2023 Major Science Initiatives Fund

Draft call for proposals
June 2021





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About the Canada Foundation for Innovation

The Canada Foundation for Innovation (CFI) makes financial contributions to Canada's universities, colleges, research hospitals and non-profit research organizations to increase their capability to carry out high-quality research.

The CFI invests in infrastructure that researchers need to think big, innovate and push the boundaries of knowledge. It helps institutions to attract and retain the world's top talent, to train the next generation of researchers and to support world-class research that strengthens the economy and improves the quality of life for all Canadians.

Part 1 – What you need to know about this competition

Background

In 2010, the Government of Canada mandated the CFI to design a systematic approach to:

- Evaluate and address the operating and maintenance needs and scientific performance of research facilities of national importance; and,
- Oversee their governance and management policies and practices.

We launched the Major Science Initiatives Fund with the inaugural competition in 2012. Our goal was to help stabilize the operations of the funded facilities by promoting governance and management practices of the highest standards including the development of business plans tailored to the Canadian funding model.

The 2023 MSI Fund competition is the fourth competition launched through this program. Across the former three competitions, the program has expanded to include a greater range of facilities, both in size and complexity and across all research disciplines. It now also includes facilities without previous CFI capital investment, which had been the focus of the inaugural competition.¹

In 2019, we implemented two important changes to the MSI Fund that we will maintain in this competition:

- The Government of Canada, acting upon a recommendation made in 2017 in <u>Canada's</u>.
 <u>Fundamental Science Review report</u> (also known as the Naylor report), mandated the CFI to allow an increase of its share of funding from 40 percent to 60 percent of a facility's operating and maintenance costs for the subset of facilities identified in the report as being of major scale (see <u>Appendix 1</u>). These facilities will again be eligible in this competition to request 60 percent of their total operating and maintenance (O&M) costs from the CFI.
- The awarding of permanent funding to the CFI announced in the 2018 federal budget allowed the CFI to extend the funding cycle for the MSI Fund from five to six years, providing for a longer planning horizon for facilities and greater stability to help retain highly qualified personnel.



How do we define a facility in the context of this fund?

A facility funded through the Major Science Initiatives Fund addresses the needs of a community of Canadian researchers representing a critical mass of users distributed across the country.

This is done by providing shared access to substantial and advanced specialized equipment, services, resources, and scientific and technical personnel.

Whether single-sited, distributed or virtual the facility:

- supports leading-edge research and technology development, and promotes the mobilization of knowledge and transfer of technology to society
- requires resource commitments well beyond the capacity of any one institution
- is specifically identified or recognized as serving pan-Canadian needs and its governance and management structures reflect this mandate.

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¹ For a more detailed history of the first three competitions, please consult <u>The Canada Foundation for Innovation</u>, 2018. The Canada Foundation for Innovation's Major Science Initiatives Fund: A report on the advancement of research facilities funded between 2012 and 2017. Ottawa, Ont.

Through this 2023 MSI Fund competition, the CFI will continue to contribute to O&M needs of facilities of national importance for which the loss or absence of support would represent a serious setback for Canada. This includes facilities which may not have been previously funded through the program, provided these are successful in meeting the eligibility and assessment criteria established for this competition.

Funding provided by the CFI will complement existing O&M resources to address the operational needs of the successful facilities. It is expected that current O&M funding partners will continue their support.

Objectives

This competition will provide multiyear funding toward the O&M needs of facilities for the period April 1, 2023 to March 31, 2029.

Funding through this competition is intended to:

- Enable pan-Canadian research communities to undertake world-class research and technology development that lead to social, health, economic or environmental benefits for Canadians
- Enable facilities to operate at an optimal level to ensure the best use of their specialized equipment, services, resources, and technical and scientific personnel
- Promote responsible stewardship through the adoption of best practices in governance and management.

Competition timeline

Facilities funded in the 2017 competition

Jul 12, 2021	Call for proposals launched by the CFI
Sep 20, 2021	Deadline to submit notices of intent
Nov 4, 2021	Deadline to submit proposals
Dec 2021–Feb 2022	Review of proposals by Expert Committees
May 20, 2022	Review of proposals by a Multidisciplinary Assessment Committee
Jun 22, 2022	Decision by CFI Board of Directors

All other facilities

Jul 12, 2021	CFI launches Call for proposals
Aug 10, 2021	Deadline to submit expressions of interest
Sep 20, 2021	Deadline to submit notices of intent
Oct 2021	Review of notices of intent by a Multidisciplinary Assessment Committee
Nov 4, 2021	Invitations to submit proposals communicated to administrative institutions
Feb 8, 2022	Deadline to submit proposals
Mar-Apr 2022	Review of proposals by Expert Committees
May 20, 2022	Review of proposals by a Multidisciplinary Assessment Committee
Jun 22, 2022	Decision by CFI Board of Directors



Equity, diversity and inclusion

The CFI is committed to the principles of equity, diversity and inclusion. In all our activities, we recognize that a breadth of perspectives, skills and experiences contributes to excellence in research.

Equity: We aim to ensure all CFI-eligible institutions have the opportunity to access and benefit from our programs and CFI-funded infrastructure through our well-established, fair and impartial practices.

Diversity: We value attributes that allow institutions and their researchers — from any background and from anywhere — to succeed. This includes individual attributes such as gender, language, culture and career stage;

institutional attributes such as size, type and location; and attributes that encompass the full spectrum of research, from basic to applied and across all disciplines.

Inclusion: Our culture encourages collaboration, partnership, contributions and engagement among diverse groups of people, institutions and areas of research to maximize the potential of Canada's research ecosystem.

We believe that nurturing an equitable, diverse and inclusive culture is the responsibility of every member of the research ecosystem, including funders, institutions, researchers, experts and reviewers.

Application process

See Part 2 "How to apply" for details of how to complete each stage of the application process.

Competition budget

The CFI will invest up to \$660 million over six years (April 1, 2023 to March 31, 2029)² to cover a portion of the total eligible O&M costs of funded facilities. The total CFI funding, including from the Infrastructure Operating Fund (IOF), must not exceed 60 percent of a facility's total eligible O&M costs for facilities identified in <u>Canada's Fundamental Science Review</u> report and 40 percent for all others (see <u>Appendix 1</u>).

The CFI may reserve a portion of the \$660 million for transitional funding and potential adjustments of awards at the midpoint of the award cycle (see 'Oversight and monitoring').

In the event that facilities currently receiving more than \$2 million annually from the CFI are not funded in this competition, the CFI may provide transitional funding to assist these facilities going forward. A plan for transitional funding will be requested as part of the proposal as per the guidelines provided in Part 2 of this document.

Eligible institutions

Canadian universities, colleges, research hospitals and non-profit research institutions recognized as eligible by the CFI can apply to this competition.

Expressions of interest, notices of intent and proposals must be submitted by a CFI-eligible institution on behalf of the facility. The institution which submits the proposal acts as the administrative institution for the duration of the funding cycle.

² Contingent upon the CFI receiving funding from the Government of Canada, which is subject to sufficient Parliamentary appropriations.

Eligible facilities

Facilities that seek funding for O&M costs through this competition must meet the eight criteria described below. However, facilities funded in the 2017 competition are automatically eligible to apply to this competition and do not need to demonstrate their eligibility.

Highly specialized capabilities

The facility provides highly specialized equipment, services, resources, or scientific and technical personnel that:

- · Are not readily available at most institutions
- Serve both basic and applied research in multiple fields or offer discipline-specific infrastructure with specialized capabilities not offered elsewhere
- Would represent a serious setback for Canada if they were lost.

User community

There is a demonstrated demand for the facility's equipment, services, resources and scientific and technical personnel from a research community that:

- Represents a critical mass of researchers in an area of research strength for Canada and reflects the diversity of the country's research community
- Is typically pan-Canadian and multidisciplinary
- Can be multi-sectoral, including the private sector, and international in scope.

Appropriate governance model

The facility has as an established governance model appropriate to its size and complexity, with a clearly defined national mandate, and a structure and procedures to address:

- · Accountability, legal duties and responsibilities
- · Financial controls
- Policy formulation and strategic planning, including stakeholder communications
- Oversight of facility performance.

Appropriate management structure and practices

The facility has a management structure and practices appropriate to its size and complexity to address:

- · Operation and maintenance of the facility
- Human resources and succession planning
- · Risks and risk mitigation
- Monitoring of performance
- Cybersecurity
- Data management.

Established access policy

Any interested user can request access to the facility through a publicly available user access policy. Access to limited resources is only granted following an appropriate selection process.

Additional supporting evidence:

- Access to limited resources is based on an open competition; the scientific excellence of the proposals is evaluated through independent merit review
- A defined fee schedule is publicly available
- · Access to facility data is available to any interested researcher at no cost.

Substantial annual O&M costs

The facility has demonstrated annual eligible O&M costs exceeding \$1 million to support human and operational resources beyond what is typically available in Canadian research institutions.

Total O&M costs should include:

- Human resources
- Administrative costs
- Facility costs (electricity, heating, cooling, water, sewer, custodial, security, equipment repairs, as well as maintenance and repairs for the space)
- Supplies and consumables required to keep the facility in a state of research readiness.

Fully operational status

The facility is fully operational.

Ownership

The facility is owned by one or more CFI-eligible institutions.

Eligibility restrictions

The following facilities are not eligible to apply:

- Thematic institutes, memberships
- TRIUMF
- Canada's New Digital Research Infrastructure Organization (NDRIO)
- Facilities that are the responsibility, or are included within the mandate, of a federal agency (e.g. astronomy facilities).

Eligible costs

Eligible costs are defined as the costs relating to the O&M of the facility that fall within the following categories:

- Administrative, scientific and technical support personnel
- Extended warranties/service contracts
- · Replacement parts and minor upgrades
- Services
- Supplies and consumables
- · Communications and outreach activities
- Administrative costs (excluding personnel)
- · Training and professional development
- Contingency
- Other O&M costs, such as decommissioning costs.

The table in <u>Appendix 2</u> provides a more detailed list of eligible and ineligible costs including some examples. As this list is not exhaustive, administrative institutions should consult with their CFI Senior Programs Officer to determine the eligibility of a specific item not on this list.

Eligible partner funding

Any partner may contribute to a facility's eligible O&M costs, including the Canadian Institutes of Health Research, the Natural Sciences and Engineering Research Council of Canada, the Social Sciences and Humanities Research Council, departments and agencies of the federal, provincial, territorial and municipal governments, firms and corporations, institutions and other users (e.g. through user fees), and international sources of funding.

Review process

Through our structured merit-review process, we ensure that proposals are reviewed in a fair, competitive, transparent and in-depth manner. The following sections outline the review process for proposals for this competition, including the roles and responsibilities of each committee.

Assessment criteria

Review committees will assess proposals on the basis of the six criteria outlined below. To be considered for funding, a proposal must satisfy all six criteria to a degree commensurate with the size and complexity of the facility.

Scientific excellence — The facility is used by researchers of the highest calibre and enables innovative and leading-edge research that leads to social, health, economic, or environmental benefits to Canadians. The research directions proposed in the facility's strategic plan are forward-looking and reflect the state-of-the-art in the supported fields.

International competitiveness — The facility's highly specialized equipment, services, resources, and scientific and technical personnel are internationally competitive and a high priority for the user community. The loss of these capabilities would be a setback to Canada.

Need for CFI funding — The requested funding is necessary to allow the facility to fully exploit its scientific and technical capabilities and to operate at an optimal level to address the needs of the user community.

Excellence in governance — The facility adopts best practices in governance, including long-term strategic planning, as appropriate to its size and complexity. The facility defines its needs over the life of the facility in consultation with the user community.

Excellence in management — The facility adopts best practices in the management of its operations, risk mitigation, including cybersecurity, and of its financial, data, and human resources, including equity, diversity and inclusion. The management team has the core competencies required.

Operations and user access — The facility is effectively and efficiently operated and has established mechanisms to ensure optimal use by the user community. Access to limited resources is only granted following an appropriate selection process.

Expert Committees

Proposals will be reviewed by an Expert Committee typically composed of five to eight individuals. Expert Committee reviewers are selected for their scientific leadership and expertise in operating and managing comparable facilities in Canada and internationally. Expert Committees will assess the strengths and weaknesses of proposals in relation to the assessment criteria for this competition. For facilities funded through the 2017 competition, Expert Committees will also

assess how well each facility was able to maximize its scientific and technological capabilities as a result of the MSI funding awarded since the 2019 midterm, and whether it satisfactorily addressed any concerns and areas for improvement identified by the midterm review committees. The CFI will provide the 2019 midterm review reports to the Expert Committees.

These committees will recommend to the Multidisciplinary Assessment Committee (MAC) those proposals that meet the standard of excellence for the competition. They will also recommend the amount to be awarded to each facility. Proposals not recommended by the Expert Committees will not be considered by the MAC; however, the MAC will review requests for transitional funding from facilities funded in the 2017 competition that are not successful in this competition at either the Expert Committee or MAC stage.

Face-to-face meeting

Each Expert Committee will hold a virtual face-to-face meeting with representatives of the facility, its governing body, and administrative institution with the purpose of gaining a better understanding of the operational realities, features, and outcomes and impacts of the facility. The insight gained from these discussions will assist the Expert Committee in its evaluation of the established assessment criteria.

The meeting will typically involve at least two distinct sessions. The first will focus on scientific excellence and benefits to Canadians, as well as the facility's capabilities and international competitiveness. The second session will focus on the facility's operations, governance and management, as well as the need for CFI funding.

These distinct sessions allow you to tailor the team of representatives to the types of questions being asked in each session. We may also arrange a discussion between the facility's Chair of the Board of Directors and the Expert Committee.

We recommend that five representatives be present for each of the sessions although the two groups may be composed of different individuals. Representatives will typically include the facility's CEO or Director, the Chair of its Board of Directors, its financial officer and its scientific director. In all cases, we strongly encourage the participation of a representative from the administrative institution.

Multidisciplinary Assessment Committees (MAC)

A Multidisciplinary Assessment Committee (MAC) will review all of the proposals recommended for funding by the Expert Committees. MAC reviewers are selected for their capacity to assess proposals based on the competition objectives and for their breadth of knowledge of facility management and operations of comparable facilities in Canada and internationally. To ensure that there is consistency in the review process, the MAC will include members that have also participated in the review of the notices of intent.

Following a careful analysis of the results of the Expert Committee review and its own assessment of the proposals, the MAC will be responsible for:

- Identifying proposals that best meet the competition objectives relative to other competing requests
- Establishing the amount that should be awarded to each proposal, within the competition budget
- Reviewing requests for transitional funding from facilities funded in the 2017 competition that are not successful in this competition at either the Expert Committee or MAC stage.

The MAC will provide the final funding recommendations and funding amounts to the CFI Board of Directors.

Collaboration with funding partners

To coordinate the review processes and avoid duplication of review efforts, we may provide committee reports, along with the names and affiliations of committee members, to relevant funding partners named in the proposal. In addition, we will invite representatives from the relevant funding partners, where appropriate, to participate as observers in the Expert Committee review process.

We encourage institutions to work with all current and potential federal, provincial and territorial funding authorities and other funding partners at an early stage in the planning and development of proposals.

Funding decisions

The CFI Board of Directors will make funding decisions at its June 2022 meeting. After the funding decisions are made, we will provide the review materials for each proposal to the administrative institution.

Public announcement

The Government of Canada makes public announcements of new funding from our MSI Fund. We organize these national announcements in collaboration with an institution. Public announcements provide institutions, their researchers and partners, along with government representatives, the media and the CFI, opportunities to highlight the research and technology development enabled by CFI-funded infrastructure in their communities. We encourage institutions to work with local and national media after the announcement to promote the benefits of research and technology development to Canadians.

Oversight and monitoring

We use a framework to guide the oversight and monitoring activities of facilities funded through the MSI Fund. We strongly encourage you to read the MSI Oversight Framework (2019) before submitting a notice of intent.

We will tailor oversight activities to the complexity of the facility. They will include:

- Financial and progress reports, including short- and medium-term outputs and outcomes
- Risk assessment and mitigation strategy
- · Performance monitoring strategy
- Decommissioning plans.

Each facility funded in this competition will undergo an external merit review at the midpoint of the award cycle (2026). The midterm review will assess the facility's ability to maximize its scientific and technological capabilities as a result of funding provided through the MSI Fund.

Accordingly, the midterm review will provide an assessment of the overall impact of the funding on the scientific excellence of the research program(s), the research outcomes and impacts, and the governance, management and operations. The future management plan and the need for O&M funds for the remaining period will also be assessed. The CFI contribution to the O&M costs for the remaining period will depend on the outcome of the midterm review.

To reduce the administrative burden on institutions, we endeavour to coordinate financial and other oversight activities with the facilities' funding partners. This could include, for example, combining financial reporting requirements, audit activities and sharing of the audit results, as applicable, for each of the funders.

Part 2 - How to apply

Tools to apply

Use the <u>CFI Awards Management System (CAMS)</u> to prepare, share and submit your notices of intent and proposals. (You do not need to use CAMS for expressions of interest, which can be emailed to us.)

Find technical instructions for using CAMS in the "<u>Getting started with CAMS</u>" documents for researchers and institutional administrators.

You no longer need to include a cover letter with your proposal.

This call for proposals and section 6 of the "<u>Getting started with CAMS</u>" documents contain all the information you need to apply to the 2023 MSI Fund competition, including guidelines to prepare notices of intent and proposals. We will not publish separate guidelines as we have done in past competitions.

It is important that all submissions conform to these guidelines, including those for PDF attachments. We strongly recommend that you review the completed notice of intent and proposal forms before you submit them to make sure they comply with these guidelines.

Where a discrepancy exists between both sets of instructions, this call for proposals takes precedence.

Submitting expressions of interest

If your institution is acting as the administrative institution for a facility not funded in the 2017 competition, submit an expression of interest before you submit a notice of intent.

We will use expressions of interest to plan the competition.

Include the following information in your expression of interest:

- Name of the facility
- · Website address of the facility, if there is one
- Brief description of the facility (maximum 200 words)
- · Annual operating budget of the facility (based on costs and eligible sources of funding)
- Your best estimate of the total amount you will request from the CFI for the period April 1, 2023 through to March 31, 2029.

Submit your expression of interest by email to MSI-ISM@innovation.ca by August 10, 2021.

Submitting notices of intent

If your institution is acting as the administrative institution for a facility seeking funding through this competition, submit a notice of intent in CAMS. Both facilities funded in the 2017 competition and those that were not need to submit a notice of intent.

We will use notices of intent to plan the merit-review process and to start recruiting reviewers. We will tailor the details of the merit-review process to the level of funding requested, so budgets presented in the notices of intent should be reasonable estimates of the annual operating costs of each facility.

Submit your notice of intent by **September 20, 2021**.

Choosing the correct form in CAMS

There are three sets of forms in CAMS for applying to this competition. Each set accommodates different eligibility rules, restrictions and submission processes.

Select the appropriate form from these options:

- 2023 Major Science Initiatives Fund competition Renewal of funding for facilities funded in the 2017 competition and identified in the Fundamental Science Review Report (eligible for maximum 60 percent from the CFI)
- 2023 Major Science Initiatives Fund competition Renewal of funding for facilities funded in the 2017 competition (eligible for maximum 40 percent from the CFI)
- 2023 Major Science Initiatives Fund competition Funding for facilities not funded in the 2017 competition (eligible for maximum 40 percent from the CFI)

If you select the incorrect form, you will need to create a new application to switch to the correct one.

Determining facility eligibility

- Facilities funded in the 2017 competition are automatically eligible to apply to this competition. For all other facilities, the notices of intent will be reviewed first by CFI staff and then by a Multidisciplinary Assessment Committee (MAC) to determine whether they meet the eight eligibility criteria for the competition.
- CFI staff will eliminate those facilities that are defined as ineligible under "Eligibility restrictions" in part 1 of this document or which do not meet these three criteria:
 - Ownership by one or more CFI-eligible institutions
 - Fully operational status
 - Annual operating costs above \$1 million.

The MAC, composed of experienced individuals with expertise in the governance, management and operation of comparable facilities in Canada and internationally, will identify the facilities that meet the remaining five eligibility criteria, and will eliminate those that do not.

We will provide the MAC with information on the facilities funded in the 2017 competition to inform their decisions on the eligibility of facilities new to the program.

In the event that the total funding requested significantly exceeds the competition budget, the MAC may rank notices of intent — among those that have been deemed eligible — according to the degree to which they fit the eligibility criteria and competition objectives overall.

The MAC will provide recommendations to the CFI's senior management on which facilities to invite to submit a proposal.

We will notify administrative institutions by **November 4, 2021** whether or not they are invited to submit a proposal for facilities that were not funded in the 2017 competition.

Filling out the notice of intent form

The notice of intent form consists of the following five sections:

- Project information
- Management team
- Participating institutions
- Demonstration of eligibility (for facilities not funded in the 2017 competition) and budget overview (provided as a PDF attachment)
- Suggested reviewers.

Project information

Provide basic information about the facility such as the:

- · Administrative institution
- Name of the facility
- Project leader (i.e. the facility's CEO or director)
- Keywords
- Estimated total eligible operating and maintenance (O&M) costs from April 1, 2023 to March 31, 2029
- Amount requested from the CFI.

Management team

List up to three individuals, not including the project leader, in key positions in the management and operations of the facility (e.g., chief financial officer, science director, etc.).

These individuals must have a CAMS account and must accept to participate in this project before you can submit the notice of intent.

Participating institutions

Identify institutions participating in the project. A participating institution is one that is actively involved in the management or governance of the facility. Do not include the administrative institution identified in the project information section.

Demonstration of eligibility and budget overview

In a PDF attachment, provide an overview of the facility's budget (no page limit). If the facility was not funded in the 2017 competition, also provide information that will be used to establish its eligibility (up to five pages).

For facilities funded in the 2017 competition, this section need only contain budget Tables 2.5 and 2.6, which we will use to plan the review process.

A fiscal year is from April 1 to March 31.

Extra information will not be accepted.

Demonstration of eligibility

If the facility was not funded in the 2017 competition, provide a brief description of the facility and demonstrate how it meets the eight eligibility criteria (up to five pages) as listed in Part 1 of this document.

Also provide the following information (not included in the page limit):

- Organizational charts: Include one or two charts which outline the governance and management structures of the facility. These should include names, titles and affiliations (see <u>Appendix 3</u> for samples).
- **User distribution:** Using Table 2.1, provide the number of users of the facility and their distribution.

Table 2.1: User distribution

	2019–20	2020-21	2021–22
By type of user			
Number of onsite users			
Number of remote users			
Number of data users			
By geography			
British Columbia			
Alberta			
Saskatchewan			
Manitoba			
Ontario			
Quebec			
New Brunswick			
Nova Scotia			
Prince Edward Island			
Newfoundland and Labrador			
Yukon			
Northwest Territories			
Nunavut			
Total Canada			
Outside Canada: United States			
Outside Canada: other than United States			
By sector			
University, college, research hospital			
Other public			
Private			
Non-profit			
Yearly sum of users			

Note that a user is defined as an individual or a member of a research team (including trainees) who is granted access to resources at a facility. Count each user only once for a given facility in a fiscal year. Report each user of a facility annually in one of these subcategories:

- Onsite user: an individual who is physically present at the facility at least once during the fiscal year
- Remote user: an individual who remotely accesses the facility at least once during the fiscal year
- Data user: an individual who remotely accesses data from an electronic archive supported by the facility at least once during the fiscal year

These subcategories are hierarchical (with onsite users at the highest level, remote users at the midlevel and data users at the lowest level). If a user could be reported in more than one subcategory, use the highest one.

• **Requests for user access:** Using Table 2.2, indicate the number of requests for access to the facility and how many of these were accommodated in the required fiscal periods.

Table 2.2: Access requests

Year	2019–20	2020–21	2021–22
Number of requests for access			
Number of requests accommodated			

Actual and forecasted O&M costs and contributions

If the facility was not funded in the 2017 competition, provide actual and forecasted O&M costs and contributions in order to establish its eligibility. Using Tables 2.3 and 2.4, provide the actual budget information for the fiscal periods noted.

Table 2.3: Actual and forecasted operating and maintenance (O&M) costs of the facility

		Costs (in	\$1,000s)	
Eligible O&M costs	2019-20 (Actual)	2020–21 (Actual)	2021–22 (Actual + forecast)	2022-23 (Forecast)
Administrative personnel				
Scientific and technical support personnel				
Extended warranties/ service contracts				
Replacement parts and minor upgrades				
Services				
Supplies and consumables				
Communications and outreach activities				
Administrative costs (excluding personnel)				
Training and professional development				
Contingency (up to 10 percent of annual costs)				
Other O&M costs				
Total O&M costs				

Table 2.4: Actual and forecasted funding from all funding partners, including the remaining Infrastructure Operating Fund (IOF) amount (for facilities that have previously received CFI awards)

	Funding (in \$1,000s)				
	2019–20	2020–21	2021–22	2022–23	
Contributions	(Actual)	(Actual)	(Actual + forecast)	(Forecast)	
Funding partner 1					
Funding partner 2					
Funding partner 3					
CFI – IOF					
Total contributions					

CFI request and forecasted O&M budgets

Using Tables 2.5 and 2.6, provide forecasted budget information for the fiscal periods noted.

You can include an amount in the budget as a contingency. This should not exceed 10 percent of the facility's annual eligible expenses. Enter this amount as an expense in the final year of the budget (2028–29) only.

Table 2.5: Forecasted O&M costs of the facility

	Costs (in \$1,000s)						
O&M costs	2023–24	2024–25	2025–26	2026–27	2027–28	2028–29	Total
Administrative personnel							
Scientific and technical support personnel							
Extended warranties/ service contracts							
Replacement parts and minor upgrades							
Services							
Supplies and consumables							
Communications and outreach activities							
Administrative costs (excluding personnel)							
Training and professional development							
Contingency (up to 10 percent of annual costs)							
Other O&M costs							
Total O&M costs							

Table 2.6: Funding expected to be received from partners, including the remaining Infrastructure Operating Fund (IOF) amount (for facilities that have previously received CFI awards)

Funding		Funding (in \$1,000s)					
contributions	2023–24	2024–25	2025–26	2026–27	2027–28	2028–29	2028–29
Funding partner 1							
Funding partner 2							
Funding partner 3							
CFI – IOF							
Funding requested from this competition ³							
Total contributions							

Suggested reviewers

Identify a minimum of six reviewers who are especially well-qualified to review the proposal, including reviewers with expertise in research, governance, management, or financial monitoring of similar facilities.

We encourage you to suggest reviewers that include people who are at different stages of their career, with diverse backgrounds and from underrepresented groups.

The decision whether or not to use the suggested reviewers remains with the CFI.

Suggested reviewers must not be in a position of conflict of interest as per section 6.3.5 of the "Getting started with CAMS" documents.

Submitting proposals

If your institution is acting as the administrative institution for a facility seeking funding through this competition, submit a proposal in CAMS.

Submit your proposal by **November 4, 2021** if the facility was funded in the 2017 competition or by **February 8, 2022** for all other facilities that have received an invitation to submit a proposal.

This staggered approach allows four months to prepare proposals for both groups.

Filling out the proposal form

Clearly present the merits of the facility and the need for CFI support for O&M of the facility in your proposal. The requirements for preparing proposals are outlined below. Provide sufficient information to enable reviewers to evaluate the proposal in accordance with the assessment criteria and the objectives of this competition (see "Criterion standards and instructions").

CAMS automatically populates the proposal with information provided in the notice of intent, including:

- Project information
- Management team
- Participating institutions
- Suggested reviewers.

³ The total amount requested through the 2023 MSI Fund competition plus the amount provided through the IOF must not exceed the allowed CFI share of the facility's total O&M costs.

You can make changes to the participating institutions, management team and suggested reviewers after you submit your notice of intent, but **you must let your Senior Programs Officer know as soon as possible if you do so.** This will help to avoid conflicts of interest with potential reviewers.

The proposal form consists of two separate CAMS modules:

- **Project module** Information about the facility, how it meets the objectives and criteria of the competition, and a budget justification for the O&M support requested from the CFI
- Finance module Information about the facility's O&M costs

The forms in CAMS indicate the maximum number of characters that can be included in each section and/or the page limits for uploaded attachments.

Project module

In addition to the sections found in the notice of intent, the project module consists of the following sections:

- Plain language summary and executive summary
- Assessment criteria
- · Project attachments.

Plain language summary

Provide a short summary (up to 1,500 characters) of the facility and its research activities in plain language, focusing on the expected outcomes and benefits for Canada, beyond academic accomplishments.

The plain language summary will not be used in the review process. If the facility is funded, we may use it in our communications products.

Executive summary

Provide an overview of the facility (up to two pages) including the following information:

- A general description of the facility's specialized resources (infrastructure and expertise)
- A summary of the facility's strategic goals and the research or technology development enabled by the facility
- An outline of the O&M funding you are requesting.

We will provide the executive summary to both expert and multidisciplinary assessment committees.

Assessment criteria and budget justification

Document structure

Address the assessment criteria in a PDF document (not exceeding 20 MB). Include key information on how the facility meets the objectives and assessment criteria for this competition as well as a detailed budget justification for forecasted expenses appearing in the finance module.

Page limits

Page limits for your document depend on the amount you are requesting from the CFI.

Total CFI request (\$)	Maximum number of pages
≤ \$15 million	30 pages
> \$15 million	40 pages

You have total flexibility to address each criterion in the document you submit. We encourage you to use figures or diagrams, where appropriate. The distribution of pages among criteria is at your discretion, up to the total page limits noted above.

If you are submitting a proposal with a CFI request less than or equal to \$15 million, keep in mind that CAMS will allow you to upload a PDF document up to 40 pages long. A validation error restricting the PDF document to 30 pages will only occur when the project leader sets the proposal to "complete" and when your institution sets it to "verified" or tries to submit it to the CFI.

Criterion standards and instructions

Reviewers will evaluate each assessment criterion against a standard. Address each criterion according to the instructions to make your proposal as strong as possible.

Expert Committees rate the degree to which each proposal meets each standard, whereas the MAC rates the degree to which the proposal meets each competition objective.

For facilities funded in the 2017 competition, committees will also assess the criteria and objectives in light of the performance of these facilities since the 2019 midterm review. In these cases, include a description of the actions taken in response to the 2019 Expert Committee concerns, if any, within the relevant criteria.

Several data tables containing key performance indicators are requested from facilities in this section. We recognize that facilities not previously funded may not have collected these data in the same format or categories requested. In such cases, you may adapt these tables to provide the information you have available, including flexibility in the category breakdowns or definitions used to match your own.

SCIENTIFIC EXCELLENCE

Criterion standard: The facility is used by researchers of the highest calibre and enables innovative and leading-edge research that leads to social, health, economic, or environmental benefits to Canadians. The research directions proposed in the facility's strategic plan are forward-looking and reflect the state-of-the-art in the supported fields.

Proposal instructions:

- Provide an overview of the scope and nature of the research enabled by the facility and describe the priority research directions envisioned for the next six years referencing your facility's strategic plan.
- Provide a selected list of publications enabled by the facility in the past three years (2019–20 to 2021–22) as an attachment (up to two pages, which are not included in the overall page limit).
- Using examples from the publication list provided, highlight the scientific accomplishments
 of the researchers that demonstrate they are leaders in their relevant research or
 technology development domains. Describe the transformative and innovative aspects of
 the research or technology development domains enabled by the facility.
- Using Table 2.7 below, provide the breakdown of key knowledge transfer activities, including the dissemination of research knowledge linked to the use of the facility or data from the facility.

Table 2.7: Advancement of research and knowledge transfer

	2019–20	2020-21	2021–22
Number of scientific contributions including peer-reviewed publications			
Number of conference proceedings			
Number of presentations			
Number of posters			
Number of books/chapters			
Other			
Total			

- Describe the most significant benefit to Canadians realized to date based on research enabled by the facility and list other significant benefits to Canadians.
- Describe anticipated benefits to Canadians and specify the timeframe over which these benefits are expected to occur.
- If applicable, using Table 2.8 below, provide the breakdown of key technology transfer activities linked to the use of the facility or data from the facility.

Table 2.8: Key technology transfer activities linked to the use of the facility or data from the facility

	2019–20	2020–21	2021–22
Number of technical reports			
Number of patents			
Number of licences			
Number of spin-offs			
Other			
Total			

• Using Table 2.9 below, provide the number and type of trainees (e.g. undergraduate, graduate student, postdoctoral fellow, etc.) that used the facility in the past three years. Describe the high-level skills acquired by the trainees and their relevance to careers in research and other fields (e.g., quantitative information about the career path of these trainees).

Table 2.9: Number of individuals trained at the facility or who used data from the facility for their training.

Type of trainees	2019–20	2020–21	2021–22
Number of undergraduate students			
Number of master's students			
Number of PhD students			
Number of postdoctoral fellows			
Number of technical and professional personnel*			
Other			
Total			

^{*}Technical and professional personnel excludes facility staff.

INTERNATIONAL COMPETITIVENESS

Criterion standard: The facility's highly specialized equipment, services, resources, and scientific and technical personnel are internationally competitive and a high priority for the user community. The loss of these capabilities would be a setback to Canada.

Proposal instructions:

- Describe the facility's capabilities, such as highly specialized equipment, services, resources, and scientific and technical personnel, and explain how the loss of these would be a setback to Canada.
- Identify similar facilities world-wide and through comparison to these facilities demonstrate how the facility is internationally competitive.
- Demonstrate that the highly specialized equipment, services, resources, and scientific and technical personnel are a high priority for the research community that the facility serves.
- Demonstrate that there is significant demand by the user community for the equipment, services, resources, and scientific and technical personnel offered by the facility.
- Describe how the facility works in cooperation and collaboration with its users to define future needs to maintain its competitive standing.

NEED FOR CFI FUNDING

Criterion standard: The requested funding is necessary to allow the facility to fully exploit its scientific and technical capabilities and to operate at an optimal level to address the needs of the user community.

Proposal instructions:

- Describe how the requested funding will allow the facility to fully exploit its capabilities, operate at an optimal level and address the needs of the user community.
- Describe the budgeting process and how the facility determined the level of funding requested from the CFI. Explain any variations in the budget compared to past years.
- Describe the plan for maintaining the current sources of funding, securing and diversifying sources of funding and contingency plans for potential funding shortfalls. If applicable, describe the user fee structure and how anticipated revenues have been calculated.
- Describe and provide justification for each expense outlined in the detailed budget provided in the finance module.
- For facilities currently receiving more than \$2 million annually from the MSI Fund, provide a plan (as an additional attachment, which is not included in the page limit) for transitional funding if CFI funding is not renewed (see "Request for transitional funding").

EXCELLENCE IN GOVERNANCE

Criterion standard: The facility adopts best practices in governance, including long-term strategic planning, as appropriate to its size and complexity. The facility defines its needs over the life of the facility in consultation with the user community.

Proposal instructions:

- Describe the governance structure of the facility, including the composition and mandate of each of its committees and affiliations of its members. Compare this to best practices in governance of similar facilities or organizations.
- Describe the steps taken to apply equity, diversity and inclusion principles to the composition of the facility's board of directors and its related committees.
- Explain how the facility is accountable to its administrative institution, and if applicable, to member institutions.
- Explain how the facility measures its success in achieving its objectives, including its priority research directions. Describe any key performance indicators used to measure performance.
- Provide the facility's current strategic plan (as an attachment, which is not included in the page limit) and describe the process used to define the strategic directions, if this is not already described in the plan.
- Describe how the facility is integrating, or plans to integrate, equity, diversity and inclusion principles in their strategic planning.
- Describe the long-term vision for the facility and any major upgrades planned over the next 20 years, as applicable.

EXCELLENCE IN MANAGEMENT

Criterion standard: The facility adopts best practices in the management of its operations, risk mitigation, including cybersecurity, and of its financial, data, and human resources, including equity, diversity and inclusion. The management team has the core competencies required.

Proposal instructions:

- Describe the current management structure and identify individuals in key positions (e.g., executive director, scientific director, financial, human resources, information management, and/or safety monitoring, as appropriate for the facility). Demonstrate that these individuals have the core competencies required to effectively manage the facility (refer to the management CVs attached to the proposal).
- Explain how equity, diversity and inclusion principles are applied to the recruitment of staff.
- Describe the facility's process and mechanisms to track and measure the outcomes enabled by the facility. Describe how this information is integrated into management decision-making processes.
- Identify the facility's key risks and describe the strategies to mitigate these risks.

- Provide the facility's current management plan (as an additional attachment, which is not included in the page limit), which should include financial controls, safety monitoring, human resources and succession planning, maintenance and repairs, and decommissioning plans.
- Unless already included in the management plan, provide a plan or policies describing the facility's approach to data management, research security and cybersecurity, and equity, diversity and inclusion (as an attachment, which is not included in the page limit).

OPERATIONS AND USER ACCESS

Criterion standard: The facility is effectively and efficiently operated and has established mechanisms to ensure optimal use by the user community. Access to limited resources is granted following an appropriate selection process.

Proposal instructions:

- Describe the expertise and specialized support (e.g., technical staff) available and planned.
- Define the optimal level of use of the facility (e.g., the level of use of the facility as a function of total capacity excluding required maintenance periods).
- Demonstrate how the facility is being used effectively and explain the plan to maintain or increase its efficiency.
- Provide the breakdown of users, using <u>Table 2.1 provided in "Demonstration of eligibility</u>," and describe the community or communities of users of the facility (e.g., the scope, diversity, sector and geographic distribution of users).
- Describe the process to allocate access to the facility and provide, as in Table 2.2, the annual number of access requests received and accommodated for the fiscal periods shown.
 Describe any differences between academic, public and private users.
- Identify any barriers to access and what steps will be taken to ensure equitable and inclusive access to the facility.

Attachments

In addition to the allotted pages to describe how the facility meets the assessment criteria, upload the following documents (in PDF format, each not exceeding 20 MB) into CAMS:

- The facility's strategic plan
- The facility's management plan
- A list of key publications (up to two pages) related to the use of the facility in the last three years
- CVs (up to three pages each and merged into a single document) of up to four individuals in key positions in the management and operations of the facility (e.g., director or CEO, chief financial officer, science director, etc.) which demonstrate that these individuals have the core competencies required to effectively manage the facility
- A transitional funding plan (up to three pages) for facilities currently receiving more than \$2 million annually from the MSI Fund (as described below).

Unless these are already included in the facility's strategic or management plan, also upload the following documents:

- The facility's decommissioning plans (up to five pages)
- The facility's equity, diversity and inclusion policy or plan (up to five pages)
- The facility's data management, research security and cybersecurity policies or plan (up to five pages)
- Organizational charts (up to two pages).

Additional attached documents, unless requested by the CFI, will not be accepted.

Request for transitional funding (if applicable)

Facilities currently receiving more than \$2 million annually from the MSI Fund may submit a plan (up to three pages) demonstrating the need for transitional funding in the event that the proposal is not successful in this competition.

Transitional funding may be used over a maximum of two years (2023–24 and 2024–25) and may not exceed a total of 75 percent of the facility's current annual CFI funding (e.g., The facility may plan to use the full 75 percent in a single year, or 50 percent in the first year and 25 percent in the second year.).

Provide a breakdown of costs by category and contributions from partners for the two years. Do this using tables similar to Table 2.5 and 2.6 of the notice of intent.

Finance module

The finance module consists of the following sections:

- Detailed budget
- Contributions from eligible partners and the Infrastructure Operating Fund (IOF)
- Historic expenditures and contributions
- Project funding (generated automatically)

Detailed budget

In this section, provide a breakdown, as per the categories of eligible expenses (see "Eligible costs"), of the forecasted O&M costs of the facility for each of the six years of the funding cycle (April 1, 2023 to March 31, 2029).

We recommend you bundle items into functional groupings when completing this section. In the budget justification under the "Need for CFI funding" criterion, provide details for each item in a group.

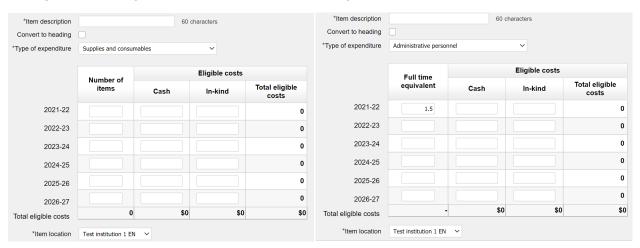
As shown in Figure 2.1, select the appropriate type of expenditure from the list, specify the number of items or the number of full-time equivalents (in the case of personnel costs) and provide the full cost of each item.

You can include an amount in the budget as a contingency. This should not exceed 10 percent of the facility's annual eligible expenses. Enter this amount as an expense in the final year of the budget (2028–29) only.

When preparing budget estimates, follow existing institutional policies and procedures. Costs included in this budget must be close estimates of fair market value.

Refer to the Policy and program guide for instructions on how to calculate in-kind contributions.

Figure 2.1: Adding items to the list in the "Detailed budget" section.



Contributions from eligible partners and the Infrastructure Operating Fund (IOF)

List all contributions from eligible partners for each of the six years of the funding cycle (April 1, 2023 to March 31, 2029). Do not include the amount requested from the CFI. Provide the partner name and type, as well as a breakdown of contributions (cash and in-kind) for each eligible partner. For each contribution, indicate whether the amount is *expected* or has been *secured* at the time you submit your proposal. If partner contributions are expected but have not yet been confirmed, outline the plans for securing these funds.

In the "IOF funding" section, include the amounts from the CFI's IOF that will be used to cover eligible costs for each of the six years of the funding cycle (April 1, 2023 to March 31, 2029).

Historic expenditures and contributions

Expenditures

Provide the breakdown of actual and forecasted expenditures (cash and in-kind) per category of eligible costs for the four fiscal years (2019–20 to 2022–23) preceding the start of the requested funding.

Figure 2.2: Adding expenditures using the "Extended warranties/service contracts" category as an example.





Contributions

Provide the breakdown of actual and forecasted partner contributions (cash and in-kind) for the four fiscal years (2019–20 to 2022–23) preceding the start of the requested funding. If applicable, enter amounts received through the MSI Fund and IOF.

Figure 2.3: Adding a funding partner using the federal government as an example

Partner type	Eligible cost			*Partner type Federal government (departments or agencies)			
	Cash	In-kind	Total	,	9	Eligible cost	,
Canada Foundation for Innovation	\$0	\$0	\$0		Cash	In-kind	Total
IOF	\$0	\$0	\$0	2020-21			0
Institutions, trust funds or foundations	\$0	\$0	\$0	2019-20			0
	\$0	\$0	\$0	2018-19			0
Federal government (departments or agencies)	\$0	\$0	\$0	2017-18			0
Provincial governments (departments or agencies)				2016-17			0
Other governmental sources (municipal or foreign)	\$0	\$0	\$0				
Corporations/firms	\$0	\$0	\$0				
Voluntary organizations	\$0	\$0	\$0				
Other	\$0	\$0	\$0				

For facilities funded in the 2017 competition, the amounts entered in the Historical expenditures and contributions section should reflect the amounts reported for that fiscal year in the budget you submitted most recently for your 2017 MSI Fund award.

Project funding (generated automatically)

CAMS automatically fills the tables in this section from the information provided in the previous sections of the finance module.

The yearly breakdown of the amount requested from the MSI Fund will be calculated as the difference between the total yearly costs and eligible partner contributions.

The total CFI funding requested over the six years of the funding cycle (April 1, 2023 to March 31, 2029), including IOF, must not exceed 40 percent of the facility's total eligible O&M costs unless otherwise specified in <u>Appendix 1</u>.

Appendix 1 – Facilities funded in the 2017 competition

FACILITIES ELIGIBLE FOR CFI FUNDING AT 60 PERCENT OF TOTAL O&M COSTS

Facility	Administrative institution
SNOLAB	Queen's University
Canadian Light Source (CLS)	University of Saskatchewan
Canada's National Design Network (CNDN)	Queen's University
Ocean Networks Canada (ONC)	University of Victoria
CCGS Amundsen	Université Laval
Ocean Tracking Network (OTN)	Dalhousie University
Vaccine and Infectious Disease Organization International Vaccine Centre (VIDO)	University of Saskatchewan

FACILITIES ELIGIBLE FOR CFI FUNDING AT 40 PERCENT OF TOTAL O&M COSTS

Facility	Administrative institution
The Canadian Centre for Electron Microscopy	McMaster University
The André E. Lalonde Accelerator Mass Spectrometry Facility for Environmental Radionuclides	University of Ottawa
Canadian Cancer Trials Group Operations and Statistics Centre at Queen's University	Queen's University
The Centre for Phenogenomics	Sinai Health System
SuperDARN Canada	University of Saskatchewan
Plateforme de recherche en sciences humaines et sociales – ERUDIT.ORG	Université de Montréal
Canada's Genomics Enterprise	The Hospital for Sick Children
Canadian Research Data Centre Network (CRDCN)	McMaster University
The Metabolomics Innovation Centre	University of Alberta

Appendix 2 – Eligible and ineligible costs

Categories (as
listed in the
CFI Awards
Management
System (CAMS)

Descriptions and examples

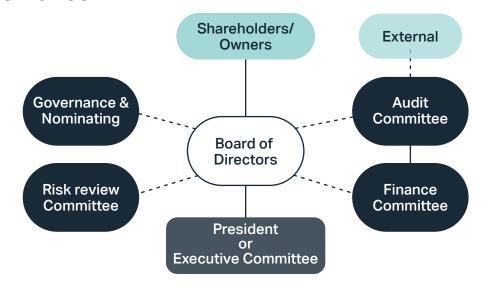
System (CAMS)					
	Eligible costs	Ineligible costs			
Administrative, scientific and technical support personnel	Salaries of non-academic managers, professionals, administrative personnel, consultants and trainees (undergraduates, graduates and postdoctoral fellows) directly involved in the governance, management, operation and maintenance of the facility who provide services which benefit the pan-Canadian user community Examples of such costs include:	Administrative personnel not directly related to the governance, management, operation and maintenance of the facility (e.g., institutional research office, library and finance services) Examples of such costs include:			
	 Salary cost for personnel related to human resources, financial (including auditing), data management, procurement, legal, contracts management, accounting (even if provided by the host institution to the facility.) Salaries of scientific and technical personnel employed by the facility (who are not also faculty members) for eligible O&M activities including technology development for improving facility services or enhancing core platforms (i.e. development of new protocols, integration of new tools, methodologies, optimization) and for Information Technology development and support (e.g. cybersecurity) Portion of the salary of students (e.g., summer or co-op) for eligible O&M activities. For example, skilled trades or technology development for improving facility services or enhancing core platforms Portion of the salary of students (e.g., summer or co-op) for tasks related to the administration of the facility (e.g., accounting) Hiring consultants for strategic planning purposes 	 Portion of the salary of trainees (undergraduate, graduate, postdoctoral fellows) for conducting research activities not related to the facility's general O&M Faculty members' salaries Scientific internships and exchanges for research activities Costs associated with teaching release Remuneration of Board members 			
Extended warranties/service contracts	Extended warranties and/or service contracts and extensions to warranty coverage and software upgrades				

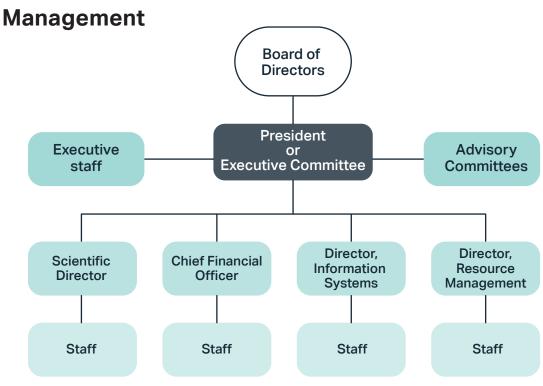
Replacement parts and minor upgrades	 Replacement parts and replacement of an item (including taxes and shipping) needing repair if the replacement is more cost-effective than the repair (the replacement item must have similar functionality) Minor upgrades to maintain the operational capacity of the facility. This could also include add-ons, minor tools or components required for the improvement of existing technologies at the facility or for technology and service development activities that lead to enhanced facility services for researchers 	
Services	Services that directly support the facility	
	Examples of such costs include:	
	Electricity, security, cleaning, telephone, internet, license fees for delivery of facility's services, permits etc.	
Supplies and consumables	Supplies and consumables required to keep the facility in a state of readiness for research, independent of the number of researchers actually using the resource, and not associated with specific research projects.	
Communications and outreach activities	 Strategic planning costs (e.g., hosting meetings to consult stakeholders/planning sessions etc.) Hosting regional/national networking events for users Communication products for the facility Development of website to book facility resources or for data access 	
Administrative costs (excluding personnel)	 Insurance directly related to the facility Audit fees Regulatory compliance costs (e.g., certification, compliance audits, etc.) Incorporation cost (e.g., legal/incorporation cost) and strategic planning cost Board of Director and facility governance committee meetings, such as for the finance committee, nominating committee, international advisory committee, user committee, etc., and related travel 	
Training and professional development	 Training for the main operators of the facility infrastructure Group training sessions for facility personnel and/ or users of the facility infrastructure Statutory training, regulatory specified training (e.g., environment, health and safety) and associated certification costs for facility personnel Travel to attend conferences or visit other facilities for training purposes of facility personnel Other professional development activities for facility personnel 	

Contingency	An amount not to exceed 10 percent of a facility's annual eligible expenses can be included in the budget as contingency. This contingency fund will be retained at the CFI, and can only be claimed to cover eligible expenses arising from unforeseen events. Use of these funds will require approval from the CFI.	The contingency fund may not be used to cover cost overruns in other budget categories.		
Other operating and maintenance costs	Ramp down of facility activities toward the final decommissioning of the facility Examples of such costs include:	Decommissioning costs of the facility infrastructure		
	Facility staff severance packages, legal fees, audit fees, etc.	Equipment and major construction/ renovation costs deemed eligible under an infrastructure award		
		Buying or leasing of real property		
		 Any cost to conduct research activities Expenses related to intellectual property Housing and rental fees 		
		(e.g., facility-run lodging for users)Transportation to and from the facility for users		

Appendix 3 – Template charts for governance and management structures⁴

Governance





⁴ These templates are provided as examples, not requirements. Choose any appropriate format for your facility.