



RESEARCH DATA MANAGEMENT STRATEGY

Current version: December 2024

The Carrier Sekani Family Services Research Data Management Strategy is mandated under the [Tri-Agency Research Data Management Policy](#) and must be finalized and publicly available by March 1, 2023.

PRINCIPLES

Carrier Sekani Family Services (CSFS) recognizes the significance of data as an important research output and is dedicated to fostering excellence in research data management (RDM). The values of **Compassion, Honesty, Integrity, Respect, Responsibility, and Trust**, as established by our founding Elders and Matriarchs, are integral to the Carrier and Sekani approach to research and data management. These principles ensure that RDM and all research activities are conducted with cultural sensitivity and ethical integrity. Central to this commitment are the eight guiding principles derived from the First Nations Data Governance Strategic Framework:

1. **Community-driven and Nation-based:** Ensuring that initiatives are led by the community and reflect the aspirations of the Member Nations.
2. **OCAP® Principles:** Upholding the principles of Ownership, Control, Access, and Possession to empower the Member Nations.
3. **Relationships:** Cultivating strong, trust-based partnerships among all stakeholders.
4. **Transparency and Accountability:** Maintaining clear, open communication and being answerable to the communities we serve.
5. **Quality community-driven Standards and Indicators:** Developing and adhering to high standards and indicators that are determined by the communities.
6. **Nation (re)building:** Supporting the restoration and strengthening of Nation sovereignty and governance.
7. **Equity and Capacity:** Promoting fair access to resources and opportunities while enhancing the community's abilities
8. **Effective technology and policy:** Implementing robust technology and policy frameworks that align with community values and needs.

At CSFS, ensuring the highest standards of RDM through the research data lifecycle also means providing our researchers with an environment that enables and supports world-class RDM practices. These include:

- Prioritize the recognition of data as a critical research output to enhance the value and impact of research initiatives.
- Supporting researchers in their efforts to establish and implement data management practices that are consistent with ethical, legal, and commercial obligations, as well as Tri-Agency requirements and policies and CSFS requirements and policies.
- Promoting the importance of data management to researchers and staff.



- Ensuring the execution or modification of the data management plan throughout a research project.
- Ensure data is stored securely in a reliable network infrastructure for continuous and dependable operation.
- Describing and documenting data in ways that can be understood beyond a given research team
- Understanding that data created in the context of research by and with the member Nations, communities, and CSFS will be managed according to the principles developed and approved by, and in partnership, with them. While also respecting cultural and ethical obligations related to private data, cultural data, and intellectual property.
- Developing clear and comprehensive agreements regarding the ownership and sharing of data
- Publicly sharing research data for reuse, where possible

SCOPE

The CSFS RDM Strategy acknowledges CSFS' responsibility to support researchers in implementing good research data management practices. It outlines institutional supports to ensure researchers have the necessary information and resources to develop and execute data management plans, meeting conditions of the Tri-Agency or other research agreements, compliance requirements, cultural considerations, and retention requirements.

The Strategy establishes an environment that facilitates and upholds RDM practices in line with ethical, legal, and commercial responsibilities as outlined in CSFS and Tri-Agency policies and requirements. This includes compliance with the Tri-Agency Research Data Management Policy, the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans, the Tri-Agency Framework: Responsible Conduct of Research, and other relevant policies.

RESPONSIBILITIES OF RESEARCHERS AND INSTITUTIONAL SUPPORTS

This section of the CSFS RDM Strategy elaborates on the specific requirements and best practices that are contained in the Tri-Agency RDM Policy. It identifies areas where CSFS provides support and includes links to additional information about available services. For more information on institutional support, you may contact the [Director of Quality and Innovation](#) at CSFS.

DATA MANAGEMENT PLANS

Tri-Agency Requirement and Best Practices: Researchers should have access to storage that meets the needs of their research teams and is compliant with relevant laws, regulations, and ethical requirements.

Researchers should create data management plans (DMPs) as an essential step in research project design and should ensure that DMPs are updated throughout the project. Researchers are encouraged to use standardized tools to develop their DMPs, including the national [DMP Assistant](#) tool that the Tri-Agency has endorsed.

For research conducted by and with member Nations, communities, collectives and organizations, DMPs must be co-developed with these groups in accordance with RDM principles or DMP formats that they accept and respect principles underlying Indigenous data sovereignty (e.g. OCAP® Principles). DMPs in the



context of research by and with member Nations and communities, collectives and organizations should recognize Indigenous data sovereignty and include options for renegotiation of the DMP.

Institutional Support: The CSFS Quality and Innovation department will provide guidance and support for researchers and research teams in developing compliant and ethical DMPs.

DATA STORAGE

Tri-Agency Requirement and Best Practices: Researchers must store working data in secure, reliable networks that conform to ethical and legal requirements.

Institutional Support: Information Technology Services

The CSFS Information Technology Services department provides comprehensive support and guidance to ensure research data is stored and managed securely, ethically, and efficiently throughout its lifecycle. Key responsibilities include:

1. Provision of Data Storage Solutions

IT Services will assist researchers in identifying and implementing appropriate data storage solutions that align with CSFS policies and Tri-Agency requirements. Microsoft Office365 will serve as the primary platform for secure remote storage, offering flexibility for both internal and external data management.

2. Case-by-Case Assessment of Storage Needs

Active data storage requirements exceeding the standard allocation will be addressed individually. IT Services will collaborate with researchers to evaluate and fulfill these needs effectively, ensuring continuity and compliance.

3. Secure Data Transfers

The department will provide support for transferring data to or within CSFS environments, ensuring secure and compliant handling during all stages.

4. Access to Repository Services

IT Services will facilitate access to digital repositories or other platforms for the long-term preservation and accessibility of research data. Assistance includes integrating solutions that comply with ethical, legal, and cultural standards.

5. Technical Support and Training

Researchers can access IT support for technical challenges related to data storage and management. Regular training sessions and resources will be available to enhance researchers' understanding and usage of the provided systems.

6. Monitoring and Security

IT Services employs advanced security measures, such as multi-factor authentication, endpoint protection, and 24/7 monitoring, to safeguard data against unauthorized access or breaches.

DATA CURATION

Tri-Agency Requirement and Best Practices: Researchers should describe, organize, and document data in ways that can be understood beyond a given research team. Data Curation is the documentation,



description, and management of research data that adds value by optimizing datasets for current use and future discovery and reuse.

Institutional Support: The CSFS Quality and Innovation department will provide guidance and support for research teams that request assistance in these areas.

DATA DEPOSIT

Tri-Agency Requirements and Best Practices: CIHR-funded researchers must continue to comply with limited data deposit requirements included in the Tri-Agency Open Access Policy on Publications (in place since January 1, 2008). Requirements for SSHRC and NSERC-funded researchers will be phased in after the agencies review institutional strategies.

Researchers are required to deposit into a digital repository all digital research data, metadata and code that directly supports the research conclusions in journal publications and pre-prints that arise from agency-supported research. These data, metadata and code should be linked to the publication with a persistent digital identifier whenever possible. Data deposits are not equivalent to sharing research data; when researchers deposit data, they can choose to limit sharing permissions or keep data private once it is deposited.

For research conducted by and with the member Nations and communities, collectives and organizations, these groups will guide and determine how the data are collected, used, and preserved and have the right to rematriate the data.

Institutional Support: The CSFS Information Technology Services will provide or support access to repository services or other platforms that securely store and provide continued access to research data. For assistance with repository services or related inquiries, researchers are encouraged to contact the CSFS IT Service Desk at ithelpdesk@csfs.org or call 250-649-4687.

DATA SHARING

Tri-Agency Requirements and Best Practices: Researchers are not necessarily required to share their data. The Tri-Agency expectation is that researchers will provide appropriate access to the data where ethical, cultural, legal, and commercial requirements allow and in accordance with FAIR principles and standards of their disciplines.

Institutional Support: The CSFS Quality and Innovation department will provide support to researchers in managing the development, review, negotiation, and finalization of sharing their data effectively.

SENSITIVE DATA

Tri-Agency Requirement and Best Practices: The collection, analysis, use, and reuse of sensitive research data takes place in a complex ethical, legal, policy and societal context involving privacy, security, and intellectual property rights.

Researchers must store sensitive data in a secure location that is accessible only to authorized personnel. There must be a plan for the retention and/or disposition of sensitive data. Researchers are responsible



for ensuring that sensitive data is protected and, when appropriate, transferred to CSFS for permanent storage.

Institutional Support: The CSFS Quality and Innovation department supports the protection of intellectual property and facilitates data-sharing for researchers conducting research with member Nations, communities, and the organization. Additionally, it provides support and guidance for researchers who are collecting or using personally identifiable information.

INDIGENOUS DATA

Tri-Agency Requirement and Best Practices: The Agencies recognize the specific requirements for managing data related to research involving First Nations, Métis, or Inuit communities. Data related to research by and with First Nations, Métis, or Inuit communities must be managed according to principles developed and approved by these communities, ensuring their control over their data.

Researchers must obtain free, prior, and informed consent (FPIC) from First Nations, Métis, or Inuit communities before collecting, using, or sharing their data. While emphasis is placed on upholding Indigenous data sovereignty, which includes existing principles such as OCAP® and CARE, it is understood that they do not necessarily respond to the needs and values of distinct First Nations, Métis, or Inuit communities. A distinctions-based approach is necessary to recognize, affirm, and implement the unique rights and best interests of First Nations, Métis, or Inuit communities.

For research conducted by and with First Nations, Métis, or Inuit communities DMPs must be co-developed with them in accordance with RDM principles or acceptable DMP formats that respect the values and principles of First Nations, Métis, or Inuit communities. DMPs should recognize Indigenous data sovereignty and include options for renegotiation of the DMP.

Institutional Support: The CSFS Quality and Innovation department will ensure that the data generated through research in collaboration with member Nations, communities, and CSFS will be managed in partnership with them. Appropriate strategies will be followed to further the goal of Indigenous data sovereignty in research. Such strategies include:

- a. **Implementation of OCAP® Principles:** Ownership, Control, Access, Possession. These principles ensure that Indigenous communities have full authority over their data, including how it is collected, used, and shared. By providing education and training for staff and stakeholders, we ensure the importance of these principles is emphasized in data governance that benefits Indigenous communities and respects their authority over their data.
- b. **Develop Data Governance Frameworks:** These frameworks will reflect the cultural values, priorities, and ethical standards of the member Nations and communities while ensuring their input and control over their data.
- c. **Ensuring Ethical Data Use:** Implement ethical guidelines for the collection, storage, and sharing of Indigenous data that prioritize the rights and interests of the member Nations and communities. This includes obtaining free, prior and informed consent for any data-related activities.
- d. **Engage in Capacity Building:** This includes technical skills, legal knowledge, and ethical considerations.



- e. **Foster Collaborative Relationships:** Strengthening partnerships between researchers and the member Nations and communities to help ensure that data practices are culturally appropriate and mutually beneficial. This includes involving the member Nations and communities in all stages of the research process.
- f. **Promote Ethical Research Practices:** Ensuring that all research involving the member Nations, communities, and CSFS adheres to ethical standards and respects the rights and interests of Indigenous peoples. This includes obtaining prior informed consent and ensuring data privacy and confidentiality.

COMPLIANCE

Tri-Agency Requirement: By accepting Agency funds, institutions and researchers accept the terms and conditions as set out in the Agencies' policies, agreements, and guidelines.

In the event of an alleged breach of Agency policy, agreement, or guideline, CSFS and the Agency may take steps in accordance with the Tri-Agency Framework: Responsible Conduct of Research and relevant CSFS policies.

Institutional Support: To support researchers and ensure compliance with the Tri-Agency requirements, the CSFS Quality and Innovation department will provide guidance and support outlined through the following proactive steps:

- a. **Policy Communication:** Clearly communicate the terms and conditions of Agency policies, agreements, and guidelines to all researchers.
- b. **Institutional Policies:** Develop and maintain institutional policies that align with the Tri-Agency Framework: Responsible Conduct of Research. These policies will outline the procedures for managing research data, addressing breaches, and ensuring ethical conduct.
- c. **Support Services:** Establish dedicated support services, such as research ethics boards and data management systems, to assist researchers in adhering to the Tri-Agency requirements. These services can provide guidance on data management plans, ethical considerations, and reporting procedures.
- d. **Monitoring and Compliance:** Implement a regular monitoring process to ensure ongoing compliance with the Tri-Agency policies. This can include regular audits, reviews of data management practices, and mechanisms for reporting and addressing potential breaches.
- e. **Collaboration with Agencies:** Foster a collaborative relationship with the Tri-Agencies to stay updated on policy changes and best practices. This collaboration can also help in addressing any issues or breaches promptly and effectively.
- f. **Support and Resources:** Offer support and resources to facilitate the implementation of data management plans and compliance with ethical guidelines. This can include providing access to data repositories, software tools, and training materials. Additionally, ensure that support staff are available to assist with understanding and meeting compliance requirements.



CSFS RESEARCH DATA MANAGEMENT STRATEGY:

CSFS is committed to providing the research community with a comprehensive framework and essential support to ensure the implementation of best practices in research data management in accordance with institutional and regulatory standards. To achieve this, CSFS will ensure:

1. Institutional Support and Responsibilities:

- a. Provide researchers with the necessary information and resources that enable world-class data stewardship and practices.
- b. Provide researchers with support to meet Tri-Agency requirements and ethical standards.
- c. Promote the importance of data management to researchers.
- d. Develop and maintain our own data management policies, ensuring that they are in accordance with ethical, provincial and national laws, and can accommodate the rapidly evolving research communities' best practices.

2. Compliance and Ethical Practices:

- a. Ensure adherence to the Tri-Agency Research Data Management Policy.
- b. Follow the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans
- c. Comply with Tri-Agency Framework: Responsible Conduct of Research and other relevant policies.

3. Resource Allocation:

- a. Allocate resources to support the development and implementation of RDM.
- b. Ensure researchers have access to tools and training for effective RDM.

4. Cultural and Retention Considerations:

- a. Ensure all communications are culturally sensitive and respectful, acknowledging the diverse backgrounds and traditions of the member Nations.
- b. Uphold cultural considerations in RDM by integrating cultural sensitivities that respect cultural protocols and values.
- c. Meet retention requirements for RDM while adhering to cultural guidelines of the member Nations.

5. Environment and Infrastructure:

- a. Foster a collaborative environment by involving the member Nations in the development and refinement of data management, ensuring their needs and perspectives are prioritized.
- b. Establish a conducive environment that supports and upholds world-class RDM practices.
- c. Ensure our infrastructure aligns with ethical, legal, and commercial responsibilities.

ACKNOWLEDGEMENT

The structure, background information, and best practices outlined in the CSFS RDM Strategy are developed with the utmost consideration for the member Nations, communities, and CSFS. They are based on the following RDM Strategies:

[University of Victoria Research Data Management Strategy](#)

[UNBC Institutional Research Data Management Strategy](#)



GLOSSARY

CARE Principles: A set of principles for Indigenous Data Governance that are people and purpose-oriented, highlighting the essential role of data in promoting Indigenous innovation and self-determination. These principles stand for Collective Benefit, Authority to Control, Responsibility, and Ethics. They complement the existing FAIR principles and encourage open movements to consider both people and purpose.

Data Management Plan (DMP): Statement describing how research data will be managed throughout a specified research project's life cycle – during and after the active phase of the research project – including terms regarding archiving and potential preservation of the data in a data repository. The DMP is considered to be a 'living' document, i.e., one which can be updated when necessary.

Data Repository: Physical or digital storage location that can house, preserve, manage, and provide access to many types of digital and physical materials in various formats. Materials in online repositories are curated to enable search, discovery, and reuse. There must be sufficient control for the physical and digital material to be authentic, reliable, accessible, and usable on a continuing basis.

FAIR Principles: Set of guiding principles to make data Findable, Accessible, Interoperable and Reusable.

FPIC: A principle that recognizes the right of an Indigenous community to give or withhold its consent to proposed projects that may affect the lands they traditionally own, occupy, or otherwise use. Recognized in the UN Declaration on the Rights of Indigenous Peoples, it ensures the participation and consultation of an Indigenous population before any activities, development, or use of resources is initiated.

OCAP® Principles: A set of principles developed to protect First Nations' data and information and how it is collected, protected, used, or shared. These principles stand for ownership, control, access, and possession. Upholding these principles supports Indigenous Information Governance and data sovereignty.

Rematriate: In the context of Indigenous cultural processes, this term refers to the restoration of sacred relationships between Indigenous people and their ancestral lands. Emphasis is placed on the return of culture, land, and knowledge to communities. It has a deeper cultural significance, focusing on balance and harmony and honouring matrilineal societies.

Research Data: Data that are used as primary sources to support technical or scientific enquiry, research, scholarship, or artistic activity, and that are used as evidence in the research process and/or are commonly accepted in the research community as necessary to validate research findings and results. All other digital and non-digital content have the potential to become research data. Research data may be experimental data, observational data, operational data, third-party data, public sector data, monitoring data, processed data, or repurposed data.

Research Data Management (RDM): The storage, access, and preservation of data produced from a given investigation. RDM practices cover the entire life cycle of the data, from planning the investigation to conducting it, and from backing up data as it is created and used to long-term preservation of data deliverables after the research investigation has concluded. Specific activities and issues that fall within



the category of RDM include file naming, data quality control and quality assurance, data access, data documentation, metadata creation and controlled vocabularies, data storage, data archiving and preservation, data sharing and re-use, data integrity, data security, data privacy, data rights, notebook protocols.

Researcher: In the context of the Tri-Agency Data Management Policy, “researcher” can be read to mean grant recipient. However, at CSFS, this high-level strategy is designed to meet the needs of both funded and non-funded researchers across all levels of the organization. While some specific requirements apply only to Tri-Agency-funded researchers, institutional support is available to everyone.

Tri-Agency: The three Canadian funding agencies are the Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council (NSERC), and the Social Sciences and Humanities Research Council (SSHRC).

RELEVANT POLICIES: EXTERNAL

[Tri-Agency Framework: Responsible Conduct of Research \(2021\)](#)

[Tri-Agency Research Data Management Policy](#)

[Tri-Agency Statement of Principles on Digital Data Management](#)

[Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans \(2022\)](#)

[CIHR Health Research and Health-Related Data Framework and Action Plan](#)

RELEVANT POLICIES: CSFS

[CSFS Policy on Responsible Conduct of Research](#)

[CSFS Research Ethics Policy](#)

RELEVANT EXTERNAL LINKS:

[AFN FPIC Fact Sheet](#)

[CARE Principles for Indigenous Data Governance](#)

[CODATA RDM Terminology 2023](#)

[FAIR Data Principles: What is FAIR](#)

[First Nations Principles of OCAP®](#)