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# Operationalizing Data Stewardship

The DOE Data Stewardship Playbook

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SRNL-STI-2026-00112

2026 DOE Data Days, March 4, 2026

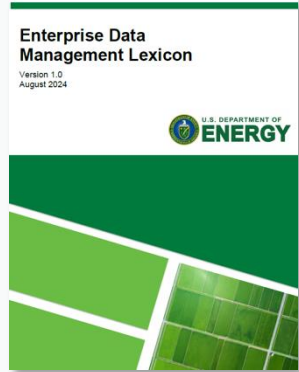


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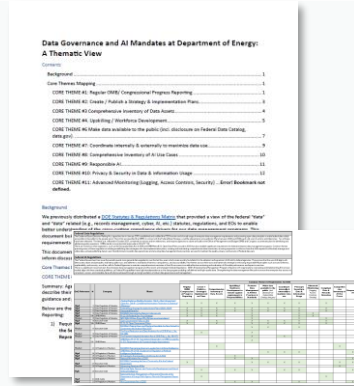
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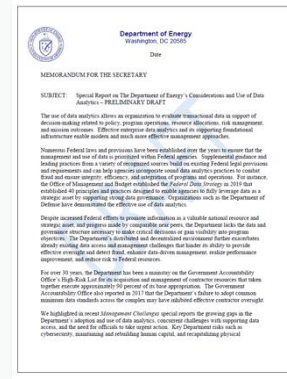
# Enterprise DGB-Led Assets to Accelerate Operational Excellence



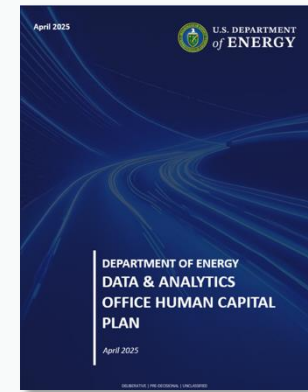
Enterprise Data Management Lexicon



Compliance Statutes & Regulations Documents



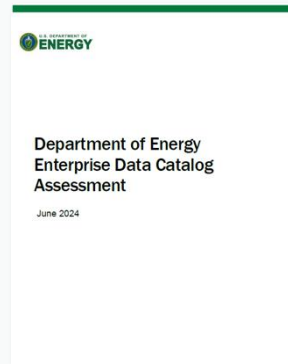
Responses to IG Memos, Audits, & OMB Requests



D&A Office Human Capital Plan



FY25-28 Enterprise Data Strategy



Data Catalog AoA & Roadmap



Data Maturity Model AoA

April 2025

# Data Stewardship Playbook



## The Game Plan

Guide effective data stewardship by defining its value, key activities, and tactical considerations. It will provide ***practical actions***, aligned with our data strategy goals, and connect readers to industry best practices to implement across DOE organizations.

## The Myths

***Is not a general strategy or framework, nor does it create new, DOE specific policies or procedures for data stewardship.***

## The Impact

Have chapters released in an agile manner to react to emerging priorities. Content will provide clear, actionable steps that focusing on execution over strategy and define responsibilities, workflows, and decision-making processes for data stewards to operationalize data management best practices.

***This ensures DOE data is findable, accessible, interoperable, & reusable – increasing its readiness for mission & operational use.***



# Phases of Data Stewardship Maturity

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1

Establishing a Shared  
Understanding of Data  
Stewardship

- 1.1 Data Stewardship Overview: Definitions & Principles
- 1.2 Defining Common Roles & Responsibilities of Data Stewards
- 1.3 Defining Data Ownership
- 1.4 Creating Buy-In to Begin Formalizing Data Stewardship



# 1.1 Data Stewardship Principles

## 1. Treat Data as a Strategic Asset

Data stewardship reflects the importance of treating data as strategic assets in an enterprise that pursues its mission with evidence & security.

## 2. Align Standards & Principles to Practices

Data stewardship aligns data practices to standards & Principles\* that increase the usability & security of data assets in line with community best practices.

## 3. Improve Decision-Making

Data stewardship ensures that decision-makers & other data stakeholders have access to quality, reliable data so that they can measure & solve for what matters most to their mission.

## 4. Cultivate a Value-Driven Mindset

Data stewardship fosters a value-driven mindset that seeks to maximize data asset use while evolving alongside changing business needs, regulatory requirements, and technological advancements to ensure long-term compliance, data integrity, and relevance.

## 5. Empower Mission Workers

Data stewardship empowers SMEs to leverage continuous learning & data fluency to even more effectively support their mission with data.

## 6. Design Scalable Quality Standards

Data stewardship implements data quality standards & practices on tools & processes that are designed for scale.

## 7. Data Stewards are Data Guardians

Data stewardship establishes guardrails for data use, designed by those most familiar with the data, to ensure responsible, transparent, and secure practices that support the mission.

## 8. Define Responsibility for Accountability

Data stewardship establishes clear roles & responsibilities to ensure accountability for data quality & use, fostering a culture of shared responsibility across the enterprise.

## 9. Enable Collaboration

Data Stewards serve as collaborators within a data community to harness the collective strength of teams at every stage of the data lifecycle.

## 10. Data Stewards are Architects of AI Success

Data Stewards ensure AI models are trained on accurate, unbiased, and compliant data.



# 1.2 Defining Common Roles & Responsibilities

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**Manage Data Quality:** Ensure high-quality, reliable, and consistent data.

**Manage Metadata & Data Catalogs:** Oversee effective metadata & data catalog management, which improves data visibility, traceability, and accessibility.

**Administer Access Controls & Content Management Policy:** Define & enforce access policies that align with security, privacy, and operational needs.

**Implement Compliance & Security Standards:** Establish clear accountability for data assets.

**Execute Data Governance Activities:** Implement data governance & policies.

**Improve Data Products & AI Readiness:** Ensure that governed, AI-ready, and reusable data is available across domains.

**Formalize processes & workflows:** Interface with key stakeholders to inform standards to ensure quality, discoverability, and security outcomes.

**Develop training & resources:** Provide training & resources on key data practices as leaders of this effort.



# 1.3 Defining Data Ownership

**Why Shift from an Ownership to a Stewardship Mindset?** The term “ownership” implies exclusivity & control, reinforcing silos & restrictive data-sharing practices. Many DOE components are already moving towards roles such as **“Data Stewards” & “Data Trustees.”**

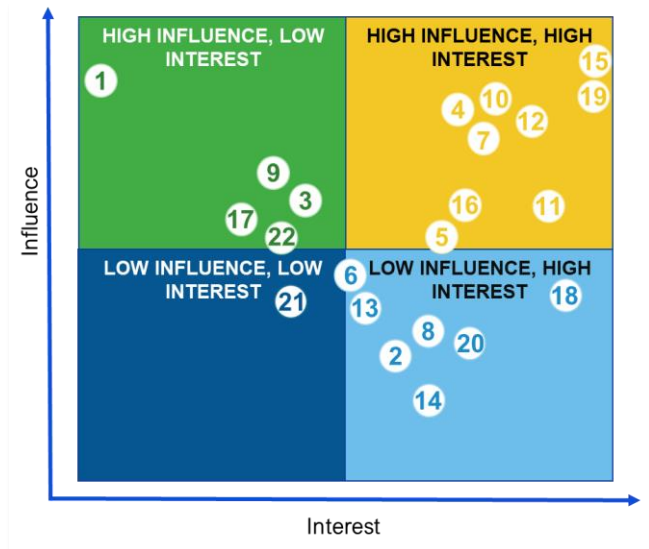
This evolution acknowledges:

- **Data responsibility is shared.** No single individual or team owns data outright; instead, organizations & programs serve as custodians, ensuring its proper use & accessibility.
- **Accountability should be at the enterprise level.** Shifting responsibility to the enterprise or funding entity, rather than an individual, ensures continuity & reduces risk-adverse behaviors that discourage sharing.
- **Stewardship enables strategic data management.** By clarifying collaborative roles & responsibilities, DOE can foster a culture where data is seen as a valuable resource to be managed & shared, not a liability to be restricted.
- **Clarifying data in legal or contractual terms could help establish clearer guidelines.** Defining data ownership through a legal or contractual framework, like software licensing & usage agreements, may provide a structured approach to managing access, rights, and responsibilities across different types of DOE data.



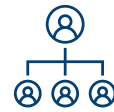
# 1.4 Creating Buy-In to Begin Formalizing Data Stewardship

## Step 1. Identify Key Stakeholders



Develop a **Stakeholder Matrix** to visualize influence & interest levels. Use this to identify champions, blockers, and areas requiring further relationship building.

Common personas of key stakeholders in data stewardship programs to consider mapping in a Stakeholder Matrix may include:



**Executives** | Management or executive sponsor who has the authority, access to resources, and strategic influence to sponsor data stewardship activities across an organization or program.



**Data Champions** | Any level of staff that has authority or strategic influence to drive change. Can be a data-related SME or mission/operations leader that understands the value of data & data management.



**Data Users** | Any stakeholders that consume data & data products as part of their roles (e.g., data analysts, researchers) & have a vested interest in accessing / publishing accurate, trusted data.



# 1.4 Creating Buy-In to Begin Formalizing Data Stewardship

Steps 2-4	Description of Action
<b>Step 2.</b> Connect Stewardship Activities to Strategic Outcomes	<ul style="list-style-type: none"><li>• <b>Capture Relevant Priorities:</b> Inventory key motivators (e.g., operational efficiency, compliance, innovation, personal) &amp; priority use cases of high influence stakeholders identified in <b>Step 1</b>.</li><li>• <b>Map Stewardship Activities to Priorities:</b> Map stewardship activities to strategic priorities. Clearly detail how these activities impact success, using metrics when possible (e.g., data quality improvement, reduced errors, faster decision-making).</li></ul>
<b>Step 3.</b> Test Value Stories & Down Select Pilot Scope with Data Champions	Capture high-impact use cases & test the value of data stewardship against the use cases with trusted data champions, linking data challenges with business or mission outcomes. Use feedback to refine value stories & scope of use cases to pilot data stewardship. Use cases that are highly visible to executives are more likely to get initial support & secure long-term resources if the first pilot is successful.
<b>Step 4.</b> Present to Leadership & Finalize Pilot Scope	Present pilot use cases to high-influence executives identified in Step 1. If appropriate, invite data champions who have influence & the respect of those executives to join the presentations. Listen for new priorities & requirements that may emerge from leadership during the conversations & embrace adapting use cases or scope to meet higher value needs. Have an initial high-level estimate of the resources (# of people, budget) needed for a pilot use case, as executives may ask for that information upfront.



# 1.4 Creating Buy-In to Begin Formalizing Data Stewardship

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## Key Considerations

- 1. Tailor Communication To the Audience.** Speak in terms that resonate with stakeholders by using analogies, familiar examples, and nontechnical language drawn from their own domains.
- 2. Emphasize Value Stories & Impact.** Use clear metrics & compelling value stories to demonstrate the tangible results stewards deliver.
- 3. Sustain Outcomes through Formal Support.** Long-term success in data stewardship requires dedicated investment, whether through trained & recognized Data Stewards, effective tools like metadata management & governance platforms, or codified policies & priorities. Informal, grassroots efforts can spark momentum; however, structure & resourcing are key.



# Phases of Data Stewardship Maturity

## Phase 2 Overview: Designing & Launching A Data Stewardship Program

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### 2.1 Define Data Stewardship for Your Needs

**Contributors:**

Meredith Goins (SC)

Kimberly Maestas (LANL)

Rekha Sukumar (LANL)

### 2.2 Identifying & Formally Assigning Data Stewards

**Contributors:**

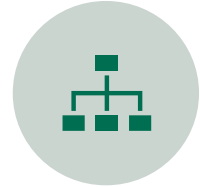
Robert (Bob) Eber (KCNSC)

Alex May (ORNL)

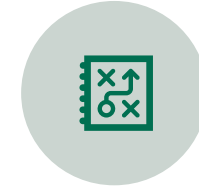
Jason Walli (Hanford)

# In Conclusion – Stewardship Builds a Data Culture

**Data Stewardship Playbook** is a living document that evolves over time, including new ideas & best practices to support effective data stewardship across DOE.



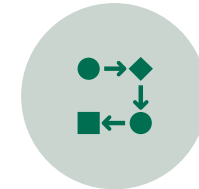
Data stewardship is not a role, it's an enterprise function



The Playbook provides a repeatable operating model, turning policy into day-to-day practice



Good data is a byproduct of clear responsibility



Adoption is incremental – start small, scale deliberately



Success depends on sustained leadership support and adoption



Culture changes when stewardship becomes routine



# Acknowledgements

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- Rob King and EDM Team
- Meredith Goins (SC)
- Kimberly Maestas (LANL)
- Rekha Sukumar (LANL)
- Laura Biven (J-Lab)
- Jeremy Crampton (ASCR)
- Robert (Bob) Eber (KCNCS)
- Cara Corey (SNL)
- Martin Klein (PNNL)
- Robert (Bob) Eber (KCNCS)
- Alex May (ORNL)
- Jason Walli (Hanford)



# Overview & Value of Data Maturity Models

*Objective 1.2: Define & promote frameworks that advance data management & quality practices at an enterprise scale.*

## Why Adopt a Data Maturity Model

To successfully execute our EDS Implementation Plan, DOE would benefit from a **clear approach for measuring & monitoring progress as we mature critical data & analytics capabilities.**



**A data maturity model provides this structure, allowing us to:**

- **Track progress over time** against industry best practices.
- **Identify gaps & prioritize investments** in data & analytics capabilities.
- **Align teams & resources** around a common roadmap for capability excellence.
- **Ensure scalability & adaptability** as our Data Strategy evolves.

**Maturity Models help focus investments on capabilities required to realize goals detailed in Strategies & Implementation Plans**

### Data Strategy

- Sets the vision & long-term objectives



### Implementation Plan

- Translates strategy into action with tactical milestones

### Maturity Model

- Measures progress towards capability maturity over time

The [2020 Federal Data Strategy](#) requires that agencies conduct data management maturity assessments.



# Data Stewardship Integrated Working Group

Goal: Build a playbook that drives maturation of Data Stewardship at DOE.

## The Game Plan

The playbook will guide effective data stewardship by defining its value, key activities, and tactical considerations. It will provide ***practical actions***, aligned with our data strategy goals, and connect readers to industry best practices to implement across DOE organizations.

## The Myths

This playbook is ***not a general strategy or framework***, nor does it create ***new, DOE specific policies or procedures*** for data stewardship.

## The Impact

The playbook will have chapters released in an agile manner to react to emerging priorities. Content will provide clear, actionable steps that focusing on execution over strategy and define responsibilities, workflows,

*Thank you to our members*

- ASCR
- Hanford/RL
- J-Lab
- KCNSC
- LANL
- ORNL

## Updates on Progress

1



**January**

Kick-off Meeting

2



**February**

Content maturation by members

**March**