Mason Insights: Data to Analytics Solutions

Executive Summary

GEORGE MASON UNIVERSITY

July 31, 2024

Bottom Line Up Front

Leadership approval, prioritization and investment in MIDAS efforts.

MIDAS Project End Goal:

A campus data repository that houses operational and official (snapped) data views that are validated and clearly defined following industry standards, transparent deployment protocol, all of elements of which are focused on ease of access and use for end-users in reporting, analysis, business intelligence, and accountability.

Sub Components:

- Re-engineering End-User Access and Security
- Consolidated Best in Class Campus Query, Reporting, and Visualization Tools
- Common Request Portal
- Institutional Data Dictionary aligned with official definitions and business needs
- Implemented practices, standards, and expectations for clean, reliable, valid data at point of entry
- Processes and methods for identifying and incorporating new data elements

Paradigm Shift and Culture Change

Themes from Current State Assessment

- **Inconsistent Data Literacy.**
- **Independent Data Utilization.**
- **Limited Accountability and Ownership of Data.**

Regardless of the investments made in human and technology resources, George Mason stakeholders are aware of the need for change. The MIDAS Project is a generational change that will help position the University to be an aspirational peer for data management.

Reduce Risk to Unauthorized Use and Access of Data

Advance Data Literacy Across Campus

Increase Operational Efficiency Using and Working with Data

Inform Decisions Consistently and Accurately Through Reporting and Analysis

IMPLEMENTING NEW TECHNOLOGY TOOLS ALONE WILL NOT BE SUFFICIENT

REQUIRES SIGNIFICANT CULTURE CHANGE INCLUDING THE PERCEPTION OF VALUE AND UTILIZATION OF DATA.

MIDAS Project Objectives

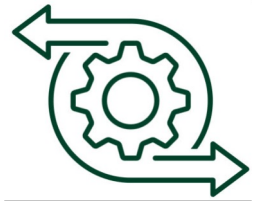
1. Review and creation of **End-User Access and Security** Protocols and Processes

2. Review current toolsets for **Campus Query, Reporting, and Visualization** to assess potential consolidation of tools/reports to meet data needs

3. Create a **common request portal** that serves all offices involved in responding to data requests across campus

4. Building from Mason Data Catalogue, create an end-user-focused **Institutional Data Dictionary** that enforces data definitions and aligns reporting requirements

5. Identify methods for helping ensure **clean, reliable, valid data** at the source within offices, providing best practices for quality control at data entry



6. Identify **processes and methods for identifying and incorporating new data elements** for reporting and analyses in a manner that facilitates flexibility, collection, addition, and deletion into the future

7. Create a **“common well”** that acts as a repository for campus use containing operational and official (snapped) data views

MIDAS is a long-overdue strategic imperative

We seek support to embark on this transformative journey to reinforce George Mason's commitment to excellence and innovation.

- Promotion of campus data literacy;
- Strengthened data integrity;
- Effective utilization and optimization of data tools and systems;
- Increased end-user understanding of data access and use;
- Curation of a common well with targeted access levels matched to role and function;
- Creating opportunities for improved decision-making informed by data;
- Enhancing operational efficiencies in multiple spaces;
- Positioning George Mason for continued success in increasingly competitive educational landscape.

Mason’s Strategic Direction and the MIDAS Project

The successful outcome of the MIDAS Project is critical to supporting George Mason's Strategic Direction.

Strategic Direction		MIDAS Impacts
1.4.4	**Strategic Direction : Facilitate exchange of relevant data among student-serving units throughout the student life cycle to best support Mason learners by:**	Development of transparent policies and procedures to match role with appropriate access and security.
		Campus curation of a suite of tools to allow data democratization and collaboration.
		Provide all student serving units with the data literacy skills to ensure they can find relevant data, quickly and turn it into business intelligence
5.2.3	**Improve reliability, validity, and accessibility of Mason’s data used for decision-making**	Defining 'systems of record' and the ownership and stewardship responsibilities of those systems
		Developing policies and procedures to ensure data quality
		Utilizing investments and enhancements in technology to automate and simplify role-based access

MIDAS Project Business Case

Strategic Importance

- **Compliance and Risk Management**
  - Ensure compliance with federal and state regulations (e.g., FERPA, GDPR).
  - Mitigate risks associated with data breaches and misuse.
  - Protect the institution's reputation and avoid potential financial penalties.
- **Data-Informed Decision-Making**
  - Improve the quality and reliability of data for strategic planning.
  - Enable evidence-based decisions that enhance academic and administrative outcomes.
  - Foster a culture of transparency and accountability.
- **Operational Efficiency**
  - Streamline data management processes across departments.
  - Reduce redundancy and improve data integration.
  - Enhance collaboration through standardized data practices.

MIDAS Project Business Case (Continued)

Anticipated Benefits

- **Enhanced Academic Outcomes**
  - Improved student tracking and personalized learning pathways.
  - Better assessment of program effectiveness and student success metrics.
  - Informed curriculum development based on comprehensive data analysis.
- **Optimized Resource Allocation**
  - Data-informed budgeting and resource management.
  - Identification of cost-saving opportunities through efficient data usage.
  - Strategic investment in high-impact areas based on data insights.
- **Increased Research Capabilities**
  - Facilitation of interdisciplinary research through shared data resources.
  - Enhanced data security and compliance in research activities.
  - Improved data sharing and collaboration with external partners.

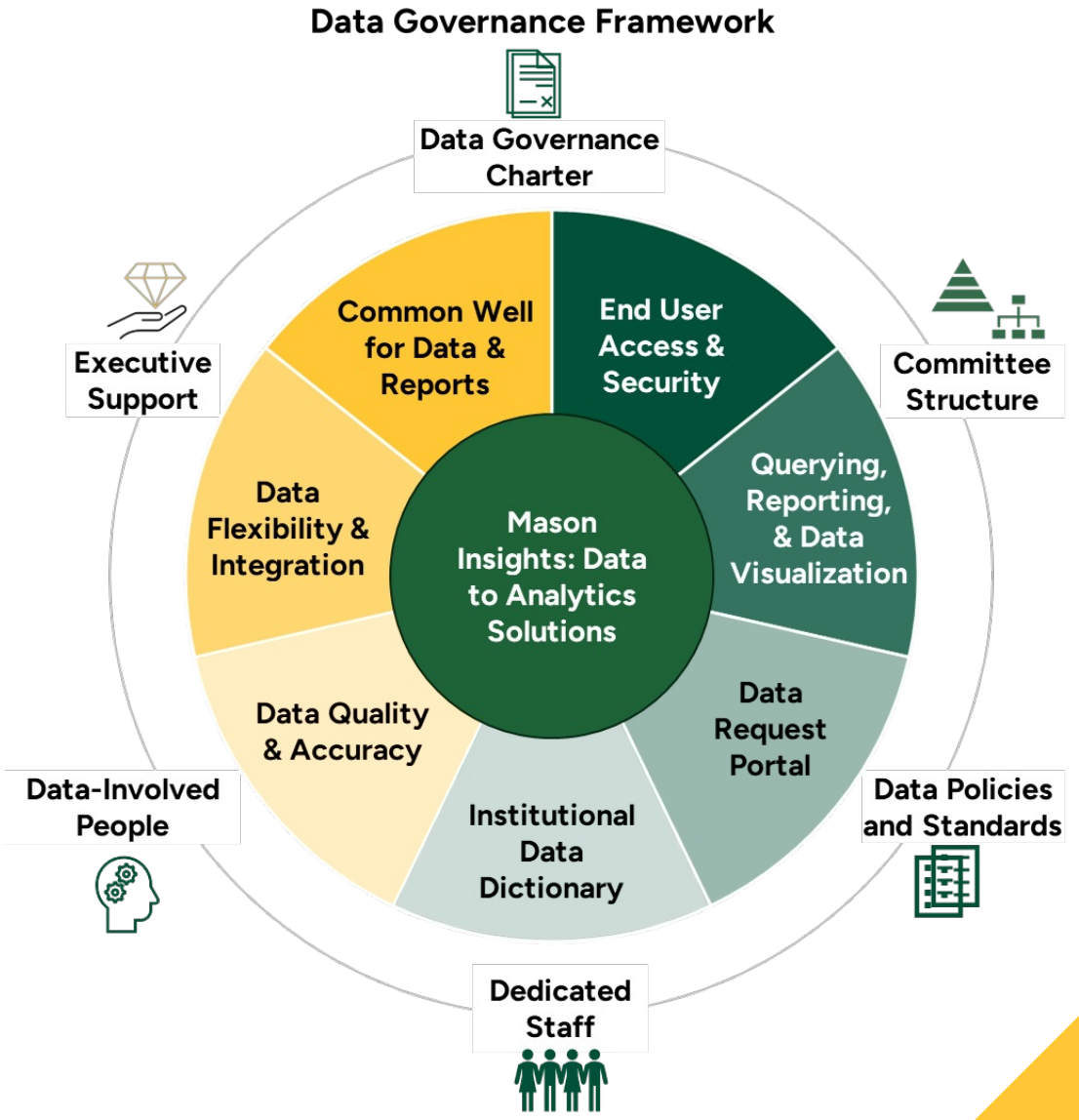
Data Governance at George Mason

- **Previous efforts challenged by**
  - **Limited support.**
  - **Siloed into individual projects or groups.**
- **MIDAS foundationally requires an effective, sustainable governance framework including**
  - **defined roles, responsibilities, and accountability.**
  - **decision-making authority.**
- **MIDAS should build upon the current foundation developed in ITS to formalize a framework that includes data stewards.**

What is a Data Steward?

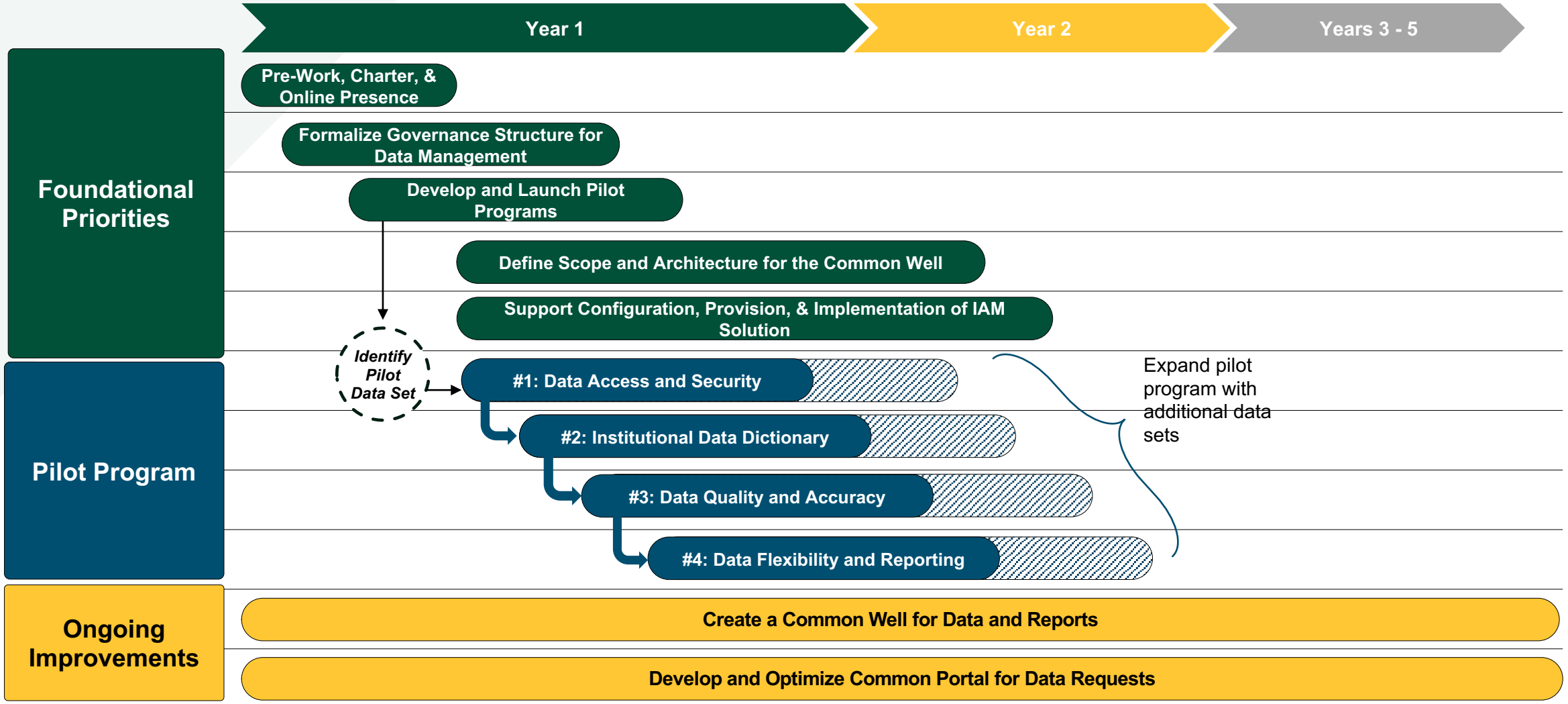
As defined in George Mason's draft Data Governance Policy, a Data Steward is part of a cross-departmental team charged with the responsibility for data issues, data quality, and user-related projects. Accountable for the data catalog and working with the Data Governance Team on policies, processes, and standards, Data Stewards:

- **Ensure appropriate access to data based on privacy and security protocols**
- **Create and implement data quality standards, controls, policies, and processes**
- **Foster a data-sharing culture across the University, consistent with Mason's goals for effective data governance**



High-Level Timeline for MIDAS Project Roadmap

The high-level roadmap included in the figure below is a preliminary timeline for furthering the MIDAS project by over the next three to five years.



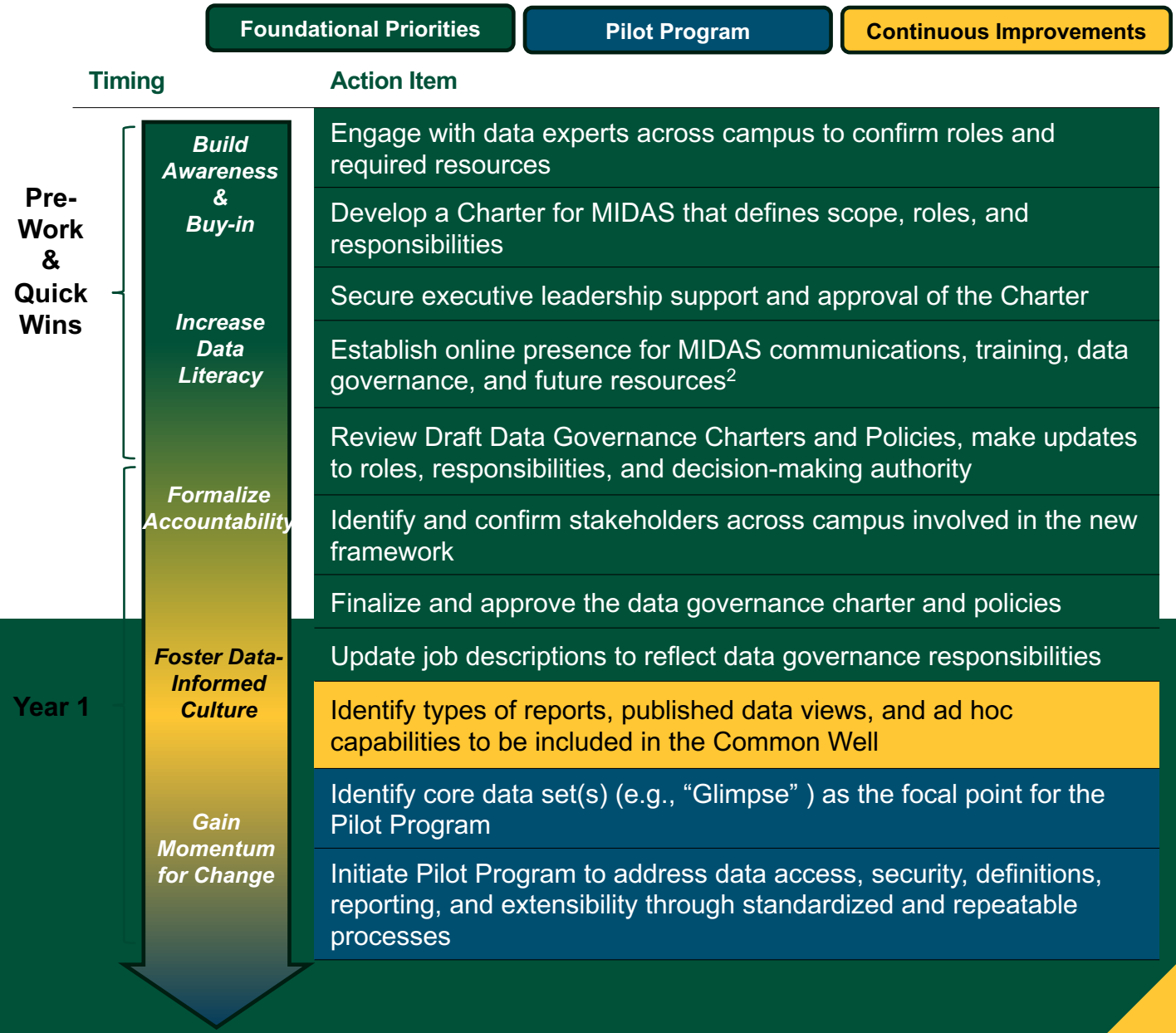
Operationalizing the roadmap will require executive support, active sponsorship, and dedicated human and technology resources.

MIDAS Project Roadmap

High-level roadmap for implementing MIDAS objectives

The high-level timeline for the MIDAS project includes foundational priorities, the Pilot Program, and ongoing improvements that were identified over the course of our work.

- **Foundational Priorities** include quick wins and fundamental changes to valuing data as an institutional asset and responsibilities for data stewardship
- **The Pilot Program** takes a defined data set through a structured life cycle, concluding with the Common Well, to provide a proof of concept and documented process for future data sets
- **Ongoing Improvements** are projects that have already been started and can be continuously developed, enhanced, and adapted over time with changes to the data landscape



Identifying Necessary Resources for the MIDAS Project

Through the visioning workshop discussion and work with the MIDAS team, BerryDunn identified resources necessary to achieve the stated MIDAS objectives.

Build on previous efforts and investments that can support MIDAS objectives
(e.g., data catalog prototype, data quality audits, reporting tools and processes, etc.)

Analyze current needs identified from survey results, focus groups, and visioning workshop

Leverage our higher education experience and benchmarking research

Identify necessary investments in human and technology resources for the MIDAS Project

Resource planning for large scale, complex efforts such as the MIDAS project involves budgeting for necessary project investments, resource allocation, project risks, and uncertainties.

- The MIDAS Project represents a fundamental shift in how George Mason utilizes and manages institutional data.

- Realizing the greatest ROI requires thorough analysis, risk assessment, and continuous planning for appropriate internal resource allocation.

Recommended Human Resource Investments

- **Project Coordinator ~$130K (salary + fringe).** ***May be filled by current staff.***
  - Supports planning, executing, and coordinating project tasks.
  - Liaison between campus groups, ensuring project details are communicated, issues and risks are identified, and resistance is managed.
- **Data Architect/Engineer ~$200K (salary + fringe).** ***New hire required given no current resource.*** Design and management of critical processes of migrating and integrating data in the cloud.
  - Strategize and lead efforts to optimize the cloud data architecture.
  - Support the growing data volume and efforts to expand the current data warehouse.
- **Business/Data Analyst ~$180K (salary + fringe).** ***Currently contracted role. Convert to FTE.***
  - Works with campus groups to identify report gaps and inconsistencies, communicate regulatory changes, and oversee report standardization efforts.
  - Assists with data quality audits and support end-user data literacy and training efforts.
  - Responsible for supporting integration design and development of reports and dashboards from various data sources to support decision-making.

- **Requires significant participation from data custodial offices, data end-users, OIEP, and ITS**

Recommended Technology Investments

Do not currently exist in the data landscape	Have not been fully implemented or utilized across campus	Present opportunities for future consolidation and long-term cost savings

- **Data Cataloging Tool**

  One-time: $50-250k, reoccurring: $20-150k

- **Cloud Data Warehouse**

  One-time: $200k-1m, reoccurring: $50-300k

Mason Insights: Data to Analytics Solutions

Thank you!

GEORGE MASON UNIVERSITY

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- Assigned by and accountable to **Data Trustees** (Yet to be designated, they are the university officials with authority over institutional data or the university's use thereof. Data Trustees are accountable for managing, protecting, and ensuring the integrity and usefulness of institutional data and for upholding GM policy as well as SCHEV, state and federal laws applicable to GM data.) Each Data Trustee may appoint one or more Data Stewards for the **data domain** (Yet to be designated, Data Domains are high-level categories as designated by the **Data Governance Council** (yet to be formed), for the purpose of assigning accountability and responsibility for the data. Each data domain will have a Data Trustee.