



# Corporate plan 2017–18

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## Corporate plan 2017–18

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### 1.0 The role of the Canada Foundation for Innovation

The Canada Foundation for Innovation (CFI) is a non-profit corporation created by the Government of Canada through the 1997 Budget Implementation Act. Its mission is to benefit Canadians by strengthening the capacity of Canadian universities, colleges, research hospitals and non-profit research institutions to carry out world-class research and technology development.

The CFI invests in the infrastructure that Canada's top researchers require to conduct leading-edge research. The CFI funds up to 40 percent of a project's cost. Institutions, in partnership with provincial governments, the private sector and many other public and non-profit organizations, must secure the remaining 60 percent of the required funding.

Canada's prosperity depends on its ability to generate knowledge and ideas that result in new products and services, create wealth, enhance social foundations, sustain the environment and ultimately improve the quality of life for all Canadians. By supporting the country's capacity for world-class research, we play a vital role in producing social, economic, environment and health benefits for Canadians.

### 1.1 Organizational context

As the CFI completes its 20th year, the context in which it operates continues to be characterized by both change and continuity. Over the past 15 months, the Government of Canada has introduced a number of initiatives related to Canadian research, including the establishment of the Department of Innovation, Science and Economic Development, led by both the Minister of Innovation, Science and Economic Development and the Minister of Science. We anticipate that these changes will translate into new federal strategic priorities and specific funding commitments.

The short-term stability of the CFI has been secured through the latest contribution agreement, signed in September 2015. This contribution agreement allowed continued investment in research infrastructure over the next few years and provided the CFI with the resources necessary to fulfil its mandate of enhancing the capacity of Canadian researchers to conduct world-class research and technology development.

In June 2016, the Honourable Kirsty Duncan, Minister of Science launched an independent review of federal funding for fundamental science. The review is designed to assess the funding mechanisms that are currently in place to support research and researchers in Canada. Throughout the summer and autumn of 2016, CFI staff provided the Fundamental Science Review Panel with extensive information on our mandate, funding mechanisms and operations, as well as numerous suggestions and recommendations for improving the way that the Government of Canada supports excellent research across the country. We expect that the recommendations of the review panel will be submitted to the Minister for consideration in early 2017. The CFI will respond to any resulting changes directed by the Minister throughout 2017-18.

As well, the Government of Canada is expected to appoint a Chief Science Advisor sometime in 2017. The Chief Science Advisor will be responsible for providing scientific advice to the Prime Minister, the Minister of Science and members of Cabinet. This individual will also advise on how to ensure that

government science is open to the public, that federal scientists are able to speak freely about their work, and that science is effectively communicated across government.

Senior management of the CFI will undergo a transition in 2017–18 with the arrival of a new President and CEO when our current President and CEO, Dr. Gilles Patry, reaches the end of his term. This is expected to take place in July 2017. As well, once the appropriate Orders-in-Council have been issued, Dr. Kevin Smith, current Chair of the CFI Board of Directors, will complete his term. We anticipate that the Government of Canada will appoint a new Chair in the second half of 2017.

While the quality and breadth of research and technology development in Canada’s universities and colleges continues to increase and achieve levels of global competitiveness, investment in R&D by the Canadian private sector is just beginning to rebound from several years of decline following the 2008 recession. The latest data from Research Infosource, a company that tracks research and innovation performance in Canada, indicates that private sector R&D expenditures rose by a healthy 6.9 percent in 2015–16.<sup>1</sup> We are optimistic that this renewed focus on R&D investment will provide more opportunities for research collaborations between Canada’s leading R&D-intensive companies and our universities, colleges and research hospitals. The CFI’s research infrastructure investments have created a sound foundation upon which these collaborations can flourish, and the CFI Facilities Navigator has been specifically designed to facilitate connections and collaborations between academic researchers and the private sector.

## 1.2 The CFI’s funding and contribution agreements

The CFI currently operates under two funding agreements and two contribution agreements with the Government of Canada as represented by, and under the authority of, the Minister of Industry (now the Minister for Innovation, Science and Economic Development). All four agreements are currently active.

- The first funding agreement specifies the conditions under which all funds allocated to the CFI between 1997 and 2009, totaling \$4.39 billion, were distributed to eligible recipients. As well, these sums generated \$1.6 billion in interest income that has been directed to project funding and operational expenditures.
- The 2009 Federal Budget allocated \$150 million to the CFI under the first funding agreement and \$600 million to be distributed under a second funding agreement, which was signed in July 2010.
- In March 2014, we signed a contribution agreement with the Government of Canada for \$499.85 million allocated through the Economic Action Plan 2012. We are now delivering funding competitions according to this contribution agreement.
- In September 2015, we signed our most recent contribution agreement with the Government of Canada for \$1.33 billion. As these funds are not available for use until 2017–18, we are now conducting the funding competitions according to this contribution agreement.

Both the 2014 and 2015 Contribution Agreements state that the CFI will pursue the following objectives:

- Support economic growth and job creation, as well as health and environmental quality through innovation.
- Increase Canada’s capability to carry out important world-class scientific research and technology development.

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<sup>1</sup> *University Affairs*, November 17, 2016, p. 19.

- Expand research and job opportunities by providing support through research infrastructure for the development of highly qualified personnel.
- Promote productive networks and collaboration among Canadian universities, colleges, research hospitals, non-profit research institutions and the private sector.

The contribution agreements state that the funds disbursed by CFI are expected to help enhance the capacity of ultimate recipients to:

- Attract and retain the world's top research talent;
- Train the next generation of researchers;
- Enable researchers to undertake world-class research and technology development that lead to social, economic and environmental benefits for Canada; and,
- Support private sector innovation and commercialization.

In 2014–15, as announced in the Government of Canada's Economic Action Plan 2012, the CFI also launched competitions in connection with the \$225 million of interest income accrued under the first funding agreement. These funds are being used to augment both the 2015 Innovation Fund and the Major Science Initiatives Fund competitions, to sustain our operations, and to support the Cyberinfrastructure Initiative.

Between 2012 and 2015, the CFI generated an additional \$35 million in interest income. As set out in section 9.01 of the 1997 Funding Agreement between the Government of Canada and the CFI, we have written to the Minister of Science and the Minister of Innovation, Science and Economic Development on the use of the uncommitted funds. The Minister of Science has recommended that the funds be set aside, the use of which will be determined by the Minister no later than March 31, 2018.

### 1.3 The CFI's strategic directions

In March 2012, the Board of Directors approved the CFI Strategic Roadmap for the period between 2012–17. The roadmap identifies three specific areas of opportunity where the CFI's activities can contribute to a better understanding of the world in which we live; address social, economic and environmental challenges; and improve the health and well-being of Canadians. They are:

- Sustaining and enhancing the world-class capacity of Canada's research institutions;
- Fostering collaboration and integration between academic research and the private and non-profit sectors; and,
- Increasing the global influence of Canadian research in ways that benefit Canadian society.

We address these opportunities through our funding initiatives by applying the principle of excellence to a range of research and research management activities, including the governance of large-scale research facilities, the quality of the relationships between research collaborators in both the public and private sectors, and institutional planning. We also design our programs and policies to support the full range of activities across the research spectrum, from discovery to innovation.

In delivering on our core mandate to support and enhance world-class research, world-class talent and world-class innovation, our Board of Directors identified six specific strategic directions:

- Invest in the highest levels of excellence to ensure that Canadian researchers are internationally competitive and that innovators benefit from their research.

- Sustain and enhance Canada's research capacity to ensure that Canada's research enterprise continues to have the capacity to perform at world-class levels.
- Forge productive partnerships to ensure that CFI infrastructure investments achieve maximum leverage and impact.
- Build global influence to ensure that Canadian researchers have access to the infrastructure necessary to make important and influential contributions to the global research enterprise while maximizing the benefits for Canada.
- Establish a trusted voice to ensure that the CFI shares its unique expertise in matters related to research infrastructure, to communicate the results of its extensive consultation efforts, and to explain the value and impact generated by its infrastructure investments; and,
- Track impacts to assess the value of the CFI's research infrastructure investments.

In 2016–17, following a pan-Canadian consultation with our stakeholders, and in anticipation of the arrival of a new President and CEO and a new Chair of the Board of Directors, we began an organization-wide initiative to refresh and update our strategic roadmap. A series of activities involving Board Directors, the senior management team and staff members were organized and implemented from early 2016 through to November of that year. The purpose was to assess the current strategic roadmap in light of the progress made by the Canadian research community and changes in Government of Canada policies. Once the new President and Chair of the Board of Directors are in place, the assessment undertaken in 2016–17 will help inform any necessary revisions to the strategic roadmap.

These preliminary discussions resulted in the identification of several emerging issues that we will examine over the next several months:

- How best to support current and future research excellence.
- Addressing the requirements of early career researchers.
- Understanding gender issues related to the application, award and use of research infrastructure.

#### **1.4 Short- and medium-term outputs and outcomes from 2016–17**

In 2016–17, the CFI achieved many short- and medium-term outputs and outcomes, including:

##### **a. The launch of the 2017 Innovation Fund competition**

The 2017 Innovation Fund competition was launched in the spring of 2016. As specified in the 2015 Contribution Agreement, the budget for this competition is \$425 million, plus \$127 million in associated money from the Infrastructure Operating Fund. For our tenth nationwide research infrastructure competition, we are encouraging eligible institutions and their researchers to craft ambitious proposals that focus on excellence, build on research strengths, and incorporate collaboration as a means to ensure the long-term sustainability of the Canadian research enterprise. The objectives of the 2017 Innovation Fund competition are to enable institutions and their best researchers to:

- Strive for global leadership by conducting world-class research or technology development activities in areas of institutional strategic priority;
- Enhance research capacity by forging productive partnerships within and among institutions, sectors and disciplines for the effective and sustainable use of research infrastructure and facilities; and,
- Generate social, health, environmental and/or economic benefits for Canadians, including better training and improved skills for highly qualified personnel, through appropriate pathways.

The three-stage merit-review process will take place between November 2016 and May 2017. Funding decisions will be made by the CFI Board of Directors in June 2017.

#### **b. Cyberinfrastructure Initiative: investing in advanced computing resources**

The main objective of the CFI's Cyberinfrastructure Initiative is to enhance the capacity of Canadian institutions and researchers to conduct leading-edge research in areas of demonstrated strength by supporting the infrastructure needs of computationally and data-intensive research. This objective is being achieved with investments in:

- A limited number of research data infrastructure projects that, in collaboration with Compute Canada, enable communities of researchers, along with data scientists, data analysts, software developers and other experts, to devise optimal ways of organizing and using research data resources; and,
- Upgrades and modernization of the computational and data storage capacities of the pan-Canadian advanced research computing platform, managed by Compute Canada.

The Cyberinfrastructure Initiative is composed of two streams or “challenges:” Challenge 1 for research data infrastructure projects, and Challenge 2 for supporting Canada’s advanced computing and data storage network.

Through the first competition of the Cyberinfrastructure Initiative Challenge 1, the CFI approved seven projects for a total of \$13 million in contributions. Many of these projects are already underway and are expected to provide tangible benefits to their communities in the coming years.

The Challenge 2 competition has been purposely linked to the Major Science Initiatives Fund competition in order to provide the applicants with an opportunity to request both capital and operating funding. Building on the 2015 investments in advanced computing resources, the Cyberinfrastructure Initiative Challenge 2 competition provided an additional \$20 million in capital funding to Compute Canada. These contributions were approved by the CFI Board of Directors in September 2016.

#### **c. Completion of the 2017–22 Major Science Initiatives Fund competition**

The CFI will provide multi-year support for the operations and maintenance needs of national research facilities for the period of April 2017 to March 2022. CFI contributions are intended to:

- Secure and strengthen state-of-the-art national research facilities that enable Canadian researchers to undertake world-class research and technology development that lead to social, health, economic or environmental benefits for Canadians;
- Enable funded facilities to operate at an optimal level and to fully exploit their scientific capabilities; and,
- Promote the adoption of best practices in governance and management, including long-term strategic and operational planning in keeping with the scale and complexity of the facility.

The CFI will fund 17 national facilities under the Major Science Initiatives Fund with a maximum contribution of \$328.5 million. This funding will complement existing operations and maintenance resources to secure and strengthen state-of-the-art national research facilities.

#### **d. Continuation of John R. Evans Leaders Fund competitions**

Throughout 2016–17, in three separate competitions, we received and adjudicated funding applications to the John R. Evans Leaders Fund, continuing the distribution of the allocation to the fund made through the 2014 Contribution Agreement. In 2016–17, \$69 million in project funding, plus \$20 million in infrastructure operating funding was available for distribution.

#### **e. College-Industry Innovation Fund**

The College-Industry Innovation Fund seeks innovative projects that will enhance the capacity of colleges to support business innovation in Canada by providing them with state-of-the-art, industry-relevant research infrastructure to foster partnerships with the private sector in a specific area of institutional strategic priority.

The College-Industry Innovation Fund Stream 1 supports infrastructure requests aimed at enhancing existing applied research and technology development capacity in colleges. Colleges with established research capacity are encouraged to apply to this stream. Following the review of 19 eligible proposals submitted under Stream 1 in the 2016 competition, six projects received \$ 6.8 million in funding.

Stream 2 of this fund supports research infrastructure associated with a five-year Innovation Enhancement Grant from the College and Community Innovation Program, a tri-agency initiative managed by the Natural Sciences and Engineering Research Council of Canada. This joint initiative allows colleges to apply for a comprehensive funding package supporting both direct research costs and research infrastructure. Three of the 10 proposals submitted in October 2016 in response to a joint Call for Proposals were funded with a total CFI investment of \$3.6 million.

#### **f. Adjudication of Governor General's Innovation Awards**

At the request of His Excellency the Right Honourable David Johnston, the CFI agreed to adjudicate the newly-created Governor General's Innovation Awards. The aim of these awards is to inspire Canadians to embrace innovation and to emulate innovative, entrepreneurial risk-takers who have developed new or better ways of creating value that have had a meaningful impact on our quality of life. We received 116 nominations for the Innovation Awards which were reviewed between November 2015 and March 2016. The adjudication followed a two-stage process, using assessment committees to identify a short list of 20 finalists, and a high-level multidisciplinary selection committee to select the final six outstanding innovators. These six individuals were recommended to the Governor General.

The selection of award winners is based on the following criteria:

- Extent to which the individual, team or organization has shown initiative and leadership to be agents of change in addressing a current issue about which they are passionate.
- Creative use of new knowledge and/or technology to develop ideas aimed at addressing social, economic or cultural challenges and solving real-world problems.
- Evidence of the successful implementation of these ideas, resulting in a positive impact beyond the nominee's own community or organization.
- The degree to which the nominee and the activities undertaken have demonstrated the following skills, attitudes and behaviours of innovation: inspiration, creativity, collaboration, risk taking and problem solving.

The 2016 Governor General's Innovation Awards Program culminated in a presentation ceremony in May 2016 hosted by His Excellency the Right Honourable David Johnston, Governor General of Canada.

This activity is being conducted on a cost-recovery basis.

#### **g. Attendance at the 2016 annual meeting of the American Association for the Advancement of Science**

We organized and hosted two significant events at the 2016 annual meeting of the American Association for the Advancement of Science, both of which have had considerable positive impact on the international visibility and presence of the Canadian research community and of the CFI itself.

To wrap up our series of events on Arctic and marine research, we organized a panel session on responsibility and opportunity in Arctic research. The panel was moderated by the Honourable Kirsty Duncan, Minister of Science, and the participants represented the US National Science Foundation, the ArcticNet Networks of Centres of Excellence and the European Commission's Directorate of Research and Innovation.

We also organized a high-level roundtable discussion on fostering international collaboration between the US, Europe and Canada. The roundtable was hosted at the Canadian Embassy in Washington and was chaired by David Johnston, Governor General of Canada. Participants included the presidents or senior officials from 16 research granting agencies in the US, Europe and Canada. The Minister of Science also participated in the roundtable, as well as our CEO and President, Dr. Gilles Patry, representing the CFI. The roundtable was followed by a reception at the Embassy, attended by some 300 officials from over 20 countries.

#### **h. Celebration of 20 years of supporting world-class research**

September 20, 2016, marked the beginning of our 20th anniversary campaign, under the theme, *Research builds my community*. The campaign runs until March 2017 and highlights how research enabled through CFI-funded infrastructure is touching the lives of Canadians. With compelling multimedia storytelling on our website, promotion in various publications (including large supplements in *The Globe and Mail*, and in *Le Droit*, *La Presse* and various other Quebec papers) and through social media (Twitter #CFI20yrs and #CFI20ans), we reached millions of Canadians with messages of how sustained federal support for research is having an impact on people across the country. We also produced a limited edition commemorative book, which celebrates human ingenuity and the researchers whose work touches the lives of people across the country, and around the world. The stories presented in this publication are just a handful of the thousands of research infrastructure projects supported by the Canada Foundation for Innovation since its inception in 1997. The campaign has offered the CFI many opportunities to demonstrate its role as a trusted voice in the research community and to engage the community in sharing their research stories.

#### **i. Launch of a new Innovation.ca**

The new Innovation.ca website launched September 14, 2016. The development of the new site strengthens the CFI's online presence by better showcasing our core messages, business activities and value to all of our audiences, in an innovative, accessible and responsive way. Among the improvements, the new site incorporates intuitive architecture, addresses the business needs of various visitor audiences, meets legislated accessibility requirements and is responsive for desktop, tablet and smart phone users.

#### **j. Achievement of a milestone for the Research Facilities Navigator**

The CFI Research Facilities Navigator, a searchable database of research labs and facilities across Canada which are open to working with business, reached more than 500 listings during fiscal year 2016–17. The Navigator was created to help businesses and other organizations connect with

universities, colleges and research hospitals as a first step towards establishing research partnerships and collaborations.

#### **k. Completion of analyses related to objectives and expected results**

We completed a series of analyses related to organizational objectives and expected results, including the role CFI plays in:

- Strengthening the capacity of Canadian universities to conduct world-class research and technology development by looking at the relationship between CFI funding and the success of institutions under the first two competitions of the Canada First Research Excellence Fund;
- Attracting and retaining Canada's top researchers, using project progress report data as well as bibliometric data;
- Supporting skills development and an enriched training environment for students and post-doctoral fellows in Canada; and,
- The creation of knowledge as reported in research outputs and bibliometric acknowledgements.

#### **l. Sharing of good practices in the management of CFI awards**

We have heard from many institutions that it is useful to share good practices between recipient institutions on how to best manage CFI awards. Although we often share good practices during monitoring visits, at conferences, and through daily interactions with institutions, we sought better ways to collect and disseminate these to all institutions.

A “Sharing good practices” section was introduced on the CFI website, Innovation.ca, in fall 2016. Practices span the full lifecycle of a CFI award and include, for example, strategic planning, proposal development, project implementation, sustainability, risk management, tracking and communication of impacts and outcomes, and governance and management of large initiatives. We will continue to build on this initiative and encourage institutions to send us their good practices so we can share them with others, including smaller institutions and colleges. At the request of these smaller institutions, we are increasing the number of monitoring visits in order to both gather and disseminate this useful information.

#### **m. Improvement to the CFI Awards Management System (CAMS)**

The CFI Awards Management System (CAMS) is a secure online portal that allows universities, colleges, research hospitals and non-profit research institutions to apply for CFI funding and manage pre- and post-award activities. CAMS is used by researchers, institutional administrators, and reviewers assigned to assess the proposals. In 2016–17, several new features and functionalities were deployed:

- Report repository: Following consultations with institutions, and as part of an enhancement to the overview module available through CAMS, the report repository provides institutions with the ability to run up-to-date reports accessed through their online dashboard.
- Institutional user access: User access in CAMS was enhanced to allow institutions online self-management of user roles and privileges including the update of key institutional representatives and authorities.
- Other activities:
  - Improvements to the CV
  - Ability to submit the Award Finalization Form in CAMS
  - Automation of payment notifications to institutions

## 1.5 Successes and remaining challenges from 2016–17

In 2016–17, the CFI achieved considerable success in meeting its core mandate to improve the research and technology development capabilities of Canada’s research institutions and in meeting the strategic directions in the CFI Strategic Roadmap 2012–17. Our adjudication processes continue to set a world standard for selecting excellent research infrastructure proposals. The sustainability of Canada’s research capacity has been strengthened through the Major Science Initiatives Fund and the John R. Evans Leaders Fund. The global influence of the Canadian research enterprise has been enhanced through the funding of a number of cutting-edge research facilities and through activities such as the CFI presence at the European Commission-sponsored International Conference on Research Infrastructures 2016 in Cape Town, South Africa. The CFI has continued to be a trusted voice through numerous consultations, publications and outreach activities and is breaking new ground in evaluation with the current national outcome assessment study in agriculture research.

A number of issues remain on the horizon:

### a. The level of support currently being provided through the federal granting agencies

Funding provided through the federal granting agencies (CIHR, NSERC and SSHRC) has not kept pace with inflation and with growth in the post-secondary research system. The granting agencies are critical supporters of research and innovation in Canada. Despite stable growth in research capabilities and competitiveness, a funding shortfall has emerged; one that threatens to compromise current and future research performance.

### b. Securing ongoing and stable funding for research infrastructure

State-of-the-art equipment and facilities are the foundation of a vibrant research and innovation ecosystem. The Government of Canada recognizes the importance of the link between state-of-the-art research infrastructure and world-class research. The lack of predictability in CFI funding competitions, particularly the Innovation Fund, limits the ability of institutions, their researchers, and other research and funding partners (especially provincial governments) to do effective forward planning, act on strategic priority initiatives and seize opportunities at both the domestic and international levels.

### c. The importance of sustaining the operations and maintenance of a broad range of research facilities

In 2012, the Government directed the CFI to launch the Major Science Initiatives Fund, financed at the rate of \$37.5 million per year over five years. The program was expanded in 2014 to \$45 million per year, and again in 2017 to \$80 million per year. By 2017, the program will support 17 national facilities across the country. However, many regional facilities and an even greater number of vital state-of-the-art core institutional facilities are not supported under the Major Science Initiatives Fund. At the same time, many university leaders have been advocating for an adjustment to the Research Support Program (formerly known as the Indirect Cost Program). To address the financial pressures on universities and colleges resulting from investments in research infrastructure, we have suggested that the Government of Canada consider complementing the current Research Support Program by expanding the CFI’s Infrastructure Operating Fund. Referred to as the Research Facilities Performance Fund, this complementary investment would be distributed to all institutions based on the size of their portfolio of CFI-funded research infrastructure.

### d. The limitations of the 40:60 contribution model in relation to national research facilities

The use of the 40:60 matching fund model in the Major Science Initiatives Fund poses a number of challenges for several national facilities. The CFI’s shared contribution funding model was specifically

designed to involve provincial governments in the funding of university and college research infrastructure. While this is a remarkably effective leveraging mechanism for research equipment and single-institution research facilities, it is sometimes difficult for provinces to justify contributing to facilities that are located outside of their jurisdictions or that provide research capabilities for national, and indeed, international networks of researchers.

#### **e. The need for a big science roadmap for Canada**

Major research facilities, such as synchrotrons, neutron sources, telescopes and research vessels play a vital role in advancing the frontiers of knowledge. They also act as powerful magnets for top research talent from around the world, drawing together individuals and teams from numerous nations to work together. Over the past two decades, the Government of Canada has made important investments in world-class research facilities across Canada in all areas of research. These investments, however, have been through an *ad hoc* process, rather than one that is structured, merit-based and focused on national science priorities. To frame such a process, the Government of Canada would benefit from the development of a big science roadmap where Canadian scientific interests and potential financial commitments are identified over the next 10 to 20 years. Building on the expertise and capabilities developed over the past several years, the Canada Foundation for Innovation is ready to assist in this matter.

#### **f. Enabling research leadership and seizing emerging opportunities at both the domestic and international levels**

Beyond the big science projects described above, there are a significant number of international research initiatives, such as the search for a Zika virus vaccine or the compelling need to address anti-microbial resistance, in which Canadian participation is critical to maintain and strengthen our global scientific leadership. Canada has both the research ability and the international reputation as a collaborator to lead important international science initiatives. The human and intellectual contributions are readily available, but the necessary financial contributions often are not. Securing our active participation in these initiatives will enable Canada's best researchers to work with the best researchers around the world, but this requires the ability to respond quickly to emerging and time-sensitive funding opportunities. Strategic partnership funding that can be quickly mobilized and awarded to ensure Canadian involvement in international initiatives is a critical, yet missing, element of the federal funding system.

#### **g. Enhancing inter-agency coordination and collaboration**

One of the issues raised by the Fundamental Science Review Panel is the need for greater coordination between the federal research granting agencies, including the CFI. The CFI contribution agreement, however, specifies the funding allocated to each of the various CFI funds, which prevents access to any discretionary resources for joint programming. Although we are committed to working with the granting agencies to improve coordination in supporting world-class research, we will also be encouraging the Government of Canada to consider providing a greater degree of flexibility in the use of CFI allocations.

## The CFI suite of funds

### Core funds

**Innovation Fund:** This flagship support mechanism provides a broad range of awards for leading-edge research infrastructure across all disciplines and areas of research.

**John R. Evans Leaders Fund:** A responsive funding mechanism that provides support to ensure that institutions have the infrastructure resources necessary to attract and retain top research talent.

**Major Science Initiatives Fund:** Provides unique, large-scale national research facilities with the operating support necessary to produce excellent, world-class science and technology development.

**College-Industry Innovation Fund:** Supports emerging applied research capacity in Canada's colleges and polytechnics, with the goal of assisting business innovation.

**Exceptional Opportunities Fund:** Provides institutions with an opportunity to seek funding for exceptional and time-sensitive initiatives that would be missed within the regular CFI competition cycles.

**Infrastructure Operating Fund:** Provides a 30 percent supplement to CFI capital awards to cover a portion of the operating and maintenance costs of CFI-funded projects to help ensure their optimal use.

### Ongoing special initiatives

**Cyberinfrastructure Initiative:** Supports Canada's advanced research computing network through Compute Canada, as well as cutting-edge, domain-specific research data management projects.

## 2.0 Planned activities and implementation schedule for 2017–18

### 2.1 Delivering the CFI's funds and initiatives

#### a. 2017 Innovation Fund

The 2017 Innovation Fund competition was launched in mid-2016. As specified in the 2015 Contribution Agreement, the budget for this competition is \$425 million, plus \$127 million in associated money from the Infrastructure Operating Fund. The three-stage merit-review process is currently in its final stages. Funding decisions will be made by the Board of Directors in June 2017. For this competition, we encouraged eligible institutions and their researchers to craft ambitious proposals that focus on excellence, build on research strengths, and incorporate collaboration as a means to ensure the long-term sustainability of the Canadian research enterprise.

We received 351 proposals from 59 institutions for the 2017 Innovation Fund competition. These proposals requested approximately \$1.2 billion from the CFI and represent total project costs of approximately \$3.2 billion.

#### b. John R. Evans Leaders Fund

At a time of intense international competition, the John R. Evans Leaders Fund assists institutions to attract and retain the very best of today's and tomorrow's researchers. The John R. Evans Leaders Fund offers institutions the opportunity to:

- Acquire infrastructure for their leading researchers to undertake cutting-edge research; and,
- Create competitive research support packages in the form of infrastructure and a portion of the operating and maintenance costs from the CFI, coupled with direct research costs from partner organizations.

The John R. Evans Leaders Fund receives proposals from eligible institutions three times per year.

#### c. 2017–22 Major Science Initiatives Fund competition

In September 2016, the CFI Board of Directors made final decisions on the awards for the 2017–22 Major Science Initiatives Fund competition. Subsequently, institutions, provincial governments and other funding partners were informed of the results.

The process to finalize awards for national facilities began in October 2016. This process included communicating award conditions and budget concerns, identifying potential short-term risks and management challenges, and discussing timelines for completion.

As part of the Major Science Initiatives Fund, the CFI is responsible for overseeing the governance and management practices of funded facilities. To meet these responsibilities, the CFI has adopted an approach that balances general principles of scientific excellence, responsible stewardship and accountability. These principles are applied through an oversight framework that is designed to accommodate the size and complexity of each national facility.

Throughout 2017–18, CFI staff will work with each funded facility to develop and apply a plan for oversight of governance and management practices, and to ensure that award finalization is complete by April 1, 2017, when the funding period begins.

As well, CFI program staff will be monitoring current and emerging MSI needs and preparing for the mid-term review and a possible supplemental competition.

#### **d. Cyberinfrastructure Initiative**

Throughout 2017–18, the CFI will continue to deliver the Cyberinfrastructure Initiative. Its overarching objective is to enhance the capacity of researchers to conduct leading-edge research in areas of demonstrated strength by supporting the infrastructure needs of computationally and data-intensive research.

This initiative consists of two funding streams, Challenge 1 provides contributions to data infrastructure projects that enable communities of researchers, along with data scientists, data analysts, software developers and other experts to devise optimal ways of organizing and using research data resources. Challenge 2 provides contributions for upgrading and modernizing the computational and data storage capacities of the pan-Canadian advanced research computing platform, managed by Compute Canada.

The second Cyberinfrastructure Initiative Challenge 1 competition will be launched in early 2017 and will solicit proposals for research data infrastructure projects. The CFI will require communities of researchers to come together to form multi-institutional consortia and propose research data infrastructure projects that create tailored, shared and integrated data resources capable of enabling leading-edge research on significant scientific, social and economic questions. The CFI has allocated up to \$12.5 million for this competition.

The submission deadline will be in October 2017 and funding decisions will be made by the CFI Board of Directors in March 2018.

#### **e. College-Industry Innovation Fund**

The College-Industry Innovation Fund is designed to enhance the capacity of colleges to support business innovation in Canada. The fund provides colleges with state-of-the-art, industry-relevant research infrastructure, allowing them to foster partnerships with the private sector in a specific area of strategic priority to the institution.

The purpose is to stimulate competitive partnerships between colleges and industry for applied research and technology development. These partnerships lead to business innovation by:

- Encouraging interactions between the college and its industrial partners;
- Enabling the college to respond to specific technological challenges of their industrial partners;
- Allowing the college to undertake large-scale collaborative projects with industrial partners;
- Enhancing applied research and technology development capacity at the college in an area of institutional strategic priority;
- Providing highly qualified personnel with opportunities to participate and gain know-how in applied research and technology transfer activities through direct hands-on experience with state-of-the-art instrumentation; and,
- Generating regional and national socioeconomic benefits through partnerships with the private sector and other relevant stakeholders.

We have allocated up to \$40 million, plus up to \$12 million in infrastructure operating funding, for the various College-Industry Innovation Fund competitions that are scheduled to take place between 2015

and 2019. Proposals for the next Stream 1 competition will be received in May 2017. The Board of Directors will make final funding decisions on this stream in November 2017. Since Stream 2 is a joint CFI-NSERC process, the next deadline for proposals will be negotiated in spring 2017.

#### **f. Infrastructure Operating Fund**

In accordance with our current contribution agreements, the CFI will continue to contribute towards the operating and maintenance costs of CFI-funded research infrastructure through the Infrastructure Operating Fund. This fund helps cover a portion of operating and maintenance costs to ensure optimal use of CFI-funded infrastructure. The funds are committed at a rate of 30 percent of the original CFI award under the John R. Evans Leaders Fund, the Innovation Fund, the College-Industry Innovation Fund and the Cyberinfrastructure Initiative (for Challenge 1 awards only).

#### **g. Governor General's Innovation Awards**

At the request of His Excellency the Right Honourable David Johnston, the CFI has agreed to once again adjudicate the Governor General's Innovation Awards. For the 2017 cycle, CFI program staff has worked extensively with the Office of the Secretary to the Governor General to revise and refine the nomination form, simplify submission procedures and improve communications. We also held webinars with the

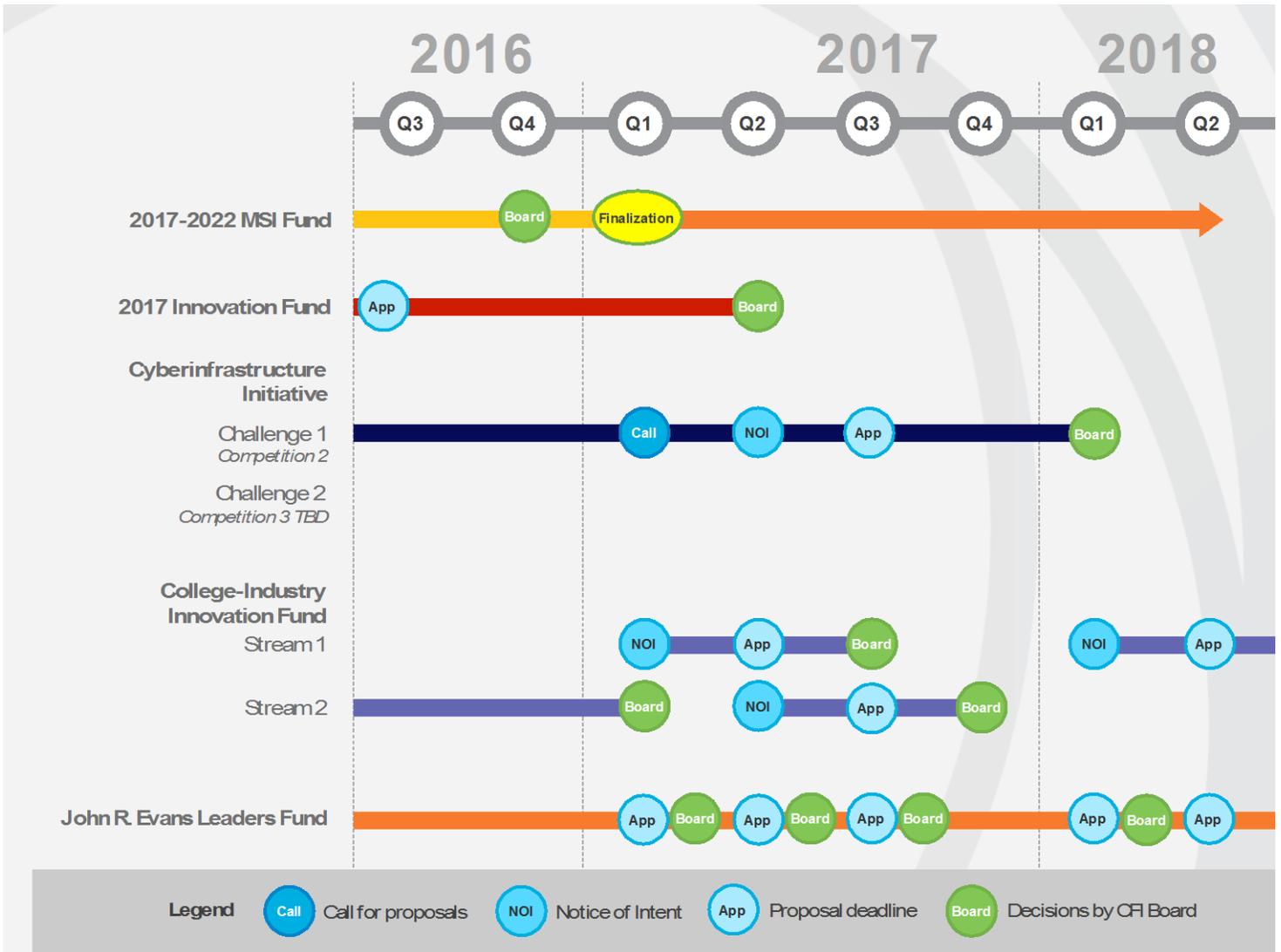
Nominating Partners to explain the objectives, scope and evaluation criteria for the awards program. Along with answering questions from Nominating Partners during the submission period, these efforts are resulting in a better understanding of the purpose of the program and higher quality submissions.

As of the November 25, 2016 deadline, we have received 113 nominations.

- 19 are young innovators
- An additional 11 nominations are for persons between 30 and 35 years old
- 72 nominees are men (64 percent)
- 41 nominees are women (36 percent)

Even though there are several new Nominating Partners, we estimated that roughly the same number of nominations would be submitted this year as last year. Last year, we received 115 nominations. The annual cycle of the Governor General's Innovation Awards will culminate in May 2017 with a presentation ceremony hosted by the Governor General of Canada.

Figure 1: 2016–17 program delivery timelines, with major milestones and decision points



## 2.2 Building external relations and communicating the CFI's activities

Many of our communications activities in 2017–18 will focus on reaching out to new audiences to raise awareness and engage all of those supported — directly and indirectly — by CFI funding. We will use our refreshed website to help expand our online presence, including finding opportunities to grow our social media channels to engage these audiences in new, creative ways.

We will continue to support Government of Canada efforts in celebrating Canadian science, research and innovation as part of the country's sesquicentennial in 2017 with material developed for our 20th anniversary campaign, along with new storytelling that not only marks Canadian research achievements, but that also looks to the country's bright future in research and innovation. In particular, we will continue contributing regularly to the Innovation150.ca website and activities.

In May, we will contribute to the Journées internationales de la culture scientifique, Science & You conference in Montréal, which will provide an opportunity to showcase best Canadian practices related to public awareness of science. We will work with our colleagues in the federal granting agencies to hold the annual “summit” of research communicators at our funded institutions as part of this international conference. This will offer an occasion to network with funding agency contacts and a valuable opportunity to meet like-minded communicators from around the world.

We will support the work of the Governor General of Canada to promote the next winners of the Governor General's Innovation Awards and to help communicate the goal of these awards.

We will support the transition in CFI leadership, ensuring the new President and CEO is introduced to all of our stakeholders and is able to adopt the CFI's role as a trusted national voice on issues of research and research infrastructure.

## 2.3 Managing the financial aspects of the CFI's activities

All of the financial aspects of the organization's activities are under the responsibility of the finance team. This team is composed of two groups:

- The corporate finance group is responsible for the general accounting functions of the CFI, including bookkeeping, payments, budgeting and cash flow management, as well as award finalization processes and payments to institutions that receive CFI awards.
- The financial monitoring group ensures that funds forwarded to institutions are spent appropriately and that institutions have appropriate processes and controls in place for the management of CFI funds.

### a. The CFI investment portfolio

Following standard practice, the CFI's investment strategy and investment policy will be reviewed by senior management and the Board of Directors Investment Committee in autumn 2017. The results of this review, and any subsequent recommendations, will be presented to the full Board of Directors in autumn 2017.

## **b. Institutional monitoring visits**

Over the course of fiscal year 2017–18, the finance team will perform between six and eight monitoring visits. The purpose of these monitoring visits is to ensure that institutions receiving funding have the proper practices and processes in place, and to share best practices on how to effectively and consistently administer awards. These monitoring visits will include both large and small institutions to ensure full coverage of institution types and to broadly share information on good practices.

## **c. Contribution audits**

The finance team is planning to conduct between seven and 12 contribution audits of CFI-funded projects where fieldwork will be performed over the course of 2017–18. These audits will include a mix of both low- and high-risk projects, including those where the CFI investment is \$10 million or more.

## **d. Financial reports**

In addition to its other activities, the finance team expects to review approximately 800 financial reports in 2017–18. These include both interim and final financial reports, and annual reports on expenditures from the Infrastructure Operating Fund.

## **2.4 Improving the CFI's information management capabilities**

Late in 2015–16, the CFI embarked on a corporate-wide information management initiative. In 2016–17, the primary focus was on project identification and training. The vision and mission for the initiative were formulated and a governance structure put in place to oversee this multi-year initiative. In 2017–18, the focus will be on continuous improvement of:

- the quality, reliability and accessibility of CFI data;
- the processes and tools that transform data into information; and,
- the management of knowledge derived from that information.

Additional Corporate Services activities will include responding to a recent employee satisfaction survey. The human resources staff will be looking at methods to improve training and professional development opportunities for CFI staff.

As well, information services staff will continue to develop and enhance our database systems and technology tools in response to business needs.

## **2.5 Analyzing corporate performance, outcomes and impacts**

The CFI is committed to the principle of public accountability and places great importance on evaluating the impact of its investments in research infrastructure.

In 2017–18, we will continue to track performance data as outlined in our 2015 performance evaluation, risk and audit framework. These include data relating to:

- **Capacity:**

- World's top researchers attracted and retained — investment in research infrastructure enables eligible institutions to attract and retain researchers who are highly productive and recognized in their fields.
- Capacity to conduct world-class research and technology development enhanced — investment in state-of-the-art infrastructure, along with planning for its optimal use, enhances the ability of eligible institutions to compete globally in research and technology development.
- Training environment enriched — availability of high-quality infrastructure, together with top researchers, creates the optimal conditions to train the next generation of researchers and highly skilled technical personnel.

- **Capability:**

- Productive teams, networks and collaborations established — the provision and use of infrastructure supports eligible institutions in bringing together a diverse and multi-sectoral community of users, and enhancing networks and collaborative arrangements.
- Skills and expertise acquired by highly qualified personnel — the use of infrastructure allows students, post-doctoral fellows, other trainees and technical staff to develop skills in a world-class research environment, and gain knowledge from leading researchers in their fields.
- Knowledge advanced — the use of infrastructure allows researchers to produce, collect, analyze and interpret data that advances scientific and technological knowledge.

- **Uptake:**

- Innovation supported — the undertaking of activities that facilitate the comprehension, uptake and implementation of research knowledge acquired through the use of CFI-funded infrastructure allows researchers and institutions to encourage their adoption into practice and policy, and ultimately contribute to the innovation system.
- Social, economic and environmental benefits to Canada — the innovative research that results from the confluence of world-class infrastructure and great minds leads to discoveries and better public policy, and fosters the commercialization of discoveries, all of which improve the overall quality of life for Canadians.

In keeping with best practices, we will prepare our annual performance report to enable CFI leadership to continue to explore areas for improvement and efficiency in an evidence-based manner.

In alignment with our corporate information management strategy and initiatives, we will review data of corporate importance in an effort to identify opportunities to enhance data-capture processes that result in improved data availability and integrity. Much of the data improvement work will be done in connection with similar efforts of other research funders in Canada.

## Project progress reports

The CFI will prepare and release its annual *Report on results* based on annual project progress report data. The purpose of the *Report on results* is to provide timely, strategically focused, objective and evidence-based information on outputs and outcomes of the CFI-funded infrastructure as they relate to our overall objectives. We also intend to develop a video in 2017–18 to explain the reporting process and highlight the importance of the data both to the CFI and to other stakeholders.

## Outcome assessment

In 2017–18, the national outcome assessment study on agriculture research will be completed. The case study work completed last fiscal year will be reviewed by an international panel of experts. The panel will be tasked with preparing an independent assessment of the impact of the investments in this area.

In 2017–18, we will continue to develop our analyses focused on the CFI objectives. This year's efforts will be focused on analyses related to teams, networks and collaborations, as well as support for innovation. These analyses rely on data captured through project progress reports as well as other CFI data collection activities.

Table 1: Investment plan (commitments) for the contributions under each agreement

First Funding Agreement (\$4,390M)*						
	Cumulative March 31, 2016	2016-17	2017-18	2018-19	2019 and later	Total (\$M)
	(\$M)	(\$M)	(\$M)	(\$M)	(\$M)	
Fund	Commitments** (Actual)	Commitments (Projected)	Commitments (Projected)	Commitments (Projected)	Commitments (Projected)	
Automotive Partnerships Canada	9					9
Canada Research Chairs	194					194
Career Awards	6					6
College Research Development	16					16
Cyberinfrastructure Initiative	40	20	9			69
Digging into Data / Discovery Frontiers	1					1
Exceptional Opportunities Fund and other	23		10	10		43
Infrastructure Operating Fund	1,018	19	3			1,040
Innovation Fund (1998-2005)	1,760					1,760
Innovation Fund 2015	53					53
International	202					202
John R. Evans Leaders Fund (and Leaders Opportunity/New Opportunity Fund)	824	63				887
Leading Edge/New Initiatives Fund	836					836
Major Science Initiatives 2014 Special Competition	25					25
National Platforms	84					84
Research Development	35					35
Research Hospital Fund	490					490
Thirty Meter Telescope	25					25
<b>Total</b>	<b>5,641</b>	<b>102</b>	<b>22</b>	<b>10</b>	<b>0</b>	<b>5,775</b>

	Cumulative March 31, 2016	2016-17	2017-18	2018-19	2019 and later	Total (\$M)
	(\$M)	(\$M)	(\$M)	(\$M)	(\$M)	
<b>Fund</b>	Commitments** (Actual)	Commitments (Projected)	Commitments (Projected)	Commitments (Projected)	Commitments (Projected)	
<b>2010 Funding Agreement (\$600M)*</b>						
College-Industry Innovation Fund	25					25
Infrastructure Operating Fund	96					96
John R. Evans Leaders Fund	140					140
Leading Edge/New Initiatives Fund	156					156
Major Science Initiatives	185					185
<b>Total</b>	<b>602</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>602</b>
<b>2014 Contribution Agreement (\$499.85M)*</b>						
College-Industry Innovation Fund	7	13	9	10		39
Infrastructure Operating Fund	97	12	3	3		115
Innovation Fund 2015	206					206
John R. Evans Leaders Fund	110	30				140
<b>Total</b>	<b>420</b>	<b>55</b>	<b>12</b>	<b>13</b>	<b>0</b>	<b>500</b>
<b>2015 Contribution Agreement (\$1,330M)*</b>						
College-Industry Innovation Fund					35	35
Cyberinfrastructure Initiative				60	9	69
Infrastructure Operating Fund			147	23	32	202
Innovation Fund 2017			425			425
John R. Evans Leaders Fund			67	66	66	199
Major Science Initiatives		328			72	400
<b>Total</b>	<b>0</b>	<b>328</b>	<b>639</b>	<b>149</b>	<b>214</b>	<b>1,330</b>

\* The first Funding Agreement and the 2010 Funding Agreement have \$1.385 billion and \$2 million of generated interest income respectively directed to project funding. There are no anticipated revenues from other sources expected in future years other than interest income.

\*\* Actual committed amounts are net of amounts that will be unused by eligible recipients, as confirmed through final financial reports for infrastructure projects submitted as of September 2016.

Table 2: Planned expenditures (disbursements) detailed by fund

First Funding Agreement (\$4,390M)*						
	Cumulative March 31, 2016	2016-17	2017-18	2018-19	2019 and later	Total (\$M)
	(\$M)	(\$M)	(\$M)	(\$M)	(\$M)	
Fund	Expenditures (Actual)	Expenditures (Projected)	Expenditures (Projected)	Expenditures (Projected)	Expenditures (Projected)	
Automotive Partnerships Canada	9					9
Canada Research Chairs	194					194
Career Awards	6					6
College Research Development	16					16
Cyberinfrastructure initiative	6	12	24	18	9	69
Digging into Data / Discovery Frontiers	1					1
Exceptional Opportunities Fund and other	18	3	2	10	10	43
Infrastructure Operating Fund	849	60	28	23	80	1,040
Innovation Fund (1998-2005)	1,758	1	1			1,760
Innovation Fund 2015	2	19	14	9	9	53
International	202					202
John R. Evans Leaders Fund (and Leaders Opportunity/New Opportunity Fund)	822	7	40	3	15	887
Leading Edge/New Initiatives Fund	805	16	8	7		836
Major Science Initiatives 2014 Special Competition	20	2	3			25
National Platforms	84					84
Research Development	35					35
Research Hospital Fund	486	2	2			490
Thirty meter telescope	25					25
<b>Total</b>	<b>5,338</b>	<b>122</b>	<b>122</b>	<b>70</b>	<b>123</b>	<b>5,775</b>
2010 Funding Agreement (\$600M)						
College-Industry Innovation Fund	23	0	1	1		25
Infrastructure Operating Fund	15	19	19	19	24	96
John R. Evans Leaders Fund	130	7	3			140

Leading Edge/New Initiatives	119	15	12	10		156
Major Science Initiatives	142	36	7			185
<b>Total</b>	<b>429</b>	<b>77</b>	<b>42</b>	<b>30</b>	<b>24</b>	<b>602</b>
<b>2014 Contribution Agreement (\$499.85M)</b>						
	Cumulative March 31, 2016	2016-17	2017-18	2018-19	2019 and later	Total (\$M)
	(\$M)	(\$M)	(\$M)	(\$M)	(\$M)	
<b>Fund</b>	Expenditures (Actual)	Expenditures (Projected)	Expenditures (Projected)	Expenditures (Projected)	Expenditures (Projected)	
College-Industry Innovation Fund		4	13	8	14	39
Infrastructure Operating Fund	1		15	19	80	115
Innovation Fund 2015	56	66	46	17	21	206
John R. Evans Leaders Fund	61	51	20	5	3	140
<b>Total</b>	<b>118</b>	<b>121</b>	<b>94</b>	<b>49</b>	<b>118</b>	<b>500</b>
<b>2015 Contribution Agreement (\$1,330M)</b>						
College-Industry Innovation Fund					35	35
Cyberinfrastructure Initiative					69	69
Infrastructure Operating Fund					202	202
Innovation Fund 2017			8	132	285	425
John R. Evans Leaders Fund			20	56	123	199
Major Science Initiatives			65	70	265	400
<b>Total</b>	<b>0</b>	<b>0</b>	<b>93</b>	<b>258</b>	<b>979</b>	<b>1,330</b>

\* In addition to disbursements to eligible recipients, a total of \$186.5 million had been disbursed as of March 31, 2016 for operating expenses of the Foundation. These expenses are forecasted to be approximately \$15 million per year in the next two years.

Table 3: Annual cash flow requirements

Cash Flow Requirements*						
	Cumulative March 31, 2016	2016-17	2017-18	2018-19	2019 and later	Total (\$M)
	(\$M)	(\$M)	(\$M)	(\$M)	(\$M)	
<b>Disbursements</b>	Actual	Projected	Projected	Projected	Projected	
2010 Funding Agreement	429	77	42	30	24	602
2014 Contribution Agreement	118	121	94	49	118	500
2015 Contribution Agreement			93	258	979	1,330
<b>Total disbursements</b>	<b>547</b>	<b>198</b>	<b>229</b>	<b>337</b>	<b>1,121</b>	<b>2,432</b>
Received from the Government	553	199				752
Generated interest income	2					2
Future government payments necessary to meet cash flow needs **			220	337	1,121	1,678
<b>Difference for the period</b>	<b>8</b>	<b>1</b>	<b>-9</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Cumulative difference</b>	<b>8</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

\* Funds for the first Funding Agreement have all been received from the Government of Canada. Therefore, there are no future cash flow requirements for this agreement.

\*\* Of the amount of \$220 million for 2017-18, \$119 million is needed in early April 2017 to cover expenses of April 2017 to September 2017. The balance of \$101 million can be paid during summer 2017. Of the amount of \$337 million for 2018-19, \$168 million is needed in early April 2018 to cover expenses of April 2018 to September 2018. The balance of \$169 million can be paid during summer 2018. There are currently no amounts owing by the CFI to the Government of Canada.

## Appendix 1: the CFI’s key risks and mitigation measures

In 2014, the CFI engaged KPMG LLP to assist with the update of the key risks facing the organization. As a result of this exercise, we have identified seven primary risks and related mitigation measures. These are summarized in the table below. Information on secondary risks is available upon request. It is anticipated that a full review will be undertaken in 2017–18.

The risks identified below are ordered according to their potential impact on the CFI.

STRATEGIC RISKS	
<b>1</b>	<p><b>Risk that the CFI is unable to maintain and/or secure ongoing political support at the federal level</b></p> <p>Mitigation measures:</p> <ul style="list-style-type: none"> <li>• The CFI undertakes regular ongoing discussions with Government of Canada officials in ministerial offices and senior department managers on the requirements for research infrastructure, the leveraging of benefits, the multidisciplinary reach and impacts of the CFI investments and ideas for the future of the CFI, and the research and innovation ecosystem.</li> <li>• The CFI regularly provides parliamentarians with evidence on the ways that infrastructure assists in attracting and retaining top research talent, enables world-class research and supports innovation.</li> <li>• The CFI leads and participates in outreach and communications activities specifically targeted to parliamentarians.</li> <li>• The CFI consistently demonstrates value-for-money and how infrastructure funding has been and continues to be responsive to government priorities and research community requirements.</li> <li>• The CFI disseminates success stories and evaluation assessments to demonstrate the results of CFI investments.</li> <li>• The CFI seeks to capitalize on the strength of its solid reputation as a world-class funding agency.</li> <li>• The CFI includes elected officials and media in celebrations and public events.</li> </ul>
<b>2</b>	<p><b>Risk that the fiscal realities of the provinces will result in reduced and/or delayed support for CFI projects (e.g. via matching funds, S&amp;T funding in the province)</b></p> <p>Mitigation measures:</p> <ul style="list-style-type: none"> <li>• Provincial partners are given opportunities to provide input on activities, processes and funding mechanisms.</li> <li>• The priorities of provincial partners are taken into consideration in the application review process.</li> <li>• The CFI conducts ongoing monitoring of provincial research and innovation activities.</li> </ul>

	<ul style="list-style-type: none"> <li>• The CFI communicates the value of the 40 percent funding provided by the CFI.</li> <li>• The CFI communicates with provinces on funding parameters and competition schedules to assist them in their planning.</li> <li>• While the CFI endeavours to accommodate provinces with cash flow challenges, CFI funding is provided only when partner funding has been secured.</li> </ul>
3	<p><b>Risk that key stakeholders, including federal funders at both the administrative and political levels, do not understand the activities, outcomes and impacts associated with CFI funding</b></p>
	<p>Mitigation measures:</p> <ul style="list-style-type: none"> <li>• The CFI consistently sends the message that world-class research requires state-of-the-art infrastructure.</li> <li>• The CFI reports on and communicates to all stakeholders the outputs, outcomes and impacts of the research enabled by infrastructure.</li> <li>• The CFI maintains a dialogue with the Government of Canada and with other funding agencies on its role and programs, and on the level of funding provided.</li> <li>• The CFI’s communications strategy focuses on highlighting the key results, and social and economic outcomes, of the research enabled by CFI investments.</li> <li>• The CFI Navigator fosters and enables communication and linkages between CFI-funded institutions and external stakeholders in the private and public sectors.</li> <li>• The CFI encourages the research community to communicate with government about the value of CFI funding.</li> <li>• The CFI continues to explore new ways of telling the stories of the impacts of research enabled by CFI-funded infrastructure.</li> </ul>
4	<p><b>Risk that overall funding cannot be balanced to support different stakeholder needs (e.g. between capital and operating and maintenance investments)</b></p>
	<p>Mitigation measures:</p> <ul style="list-style-type: none"> <li>• The CFI conducts ongoing consultations with the research community and government to determine the balance of funding types for major science initiatives and multi-institutional facilities.</li> <li>• The CFI undertakes discussions with government and other funding organizations on funding pressures and how best to optimize the overall funding system.</li> <li>• The latest Innovation Fund competition provides additional operating and maintenance funding for projects with greater needs for operational support.</li> <li>• The Infrastructure Operating Fund provides institutions with flexibility to address projects with varying needs.</li> <li>• The CFI continues to advocate for a national strategy to best address the requirements for large-scale research infrastructures.</li> </ul>

5	<p><b>Risk that contribution agreement requirements impairs the ability of the CFI to be responsive to stakeholder needs in a timely and flexible manner (e.g. through new programs)</b></p>
	<p>Mitigation measures:</p> <ul style="list-style-type: none"> <li>• The CFI regularly consults with institutions to understand their needs and explain the specifics of federal funding programs and opportunities.</li> <li>• The CFI briefs parliamentarians and senior government officials on the value of a flexible model, alignment of funding mechanisms with the federal Science, Technology and Innovation Strategy and the granting agencies, and on the needs of institutions.</li> <li>• Communication and outreach activities underscore the need for flexibility as a means to enable the CFI to achieve the expected results specified in its contribution agreements.</li> <li>• The CFI encourages the research community to work with the CFI to communicate its needs to key decision-makers.</li> <li>• The CFI periodically assesses whether funding mechanisms are addressing stakeholder needs and, when necessary, makes appropriate adjustments in the program architecture and fund delivery mechanisms.</li> </ul>
<p><b>HUMAN RESOURCES RISKS</b></p>	
6	<p><b>Risk of turnover and/or loss of corporate memory among critical leadership positions</b></p>
	<p>Mitigation measures:</p> <ul style="list-style-type: none"> <li>• The horizontal structure of the CFI facilitates the effective transfer of corporate knowledge throughout the organization and in periods of leadership turnover.</li> <li>• The CFI maintains a competitive compensation structure and a balanced work environment that help attract and retain top talent.</li> <li>• The CFI succession plan is reviewed and updated every two years.</li> </ul>
<p><b>INFORMATION TECHNOLOGY/INFORMATION MANAGEMENT RISKS</b></p>	
7	<p><b>Risk that information is not managed and/or accessible in a manner to support and enable effective and timely decision making</b></p>
	<p>Mitigation measures:</p> <ul style="list-style-type: none"> <li>• The CFI's business units consistently review and update the information captured for both structured data (i.e. corporate database systems) and unstructured data (i.e. business unit specific activity) to support their operational and strategic business decisions.</li> <li>• The Performance, evaluation, risk and audit framework exercise periodically reviews and updates information requirements needed to inform strategic business decisions and directions.</li> <li>• Information access follows a decentralized approach. Business units have staff with advanced-</li> </ul>

level expertise using the CFI business information tools to effectively support decision making. All users are supported by the information management team. Training is available on an ongoing basis, and specialized training sessions are provided as needed.

- All information captured at the CFI occurs within a secure and protected environment using up-to-date, industry-standard technology and infrastructure, and software supported by contracted experts. Regular data backup schedules and maintenance operations are in place.
- The information management initiative undertaken in 2015 will optimize the value of data within the organization, produce repeatable results, enrich analytical capabilities and provide tools for the CFI to be a trusted voice.



**Research builds communities**  
**La recherche au service des collectivités**

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