

Digital Research Alliance of Canada: Alliance Simplified Template (Funding Application Stage)

Introductory Guidance

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Plan Questions

What considerations will you take into account with respect to ethical, legal, or commercial issues?

Describe any applicable ethical, legal, or commercial considerations related to your project and data. This includes research involving Indigenous communities and knowledges, human subjects, legal and commercial considerations/agreements, partnerships or data with a high level of risk associated with it

Guidance:

Consider how you will manage data throughout the lifecycle of the project, including how you will safeguard information, protect potentially sensitive data, support potential long-term data stewardship, and meet requirements, including those set forth by funders, research ethics boards, or other obligations, as applicable. If needed, contact key areas at your institution or organization for guidance and to find out what resources and support are available.

Some notable key considerations include:

- How will you support long-term data stewardship, including data deposit and appropriate sharing? Note - research involving human participants will very often require both informed consent and ethics approval with respect to data sharing.
- How will data deemed as being sensitive be effectively safeguarded and protected across the lifecycle of your research project?

Depending upon the nature of your project, you may want to consider how parts will be shared through knowledge translation/mobilization or through [technology transfer](#) if you develop new technology.

What data will you collect or otherwise bring into your project under this plan?

Describe the data that will be collected, generated, and/or acquired.

Guidance:

Research data refers to any information that is collected, observed, generated, or acquired to validate your research findings.

Notable examples of research data may include data files, questionnaires, transcripts, samples, physical collections, software, models, algorithms, lab notebook, codebooks, methodologies, workflows, and other materials to be produced during the course of the project.

When describing your data be sure to:

- Describe the data types (e.g., image data, textual data, numerical data, audiovisual, etc)
- Briefly explain how the data will be collected or generated - if already existing data will be acquired, describe the source of the data (e.g., citations, URL, persistent identifiers linked to the data, acquisition requests) and specify what data will be used.
- Indicate if your data is, or may possibly be, considered as sensitive (e.g., health, administrative and/or clinical records, participant interviews, involving sensitive topics, etc).
- Indicate if your data involves Indigenous communities and/or knowledges and information.
- Describe if your data are in proprietary vs. non-proprietary formats
- As best able, provide an estimate of the size of the data, taking into account multiple versions of data needed (e.g., raw, master, analytic). This will additionally help when considering storage data storage needs for the project.

How will you document data for future re-use or validation?

Describe how you will document your data to ensure that it is easily read and interpreted correctly throughout the research process.

If applicable, specify any data and/or metadata standards that are being used to support your research project.

Guidance:

Structured documentation allows for your research and data to be understood, reproduced, and, potentially, reused by others. Notable examples of data documentation may include such things as data dictionaries, codebooks, readme files, lab and/or field notes, code and syntax, user guides, etc.

[Metadata standards](#) provide a set list of descriptive fields (similar to a vocabulary) for providing relevant contextual information to describe data. Most metadata standards use open and machine-readable formats (e.g., JSON; XML), which facilitates opportunities for interoperability, including future exchange and reuse of metadata between systems and software used for analysis, as well as for supporting data sharing and indexing in a repository or database for search and discovery purposes.

Consider at the funding application stage how you will ensure that your data is efficiently documented and captured through out your project (e.g. scripting, tool-generated, user-documented), including by whom, can help to identify needs, including staffing resources and expertise, that may possibly be built into your application and supported through grant funds.

As needed, connect with local expertise at your institution or organization, including the Library, for assistance when considering your project's metadata needs, including identifying if there are existing metadata standards that can be used.

How will data be stored, accessed and worked with?

Describe both where and how data will be stored, accessed, and worked with during the active phases of your research including as applicable:

- all versions of data (e.g., raw, master, analytic)
- All activities (e.g., data collection, processing, analysis, dissemination)
- All software and platforms
- Who requires access, including security measures (e.g., Investigators, research staff, collaborators, partners)
- How data will be backed up to prevent data loss

Guidance:

Consider and identify both *where* and *how* data will be stored, accessed, and worked with across the active phases of your research. Projects involving multiple people (e.g., co-investigators, research staff, trainees, partners) need to consider who requires access, as well as how they will work with data.

If you are working with sensitive data, you will require secure storage. Contact your institution's IT services to discuss options. If you are working with data from human participants, you will need to follow any directions from your local research ethics board.

Many server and cloud based environments, such as the Digital Research Alliance of Canada's freely available [Rapid Access Service](#), can support projects' active data storage and access needs, including for geographically dispersed teams, greatly reducing the need for data transferring and storing data on personal computers and mobile devices.

Notable things to consider and describe as able at the funding application stage include:

- Where and how all versions of data will be stored and worked with - this includes data that are unprocessed and identifiable (raw data), those that are processed and de-identified (master data), as well as analytic files.
- Who needs access and to what versions of data - Consider if, for instance, co-investigators, trainees, and/or research staff may require access to data. Should your project move forward, in some instances, individuals may require ethics approval in order to access raw or sensitive data.
- How people will access and work with data - will you utilize a server or cloud based environment and, if so, will all team members be able to access

If for any reason data are being worked with or stored on personal computers or mobile devices, describe how you will ensure that data are backed up to prevent data loss, including if to an external hard drive, a server, and/or a cloud solution. You may also want to contact your institution's data library or IT divisions to ensure you are compliant with local policies.

How will data be managed, discoverable, and accessible for the long term?

Describe plans for long-term management of your data after the active phases of your research have concluded including data deposit and sharing.

Consider and describe as applicable plans for:

- all versions of data deposited (raw, master, analytic, published)
- All activities (e.g., curation, preservation, ethical compliance, publishing etc.)
- All software and platforms (e.g., data repositories)

Guidance:

Describe the steps you will take to ensure your data will remain, as appropriate, discoverable and accessible over time while considering:

- Any obligations from funders, publishers, or your own institution's policies
- If any data will be destroyed and, if so, under what conditions.
- If any data are sensitive and if ethics approval and/or de-identification is required prior to sharing
- If any software is needed for continued access to the data, as well as if code, scripts, or metadata are required to interpret the data

Will you deposit any versions of your data into a digital research data repository for open discovery, appropriate access, and potential reuse by others?

- If yes, provide details including, as best able, where you will deposit your data
- If no, include an explanation as to why your data will not be deposited.

When planning to deposit data, consider repositories that assign a persistent identifier as these support both its discovery and citability. Two free-to-use generalist (not discipline specific) data repositories in Canada are:

- [Borealis](#), the Canadian Dataverse Repository: Check the Borealis website to see if your institution supports the delivery of this repository service and to learn more about it and its key features.
- [Federated Research Data Repository \(FRDR\)](#): Hosted by the Digital Research Alliance of Canada, FRDR, is a national repository service and data discovery platform that can additionally support very large data deposits.

Some repositories and institutions may provide support for curation activities. Curators can work with you to help ensure your data are appropriately formatted and documented, which contributes to its long term value.

Connect with local expertise at your institution or organization, including the Library, for assistance when considering your project's long-term management and deposit needs, including if there are resources, expertise, and/or repository solutions that can be leveraged.