



Ensuring LM's Long-Term Stewardship Mission Success Through Governance of Environmental and Geospatial Data

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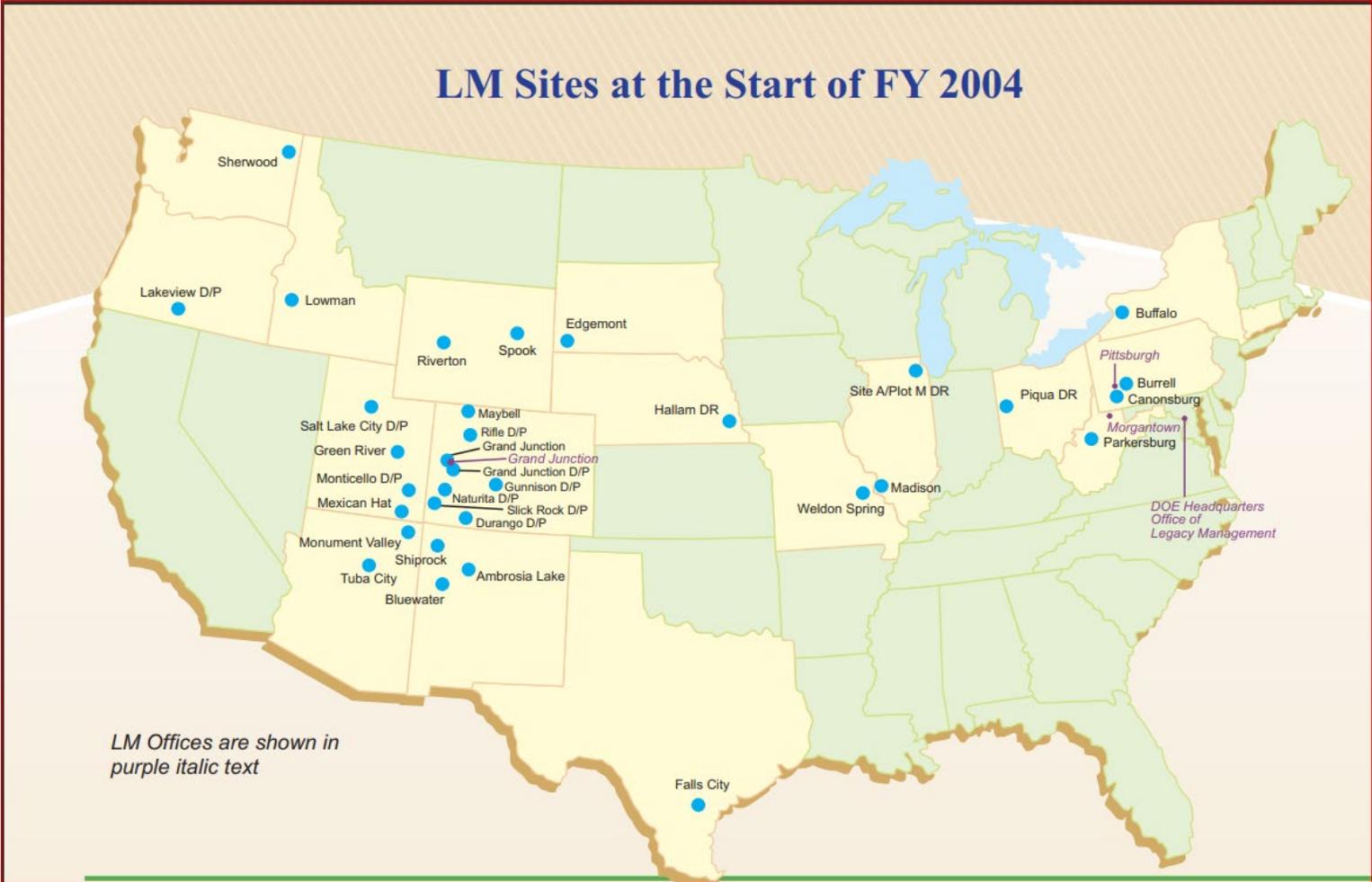
LM Mission

U.S. Department of Energy Office of Legacy Management manages more than 100 legacy sites in the United States and Puerto Rico associated with the nation's World War II and Cold War nuclear weapons complex

- Requires constant access to reliable data for all sites
 - Historical data sets
 - Groundwater levels
 - Geochemistry
 - Air and land sampling
 - Models
 - Ongoing data collection



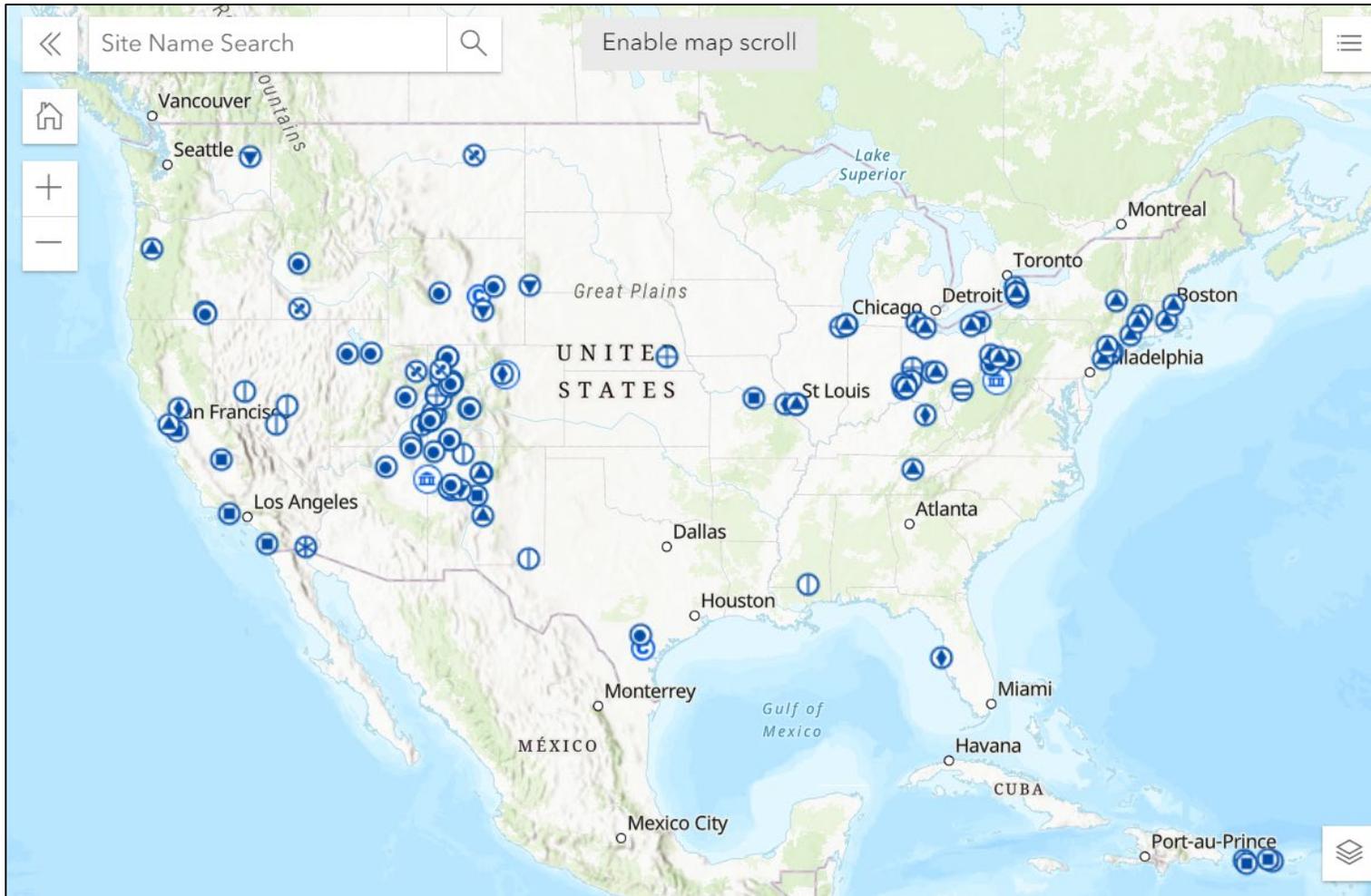
LM Sites - 2004



All 33 of the initial sites were UMTRCA Title 1



LM Current Sites – Sept 2023



Current Sites

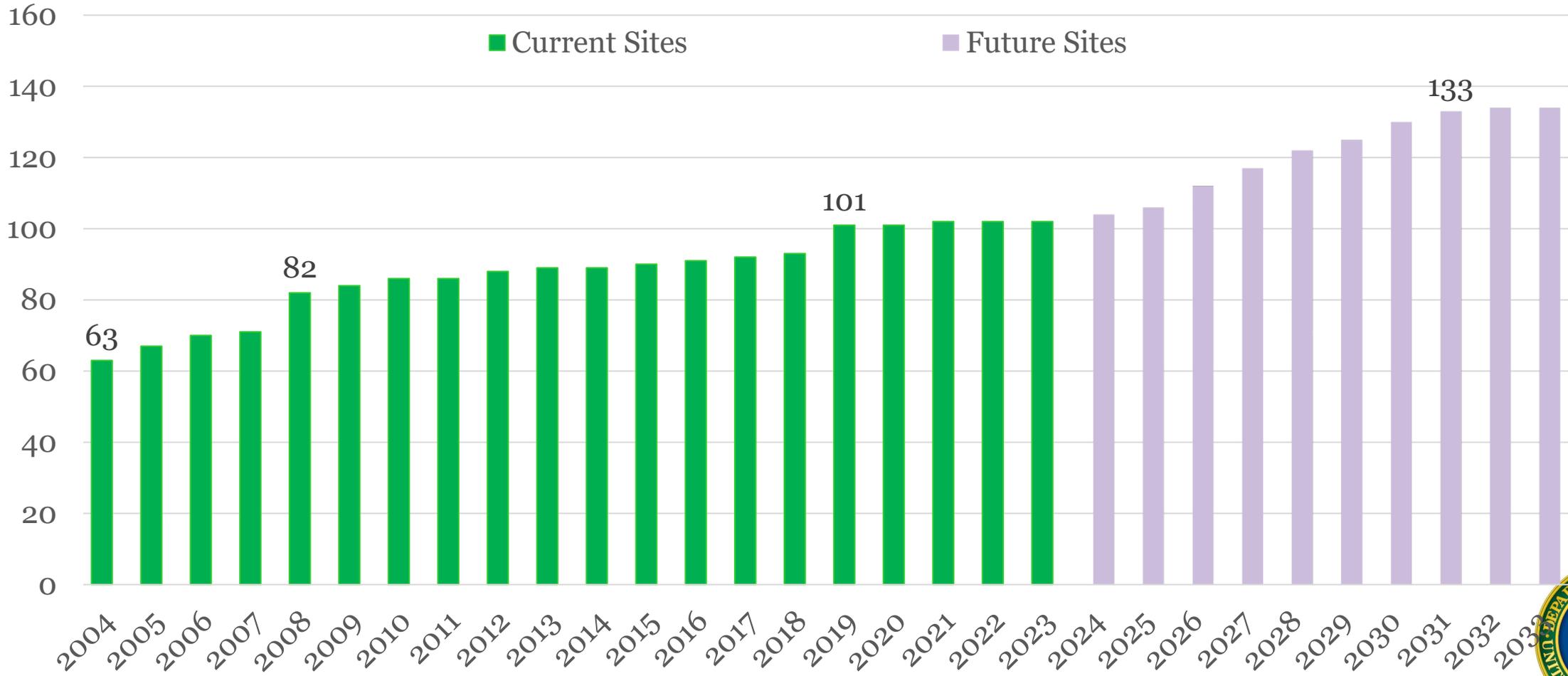
- CERCLA/RCRA
- D&D
- FUSRAP
- MED/AEC Legacy Site
- NWPA
- Nevada Offsites
- Plowshare Vela Uniform
- State Water Quality
- UMTRCA Title I
- UMTRCA Title II

LM Office Locations



Source: <https://www.energy.gov/lm/sites>

Sites Have Grown Organically



Where Does Data Go?

Without a Plan - Convenient places like spreadsheets, local access databases

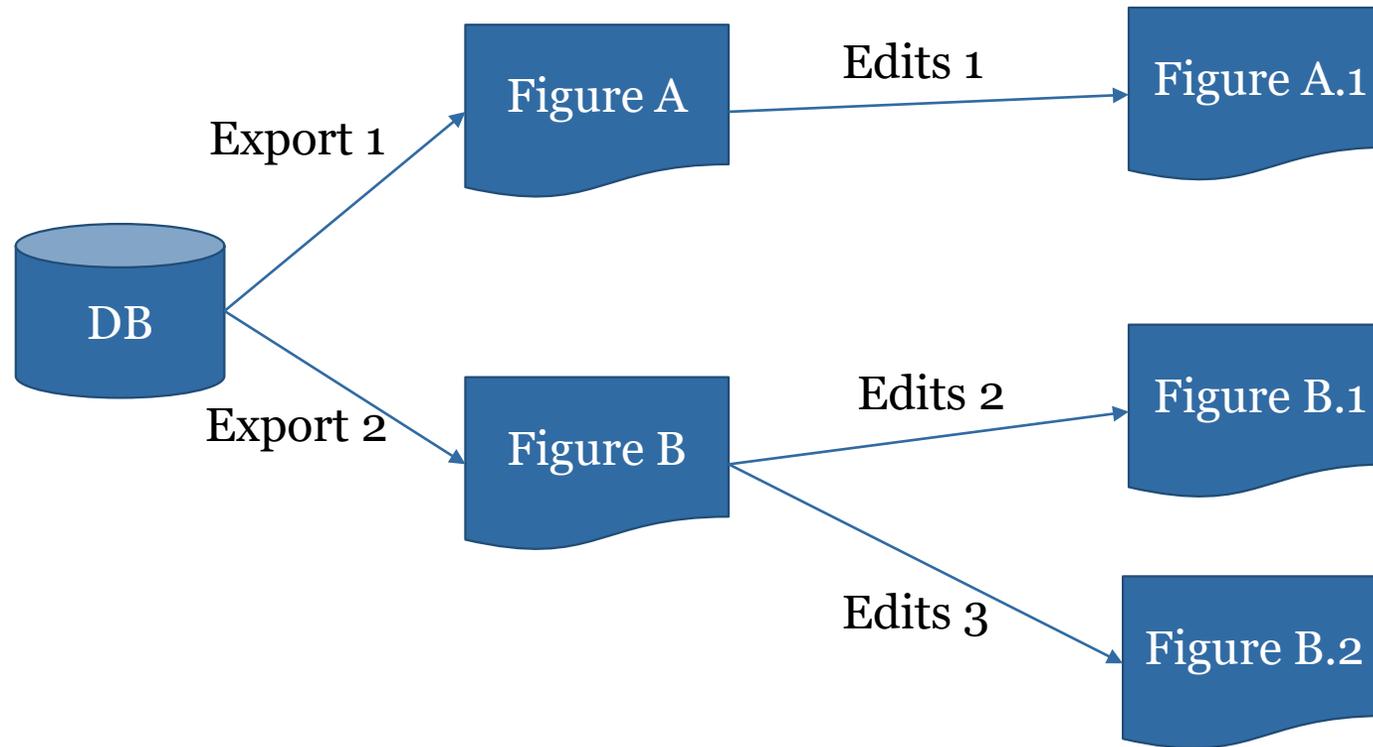
With a Plan – into an Authoritative Data Source

- Recorded as the 'System of Record' for the data included
- A tool with a database that meets all criteria to reliably store data and make data available to end users.
 - Patched
 - Properly Licensed
 - Backed up
 - Access Controlled
 - Accessible
 - Change management
 - Has data standards
 - Meets cybersecurity criteria for 'critical business data.'



When There Isn't an Authoritative Source

- Data propagates and migrates



LM's Plan to Centralize, Standardize, and Control Data as an Asset

- **The Environmental and Geospatial Data Management Plan**

- A Data Lifecycle approach to management of all LM environmental and geospatial data.

- Starts with two key concepts

1. Planning 'net-new' data collections to ensure they follow the Data Lifecycle
2. Build an inventory and record of Authoritative Data Sources -> Data Catalog

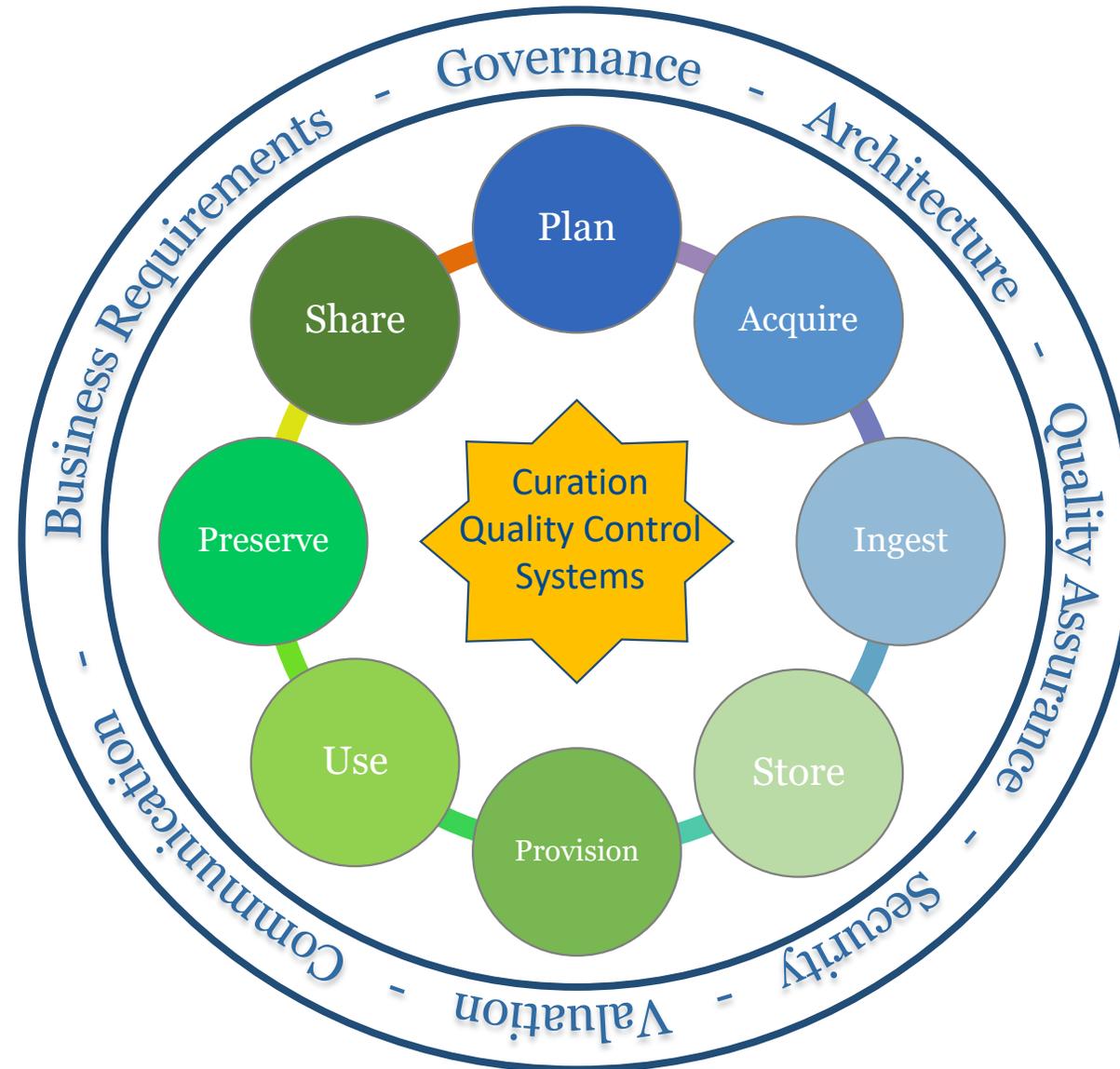
- Maximizes data VAULTS

- Visible
- Accessible
- Understandable
- Linked
- Trusted
- Secure

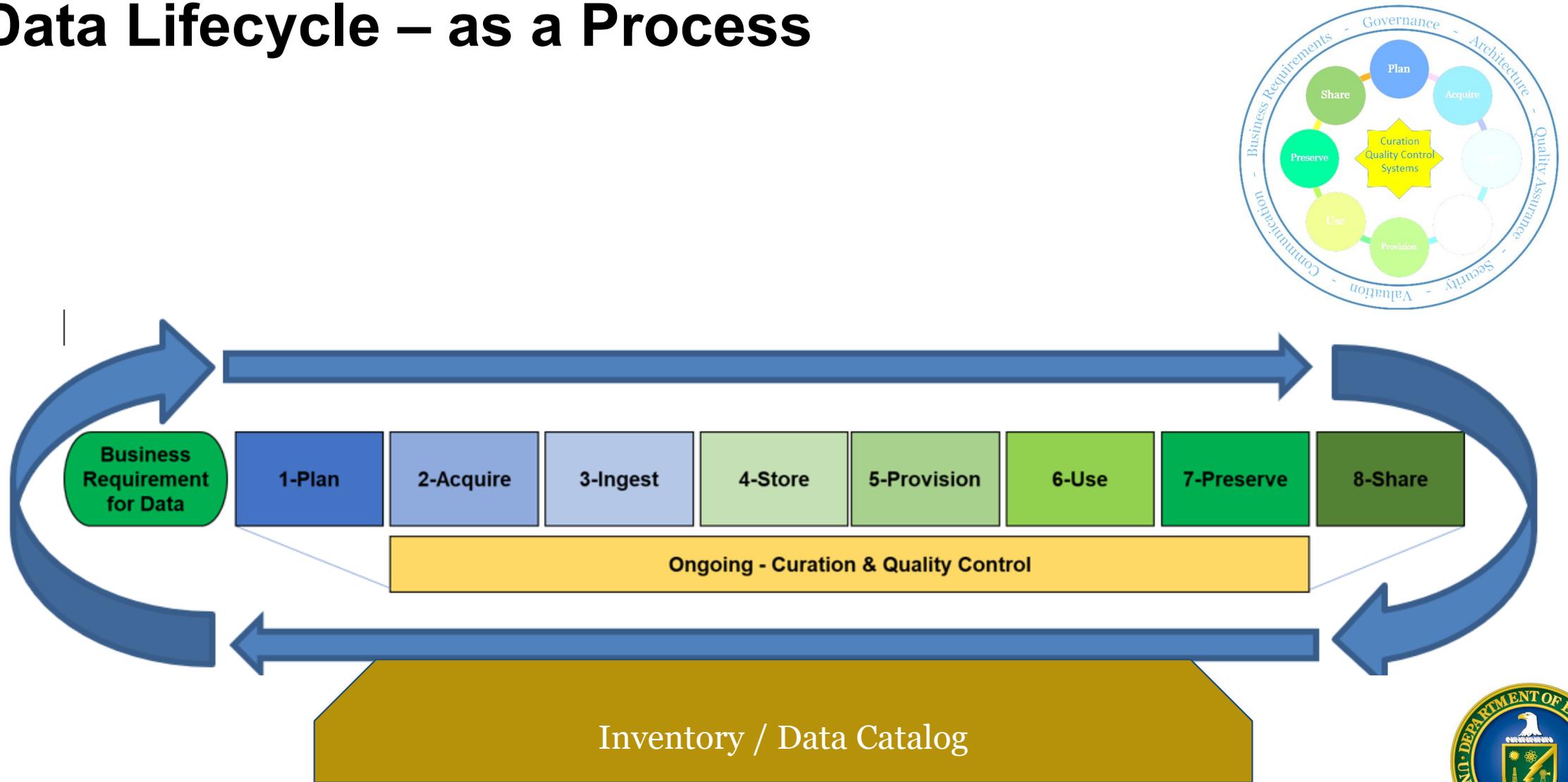
- Describes decision points to ensure LM data meet federal data regulations



Introducing the Data Lifecycle

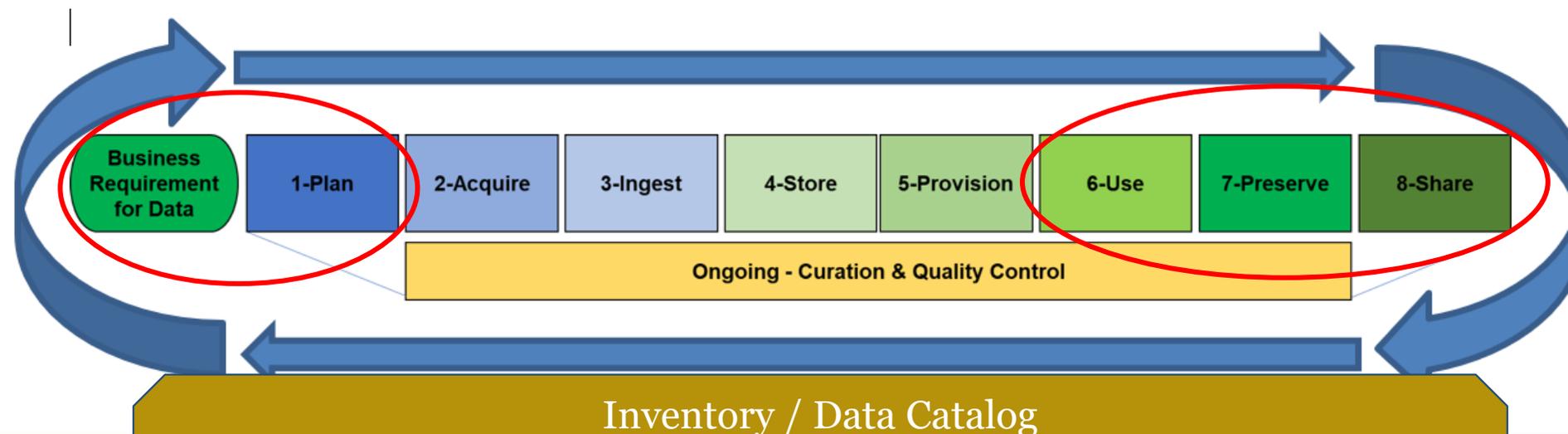


Data Lifecycle – as a Process



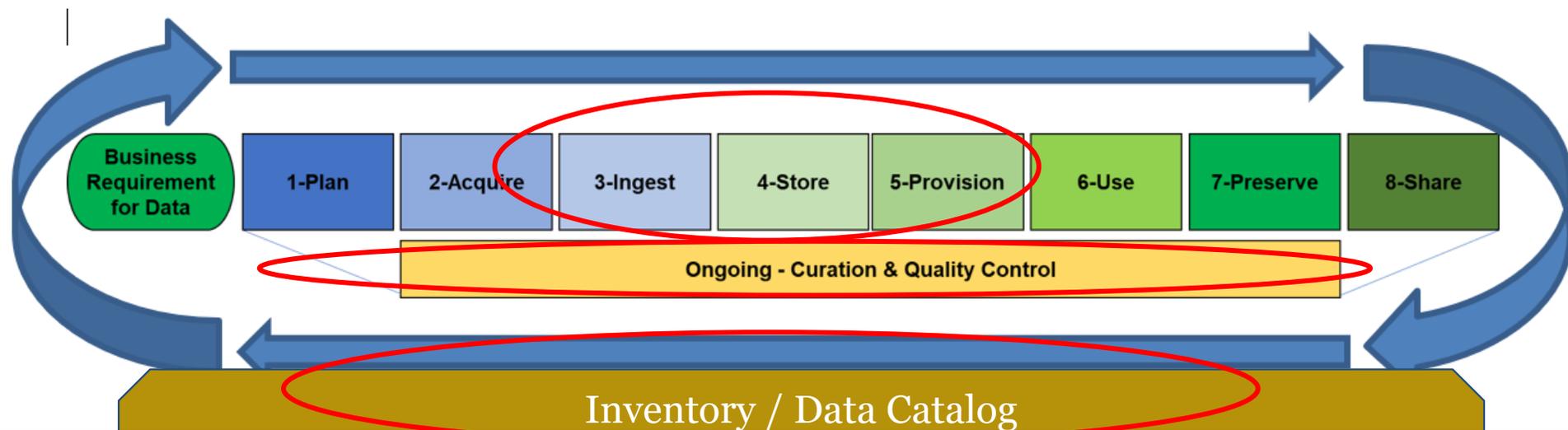
Key Responsibilities for Data Owners and Requestors

- Be aware of the Data Lifecycle
- Drive data collection with business requirements
- Check for existing data before collecting new data
- Plan new data collections to include validation, storage, provisioning, sharing, etc. ...
- Inventory, schedule, and budget for correction of existing data sets
- Connect site personnel with enterprise data management personnel to reduce silos and increase data usage
- Store data in Authoritative Sources, or make plans to move it



Key Enterprise Activities

- Build a Data Catalog where all LM data can be indexed and accessed
- Centralize a process to review new data requirements against existing data
- Maintain authoritative data and data sources
- Coordinate Access Control Lists (ACL) to properly provision data access
- Conduct Working Groups to develop data standards and address issues
- Establish quality review process and procedures
- Create and maintain tools to enable enterprise-wide and public access to data, where appropriate



It works!

Early Successes from Centralizing Geospatial Data

- Cost Savings
 - Land-based survey was requested and **determined unnecessary** due to accessibility and accuracy to LIDAR flown previous year.

- Data Availability – Growing a One-Stop-Shop Geoportal
 - New tools – a map service to view imagery web maps to view site data

- Reducing Data Duplication
 - Duplicates removed from separate geodatabases – storage savings, reduces confusion and time to review.

- Increasing use of field and digital data collection tools
 - Loading direct to databases
 - Reducing human data collection error
 - Prairie Dog colony hand-mapped was 300' off from what was walked with a digital data collection tool.



Conclusion: Benefits of Data Governance at LM

To the User

- Visibility
- Accessibility
- Integration Capability
- Data Reliability – *quality is documented and fit to the use*

To the Program

- Recognition of data as an asset
- Ability to benchmark data and effectively assess change over time
- Effective investment

