NSW Data Governance Framework - Prototype V.1

| **TOPIC**  | **POINTS TO ADDRESS** | **DISCUSSION & ISSUES** | **RESOURCES**  | **FEEDBACK**  |
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| **Introduction** | * Data governance is essential to a data-informed government and to improved customer service.
* Effective data governance leads to improved customer outcomes by ensuring trusted, accurate and reliable information is available to inform government decision-making, policy development and service delivery.
* Effective data governance is also critical to ensuring that valuable data assets are shared appropriately among agencies and managed in line with community and legal expectations.
* While there are pockets of good data governance practices across agencies, this is not consistent across clusters or across the NSW Government. To fully realise the value of its data, NSW Government requires a shared direction for building whole of government data governance maturity.
 | Foundational document to support overarching NSW Data Policy (to be developed).  | N/A |  |
| **Purpose**  | * The Data Governance Framework (the Framework) outlines a shared direction for building whole of government data governance maturity.
* The purpose of this Framework is to:
1. provide agencies with an **instrument** to govern their data assets effectively, in a consistent and coordinated manner.
2. provide agencies with a **best practice model** for building data governance maturity in their agency.
* The Framework sets out:
* Key principles of good data governance
* Data governance organisations
* Data governance roles and responsibilities
* Data governance components
* Recommended implementation activities
* This Framework does not prescribe a one-size-fits all approach to data governance. It is a framework and best practice model that agencies can adopt to improve data governance in their agency. The Framework does not supplant data governance policies in mature agencies with effective data governance arrangements.
 | The Framework is not mandatory. It is a best practice model that agencies can adopt to help build their data governance approach.  | N/A |  |
| **Compliance requirements** | * Good data governance is a legal requirement in NSW Government. The Framework complies with relevant whole of government statutes, regulations and policies, related to data governance, including the:
* *Government Information (Public Access) Act 2009 (NSW)*
* *Privacy and Personal Information Protection Act 1998 (NSW)*
* *Health Records and Information Privacy Act 2002 (NSW)*
* *State Records Act 1998 (NSW)*
* *Data Sharing (Government Sector) Act 2015*
* *NSW Information Management Framework (2018)*
* *NSW Digital Information Security Policy*
* Additional legal or regulatory requirements may apply in specific agency or business domains and all organisations should identify the specific requirements that apply to their environment.
 | Are there any other relevant legislation, policies & regulations? | [The NSW Data Sharing (Government Sector) Act 2015 No 60](https://www.legislation.nsw.gov.au/#/view/act/2015/60/full)[Government Information (Public Access) Act 2009](http://www8.austlii.edu.au/cgi-bin/viewdb/au/legis/nsw/consol_act/giaa2009368/)[Privacy and Personal Information Protection Act 1998 (NSW)](https://www.legislation.nsw.gov.au/#/view/act/1998/133)[Health Records and Information Privacy Act 2002 (NSW)](https://www.legislation.nsw.gov.au/#/view/act/2002/71/whole)[The State Records Act 1998](https://www.legislation.nsw.gov.au/#/view/act/1998/17)[NSW Digital Information Security Policy](https://www.digital.nsw.gov.au/sites/default/files/Digital%20Information%20Security%20Policy%202015.pdf)[NSW Information Management Framework 2018](https://www.digital.nsw.gov.au/sites/default/files/IM%20Framework%20infographic_0.pdf) |  |
| **Best practice/ standards** | * This Framework also aligns with accepted best practice standards, including:
* *AS ISO 15489 Records Management*
* *AS ISO 23081 Metadata for Records*
* *Standards on Record Management issues by State Records NSW*
* *DAMA-DMBOK: Data Management Standards*
 | Are there any other relevant best practice standards? | [AS/ISO standards](https://www.iso.org/obp/ui)[NSW Standards on Record Management](https://www.records.nsw.gov.au/recordkeeping/rules/standards/records-management)[DAMA Data Management Standards](https://dama.org/content/body-knowledge)  |  |
| **Scope** | * The Framework applies to all forms of data created and managed by the NSW public sector.
* The Framework applies to all NSW Government Departments and Public Service Agencies and all staff, contractors and other persons who, in the course of their work, contribute to or have access to NSW Government data.
 | Should the Framework apply to all forms of data or only to core value data assets? Core value data is data that is aligned to NSW Government strategic objectives and required to support government functions and services. | N/A |  |
| **What is Data Governance?** | * Data governance refers to the formal management of data assets in an organisation.
* It establishes responsibility for data, organising staff to collaboratively and continuously improve data quality through the systematic creation and enforcement of **policies**, **processes**, **roles**, **responsibilities** and **procedures**.
* In short, data governance is the strategic, organisation-wide approach to setting the rules of engagement for data management activities.
 | Clarify distinction between data management, information management and IT governance and ensure alignment with [AS/ISO standards](https://www.iso.org/obp/ui). | Data Champions Network – Data Governance Insights Report (November 2018).  |  |
| **What are the benefits?** |

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| **Benefits of effective data governance**  | **Consequences of poor data governance** |
| Enhances data quality and authenticity | Data quality issues |
| Improves data integrity and reliability  | Unreliable data  |
| Improves discoverability and accessibility | Data is difficult to find and interpret  |
| Facilitates data sharing  | Data is not shared |
| Improves accountability and reduces risk | Non-compliance with legislation and regulations. Reputation damage. |
| Enables appropriate privacy and security controls | Privacy breaches. Loss of public trust. |
| A consistent approach for data needs that encourages opportunities and efficiencies.  | Data silos, which expose agencies to risks and limits opportunities. |
| Enables cross-government collaboration and innovation | Stifles cross-government communication and innovation. |

 | Adapted from National Archives of Australia Information Governance (2019).  | N/A |  |
| **Principles of Data Governance**  | The Framework is based on 8 principles that provide the foundation for effective data governance: Principle 1: Data governance is strategic and well-plannedPrinciple 2: Data quality is described and fit for purposePrinciple 3: Data is protected and secured Principle 4: Data is discoverable and accessible Principle 5: Data is standardised Principle 6: Data is stored to maximise its value Principle 7: Data is integrated and interoperable Principle 8: Data is leveraged to support good decision-making | Combination of principles derived from several data policies and frameworks – do they make sense or are there existing data governance principles that could be used? | N/A |  |
| **Data Governance Structure (incl. Data Governance Organisations)** | Each department or agency should have a clearly defined data governance structure. This structure should be broadly consistent with the requirements outlined in this Framework and comply with the relevant department’s delegation manuals. At a minimum, a data governance structure should include the key individuals and bodies responsible for:

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| **Strategic direction -**  | The Secretary or Chief Executive should invest in data governance initiatives and assume overall accountability and responsibility for the strategic direction of data governance in their agency. |
| **Strategic oversight -** | Chief Executives with data delegation, Steering Committees, Deputy Secretaries should be responsible for strategic oversight of data governance activities. |
| **Endorsement -**  | Agencies and governance committees should be responsible for endorsing and provide input on data governance activities. |
| **Engagement -** | Working Groups should be engaged to address agency-specific data needs.  |

This structure allows organisations to clearly identify decision-making authority at all levels. Agencies should set up a structure and data governance committees and working groups tailored to their specific data needs. Illustrated below is an example of NSW Health’s overarching data governance structure: | Adapted from NSW Health Data Governance Framework (2019).  | [NSW Health Data Governance Framework (2019)](https://www1.health.nsw.gov.au/pds/ActivePDSDocuments/GL2019_002.pdf) |  |
| **Roles and Responsibilities** | * Each NSW data asset must have formally assigned data custodianship roles and responsibilities that are the same as, or comparable to, a **Data Sponsor, Data Custodian and Data Steward**.
* None of these roles are synonymous with ownership – rather they manage data on behalf of the state.

**Data Sponsor** * Control over strategic direction
* Hold overall accountability for the dataset
* Enable strategic management, governance and operation of the asset
* Provide direction and guidance, and authorise appropriate resources for management of the asset
* Ensure compliance with all relevant legislation, policies and standards
* Appoint a data custodian and ensure the data custodian’s duties are fulfilled

**Data Custodian*** Day to day management and oversight of the asset
* Approval of access to/sharing of data and the overall quality and security of the asset
* Ensure that the asset has published metadata
* Any use of the data aligns with the purpose for which it was collected
* Control access to data in compliance with all relevant legislation, policies and standards and any conditions specified by the Data Sponsor
* Regularly review users with access to the data and the ongoing need and appropriateness of access
* Establish a data quality framework that ensures the integrity and accuracy of the data and processes for rectification are in place
* Establish and maintain an acceptable level of data protection to ensure privacy, security and confidentiality of information + data breach processes
* Appoint a Data Steward
* Escalate issues to Data Sponsor

**Data Steward*** Day-to-day operational management and operation of the data assets
* Manage the data asset in compliance with relevant legislation, policies, standards and any conditions specified by the data sponsor
* Work with stakeholders to develop and maintain metadata including a data dictionary, business rules and guide for use
* Coordinate stakeholder engagement and input into the business requirements for the data asset
* Provide advice to Data Custodian and Sponsor on the management of the asset
* Provide feedback to data suppliers in relation to data quality issues
* Escalate risks to Data Custodian

**Data User*** Ensure data is recorded or collected according to data standards
* Report errors regarding data they receive in a timely manner
* Ensure security & privacy are maintained whenever data is accessed
* Report any break or suspected breaches
* Comply with legislation, policies and standards
* Obtain approval from Data Sponsor or delegated authority for public release of data
* Comply with terms and conditions associated with approval for access to data
 | Adapted from NSW Health’s Data Management Framework. Proposed structure would replace NSW Data & Information Custodianship Policy (2016). Data roles and responsibilities in agencies will inevitably differ. Would agency-specific examples of the levels of these roles help? E.g. in X agency, the Data Sponsor is X | [NSW Health Data Governance Framework 2019.](https://www1.health.nsw.gov.au/pds/ActivePDSDocuments/GL2019_002.pdf)  |  |
| **Data Governance Functions: Overview**  | * Data governance functions include: Strategy & Planning, Data Quality Management, Data Security & Privacy, Data Storage & Operation, Reference & Master Data Management, Data Integration & Interoperability, Business Intelligence & Analytics, Metadata Management, Data Modelling & Design.
* The Framework does not prescribe how agencies should meet the principles, it only recommends possible implementation activities. Agencies should implement data governance activities that meet the specific business and data needs of their agency.
 | Adapted from DAMA-DMBOK2 Data Management Framework and TfNSW Data Management Framework V 1.0. | [DAMA-DMBOK2 Data Management Framework](https://dama.org/sites/default/files/download/DAMA-DMBOK2-Framework-V2-20140317-FINAL.pdf)  |  |
| **Data Governance Function 1: Strategy and Planning** | **Principle**: Data governance is strategic and well-planned.**Why**: Data governance needs to be informed by strategic direction and planning, to ensure data remains a valued, managed and business-aligned strategic asset.**Key components**:* Identify, plan and manage key data assets and systems required to support business operations
* Define and implement performance management, monitoring, analyses and metrics to report on data governance

**What good looks like**:* **Business-aligned**: data governance strategy and planning are aligned to current and future business needs and priorities, regulatory requirements and market forces.
* **Customer-driven**: data governance strategy and planning are driven by customer needs and ensure data is used in accordance with community expectations.

**Measured**: all aspects of data governance are monitored, analysed and measured to ensure that the agencies data governance objectives are being achieved.* **Iterative**: data governance is developed iteratively with key stakeholders and implemented gradually across the organisation and prioritised based on risk and value.

 **Recommended implementation activities**:* Data governance needs assessment
* Data governance risk assessment
* Information asset registration
* Develop data governance strategy
 | Align with Information Management Framework and Cyber Security Policy.  | [NSW Information Management Framework 2018](https://www.digital.nsw.gov.au/sites/default/files/IM%20Framework%20infographic_0.pdf)[NSW Cyber Security Policy](https://www.digital.nsw.gov.au/policy/cyber-security/cyber-security-policy) |  |
| **Data Governance Function 2: Data Quality Management**  | **Principle**: Data quality is described and fit for purpose.**Why**: Trusted high-quality data across the government enables confident decision-making. The use of poor-quality data or data that contains biases may lead to incorrect conclusions and poor decisions being made. **Key components:*** Developing a governed approach to maintain and improve data quality
* Utilise existing (or if required, define new) standards, requirements and specifications for data quality controls as part of the data lifecycle
* Define and implement processes to measure, monitor, and report on data quality levels

**What good looks like:*** **Agency-wide**: consistent approach to data quality across the agency
* **Lifecycle management**: the quality of data is managed across the data lifecycle, from creation or procurement through to disposal
* **Root cause remediation**: problems with data quality are addressed at their root cause (e.g. fixing the problem at the source)
* **Standards-driven**: requirements are defined in the form of measurable standards and expectations against which the quality of data can be measured
* **Embedded in business processes**: data quality requirements are enforced through clear monitoring, reporting and issues management processes

**Recommended implementation activities:*** Create and implement a data quality strategy
* Perform data quality assessments and monitor data quality
* Develop operational procedures and automated processes
* Develop preventative and corrective actions
* Report data quality levels and findings
 | Adapted from DAMA-DMBOK2 Data Management Framework and TfNSW Data Management Framework V 1.0 | [NSW Government Standard for Data Quality Reporting](https://www.digital.nsw.gov.au/sites/default/files/NSW%20Standard%20for%20Data%20Quality%20Reporting%20v1.2%20FINAL.pdf)[ABS Data Quality Framework & Reporting tool](https://www.abs.gov.au/websitedbs/D3310114.nsf/home/Quality%3A%2BThe%2BABS%2BData%2BQuality%2BFramework)[DAMA-DMBOK2 Data Management Framework](https://dama.org/sites/default/files/download/DAMA-DMBOK2-Framework-V2-20140317-FINAL.pdf)  |  |
| **Data Governance Function 3: Privacy & Security**  | **Principle**: Data is protected from unauthorised use and disclosure.**Why**: Data can contain information that identifies specific individuals, entities or reveal other forms of sensitive information that can have serious implications for both the populations about whom data are being shared and the organisations sharing the data. **Key components**:* Enable appropriate, and prevent inappropriate, access to agency data assets.
* Understand and comply with all relevant regulations and policies for privacy, confidentiality and appropriate access
* Ensure the privacy and confidentiality needs of all stakeholders are enforced and audited

**What good looks like:*** **Compliance**: data is collected, stored, used & disclosed, archived & disposed in accordance with relevant privacy legislation and privacy and security policies, procedures and standards
* **Clear accountability:** data roles and responsibilities are clearly defined across the agency
* **Classified**: each data asset is classified according to the NSW Government Information Classification, Handling and Labelling Guidelines
* **Proactive management**: data security is managed proactively, dynamically and collaboratively with relevant internal and external stakeholders
* **Privacy-by-design**: privacy measures are built into business processes and systems to ensure that personal data is automatically protected

**Recommended implementation activities:*** Assess current data security risk and define controls to manage risk
* Implement data security controls and procedures, including privacy breach procedures
* Educate staff on data security requirements
 | Adapted from DAMA-DMBOK2 Data Management Framework and TfNSW Data Management Framework V 1.0 | [NSW Government Information Classification, Handling & Labelling Guidelines](https://www.digital.nsw.gov.au/sites/default/files/NSW%20Government%20Information%20Classification%20Labelling%20and%20Handling%20Guidelines%20V.2.2_0%20%283%29.pdf)[DAMA-DMBOK2 Data Management Framework](https://dama.org/sites/default/files/download/DAMA-DMBOK2-Framework-V2-20140317-FINAL.pdf)  |  |
| **Data Governance Function 4: Metadata management**  | **Principle**: Data is discoverable and accessible. **Why:**Metadata allows data assets to be found, understood, controlled, shared, compared and managed. **Key components:*** Ensure all data has sufficiently rich and accurate metadata
* Ensure metadata quality, consistency, currency and security
* Establish or enforce the use of metadata standards to enable data exchanges
* Break down information silos by providing a standard way to access metadata

**What good looks like:*** **Consistent**: metadata conforms to published standards and industry guidelines
* **Access**: metadata is recorded and maintained on an accessible repository
* **Quality**: the quality of metadata is assured, measured, monitored and improved
* **Agreed**: changes to metadata are agreed and authorised with due consideration of impacts to other data management functions and business processes

**Recommended implementation activities:*** Establish metadata policies, rules and practices
* Educate staff on the value of metadata, as well as on access and use of metadata
* Establish and manage metadata repositories
* Create feedback mechanisms so that data users can provide input on incorrect or out-of-date metadata.
 | Adapted from DAMA-DMBOK2, the Cancer Institute Data Management Framework & TfNSW Data Management Framework V1.  | [DAMA-DMBOK2 Data Management Framework](https://dama.org/sites/default/files/download/DAMA-DMBOK2-Framework-V2-20140317-FINAL.pdf) AS ISO 23081 Metadata for Records |  |
| **Data Governance Function 5: Reference and Masterdata management**  | **Principle: Data is standardised****Why:** Definition and management of the critical data assets used across an agency is necessary to meet business objectives, reduce risks associated with data redundancy, and reduce the cost of data integration.**Key components:*** Provide authoritative sources of quality assessed Masterdata and Reference Data across the agency and government more broadly
* Enable sharing of data assets across agency and government functions and applications
* Lower the cost and reduce the complexity of data use and integration

**What good looks like:*** **Shared**: Masterdata and Reference Data is managed so that it is shareable across government
* **Consistent**: definitions comply with state and national standards where possible
* **Centralised**: Masterdata is recorded and maintained on a central repository
* **Controlled**: changes to Reference and Masterdata are agreed and authorised with due consideration of impacts to other data management functions and business processes

**Recommended implementation activities:*** Identify and validate data definitions
* Publish Reference & Masterdata
* Establish maintenance policies and processes
 | Adapted from DAMA-DMBOK2 Data Management Framework and TfNSW Data Management Framework V 1.0 | [DAMA-DMBOK2 Data Management Framework](https://dama.org/sites/default/files/download/DAMA-DMBOK2-Framework-V2-20140317-FINAL.pdf)   |  |
| **Data Governance Function 6: Data Storage & Operation** | **Principle:** Data is storedto maximise its value.**Why:** To ensure the long-term continuity and accessibility of data assets, agencies need to find appropriate and secure storage environments that align with security and regulatory requirements.**Key components:*** Manage the availability of data throughout the data lifecycle
* Ensure the integrity of data assets
* Manage the performance of data transactions

**What good looks like:*** **Digital continuity:** storage environments enable information continuity by ensuring the preservation and maintenance of key data assets.
* **Retention and disposal:** storage environments ensure data is kept and disposed of in accordance with business requirements, protective security requirements for classified and unclassified information, and legislative requirements under the State Records Act and PPIPA
* **Best practice:** best practices including database standards and practices are understood and applied
* **Re-use:** storage environments that promote data re-use and integration are preferenced
* **Migration, transition and decommissioning:** changes to storage environments are agreed and authorised to ensure that data of long-term value is migrated or transitioned to new environments or appropriately assessed in decommissioning arrangements

**Recommended implementation activities:*** Assessment of organisational architecture needs
* Alignment of business needs to enterprise architecture
* Manage and monitor effectiveness of enterprise architecture
* Future planning for business continuity
 | Adapted from DAMA-DMBOK2 Data Management Framework and TfNSW Data Management Framework V 1.0Aligned with the ‘continuity management’ section of the Information Management Framework and regulatory requirements under the State Records Act and PPIPA.  | [DAMA-DMBOK2 Data Management Framework](https://dama.org/sites/default/files/download/DAMA-DMBOK2-Framework-V2-20140317-FINAL.pdf) [NSW Information Management Framework (2018)](https://www.digital.nsw.gov.au/sites/default/files/IM%20Framework%20infographic_0.pdf)[Privacy and Personal Information Protection Act 1998 (NSW)](https://www.legislation.nsw.gov.au/#/view/act/1998/133)[Health Records and Information Privacy Act 2002 (NSW)](https://www.legislation.nsw.gov.au/#/view/act/2002/71/whole)[NSW State Records Act 1998](https://www.legislation.nsw.gov.au/#/view/act/1998/17) |  |
| **Data Governance Function7: Data Integration & Interoperability** | **Principle:** Data is integrated and interoperable **Why:** Data integration and interoperabilitymeans that data can be exchanged between different systems. It allows agencies to get data where it is needed, when it is needed, and in the form in which it is needed. **Key components:*** Provide data securely, in the format and timeframe needed
* Improve efficiency of data management through shared infrastructure
* Support business intelligence, analytics, operational efficiency efforts

**What good looks like:*** **Government-wide:** data is stored in whole-of-government or agency-wide platforms, where appropriate
* **Standardised**: software and hardware conform to defined standards that promote interoperability for data, applications and technology
* **Understood**: data users understand the meaning of exchanges information through the consistent use of metadata, Masterdata and data quality standards

**Recommended implementation activities:*** Assess current state of interoperability
* Build future state vision
* Gap analysis and identify requirements
* Planning and design of solutions
* Implement frameworks, policies and standards to support integration
* Maintain data integration & interoperability metadata
 | Adapted from DAMA-DMBOK2 Data Management Framework and TfNSW Data Management Framework V 1.0 | [DAMA-DMBOK2 Data Management Framework](https://dama.org/sites/default/files/download/DAMA-DMBOK2-Framework-V2-20140317-FINAL.pdf) [National Archives of Australia Information Management Framework](http://www.naa.gov.au/information-management/Building-interoperability/interoperabilitydevphases/index.aspx)  |  |
| **Data Governance Function 8: Business Intelligence & Analytics** | **Principle:** Data is leveraged to support good decision-making**Why:** An agency that acts onknowledge gained from business intelligence and analytics can improve operational efficiency and drive better outcomes.**Key components:*** Support business intelligence activity
* Enable effective business analysis and decision-making
* Find ways to innovate based on insights from data

**What good looks like:*** **Business goals:** data repository serves organisational priorities and informs solutions
* **Outcomes-focused:** business priorities drive the creation of data repository content
* **Start with the end in mind:** the business priority and scope of end-data-delivery drives the creation of the data repository content.
* **Once size does not fit all:** use the right BI tools and products for your purpose

**Recommended implementation activities:*** Understand requirements
* Define and maintain BI design
* Implement BI solutions
* BI activity monitoring
 | Adapted from DAMA-DMBOK2 Data Management Framework and TfNSW Data Management Framework V 1.0 | [DAMA-DMBOK2 Data Management Framework](https://dama.org/sites/default/files/download/DAMA-DMBOK2-Framework-V2-20140317-FINAL.pdf)  |  |