Research Data Management Strategy – Maturity Model

UBC's RDM strategy will look for gaps between the current state and the desired state of UBC RDM services. These decisions will take into account institutional philosophy, the resourcing outlook, and the benefits and risks associated with moving to a higher level of capability.

For each item in the DCC RISE model, the self assessment should evaluate what level is considered feasible and desirable for UBC, what is the maturity level we are right now at UBC, and what the priority for addressing any gaps should be. It is important to remember that maturity levels are guidelines for the ongoing development of the UBC RDM strategy and its implementation.

Goal 1: Develop Institutional Research Data Management Governance, Policies, and Standards

Goal	Level 1	Level 2	Level 3
1.1 Policy development **Ideal Summary Description**: An Institutional RDM policy is robust and other policies with a bearing on RDM (e.g. FOI, ethics, research conduct, etc.) are joined up and complementary. Policies are externally promoted, aiming to push the sector forward.	Institutional policy articulates roles & responsibilities for researchers, other staff and students to comply with legal & regulatory obligations and external funders' RDM policy expectations.	Institutional policy articulates the value of good RDM practice to the institution and its rationale for retaining data of long-term value. Policy is subject to a regular, scheduled review process.	Institutional policies with a bearing on RDM (e.g. FOI, ethics, research conduct, etc.) are joined up and complementary. Policies are externally promoted, aiming to push the sector forward.
1.1 Awareness raising and stakeholder engagement **Ideal Summary Description**: RDM related Policies are promoted by the institution through channels designed to engage with staff, student and researcher groups' specific interests.	Research data policies are promoted to all relevant staff, students and researchers.	Guidance on how to apply all relevant policies to the institutional context is provided and promoted to all relevant staff, students and researchers.	Policies are promoted by the institution through channels designed to engage with staff, student and researcher groups' specific interests.

GOAL 2: IMPROVE ACCESS TO DATA REPOSITORIES OR OTHER PLATFORMS

Goal	Level 1	Level 2	Level 3
2.1 Technology investment Ideal Summary Description: The institution invests in technical infrastructure for all aspects of the research data lifecycle, interoperating with tools and workflows at research group level.	A base level of investment in technical infrastructure, with commitment to supporting recurring costs, ensures that researchers can make their data findable and accessible in the long-term.	The institution coordinates investment in the central technical services it deems a strategic priority for research data life-cycle support.	The institution invests in technical infrastructure for all aspects of the research data lifecycle, interoperating with tools and workflows at research group level.
2.2 Scalability and synchronization Ideal Summary Description: Researchers are provided with managed access to networked storage, from multiple devices, of sufficient capacity and performance to satisfy most projects. Automated access to additional storage to satisfy exceptional capacity or performance demands is available.	The service provides researchers with managed access to networked storage, from multiple devices, of sufficient capacity and performance to satisfy most of the organization's projects.	The service can provide additional storage on request to satisfy exceptional storage capacity, device networking, or performance demands.	The service provides automated access to additional storage to satisfy exceptional capacity or performance demands.
2.3 Collaboration support Ideal Summary Description: Access to data is provided for external collaborators with local access rights to institutional storage systems and managed access to virtual research environments that enable researchers to work on data with external collaborators.	The service enables access to data for external collaborators by providing them with local access rights to institutional storage systems.	The service provides managed access to tools that enable researchers to share data with external collaborators.	The service provides managed access to virtual research environments that enable researchers to work on data with external collaborators.
2.4 Security management Ideal Summary Description: Authenticated access to	The service provides authenticated access to storage that is protected from unauthorized data access, and	The service provides tools/environments that enable	The service provides researchers from across the institution with access to ISO 27001/2 or

storage that is protected from unauthorized data access is available, and researchers are made aware of procedures for data protection, encryption, and de-identification. Researchers from across the institution have access to ISO 27001/2 or equivalently accredited facilities for analysis of shared sensitive data.	researchers are made aware of procedures for data protection and de-identification.	researchers to de-identify, encrypt or control access to data as required.	equivalently accredited facilities for analysis of shared sensitive data.
2.5 Data collection policy **Ideal Summary Description**: Criteria for developing datasets as special collections, criteria for retention of datasets of long-term value to the institution, and ensures these meet specialist depositor and user needs and clearly specified.	Service primarily supports data deposit to third-party repositories, and holds datasets in-house when legal/regulatory compliance requires.	Service defines criteria for retention of datasets of long-term value to the institution.	Service defines criteria for developing datasets as special collections and ensures these meet specialist depositor and user needs.
2.6 Security, legal, and ethical risk assessment **Ideal Summary Description**: Data is collected or created in accordance with legal and ethical criteria. Legal and ethical risks relevant to depositors and usersis proactively managed. Tailored guidance on risk assessment, and on solutions that offer an appropriate level of risk control for the data they manage is provided.	Service seeks confirmation that data was collected or created in accordance with legal and ethical criteria prevailing in the data producer's geographical location or discipline.	Service commits to proactively manage legal and ethical risks relevant to its depositors and users, and to relevant professional and technical development for researchers and support staff.	Service offers data producers tailored guidance on risk assessment, and on solutions that offer an appropriate level of risk control for the data they manage.
2.7 Metadata collection to inform decision-making	Information is gathered from research projects to enable the	Metadata is routinely recorded to relate research activity to data and	Metadata on data and related research outputs is sufficiently

Ideal Summary Description: Metadata is routinely recorded to relate research activity to data and other outputs. Metadata on data and related research outputs is sufficiently well-structured and interoperable to enable added value to be extracted for service users' needs.	identification of research data that must be kept for compliance purposes.	other outputs, and enable better informed decisions on the preservation costs, risks and value to the institution.	well-structured and interoperable to enable added value to be extracted for service users' needs.
2.8 Preservation planning and action **Ideal Summary Description**: Tools and expertise to maintain the significant properties of data are provided. Metadata and related information for required retention periods and identified user groups (full preservation) is ensured.	Service demonstrates it can ensure continued bit-level integrity of the data collections it holds, its metadata, and its links to any related information submitted with it.	Service enables preservation plans e.g. file migration or normalization to be enacted at time of ingest or dissemination, and records all actions, migrations and administrative processes it performs.	Service commits to deploy tools and expertise to maintain the significant properties of data, metadata and related information for required retention periods and identified user groups (full preservation)
2.9 Continuity support **Ideal Summary Description**: Institutional Services provided Data & metadata that are automatically distributed across multiple locations according to specific policy criteria.	Service enables retained data to be stored with a copy automatically held in another location.	Service enables retained data to be stored with copies automatically held in two separate locations, at least one off-site.	Service enables data & metadata to be automatically distributed across multiple locations according to specific policy criteria.
2.10 Monitoring locally produced datasets **Ideal Summary Description**: Metadata on locally produced research data, and its links to other activities or outputs, is sufficiently structured and organized to	Information is gathered from research projects to enable compliance with funders' requirements for research data discoverability.	Metadata is routinely recorded on locally produced data, and its links to research activity or related outputs, enhancing the quality of the institution's research information.	Metadata on locally produced research data, and its links to other activities or outputs, is sufficiently structured and organized to inform institutional strategy.

inform institutional strategy and meets funder requirements.			
2.11 Data publishing mandate Ideal Summary Description: Bespoke content discoverability, access and quality review is available based on needs for user groups or organizations. Best practice standards for data access, citation and metadata exchange are supported.	Service supports minimum external requirements for metadata and publicly accessible data.	Service supports community best practice standards for data access, citation and metadata exchange.	Service supports bespoke content discoverability, access and quality review needs for user groups or organizations.
2.12 Level of data curation Ideal Summary Description: Value of submitted data is enhanced or maintained and there is a commitment to maintain or enhance value through bespoke action on individual collections.	Service commits to brief oversight of submitted data and metadata e.g. for compliance purposes.	Service commits to maintain or enhance value through routine action across data collections.	Service commits to maintain or enhance value through bespoke action on individual collections.
2.13 Metadata cataloguing scope Ideal Summary Description: Metadata is catalogued to enhance potential dataset reuse according to sector leading standards, fulfilling domain-specific purposes. Metadata enhances value of the institutions data assets in accordance with recognized best practice standards.	Service catalogues metadata for the organization's publicly funded datasets according to funder expectations that they are discoverable, citable, and linked to related content.	Service catalogues metadata to enhance value of the institutions data assets in accordance with recognized best practice standards.	Service catalogues metadata to enhance potential dataset reuse according to sector leading standards, or fulfil domain-specific purposes.

GOAL 3: PROVIDE DATA MANAGEMENT PLANNING TOOLS AND EXPERTISE

Goal	Level 1	Level 2	Level 3
3.1 Data management plans **Ideal Summary Description**: Institution promotes best practice in data management planning and facilitates good research design. Guidance and templates are provided. Research Office connects to relevant stakeholders to appraise DMP content and notify them of relevant resource implications. Automated systems flag researcher requirements to the relevant institutional support services (e.g. exceptionally large projected data volumes).	Institution provides guidance to researchers on completing funder-mandated DMPs as part of grant bids.	Institution mandates DMP production at bid stage for all researchers. Guidance and templates are provided. Research Office connects to relevant stakeholders to appraise DMP content and notify them of relevant resource implications.	Institution promotes best practice in data management planning and facilitates good research design in relation to data generation and preservation. Automated systems flag researcher requirements to the relevant institutional support services (e.g. exceptionally large projected data volumes)

GOAL 4: DATA STEWARDSHIP AND RESEARCH DATA MANAGEMENT PRACTICES

Goal	Level 1	Level 2	Level 3
4.1 Advisory services Ideal Summary Description: Guidance is significantly tailored to support the specific needs of the institution's researchers and support staff. Guidance content is externally referenced as sector best practice.	Generic, online guidance is offered that addresses key areas of RDM. Content may be externally sourced, with little relating to the specific institutional context. Pages include a helpdesk email address.	Guidance offers relevant advice on how to use services that comply with institutional policies, and the benefits to researchers of doing so.	Guidance is significantly tailored to support the specific needs of the institution's researchers and support staff. Guidance content is externally referenced as sector best practice.
4.2 Online training Ideal Summary Description: The institution produces a significant amount of online training material which meets the needs of its researchers and staff.. Materials are reused by others in the sector.	Externally sourced online courses are linked to from RDM pages.	Externally sourced online courses are supplemented with some materials which support local needs and services.	The institution produces a significant amount of online training material which meets the needs of its researchers and staff.. Materials are reused by others in the sector.
4.3 Face to face training Ideal Summary Description: Regular + On-demand, structured face to face RDM courses are available to all. Competencies for relevant researchers and professional support staff are defined in standard role descriptions. Training is provided which facilitates this development.	Face to face training in basic RDM principles is available on request. Course content is regularly updated and responsive to feedback.	Regular, structured face to face RDM courses are available to all. Training objectives are aligned with the objectives of the institution's RDM strategy.	Competencies for relevant researchers and professional support staff are defined in standard role descriptions. Training is provided which facilitates this development.

GOAL 5: ENHANCE UBC RESEARCH DATA MANAGEMENT EXPERTISE THROUGH STRATEGIC HIRING AND TRAINING

Goal	Level 1	Level 2	Level 3
5.1 Staff investment **Ideal Summary Description**: RDM service is delivered by dedicated staff roles, consistent with the establishment of an RDM service.	RDM service is delivered by dividing responsibilities among existing staff.	RDM service is delivered through significant redesign of staff roles including investment in staff development.	RDM service is delivered by a major redesign of staff roles, consistent with the establishment of an RDM service.

GOAL 6: EVALUATE STRATEGIC PARTNERSHIPS OPPORTUNITIES

Goal	Level 1	Level 2	Level 3
6.1 Governments and industry **Ideal Summary Description**: Leadership roles in multiple government and industry groups is maintained. New opportunities for partnership are consistently sought.	Active involvement is maintained in one or more related groups and information sharing is welcomed whenever possible.	Active involvement in multiple government and industry groups is maintained with a commitment of resources to participate and share information.	Leadership roles in multiple government and industry groups is maintained. New opportunities for partnership are consistently sought.
6.2 Partnerships with other RDM service providers **Ideal Summary Description**: Leading roles as a RDM partner with a commitment of resources and program to seek out and develop additional partnerships is an ongoing priority.	Partnerships exist at some level with at least one other RDM service providers.	Partnerships exist with multiple RDM service providers including a commitment of resources to share information and define solutions.	Leading roles as a RDM partner with a commitment of resources and program to seek out and develop additional partnerships.