

Oregon DOT DMV Data Quality Maturity Assessment Final Report

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Executive Summary

What is this report about?

In response to recent concerns regarding voter registration eligibility determined by the Oregon Department of Transportation (ODOT) Driver and Motor Vehicle Services Division (DMV) in accordance with Oregon’s Motor-Voter law, ODOT contracted with Spy Pond Partners, LLC (SPP) to conduct a data quality maturity assessment. This report presents the results of this assessment.

How was data quality maturity assessed?

The International Standards Organization (ISO) standards for data quality management (ISO 8000 series) were used. These standards define 20 distinct processes that organizations can use to ensure that the data they collect, manage, use, and share is fit for its intended purposes – i.e., is sufficiently accurate, complete, consistent, timely and accessible.

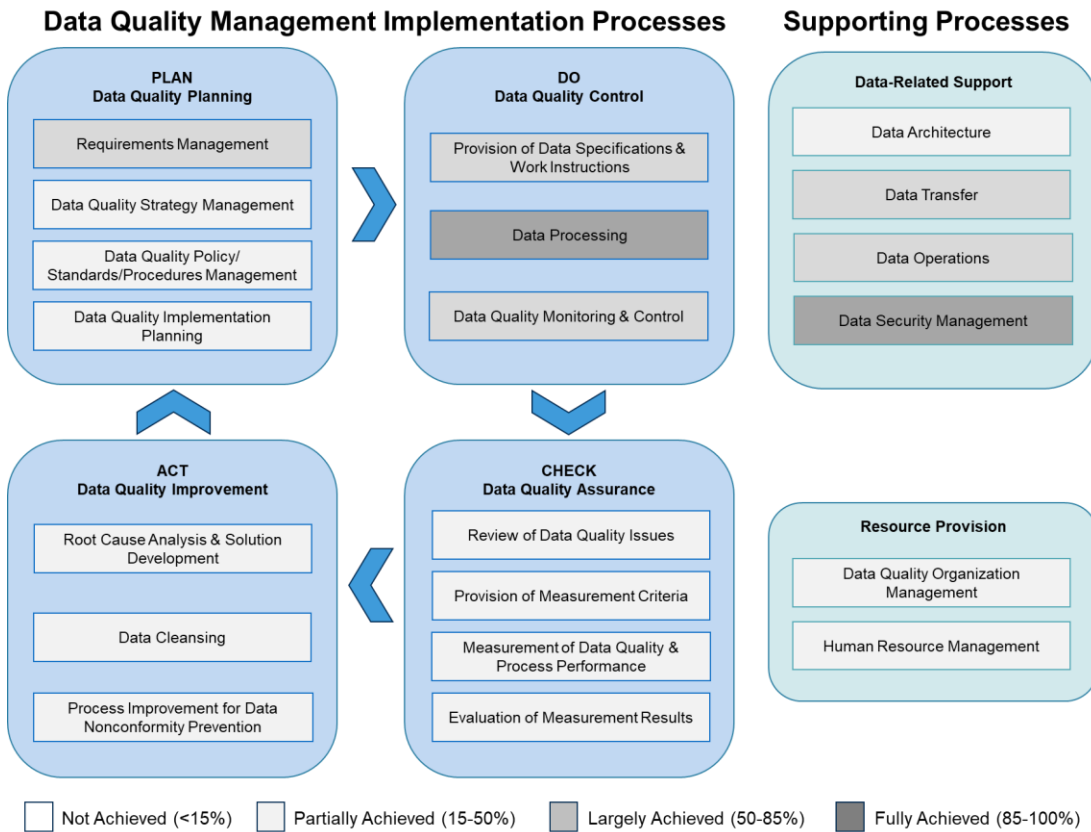
What did the assessment find?

ODOT/DMV’s data quality management maturity was assessed at a level 2 (out of 5):

0 – Immature	Data quality management processes are not demonstrated; no evidence that data meet requirements.
1 – Basic	Operational processes have access to data that meet requirements; data are subject to appropriate security considerations. No evidence of managing requirements or managing data processing activity.
2 - Managed	Operational processes make use of data that meet requirements; requirements are managed, data processing methods are managed.
3 - Established	Operational processes make use of data that meet requirements; there are common, repeatable processes for performing data quality management.
4 – Predictable	Operational processes make use of data that meet requirements; there are common, repeatable and predictable processes for performing data quality management. This predictability involves measuring the performance of data quality management.
5 – Innovating	Operational processes make use of data that meet requirements; there are common, repeatable, predictable and sustainable processes for performing data quality management. This sustainability involves applying appropriate innovation

Moving to the next level of maturity (Level 3-Established) will require more formalized data quality planning processes and well-defined data quality management roles. ODOT has an active agency-wide data governance program that can provide a foundation for further maturity advancement.

The overall rating of data quality maturity was based on examination of the 20 different processes covered by the ISO 8000 standard. The results of this more detailed review indicate that ODOT/DMV has at least partially implemented all 20 of the processes, and has largely or fully implemented seven of the 20 processes.



How can these results be used?

This was a fast-track assessment conducted over a two week period that involved four meetings with managers within ODOT’s Data Solutions Office, Information Services Branch, and DMV who were knowledgeable about data quality management practices. Results should be considered as informative but used as a starting point for further investigation and analysis.

ODOT/DMV can review the specific findings for the processes rated as Partially Achieved, and conduct further discussions to confirm their validity. Based on these discussions, they can identify and pursue improvements to workforce development, business processes, documentation, and automation that are both feasible and impactful. Periodic re-assessment of maturity can be conducted to track progress in moving towards more repeatable and predictable practices for ensuring quality data that conforms to established and managed requirements.

1. Introduction

Background

In response to recent concerns regarding voter registration eligibility determined by the Oregon Department of Transportation (ODOT) Driver and Motor Vehicle Services Division (DMV) in accordance with Oregon's Motor-Voter law, ODOT contracted with Spy Pond Partners, LLC (SPP) to conduct a data quality maturity assessment. This assessment is intended to provide baseline information for a separate, full-scale Data Integrity Review (DIR) being conducted by a separate contractor. The focus of the DIR is on data quality assurance and controls for driver, voter registration, and identity related data, including the processes of collection, verification, documentation, extraction, and transmittal of this data.

For the purposes of this assessment, "data quality" is defined as the degree to which data meet established requirements. In practice, data quality is determined based on conformance of data to specifications and business rules. Data quality measures the extent to which data are "fit for purpose" and meet specific dimensions or characteristics that can include things like completeness, validity, consistency, accuracy, integrity, and timeliness.

Data quality maturity assessment tools are widely used to assist organizations in benchmarking their current data quality practices and identifying paths for improvement. They typically cover data governance elements such as processes, roles, and measurement/metrics, as well as culture, for understanding and improving data trustworthiness, consistency, completeness and accessibility. They define different levels of maturity with respect to these elements, typically from ad-hoc or unaware to optimizing. Once an organization becomes aware of its maturity level, they can use the description of the subsequent levels to understand how to advance their practices.

Data quality maturity is often examined in context of an agency's larger data governance practices. Data governance provides the umbrella under which agencies can formalize and ensure accountability for the uniformity and consistency of data quality processes and practices. A primary component of data quality maturity assessment is to examine what broader data governance structures and processes have been implemented.

Report Overview

This report presents the results of the data quality maturity assessment. Section 2 provides background on the assessment structure and reviews the methodology used to conduct the assessment. Section 3 presents the assessment results. Appendix A provides additional details on the findings that provided the basis for assessment ratings.

It is important to note that this assessment was conducted in response to direction from Governor Tina Kotek to ODOT for assessing DMV's data integrity within a very tight timeframe. Information gathering activities were limited to four 2-hour meetings and a review of selected documentation. Therefore, results should be used as a starting point for further investigation and analysis.

2. Methodology

Overview

The following process was used to conduct the assessment:

- Review candidate data quality maturity models and select a model that is appropriate for this application and feasible to apply within the available time constraints. The ISO 8000-61 Data Quality Management (DQM) Process Reference Model and companion ISO 80000-62 Process Assessment standard was selected.
- Identify individuals at ODOT to participate in the assessment.
- Conduct a series of meetings to walk through the assessment elements and gather information relevant to determining the extent to which included elements are present at ODOT/DMV.
- Review background documents providing evidence of data quality management process implementation.
- Document findings and related evidence for each assessment element.
- Prepare and share draft findings with representatives of ODOT's Data Solutions Office (DSO) and DMV Office of Innovation and Planning (IAP).
- Prepare a final report reflecting comments from ODOT.

The ISO 8000-61 Data Quality Management Process Model

The ISO 8000 model was selected because it provides a comprehensive and well-established view of the processes that contribute to data quality. Other models considered included those from the Data Management Association (DAMA), the Enterprise Data Management (EDM) Council, Gartner, and The Data Warehouse Institute (TDWI).

As shown in Figure 1, the ISO 8000 model is based on a “plan-do-check-act” cycle, developed by Shewhart in the 1920's and popularized by Demming in the 1950's. As applied to data quality, the “plan” step (Data Quality Planning) establishes requirements to be met by data and develops strategies, standards, policies, and procedures for ensuring these requirements are met. The “do” step (Data Quality Control) implements data creation, updating, use, and monitoring practices specified by the policies and procedures. The “check” step (Data Quality Assurance) identifies, measures and evaluates the impact of “nonconformities” – i.e., cases where the data requirements aren't met or the data management processes are not performing as intended. Finally, the “act” step (Data Quality Improvement) develops and implements solutions to the identified nonconformities and processes.

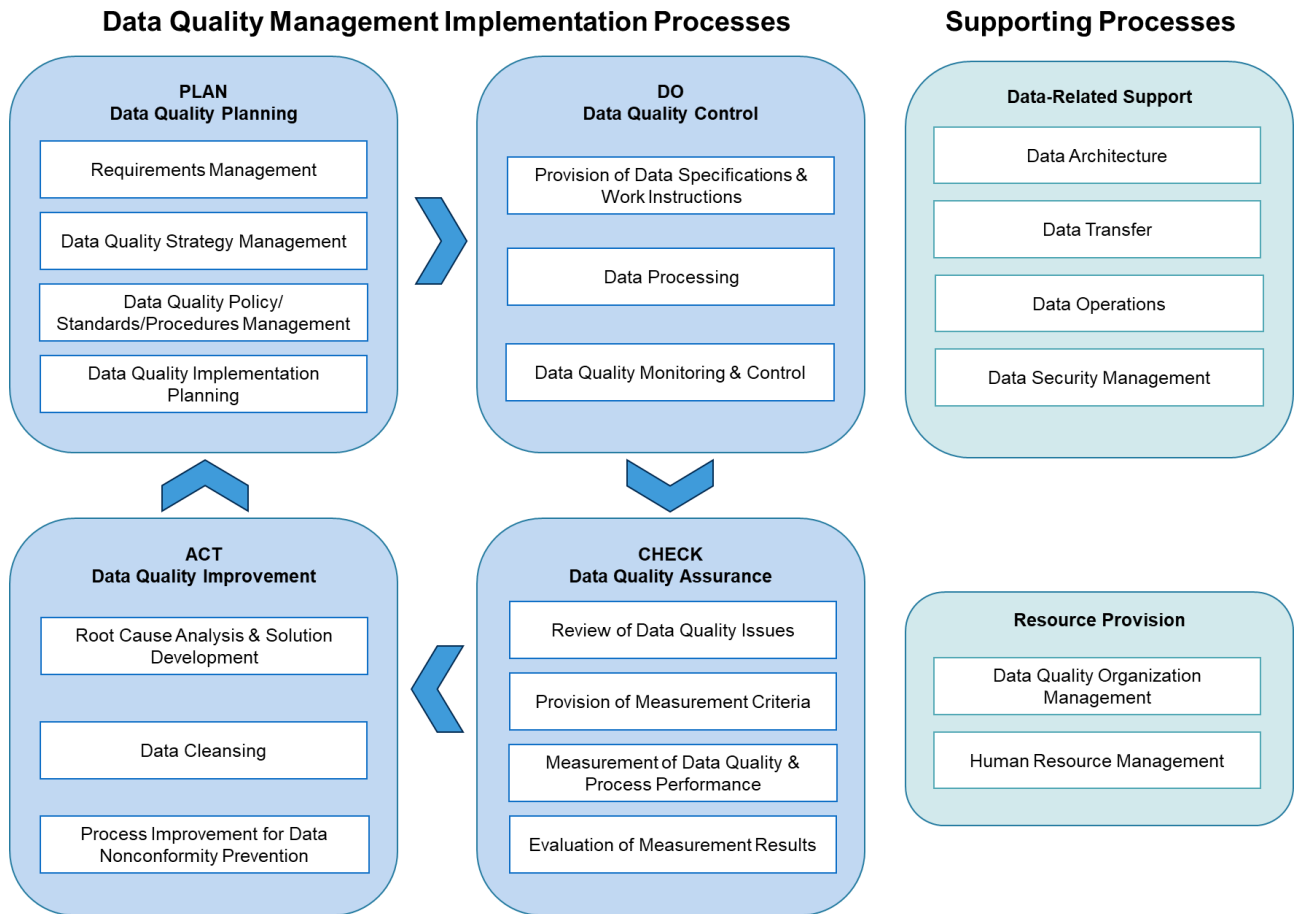


Figure 1. The ISO 8000-61 Data Quality Management Process Model

The ISO 8000 model also includes data, organizational and human resource management processes that support the core data quality management processes. Implementation of processes defined in the ISO 8000 model involve a mix of people, process and technology-related activities.

The methodology for maturity assessment based on the ISO 8000-61 process model is defined in ISO 8000-62. This standard defines criteria for determining the degree to which each process has been implemented in an agency or portion thereof. It also defines five overall data quality process maturity levels and provides a method for determining an agency’s maturity level based on the extent to which it has implemented different processes.

Table 1 lists the 20 data quality management and supporting processes included in ISO 8000-61 and shown in Figure 1.

Table 1. ISO 8000-61 Data Quality Management Processes

Process Area	Processes
Data Quality Planning	<p>DQP.1 Requirements Management: Establish, prioritize and validate data requirements to serve as the basis for creating/refining a data quality strategy that aligns with stakeholder needs and expectations</p> <p>DQP.2 Data Quality Strategy Management: Establish and evaluate a data quality strategy consisting of the vision, long-term goals and implementation roadmap to secure data quality across the organization in accordance with identified data requirements</p> <p>DQP.3 DQ Policy/Standards/Procedures Management: Specify data quality policies, standards, rules and procedures to ensure a consistent approach to data quality management</p> <p>DQP4. DQ Implementation Planning: Develop, execute and monitor plans for implementing data quality control, assurance, improvement and supporting processes - to include scoping, resourcing, roles and responsibilities and tracking.</p>
Data Quality Control	<p>DQC.1 Provision of Data Specifications and Work Instructions: Develop specifications describing the required characteristics of data for data processing and DQ monitoring & control. Develop work instructions that detail the approach to data processing and DQ monitoring & control.</p> <p>DQC.2 Data Processing: Create, use, update and delete data in conformance with specifications and work instructions. Log data processing activities to inform root cause analysis.</p> <p>DQC.3 DQ Monitoring and Control: Conduct a data quality risk assessment to prioritize monitoring and control activities. Monitor and measure DQC process performance and adjust as needed. Monitor and measure data conformance to specifications and correct when viable and inform stakeholders.</p>
Data Quality Assurance	<p>DQA.1 Review of DQ Issues : Identify and analyze DQ issues from data quality planning or control and establish a set of data nonconformities for measurement and evaluation.</p> <p>DQA.2 Provision of Measurement Criteria: Determine the scope of data and processes for QA and develop or select metrics and measurement metrics for both data and processes in the selected scope.</p> <p>DQA.3 Measurement of DQ and Process Performance: Measure data quality and process performance levels</p> <p>DQA.4 Evaluation of Measurement Results: Quantitatively evaluate the data quality and process performance levels and determine the impact on the organization.</p>

Process Area	Processes
Data Quality Improvement	<p>DQI.1 Root Cause Analysis and Solution: Identify root causes for each identified DQ issue and identify data cleansing or process improvement solutions. Prioritize candidate solutions based on cost-effectiveness and develop a plan for implementing selected solutions.</p> <p>DQI.2 Data Cleansing: Correct data nonconformities and related data, and act to prevent recurrence of nonconformities.</p> <p>DQI.3 Process Improvement for Non-Conformity Prevention: Identify, implement and validate process improvements to prevent future DQ issues.</p>
Data-Related Support	<p>DRS.1 Data Architecture Management: Define organization-wide data models to enable exchange and sharing of common data among software applications and data stores. Create shared artifacts to enable data consistency across the organization</p> <p>DRS.2 Data Transfer Management: Record, monitor and control data transfers conducted as part of DQ processes to ensure the traceability of all data that flows within, into and out from the organization</p> <p>DRS.3 Data Operations Management: Provide environments to ensure effective and efficient processing of data. Manage data-related software and tools, including Database Management System (DBMS) software, data management utilities, data modelling tools, data quality analysis tools and data cleansing tools.</p> <p>DRS.4 Data Security Management: Establish and maintain policy, standards, controls and procedures for data security. Authorize data access privileges and responsibilities for users. Monitor data access by users. Evaluate the performance of data security and act to improve confidentiality, integrity and availability of data.</p>
Resource Provision	<p>RPV.1 DQ Organization Management: Establish units supporting data quality management and ensure important decisions on data quality issues are taken, ultimately resulting in performance of the overall process for data quality management. Establish a clear escalation process to ensure that decisions are taken at the correct organizational level. Manage data, information and knowledge about data quality.</p> <p>RPV.2 HR Management: Develop or acquire knowledge and skills for data quality management, providing them to personnel having responsibilities for data quality management. Provide personnel with knowledge and skills for data quality management by training or recruitment. Collect, share, reuse and enhance best practices, knowledge, and skills throughout the organization.</p>

Table 2 shows the maturity levels and the process implementation expectations associated with each one from ISO 8000-62.

Table 2. ISO 8000-62 Data Quality Maturity Levels

Level	Description	Associated Processes
0 – Immature	Data quality management processes are not demonstrated; no evidence that data meet requirements.	None
1 – Basic	Operational processes have access to data that meet requirements; data are subject to appropriate security considerations. No evidence of managing requirements or managing data processing activity.	DRS.4 Data Security Management DQC2. Data Processing
2 - Managed	Operational processes make use of data that meet requirements; requirements are managed, data processing methods are managed.	Above Plus: DQP.1 Requirements Management DQC.1 Provision of Data Specifications and Work Instructions DQC.3 Data Quality Monitoring and Control
3 - Established	Operational processes make use of data that meet requirements; there are common, repeatable processes for performing data quality management.	Above Plus: DQP.2 Data Quality Strategy Management DQP.3 Data Quality Policy, Standards, Procedures Management DQP.4 Data Quality Implementation Planning DRS.1 Data Architecture Management DRS.3 Data Operations Management RPV.1 Organization Management
4 – Predictable	Operational processes make use of data that meet requirements; there are common, repeatable and predictable processes for performing data quality management. This predictability involves measuring the performance of data quality management.	Above Plus: DQA.1 Review of DQ Issues DQA.2 Provision of Measurement Criteria DQA.3 Measurement of DQ and Process Performance DQA.4 Evaluation of Measurement Results DRS.2 Data Transfer Management RPV.4 HR Management

Level	Description	Associated Processes
5 – Innovating	Operational processes make use of data that meet requirements; there are common, repeatable, predictable and sustainable processes for performing data quality management. This sustainability involves applying appropriate innovation	Above Plus: DQI.1 Root Cause Analysis and Solution DQI.2 Data Cleansing DQI.3 Process Improvement for Non-Conformity Prevention

The ODOT DMV Assessment Process

The assessment process was designed to be conducted within a short period so that it could provide input to the more in-depth DIR, which was also on a fast track.

Four 2-hour meetings were held between November 25 and December 6, 2024. The initial meeting provided background on the ISO 8000 standard and assessment process and covered the organizational support processes. Subsequent meetings covered the remaining processes. The assessor described the purpose, outcomes and typical actions included for each process and then asked the group a series of questions to determine the extent to which the process was implemented at ODOT/DMV. The group was asked to identify documented evidence of process implementation and where possible, provide copies or links. Following the meetings, the assessor recorded findings and assigned an implementation rating to each process.

Table 3 summarizes information about the meetings held. Table 4 lists the positions of individuals who participated in one or more of these meetings – attendance varied based on the topics covered.

Table 3. Assessment Meetings and Topics

Meeting Date	Processes Covered
11/25/2024	Data Quality (DQ) Organization Management Human Resources Management
11/27/2024	Data Architecture Management Data Transfer Management Data Operations Management Data Security Management
12/2/2024	Requirements Management DQ Strategy Management DQ Policy, Standards, Procedures Management DQ Implementation Planning Provision of Data Specifications and Work Instructions Data Processing DQ Monitoring and Control

Meeting Date	Processes Covered
12/6/2024	Review of Data Quality Issues Provision of Measurement Criteria Measurement of DQ and Process Performance Evaluation of Measurement Results Root Cause Analysis and Solution Development Data Cleansing Process Improvement for Data Nonconformity Prevention

Table 4. Participants in the Data Quality Maturity Assessment

Participant (Position)
ODOT DMV Administrator
ODOT DMV Innovation and Planning Manager
ODOT DMV Business Systems Support Manager
ODOT DMV Field Services Group Manager
ODOT DMV Customer Services Group Manager
ODOT DMV Program Services Group Manager
ODOT DMV Driver Services Manager
Software Project Architect, FAST Enterprises
ODOT Chief Information Officer
ODOT Information Services Branch (ISB) Enterprise Architecture and Security Manager
ODOT ISB DMV/CCD Systems & Planning Manager
ODOT ISB Business Relationship Manager
ODOT ISB Information Systems Specialist
ODOT Chief Data Officer

3. Assessment Results

Overall Assessment Maturity Rating

Data quality management process maturity at ODOT/DMV was assessed at **Level 2-Managed**. At this level of maturity:

- Requirements for data have been established based on stakeholder needs, and these requirements are documented and managed.
- Specifications for data have been developed based on the requirements.
- Work instructions have been developed for data processing, monitoring and control.
- Data are being processed in accordance with specifications and work instructions.
- Data processing activities are logged to support root cause analysis of data quality issues.
- Quality control activities are conducted that monitor and measure data and data processing and correct issues when viable.
- Data security management policy, standards, controls and procedures are established, monitored and evaluated to ensure confidentiality, integrity and availability of data.

Moving to the next level of maturity (Level 3-Established) will require more formalized data quality planning processes, and advancements in supporting data processes (architecture management and data operations management) and supporting organizational management processes (roles and responsibilities for data quality management).

Process Implementation Findings

As described in section 2, the overall maturity rating is based on ratings for each individual process area, reflecting the extent to which they have been implemented. Individual process implementation is rated as follows:

- 0-Not Achieved (<15%)
- 1-Partially Achieved (15-50%)
- 2-Largely Achieved (50-85%)
- 3-Fully Achieved (85-100%)

Figure 2 displays the assigned implementation ratings for the processes within each assessment area. Figure 3 displays this information in radar chart format. It should be noted that all seven of the data quality assurance and improvement processes were rated as a group rather than individually. This is because ODOT/DMV approaches them as integrated processes rather than sequential processes to identify, measure, evaluate and prioritize issues and then to implement improvements.

The strongest process areas for ODOT/DMV (rated at Fully Achieved) are in Data Security Management and Data Processing.

Other areas of relative strength (rated at Largely Achieved) are Requirements Management, Provision of Data Specifications and Work Instructions, Data Quality Monitoring and Control, Data Operations Management, and Data Transfer Management.

All other processes are rated as Partially Achieved. Notably, many of these processes are associated with overall data quality maturity levels 3-5. There were no processes rated as Not Achieved.

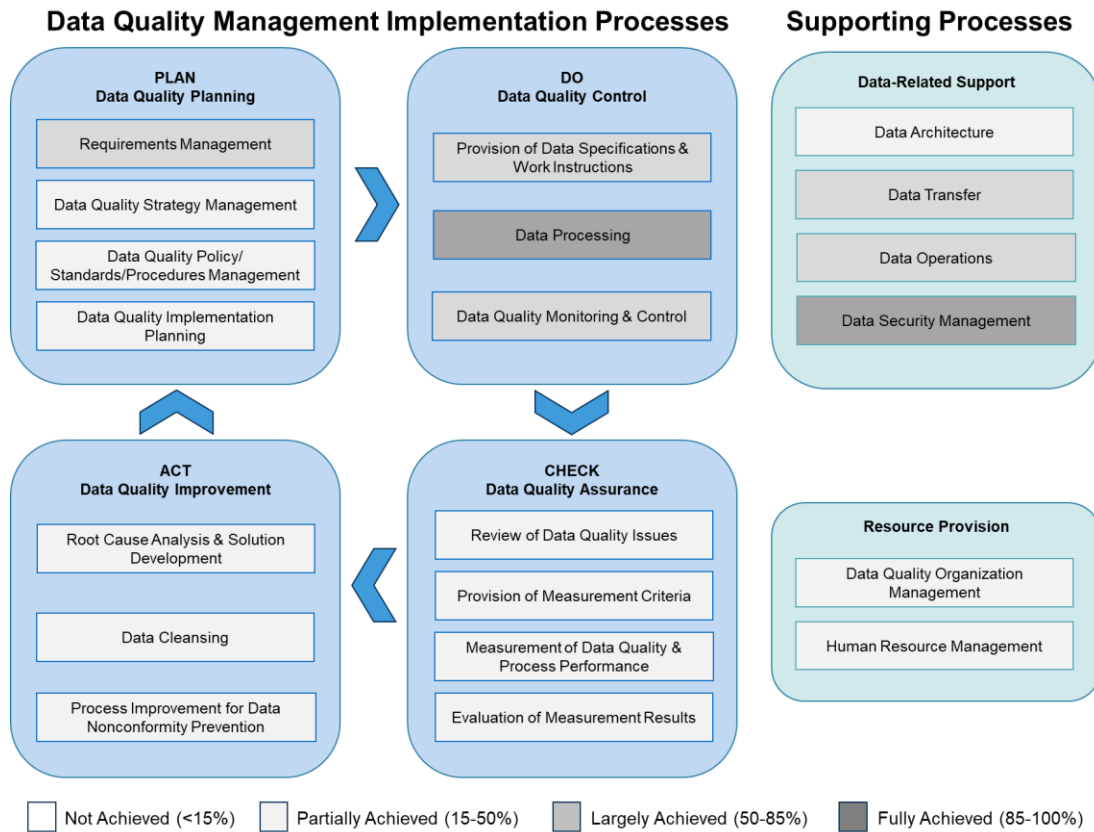


Figure 2. Process Implementation Ratings

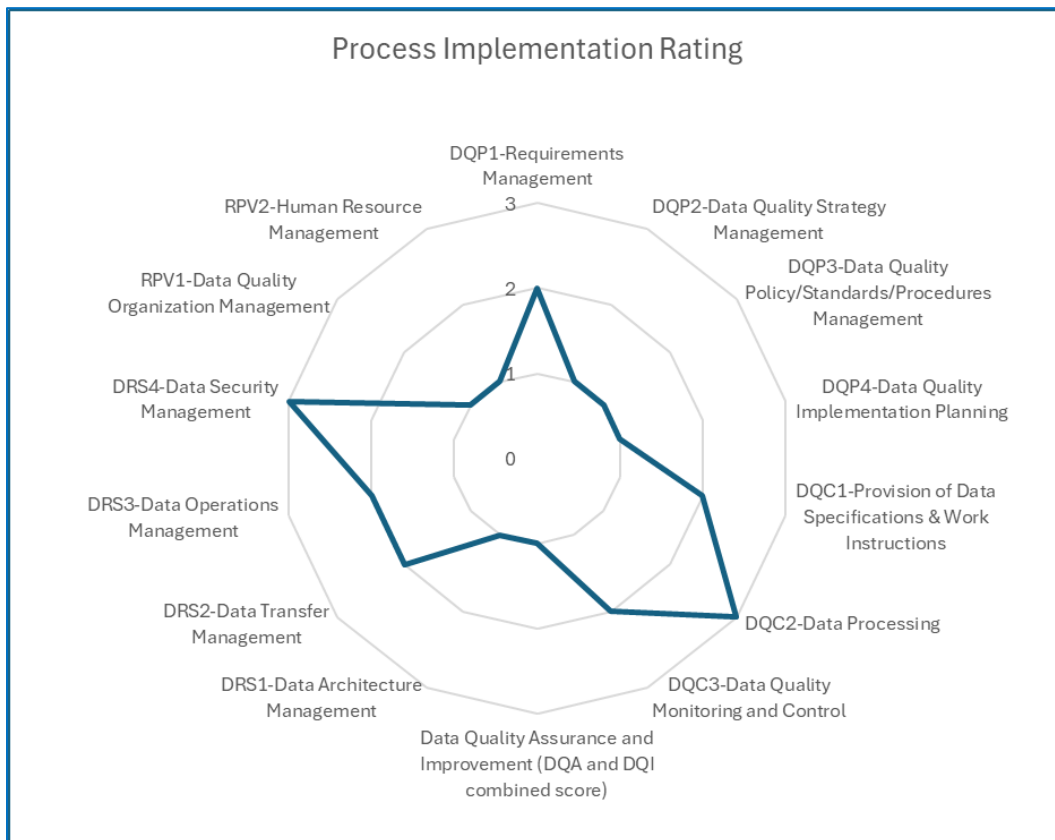


Figure 3. Radar Chart

Table 5 lists each process and describes the basis for assignment of the ratings. Further details are provided in the Appendix

Table 5 Basis for Process Implementation Ratings

Process	Rating	Comments
DQP1-Requirements Management	2	Detailed requirements for DMV data and system functionality were created as part of the Service Transformation Program (STP) that put the OLIVR system in place. Changes to requirements are documented as part of OLIVR change requests. Requirements development is part of ODOT's standard Information Systems (IS) project development lifecycle. However, there is no single master data requirements repository available representing the current state.
DQP2-Data Quality Strategy Management	1	There is a strong strategic foundation for data quality improvement at the state, agency-wide and DMV levels. Within DMV, work on the data strategy is in early stages and has yet to be more fully fleshed out, aligned with the agency-level activities, implemented and evaluated.
DQP3-Data Quality Policy/Standards/Procedures Management	1	ODOT is in the process of operationalizing data governance and data quality management, which will involve updates to policies, standards and procedures. DMV currently has detailed policies and procedures which are not specific to data quality but detail processes and standards for creating and updating data in OLIVR. DMV conducts training to ensure adherence to these policies and procedures, The complexity of rules governing DMV activities presents challenges to efficient navigation and discovery of information contained in the large volume of policy and procedure documentation.

Process	Rating	Comments
DQP4-Data Quality Implementation Planning	1	There is no single implementation planning process for data quality control, assurance, and improvement at DMV. However, there are established implementation planning activities for system changes, for the agencywide data governance rollout at ODOT, and for other DMV initiatives to respond to changes in business requirements. DMV is beginning to plan for implementation of their strategic plan's data management strategy.
DQC1-Provision of Data Specifications & Work Instructions	2	DMV's data specifications are embedded within OLIVR system logic and interface specifications. Work instructions for creating, updating and deleting records are provided in the form of procedures and guidance for completing various types of transactions. Some reports have been created for monitoring data and process conformance to specifications, and there are work instructions for running these reports.
DQC2-Data Processing	3	DMV ensures that data meet specifications through a combination of built in data entry logic and checks and employee training. DMV maintains records of data changes and transfers that can be used for root cause analysis.
DQC3-Data Quality Monitoring and Control	2	DMV assessment participants provided examples of risk assessment, process performance measurement, data correction, stakeholder notification, and updates to processes. These activities are not centralized or standardized and take place within individual business units. However, participants stated that these activities are integral to how they operate.
<p>NOTE: Data quality assurance and improvement are approached as integrated processes by DMV rather than sequential processes to identify, measure, evaluate and prioritize issues and then to implement improvements. Therefore, they have a combined rating.</p>		
DQA1-Review of Data Quality Issues	1	DMV has established processes for data issue investigation, measurement (where appropriate), determination of appropriate actions, and resolution. There are
DQA2-Provision of Measurement Criteria		

Process	Rating	Comments
DQA3-Measurement of Data Quality & Process Performance		<p>opportunities to improve documentation of processes to ensure that they are well understood by new staff. Data quality assurance and improvement processes are currently primarily reactive rather than proactive. There are opportunities to shift to more proactive identification and investigation of both data and process issues. Creating an analytical DMV data repository (separate from the OLIVR transactional database) would serve as an important enabler for expanded proactive data quality assurance and improvement activities. Availability of technical staff resources is a significant constraint to progress in this area.</p>
DQA4-Evaluation of Measurement Results		
DQI1-Root Cause Analysis & Solution Development		
DQI2-Data Cleansing		
DQI3-Process Improvement for Data Nonconformity Prevention		
DRS1-Data Architecture Management	1	<p>ODOT is in early stages of maturity with respect to management and sharing of common data components. DMV's data are maintained in a Commercial-Off-the-Shelf (COTS) product that is architected to be consistent with national standards to enable data sharing. Opportunities for further harmonization and data exchange between OLIVR and other internal ODOT systems are limited.</p>
DRS2-Data Transfer Management	2	<p>Data transfers into and out of OLIVR are specified via Intergovernmental Agreements (IGAs), and there are tracking systems in place that maintain logs of data exchanges. Tracking information is available for use in Quality Assurance (QA) activities but has primarily been used to confirm successful and complete data transfers.</p>
DRS3-Data Operations Management	2	<p>ODOT provides data processing environments that enable DBMS software updates, database connectivity management, data exchange, data backup and recovery, performance tuning, and monitoring and error reporting for the OLIVR transactional system. ODOT licenses and supports a variety of data management tools, though it does not use specialized tools for data profiling and cleansing.</p>

Process	Rating	Comments
DRS4-Data Security Management	3	ODOT maintains policies, standards and procedures to manage access to data systems and has implemented standard security protocols including role-based permissions for access to the OLIVR transactional system. A recent Secretary of State (SOS) audit identified the need for improved documentation and periodic review of access and risk assessments.
RPV1-Data Quality Organization Management	1	Basic governance roles and structures are in place within the agency, with limited DMV participation. DMV roles and processes are established to address data quality issues that arise. However, roles and processes are focused on identifying, vetting and implementing system changes and don't currently emphasize proactive data quality management activities.
RPV2-Human Resource Management	1	Training and knowledge sharing opportunities are being provided to DMV staff to ensure that data being entered into systems is accurate and meets applicable specifications. Specific training on data quality management practices has been developed by the ODOT DSO and is anticipated to be rolled out in 2025.

Appendix A. Detailed Findings

This appendix provides detailed findings gathered from the four assessment meetings and selected documentation review. These detailed findings were used to assign the process implementation ratings shown in section 3 of this report.

Data Quality Planning Processes (DQP)

DQP.1-Requirements Management: Establish, prioritize and validate data requirements to serve as the basis for creating/refining a data quality strategy that aligns with stakeholder needs and expectations

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
DQP1.1 Requirements Gathering	DQP1.1.1 As part of the Service Transformation Program (STP)/OLIVR implementation, ODOT DMV developed detailed requirements and business rules	DMV Business Needs and Rules spreadsheet	DMV serves a vast array of stakeholders including: "all Oregonians"; federal, state and local law enforcement agencies; courts, Oregon Department of Environmental Quality (DEQ), other state DMVs, University researchers, insurance companies, US Social Security Administration (SSA), and the Federal Motor Carrier Services Administration (FMCSA). Business rules consist of references to legislation that define what information is to be collected and how.

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	DQP1.1.2 The Business Requirements for OLIVR included several related to how the system should validate data	DMV Business Needs and Rules spreadsheet	<p>Examples of validation requirements: <i>The system must interface with external systems, such as USPS, Melissa Data, and/or 411, to verify valid and complete address information.</i></p> <p><i>The system must validate VIN to make, model, etc. (VIN Conforming).</i></p> <p><i>The system must validate vehicle (situs) and residence or business address using table of known invalid physical addresses (currently known as drop-box table).</i></p> <p><i>The system must interface with PDPS/CDLIS to determine whether the prospective examiner has three years of driving experience as a valid CDL holder.</i></p>
	DQP1.3 IT projects that implement changes to DMV data and functionality include a standard requirements gathering activity	DMV RFW Instructions IS Template P261S System Requirements Specification	<p>DMV Request for Work (RFW) instructions include space to describe requirements to be met through the requested change</p> <p>IS Template includes section for data requirements- including data integrity, security, history management, distribution, and replication.</p>

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	DQP1.4 DMV's Business Support Services unit (BSS) provides templates for gathering business needs associated with an Expedited Policy Changes type request	Template and Instructions for Gathering Business Needs	
DQP1.2 Requirements Documentation	DQP1.2.1 DMV established a requirements repository in SharePoint during the STP.	Requirements Repository document on the BSS webpage	BSS is the current owner of this repository.
	DQP1.2.2 Changes in business needs, rules and laws are documented via the OLIVR system change requests (a.k.a., SQRs) submitted for state and federal legislation, IT projects, Expedited Policy Changes, Maintenance & Enhancements (a.k.a., MET Items), and other types of IT work.	Requirements Repository document on the BSS webpage	

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
DQP1.3 Requirements Updating	DQP1.3.1 Requirements associated with system changes are created, but are not merged into a single master requirements repository		

DQP.2-Data Quality Strategy Management: Establish and evaluate a data quality strategy consisting of the vision, long-term goals and implementation roadmap to secure data quality across the organization in accordance with identified data requirements.

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
DRP2.1 Data Quality Strategy	DRP2.1.1 The State of Oregon published a Data Strategy that includes a mission and core principles and practices	Oregon's Data Strategy	One of the core practices is to: "Build policies and guidelines to safeguard data quality, integrity, and authenticity within agency data governance programs"
	DRP2.1.2 ODOT created a Strategic Data Business Plan (SDBP) in 2016 that includes a vision, goals and objectives, and an implementation roadmap	ODOT 2016 Strategic Data Business Plan	One of the objectives is: "ODOT strengthens internal processes and competencies for data quality assurance, analysis and communication."

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	DRP2.1.3 ODOT's current IT Strategic Plan includes objectives supporting optimal use of data and aligns with the SDBP	ODOT 2024-2027 IT Strategic Plan	Goals include: <ul style="list-style-type: none"> - Enable secure and efficient data sharing to promote optimal use of enterprise information assets and informed decision-making, in alignment with ODOT's Strategic Data Business Plan goals and strategies - Enable secure application and data integration across business functions, application platforms and external partners within the transportation ecosystem
	DRP2.1.4 DMV's Strategic Plan includes "Data Informed" as one of its strategic goals and "Enhanced Data Management" as one of its seven key strategies; this strategy explicitly includes access to high-quality data for operations and decision making.	DMV 2022-2027 Strategic Plan	The data-related strategy is: "Enhanced Data Management will build upon existing reports and create tools that allow staff access to high-quality data, maximizing operations and decision making at all levels."

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	DRP2.1.4 DMV has created a project charter supporting implementation of its Enhanced Data Management strategy, defining goals/metrics, expected deliverables and resources,	DMV Strategic Plan (Key Strategy) Project Charter - Enhanced Data Management	
DRP2.1 Data Quality Strategy Evaluation and Updating	DRP2.1.1 ODOT's DSO is working to formalize data governance implementation and put a formal data quality planning process in place, following the strategies included in the SDBP. They have been focusing on implementation of foundational structures and processes and have not prioritized updating ODOT's documented data strategy.	DSO web pages	
	DRP2.1.2 DMV updates its strategic plan every five years. They are currently in early stages of implementing the data strategy included in the current plan.		

DQP.3-Data Quality Policy, Standards and Procedures Management: Specify data quality policies, standards, rules and procedures to ensure a consistent approach to data quality management.

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
DQP3.1 Policies, Standards and Procedures	DQP3.1.1 ODOT created a data governance policy (ADM 04-25) but this policy was last validated in 2019 and references data governance groups that are no longer active.	ADM 04-25 Data Governance Policy	
	DQP3.1.2 ODOT's DSO has created a data quality management plan (DQMP) template that defines a process and intents to roll this out to data stewards and trustees in 2025	Draft DQMP Template	
	DQP3.1.3 DMV maintains extensive and detailed policies and procedures governing the information to be entered into the OLIVR system.	DMV Policy and Procedure Manuals	

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
DQP3.2 Ensuring Consistent Adherence to Policies, Standards and Procedures	DQP3.2.1 ODOT's DSO has created training on data quality management and intends to roll this out to data stewards and trustees in 2025.	Draft data quality training materials	
	DPQ3.2.2 DMV conducts extensive and regular training on policies and procedures for staff who enter data into the OLIVR system and staff serving in various support roles impacting the quality of data in that system.	DMV training materials	
	DPQ3.2.3 The complexity of legislatively established requirements and the large body of policy and procedure documents makes it challenging to find answers to specific questions		

DQP.4-Implementation Planning: Develop, execute and monitor plans for implementing data quality control, assurance, improvement and supporting processes - to include scoping, resourcing, roles and responsibilities and tracking.

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
DQP4.1 DQ implementation Plans	DQP4.1.1 ODOT's DSO conducts business planning and budgeting to advance implementation of data governance (including data quality management)	DSO business plan and budget documents*	Limited resources and other agency priorities constrain DSOs ability to implement its desired initiatives.
	DQP4.1.2 DMV is in the process of developing an implementation plan for its Strategic Plan-Enhanced Data Management strategy.	DMV Strategic Plan (Key Strategy) Project Charter - Enhanced Data Management	
	DQP4.1.3 There are detailed implementation plans produced for any activities involving system changes. Some of these system changes are implemented to improve data quality - for example, adding validation or adjusting a user interface	DMV RFW Instructions	

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
DQP4.2 DQ Responsibilities and Accountabilities	<p>DQP4.2.1 DMV made initial designations of individuals for the established agency data governance roles: Coordinating Data Stewards, Business Data Stewards and Trustees. These roles have established responsibilities and accountabilities for data. Updates to roles are currently pending to reflect staffing changes.</p>		See RPV1.1.3
	<p>DQP4.2.2 Responsibilities and accountabilities for data accuracy and completeness as transactions are completed are distributed across multiple DMV field and Headquarters (HQ) units.</p>		<p>A DMV manager must sign off on every RFW. The Driver Services Coordination Team (DSCT) and Vehicle Services Coordination Team (VSCT) are responsible for vetting system changes to avoid unintended consequences. The DMV records section provides centralized control for responses to records requests.</p>

Data Quality Control

DQC1-Provision of Data Specifications and Work Instructions: Develop specifications describing the required characteristics of data for data processing and DQ monitoring & control. Develop work instructions that detail the approach to data processing and DQ monitoring & control.

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
DQC1.1 Data Specifications	DQC1.1.1 ODOT IS has basic data dictionary information on OLIVR databases, tables, and columns (data type, length, and description)	Wiki with dynamically generated data dictionary information from OLIVR	This documents the entire FAST system, including databases and tables that ODOT is not using.
	DQC1.1.2 OLIVR includes built in business/data entry logic based on required data characteristics	OLIVR code base*	
	DQC1.1.3 DMV Procedures and training materials contain specifications of data related to specific transactions.	DMV Procedures DMV Training Materials	These specifications are distributed across many different source documents.
	DQC1.1.4 Data included in OLIVR interfaces that is received from or shared with other agencies is specified in IGAs and in OLIVR interface specifications	DMV IGAs OLIVR code base*	Sample IGAs were provided for review; not a complete set

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
DQC1.2 Work Instructions	DQC1.2.1 DMV's work instructions for creating and updating records are provided in multiple procedure documents and training materials covering different transaction types and cases	DMV Procedures User Manuals	
	DQC1.2.2 As part of the conversion of legacy data from the DMV mainframe system to OLIVR, procedures were created to validate data extraction procedures.	Data validation code*	
	DQC1.2.3 DMV runs reports to identify data issues including duplicate records, and work instructions are available for running these reports.	American Association of Motor Vehicle Administrators (AAMVA) documentation OLIVR Report Specifications	Some of these reports are based on documented AAMVA best practices Other reports ensure that processes are being completed in a timely fashion.

DQC2-Data Processing: Create, use, update and delete data in conformance with specifications and work instructions. Log data processing activities to inform root cause analysis.

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
DQC2.1 Data conform to specifications; embedded specs in system	DQC2.1.2 OLIVR includes built in business/data entry logic based on required data characteristics	Wiki with dynamically generated data dictionary information from OLIVR	Same as DQC1.1.2 OLIVR controls data inputs; contains checks for duplicate records (prompt for user action)
	DQC2.1.3 DMV Procedures and training materials contain specifications of data related to specific transactions.	OLIVR code base*	Same as DQC1.1.3 In addition to formal training, employees receive email notifications of any system or policy changes. The Wednesday AM meetings provide an opportunity for ongoing training and discussion of issues.
	DQC2.1.4 Data included in OLIVR interfaces that is received from or shared with other agencies is specified in IGAs and in OLIVR interface specifications	DMV Procedures DMV Training Materials	Same as DQC1.1.4

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	DQC2.1.5 DMV has established several checks to ensure that driver citizenship information is entered accurately and that the required documents have been provided.		
DQC2.2 Education of end users in application of specs and work instructions	DQC2.2.1 All new DMV staff receive training appropriate to their role, some of which emphasizes the importance of data accuracy and completeness	Training documentation	Same as RPV2.1.2
	DQC2.2.2 DMV field staff meets weekly for training and information sharing. These meetings include knowledge transfer related to practices that result in quality data.		Same as RPV2.2.2
DQC2.3 Records of data modifications and transfers	DQC2.3.1 OLIVR logs all system accesses and changes.	Screen shots showing audit fields on data records*	Same as DRS4.2.3
	DQC2.3.2 Information on data transfers is retained in OLIVR and MoveIT indefinitely.	OLIVR and MoveIT log files	Same as DRS2.2.1

DQC.3-Data Quality Monitoring and Control: Conduct a data quality risk assessment to prioritize monitoring and control activities. Monitor and measure DQC process performance and adjust as needed. Monitor and measure data conformance to specifications and correct when viable and inform stakeholders.

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
DQC3.1 Risk assessment to guide monitoring and control activities	DQC3.1.1 DMV does not conduct a formal assessment of risks to guide data processing monitoring and control, but staff report that risk assessment is embedded throughout all processes.		
	DQC3.1.2 DMV has processes to identify, analyze, escalate and resolve issues - these vary by service channel		These processes address a variety of issues, some of which are related to data entry, transfers, and processing.
	DQC3.1.3 DMV has a legal support team that identifies risks related to tort claims	DMV org chart	
DQC3.2 Measurement of process performance	DQC3.2.1 Measurement and monitoring of processes takes place within individual business units	DMV policy and procedures documents	Examples: verification that data sent to partner agencies is received; verification that records have been retained/destroyed per retention schedule; verification that items sent for imaging are successfully processed.

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
DQC3.3 Data correction and stakeholder notification	DQC3.3.1 IGAs govern stakeholder notification and correction processes in the event that data errors are found	IGAs	A small sample of IGAs were reviewed
	DQC3.3.2 Customers are notified when errors are identified in their records	DMV policy and procedures documents	
DQC3.4 Updates to processes to prevent recurrence of data nonconformities	DQC3.4.1 DMV modifies policies, procedures and system documentation as issues are identified and as system changes are made to prevent observed data nonconformities	DMV policy and procedures documents	DMV maintains a history of changes to policy documents

Data Quality Assurance and Data Quality Improvement

All processes within the Data Quality Assurance and Data Quality Improvement areas were rated together as a unified combined process. The ISO process model has quality assurance ending with an identified, measured and evaluated set of issues to move forward for improvement. However, DMV combines quality assurance and improvement activities for each identified issue. Specific processes that were combined for purposes of this assessment are:

DQA.1 Review of DQ Issues: Identify and analyze DQ issues from data quality planning or control and establish a set of data nonconformities for measurement and evaluation.

DQA.2 Provision of Measurement Criteria: Determine the scope of data and processes for QA and develop or select metrics and measurement metrics for both data and processes in the selected scope.

DQA.3 Measurement of DQ and Process Performance: Measure data quality and process performance levels.

DQA.4 Evaluation of Measurement Results: Quantitatively evaluate the data quality and process performance levels and determine the impact on the organization.

DQI.1 Root Cause Analysis and Solution Development: Identify root causes for each identified DQ issue and identify data cleansing or process improvement solutions. Prioritize candidate solutions based on cost-effectiveness and develop a plan for implementing selected solutions.

DQI.2 Data Cleansing: Correct data nonconformities and related data, and act to prevent recurrence of nonconformities.

DQI.3 Process Improvement for Non-Conformity Prevention: Identify, implement and validate process improvements to prevent future DQ issues.

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
<p>DQAI.1.Data Issue Identification, Measurement, Evaluation and Resolution</p>	<p>DQAI.1.1 Data issues are identified through multiple sources and are investigated to determine the source of the problem and the needed response (data correction, system change, training, procedure update, policy change, etc.). The specific approach to measurement and evaluation varies based on the issue</p>		<p>Examples:</p> <p>(1) Customer challenges sanction imposed on their driver record, which triggers an administrative review process. DMV reviews when the record was changed, determines whether it was in error. If it was an error, they assess if this was an anomaly or if it was due to a systematic issue. Then, they identify the appropriate response, which may include correcting the error and notifying the customer, conducting additional training, updating procedures/documentation and/or making changes to the system.</p> <p>(2) Imaging staff notes that the name on the Driver License (DL) record does not match the one on the image. They escalate this issue, which results in an investigation of what occurred, and what correction is needed.</p> <p>(3) Issues are identified during meetings of the VSCT and DSCT. There was one case which initiated a lookup of a death record, which should have been available based on an automated data transfer that had been established with Vital Statistics. On further investigation, it was found that this automated transfer had stopped working.</p>

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	DQAI.1.2 Issues that are related to OLIVR data or system behavior are brought to the BSS team, which investigates the issue and if appropriate, initiates a system change process.		It was noted that there is room for improvement in documentation of the issue investigation and response process - for new employees and contractors.

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	DQAI.1.3 The BSS team has runs queries on the OLIVR data to identify the span of records impacted by an observed issue	Sample queries*	<p>Examples:</p> <p>(1) Following initial conversion of legacy data for the OLIVR transition, staff noticed some discrepancies between the original and the converted data. They ran a report that compared values. Based on this report, they determined how the errors occurred and developed a fix for the affected records.</p> <p>(2) Staff identified the need for a policy change related to customers whose licenses have been suspended indefinitely due to incarceration. It was up to the customers to provide DMV with their date of release from incarceration so that DMV could determine the suspension length. However, this was not an effective way to obtain this information - the data on release dates was not being updated. This data issue resulted in felony convictions of drivers whose licenses were still suspended, but should not have been. A new process was created to obtain release dates from the Department of Corrections (DOC), the policy was changed, impacted records were identified through a query, and the records were individually reviewed and corrected as needed.</p>

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	DQAI1.4 After action reviews (AARs) are conducted for large scale issues that document what happened, why, and corrective steps to be taken	DMV AAR for Motor Voter Issues (Oct 7, 2024)	
DQAI2.Data Process Measurement, Evaluation and Improvement	DQAI.2.1 DMV runs daily and monthly production reports showing the volume of different types of transactions processed . These reports are reviewed to identify process issues for investigation	Sample reports*	Example: a monthly report showed a decrease in the number of Real IDs processed. On investigation, a data issue with the report was identified.
	DQAI2.2 OLIVR has robust health checking processes that provide prompts about the need for intervention.	OLIVR technical specifications*	

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	DQAI.2.3 DMV staff note that they would like to expand proactive reporting and analysis activities that (1) provide alerts for process results that are outside of normal limits and (2) identify situations where data meet current specification but are not actually correct (which might be identified through application of new business rules)		<p>Staffing constraints limit DMV's ability to expand these activities.</p> <p>The DSO has identified DQ issues in DMV data that are the result of legacy system entries that continue to be propagated forward to current/active records without being cleaned for consistency and accuracy. These issues are currently under investigation.</p>
	DQAI2.4 Consequences of poor data quality and process performance are routinely understood and considered	See examples for DQAI1.1 and 1.3	DMV staff prioritize issues based on impacts to customers and to public safety.

Data-Related Support Processes

DRS.1-Data Architecture Management: Define organization-wide data models to enable exchange and sharing of common data among software applications and data stores. Create shared artifacts to enable data consistency across the organization.

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
DRS1.1 Common Data Models	DRS1.1.1 ODOT does not have a centralized data architecture function that creates and shares common data models for reuse. However, there are early stage examples of data sharing between DMV and other ODOT units for specific projects and discussion about ingesting some DMV data into ODOT's data warehouse.	Data models for GIS, TEAMS, MMS, Data Warehouse*	Road inventory based on the FHWA MIRE standard Crash data based on the MMUCC standard TEAMS financial data based on the statewide financial management system IGA with Tyler Technologies for payment processing Representation of asset inventory in the Maintenance Management System (MMS) Common dimensions for the data warehouse Pilot project with Oregon Department of Human Services (DHS) to check consistency of Medicare/Medicaid enrollee identification info against DMV driver records. Pilot project to use DMV vehicle registration data to analyze Greenhouse Gas (GHG) reduction progress and need for Electric Vehicle (EV) charging stations.
	DRS1.1.2 OLIVR is a COTS solution that incorporates data structures consistent with federal/national data sources and standards including from AAMVA, FMCSA and USPS	OLIVR data model* Data standards from AAMVA, FMCSA, USPS	USPS Address Standardization Application Programming Interface (API): https://developer.usps.com/addressesv3

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	DRS1.1.3 Most DMV data does not overlap with other ODOT data, with the exception of address/location information. However, ODOT does not yet have an agency-wide standard for this data.	NA	Address information is structured to enable validation against USPS data DMV data is localized by design
DRS1.2 Data Exchange	DRS1.2.1 OLIVR does not contain ODOT shared data components that require a data exchange/synchronization process. Code tables from national data sources are refreshed by the vendor as needed.	NA	

DRS.2 Data Transfer Management: Record, monitor and control data transfers conducted as part of DQ processes to ensure the traceability of all data that flows within, into and out from the organization.

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
DRS2.1 Data Transfer Monitoring	DRS2.1.1 DMV uses multiple methods for data exchange including batch file transfers and APIs. External batch transfers are managed via MoveIT, which maintains log files of transfers. Records of batch and API data transfers are also maintained within OLIVR	OLIVR tables that store gateway exchange information; MoveIT log files.	OLIVR has 50 interfaces. OLIVR system tables track API calls (when, who, what data).
	DRS2.1.2 IGAs with external agencies specify the content and timing of data transfers	IGAs, OLIVR interface documentation*	

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	DRS2.1.3 For some (not all) external transfers, data received is logged and validated to ensure that the data are well-formed and that the transfer completed successfully.	OLIVR log files, OLIVR validation code, OLIVR interface documentation	For some exchanges, OLIVR produces a file documenting errors to be corrected which is transmitted back to the sender via a structured, established process. For the physical license production process, there are checks built in to ensure that the information received matches what was sent. It was noted that just because the data exchange was found to be well-formed, this doesn't necessarily mean that it is accurate.
	DRS2.1.4 Information on internal data changes within OLIVR is tracked via auditing columns that record who made changes and when.	OLIVR data model	
DRS2.2 Data Transfer Record Keeping	DRS2.2.1 Information on data transfers is retained in OLIVR and MoveIT indefinitely.	OLIVR and MoveIT log files	There are some exceptions for certain types of data exchanges based on security or external requirements.

DRS.3 Data Operations Management: Provide environments to ensure effective and efficient processing of data. Manage data-related software and tools, including DBMS software, data management utilities, data modelling tools, data quality analysis tools and data cleansing tools.

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
DRS3.1 Data Processing Environments	DRS3.1.1 Database software updates are performed by ISB's Infrastructure team.	ODOT ISB position descriptions	
	DRS3.1.2. Database connectivity is managed by ISB's DBA team with support from the networking and security teams.	ODOT ISB position descriptions	
	DRS3.1.3 Data exchanges are supported via a variety of mechanisms. Requests for new data exchanges are tracked via DevOps.	Work request tracking data	
	DRS3.1.4 ISB works with the state to provide data backup and recovery. Every database that is stood up has a document defining its backup schedule. Annual testing of backup recovery is performed	Database backup schedules	

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	DRS3.1.5 ISB's DBA team conducts performance tuning and monitoring using various tools to measure database performance and respond to deviations from norms. OLIVR has built in performance monitoring and error reporting capabilities including regular health checks and alerts when performance standards are not met.	Screen shots of OLIVR health checks; logs of alerts sent.	Performance monitoring tools include Spotlight and Dynatrace.
DRS3.2 Software and Tools	DRS3.2.1 ODOT licenses DBMS software including MS SQL Server	ODOT Software licenses	
	DRS3.2.2 ODOT licenses and uses a variety of data management utilities including Redgate and Quest products.	ODOT Software licenses	
	DRS3.2.3 ODOT uses SAP PowerDesigner as their standard data modeling tool.	ODOT Software licenses	

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	DRS3.2.4 ODOT does not license specialized data quality analysis or cleansing tools, but uses standard SQL tools for development of validation scripts.		DMV's OLIVR system has rigorous validation built in for data entry to ensure that the data that is entered into the system is valid to begin with.

DRS.4 Data Security Management: Establish and maintain policy, standards, controls and procedures for data security. Authorize data access privileges and responsibilities for users. Monitor data access by users. Evaluate the performance of data security and act to improve confidentiality, integrity and availability of data.

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
DRS4.1 Policies, Standards and Procedures	DRS4.1.1 Oregon's Enterprise Information Services publishes statewide IT control standards governing processes for data access control and monitoring	https://www.oregon.gov/eis/cyber-security-services/Documents/eis-css-statewide-information-technology(IT)-control-standards.pdf	

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	DRS4.1.2 ODOT maintains IT security guidelines consistent with the statewide standards	ODOT IT Security policies and guidelines	LEG 03-07-Information Security Incident Management ADM 04-25 Data Governance Standard ODOT Information Security Incident Handling Process (from ISP Playbook) ODOT Information Security Incident Handling Plan Phishing Awareness Program Plan ODOT System Security Plan-Common Controls
	DRS4.1.3 OLIVR's desk manual contains security procedures	OLIVR desk manual*	
DRS4.2 Access Controls	DRS4.2.1 ODOT manages access to applications via Active Directory. OLIVR integrates with Active Directory.	ODOT Account Management procedure documents	

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	DRS4.2.2 OLIVR has role-based permissions for data access and modifications. There is a process defined for authorizing who gets what access, including required approvals. Requests for changes in access go through a formal change request approval process	OLIVR access request form*	Controls exist but there may be a time lag between changes in roles and removal of access privileges
	DRS4.2.3 OLIVR logs all system accesses and changes.	Screen shots showing audit fields on data records*	
	DRS4.2.4 The SOS Audit found that "OLIVR computer code modifications are appropriately controlled to ensure the integrity of the system data is maintained"	SOS Audit	

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	<p>DRS4.2.5 The SOS Audit found that "Department management has implemented important protection measures for system security, such as multifactor authentication, system logging, and role-based access, but additional process improvements are needed to better secure the system and its data. Weaknesses included immature processes for granting and reviewing system access, a lack of detailed application security plans, as well as a lack of appropriate periodic security risk assessments</p>		

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
DRS4.3 Access Monitoring and Review	DRS 4.3.1 OLIVR includes internal fraud reports for managers with information about access levels and system activity for direct reports	Sample OLIVR fraud reports*	The SOS audit found adequate processes for managing access associated with adding and removing people, but recommended annual checks to verify that people were assigned to the appropriate security groups.
	DRS 4.3.2 See DRS4.2.5 regarding lack of appropriate periodic security risk assessments		

Resource Provision Processes

RPV.1 Data Quality Organization Management: Establish units supporting data quality management and ensure important decisions on data quality issues are taken, ultimately resulting in performance of the overall process for data quality management. Establish a clear escalation process to ensure that decisions are taken at the correct organizational level. Manage data, information and knowledge about data quality.

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
RPV1.1 Units and Roles supporting DQM	RPV1.1.1. ODOT DSO, led by a Chief Data Officer (CDO) provides agency-wide support for DQM	ODOT Org Chart ODOT CDO Position Description* Model Data Quality Management Plan Document (CDO-to be finalized in 2025) Data Quality Management Training (CDO-to be released in 2025)	DSO activities are coordinated with Oregon's state-level CDO
	RPV1.1.2. ODOT Information Services Branch (ISB), led by a Chief Information Officer (CIO) provides agency-wide support for system development, operation and management ensuring data security and integrity	ODOT Org Chart CIO Position Description*	

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	RPV1.1.3. Data Trustee and Steward roles have been defined by the agency, and assigned to specific DMV staff representatives.	ODOT Data Stewardship Roles and Responsibilities Descriptions (DSO) List of DMV Data Trustees and Stewards (DSO)	Data trustees and data stewards have responsibilities defined for data quality management. However, DMV staff are concerned that the designated staff won't have sufficient bandwidth to perform additional tasks beyond what they are currently doing.
	RPV1.1.4 ODOT has established data and technology governance groups - the Technology and Data Council (TDC), the Data Steering Team (DST) and the Technology Steering Team. DMV has representation on the TDC and the DST.	TDC, DST, TST Charters and membership lists	DMV's Innovation and Planning Manager sits on the TDC DMV's Business System Support Manager sits on the DST
	RPV1.1.5. The ISB's Technical Services Group (TSG) includes a Business Relationship Manager (BRM) position with responsibility for DMV application development and data integrity	ODOT ISB Org Chart Business Relationship Manager Position Description*	

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	RPV1.1.6. The DMV's Innovation and Planning Group (IAP) supports implementation of technology and data projects.	ODOT DMV Org Chart IAP group web pages	BSS has 12 Business Systems Analysts (BSAs).
	RPV1.1.7. IAP includes a Business Support Systems Unit (BSS) that serves as the liaison between the DMV's data and functional subject matter experts (SMEs) and the ISB's TSG. The BSS works with the TSG to ensure that the OLIVER system is functioning as intended.	BSS unit web pages	
	RPV1.1.8 IAP includes a Project Management Office (PMO) that supports requirements management, business process mapping and other activities related to data quality management.	PMO unit web pages	The PMO supports acquisition and management of independent quality assurance services for IT projects.

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	RPV1.1.9 The Driver Services Coordination Team (DSCT) and the Vehicle Services Coordination Team (VSCT) review and approve any changes to DMV data structures and OLIVR functions and processes.	DSCT and VSCT membership lists and charters*	These teams were established in conjunction with the transition from mainframe-based systems to the new Oregon License Issuance and Vehicle Registration (OLIVR) relational database system, put in place in July, 2020.
	RPV1.1.10 There is no single role in DMV with responsibility for data quality (independent of systems), but it is integral to multiple roles across DMV		
	RPV1.1.10 There is no unit or role with specifically defined responsibility for proactive identification of data anomalies		This is attributed to DMV's staffing limitations.
RPV1.2 Manpower, Skills and Technology Resources for DQM	RPV1.2.1 DSO staff have skills and experience in data quality management	DSO position descriptions and staff resumes*	

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	RPV1.2.2 ISB staff (including the assigned BRM for DMV) have skills and experience in data security and integrity management	ISB DMV BRM position description and staff resume*	
	RPV1.2.3 The DMV's Planning and Innovation Manager has an understanding of data management	DMV Planning and Innovation Manager position description and staff resume*	
	RPV1.2.4 DMV's management team reports that their staffing levels have not kept up service demands and that workforce capacity is a significant limiting factor in DMVs ability to expend additional efforts on data quality management activities.	Budget documents describing staffing shortages.*	Oregon's population increased by 750,000 over the past 20 years but DMV staffing levels have remained constant. There are difficult tradeoffs between throughput (speed) and accuracy given that processes to resolve data discrepancies can be very time consuming. When DMV transitioned to the OLIVR system, additional burdens were placed on front line field staff for data entry and validation. Previously, many of these activities were performed by central office staff. New functionality to interface with other systems (e.g., to access driver records from other states) required diverting staff resources from other duties.

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	RPV1.2.5 DMV is currently undertaking a review of DMV position classifications which may result in adjustments to position descriptions, classifications and compensation levels	DMV Classification Review Project webpage	
	RPV1.2.6 ODOT's ISB provides basic technology resources supporting DQM (see DRS.3)		ISB does not currently license specialized tools for data profiling and cleansing.
RPV1.3 Data Quality Issue Identification, Escalation and Resolution Processes	RPV1.3.1 DMV has processes in place for intake, evaluation, prioritization and response to both issues related to DMV-managed data/records and system change requests.	BSS Maintenance and Enhancements Processes and Procedures Document Request for Work (RWF) Form and Instructions DSCT and VSCT Issue Intake Forms	These processes aren't limited to data quality issues - they cover the full range of issues related to policy, procedure, training, systems and data. Issues may be identified through multiple channels - for example: a program coordinator, a customer, a vendor (through regular meetings), field staff, or a BSA.
	RPV1.3.2 Issues identified by partner agencies are brought to the attention of DMV's business liaison, who then reaches out to the BSA to review and escalate as needed.	PMO Business Decision Making Flowchart	Half of the time, reported issues do not require escalation - they can be resolved through clarification of current policy or process.

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	RPV1.3.3 DMV solicits employee suggestions for improvement as part of an effort to foster continuous improvement. These suggestions may be related to data quality improvement.	Employee suggestion program webpage	
	RPV1.3.4 DMV's policies and procedures define specific escalation paths for issues and atypical situations that may result in data that doesn't conform to established requirements	DMV Manuals	For example, an issue may be escalated from the Transportation Service Representative (TSR) to the Region Analyst (RA) to a Field Services Analyst (FSA), to the Program Service, and then up to the appropriate Program Services unit or to an Analyst in the BSS.
RPV1.4 Data Quality Information Management	RPV1.4.1 OLIVR stores tickets (issues for resolution) and SQRs (system change requests)	OLIVR Documentation*	Some SQRs include work related to addressing identified data issues
	RPV1.4.2 ODOT IS stores information about work requests, documenting the original request, discussion of the scope and priority, and resolution	ISB RFW System*	Some RFWs include work related to addressing identified data issues

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	RPV1.4.3 The DMV maintains an internal SharePoint site with copies of DMV policies and procedures related to multiple topics, including those impacting data quality	Policy and procedure documents on DMV SharePoint Site	This site includes 100+ documents, which may impact the ability of employees to navigate to the appropriate document.

RPV.1 Human Resources Management: Develop or acquire knowledge and skills for data quality management, providing them to personnel having responsibilities for data quality management. Provide personnel with knowledge and skills for data quality management by training or recruitment. Collect, share, reuse and enhance best practices, knowledge, and skills throughout the organization.

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
RPV2.1 Knowledge, Skills and Abilities (KSAs) and Training for DQ Positions	RPV2.1.1 KSAs are specified appropriate to role and level of position	Position descriptions and staff resumes*	For example, data entry staff have position descriptions that emphasize detail orientation, use of computer systems, and judgement.
	RPV2.1.2 All new DMV staff receive training appropriate to their role, some of which emphasizes the importance of data accuracy and completeness	Training documentation	

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	RPV2.1.3 There is no evidence of training specifically on data quality management. However, the DSO intends to roll out a training module on data quality management in Q1 2025, and the DMV intends to offer this training to its data stewards and trustees.	DSO Data Quality Training Module	
	RPV2.1.4 A new Field Services Group (FSG) Training Analyst position is being established, which includes duties to improve data qualities	FSG Training Analyst position description	Duties include: "Analyze error feedback to identify common errors and determine areas with which FSG staff are struggling. Create job aids, lessons, or trainings to help staff understand complex policies and procedures" and "evaluate how errors occurred and recommend system improvements to prevent future errors."
RPV2.2 Data Quality Knowledge Sharing	RPV2.2.1 Knowledge about data-related practices is shared at DSCT and VSCT team meetings	DSCT and VSCT meeting agendas	

Process Element	Finding	Evidence (*not provided but presumed to be available)	Comments
	PRV2.2.2 DMV field staff meets weekly for training and information sharing. These meetings include knowledge transfer related to practices that result in quality data.		This allocation of DMV field staff time (2 hours every Wednesday morning from 8-10 AM) required state legislation to implement.
	PRV2.2.3 All DMV technology projects include a lessons learned capture activity to document key decisions and ideas for future improvement. New technology projects begin with a scan of what can be learned from prior projects.	Technology project lessons learned template and example	Formal lessons learned capture is only conducted for major projects - it is not done following responses to minor work requests.