subject to a Non-Disclosure Agreement. The dissemination of employee information contained in the attachment to this response raises privacy concerns. Therefore, PG&E believes that such information should remain confidential and not be subject to public disclosure.

QUESTION 1

Please provide the latest version of the report of the internal review of information management within the Gas Transmission Division prepared by PwC and referred to on page 5-24 of the CPSD Report in I.11-02-016, released on March 12, 2012. Please also provide the January 18, 2012 draft report referenced on that same page.

ANSWER 1 - SUPPLEMENTAL

On March 19, 2012, during the evidentiary hearings in Order Instituting Rulemaking 11-02-019, Nick Stavropoulos stated that the recordkeeping report prepared for PG&E by PWC would be made public.

Please see GasPipelineSafetyOIR_DR_TURN_029-Q01Atch02 through GasPipelineSafetyOIR_DR_TURN_029-Q01Atch06-CONF for PWC's findings, recommendations, and a proposed "Roadmap" to implement the recommended improvements.

For the convenience of TURN, PG&E is also attaching GasPipelineSafetyOIR_DR_TURN_029-Q01Atch07, which is a public version of GasPipelineSafetyOIR_DR_TURN_029-Q01Atch06-CONF confidential information redacted.

Gas Operations Records and Information Management Assessment

March 31, 2012

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Executive Summary

Preface

This report is intended to capture the key observations, findings, and proposed recommendations as part of the PG&E Gas Records and Information Management ("RIM") Assessment effort.

The assessment project began on November 16, 2011, with interviews and information gathering concluded in early February 2012. Information analysis, review validation, and report write up occurred in February and March 2012. This RIM assessment reflects a "snapshot" across the entire Gas organization at a point in time and this material is based upon information conveyed and made available to the assessment team at the time of its preparation. It should be noted that the Gas organization is in a state of transition with various initiatives and projects in progress. Additionally, many resources are mobilized to respond to various gas-related regulatory and legal proceedings. The assessment team attempted to adjust for these changes, interim dynamics, and new developments as the team became aware of them. As such, the report may not reflect recent changes or recommendations that have recently been initiated.

The assessment and work performed under this engagement does not constitute an examination or a review in accordance with generally accepted auditing or attestation standards. This report is considered confidential information for the sole use and benefit of PG&E Gas Operations and is not intended for reliance by third parties. Further, the content of this report does not constitute legal advice relating to any of the matters addressed herein.

All RIM assessment findings and proposed recommendations pertain specifically to and are designed for the Gas Operations line of business. The ultimate decision to accept, and implement any specific recommendations made related to this report rests with PG&E.

Objective

As a result of the San Bruno gas pipeline explosion that occurred on September 9, 2010, PG&E has been responding to a formal California Public Utilities Commission ("CPUC") Order Instituting Investigation ("OII")[1] related to its Gas Transmission Records. Additionally, following the San Bruno incident, the CPUC approved resolution no. L-403 which included formation of an Independent Review Panel (IRP) of experts to gather and review facts, and ultimately make recommendations to the CPUC for the improvement of the safe management of PG&E's natural gas transmission lines. The IRP issued its report on June 9, 2011, and among the findings, conclusions, and recommendations were items addressing PG&E's data management practices. In response, PG&E made a commitment to the CPUC to identify industry experts to assist PG&E in addressing its records and information management challenges.

The primary objective of the Records and Information Management (RIM) assessment is to improve the safety of PG&E's gas transmission and distribution system and its operations via assessing the current RIM landscape for Gas Operations and identifying actions for improving gas records and information management practices. The RIM assessment focus is to identify current gas records and information management challenges as compared to leading RIM practices, and address actionable ways to improve the RIM program maturity of Gas Operations.

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1 [illegible]

Assessment Scope and Methodology

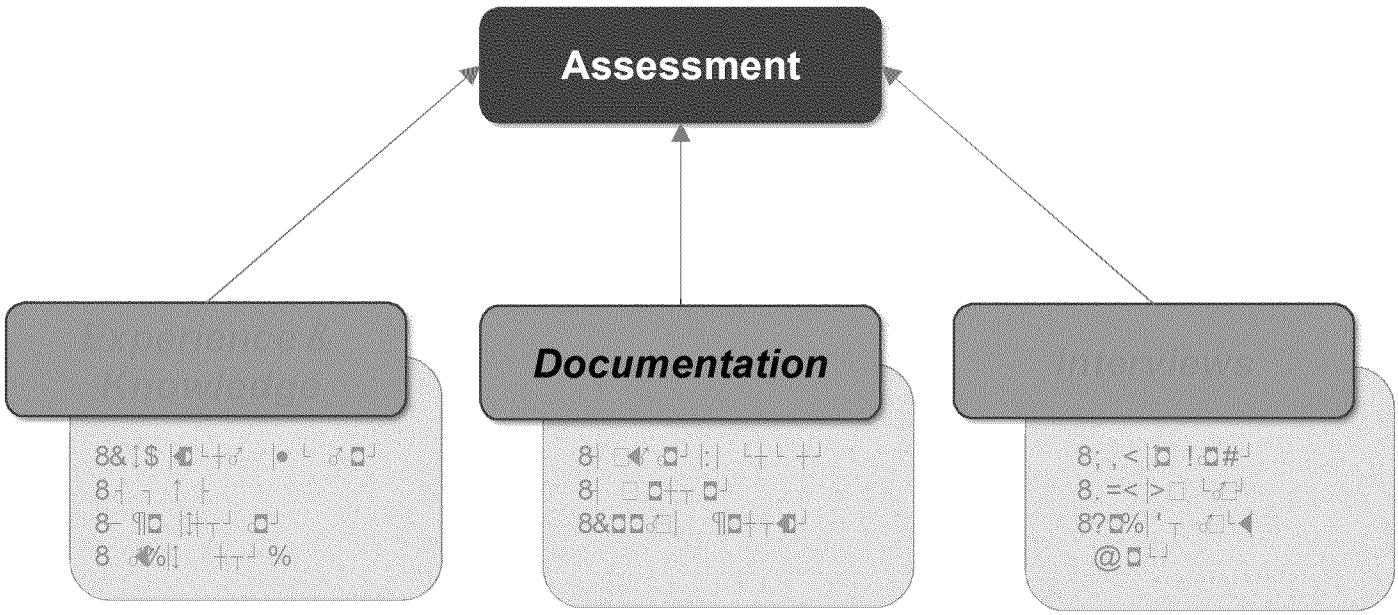
To meet the objective as stated above, the assessment team was engaged to perform the following tasks:

- Conduct information gathering efforts as it relates to the records and information management practices across the Gas Operations organization. Information gathering includes conducting interviews and discussions with personnel (via site visits, in person meetings or conference calls), and review of documentation provided and/or made available to the assessment team.

- Assess the information conveyed and provided as a part of the information gathering effort against leading records and information management program practices, against the team's experience with RIM assessments and programs across other industries, and against RIM industry guidelines and standards. This includes evaluating the current "As-Is" state in relation to the desired future "To Be" state, and as it pertains to the relevant People, Process, and Technology components of a RIM program.

- Provide observations and proposed recommendations related to improving the program maturity of the gas records and information management practices. These proposed recommendations will then be prioritized and sequenced for a Roadmap of RIM related activities.

Figure 1: Assessment Methodology



Summary of Current State Observations

Based on the information gathering efforts of the Assessment team, the following are the summary Records and Information Management related observations for Gas Operations:

- There is little formal RIM Governance within Gas Operations
- Information is often incomplete, unreliable, and not fully traceable
- Clearly defined RIM procedures and quality controls are lacking within key work processes
- Employees have challenges easily and efficiently identifying and accessing key records for their work
- There is a lack of clear standards, work procedures, and training for how staff should create, manage, transfer, store, and dispose of records and information
- Existing processes are very manual, heavily paper-based, and may differ between different office locations
- There are numerous and disparate technology applications and systems where data is stored in parallel to paper-based records. Both paper and electronic populations contain gaps and errors
- Information is not managed throughout its lifecycle; nor is it managed as a corporate asset

Opportunities for improvement for Gas Operations center around a cultural shift in the way people approach Governance, Information Quality and Controls, and clearly defined Standards as they pertain to Records and Information Management.

Summary of Proposed Recommendations

Based on the above summary of RIM related observations for Gas Operations, the following list summarizes key RIM-related recommendations as follows:

- Establish a Gas Records and Information Management Program, with a defined Governance structure
- Store and publish all records electronically, such that they are appropriately available to different functions, with centralized document management and robust controls (quality, security, and auditing) in place
- Update and consolidate relevant Records and Information Management related Policies, Procedures and Retention Schedules
- Develop and roll out the RIM standards, and guidelines such that all gas business processes have RIM components and controls addressed
- Develop a gas training curriculum by function, and include RIM related training to all staff

- Develop thorough business requirements to drive user interface, workflow, and reporting associated with anticipated content management and database systems that will hold Gas Operations information

Gas Operations must move to a Records and Information Management culture, where all information is managed appropriately at all stages within the information cycle, and that the information is treated as another corporate asset.

Future RIM Vision

For an organization to successfully lead and implement change with its RIM program, it is necessary to understand the current landscape and where they endeavor to be in the future. The following summarizes Gas Operations' vision and desired "To-Be" state as it pertains to records and information management:

- An organization known for public safety as the unquestionable, paramount priority, enabled by quality work and information
- An organization which manages its Records as a Corporate Asset
- A sustainable Information Governance program, which encompasses the philosophy that each and every employee has a responsibility for Information Management, and is enabled to do so effectively
- Information Management practices that take into account the entire information lifecycle for all information categories, regardless of format or medium

These vision statements are aligned with one of the foundational components of the Gas Turnaround Plan, "Develop Accurate Asset Knowledge". [2]

[2] PG&E Gas Turnaround Plan, published by Nick Stavropoulos, Executive Vice President, Gas Operations on October 26, 2011

Records and Information Management (RIM) Principles and Leading Practices

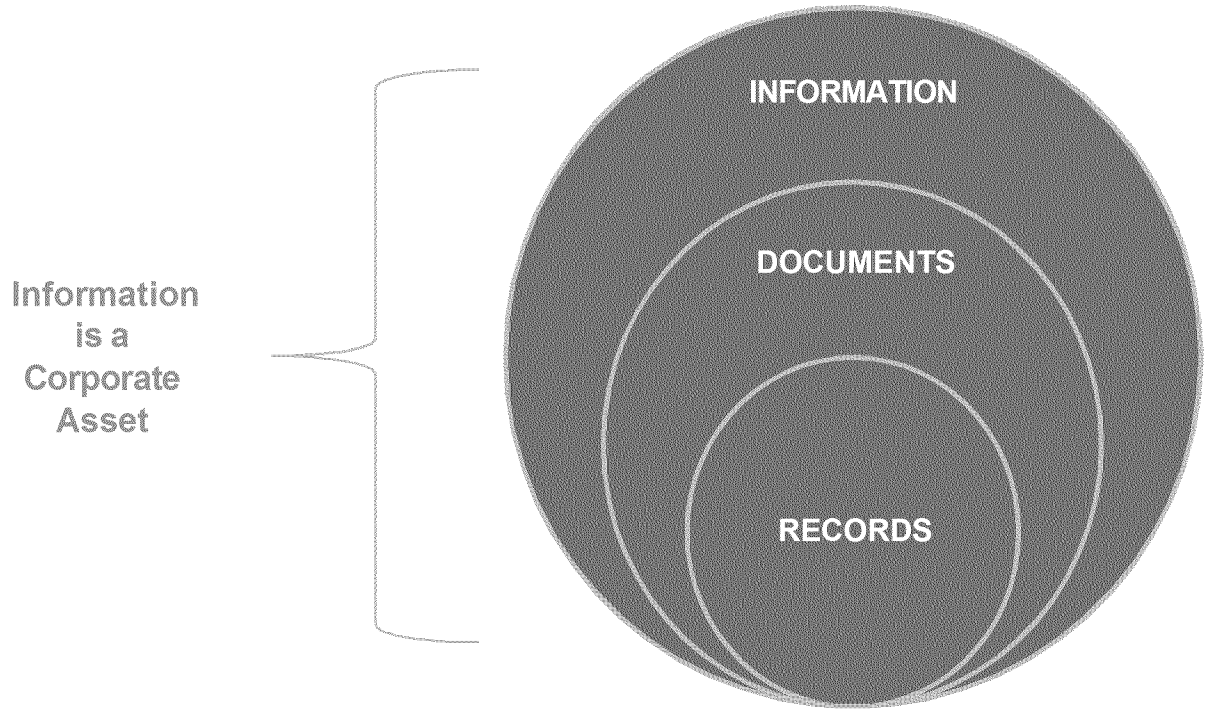
Records and Information Management

Information is the broadest universe of knowledge that is communicated or obtained, and can be in any tangible or intangible format. For business purposes it includes tangible formats such as paper, maps, electronic records, email, electronic files, voicemail, text messages, instant messages, hand-written notes, microfilm, microfiche, aperture cards, backup tapes, floppy disks, etc.

Documents represent the largest share of a company's overall tangible information sources. They offer the basis of evidence of an event, transaction or communication. While electronic documents are becoming the prevalent format in most organizations, documents can be both electronic and paper-based. Documents can become or be designated as Records when some or all information contained in the document is designated to be retained in an official capacity. Generally, only a subset of all documents gets classified as formal Records. All Records are Documents, but not all Documents are Records.

Examples of records for most companies include legal agreements, transaction documents, and final reports. Examples of documents may include drafts, duplicates, reference materials, and contemporaneous email discussions. Furthermore, Vital records are considered to be a subset of Records that may document an entity's legal and financial rights, as well as those affected by company activities, and serve as an essential component for business continuity of operations and disaster recovery of business-critical functions during and after a disaster or emergency that without would lead to the insolvency of the company.

Figure 2: Information Management



What is a Record?

ARMA International[3] and the International Standard ISO 15489: 2001[4] similarly define **records** as *"information created, received, and maintained as evidence and information by an organization or person, in pursuance of legal obligations or in the transaction of business"*. Records are an authentic and official recording and can exist in any format.

Understanding the relationship (as shown in Figure 2 above) between Information, Documents, and Records is important for the organization since associated management processes, and controls for Retention and Disposition (which have critical Business, Legal or Regulatory retention requirements), will be different and possess increasing value and necessity to the organization.

Information Lifecycle Management

Information Management is the collection and management of information (in all formats both physical and electronic) through the entire lifecycle (i.e., creation / collection, usage / editing, maintenance, transfer, storage, archival, retrieval, disposition / disposal), to support business operations while adhering to regulatory and legal requirements.

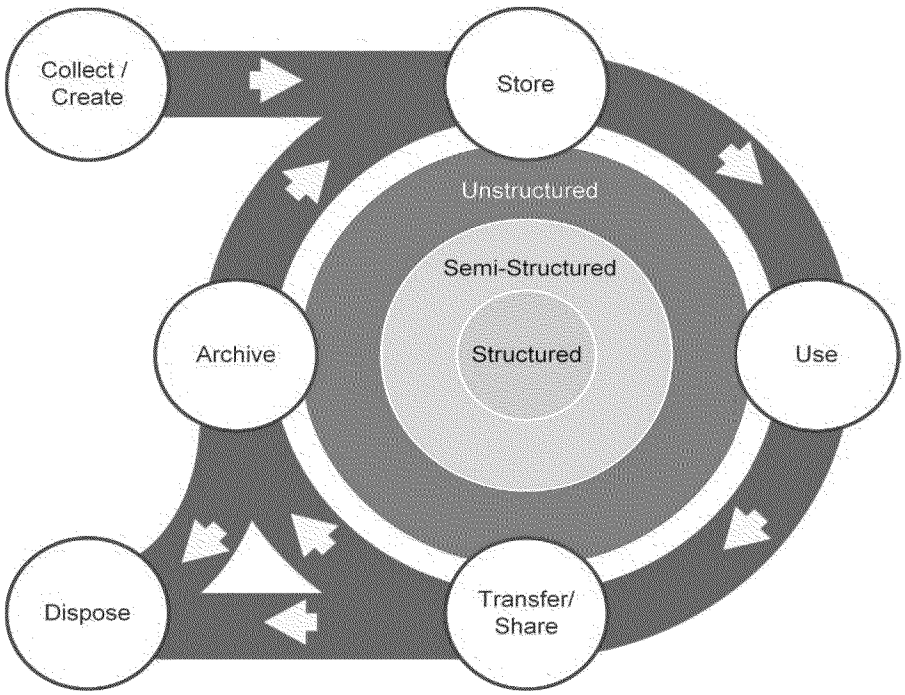
[3] ARMA International (formerly known as Association of Records Managers and Administrators) Best Practices Reference
[4] ISO (International Standards Organization) 15489; Information and Documentation - Records Management

Robust and successful Records and Information Management programs take into account the entire Information Lifecycle for all information categories, regardless of format or medium, and acknowledge that various functional groups and individuals may have ownership or leverage the information at different stages. This concept of ownership across the lifecycle reinforces the role an individual may have, if only for a part of the lifecycle, of a particular information type.

While the execution and approach to information management varies from company to company, taking a holistic view of the lifecycle is important to assessing and designing appropriate actions, procedures, and implementing technologies that will be effective to managing information across an organization.

The figure below identifies the six general stages of information lifecycle management, which apply regardless of whether the information is in a structured, semi-structured or unstructured format.

Figure 3: Information Lifecycle Management



For Gas Operations to continue improving their records and information management practices, it must be understood that information created within each business unit is a corporate asset, and it is necessary to manage that information appropriately through each stage of the information lifecycle.

RIM Program Principles

To introduce and implement a holistic and effective Records and Information Management program, it is important to establish the foundational aspects and attributes referred to in this report as RIM "Principles". When each principle is implemented, the maturity of the overall RIM program increases. A company may exhibit varying levels of RIM maturity compared against the RIM principles. However, each principle is an essential and important component to a RIM program and in aggregate comprises a comprehensive RIM program.

Based on the assessment team's experience and applicable industry guidelines (presented in the next section of this report), the following six (6) RIM program principles are defined below.

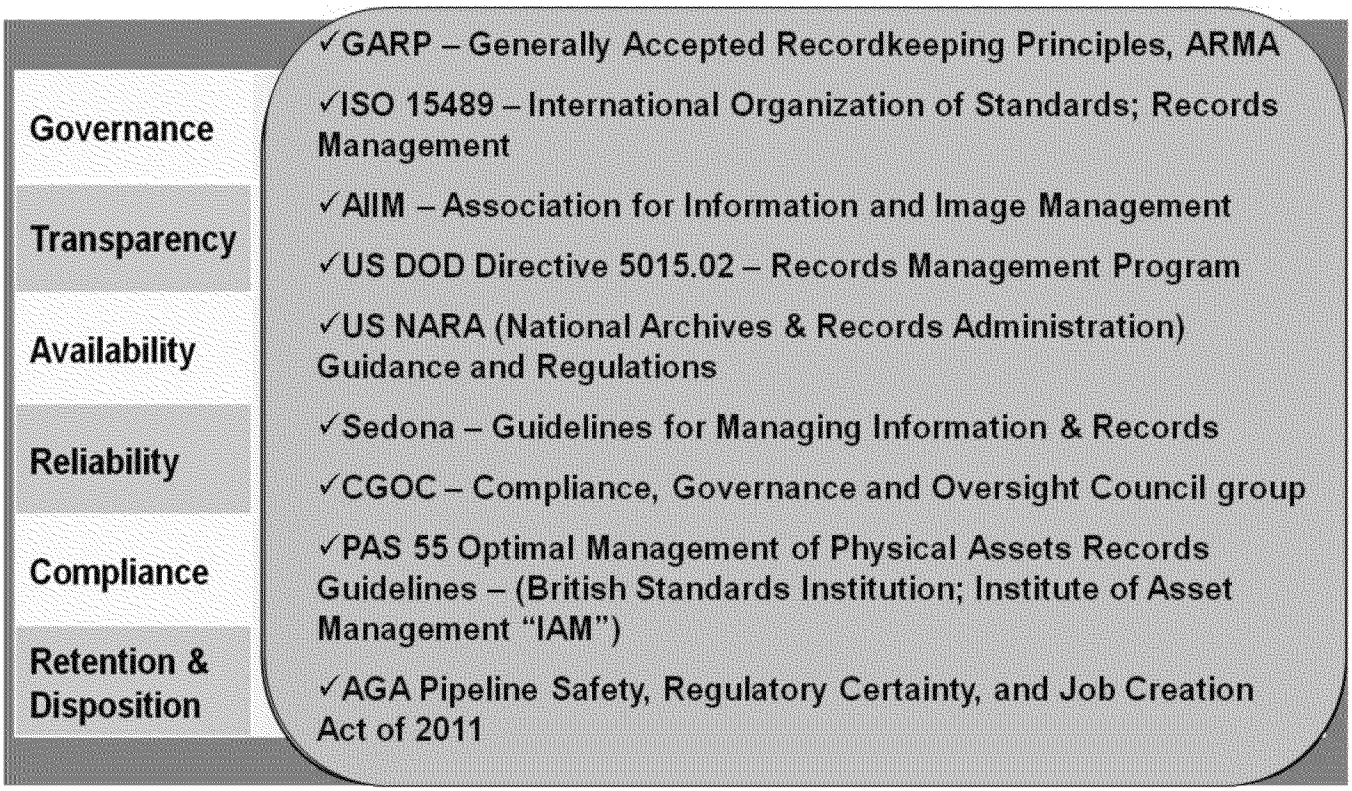
Table 1: RIM Program Principles

Governance	A senior executive oversees the Information Governance program and delegates responsibility to appropriate individuals. All employees have responsibility for Information they create or use. The organization adopts policies and procedures to guide personnel, and ensure the program can be audited; and these are reviewed by an Information Governance Council on a periodic basis for refresh and update.
Transparency	The processes and activities of an organization's Information Governance program are documented in a manner that is open and verifiable and is available to all personnel and appropriate interested parties.
Availability	An organization shall maintain information and its Records in a manner that ensures and enables timely, efficient, and accurate retrieval of needed information.
Reliability	An Information Governance program shall ensure the Records and Information generated or managed by or for the organization have a reasonable and suitable guarantee of authenticity and integrity, and reasonable level of appropriate protection (for Privileged, Proprietary, Sensitive, and Confidential information).
Compliance	The Information Governance program will comply with all applicable laws and other binding authorities, as well as the organization's own policies. The organization self-audits on a periodic basis.
Retention & Disposition	The Information Governance program will provide clear Retention requirements taking into account legal, regulatory, fiscal, operational and historical requirements, and secure and appropriate Disposition guidelines.

Sources for RIM Principles

RIM industry standards and guidelines, combined with those from relevant gas utility guidelines (please see Figure 4 below), were leveraged together to assess PG&E's Gas Operations' current state practices against RIM leading practices. The group of standards and guidelines below was reviewed and compared to the foundational RIM principles for guiding the assessment.

Figure 4: Sources for RIM Principles



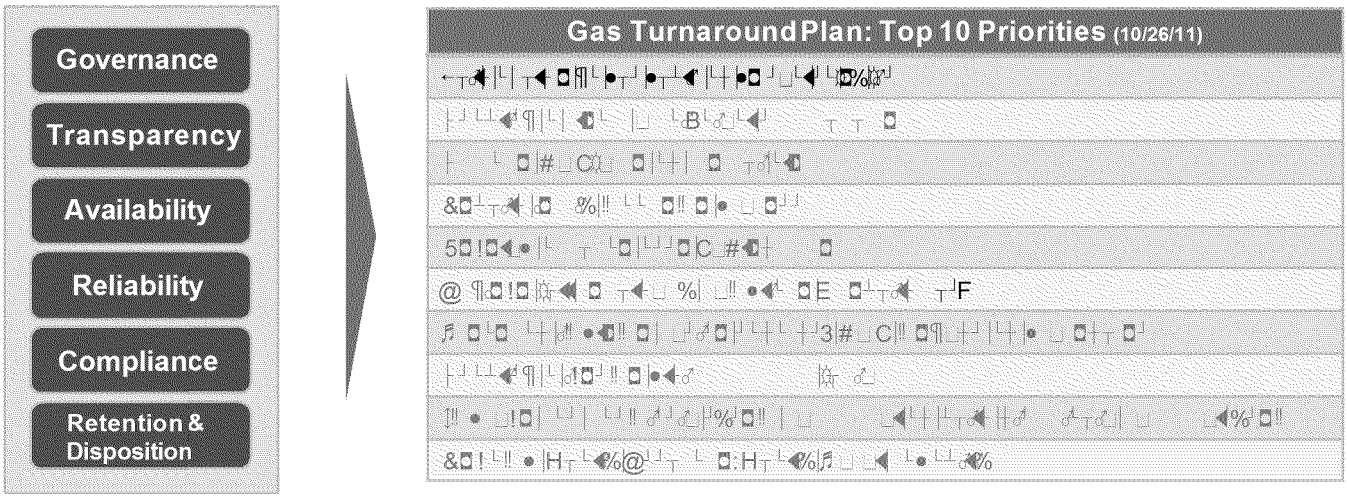
Reviewing the relevant Records industry and other related guidelines provided the assessment team with broad and comprehensive view of practices.

Similar to a RIM Program that evolves in an organization over time RIM guidelines and standards, particularly ones that originate from the utility industry, are anticipated to evolve and change in coming years with the introduction of new legislation, new case law, and an increased focus by industry groups on the topic of records and information management.

Alignment of Gas Operations Priorities to RIM Principles

The Gas Turnaround Plan[5] outlined the "Top 10 Priorities" for Gas Operations. While this list was structured from an overall Gas Operations perspective, one or more of the RIM principles is a key enabler to achieving the goals.

Figure 5: Alignment of Gas Operation Priorities to RIM Principles



Records and Information Management Maturity

Gas Operations is currently undergoing significant change as the organization moves forward with several initiatives. These include MAOP validation and associated records digitization, new technology systems under the Gas Transmission Asset Management (GTAM[6]) program, PAS55 certification, the Pipeline Safety Enhancement Program (PSEP), Hydrotest program, etc, and achieving a higher level of maturity for its Records and Information Management practices.

Organizations manage their information in order to conduct business and to meet applicable regulatory and legal requirements. While it is common that organizations all share in some degree challenges in records and information management, the application of RIM practices vary widely. In the absence of prescriptive regulatory and legal requirements, RIM related practices are tailored uniquely to each organization and may intentionally or unintentionally be more or less optimized when compared to leading practices.

Organizations may have differing levels of maturity, including:

8| Across each of the different RIM principles,

[5] PG&E Gas Turnaround Plan, published by Nick Stavropoulos, Executive Vice President, Gas Operations on October 26, 2011

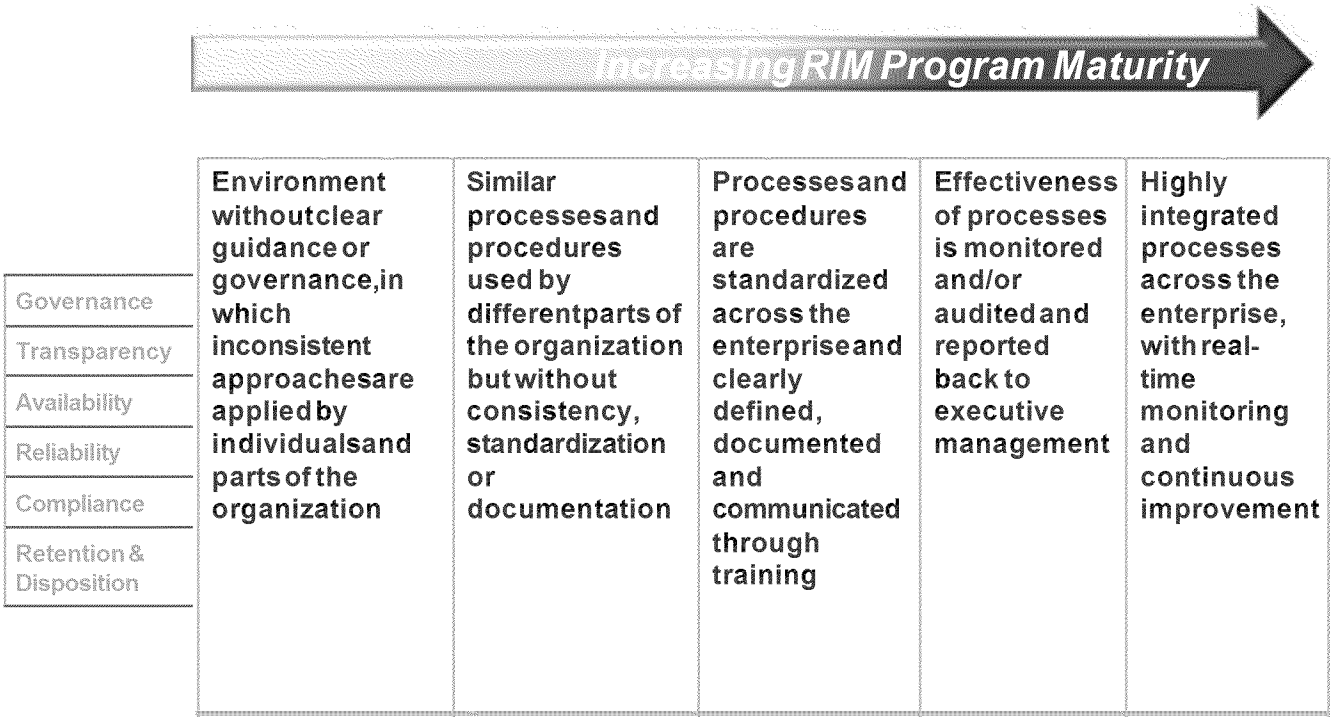
[6] It is the team's understanding that as of March 30, 2012, Gas Operations has renamed this effort to be "Project Mariner".

- At a given point in time as different events occur or as an organization evolves over time, and,
- Across different lines of business, subsidiaries, or departments

RIM maturity varies across industries and organizations depending largely on the level of regulatory oversight and laws, risk culture of the organization, and impact of current/historical records and information management practices.

The figure below summarizes general attributes of increasing RIM Program Maturity over time.

Figure 6: Attaining RIM Maturity



A more mature RIM Program for Gas Operations will help ensure that information is consistently and appropriately managed across the functional areas of Gas Operations according to regulatory, legal, and operational requirements of the organization. As RIM maturity is achieved over time, this will help reduce risk for the organization and provide operational efficiency for quality information to be more readily available and accessible when needed.

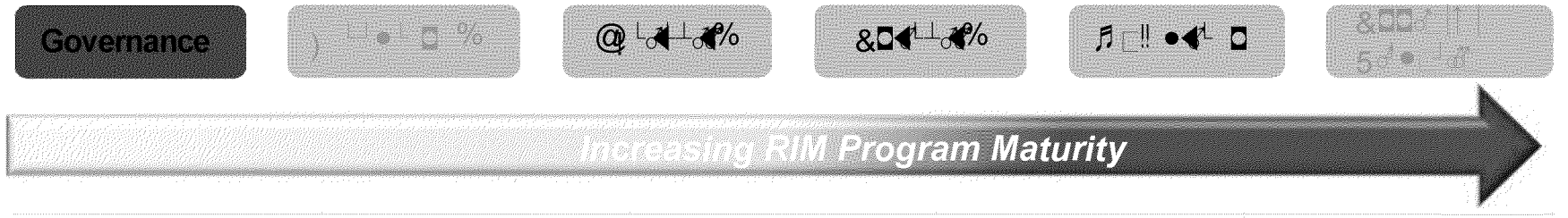
The subsequent sections provide a summary description for each RIM principle as introduced in this report, and the general attributes associated with increasing records and information management program maturity. As PG&E continues to conduct activities to improve its overall management of information in Gas Operations, PG&E can leverage these maturity level attributes to self-benchmark and to measure progress.

Note that the RIM principle attributes as described are intended to be directional. These descriptions should be leveraged as guidelines rather than an all-inclusive list of capabilities that needs to be achieved at one point in time.

Governance

The following table highlights the summary attributes of increasing RIM program maturity as it pertains to the RIM principle of Governance.

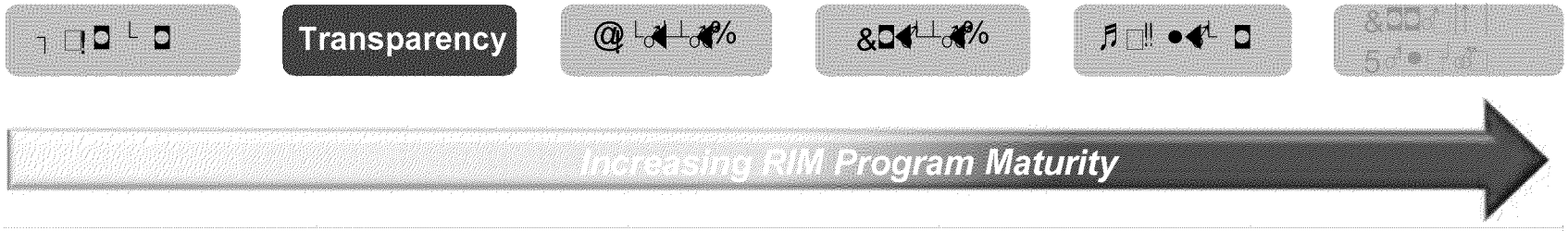
Figure 7: Governance Maturity



Transparency

The following table highlights the summary attributes of increasing RIM program maturity as it pertains to the RIM principle of Transparency.

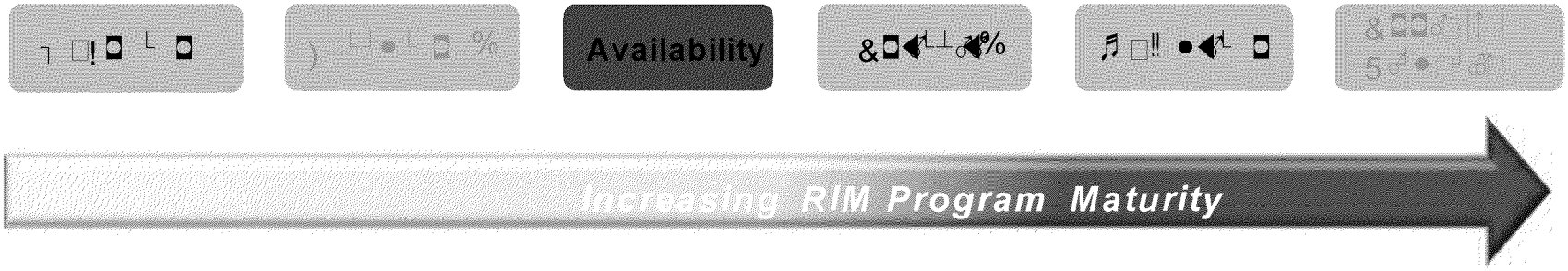
Figure 8: Transparency Maturity



Availability

The following table highlights the summary attributes of increasing RIM program maturity as it pertains to the RIM principle of Availability.

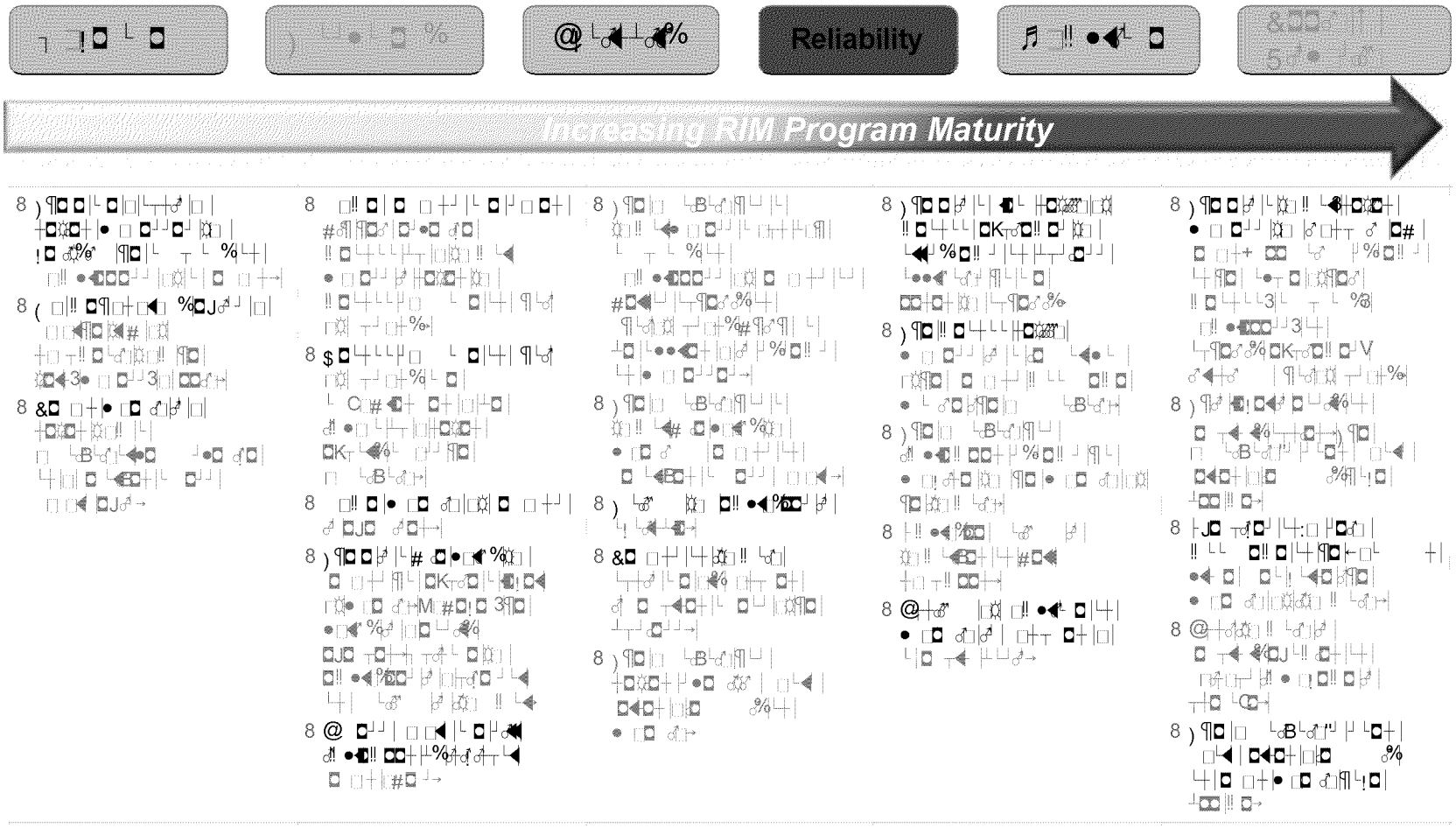
Figure 9: Availability Maturity



Reliability

The following table highlights the summary attributes of increasing RIM program maturity as it pertains to the RIM principle of Reliability.

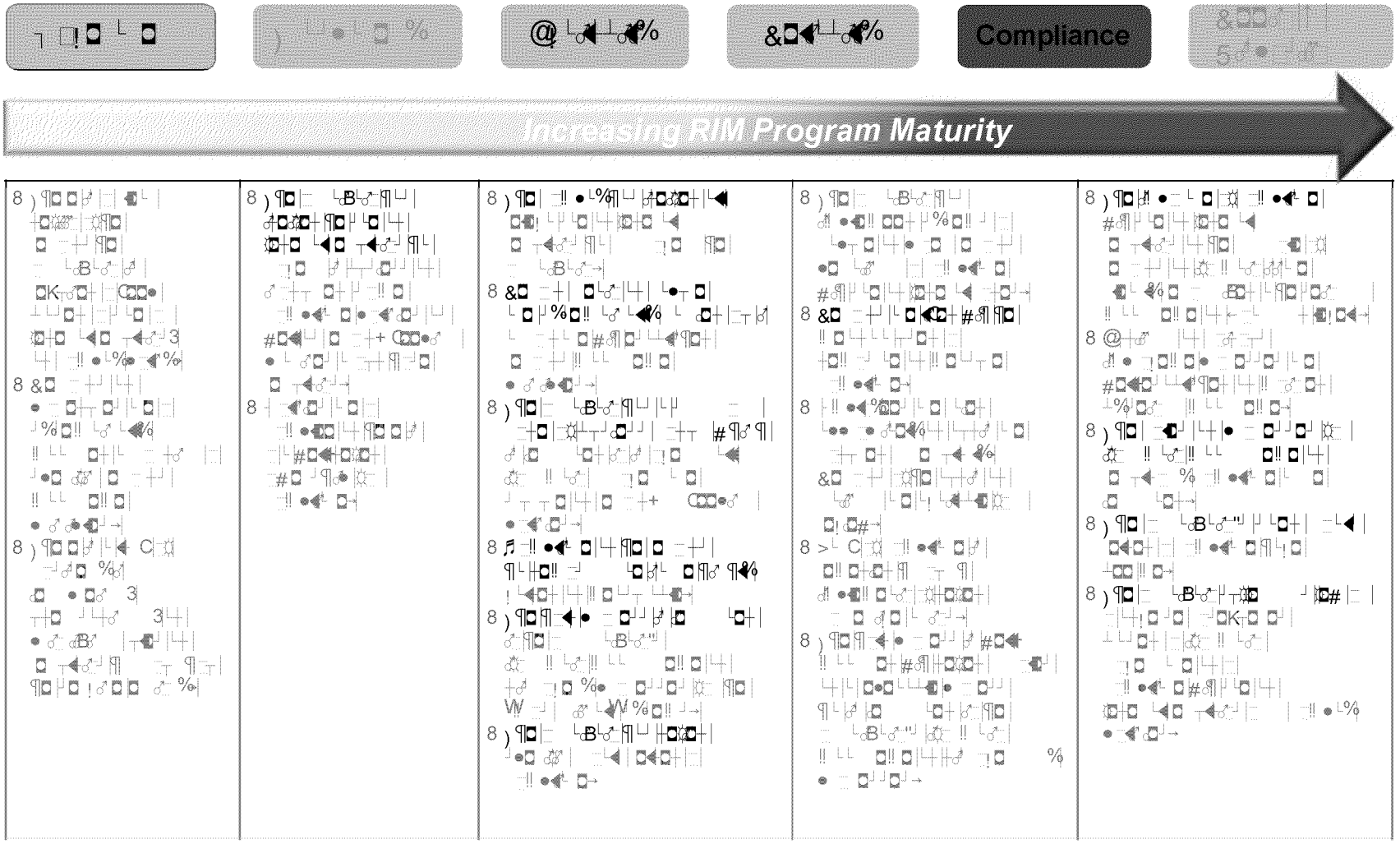
Figure 10: Reliability Maturity



Compliance

The following table highlights the summary attributes of increasing RIM program maturity as it pertains to the RIM principle of Compliance.

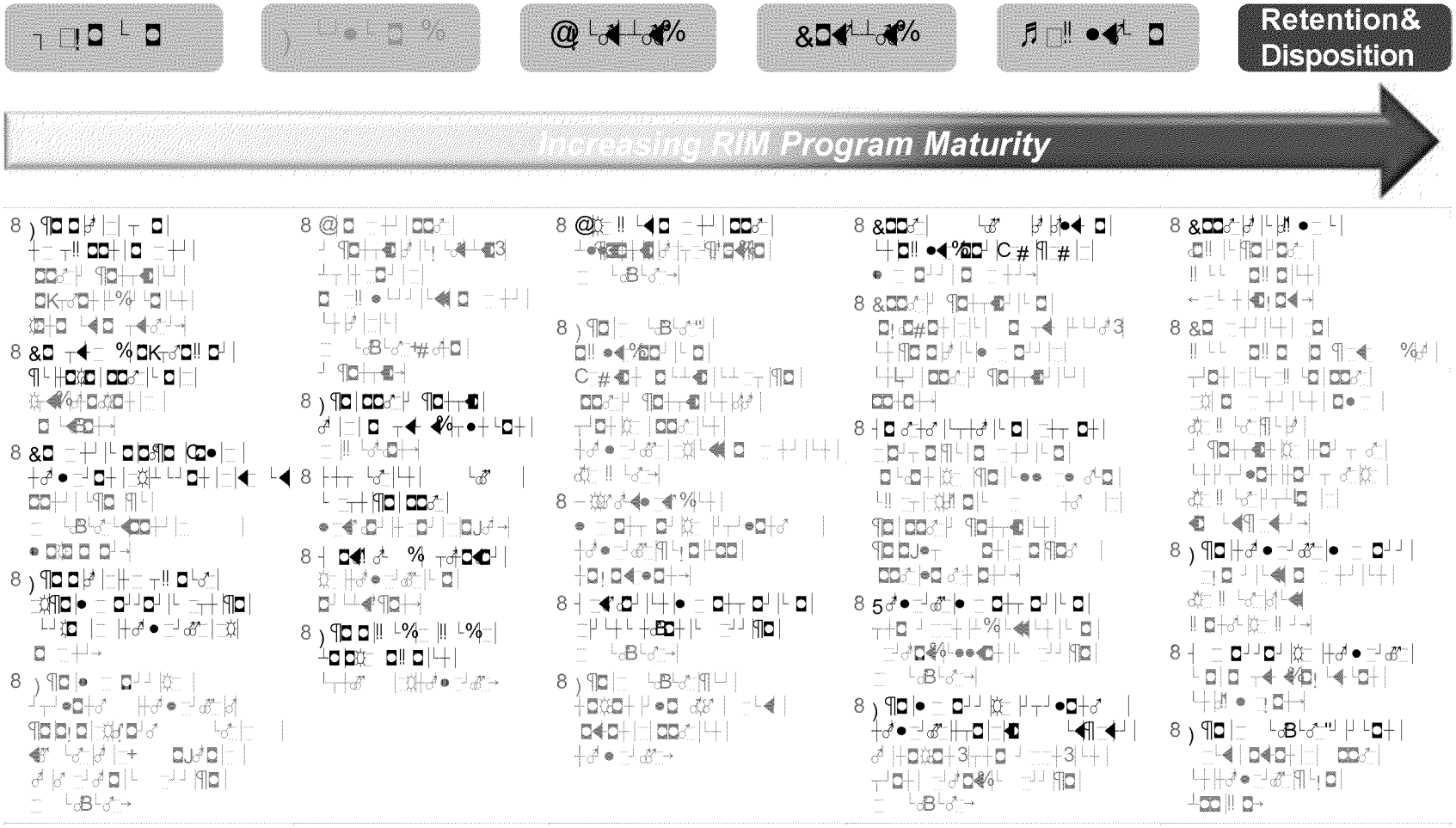
Figure 11: Compliance Maturity



Retention and Disposition

The following table highlights the summary attributes of increasing RIM program maturity as it pertains to the RIM principle of Retention and Disposition.

Figure 12: Retention and Disposition Maturity



Leading Practice Examples

When organizations are seeking to increase their overall Records and Information Management maturity, it is common practice to look to other leading organizations who have achieved their desired end state to understand the process and lessons learned.

The vast majority of organizations today have challenges with Records and Information Management. Many companies are struggling with the exponentially increasing amounts and formats of electronic data, and in particular, are focused on managing the risks and costs (operational and legal discovery) of the proliferation of Email. Information governance is also a frequent challenge, with the actual ownership and focus on RIM the organizational equivalent of a game of "hot potato".

Some general indicators of companies with greater RIM challenges often include:

- Significant mergers and acquisitions activity over the years,
- Decentralized organizations (geographic offices as well as IT infrastructure),
- Companies with a less to moderately active litigation profiles that have not been so significant a burden to the organization to prompt upstream and proactive work around information management,
- Companies that have been in existence for many decades, and before personal computers were a part of work processes and employee tools,
- Companies with very liberal and open cultures with respect to usage of various technologies, systems and social media platforms,
- Companies that have no formal RIM roles and/or the RIM role is more akin to a company librarian or filing function.

Increasing RIM program maturity must be tailored to each individual organization based on variables such as size, service territory, number of years in operation, and employee count. Achieving RIM maturity for any organization is an endeavour that is done over time. The time is necessary not only to appropriately assess, plan, design, execute and monitor the improvement activities, but also so that effective change management can occur with all employees.

In the United States utility industry, there are varying levels of maturity for Records and Information Management practices. This is often seen through heavily leveraged and controlled technology for energy, customer delivery and billing aspects, but less so seen within the more corporate functions. This is also seen where utilities may possess Nuclear-related assets and have very strict and well controlled RIM practices (in part due to very heavy and prescriptive regulatory requirements, and the expectation for impending litigation), but may have less mature RIM practices in other parts of the organization.

ARMA Cobalt Award Winner

ARMA International has established a yearly award[7] to recognize organizational excellence in managing records and information. The award requires applicant organizations to answer 12 key prequalification questions before they may proceed for consideration of the award, which includes further evaluation and inquiries, including questions posed by the judging panel to upper management of the organization.

As described by ARMA International, "The judging panel looked for clear indicators of top management support, organization-wide collaboration; solid records management practices, integrated and effective technology use, well-defined training programs for all staff, and appropriate risk management and compliance measures." This demonstrates that their measure for excellence in RIM includes various organizational components in addition to aspects that affect People, Processes, and Technology. The 2011 listing of prequalification questions for the Cobalt award are listed in the table below.

Table 1: ARMA Cobalt Award Questionnaire

ARMA International Cobalt Award – Prequalification Questions for 2011	
1. Does your organization have a formal, written records and information management policy statement that requires adherence by all management, staff, and contractors?	7. Does your organization manage e-mail based on its content?
2. Does your organization have a formal, written policy regarding information security and controls?	8. Does your organization provide ALL employees with formal training on their roles and responsibilities in managing records and information?
3. Does your organization have a formal, written privacy policy?	9. Are all RIM staff trained on current policies, procedures, practices, and systems?
4. Does your organization have a formally approved business continuity plan?	10. Does your organization regularly backup its systems and data?
5. Does your organization have a formal, written policy for handling litigation holds?	11. Has your organization assembled an information management compliance team? That includes RIM and IT stakeholders?
6. Does your employee manual or other policy or procedure include a statement from the organization's top executive about the importance of records and information management?	12. Does your organization rely on back-up tapes to retain and/or produce data for litigation?

[7] ARMA International (formerly known as Association of Records Managers and Administrators) Best Practices Reference: International's Cobalt Award - First Round Questions and Best Practices 2011

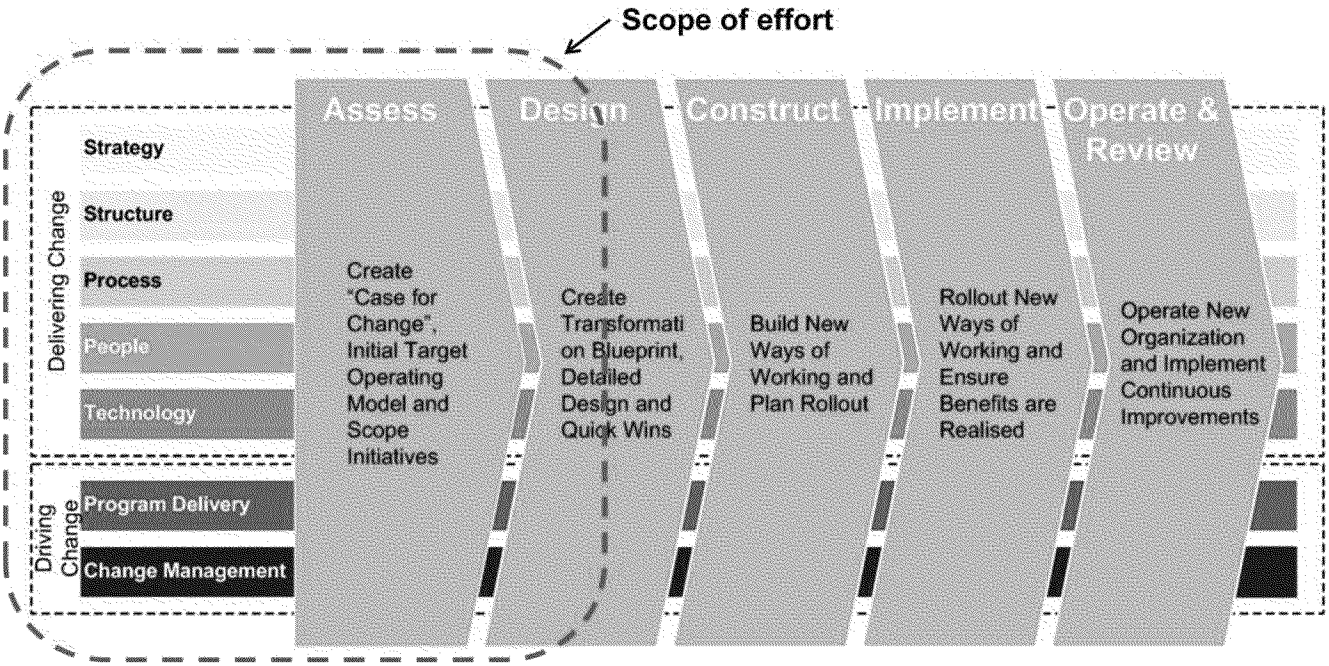
An organization seeking to improve upon its RIM practices and increase the overall RIM maturity may leverage the above questions and the ability to provide robust answers as another internal tool by which to measure progress.

Assessment Recommendations

Dimensions of Delivering Change

Successfully delivering and sustaining change for any organization is generally conducted in the stages of Assess, Design, Construct, Implement and Operate and Review. This approach is a sound and robust methodology that is applied for various types of organizational change. The Gas Operations Assessment is the first step in this process.

Figure 13: Dimensions of Delivering Change



This report is structured by the five dimensions of "Delivering Change" Strategy, Structure, Process, People, Technology (seen represented horizontally crossing the procedural stages of change in the figure above). The following sections summarize the proposed recommendations into these categories, with corresponding mapping of the recommendations to the key RIM principles in which greater maturity levels will be achieved.

The following table summarizes the key Strategy related RIM recommendations for Gas Operations. These recommendations are mapped to the RIM principles in this report to demonstrate when the recommendation is achieved, which RIM principles are improved as a result.

Table 2: Strategy Recommendations Summary

Strategy: Proposed Recommendations	Governance	Transparency	Availability	Reliability	Compliance	Retention & Disposition
*	X	X				X
.	X	X	X	X	X	X
Y	X	X	X	X	X	X

The following table summarizes the key Structure related RIM recommendations for Gas Operations. These recommendations are mapped to the RIM principles in this report to demonstrate when the recommendation is achieved, which RIM principles are improved as a result.

Table 3: Structure Recommendations Summary

Structure: Proposed Recommendations		Governance	Transparency	Availability	Reliability	Compliance	Retention & Disposition
[illegible]	[illegible]	X	X			X	X
[illegible]	[illegible]	X	X			X	X
[illegible]	[illegible]	X	X	X	X	X	X
[illegible]	[illegible]	X	X		X	X	X
[illegible]	[illegible]	X	X	X	X	X	X
[illegible]	[illegible]	X	X			X	X
[illegible]	[illegible]	X	X			X	X

Successfully implementing the Structure recommendations listed in the above table demonstrates that the maturity of the RIM principles of Governance, Transparency, Compliance and Retention & Dispostion are most heavily affected and improved. Availability and Reliability are also enhanced to some degree.

The following table summarizes the key People related RIM recommendations for Gas Operations. These recommendations are mapped to the RIM principles in this report to demonstrate when the recommendation is achieved, which RIM principles are improved as a result.

Table 4: People Summary Recommendations

People: Proposed Recommendations			Governance	Transparency	Availability	Reliability	Compliance	Retention & Disposition
	*			X	X	X	X	X
	.			X		X	X	X
	Y			X		X	X	X
	4		X	X			X	X

Table 5: People Summary Recommendations continued

The following table summarizes the key Process related RIM recommendations for Gas Operations. These recommendations are mapped to the RIM principles in this report to demonstrate when the recommendation is achieved, which RIM principles are improved as a result.

Table 6: Process Summary Recommendations

	Process: Proposed Recommendations	Governance	Transparency	Availability	Reliability	Compliance	Retention & Disposition
&$	*	X	X		X		
	.	X	X	X	X	X	X
	Y	X		X		X	X
	4	X	X			X	X
	=		X	X	X	X	X
	/		X	X	X	X	X
	;			X	X	X	X
	[	X	X	X	X	X	X

Table 7: Process Summary Recommendations continued

Process: Proposed Recommendations		Governance	Transparency	Availability	Reliability	Compliance	Retention & Disposition
	\	X	X	X		X	X
	*.		X	X		X	X
	**		X	X		X	X
	*.	X	X	X	X	X	X
	*Y	X	X	X	X	X	X
	*4	X	X	X	X	X	X

Table 8: Process Summary Recommendations continued

Process: Proposed Recommendations	Governance	Transparency	Availability	Reliability	Compliance	Retention & Disposition
*=	X	X	X	X	X	X
*/		X	X		X	X
*;	X	X	X	X	X	X
*[	X	X	X		X	X
*\	X	X		X		
. ,	X	X	X	X	X	X
. *			X	X	X	X

The following table summarizes the key Technology related RIM recommendations for Gas Operations. These recommendations are mapped to the RIM principles in this report to demonstrate when the recommendation is achieved, which RIM principles are improved as a result.

Table 9: Technology Summary Recommendations

Since Technology is a key support factor to help enable the People and desired Processes for Records and Information Management, successfully implementing the Technology recommendations listed in the table above will predominantly help to improve the RIM maturity of the principles of Availability, Reliability, Compliance and Retention & Disposition.

Strategy

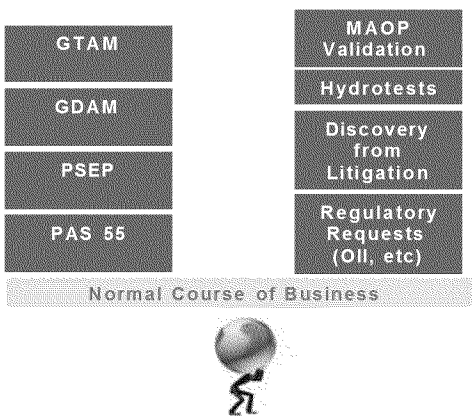
Definition

RIM strategy guides the overall approach for a holistic Records and Information Management program. Specifically, the depth and breadth of a company's overarching RIM strategy and the degree to which senior management advocates for it will be a key determinant of success.

Gas Operations has already embarked on a number of key activities since the San Bruno gas pipeline explosion, with the following that directly contain or have implied RIM improvement components:

- Updated Gas Operations organizational structure:
  - New Asset Knowledge Management organization
    - Among the new initiatives and roles is a designated "Data Quality Manager", and a "Gas RIM Director"
    - MAOP Validation project focused on review of Gas Transmission records and digitization of those records
  - New Investment Planning organization
  - Various new leadership hires from other leading Utilities
- Identification and communication of the Gas Turnaround Plan[8], including the Top 10 Initiatives and list of key gas processes
- Goal to work towards PAS - 55 certification, with a Manager designated in this lead role
- Gas Transmission Asset Management (GTAM) initiative, focused in part to implement key systems for centralized storage of structured and unstructured data

Figure 14: A Balancing Act



[8] PG&E Gas Turnaround Plan, published by Nick Stavropoulos, Executive Vice President, Gas Operations on October 26, 2011

The development and establishment of a successful gas RIM program is an additional part of the Gas Operations strategy that PG&E has also begun to undertake on top of existing initiatives, and it is a program that will touch all of these existing initiatives in some fashion.

The following table summarizes the proposed Strategy Approach and the corresponding Benefits.

Table 10: Strategy - Approach and Benefits

Approach	Benefits
8 RIM Strategy that aligns/is integrated with overall Gas Operations Strategy	8 Directly promotes Gas Operations managing Records as a Corporate Asset
8 Focus on achieving a higher state of sustained maturity for Records and Information Management, driving the six key RIM principles of Governance, Transparency, Availability, Compliance, Reliability, and Retention & Disposition.	8 Solidifies Gas Operations' message to its employees and customers that Records and Information Management is a priority and re-enforces focus on good data for Integrity Management decision making
8 Ensure that other key initiatives that revolve around information have alignment to the overall RIM Strategy (e.g., PAS 55[9], Integrity Management, GTAM, GDAM, etc.).	8 Potential for efficiencies (cost savings, faster employee transition, etc) to be gained with similar initiatives that are founded on RIM principles including reliability of data, availability of data, and retention of data

The following table summarizes the records and information management Current and Future states of Strategy for Gas Operations.

Table 11: Strategy - Current State and Future State

Current State	Future State
1. Gas Operations is handling urgent activities (e.g., data requests; discovery) and critical initiatives (Hydrotests, Pipe replacement) that divert attention from strategic, long-term initiatives.	1. Gas Operations has addressed its most urgent issues and has also implemented a comprehensive RIM strategy.
2. The Gas Turnaround Plan[10] is an interim Strategy but it is difficult to measure true progress or whether employees in the field have fully embraced their part in that plan.	2. Building on the success of the Gas Turnaround Plan, all employees understand the long term gas strategy and the role they play in ensuring a sustainable RIM program.
3. RIM is not prominently featured as a strategic priority other than the focus on records and information in the Asset Knowledge Management organization.	3. The RIM Program continues to be a strategic priority, and relevant components are integrated into other ongoing strategic gas initiatives.

[9] PAS 55: Optimal Management of Physical Assets Records Guidelines – (British Standards Institution; Institute of Asset Management "IAM")

[10] PG&E Gas Turnaround Plan, published by Nick Stavropoulos, Executive Vice President, Gas Operations on October 26, 2011

4. It is difficult to define success for various projects other than execution and completion. While quality may be implied in the effort, it is not always measured.	4. Success criteria are consistently defined for all future endeavors. The quality component within success is defined and integrated into all initiatives and measured appropriately

Findings and Recommendations

The following table captures the Strategy category summary Findings and Recommendations.

Table 12: Strategy - Findings and Recommendations

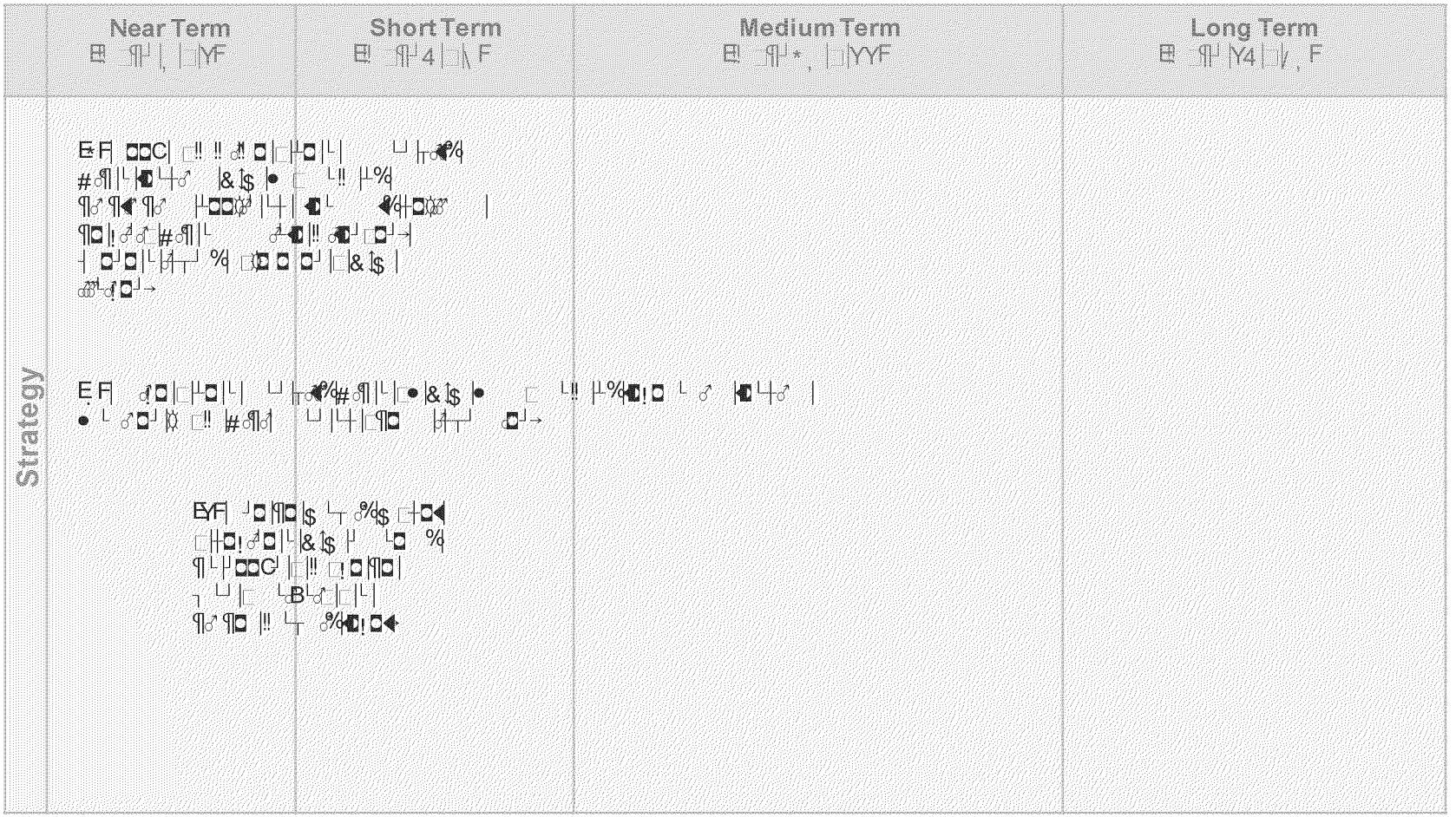
Findings	Recommendations
• Gas Operations has relatively immature RIM practices	**[A.1] Seek commitment to be a gas utility with a leading RIM program by highlighting benefits and declaring the objectives with tangible milestones such as industry awards and presenting at industry conferences on RIM initiatives.** • [illegible] • [illegible] **[A.2] Strive to be a gas utility with a top RIM program by leveraging leading practices from within gas and other industries.** • [illegible] • [illegible] • [illegible]
• There is a lack of a Records and Information Management program strategy • There is a significant amount of strain in the organization with a substantial number of new efforts drawing resources and a significant amount of change. Existing strategies only partially incorporate RIM principles.	**[A.3] Leverage the RIM Principles and attributes of RIM maturity to devise a RIM strategy that seeks to move Gas Operations to a higher maturity level.** • [illegible] • [illegible] • [illegible]

[11] ARMA International (formerly known as Association of Records Managers and Administrators) Best Practices Reference: International's Cobalt Award - First Round Questions and Best Practices
[12] Sedona Guidelines for Managing Information & Records
[13] AIIM: Association for Information and Image Management

Roadmap

The following graphic summarizes the Strategy Recommendations from the Near Term through the Long Term.

Figure 15: Strategy Recommendations Roadmap



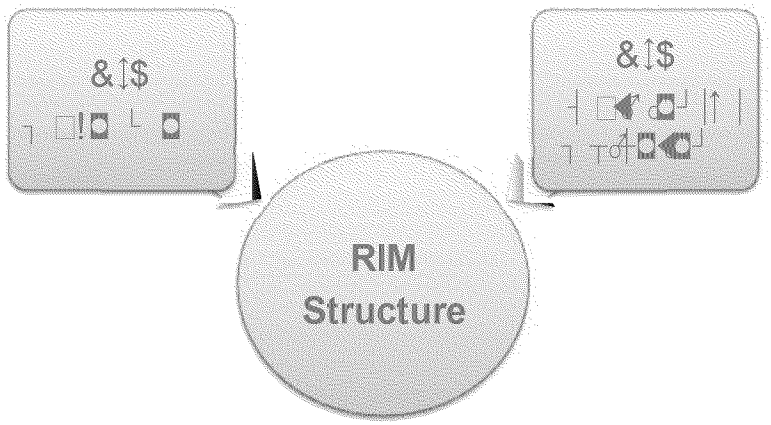
Structure

Definition

For the purposes of this RIM assessment, Structure is defined as the organizational framework and mechanism to enable a robust RIM program that is comprised of:

- RIM Governance: Identifies and has authority in the organization to ultimately make RIM-related strategy and decisions
- RIM-related Policies and Guidelines: Foundation on which RIM is integrated into business processes and compliance standards are defined

Figure 16: Structure Definition



Once the RIM structure has been established with the appropriate roles in place as part of the RIM Governance structure and RIM policies and guidelines have been created, Gas Operations will be able to sustain and manage going forward as it achieves higher levels of maturity.

The following table summarizes the proposed Structure Approach and the corresponding Benefits.

Table 13: Structure - Approach and Benefits

Approach	Benefits
A successful implementation of a RIM Structure framework includes formalizing Governance and building appropriate and consistent policies and guidelines: Key RIM Governance areas include: 8 Identify ownership 8 Verify and review alignment with executive functions, policies and procedures 8 Respond to evolving challenges such as new regulation, emerging technology strategies, risk management, and succession planning	8 Clearly defined roles across the entire organization 8 Clearly defined Accountability and Responsibility at all levels 8 Establishes a consistent "tone at the top" for RIM compliance 8 Creates a Records and Information Management culture 8 Promotes a heightened awareness of records and information management practices
Key RIM Policy and Guideline areas include: 8 Provide consistent framework and foundation for business processes 8 Establish responsibility and accountability to support RIM strategy and compliance	

Without an effective governance structure in place, it will be difficult to define and communicate standardized processes, communicate changes about records management requirements and promote the overall program and initiatives for records management.

The following table summarizes the records and information management Current and Future states of Structure for Gas Operations.

Table 14: Structure - Current State and Future State

Current State	Future State
1. Gas Operations is in a dynamic state still transitioning to the new organization, new roles, and new leadership.	1. A stable Gas organization that integrates a clearly defined and communicated RIM Governance structure to all roles.
2. There is a lack of a defined RIM Governance within Gas Operations or comprehensive RIM-related auditing.	2. A RIM Governance structure that is fully networked across the organization facilitating periodic RIM-related compliance and auditing/monitoring functions for sustainability.
3. The retention schedule is decentralized into separate documents, is partially outdated and is not enforced organization wide.	3. Alignment to Corporate Records Management Policy and Retention Schedules. Retention Schedules are centralized with one section addressing Gas Operations records.
4. Some Gas Operations policies, guidelines and work procedures are unclear, outdated, and not easily accessible.	4. Gas policies, guidelines and work procedures are centralized, current, clearly communicated, and easily accessible by all Gas Operations employees.
5. Policies do not clearly outline how to manage company data with third-party resources.	5. Policies clearly address how third parties (in the custody of or onsite) access, manage, store, and retain company data. There is follow through to ensure execution to the policies.

Overall RIM structure requires appropriate accountability as part of the governance structure, and a framework that supports the umbrella of RIM related policies and guidelines. Both will need to be reassessed and potentially refreshed on an ongoing basis as Gas Operations matures its RIM program.

Findings and Recommendations

The following table captures the Structure category summary Findings and Recommendations.

Table 15: Structure - Findings and Recommendations

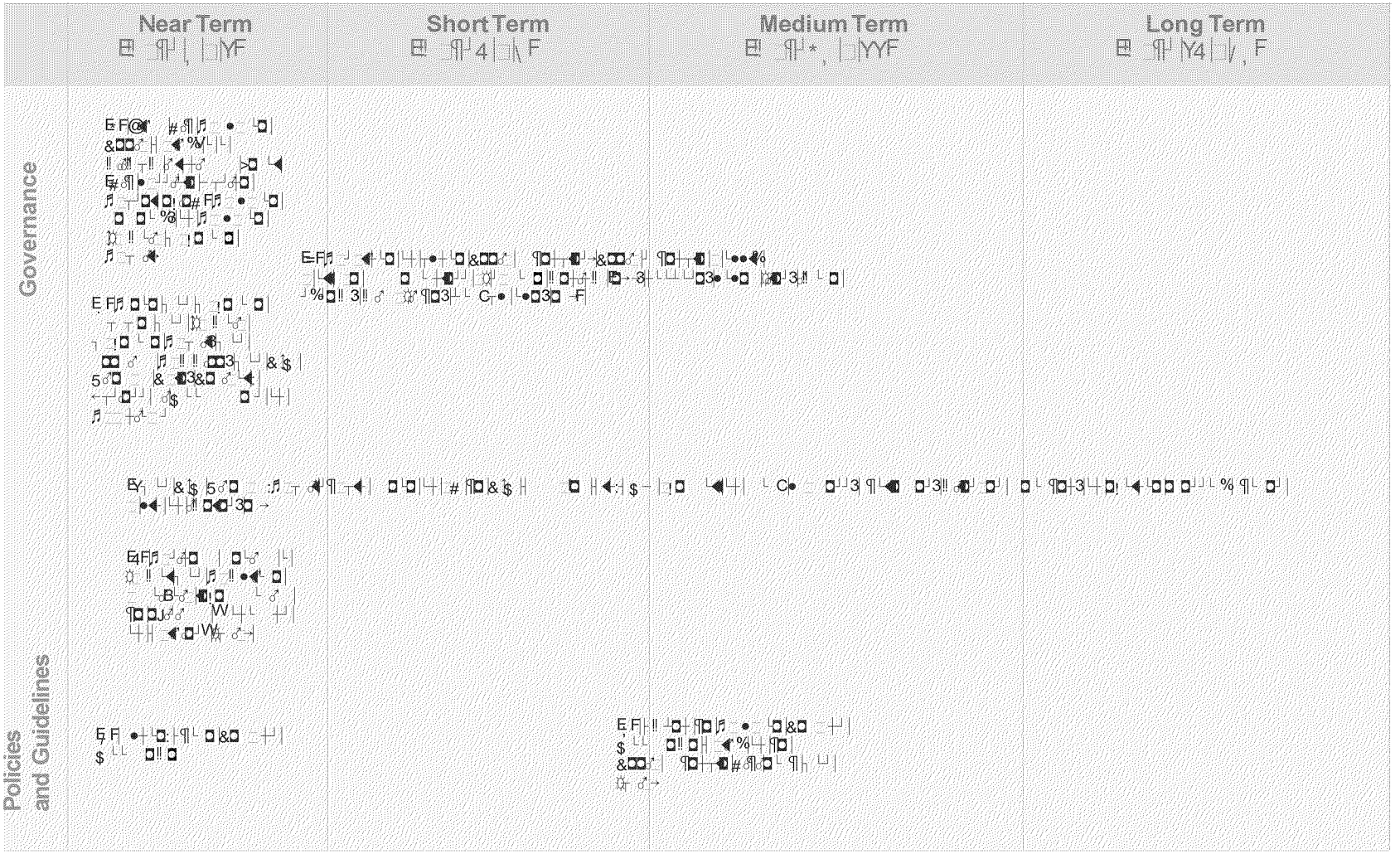
Findings	Recommendations
Governance	
• Organization lacks leadership support to enforce retention policy	[B.1] Align with Corporate Retention Policy; at a minimum including Legal (with possible **Outside Counsel review) Corporate Secretary, and Corporate Information Governance Council.**
• There is no formal RIM governance structure in place within Gas Operations	[B.2] Create Gas Governance Structure, including: • [illegible] • [illegible] • [illegible] • [illegible] **[B.3] Gas RIM Director/Council should create and own the RIM Project Plan/PMO overall and track progress, challenges, milestones reached, and evaluate necessary changes to plan and timelines, etc.**
• There is no Gas Compliance Organization, but "Standards and Policies" group contains **the key components** • [illegible] • [illegible]	[B.4] Consider creating a formal Gas Compliance organization leveraging the existing **"Standards and Policies" function.**

Policies & Guidelines	
• Various retention schedules exist with different layouts and scattered throughout the organization.	[B.5] Consolidate and update Retention Schedules. Retention schedule to apply to all content regardless of storage medium (e.g., database, paper files, image system, microfiche, backup tape, etc.)
• Many policies, standards, and work procedures are out of date, sometimes in conflict , and employees do not always know about the most recent standard • Gas Operations is retaining documents that may not be necessary to retain after a certain period of time; and organization is missing some records that should be retained	[B.6] Update/Enhance Records Management Policy to include but not limited to the following sections: • >◘ └◀M□◀┘ • 5◘☼◘└&◘ □┼!┘→└(□+&◘ □┼┘V└┼╫◘☼◘W └◘W☼□‼ └♂□ • ┐┬♂┼◘◀┘☼□ Y┼●└ ◘┘¶└┼◀ ╫┐↑├☼□ ‼ └♂□ • ☼□‼ └♂□□$ □┼♂◘5◘!♂◘┘ • □♂◀$ ◘┼♂╫
• Existing Retention Policy is not effectively nor consistently communicated across all business units.	[B.7] Embed the Corporate Records Management Policy and the Retention Schedule within each Gas Operations function

Roadmap

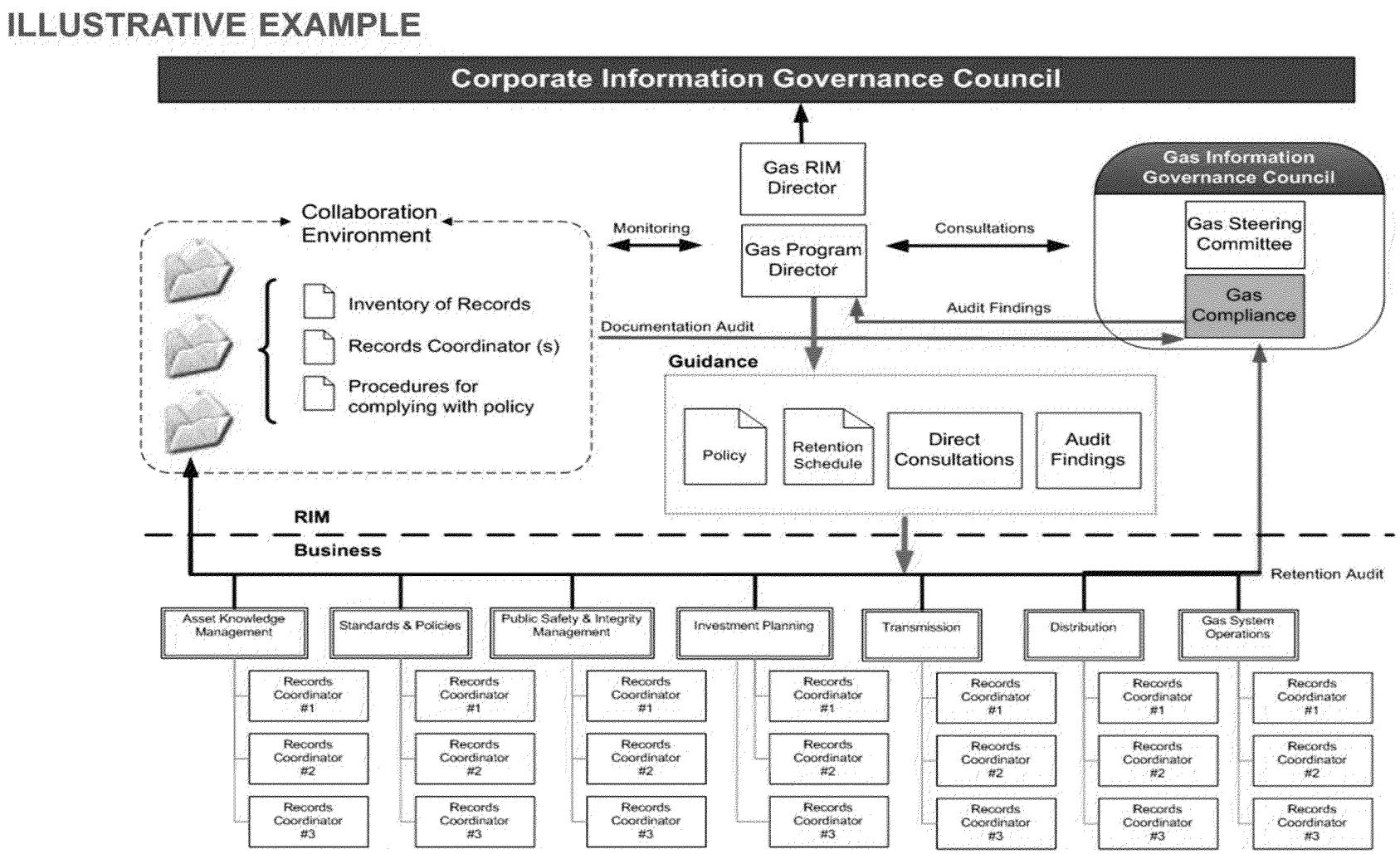
The following graphic summarizes the Structure Recommendations from the Near Term through the Long Term.

Figure 17: Structure Recommendations Roadmap



As Gas Operations moves to build a RIM program with an effective Governance structure, it is important that this structure align to that of a Corporate Enterprise Records Management Steering Committee. Below is an illustrative example of what a RIM Governance Structure could look like for a company.

Figure 18: RIM Governance Structure



While a Corporate Enterprise Records Management Steering Committee may provide support and direction to the Gas RIM strategy, the Gas RIM Director will be responsible for the overall management of the Gas RIM program and many of the initiatives that the Gas Organization decides to implement.

In addition, large organizations will typically have Records Managers and Records Coordinators spread throughout functions and locations to operate as liaisons in the business. These business unit representatives have the responsibility for promoting approved records management practices and adherence to the records management policy and retention schedules.

The table below summarizes suggested roles and responsibilities for the Gas Operations Information Governance structure.

Table 16: Gas Operations Governance Structure Roles and Responsibilities

Role	Responsibility
Gas Operations Information Governance Council	[illegible]
Gas RIM Director	[illegible]
Gas Steering Committee	[illegible]

Gas Regional Records Managers	
Gas Liaisons in Field/Business Units	
Gas Employee	

People

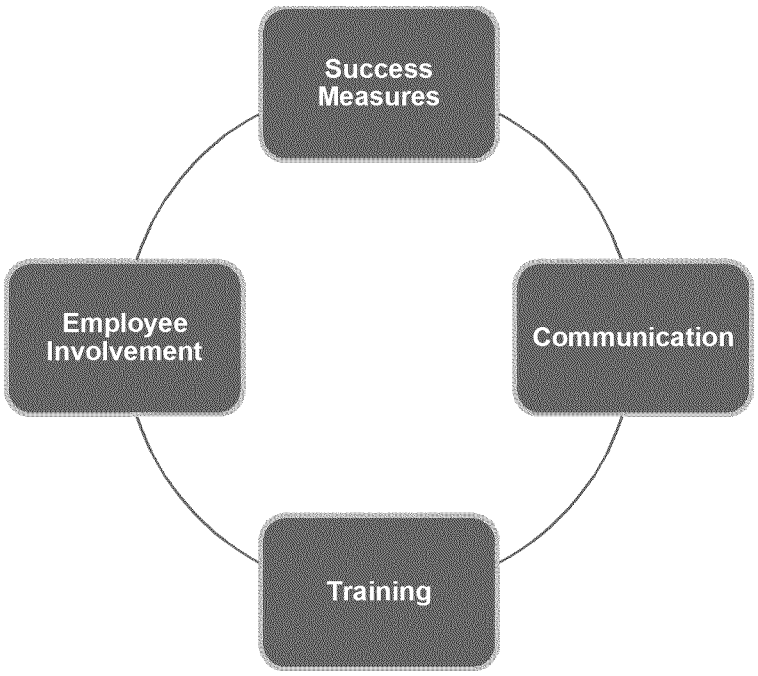
Definition

The People dimension of organizational change is critical as it is up to the employees of an organization, at all levels, to execute and ensure the appropriate practices are adhered to in the course of business. This success factor is challenging when an organization may be contemplating changes in RIM procedures from current practices that may have been in place for a long period of time and have become institutionalized in the culture.

To establish a robust RIM program that drives employee adoption and helps to minimize the time and cost associated with the transition, Gas Operations will need to ensure that timely training and communication occurs along with involving employees when changes take place to information management policies, guidelines or standards.

Factors that must be considered in this change are the varying tenures of employees, the frequency of training that will be required in order to instill new procedures and new technologies, and the geographic dispersion of the workforce.

Figure 19: The People Dimension



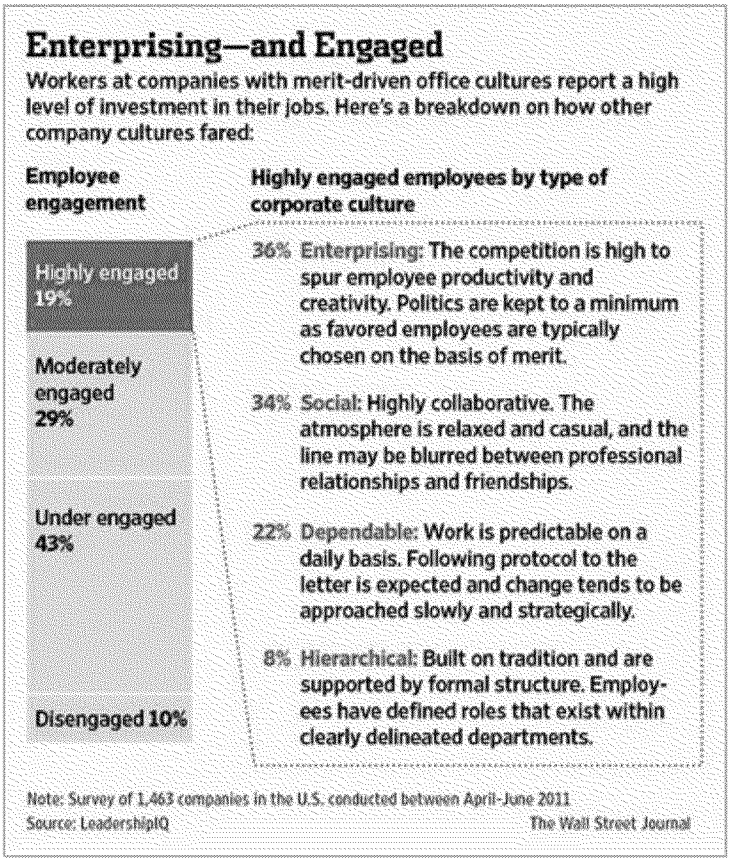
People related changes for a RIM program require a consistent "Tone from the Top" of the organization's leadership.

Employees' behavior and performance are generally influenced by:

- Investment made in their development

- Culture in which they operate
- Company's ability, willingness, and effective management of change

It is important the employees feel part of the change, and that they are informed, aware, and involved. The following graphic taken from the Wall Street Journal cites attributes of employee populations where they are highly engaged and invested in their jobs.



The following table highlights the approach around the People aspect of change for a Records and Information Management program, and the corresponding Benefits.

Table 17: People - Approach and Benefits

Approach	Benefits
A records and information management-centric culture requires: 8 Defining, promoting, recognizing *and* rewarding new ways of working where information is treated as a corporate asset	A RIM-centric culture has the following benefits: 8 Staff at all levels have a vested interest and commitment to RIM program compliance
8 Ongoing feedback and refinement as people individually and collectively help the organization promote RIM maturity	8 Employees will consistently handle information and maintain records in an organized fashion aligned with prescribed guidelines whether they are new hires or seasoned veterans
8 Empowering employees to be involved and help define what the RIM-centric organization will be	8 Organizational efficiency, data quality, and regulatory compliance increases with the work force conducting better records and information management practices

The following table summarizes the records and information management Current and Future states of People for Gas Operations.

Table 18: People - Current and Future State

Current State	Future State
1. Changing roles and an organization in flux can cause confusion for employees.	1. Employees internalize holistic focus on RIM through [illegible] fixture, not transitory.
2. There is no formal RIM training; records management practices across the gas organization are inconsistent, (including among different physical office locations and within the same functional roles).	2. Targeted RIM education and RIM concepts are seamlessly incorporated into holistic training program across gas job functions and throughout employees' careers.
3. Information comes from multiple sources including direct from supervisor, independent searches, email opt-ins, colleagues, printed materials, etc. provide different lens for recordkeeping.	3. Centralized, coordinated communication strategy and execution ensures people receive the same information and that there is a 'single source of truth' for retention and other RIM-related questions across all gas job functions.
4. Employees are not motivated or incentivized to work as a team. Employees feel disengaged from process improvement efforts.	4. Employees are incentivized for cross-functional teamwork and to provide feedback on process improvement, including but not limited to RIM.
5. Heightened focus on immediate supervisor's opinion of job performance and production metrics red/amber/green.	5. RIM-related performance metrics incorporated into job descriptions and performance evaluations; employees know expectations early on in position.

Findings and Recommendations

The following table captures the People category summary Findings and Recommendations.

Table 19: People - Findings and Recommendations

Findings	Recommendations
Training	
• There is no records and information management (RIM) related training • Training for technical and people skills is not consistently effective • **Some job-related training content is now irrelevant or outdated to the work performed and skills required today** • **Inconsistent practices across the organization, particularly among different physical office locations (even within the same functional roles)** • **Supervisors are not always technically skilled in the areas they supervise; or are not always present to assist due to the wide service area that they manage**	**[C.1] Provide RIM training to all Gas Operations employees** • [illegible] **[C.2] Create a holistic Gas Operations learning curriculum that provides timely, job-specific, technical and soft-skills training and includes RIM concepts and principles.** • [illegible] **[C.3] After initial RIM training courses are conducted, identify functions and/or individuals that require additional Change Management and training assistance.**

Findings	Recommendations
Communication	
• Not all employees are willing to share information with colleagues, including new **employees and staff in other departments** • Communication from leadership is not always proving to be effective • In the absence of communication, employees do not always align with the **company's vision and goals due to influence of more tenured employees** • Many field employees have not met or do not know their senior leaders	**[C.4] Develop and execute a Gas RIM Program Communications plan that helps to enhance and sustain executive support for the RIM initiative, educate all employees on the importance of effective RIM and the priority of the RIM program for PG&E, drive adoption of the records management policy and retention schedule.**

Findings	Recommendations
Employee Involvement	
• There is a mixed workforce demographics across Gas Operations creating varying levels of experience and perspective: • [illegible] • [illegible] • [illegible] • [illegible] • **Clerical staff has decreased across** departments • **Some employees go beyond traditional job** responsibilities to add value to other **departments**	**[C.5] Promote cross-level camaraderie and knowledge sharing by having leadership conduct "a day in the field" visits at least once a year, and observe the work, including the RIM related practices.** **[C.6] Identify additional resources (internal or external) with appropriate skill sets and experience to work at direction of identified PG&E resources with Quality Control and Vendor Management expertise. Leverage resources execute on planned temporary or interim** activities to resolve any backlog of work (filing, mapping, other functions as deemed **appropriate), and to help prep and organize records at locations in advance of larger digitization efforts.** **[C.7] Promote cross-functional teamwork to improve processes, including data accuracy and quality.** • [illegible] • [illegible] • [illegible] • [illegible] • [illegible] • [illegible]
• Metrics summarized by "Red, Amber, Green" may not necessarily reflect an accurate **picture of current state** • There is a perception that management makes decisions in a vacuum, without fully **understanding the work in the field or without**	**[C.8] Solicit, evaluate and respond to feedback from employees (after some significant RIM activities rolled out to the organization). Provide incentives to employees for generating cost savings and other innovative ideas, without compromising quality.** • [illegible] • [illegible]

Findings	Recommendations
soliciting employee opinions and experience • Mappers distributed across various geographies does not allow for consistent processes to be in place	[C.9] Consider creating a "Gas Employee of the Month" program to highlight employees who have demonstrated positive impact to RIM culture. [C.10] Consider creating a "Gas Records Management Day" to promote and get employees involved in various RIM activities. Leverage as an employee morale event / teaming event / training. [C.11] Consider consolidating Gas Distribution Mappers to a centralized location to facilitate consistency and controls. Retain 1-2 local field resources for local requests and M&C assistance.
Success Measures	
• Performance reviews do not necessarily emphasize quality, teamwork and cross-functional collaboration • There is heightened focus on immediate supervisor's opinion and performance rating	[C.12] Develop appropriate success criteria, and appropriate metrics with quality aspect. Leverage the metrics in a positive light to promote progress and achievements. Recognize employee contributions to support the organization's goals as it relates to RIM principles and initiatives.

Roadmap

The following graphic summarizes the People Recommendations from the Near Term through the Long Term.

Figure 20: People Recommendations Roadmap

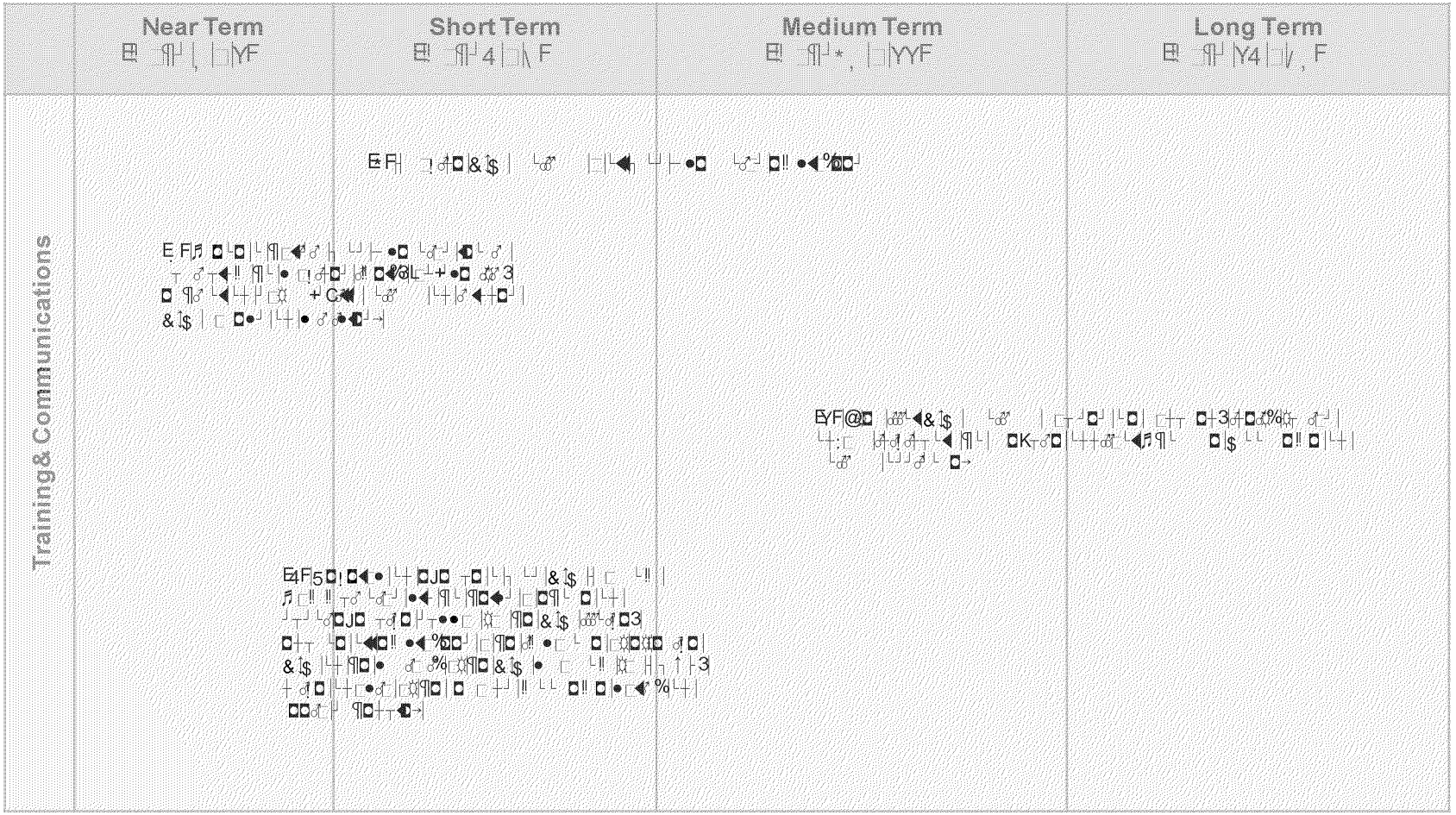
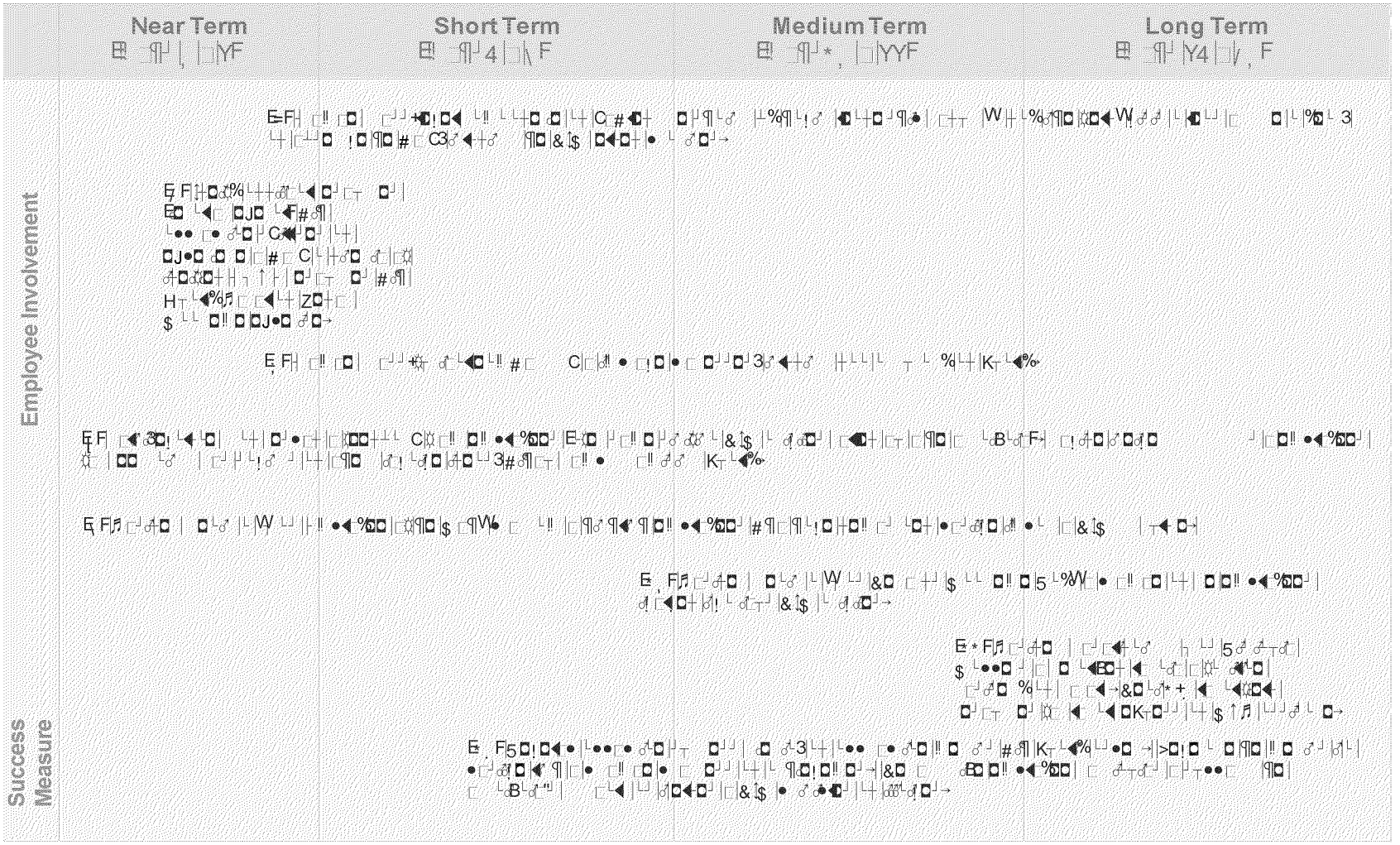


Figure 21: People Recommendations Roadmap continued



Process

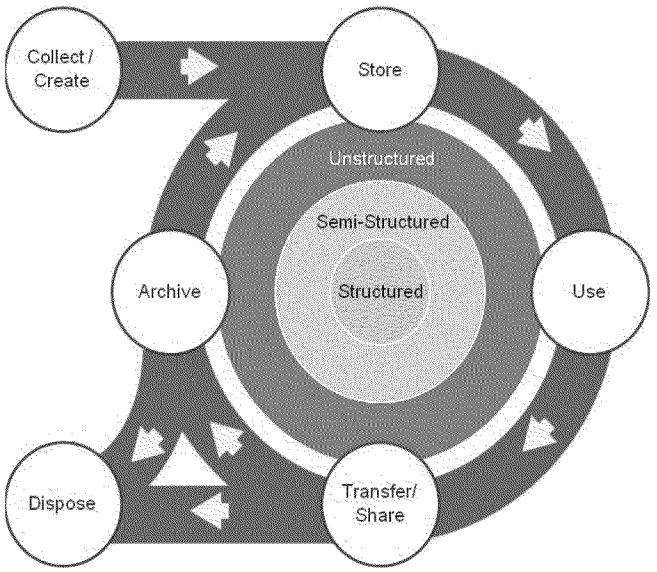
Definition

Process is a core lever to organization change by which an organization can align with to clearly define appropriate actions. A process can be defined as follows:

- A process is a series of activities, each of which requires inputs and produces outcomes in line with a set of objectives.
- Processes are the way work gets done, but requires People, and most often Technology.
- Processes, aligned with organizational objectives and strategy create value.

As companies recognize the benefit and need for standardized processes to manage information effectively, each company will adapt the "standard" set of activities and tasks to suit their environment and stage of maturity

Figure 22: Information Lifecycle Management Process



Example Gas Operations Processes
Leak Survey
Mark and Locate
Corrective Maintenance

As described earlier, understanding the definition of a Record and its relationship to Information overall is a foundational educational aspect as to Records and Information Management. A Record can be defined as:

- An authentic official copy of information which is registered on a medium in a reproducible form.
- Records document and support processes, business functions, and day-to-day activities of an organization

Fundamentally, sound records and information management contributes to the attainment of these goals:

- Business: making information available to employees, suppliers, customers, and other stakeholders to identify and exploit business opportunities and improve operational efficiency

- Legal and regulatory: ensuring that records are authentic, reliable, available, unaltered, and complete for meeting legal and regulatory requirements

- Cultural: preserving records and information bearing historical or cultural significance to connect the company to its past and help define the organization for present and future employees, investors, customers, and other stakeholders

It is important to reiterate that the terms "Record" and "Information" are not synonymous. Records consist of information created, received, and maintained as evidence of legal obligations or business transactions. In addition, Records should be protected so they cannot be changed, allowing the organization to demonstrate authenticity and completeness. Information is a broader, less formal term for describing documents and other distinct units of captured information regardless of medium or format. Some, but not all, information rises to the level of a record.

The following process flow graphic depicts an example process flow, with example decision points, for an individual Record type or category.

Figure 23: Process to Determine Type of Record

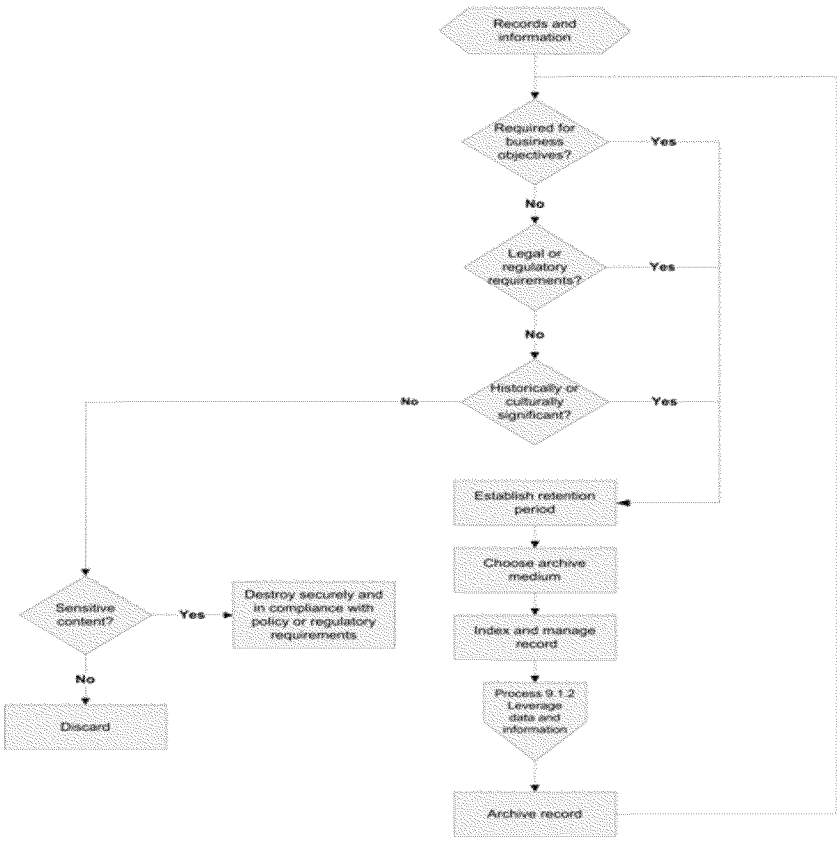


Table 20: Process - Approach and Benefits

Approach	Benefits
RIM processes and procedures 8 Provide a consistent framework and foundation for business processes that is clearly understood by all employees and embedded within day to day operations/processes and supported with auditing/monitoring, training and communications.	8 Gas RIM processes and procedures establish the framework for the efficient and systematic control of the information lifecycle: creation/receipt, edit, use, transfer, retention and disposition of gas records and information. 8 Leading RIM practices embedded within gas operational processes are viewed as an integral part of employee responsibilities rather than additional administrative tasks. 8 Employees and third parties clearly understand actions required to effectively manage records and information, including disposition of that which no longer has value to the organization. 8 Regular RIM compliance audits promote sustainability.
RIM Lifecycle (collect/create, store, access/use, transfer/share, retention/disposition) 8 Standardize processes and procedures; centralize storage and management with tools to facilitate quick identification, authorized access and use of information.	

The following table summarizes the records and information management Current and Future states of Process for Gas Operations.

Table 21: Process - Current State and Future State

Current State	Future State
1. Gas Operations lacks the RIM policies, standards and guidelines that include all components necessary for effectively managing records and information.	1. The Gas RIM standards and guidelines clearly define all roles/ responsibilities, appropriate RIM practices, and RIM procedures for third parties and departing gas employees.
2. RIM procedures and controls are not consistently applied across Gas Operations or consistently integrated into business processes and procedures.	2. RIM program level procedures are developed and accessible across Gas Operations. Operational procedures contain standardized RIM lifecycle sections (e.g., collect/create, store, access/use, transfer/share, retention, disposition).

3. Retention schedule exists as separate documents by function with different formats and inconsistencies across functions. Requirements are not clearly understood.	3. A consolidated record retention schedule exists as an enterprise-wide standard, easily accessible and understood by gas employees and managed with supporting tools, training and communications.
4. Records storage is decentralized and varies across Gas Operations with inconsistent contents and storage methods.	4. A data map facilitates locating and managing of documents in centralized storage repositories with organized structures and appropriate metadata. Key historical documents have been migrated to electronic formats and repositories.
5. RIM controls are not clearly defined and audited for compliance.	5. The Gas RIM standards and guidelines clearly define all roles/ responsibilities, appropriate RIM practices, and RIM procedures for third parties and departing gas employees.

A description of PG&E's Gas recordkeeping over the years, and key RIM related policies, standards and guidelines are provided in the Records OII, Chapters 1 and 2, June 20, 2011[14].

[14] ←□ □ ¶□ ┤ ┬┴◀ | ◢◀□┘ ♬□‼ ‼ ♂┘♂|□ ¶□| └□|□ ♬ └◀□ ♂└ ├ ┼□ |↕┘♂┌♂ |↕□┘♂ └♂|□|¶□ ♬□‼ ‼ ♂┘♂"┘ ├ # |$ □♂ □|♂|¶□| – ●□ └♂┘|└┼┤ └ ♂□┘|□ ┘ ♂ ♬ ├ └┘|└┼||◀ ♂ ♬□‼ ● └%#♂¶|&□┘●□ |□├ └ ◢◀□┘|&□ □┼┘|□ ┘ |(└┬ └◀┐ └┘) └┘‼ ♂┘♂ | %□‼ | ┤ ♂●□◀□┘→||↕***+, . +, */→|├ ♂◀┼├ □┴ ┬└ %. 43. , **→|5 └□ |6┬□|. , 3. , ** | ┐ └┘├ ●□ └♂┘ |||||||||||||||||||||||||||||||||||||||||||||♬ □□┤□♂◀□□ ‼ └♂|□□ |¶□┘□◀|┴□□□|└┼|┴┘□|□□|┐↑├→|

Findings and Recommendations

The following table captures the Process category summary Findings and Recommendations.

Table 22: Process - Findings and Recommendations

Findings	Recommendations
RIM	
• Metrics are being created and reported on that don't appear to add value. **Quantitative metrics sometimes conflict with the desired outcomes and benefits.**	[D.1] Create a Standard that indicates that all reporting metrics must include a Quality **component, or a footnote as to the method in which the quality of the metrics was supported/confirmed.**
• Historically, data quality and/or RIM issues have not been identified or recognized in a **timely fashion, leading in some cases, to major failures and costly consequences.**	[D.2] Create a requirement and protocol for reporting any potential systemic data quality or **RIM issues to immediate Supervisor and Gas RIM Director.**
• HR utilizes an employee checklist that may not include all steps necessary upon an **employee's departure or transfer to ensure business records and information in his** custody (paper and electronic) is **appropriately transitioned to Corporate for retention, preservation and management.**	[D.3] Review and update the process/procedure for Employee Departure/Transfer to ensure **transition of Gas Records from employee custody or on hard drives/servers to corporate custody, storage and management.** [D.4] **Create a formal Disposition Procedure to address records eligible for disposition, including preservation obligations, approval for disposition, and appropriate disposition techniques.**
• RIM Procedures and Controls are not consistently applied across the **organization and are not integrated into business processes and procedures** consistently	[D.5] Integrate RIM controls within Gas Operations business processes
• Inconsistent processes for storing , organizing and managing records, **including:** •	[D.6] Create formal guidelines for the storage of physical records, including **temperature/moisture conditions, and consideration of fire-safe location for vital physical records.** [D.7] Develop and execute plan for evaluating historical Gas paper Records currently at Iron **Mountain (post Cow-palace review effort in 2011) and determine what should be scanned,**

Findings	Recommendations
• [illegible]	and appropriate disposition.
• There is no clearly defined process to regularly review and refresh all RIM-related standards, retention schedule, processes and procedures for regulatory, organizational, system or other business changes.	[D.8] Establish process and protocol to align with Corporate Records Management Policy, Retention Schedule, RIM standards, guidelines and procedures, process maps, and data inventory based on a defined refresh schedule (suggested Annual Review or other trigger event such as a new Regulation)
Records & Information Lifecycle	
• Inconsistent processes for storing, organizing and managing records, including: • [illegible]	[D.9] Create a gas records and information data inventory to identify and locate all (paper and electronic) Records and Information populations. [D.10] Identify Records in Unstructured data stores, such as Shared Drives and Intranet [D.11] Develop a strategy and process to migrate active and historical electronic information from discrete storage locations (i.e., shared drives, PCs, etc) to a centralized repository (i.e., Documentum).
• There is currently no clearly defined,	[D.12] Perform Gas Operations Compliance review on RIM Program components, such as

Findings	Recommendations
comprehensive process to map regulatory recordkeeping requirements to business processes, record types and procedures. Different functions are responsible for different activities, such as tracking regulatory changes, updating procedures, communicating required changes to the retention schedule and assessing risk for Gas QA and Internal Audit plans.	Corporate Records Management Policy, Retention Schedules and other related RIM procedures.
• Internal audits and QA processes include records and information management related observations/findings but are not based on a defined set of controls for records and information management. • RIM is audited as part of business operational audits, but not conducted as a RIM program audit.	[D.13, D.14] Create interim and long-term Audit Plans (assess risk, define frequency, scope, type of audit) for Quality Assurance and Internal Audit, and define RIM controls for audit plans. Considerations include: • [illegible] • [illegible] • [illegible] • [illegible] • [illegible] • [illegible]
Gas Processes	
• Existing Gas Operations Business Processes don't follow a consistent information lifecycle.	[D.15] Review the current list of Gas Operations business processes to validate and document a comprehensive list of all gas operational processes (that should follow the full information lifecycle) [D.16] Evaluate and refresh Gas business process maps for the newly defined/validated list of processes, instituting a rigorous protocol for standardization, approval by key process/sub-process owners and socialization to drive downstream activities (e.g., training, work procedures, records types, data map, quality assurance). [D.17] Align and revise all Standards and Work Procedures to the updated list of all Gas Operations Processes.

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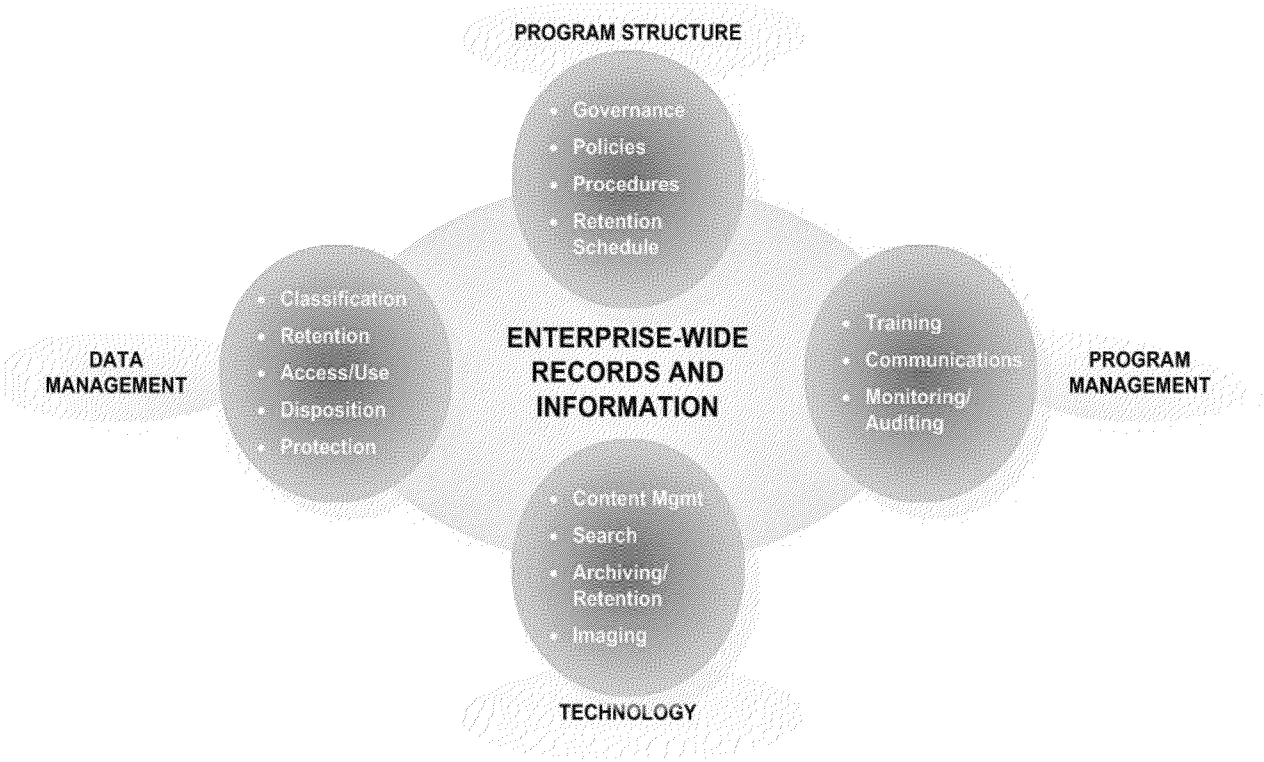
Findings	Recommendations
• There is a tendency to treat special, one-off projects differently that the more routine business processes in place. This leads to an extensive number of records that are normally not considered part of the overall record management effort.	[D.18] Develop and maintain comprehensive log of all Gas Operations "special projects" and initiatives to ensure any new Records or data stores that may be created as a part of the effort has appropriate RIM practices. [D.19] Address known challenges and backlog of Gas Maps. [D.20] Add RIM Program standards to the five year standards review process in Gas Operations. [D.21] Once RIM program and processes achieve stability, identify and develop continuous improvement activities for the Gas RIM Program.

Although Internal Audit currently creates yearly Audit Plans, it is the assessment team's understanding that it does not have a defined schedule of regular audits of specific critical processes. Gas Operations should consider creating such a schedule for high risk processes (risk defined as processes with more direct public safety implications, and risk in terms of highly utilized data stores that may receive varying data points from various locations). The following graphic depicts components of a holistic RIM Program to be considered when planning audits:

Figure 24: Holistic Components of RIM Program



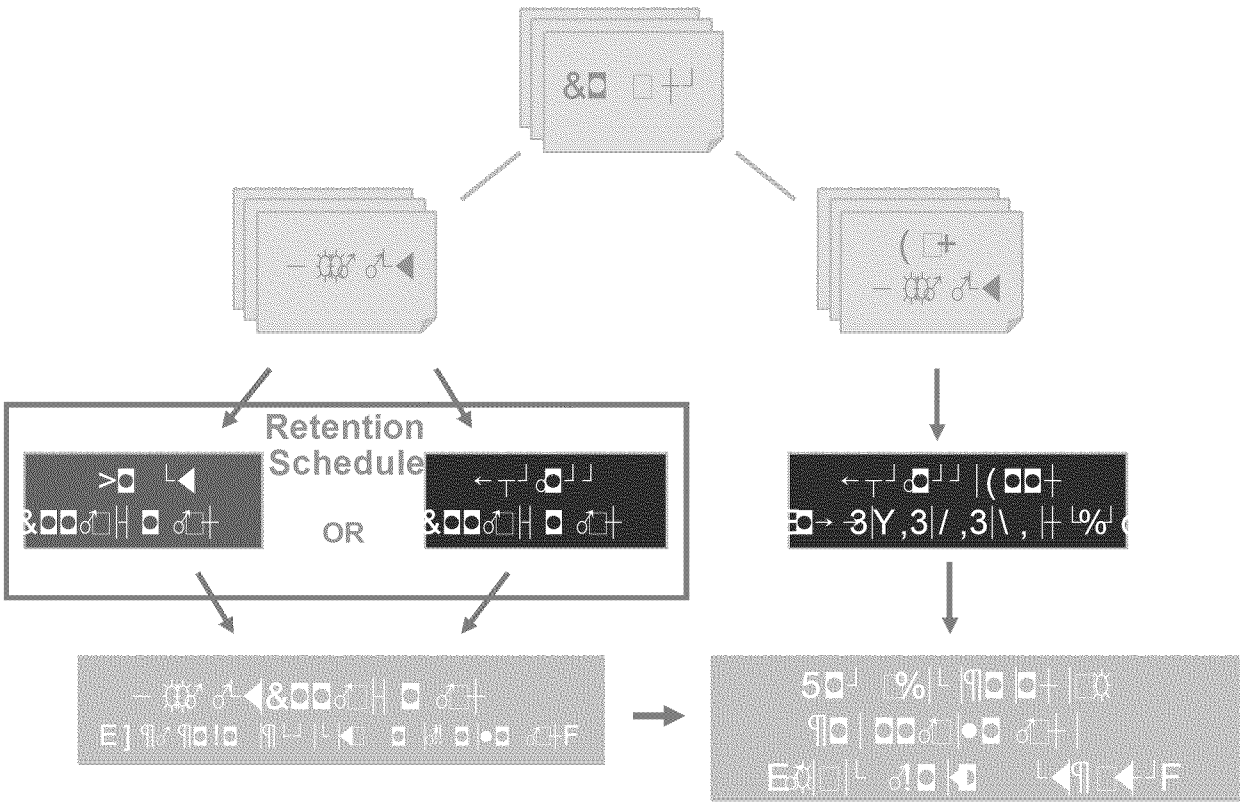
Additionally, records and information management audits typically involve a combination of the approaches below:

- Program Risk Assessment: assesses the RIM program components to industry leading practices and standards; typically performed top-down from the corporate level, drilling down to lower level areas within the organization (divisions, departments, offices)
- Compliance Audit: tests for compliance with the internal RIM policies and standards and/or defined regulations (e.g., 49 CFR Part 192)
- Monitoring/control self-assessments: through checklists, workshops and/or "cascading" management signoffs, self-assessments provide two purposes: (1) establish accountability for recordkeeping compliance at the department level, and (2) provide the opportunity to more frequently identify areas requiring attention and implement quick action plans for remediation.

These audits and reviews are performed across all levels of the organization and may include third party providers. These third party providers are in reference to those that may hold PG&E Gas records[15]. The scope may involve an enterprise Gas RIM program review, specific elements of the program or a specific regulatory focus.

The following is a high-level overview of a Records Retention and Disposition Process flow that may be applied in some fashion to many business processes:

Figure 25: Records Retention and Disposition Process Flow

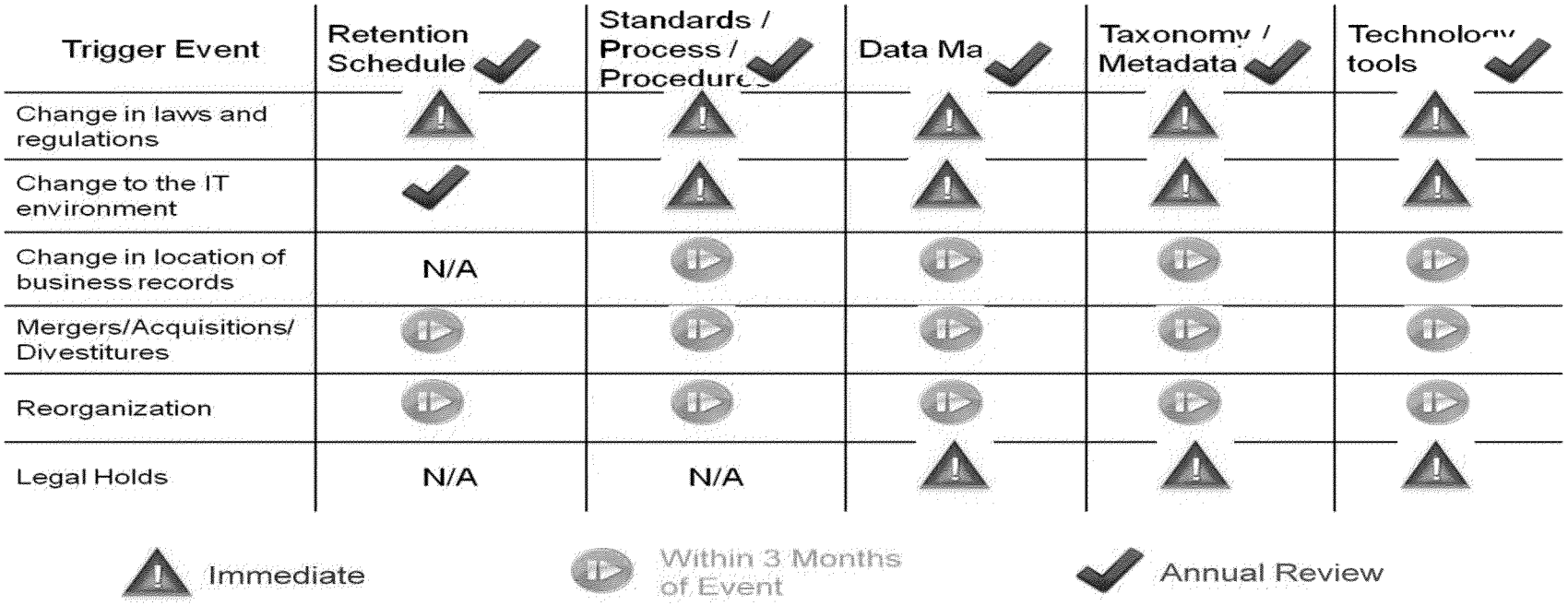


[15] It may be necessary for Gas Operations to evaluate the contractual language by which third party providers are engaged to ensure the ability to conduct audits on the handling and storage of PG&E Gas records.

As an organization experiences various events and changes to its environment, (changes in regulations or a merger/acquisition), it is important to establish protocol for key RIM program component reviews and refreshes, addressing.

The "refresh" process will be dynamic as program components and tools are developed and/or enhanced in addition to the events triggering the review and refresh. Below is an illustrative example:

Figure 26: Trigger Events and Associated Areas Affected



Quality Control vs. Quality Assurance

Quality control ("QC") and quality assurance ("QA") are often used together (as "QA/QC") and used interchangeably. It is important to note the difference in the functions and the continued role they play with in a RIM program. Quality Controls are actions performed at or close to real time, and embedded within and as part of a process. Quality Assurance is performed outside of the business process, and performed on a periodic basis typically to sample the population in some aggregate form (e.g., all records from a process created within each month or quarter) and usually via a method different than how the actual quality control was performed. Quality Assurance checks are often performed through an audit function, and may check the quality of process execution in addition to quality of the data and records created or modified.

Roadmap

The following graphic summarizes the Process Recommendations from the Near Term through the Long Term.

Figure 27: Process Recommendations Roadmap

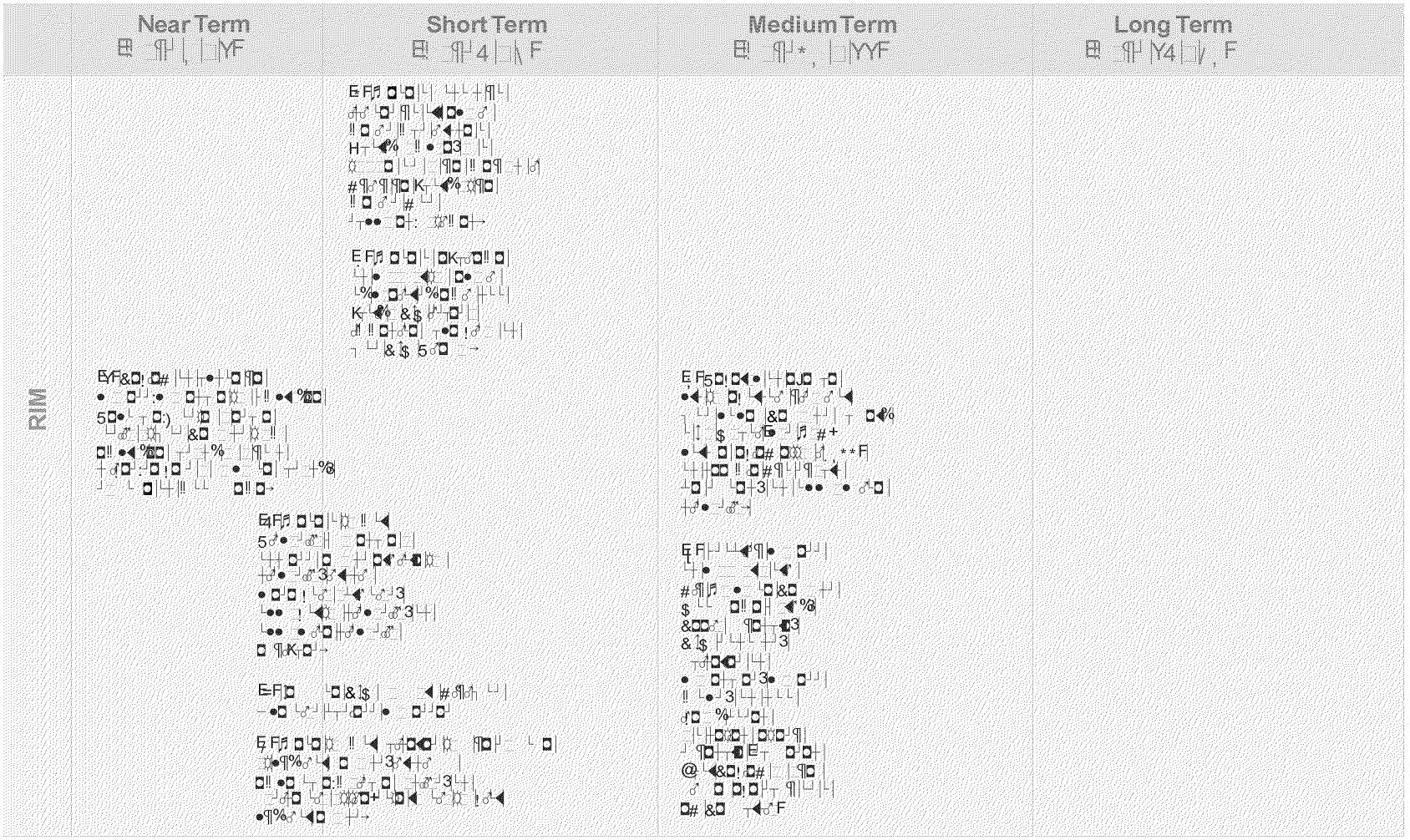


Figure 28: Process Recommendations Roadmap continued

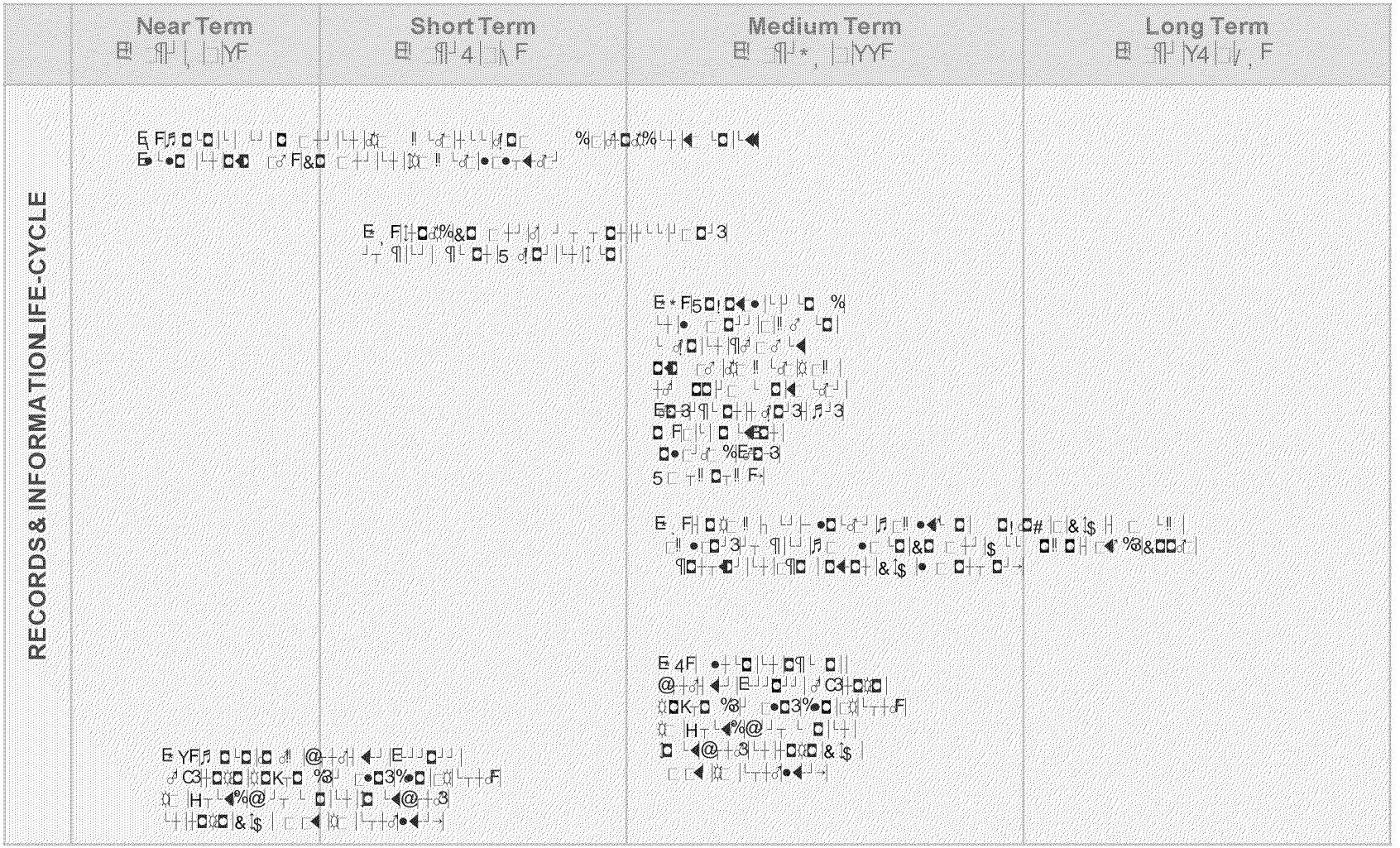
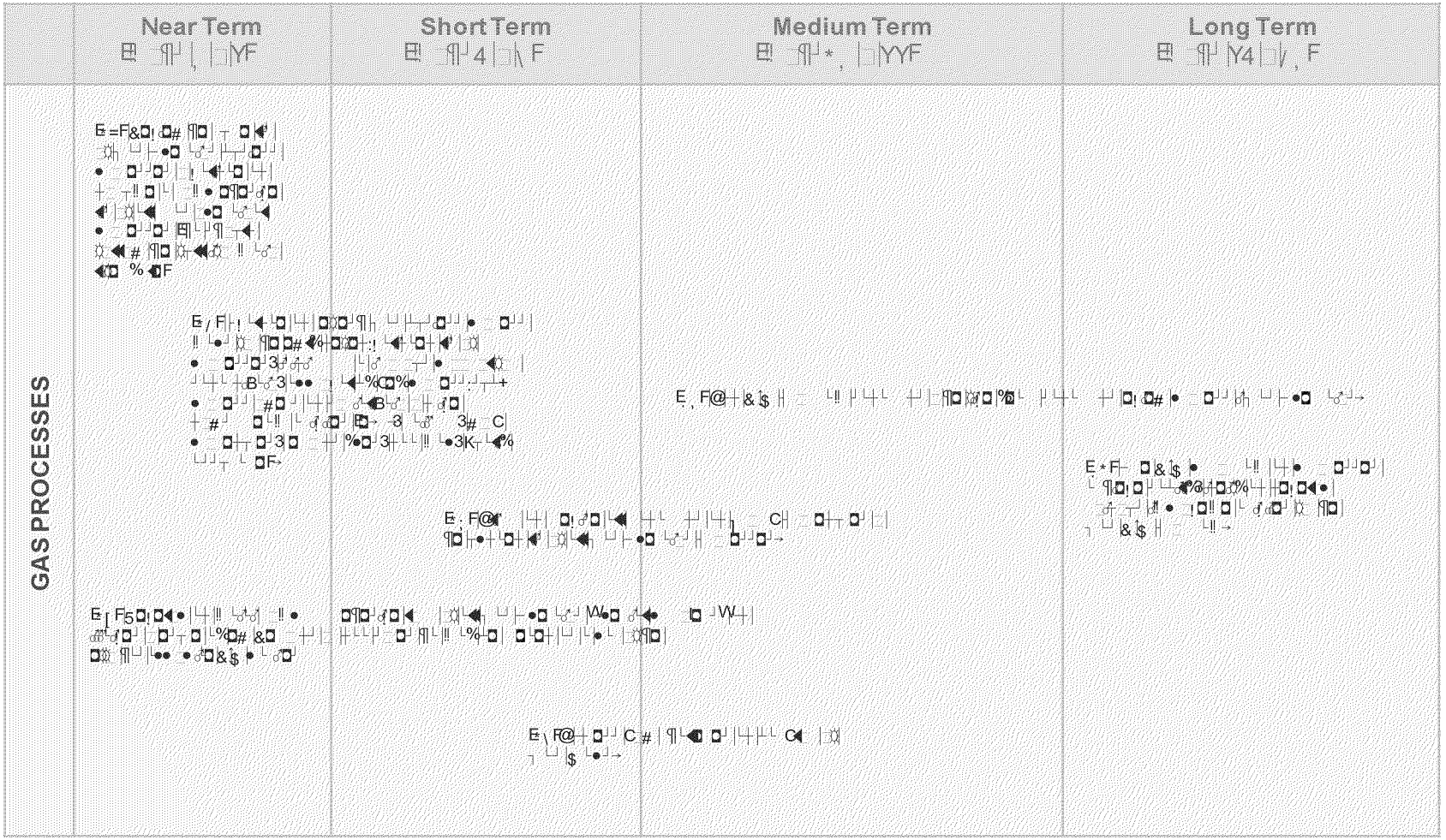


Figure 29: Process Recommendations Roadmap continued



Technology

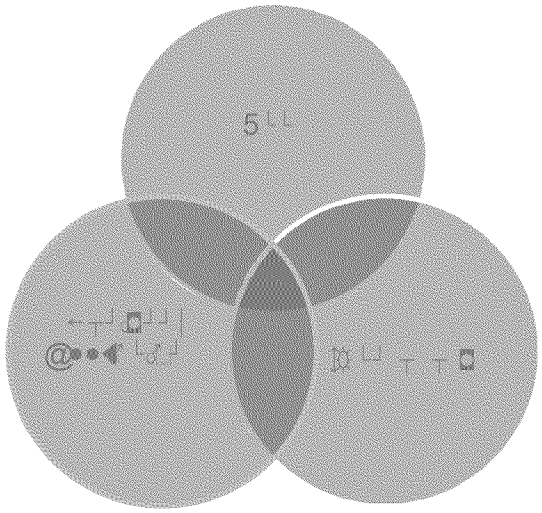
Definition

Technology is one of the five essential levers for organizations who create and leverage electronic records and information and wish to improve the maturity of a RIM program. Technology helps to apply automated consistency to RIM controls and support change across the other four dimensions of change. While Technology is an enabler for business processes, it will also help to support dissemination of information across Gas Operations as changes and updates are made to RIM standards and guidelines.

Technology can be segmented into three broad interrelated elements as listed and shown in the graphic below:

- Data
  - Structured
    - Example of structured data include a SAP database
  - Semi-structured
    - Semi-structured often refers to data stores such as SharePoint or Microsoft Outlook email, which apply some of the rigor of a structured container, but can still managed similar to unstructured data files
  - Unstructured
    - Unstructured data includes "loose" individual files that can be create, modified, transferred, and disposed of freely such as Word, Excel, PowerPoint, PDFs, etc.
- Business applications
- Infrastructure

Figure 30: Technology Defined



Technology should be leveraged to help centralize, drive consistency around work procedures, access and quality controls, facilitate authorized accessibility to records, and help to promote defined RIM standards and guidelines.

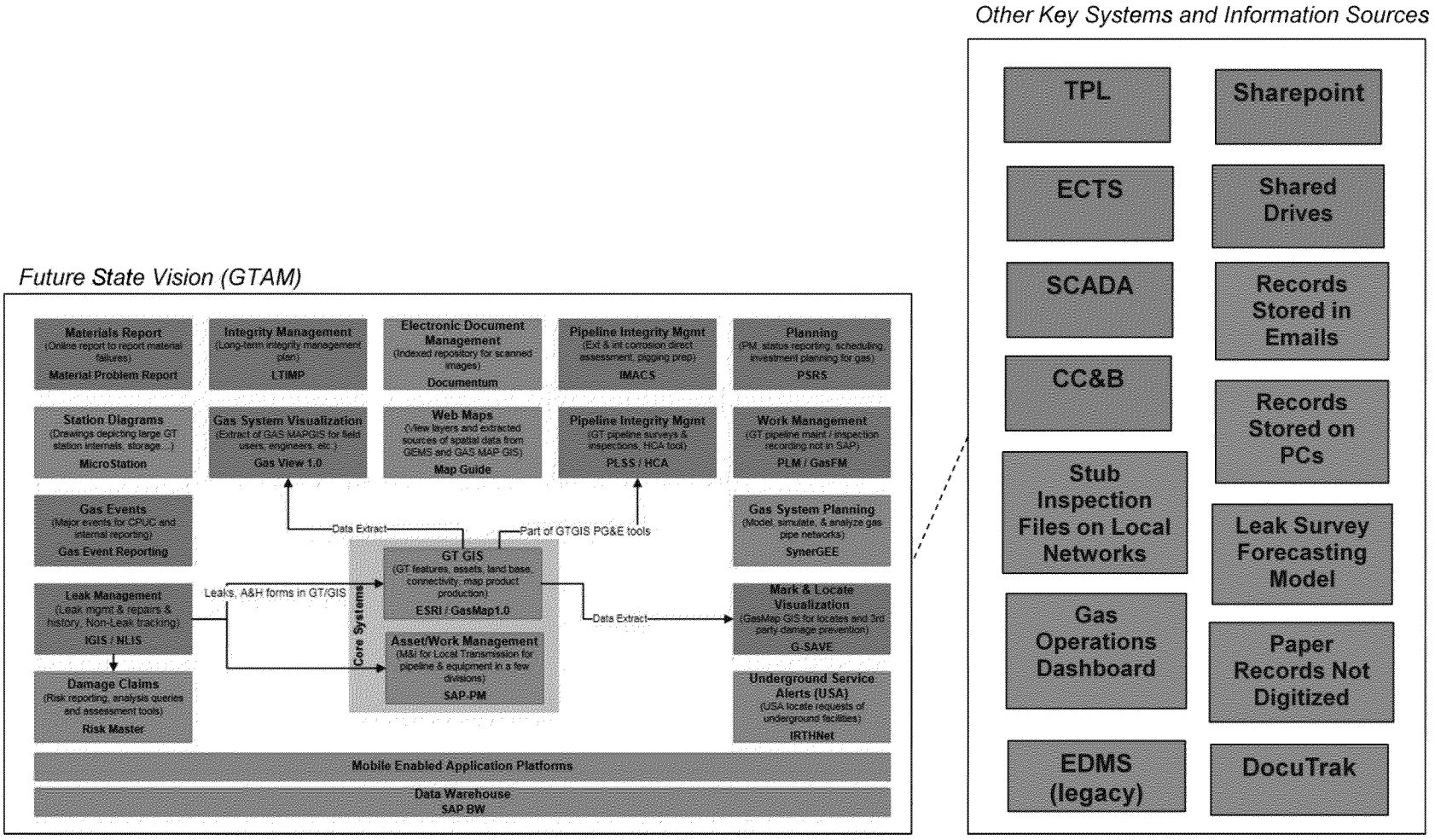
Table 23: Technology - Approach and Benefits

Approach	Benefits
A successful implementation of RIM technology(s) includes thorough business requirements development to align technology selection with business need: 8 Key areas include: 8 Taxonomy 8 Metadata / Data Capture requirements 8 User interface 8 Workflow for each business process 8 Security matrix 8 Reporting 8 Alignment to RIM governance structure 8 Careful contemplation of integrations/APIs into other systems	Technology is an essential support mechanism to be leveraged for the implementation and sustainability of a Records and Information Management Program to help ensure aspects of the following areas, including many which are core RIM principles: 8 Consistency 8 **Governance** through controls and approvals in workflow 8 **Availability** of appropriate information 8 **Transparency** 8 **Reliability** of information through established controls and reporting (from requirements development) 8 **Compliance** 8 **Retention & Disposition** Robust business requirements directly drive increased user adoption and decreased transition time

The technology focused initiatives of GTAM and GDAM[16] are in progress and not yet fully deployed.

[16] It is the team's understanding that as of March 30, 2012, "GDAM" (Gas Distribution Asset Management) will be referred to as Project Pathfinder.

Figure 31: Current Technology Landscape



The following table summarizes the records and information management Current and Future states of Technology for Gas Operations.

Table 24: Technology - Current State and Future State

Current State	Future State
1. There are numerous technology applications and systems where data is stored in parallel to paper-based records, which leads to: a. Gaps or Missing Information b. Data quality is questionable and unreliable	1. All gas records are centrally stored and available electronically, with RIM governance and controls in place. Historic information has been cleansed for accuracy and completeness.
2. Gas systems and repositories storing records are disparate and not effectively communicating with each other. These include various stand-alone systems in addition to semi- and unstructured data repositories such as shared drives, SharePoint, and email.	2. Separate systems are integrated where possible, repositories are migrated to centralized systems with effective taxonomy. Workflows are utilized to transfer tasks, obtain approvals, and facilitate information between separate systems.
3. Systems do not have sufficient built-in data quality controls (preventative or detective) to minimize errors.	3. Information is validated upon capture via system level controls, and data quality is tested for validation.
4. Systems functionality and technology are not fully leveraged to promote RIM practices.	4. Maximized investment in current technologies (e.g. SAP, Documentum, SharePoint) for centralized document management and effective user interface, controls, workflow, reporting and security.
5. GTAM and GDAM are currently two separate but related initiatives.	5. A holistic Gas 'Target Operating Model' incorporates all of Distribution and Transmission systems and records under one vision, and executes to an enterprise-wide strategy and guidelines that include "One source of truth" for data, so that official Records are easily identified.
6. ISTS is a facilities model that has recently moved towards a more federated model with personnel dedicated to Gas Operations.	6. ISTS personnel dedicated to Gas have developed strong relationships with the business, intimately know the supporting Gas technology systems, and have a deeper understanding of business processes.

Findings and Recommendations

The following table captures the Technology category summary Findings and Recommendations.

Table 25: Technology - Findings and Recommendations

Findings	Recommendations
Data (semi-structured)	
• Data quality is unreliable and missing in some data stores. This includes wrong information, missing information, and illogical information • Robust business requirements gathering does not always occur prior to system selection	**[E.1] Conduct rigorous and thorough Data Cleansing effort prior to any consolidation or migration of electronic data into new or interim systems.** **[E.2] Identify potential data completeness gaps through results of Data Cleanse exercises.** **[E.3] As a part of Business Requirements gathering efforts, evaluate what Information should be gathered to support future state Gas Operations processes and planned advancement of Integrity Management analyses.**
• PG&E Gas Operations has numerous technology applications and systems where data is stored in parallel to paper-based records considered to be "official records" • Electronically stored information (ESI) and physical records are decentralized	**[E.4] Building on records digitization efforts from the MAOP Validation project, continue to capture paper-based records and documents electronically.**
• PG&E stores a significant amount of data in stand-alone repositories such as SharePoint and Email.	**[E.5] Standardize the use of stand-alone repositories such as SharePoint and email so they can align, potentially integrate or minimally adhere to RIM procedures going forward.**

Findings	Recommendations
	[E.6] Create and execute a process to transfer data captured in emails to appropriate **permanent repositories and discourage the use of email as a data store or personal electronic filing "cabinet".**
Data (Unstructured)	
• Unstructured data repositories such as personal computers, mobile devices, **intranet and network shared drives are largely ungoverned and need formal** structure and guidance.	[E.7] Identify, and migrate official Records stored on network Shared Drives and local personal **computer hard drives to a designated central repository (Documentum). Consider eliminating Shared Drives for some functions.** • & • [E.8] **Identify, develop and execute remediation plan for other electronic "off-line" data stores such as floppy/hard disks, CDs/DVDs, USB drives, external hard drives, etc.**
Business Applications	
• Existing systems and technologies aren't fully leveraged for RIM • Lack of consistently applied standards and practices with regards to information **captured** • Lack of defined system controls upon information input to facilitate data quality **and ensure completeness** • Interim solutions such as ECTS and 3rd party Intrepid are proving to be inadequate or **challenging for other uses.**	[E.9] Enhance Detailed Business Requirements Gathering for Technology Systems. This should **include specific discussions with various relevant workforce populations on: User Interface, Gas Processes Work Flows, Reporting/Metrics, Taxonomy, Metadata, Security Access and** Protection Model. [E.12] **Leverage the PG&E Intranet Gas Operations page for a centralized, searchable, and easily navigable resource of all Gas Policies, Procedures, and Standards, (including RIM-related)**

Findings	Recommendations
• Systems used by Gas Operations are often disparate and not effectively communicating **with each other** • The current as-is GT Technology Architecture consists of numerous in-house **"home grown" systems that are not integrated (Disparate Systems resulting in** "islands" of data) • Decentralized systems lead to lack of control and duplicative data across systems **which undermines data integrity.** • GTAM has focused on key Transmission systems, but may not include all data stores **currently leveraged by the Gas Transmission organization.**	[E.10] Develop a holistic Gas Operations, Business Applications "Target Operating Model" that **includes all Gas (Distribution and Transmission) systems, Records, and data stores.**
• Current systems do not allow for 'freezing' of documents at a particular point in time to **be reliably used for legal and contractual purposes.**	[E.13] Develop and execute a formal "Hold In Place" process for Documentum to facilitate **preservation under Legal Holds. Ensure reporting/auditing of Holds In Place is also included.** **[E.14] Consider a Contract Management System plug in/interface to Documentum system to** facilitate robust, consistent and controlled Gas Contracting lifecycle process.
• Not all systems have a dedicated upgrade schedule to take advantage of new **technologies or adapt to changing business needs**	[E.15] Reassess/re-examine the existing Technology and Systems landscape and compare **against new tools and systems processes in the market to determine if Gas Operations needs are still being met in the future. This process should occur roughly once every 3 years.**
• The existing IT support resources are shared across the organization and are sometimes **not able to meet Gas Operations' specific needs in a timely fashion.**	[E.16] Create and implement a Gas IT technical support sub-group (via the phone help line) that **can more specifically address Gas Operations systems issues.**

Roadmap

The following graphic summarizes the Technology Recommendations from the Near Term through the Long Term.

Figure 32: Technology Recommendations Roadmap

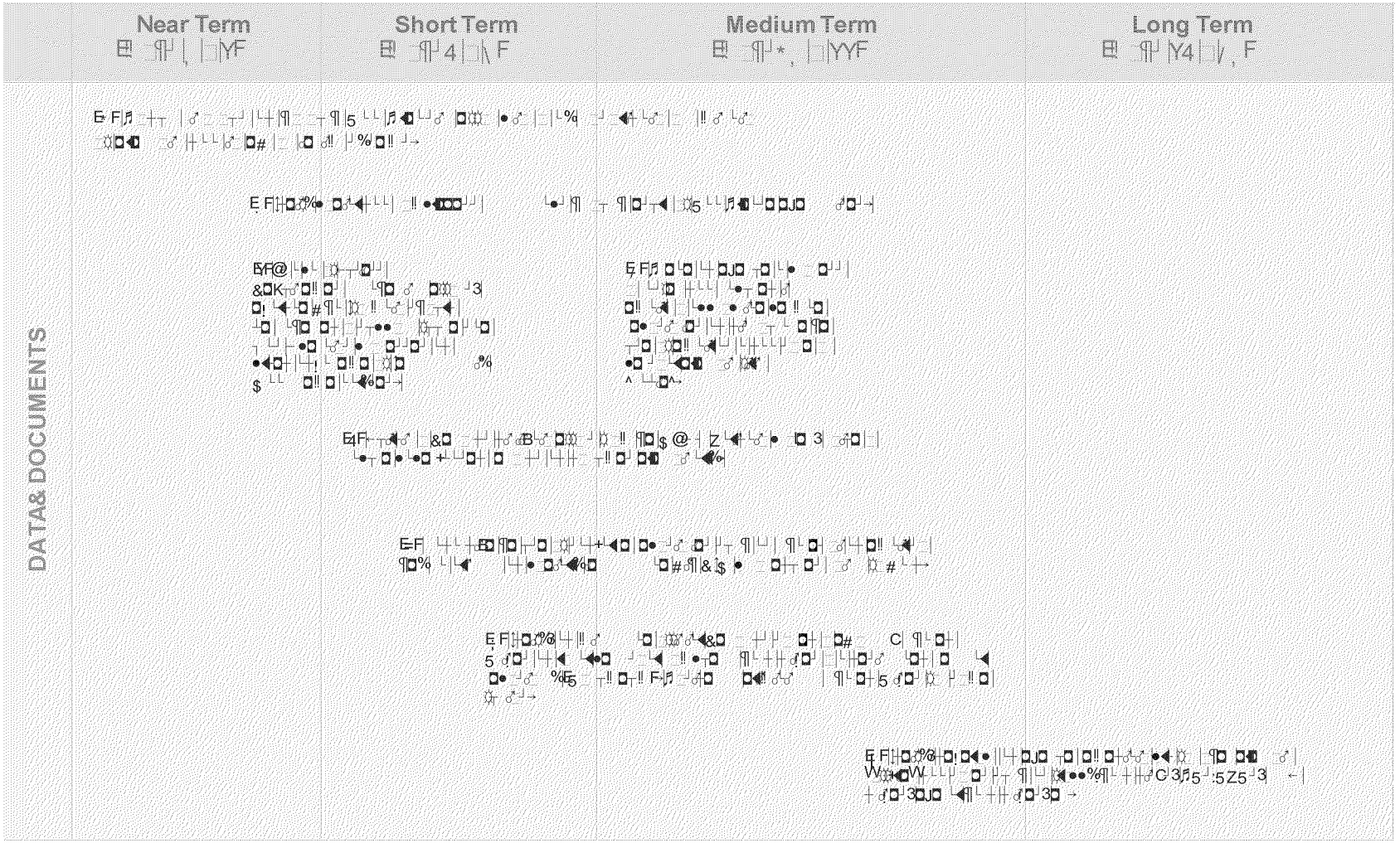
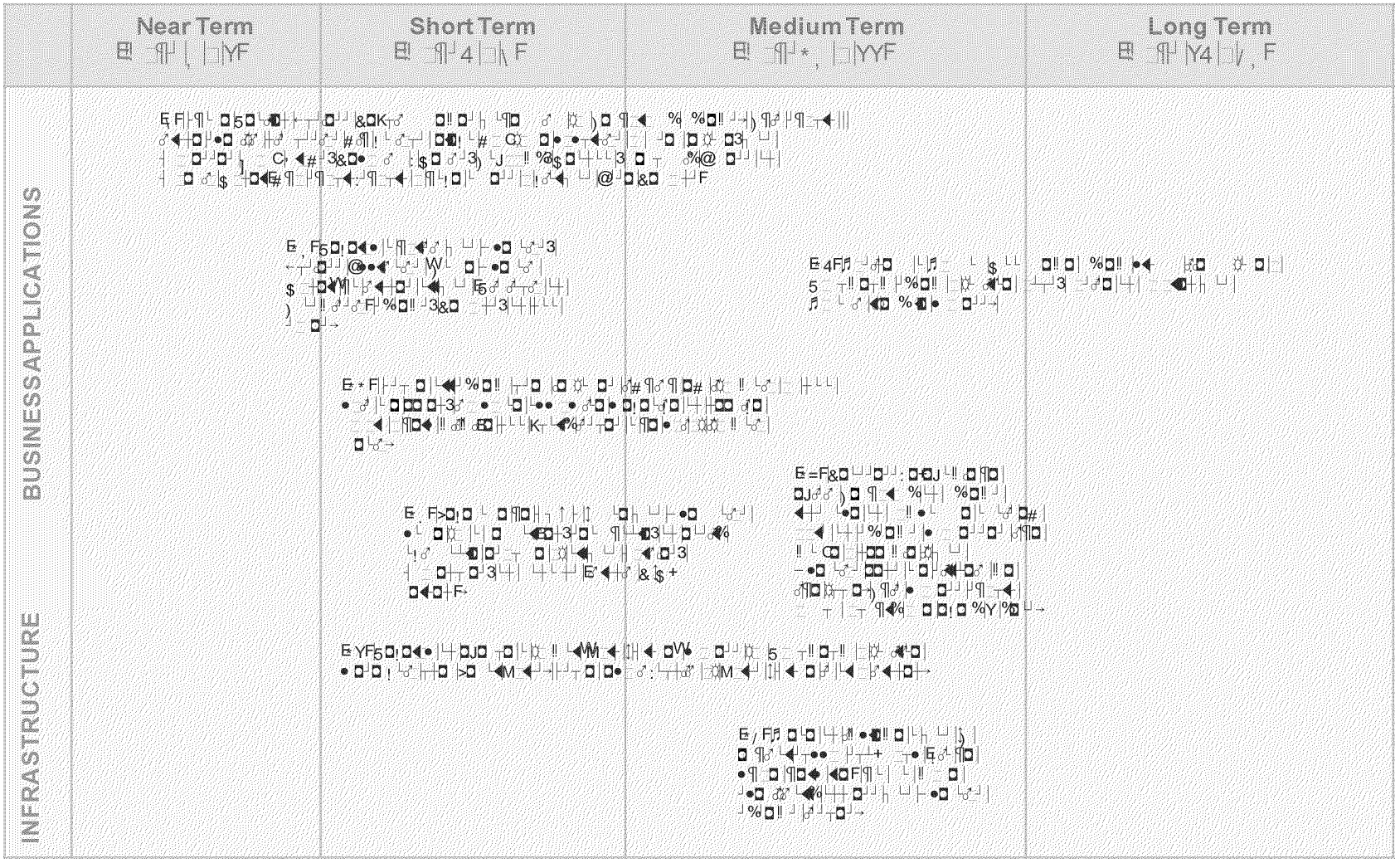


Figure 33: Technology Recommendations Roadmap continued



Roadmap

A Roadmap is intended to apply a time and sequencing dimension against the list of proposed RIM recommendations. Gas Operations can review the recommendations holistically, understanding both the sequencing and prioritization of the recommendations..

The Roadmap demonstrates that achieving "end state" RIM maturity is a multi-year effort. Execution of all the recommendations does not necessarily translate into full RIM maturity, but rather a significant progression towards increased achieving RIM maturity.

Gas Operations should review the recommendations in the Roadmap, modify as appropriate given other initiatives underway, and develop a plan of action. A desire to be aggressive with the RIM timeline must also be balanced with the knowledge that any organization, let alone one already undergoing tremendous change and transition, can only successfully support so much change at once.

It is important that the perceived and demonstrated success (progress, effectiveness, and quality) of these RIM improvement activities are continually reviewed and revised as necessary. New regulations or other organizational changes may require such a revision to the Roadmap. Similar to the overall Assessment report, the Roadmap is also a subjective review conducted in a "snapshot" period of time.

Prioritization Factors

The Roadmap represents a prioritized and sequenced overview of how the proposed recommendations can be executed. To successfully roll-out a new enterprise-wide program or initiative, leaders in the organization must consider all business activities and decide how much change the organization can bear while sustaining an efficient effort and the normal course of business.

The proposed recommendations were prioritized by the assessment team, based on the following considerations:

- Foundational RIM program activities necessary to launch multiple subsequent recommendations and activities
- Activities that can leverage existing initiatives or in-flight projects as accelerators
- Activities with significant impact that increase RIM program maturity
- "Quick win" opportunities to achieve some early milestones, and to build on smaller successes

Overview Roadmap

The following represent sections of the Roadmap recommendations, as grouped by time sequences of Near term (0 to 3 months), Short term (4 to 9 months), Medium term (10 to 33 months) and Long term (34 to 60 months).

Figure 34: Proposed Recommendations over the Next 5 Years

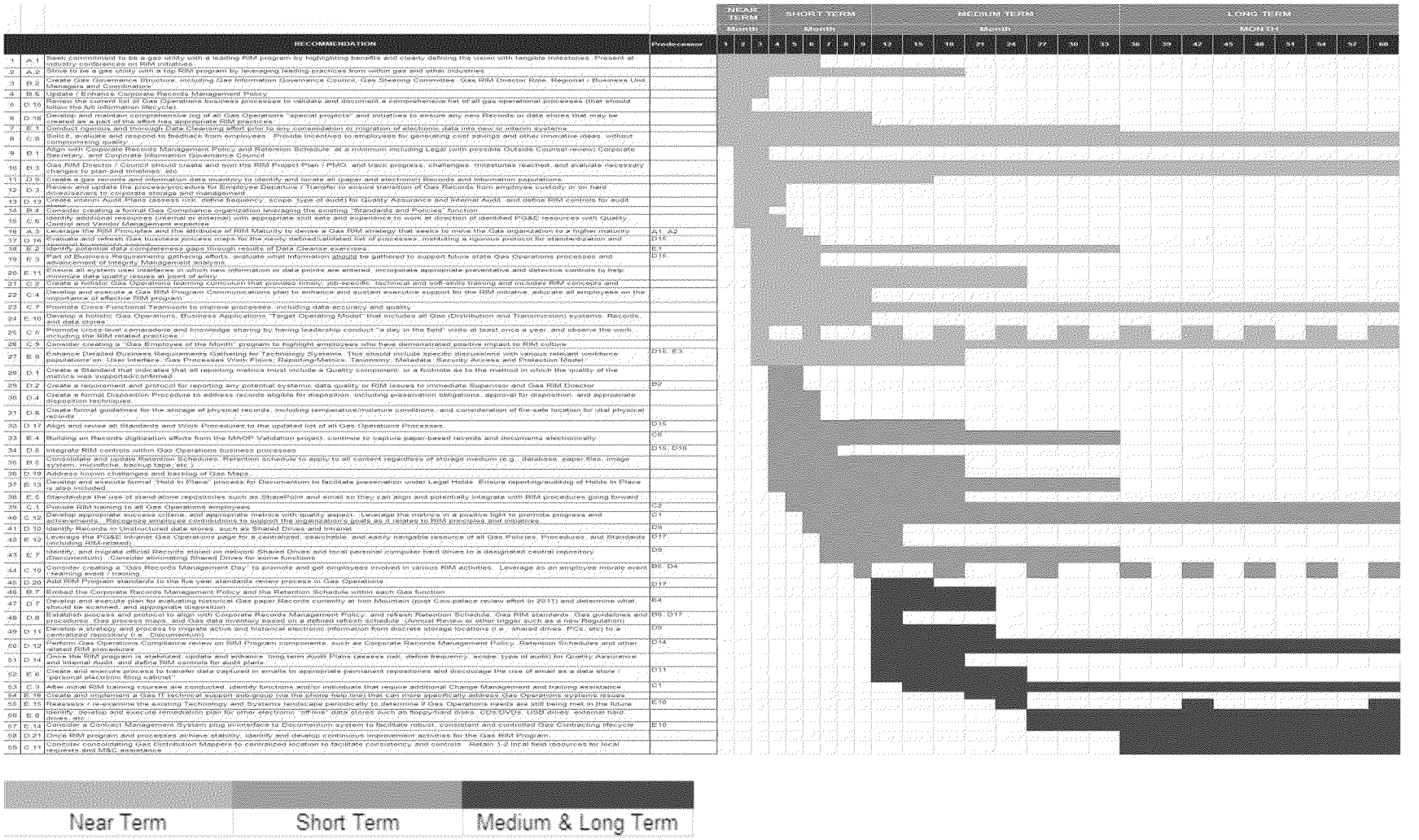


Figure 35: Near Term Recommendations

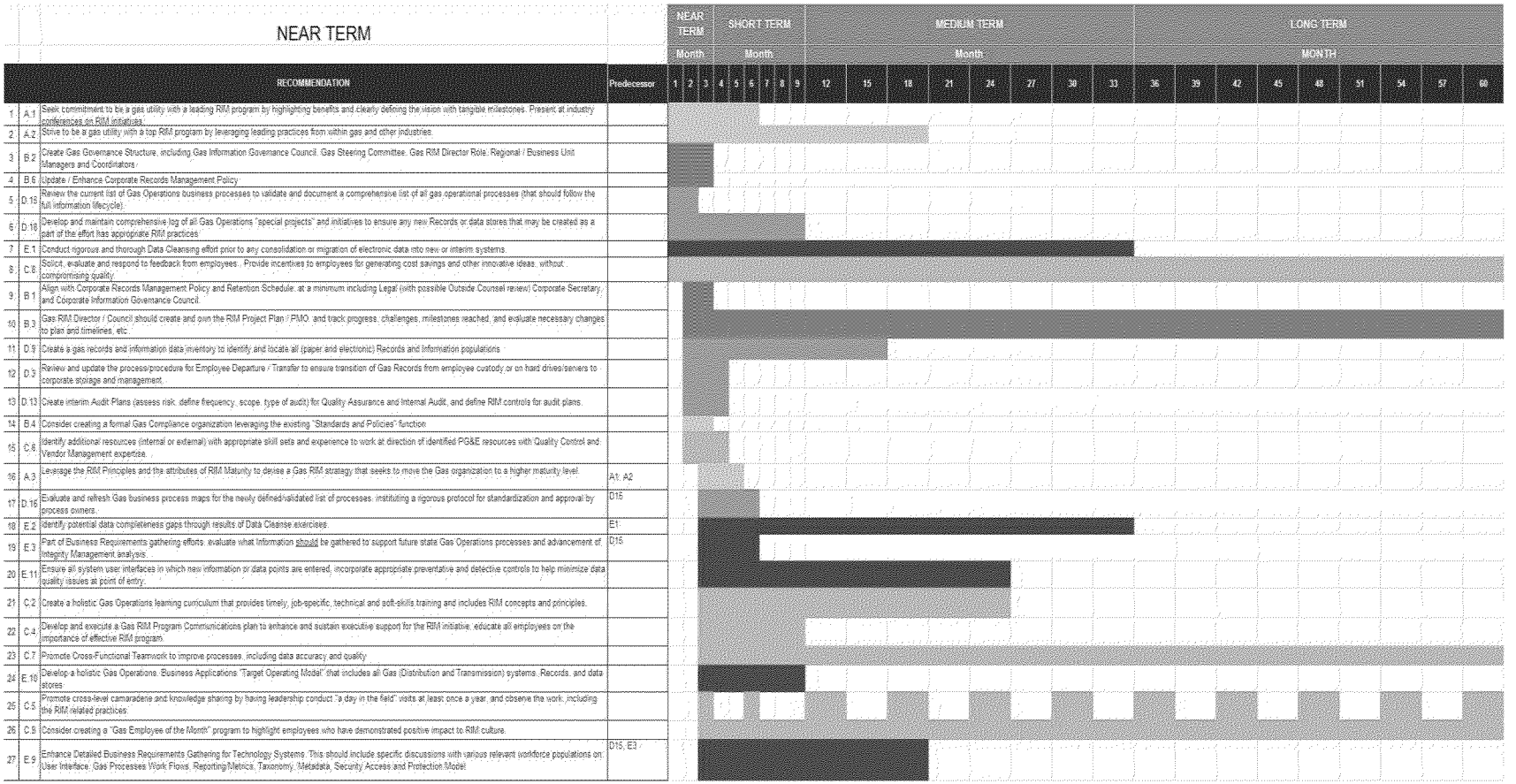


Figure 36: Short Terms Recommendations

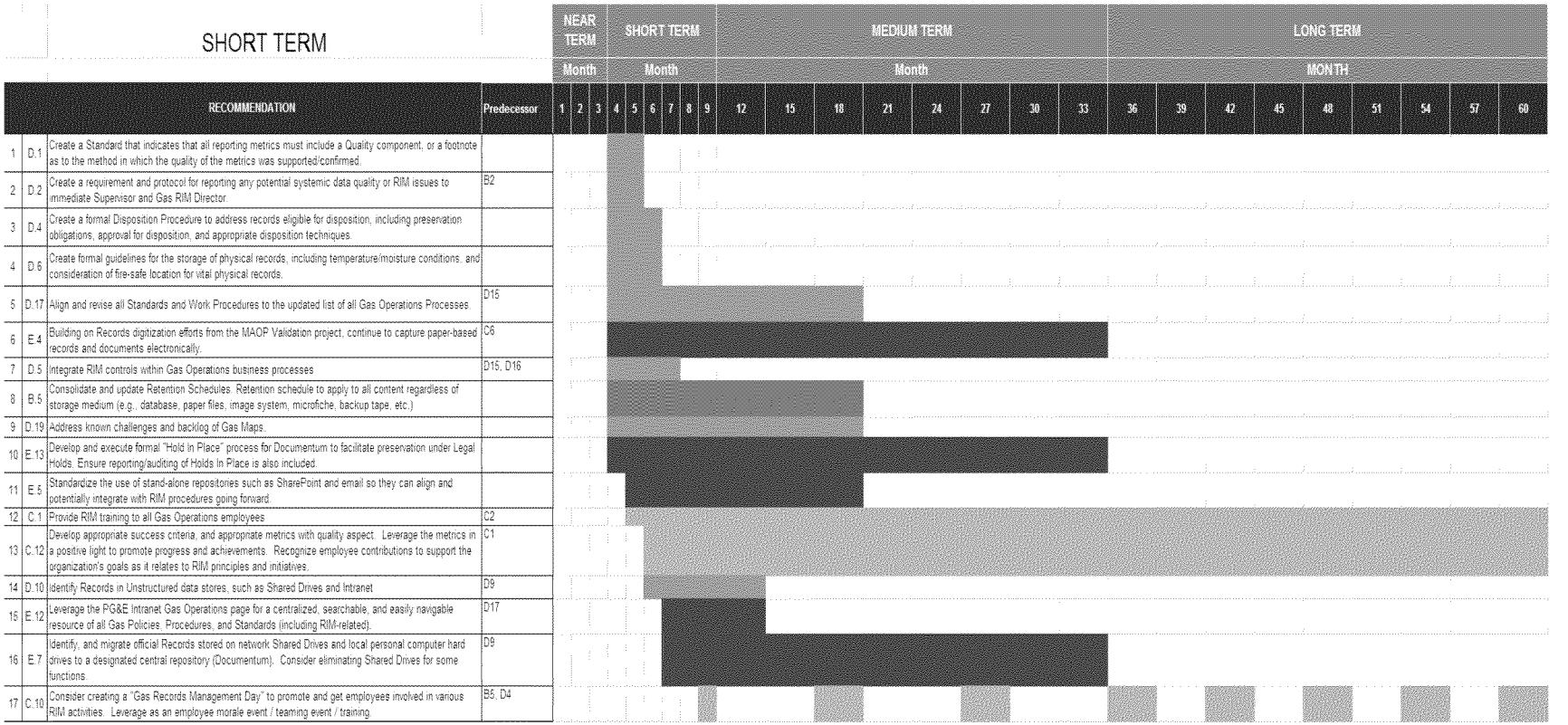
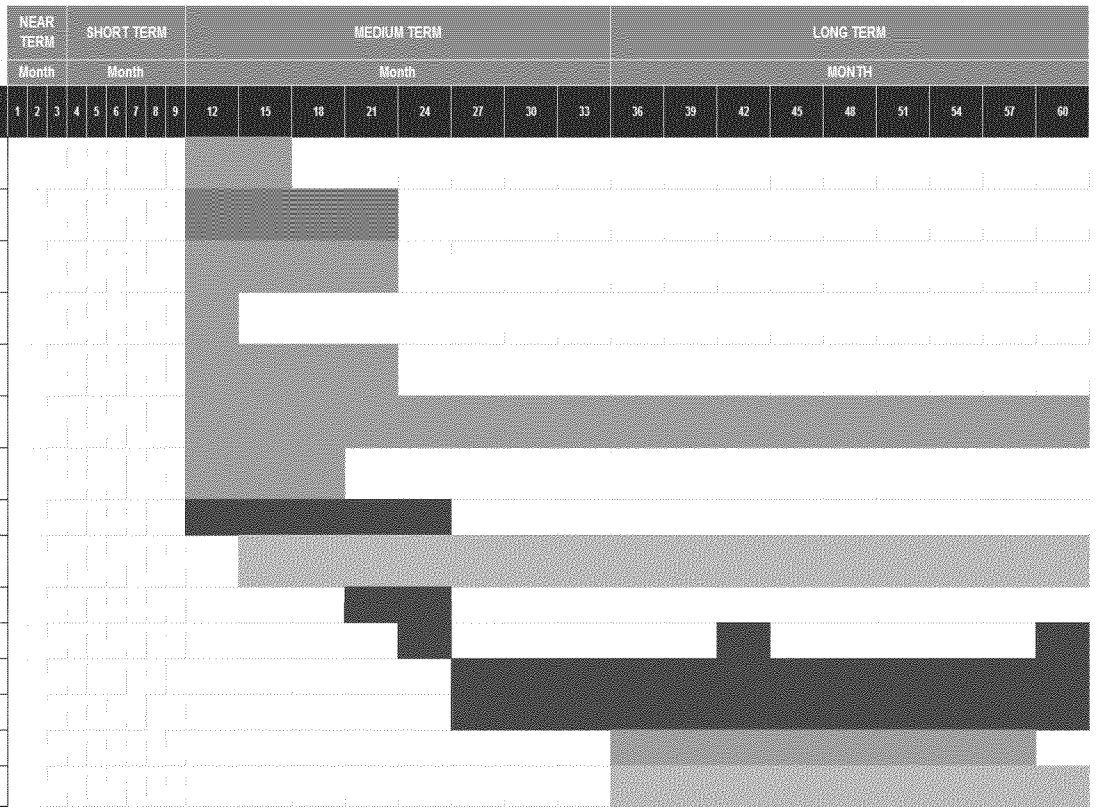


Figure 37: Medium and Long Term Recommendations

MEDIUM & LONG TERM

		RECOMMENDATION	Predecessor
1	D.20	Add RIM Program standards to the five year standards review process in Gas Operations.	D17
2	B.7	Embed the Corporate Records Management Policy and the Retention Schedule within each Gas function	
3	D.7	Develop and execute plan for evaluating historical Gas paper Records currently at Iron Mountain (post Cow-palace review effort in 2011) and determine what should be scanned, and appropriate disposition.	E4
4	D.8	Establish process and protocol to align with Corporate Records Management Policy, and refresh Retention Schedule, Gas RIM standards, Gas guidelines and procedures, Gas process maps, and Gas data inventory based on a defined refresh schedule (suggested Annual Review or other trigger event such as a	B6, D17
5	D.11	Develop a strategy and process to migrate active and historical electronic information from discrete storage locations (i.e., shared drives, PCs, etc) to a centralized repository (i.e., Documentum)	D9
6	D.12	Perform Gas Operations Compliance review on RIM Program components, such as Corporate Records Management Policy, Retention Schedules and other related RIM procedures	D14
7	D.14	Once the RIM program is stabilized, update and enhance long term Audit Plans (assess risk, define frequency, scope, type of audit) for Quality Assurance and Internal Audit, and define RIM controls for audit plans.	
8	E.6	Create and execute process to transfer data captured in emails to appropriate permanent repositories and discourage the use of email as a data store / "personal electronic filing cabinet"	D11
9	C.3	After initial RIM training courses are conducted, identify functions and/or individuals that require additional Change Management and training assistance.	C1
10	E.16	Create and implement a Gas IT technical support sub-group (via the phone help line) that can more specifically address Gas Operations systems issues.	
11	E.15	Reassess / re-examine the existing Technology and Systems landscape periodically to determine if Gas Operations needs are still being met in the future.	E10
12	E.8	Identify, develop and execute remediation plan for other electronic "off-line" data stores such as floppy/hard disks, CDs/DVDs, USB drives, external hard drives, etc.	
13	E.14	Consider a Contract Management System plug in/interface to Documentum system to facilitate robust, consistent and controlled Gas Contracting lifecycle process.	E10
14	D.21	Once RIM program and processes achieve stability, identify and develop continuous improvement activities for the Gas RIM Program.	
16	C.11	Consider consolidating Gas Distribution Mappers to centralized location to facilitate consistency and controls. Retain 1-2 local field resources for local requests and M&C assistance.	



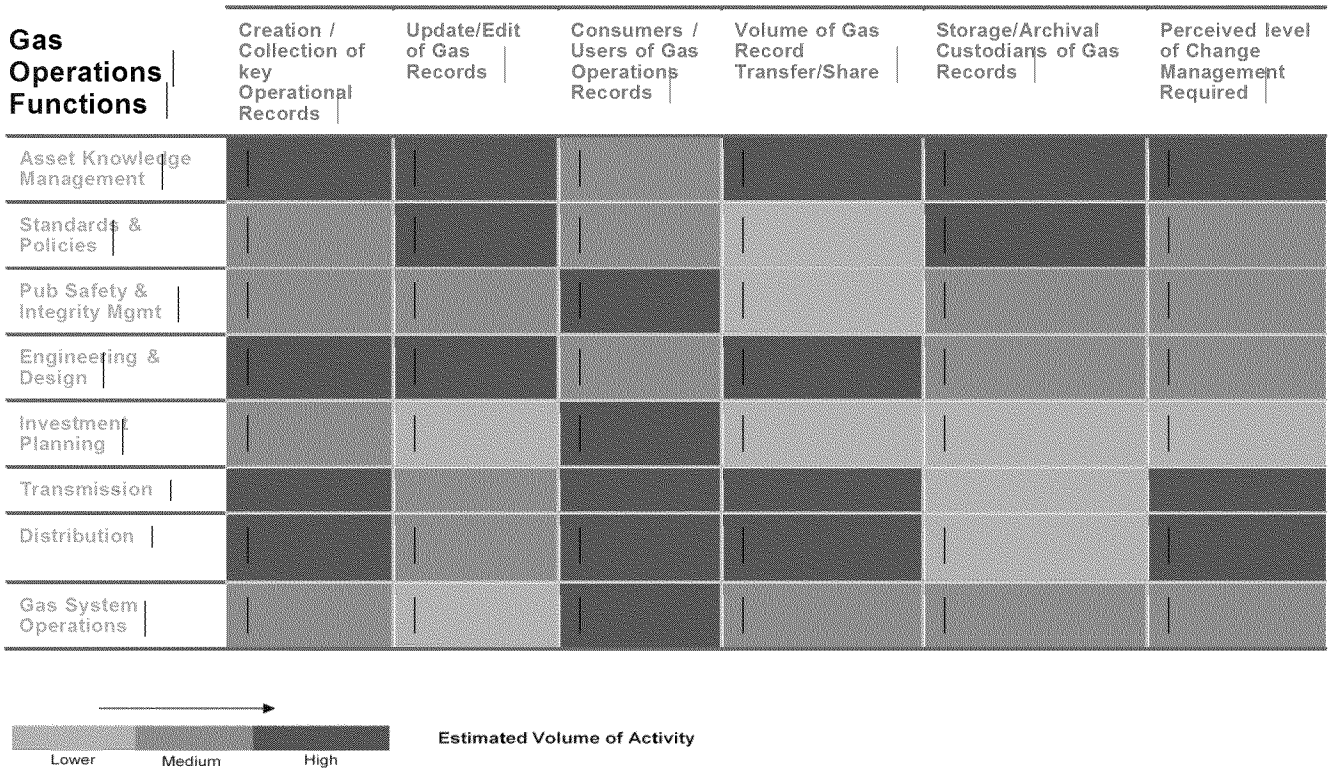
Strategy | Structure | People | Process | Technology

Information Lifecycle Activity

While many critical Gas Operations records are managed under the Asset Knowledge Management function, a significant portion of Gas Operations contributes to and uses the information for operating the business. As such, the perceived level of change management required for each functional group, as depicted in the far right column in the figure below, is believed to be Medium to High for almost all functional groups within Gas Operations.

As shown in the figure below, all functional areas in Gas Operations will play a significant role in the successful advancement of RIM maturity. It will be important for leaders to be supporters of the RIM improvement efforts, and contribute time, resource, and input to achieving the RIM end state goal.

Figure 38: Information Lifecycle Activity



Conclusion and Next Steps

PG&E Gas Operations has committed to improving its Records and Information Management practices. By leveraging this holistic Assessment report across Gas Operations and the corresponding Roadmap of proposed Recommendations, the organization can confidently plan and execute the proposed RIM maturity activities.

Each of the RIM principles of Governance, Availability, Transparency, Reliability, Compliance, Retention and Disposition is critical in the success of achieving a more mature RIM program, just as meaningful engagement by each of the Gas Operations functional groups is essential.

While many companies have challenges with records and information management practices, not all are operating under a similar amount of organizational transition within a culture that is over 100 years in the making. Success will require a multi-year effort with incremental progress expected year over year.

As Gas Operations prepares and begins the process of achieving increased RIM maturity, some suggested immediate tactical steps are listed below:

- Awareness and socialization of this assessment report with Gas Operations leaders, and their staff
- Obtain leadership buy-in for the overall effort and establish formal ownership
- Begin work to establish the Gas Information Governance structure and RIM ownership at all levels
- Validate and compile comprehensive list of all Gas business processes, and prioritize the processes for incorporation of RIM related practices and controls
- Begin data cleanse scoping (data dictionaries for all data stores, evaluate measure(s) of quality and completeness) and validate prioritization
- Planning for Gas Information Inventory to confirm universe and locations of all Gas Records
- Begin planning coordinated awareness campaign with the workforce, and communicate upcoming RIM activities on the horizon

Appendix 1. List of Proposed Recommendations

#	Recommendation
@*	
@:	
@Y	
←*	
←:	
←Y	
←4	
←=	
←7	
←	
→*	
→:	
→Y	
→4	
→=	
→7	
→;	

Appendix 2. Sources of Standards

1. Association for Information and Image Management (AIIM)

For over 60 years, AIIM has been the leading non-profit organization focused on helping users to understand the challenges associated with managing documents, content, records, and business processes. AIIM was founded in 1943 as the National Microfilm Association and later became the **Association for Information and Image Management**.

Information management requires the adoption and adherence to guiding principles that include:

- Information assets are corporate assets. This principle should be acknowledged or agreed upon across the organization otherwise any business case and support for IM will be weak.
- Information must be made available and shared. Of course not all information is open to anyone, but in principle the sharing of information helps the use and exploitation of corporate knowledge
- Information the organization needs to keep is managed and retained corporately. In other words the retention and archiving, of information. If you save a document today, you expect it to be secured and still available to you tomorrow

Information management is a corporate responsibility that needs to be addressed and followed from the upper most senior levels of management to the front line worker. Organizations must be held and must hold its employees accountable to capture, manage, store, share, preserve and deliver information appropriately and responsibly. Part of that responsibility lies in training the organization to become familiar with the policies, processes, technologies and best practices in IM.

2. ARMA International (formerly known as Association of Records Managers and Administrators) Best Practices Reference: International's Cobalt Award - First Round Questions and Best Practices

Question 1: Does your organization have a formal, written records and information management policy statement that requires adherence by all management, staff, and contractors?

Best Practice: A records and information management policy can be one over-arching document or a set of cohesive or linked policy statements. A policy may contain specific references to other key organizational policies, procedures or technical guidelines that have a records management component (e.g. information security policy, e-mail policy, privacy policy, etc.) The policy scope should be comprehensive to ensure all records are identified, and requires all employees to be responsible for managing their records and information.

Question 2: Does your organization have a formal, written policy regarding information security and controls?
Best Practice: Policies and procedures for keeping records must ensure that the records are complete, authentic, and kept in support of all business purposes for as long as they are required. Organizations should have formal policies and guidelines regulating who is permitted access to records and in what circumstances. These may include key card access to locked areas or use of Dutch doors/reference counters. Networks may control access to directories and subdirectories. Systems directors or network administrators must be prepared to swear in court that a system functions in a particular way and they must be able to explain security protections surrounding regular use.

Question 3: Does your organization have a formal, written privacy policy?
Best Practice: It is very important for each organization to have some form of privacy policy that deals with how information of a personal nature is protected and that is in tune with the regulatory environment of the organization (complies with existing legislation or corporate expectations)

Question 4: Does your organization have a formally approved business continuity plan?
Best Practice: Business continuity plans are used by organizations to prepare for future incidents that could jeopardize the organizations core mission and its long term health. Backup methods, especially for each vital records series should be employed to ensure access to information in case of a disaster or business disruption. This could be anything from systems back-up, to microfilm to hard copy duplication or dispersal

Question 5: Does your organization have a formal, written policy for handling litigation holds?
Best Practice: Records pertaining to pending or actual litigation or investigation must not be destroyed. Destruction of such records could be interpreted as selective destruction of material that would hurt the organization's legal position in court proceedings

Question 6: Does your employee manual or other policy or procedure include a statement from the organization's top executive about the importance of records and information management?
Best Practice: It should be clear to all who read the policy that the proper management of the organization's records is a mandate of the highest importance in the overall success of the organization. A records keeping program includes people, processes, policies and resources, including automation. Programs may have a number of software applications, classification plans and procedures. However, complete integration is desirable for overall program effectiveness. Successful records management programs and systems are those that are endorsed and supported by executive management.

Question 7: Does your organization manage e-mail based on its content?
Best Practice: The policy scope should be comprehensive to ensure all records are identified. The storage format (e.g., e-mail, audio tape, video tape, instant messaging, microfilm, etc.) is irrelevant to the retention of records. Records retention periods should be based on the content of the information, not the format

Question 8: Does your organization provide ALL employees with formal training on their roles and responsibilities in managing records and information?

Best Practice: The organization should ensure the policies are distributed to all employees. It may be desirable to have key stakeholders specifically acknowledge that they received the policy and understand their responsibilities. New employee orientation is a good time to ensure that all staff are aware of the records offices, the records classification plan and the importance of records-keeping to the health of the organization. Periodic records and information management training of all employees is critical to ensure the success of the records management program. Training programs may consist of in-house seminars, workshops, on-line web based education or even simple review of professional development needs.

Question 9: Are all RIM staff trained on current policies, procedures, practices, and systems?
Best Practice: As part of each RIM staff performance appraisals, records competencies should be evaluated against the needs of each job. Where deficiencies or gaps exist, opportunities should be made available to staff members (e.g. University or College Courses, Professional Seminars, Access to Internet Research, and/or Web-based Education).

Question 10: Does your organization regularly backup its systems and data?
Best Practice: Organizations should make a copy of their data residing on primary, online storage devices at regular, scheduled intervals. The primary purpose of data backup is to provide the capability of recovering critical data when online processing is interrupted or when data loss occurs

Question 11: Has your organization assembled an information management compliance team? That includes RIM and IT stakeholders?
Best Practice: Most businesses recordkeeping systems have migrated from paper to digital environments. RIM must be part of a multidisciplinary team addressing electronic records issues that includes IT, legal, compliance, and other stakeholders. RIM professionals must be proactive in demonstrating the value of RIM to the multidisciplinary team.

Question 12: Does your organization rely on back-up tapes to retain and/or produce data for litigation?
Best Practice: Back-up tapes are not designed to be an archival mechanism. They should be used purely as a disaster recovery tool in the event that a server fails. A well-designed archival system should be used as the data pool for litigation instead of tapes.

3. CGOC: Compliance, Governance and Oversight Council - Information Management Process Maturity Model

A forum of over 1600 legal, IT, records and information management professionals. CGOC conducts primary research, has dedicated practice groups on challenging topics, and hosts meetings throughout the U.S. and Europe where practice leaders convene to discuss discovery, retention, privacy and governance. Established in 2004, it fills the critical practitioners' gap between EDRM and The Sedona Conference.

- Establish Retention Program, Catalog Applicable Laws
- Manage Departmental Information Management Procedures
- Routine Disposal
- Disposition Legacy Data
- Information Policy Audit

4. US DOD (Department of Defense) Directive 5015.2 – Records Management Program

- Manage all records in any media used for creation or storage, in accordance with approved records schedules.
- Procedures applicable to the creation, maintenance, use, preservation, and disposal of all records, in any storage medium
- Establish and maintain a capability to test and evaluate automated records management information systems against legal, Agency-wide, and user requirements.
- Determine commonality of information in functional records management processes across the DoD Components to ensure information is available
- Evaluate, improve, implement, and execute DoD records management policies and procedures to ensure that functional management, control, oversight, and leadership are demonstrated during the life-cycle management of DoD records.
- Establish and maintain the DoD Records Management Program at an organizational level of sufficient authority to ensure that the objectives and policies of this Directive and Chapters 29, 31, 33, and 35 of 44 U.S.C. (reference (d)) are efficiently and effectively implemented; and designate an individual to administer the DoD Records Management Program.
- Advise all employees at least annually:
  - Of their responsibility to create and maintain records.
  - How to identify records and distinguish them from non-record materials.
  - Not to remove records from Government custody or destroy them, except as required or allowed under authorized record schedules.
  - How to inform appropriate officials of any actual, impending, or threatened unlawful removal, alteration, or destruction of Federal records.
  - To identify personal papers and maintain them separately from organizational records
  - Ensure prompt retirement or disposal of temporary records and the timely transfer of permanently valuable records under authorized record schedules.
  - Periodically evaluate the Components' compliance with the DoD Records Management Program and 36 CFR Chapter XII (reference (b)).
  - Advise the ASD (C3I) of records management issues that could have broad implications across the Department of Defense or between the Department of Defense and other Government Agencies, and fully cooperate with the ASD (C3I) in resolving these issues.
  - Safeguard all personal data within records, in accordance with DoD
  -

5. GARP: Generally Accepted Recordkeeping Principles, published by ARMA

- Rolled out by Association of Records Managers and Administrators (ARMA) in fall, 2009
- Provides framework with suggested components for a leading Records and Information Management (RIM) program
- Aligns specific RIM program components to program maturity indicators, e.g., for each principle there is a level of maturity and a description of what that level looks like within organizations
- Companies can measure RIM program against maturity model levels: sub-standard, in-development, essential, proactive, transformational

Accountability	**Integrity**	**Compliance**	**Retention**
Transparency	**Protection**	**Availability**	**Disposition**

6. ISO (International Standards Organization) 15489; Information and Documentation - Records Management

Characteristics of a Record

- Authenticity (a record that can be proven - what it purports to be; created/sent by the person purported to have done so; created/sent at the time purported)
- Reliability (contents can be trusted as full and accurate)
- Integrity (protected against unauthorized alteration; authorized annotation, addition or deletion is explicitly indicated and traceable)
- Usability (the record can be located, retrieved, presented and interpreted)

Responsibility:
Records management responsibilities and authorities should be defined and assigned, and promulgated throughout the organization so that, where a specific need to create and capture records is identified, it should be clear who is responsible for taking the necessary action. These responsibilities should be assigned to all employees of the organization, including records managers, allied information professionals, executives, business unit managers, systems administrators and others who create records as part of their work, and should be reflected in job descriptions and similar statements. Specific leadership responsibility and accountability for records management should be assigned to a person with appropriate authority within the organization. Designations of the responsible individuals may be assigned by law.

Compliance:
Records systems should be managed in compliance with all requirements arising from current business, the regulatory environment and community expectations in which the organization operates. Personnel creating records should understand how these requirements affect the business actions they perform. Records system compliance with such requirements should be regularly assessed and the records of these assessments retained for evidential purposes.

Storage & Handling:

Records should be stored on media that ensure their usability, reliability, authenticity and preservation for as long as they are needed (see 8.2). Issues relating to the maintenance, handling and storage of records arise throughout their existence, not only when they become inactive.

Retention and Disposition:
Records systems should be capable of facilitating and implementing decisions on the retention or disposition of records. It should be possible for these decisions to be made at any time in the existence of records, including during the design stage of records systems. It should also be possible, where appropriate, for disposition to be activated automatically. Systems should provide audit trails or other methods to track completed disposition actions.

7. NARA: US National Archives & Records Administration Guidance and Regulations

1220.3 What standards are used as guidelines for Subchapter B? These regulations are in conformance with ISO 15489-1:2001

1220.30 What are an agency's records management responsibilities?

1220.32 What records management principles must agencies implement?
Agencies must create and maintain authentic, reliable, and usable records and ensure that they remain so for the length of their authorized retention period. A comprehensive records management program provides policies and procedures for ensuring that:
(a) Records documenting agency business are created or captured;
(b) Records are organized and maintained to facilitate their use and ensure integrity throughout their authorized retention periods;
(c) Records are available when needed, where needed, and in a usable format to conduct agency business;
(d) Legal and regulatory requirements, relevant standards, and agency policies are followed;
(e) Records, regardless of format, are protected in a safe and secure environment and removal or destruction is carried out only as authorized in records schedules; and
(f) Continuity of operations is supported by a vital records program (see part 1223 of this subchapter

1220.34 - What must an agency do to carry out its records management responsibilities?
(a) Assign records management responsibility to a person and office with appropriate authority within the agency to coordinate and oversee implementation of the agency comprehensive records management program principles in § 1220.32;
(b) Advise NARA and agency managers of the name(s) of the individual(s) assigned operational responsibility for the agency RIM program
(c) Issue a directive(s) establishing program objectives, responsibilities, and authorities for the creation, maintenance, and disposition of records.
(d) Assign records management responsibilities in each program (mission) and administrative area to ensure incorporation of recordkeeping requirements and records maintenance, storage, and disposition practices into agency programs, processes, systems, and procedures;
(e) Integrate records management and archival requirements into the design, development, and implementation of electronic information systems as specified in § 1236.12 of this subchapter;
(f) Provide guidance and training to all agency personnel on their records management responsibilities, including identification of Federal records, in all formats and media;

(g) Develop records schedules for all records created and received by the agency and obtain NARA approval of the schedules prior to implementation, in accordance with 36 CFR parts 1225 and 1226 of this subchapter;
(h) Comply with applicable policies, procedures, and standards relating to records management and recordkeeping requirements issued by the Office of Management and Budget, NARA, GSA, or other agencies, as appropriate (see § 1222.22 of this subchapter);

(i) Institute controls ensuring that all records, regardless of format or medium, are properly organized, classified or indexed, and described, and made available for use by all appropriate agency staff; and
(j) Conduct formal evaluations to measure the effectiveness of records management programs and practices, and to ensure that they comply with NARA regulations in this subchapter.

8. PHMSA (Pipeline and Hazardous Materials Safety Administration) Advisory Bulletin ADB 11-01, Jan 4, 2011

Pipeline Safety: Establishing Maximum Allowable Operating Pressure or Maximum Operating Pressure Using Record Evidence, and Integrity Management Risk Identification, Assessment, Prevention, and Mitigation. "These records shall be traceable, verifiable, and complete."

9. Title 49 C.F.R. Part 192, Subpart O, Section 517

Transportation of Natural and Other Gas by Pipeline: Minimal Federal Safety Standards (Records). Each operator shall make, and retain for the useful life of the pipeline, a record of each test performed under §§192.505 and 192.507.

10. PAS 55: Optimal Management of Physical Assets Records Guidelines – (British Standards Institution; Institute of Asset Management "IAM")

Optimized management of physical infrastructure assets (Part 2, Guidelines for the Application of PAS-55-1). Defines:

- Civil Penalties for violation of the law
- The organization shall establish and maintain records as necessary to demonstrate conformance to the requirements of its asset management system
- Records shall be legible, identifiable and traceable

11. Sedona Guidelines for Managing Information & Records

1. An organization should have reasonable policies and procedures for managing its information and records.

2. An organization's information and records management policies and procedures should be realistic, practical and tailored to the circumstances of the organization.

3. An organization need not retain all electronic information ever generated or received.

4. An organization adopting an information and records management policy should also develop procedures that address the creation, identification, retention, retrieval and ultimate disposition or destruction of information and records.

5. An organization's policies and procedures must mandate the suspension of ordinary destruction practices and procedures as necessary to comply with preservation obligations related to actual or reasonably anticipated litigation, government investigation or audit.

12. AGA Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011

Section 60118(e) OPERATOR ASSISTANCE IN INVESTIGATIONS.—
"(1) ASSISTANCE AND ACCESS.—If the Secretary or the National Transportation Safety Board investigates an accident involving a pipeline facility, the operator of the facility shall—
"(A) make available to the Secretary or the Board all records and information that in any way pertain to the accident (including integrity management plans and test results);

INFORMATION TO EMERGENCY RESPONSE AGENCIES.—
(1) GUIDANCE.—Not later than 18 months after the date of enactment of this Act, the Secretary shall issue guidance to owners and operators of pipeline facilities on the importance of providing system-specific information about their pipeline facilities to emergency response agencies of the communities and jurisdictions in which those facilities are located.

Appendix 3. RIM related documents/guidelines reviewed

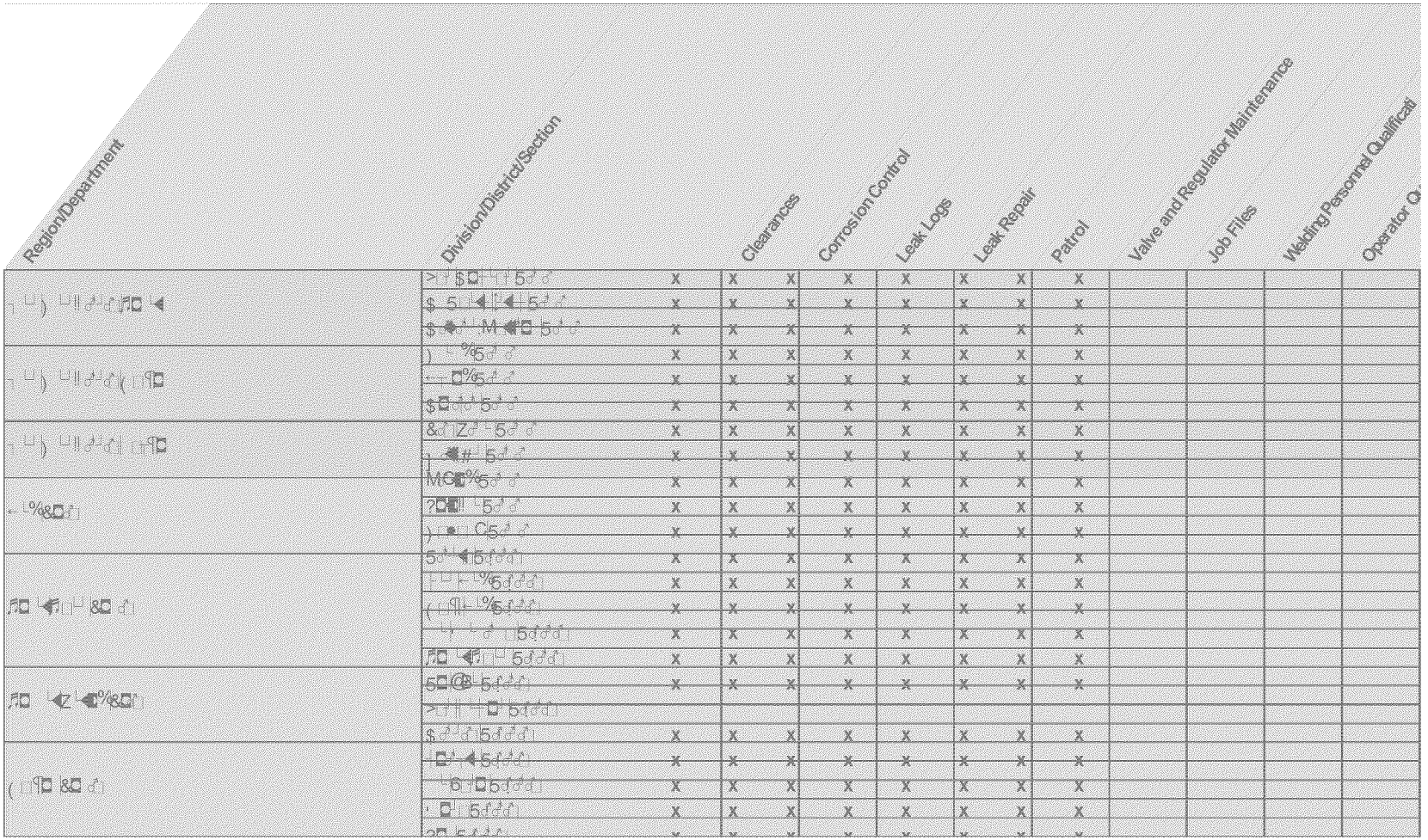
Corporate RIM Policy has been created and is published on the intranet, which includes but is not limited to the following:

1. GOV-7001S - Retention and Disposal Standard
2. GOV-7001P-01 Shipping Records to the Records Center
3. GOV-7001P-02 Requesting Records from the Records Center
4. Classification and Legal Protection of Information, USP 8
5. Protection of Computer Resources and Electronic Information, USP 9
6. Service of Legal Papers, USP 15
7. PG&E Guide to Record Retention
8. Protecting Electronic Confidential Information
9. Multiple Gas Transmission and Distribution procedures contain recordkeeping instructions

Appendix 4. RIM Audit Reference Information

Sample Audit Plan framework.

Audit/Review	Department/ Org	Type	Frequency	Responsible Parties	Report To



Appendix 5. Sample Records Mapping

Below is an illustration of records mapped throughout Gas Operations. Mappings such as these as well as mappings of relevant regulations and procedures to the organization facilitate assessment of risk and audit planning. By leveraging this effort that has already mapped key Gas Transmission Pipeline Records to locations, PG&E can successfully and proactively plan for their digitization effort, as well as ensure that these Record types are specifically called out on a retention schedule. In addition, this mapping can potentially be incorporated into the current effort of Documentum taxonomy development.

Region/Department	Division/District/Section	Clearances	Corrosion Control	Leak Logs	Leak Repair	Patrol	Valve and Regulator Maintenance	Job Files	Welding Personnel Qualificati	Operator Q
[illegible]	[illegible]	X	X	X	X	X	X	X	X	
	[illegible]	X	X	X	X	X	X	X	X	
	[illegible]	X	X	X	X	X	X	X	X	
[illegible]	[illegible]	X	X	X	X	X	X	X	X	
	[illegible]	X	X	X	X	X	X	X	X	
	[illegible]	X	X	X	X	X	X	X	X	
[illegible]	[illegible]	X	X	X	X	X	X	X	X	
	[illegible]	X	X	X	X	X	X	X	X	
[illegible]	[illegible]	X	X	X	X	X	X	X	X	
	[illegible]	X	X	X	X	X	X	X	X	
	[illegible]	X	X	X	X	X	X	X	X	
[illegible]	[illegible]	X	X	X	X	X	X	X	X	
	[illegible]	X	X	X	X	X	X	X	X	
	[illegible]	X	X	X	X	X	X	X	X	
	[illegible]	X	X	X	X	X	X	X	X	
	[illegible]	X	X	X	X	X	X	X	X	
[illegible]	[illegible]	X	X	X	X	X	X	X	X	
	[illegible]									
	[illegible]	X	X	X	X	X	X	X	X	
[illegible]	[illegible]	X	X	X	X	X	X	X	X	
	[illegible]	X	X	X	X	X	X	X	X	
	[illegible]	X	X	X	X	X	X	X	X	
	[illegible]	X	X	X	X	X	X	X	X	

Appendix 6. RIM Internal Audit Planning Considerations Sample

- Description of Audit
- RIM Objective
- Scope – RIM process
- Relevant RIM policies, standards, regulations
- For physical paper format - within a sample, checking for the existence of what should be present and retained and what should not be present according to retention schedule and other guidelines
- For Electronic Records - perform similar check of what records should be present and retained and what should not be present according to retention schedule and other guidelines. Additionally, audit plan should consider adding on a "traceability" review - meaning review of the audit trail of information and tracking as to how the record it got there and when, if it was edited, when last updated, etc
- Review that records, whether physical paper or electronic files, are stored in appropriate and approved locations based on that record type.
- Testing ability from a timing, completeness, and quality aspect to meet a mock-regulatory or legal request. Include Chain of Custody tracking to the extent records identified and pulled/collected as a part of the audit.
- Forensic Data Analytics to check quality of data via alternative systematic views and queries into the data other than what are standard metrics, and completeness.

Appendix 7. Typical Audit Findings Report Categories Sample

- Title
- Date of Audit
- Audit Performed By
- Scope and Methodology
  - Function/Role of Employees involved in Audit
  - Business Process
- Objectives
- Location/Record Type
- Distribution
- Sample
- Summary Findings
- Consequence/exposure
- Recommendations and Corrective Actions
- Validation of Findings
- Responsibility/accountability
- Action Plan and Date
- Post Corrective Actions Testing and/or Validation

Appendix 8. List of interviewees

Name	Functional Area	Interview Date
Gas Transmission Mappers	Walnut Creek - Gas Transmission Mapping	Nov 21, 2011
Gas Distribution Mappers	Stockton - Gas Distribution Mappers	Nov 29, 2011
Gas Distribution Mappers	Merced - Gas Distribution Mappers	Nov 29, 2011
Gas Distribution Mappers	Fresno - Gas Distribution Mappers	Nov 30, 2011
[redacted]	Emeryville - Gas Records	Nov 30, 2011
[redacted]	Emeryville - Gas Records	Nov 30, 2011
Gas Distribution Mappers	Bakersfield - Gas Distribution Mappers	Dec 1, 2011
Gas Distribution Mappers	Salinas - Gas Distribution Mappers	Dec 1, 2011
Gas Distribution Mappers	Concord - Gas Distribution Mappers	Dec 5, 2011
Gas Distribution Mappers	Hayward - Gas Distribution Mappers	Dec 6, 2011
Gas Distribution Mappers	Oakland - Gas Distribution Mappers	Dec 6, 2011
Karen Roth	Codes & Standards	Dec 6, 2011
[redacted]	Regulatory Support	Dec 6, 2011
[redacted]	Regulatory Support	Dec 6, 2011
Gas Distribution Mappers	San Francisco - Gas Distribution Mappers	Dec 7, 2011
Gas Distribution Mappers	San Carlos - Gas Distribution Mappers	Dec 7, 2011
[redacted]	Human Resources	Dec 7, 2011
[redacted]	Human Resources	Dec 7, 2011
Gas Distribution Mappers	San Jose - Gas Distribution Mappers	Dec 8, 2011
Bill Gibson	Regulatory Compliance & Support	Dec 12, 2011
[redacted]	Regulatory Compliance & Support	Dec 12, 2011
Gas Distribution Mappers	Ukiah - Gas Distribution Mappers	Dec 13, 2011
Joel Dickson	Emergency preparedness/public awareness	Dec 13, 2011
[redacted]	Asset Risk Management / PAS 55	Dec 13, 2011
Gas Distribution Mappers	Santa Rosa - Gas Distribution Mappers	Dec 13, 2011
Trista Berkovitz	System Planning	Dec 13, 2011
Prateek Chakravarty	System Planning	Dec 13, 2011
Gas Distribution Mappers	San Rafael - Gas Distribution Mappers	Dec 14, 2011
Sara Peralta	Integrity Management	Dec 15, 2011
[redacted]	Integrity Management	Dec 15, 2011
[redacted]	Integrity Management	Dec 15, 2011
[redacted]	Integrity Management	Dec 15, 2011
[redacted]	Field Engineers	Dec 15, 2011
[redacted]	Field Engineers	Dec 15, 2011
Bob Suehiro	GC Distribution	Dec 19, 2011
[redacted]	Manager of Estimating	Dec 19, 2011
[redacted]	Mgr, Clerical, Estimating & Service Planning Performance	Dec 19, 2011
[redacted]	Mgr for the RMC clerical	Dec 19, 2011
Jodie Kubota	M&C	Dec 19, 2011

[redacted]	M&C	Dec 19, 2011
Vince Franceshi	Exponent Consultant	Dec 19, 2011
[redacted]	OQ Administrators	Dec 20, 2011
Lise Jordan	Legal	Jan 9, 2012
Courtney Linn	Legal - (Orrick Herrington & Sutcliffe)	Jan 9, 2012
Steve Garber	Legal	Jan 9, 2012
Chuck Lewis	Legal	Jan 9, 2012
Mel Christopher	Gas System Operations Senior Director	Jan 9, 2012
[redacted]	Station Clerk/Maintenance Assistant	Jan 9, 2012
Gas Distribution Mappers	Eureka - Gas Distribution Mappers	Jan 10, 2012
[redacted]	Estimator	Jan 10, 2012
Jeff Gravelle	Local Distribution Engineers	Jan 10, 2012
[redacted]	Estimating Supervisor	Jan 10, 2012
[redacted]	Methods and Procedures	Jan 10, 2012
Gas Distribution Mappers	Chico - Gas Distribution Mappers	Jan 11, 2012
[redacted]	Station Clerk/Maintenance Assistant	Jan 11, 2012
[redacted]	Station Engineers	Jan 11, 2012
[redacted]	Drawings Diablo	Jan 11, 2012
[redacted]	Document Services Manager Diablo	Jan 11, 2012
[redacted]	Pipeline Engineers	Jan 11, 2012
[redacted]	PSEP Manager	Jan 11, 2012
[redacted]	Pipeline Engineer Manager	Jan 11, 2012
Gas Distribution Mappers	Auburn - Gas Distribution Mappers	Jan 12, 2012
Gas Distribution Mappers	Sacramento - Gas Distribution Mappers	Jan 12, 2012
[redacted]	Manager of Customer Service Delivery	Jan 12, 2012
Roland Trevino	Pub. Safety and Integrity Mgmt Senior Director	Jan 13, 2012
Sara Peralta	QA/QC Director	Jan 13, 2012
[redacted]	Financial Analyst	Jan 17, 2012
[redacted]	Sr. Consulting Engineer	Jan 17, 2012
Ben Campbell	Hydrostatic Test Engineering Director	Jan 17, 2012
[redacted]	CNG/LNG Ops Supervisor	Jan 17, 2012
Matt Storment	Work Methods Implementation Director	Jan 17, 2012
[redacted]	Supervisor Gas Distribution Engineer	Jan 17, 2012
[redacted]	E&P Manager	Jan 18, 2012
Rick Kennedy	GSR Field Services - North Director	Jan 18, 2012
Ruben Ramirez	GSR Field Services - South Director	Jan 18, 2012
Dave Slack	Process Safety Director	Jan 19, 2012
Pam Johnson	Public Safety	Jan 19, 2012
[redacted]	Public Safety	Jan 19, 2012
Chris Vana	ISTS	Jan 20, 2012
Brian Daubin	Asset Knowledge Management Director	Jan 23, 2012
[redacted]	Metrics Discussion	Jan 24, 2012
[redacted]	Supervisor Environmental	Jan 24, 2012
[redacted]	SCADA Support Manager	Jan 24, 2012
Leak Surveyors	[redacted], [redacted], and [redacted]	Jan 25, 2012
[redacted]	Regulatory Support	Jan 25, 2012
Sumeet Singh	Asset Knowledge Management Senior Director	Jan 26, 2012
[redacted]	GSR Field Services	Jan 27, 2012

[redacted]	Records Retention Center	Feb 9, 2012
Jane Yura	Standards and Policies VP	Feb 17, 2012
Bill Hayes	Gas Distribution VP	Feb 17, 2012
[redacted]	Internal Audit	Feb 17, 2012
Kirk Johnson	Gas Transmission VP	Feb 21, 2012

Appendix 9. Mapping Office visits

- Auburn - 1/12/2012
- Bakersfield - 12/1/2011
- Chico - 1/11/2012
- Concord - 12/5/2011
- Eureka - 1/10/2012
- Fresno - 11/30/2011
- Hayward - 12/6/2011
- Merced - 11/29/2011
- Oakland - 12/6/2011
- Sacramento - 1/12/2012
- Salinas - 12/1/2011
- San Carlos - 12/7/2011
- San Francisco - 12/7/2011
- San Jose - 12/8/2011
- San Rafael - 12/14/2011
- Santa Rosa - 12/13/2011
- Stockton - 11/29/2011
- Ukiah - 12/13/2011
- Walnut Creek - 11/21/2011

Appendix 10. Select Excerpts from RIM Standard/Guidelines

The Sedona Guidelines

Strategy - An organization should assess the operational and strategic value of its information and records in developing an information and records management program.

Structure - An organization should define roles and responsibilities for program direction and administration within its information and records management policies.

People - The Sedona Guidelines for Managing Information and Records in the Electronic Age, Guideline 4(d), also states that "An organization should guide employees regarding how to identify and maintain information that has a business purpose or is required to be maintained by law or regulation."

People - Guideline 4(g) of The Sedona Guidelines for Managing Information and Records in the Electronic Age states: "An organization should recognize the importance of employee education concerning its information and records management program, policies and procedures."

Process - Sedona Guideline 4(h) notes that an organization should consider completing periodic compliance reviews of its information and records management program, policies and procedures.

Process - The Sedona Guidelines recommend that these policies and procedures "should be realistic, practical and tailored to the circumstances of the organization." (See Sedona Guideline Number 2) According to Sedona Guidelines 4(a) and 4(b), information and records management policies and practices should be documented and put into practice.

Process - Policies and procedures should be revised as necessary in response to changes in workforce or organizational structure, business practices, legal or regulatory requirements and technology.

Technology - Sedona Guideline 4(f) states "An organization should consider the impact of technology (including potential benefits) on the creation, retention and destruction of information and records.

ISO 15489

Strategy - "Executives are responsible for supporting the application of records management policies throughout the organization."

Structure - "Organizations should define and document a policy for records management."

Structure - "...Responsibilities should be assigned to all employees of the organization..."

People - "Programmes for training in requirements for records management and specific practices should encompass the roles and responsibilities of, and be addressed to, all members of management, employees, contractors, volunteers and any other individuals responsible for the whole or part of a business activity of an organization..."

Process - "...organizations should institute and carry out a comprehensive records management programme which includes...k) identifying and evaluating opportunities for improving the effectiveness, efficiency or quality of its processes, decisions, and actions that could result from better records creation or management."

Technology - "...organizations should institute and carry out a comprehensive records management programme which includes...b) deciding in what form and structure records should be created and captured, and the technologies to be used..."

Appendix 11. Glossary

AGA Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011	Increases civil penalties on an oil, natural gas, or hazardous liquid pipeline facility operator for failure to: (1) mark accurately the location of pipeline facilities in the vicinity of a demolition, excavation, tunneling, or construction; (2) use first a one-call notification system to establish the location of underground facilities in such an area; or (3) comply with safety standards and related requirements, including for inspections, maintenance, risk analysis, and adoption of an integrity management program.
AIIM (Association for Information and Image Management)	Founded in 1943 as a global community of information professionals providing education, research and certification that information professionals need to manage and share information assets in an era of mobile, social, cloud and big data.
Bulletins	Leveraged to communicate interim changes to policies or standards
Business Application	Software the company uses to execute business
CC&B	Customer Care & Billing - System used to maintain customer information, track customer calls and enquiries and billing data.
CGOC (Compliance, Governance, and Oversight Council Group)	Established in 2004 as a forum of over 1600 legal, IT, records and information management professionals to conduct primary research, dedicate practice groups on challenging topics, and host meetings throughout the U.S. and Europe where practice leaders convene to discuss discovery, retention, privacy and governance.
CPUC (California Public Utilities Commission)	Regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies and serves the public interest by protecting consumers and ensuring the provision of safe, reliable utility service and infrastructure at reasonable rates, with a commitment to environmental enhancement and a healthy California economy.
Data	All collected electronically stored information (ESI) created by and used to drive the company's operating and supporting processes.
Document	Written or printed paper furnishing information or evidence.
DOL (Department of Labor)	Foster, promote, and develop the welfare of the wage earners, job seekers, and retirees of the United States; improve working conditions; advance opportunities for profitable employment; and assure work-related benefits and rights.
ECM (Enterprise Content Management)	Strategies, methods and tools used to capture, manage, store, preserve, and deliver content and documents related to organizational processes. ECM tools and strategies allow the management of an organization's

	unstructured information, wherever that information exists.
ECTS	Enterprise Compliance Tracking System - An instance was created to be the centralized repository, and facilitate the review of scanned Gas Transmission documents and associated data fields captured as part of the MAOP validation project.
FERC (Federal Energy Regulatory Commission)	Regulates wholesale sales of electricity and transmission of electricity in interstate commerce, oversees mandatory reliability standards for the bulk power system, promotes strong national energy infrastructure (including adequate transmission facilities), and regulates jurisdictional issuances of stock and debt securities, assumptions of obligations and liabilities, and mergers.
GARP (Generally Accepted Recordkeeping Principles)	Published by ARMA International in fall, 2009 as a framework which suggests components for a leading Records and Information Management (RIM) program.
GDAM	Gas Distribution Asset Management - Program planned to put in place the enabling technology infrastructure, processes, and skills to better capture, manage, access, and analyze asset data pertaining to PG&E's Gas Distribution ("GD") system. Also known as Project Pathfinder.
GEMS	System used by Gas Operations for the electronic creation, storage, and updating of maps used to document pipelines and assets. Based on AutoCAD platform.
GIS	Geographic Information System - Integrates hardware, software, and data for capturing, managing, analyzing, and displaying all forms of geographically referenced information.
Governance	Use of institutions, structures of authority, and/or collaboration to assign accountability, and to allocate resources and control activity.
GTAM	Gas Transmission Asset Management - Program to put in place the enabling technology infrastructure, processes, and skills to better capture, manage, access, and analyze asset data pertaining to PG&E's Gas Transmission ("GT") system. Also known as Project Mariner.
Guidance Documents	Presented in a manual or with other supporting documents such as job aids, numbered documents, forms, drawings, and specifications (In the past the following terms have been used at PG&E synonymous with Guidance Documents: Policies, Standards, Design Standards, Guidelines, Work Procedures, Bulletins, Forms, and Manuals.)
IGIS	System used by Gas Operations to hold leak related data.
Information	Knowledge communicated or received concerning a particular fact or circumstance.

Infrastructure	Wired and wireless assets that support the delivery of technological capabilities to the company. It includes networks and data centers as well as the technical and data architecture.
ISO 15489 (International Organization of Standards)	The standardization of records, management policies, and procedures to ensure the appropriate attention and protection is given to all records by using standard practices and procedures.
MAOP (Maximum Allowable Operating Pressure)	Maximum system pressure that can be allowed to ensure proper operation of a device or system. May also refer to the MAOP Validation effort for PG&E Gas Transmission assets.
NARA (National Archives & Records Administration Guidance and Regulations)	The nation's record keeper, maintaining historical, national documents, military records, immigration records, etc.
NLRB (National Labor Relations Board)	Independent federal agency vested with the power to safeguard employees' rights to organize and to determine whether to have unions as their bargaining representative.
PAS 55 (Publicly Available Specification)	British Standards Institution's (BSI) specifications for the optimized management of physical assets, by providing clear definitions and a 28-point requirements specification for establishing and verifying a joined-up, optimized and whole-life management system for all types of physical assets.
PHMSA (Pipeline and Hazardous Materials Safety Administration)	A part of the U.S. Department of Transportation (DOT), PHMSA works to protect the American public and the environment by ensuring the safe and secure movement of hazardous materials to industry and consumers by all transportation modes, including the nation's pipelines.
Policy	Provides broad direction or may mandate operations on how to business should perform work
Practice	Communicate "what-to-do" and "how-to-do-it" through guidance documents (Standards, Work Procedures, and Bulletins)
Procedure	Any given mode of conducting legal, parliamentary, or other business
Process	A series of activities, each of which requires inputs and produces outcomes in line with a set of objectives.
PSEP	Pipeline Safety Enhancement Plan - Initiative to modernize natural gas transmission operations in order to help achieve new, tougher standards for pipeline safety.

Record	Authentic official copy of information which is registered on a medium in a reproducible form. In a business setting, records are specifically the evidence of what the organization does.
Records Retention Policy	Provides supporting materials for retention periods determined in the Records Retention Schedule, as well as outlines the retention and disposition processes and ownership of documents.
Records Retention Schedule	Table that describes (1) length of time each document or record will be retained as an active record, (2) reason (legal, fiscal, historical) for its retention, and (3) final disposition (archival or destruction) of the record. Also called record control schedule, record disposition schedule, records schedule, or retention schedule.
RIM (Records and Information Management)	Systematic control of all business records throughout their life cycle.
Roadmap	A set of guidelines, instructions, plans, or explanations for future action within short, medium, and long term timeframes.
SAP	Enterprise software to manage business operations and customer relations.
SCADA	Supervisory Control and Data Acquisition - Real-time distributed system which provides real-time information about current operational status and allows operators to monitor and remotely control PG&E's core gas, hydro, and electric delivery systems.
Semi-Structured Data	Semi-structured data is a form of structured data that does not conform to the formal structure of tables and data models associated with relational databases but nonetheless contain tags or other markers to separate semantic elements and enforce hierarchies of records and fields within the data. Examples include web pages, information integration, and XML.
Standards	What needs to be done to implement the policies
Structure	Composed of Governance and Policies/Procedures
Structured Data	Data that resides in fixed fields within a record or file and is identifiable, such as relational databases.
TPL	Tangible Property Listing - System for tracking pipeline assets and their location which is used to calculate tax liabilities owed to state and local municipalities.

Unstructured Data	Information that either does not have a pre-defined data model, does not fit well into relational tables, or is not identifiable. Examples include word processing documents, emails, pictures, digital audio, and video.
US DOD Directive 5015.02	Records Management Program as described by the US Department of Defense
US NARA (National Archives & Records Administration)	Nation's record keeper, maintaining historical, national documents, military records, immigration records, etc.
Guidance and Regulations Work Procedures	Provide details on how the work is to be performed