One Washington
Data Management Strategy

August 2020

Table of Contents

Table of Figures

Version Log

Date	Update By	Comments
March 2020	Tech team	First release
August 2020	Tech team	Modified to include chosen vendor

SECTION 1 INTRODUCTION

1.1 EXECUTIVE SUMMARY

One Washington is committed to improving access to data that is accurate, available in a timely fashion and useful to decision-makers. The data management strategy provides an actionable plan of how to establish the processes and tools required to deliver data efficiently and effectively to meet the needs of business decision-makers.

The data management strategy describes initiatives the OneWa program will employ to achieve the vision for data quality, accuracy and availability. These initiatives are:

- Data governance
- Data architecture
- Data security
- Data standardization
- Data quality
- Metadata management
- Data integration
- Data conversion
- Data delivery

1.2 BACKGROUND, PURPOSE AND OBJECTIVES

OneWa is a comprehensive business transformation program to modernize and improve aging administrative systems and related business processes is the implementation of an ERP software solution for the state's core business functions: finance, procurement, budget, human resources, and payroll, as well as the technical features that must be supported.

The data management strategy provides the OneWa program with an actionable set of initiatives, which will enable enterprise-wide management over one of the state's largest assets - data. The initiatives included as part of this strategy have been defined to build required capabilities, identify technology needs and ensure required resources are identified and available.

Note: This document was created to update and clarify the data management work that will be done to modernize the state's legacy enterprise systems. Previous documents, while good for reference, are not current and should not be used for workload or timeline moving forward.

1.3 GUIDING PRINCIPLES

These are the data management principles that OneWa follows at the enterprise level. Agencies are encouraged to develop and maintain an appropriate set of principles.

- Enterprise data is managed as a state asset.
- Enterprise data is secure.
- Data is shared across enterprise functions and processes.
- Data is accessible for authorized users to perform their functions.
- Future state policies, procedures and processes regarding data, are standardized and simplified to ensure substantial productivity gains across the enterprise.
- Enterprise data has common vocabulary, definitions and metadata.
- Data is owned by business and has a named owner.
- Data owners are defined by subject area, enterprise agreement or other agreed-upon methods.
- Data owners define the business rules for their data.
- Data owners set the standards for their data.
- Data owners define who can access their data.
- Data owners assign data stewards.
- Data owners are responsible for the quality of their data.
- There is only one system of record for each specific data element.

SECTION 2 DATA MANAGEMENT STRATEGY AND ACTION PLAN

To support the OneWa program's objectives of advanced data availability, quality and timeliness, this document describes an actionable strategy including the activities, resources, people, process and technology considerations required to support the state's enterprise data needs.

2.1 OVERVIEW

The following initiatives serve the purpose of deploying successful enterprise data management across the transitional state solution as outlined in the conceptual model.

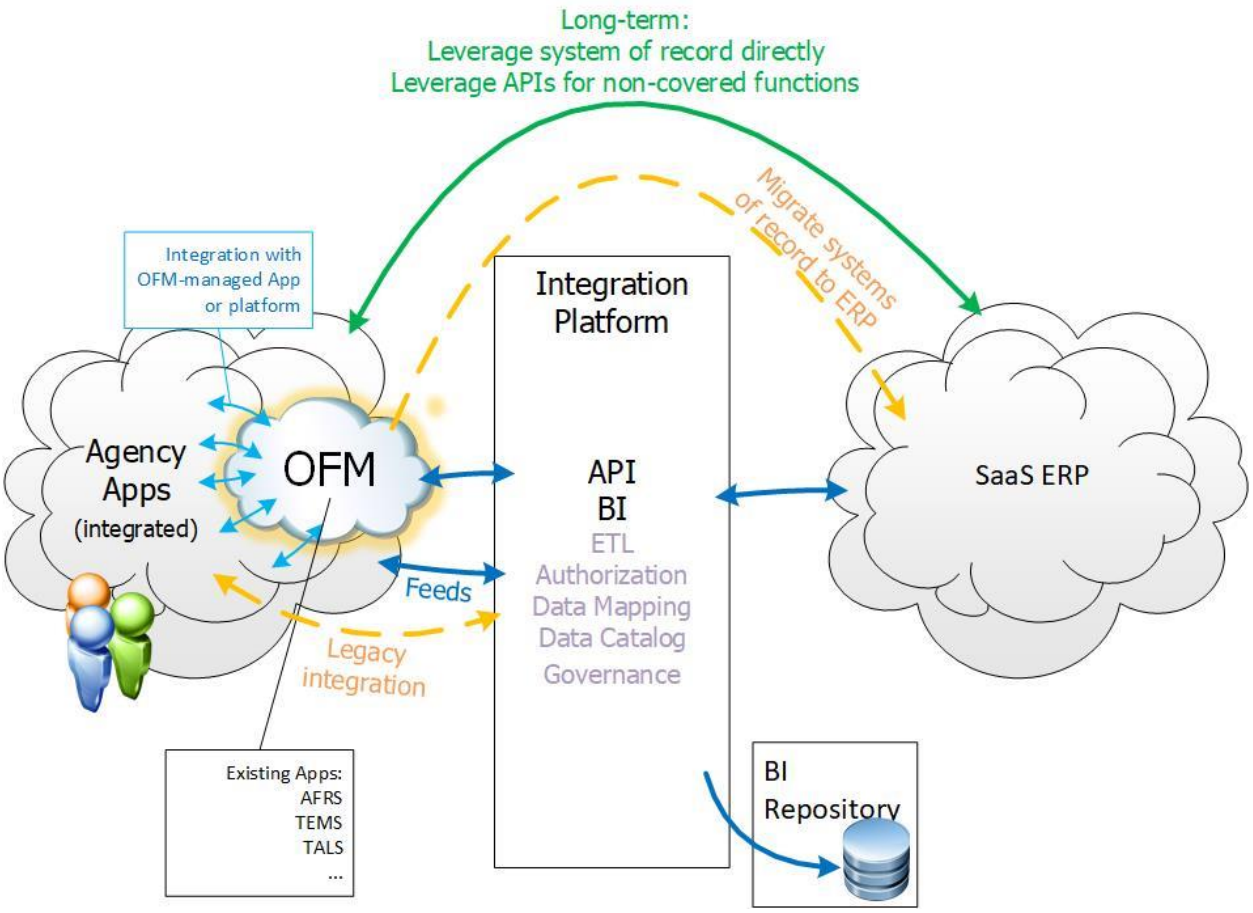

Figure 1: Conceptual model

2.1.1 DATA GOVERNANCE

Align implementation activities with the OneWa data governance efforts to ensure consistent sourcing and use of high quality, reliable data. Focus on creating a long-term governance process that will continue through maintenance and operations.

For more detail, see the data governance strategy document

2.1.2 DATA ARCHITECTURE

Establish a well-defined data architecture that proactively accounts for current and future business and technology needs. Focus on improving the availability and management of data throughout the data lifecycle in alignment with the Workday ERP software solution deployment.

The goal of the data architecture initiative is to ensure data models are built to meet business interoperability needs. These models will be developed, maintained and accessible across the five business functions.

The data architecture initiative will be conducted in two phases, which include:

- Establish data models
- Define model maintenance processes

Anticipated outcomes:

- Cross-functional data models established
- Increased data agility

Benefits:

- Limit development of analytical models in business silos
- Establish a culture of shared capabilities across the business processes
- Improve organizational efficiencies due to reduction in validation exercises

Additional details for each stage of the data architecture initiative are included in the following tables:

ESTABLISH DATA MODELS

Objectives	Key Milestones	Anticipated Benefits
• Update data lineage based on models • Establish an enterprise, subject area model to cascade across enterprise systems for OneWa	• Defined model scope • Developed conceptual model	• Establish the basis for future reporting
Critical Success Factors		**Organizational Impacts**
• Creation of templates and processes for the development of each model • Utilization of models as a basis for system change and control (e.g., any impacts require architecture approval before they can be implemented) • Integration of modeling efforts with the capture of metadata		• Train employees on the new data governance processes, policies and systems • Leverage existing systems and solutions
Key Activities		
• Define data model scope • Build conceptual models • Agree on models • Update and maintain enterprise data models		
Potential Risks		
None identified		

Figure 2: Establish analytic models

DEFINE ON-GOING DATA MODEL MAINTENANCE PROCESS

Objectives	Key Milestones	Anticipated Benefits
• Establish a change request process for changes to models	• Defined process to manage changes • Defined authoritative roles and responsibilities • Established architecture governance	• Governance over planning and implementation of future data capabilities
Critical Success Factors		**Organizational Impacts**
• Early agreement that building data architecture capabilities within the enterprise is in line with the future state needs of the business • Alignment of toolsets and data sources to support delivery of the analytics capability		• Changes in roles and responsibilities
Key Activities		

- Define scope for data architecture management
- Build data architecture management processes
- Define data architect roles and responsibilities
- Identify and onboard data architect(s) if necessary
- Implement processes
- Execute and evolve data architecture processes

Potential Risks

- State's ability to identify qualified resources takes longer than expected, delaying deployment of new capabilities

Figure 3: Define on-going maintenance process

2.1.3 DATA SECURITY

The goal of the data security initiative is to ensure role-based security is enabled to appropriately restrict access to category 3 and category 4 data and to reduce data risk and increase availability of insightful data. This increases compliance with data security access and retention policies.

The data security initiative will be conducted in a single stage to implement role-based security and access controls.

Anticipated outcomes:

- Increased compliance with data access, retention and deletion processes
- Role-based security implemented
- Data Sharing Agreements (DSA) and Non-Disclosure Agreements (NDA) are in place with all agencies

Benefits:

- Compliance with data security, open data and data privacy policies
- Compliance with policies for data access, retention and archival
- Controlled access to data and insights to the correct people, both internally and externally

This initiative will identify the data security and privacy needs of the state of Washington and will define and implement role-based security across the ERP solution to facilitate consistent secured access to category 3 and category 4 data.

IMPLEMENT ROLE-BASED DATA SECURITY

Objectives	Key Milestones	Anticipated Benefits
• Establish role-based data restrictions down to the row/column as required to comply with external and internal public disclosure and data privacy mandates such as open data and data privacy policies • Establish data sharing agreements and non-disclosure agreements where necessary	• Security and privacy scope agreed • Detailed compliance business capabilities and technical specifications gathered and discussed with stakeholders • Functional privacy domains defined • Role profiles created • Existing security and privacy communications materials aligned • Required application and tools updates defined • Security profiles implemented in systems and databases • DSA and NDA in place	• Reduce risk for category 3 and category 4 information (availability and improve adherence to all applicable privacy and security laws)
Critical Success Factors		**Organizational Impacts**
• Agreement amongst leaders on policy • Capability of current applications, tools and databases to support role-based security strategy • Willingness to increase restrictions on previously accessible data domains		• Potential for changes to technology needs including application customization • Security authorizations may result in role changes
Key Activities		
• Create security profiles for enterprise business functions • Define data visibility profiles for all end-users • Reconcile roles with existing security policies defined for the program • Design, test and implement • Standardize DSAs and NDAs,		
Potential Risks		
• Ineffective change management may result in stakeholders not adopting to new security processes and standards • Data stewards and state IT organization not prioritizing this component of governance into their day-to-day efforts		

Figure 4: Implement role-based data security

2.1.4 DATA STANDARDIZATION

Standardization to increase clarity and understanding of the enterprise data. Focus will be on identifying prioritized use cases, defining common business definitions, business rules, end-to-end lineage and metadata management needs

Data standardization will create a common understanding of data elements. This focuses on the deployment of data standards and data management processes for finance, procurement, budget, HR and payroll.

Data standardization will be conducted in three stages which include:

- Developing standards for primary subject areas and or data domains
- Developing data element and or field-specific standards
- Collecting data lineage information

Anticipated outcomes:

- Business glossary and data catalog established across business processes
- Consistent data element(s) / field specific standards established
- Data lineage documented and maintained
- Metadata repository populated

Benefits:

- Clarity, transparency and common understanding of data.
- Increased confidence in enterprise data outputs for decision making

The data standardization initiative will be executed in multiple stages in alignment with the deployment of the Workday ERP software solution. Data standardization will focus on the initial business processes with additional data standardization activities planned in parallel with Workday implementation.

During the initial implementation planning, the focus of the data standardization initiative will be on identifying a prioritized set of functional use cases. These prioritized use cases will be used to establish data definitions, data standards, rules and data lineage. Data lineage is critical to being able to provide transparency to the data lifecycle for all stakeholders and will include the business purpose, data sources, how data is transformed and where it will be used.

Data standardization will be enhanced as additional functionality comes on-line during the Workday ERP software solution implementation. The data standards will continue to mature as lessons learned from previous efforts are addressed and new data standards are defined. The ongoing work is considered part of daily operations and is not specifically identified in this strategy.

Additional detail for each stage of the data standardization initiative is included in the tables below:

DEVELOP STANDARDS FOR PRIMARY SUBJECT AREAS AND DOMAINS

Objectives	Key Milestones	Anticipated Benefits
• Identify business priorities for data based on decision making • Establish and maintain a data glossary containing key data attributes	• Identified prioritized data needs • Defined scope of subject area and data domains • Developed data standards	• Common understanding of the business and transformation rules
Critical Success Factors		**Organizational Impacts**
• Ability to prioritize data needs • Team engagement from both business team members and IT • Agreement on the business glossary terms • Approval of the glossary by governance groups • Consistency in the development and implementation of standards • A plan is put in place, and followed, for maintenance of standards that are aligned with changes to processes, tools, and policies		• New data management processes • Training and updates of operational processes
Key Activities		
• Confirm prioritized data domain scope • Build overarching subject area and domain standards • Transition to on-going monitoring and maintenance of the developed standards		
Potential Risks		
• Consensus based decision making results in exceeded timelines • Ineffective governance results in poor or slow decision making • Establishing consistent standards is unachievable due to complexity of the enterprise		

Figure 5: Data standardization for subject areas and domains

DEVELOP DATA ELEMENT AND FIELD SPECIFIC STANDARDS

Objectives	Key Milestones	Anticipated Benefits
• Document business and technical definitions and rules for all data elements and fields	• Finalized business rules, data element definitions, classifications and standards	• Clear rules for sourcing, audit, and management of data for reporting purposes
Critical Success Factors		**Organizational Impacts**
• Active participation of data stewards in the definition of standards • Data stewards and data custodians agree on the business rules, glossary terms data definitions • Defined standards are approved by appropriate governance structures established by the program		• Training on data standards and data sourcing • Change existing processes as needed to use the defined

• Consistency in the development and implementation of standards across the program • A plan is put in place, and followed, for maintenance of standards that are aligned with changes to processes, tools, and policies as needed	standards – such as, data entry processes • Update to existing legacy systems to conform to defined standards
Key Activities	
• Confirm scope of data element and field-specific standards based on prioritized dashboards, reports, scorecards and analytics • Define data elements and field-specific standards • Conduct gap analysis on standards for consistency • Transition to on-going monitoring and governance of standards • Update and maintain standards in a shared environment	
Potential Risks	
• Inability to define clear standards for a subject area or domain • Lack of resources • Standards are not consistently applied before the implementation of business intelligence tools resulting in challenges for process execution	

Figure 6: Data standardization for field specific domains

2.1.5 DATA QUALITY

Data quality is critical to the success of the OneWa modernization effort. Focus will be on standardizing and implementing data quality processes at every level.

Data quality, driven from effecitive data governance, establishs quality measures that will improve the reliability of the state's data.

- To establish trust and confidence in the data, cleansing, comparison and validation exercises will be stablished.
- Document and enforce required data quality standards.

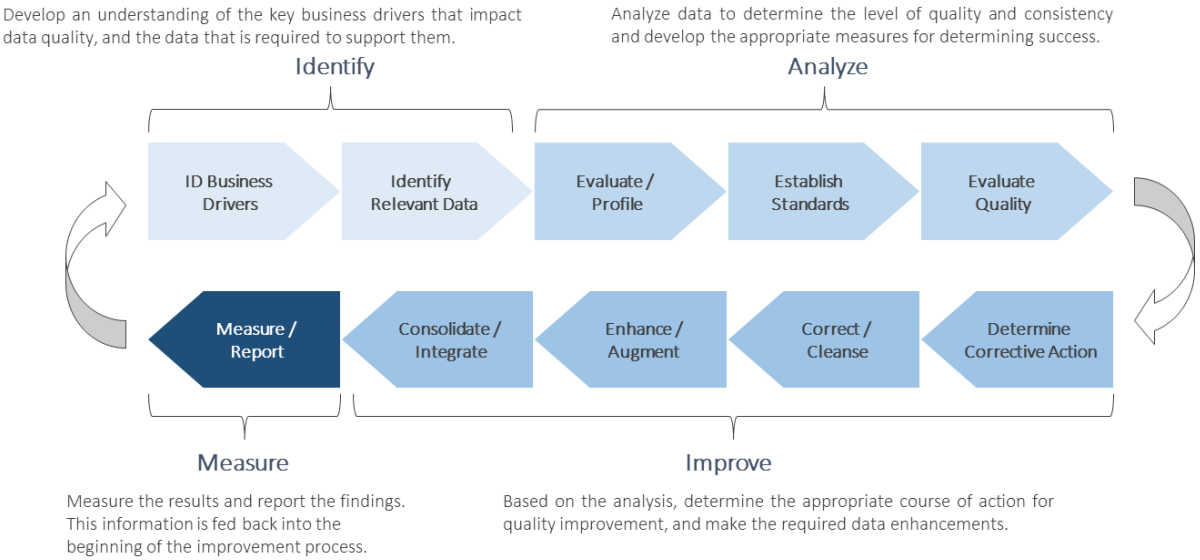

Figure 7: Data quality process flow

It is important to treat data quality as a full lifecycle activity. Data quality is a deliberate focus within the context of any process or software solution initiative. Best practice data quality standards are implemented in all enterprise data management processes, and monitored on a regular basis to ensure continued improvement.

2.1.6 METADATA MANAGEMENT

Metadata is a collection of everything known about the data itself and is vital to maintaining both data standardization and data quality. Focus on creating a central repository and processes to maintain the metadata.

A centralized metadata management approach must be leveraged to support consistency and quality while providing business benefits to a wide variety of users. Best practice taxonomy and naming standards are in use while adhering to compliance expectations.

2.1.7 DATA INTEGRATION

Movement of data in and out of both the ERP software solution and line of business systems will require a focus on standardization and quality of the process and the data.

For more detail, see the data integration strategy document

2.1.8 DATA CONVERSION

Converting necessary data into the new format to load in the Workday ERP software solution will require a focus on converting the essential data while planning for historical reporting and records retention requirements.

The criteria for determining what data to convert and migrate to the ERP is still being determined. Final recommendations will be provided by the System Integrator with final decisions made by the BTB including the business owner.

Records retention requirements will be the responsibility of the owner of the legacy system.

For more detail, see the data conversion plan document

2.1.9 *DATA DELIVERY*

Ensuring high quality, secure data is accessible for the state's reporting and analytical needs is a crucial data management function. Focus on providing an agile environment that fulfills the enterprise's many reporting and analytical requirements.

For more detail, see the business intelligence strategy document

SECTION 3 APPENDIX

Appendix A

Below are historical documents relating to the Data Management effort, if you would like to go back and see where the program was before, based off the last few years lessons learned.

Archived Documents
Program Blueprint v2
One Washington Business Intelligence Strategy