



Advisory Services

Canada Foundation for Innovation (CFI)

Performance Audit

Final Report

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Executive Summary

Under the terms of its funding agreement with Industry Canada, the Canada Foundation for Innovation (CFI) is required to have a performance audit completed by March 2010. This report presents a summary of the approach followed in planning and conducting the performance audit as well as our observations and recommendations for improvement.

Audit Objectives and Scope

The audit plan was developed using a risk-based approach through which key risks facing the achievement of the CFI's national objectives and expected results were identified and analyzed. Risks were initially identified based on a review of a strategic risk assessment of the CFI conducted in conjunction with the development of the CFI's Performance, Evaluation, Risk and Audit Framework (PERAF) in 2007. These risks were updated during the planning phase of this audit in 2008 through interviews with management and key stakeholders and through documentation review. The key risks were then linked to the core processes and practices in place within the CFI that are designed to mitigate these risks. This information was used to determine the specific objectives, criteria, and scope of the audit.

The overall objective of the audit is to provide an independent assessment of the CFI's operations to ensure the economy, efficiency, and effectiveness of funds used. The specific audit objectives are to assess whether:

- Processes for approving and monitoring funded projects provide reasonable assurance that approved projects are consistent with the CFI's objectives, are approved in a transparent manner, and that project funding is used for the acquisition and implementation of capital infrastructure.
- Stakeholder strategies effectively support the achievement of the CFI's strategic objectives with due regard to the CFI's reputation.
- Plans to help ensure sustained funding and support for the CFI's continued operations have been developed and implemented.
- Human resources management practices are in place to help ensure that required critical skill sets and talents are in place to meet the CFI's existing and future requirements in a cost-effective manner.

The scope of the audit covered the CFI's management controls, processes, practices and other means in place related to the audit objectives identified above. The audit also focused on the CFI's policies and procedures in place to manage competition-based funds, as these funds generally relate to more complex and higher risk projects. The audit fieldwork focused on assessing the efficiency and effectiveness of the CFI's management practices related to each audit objective.

Reliance is being placed on the Treasury Board Secretariat's Evaluation of Foundations, conducted by KPMG between September 2006 and January 2007, for the assessment of economy. Through this evaluation, the CFI was one of six case studies used to obtain insights into the appropriateness, effectiveness, and costs of foundations. An analysis of the CFI's costs was conducted through this case study, which was used to assess its cost structures, trends, and cost drivers and was compared to the cost structures of similar government programs. The report concluded that the CFI had the lowest operating and administrative costs (3%) per dollar of annual average funding disbursed (\$270M) of all the foundations reviewed.

The audit was conducted concurrently with a performance evaluation. As such, information obtained and analyzed in conjunction with the evaluation was considered and included in our audit findings where appropriate and relevant. The audit fieldwork was completed on May 31, 2009. Our work was limited to, and our recommendations are based on, the audit procedures conducted, and the observations and

recommendations should be considered in the context of the procedures performed. We relied on information and representations of management and others for the completeness of background information and other assertions provided.

Summary of Findings

Overall, we found that the CFI has designed and implemented practices and processes that promote economy and efficiency in the use of resources and that are effective in supporting the achievement of the CFI's national objectives and expected results. The audit identified a number of noteworthy practices currently in place within the CFI, including: the conduct of frequent process improvement reviews to continuously improve the efficiency and effectiveness of its operating policies and procedures; the use of multi-staged independent review committees to assess applications for funding on the basis of merit; the use of well-documented guidelines and tools to help promote transparency and consistency in the application, award and project monitoring processes; the use of formal risk assessment tools to guide the financial and operational monitoring of projects; the involvement of specialized skill sets throughout the project life cycle, including financial, program, communications, and evaluation expertise; the active engagement of key stakeholders to identify and respond to needs within the CFI's target audience; and the establishment of a dedicated Evaluation and Outcome Assessment team with responsibility for gathering and analyzing performance information that is used to help communicate the outcomes and impacts of CFI funding to key stakeholders and the public at large.

Some minor areas for improvement were identified through the audit. However, in all cases, these areas relate to issues or challenges that had been previously identified by management and for which management has initiated actions to improve its processes and procedures. A summary of our findings, categorized by the specific audit objective to which they relate, is provided below.

A) Approval and Monitoring of Projects.

- We found that practices and processes are in place to help ensure that approved projects are consistent with the CFI's objectives, are approved in a transparent manner, and are monitored to help ensure that project funding is used for the acquisition and implementation of capital infrastructure. Key mechanisms relied upon by management to provide reasonable assurance that projects have been approved in a transparent manner and are free from conflicts of interest include: the use of predefined and communicated evaluation criteria to assess applications for funding; the use of a three-tiered review committee structure to evaluate applications on a consensus basis; and the requirement for Board members and committee members to sign conflict of interest declarations. Management provides applicants with project funding decision reports that describe their application assessment. Management has enhanced the completeness of these reports by including additional information on the rationale for all recommendations, both positive and negative, made by the Special Multidisciplinary Assessment Committee for the most recent 2009 Leading Edge Fund and New Initiatives Fund competition. Management is encouraged to continue to document the rationale for final committee recommendations in funding decision reports in all future competitions to further enhance the transparency of the application assessment process.
- We found that the CFI has well-documented policies and procedures in place that are accessible to applicants and stakeholders. This documentation includes: clearly defined eligibility requirements; application procedures and evaluation criteria; award finalization requirements; and institutional reporting requirements. We did note that, in a few cases, the information identified in these documents was not consistently required from the institutions and/or reviewed by the CFI. It is our understanding that the CFI plans to review and revise their policies and procedures to require the submission of only the information that is considered relevant by the CFI to meet its needs.
- We found that the CFI has mechanisms in place to help ensure that in-kind contributions are appropriately valued including: documented and communicated valuation guidelines; requirements for institutions to certify the valuation of in-kind contributions in accordance with CFI policy; and

monitoring of in-kind contribution amounts reported by the institutions throughout the project life cycle.

- We found that the CFI has mechanisms in place to help ensure that other partner funding is secured by institutions. Institutions are required to provide a plan for funding at least 60% of total project funding from non-CFI sources in conjunction with their application. The CFI will not release any funds to institutions until these other sources of funding have been secured as a condition of award finalization. Management has acknowledged that the time to finalize projects has at times exceeded the CFI's targeted time frame of nine months. In response, the CFI has added resources and tools to help monitor the status of projects between the award approval and finalization stages. Management is encouraged to continue to monitor the time frame to finalize projects and continue to implement remedial actions as necessary.
- The CFI helps to ensure that funding is used for the acquisition of capital infrastructure and in compliance with award agreements by clearly outlining the eligibility of project costs on their website. In addition, financial and operational progress is monitored through the review and analysis of regular Financial Reports and Project Progress Reports submitted by the institutions.
- We found that the CFI follows a risk-based approach to monitoring and follow-up on the financial and operational progress of funded projects. A preliminary risk assessment is performed upon award finalization that is used to determine the nature and extent of financial and operational monitoring activities required for the project, and is updated throughout the life cycle of the project to reflect any changes in risks facing the project. Key monitoring activities that are performed include financial reporting, meetings with the institution based on the achievement of key project milestones, contribution audits, specified audit procedures engagements, cost assessments by professionals, and institutional monitoring visits. The frequency and type of monitoring activity required for each project will vary depending upon the project's risk assessment. Formal and periodic reporting on the results of monitoring activities is provided to the CFI Board. Management consistently revisits the nature and approach to monitoring activities to determine if the procedures are adequate to address underlying risks and whether further process improvements or efficiencies can be made.
- We noted that in the past, the CFI has funded large infrastructure projects that have experienced governance and management structure issues, resulting in operating funding shortfalls within these projects. To help prevent similar situations from recurring and to address emerging issues, the CFI has introduced a requirement to specifically evaluate management structures of large infrastructure projects as a condition for future funding and has worked with other funding agencies to develop a governance handbook to address some of the issues encountered in the past. Management is encouraged to continue to work with the other funding agencies to finalize and implement the governance handbook and other guidance to help manage risks related to the management and implementation of large infrastructure projects.

B) Stakeholder Strategies

- We found that the CFI actively engages key stakeholders to inform the design and implementation of new funding programs and CFI initiatives. A key mechanism employed by the CFI is the national consultation process held prior to each major competition, through which consultations are conducted with national research community stakeholders to identify research funding needs across the country. The CFI uses this information as a consideration in the design of future funding programs, while continuing to align priorities with those of the federal government's Science and Technology Strategy.
- The CFI consistently identifies, manages, monitors, and acts upon partnership and stakeholder collaboration opportunities. Information is shared with stakeholders through the national consultation process, the conduct of Outcome Measurement Studies, the CFI's participation in interagency working groups, and the review and communication of findings from both Project Progress and Institutional Reports.

C) Communication Strategies

- We found that the CFI has communication plans and strategies to help secure sustained public and federal support for the CFI. The CFI recognizes that its success is measured by how effectively it communicates the value and impact of research to key stakeholders. Communication plans are based

on the measurement, analysis and reporting of performance information. Key performance measurement mechanisms employed by the CFI include: the implementation of a Performance, Evaluation, Risk and Audit Framework to guide performance measurement and evaluation activities; the establishment of a dedicated Evaluation and Outcome Assessment team responsible for conducting studies, evaluations and reviews of the impacts of CFI funding and for validating the accuracy and consistency of performance information used in the CFI's communications; and the review and analysis of Annual Institutional Progress Reports, annual Project Progress Reports and Outcome Measurement Studies to help identify the overall benefits and impacts of CFI funding. Information gathered through these mechanisms is used to inform institutions, the federal government, and the Canadian public of the results of the CFI's activities on a proactive basis. The CFI also communicates its objectives and results through its Annual Report, Corporate Plans, InnovatioNation brochures, the Innovation Canada on-line magazine, and the Annual Public Meeting.

D) Human Resource Management Practices

- The CFI has incorporated retention and succession planning into the CFI's planning process to help ensure human resource plans are in place and have been implemented to provide for the continuity of critical positions throughout the organization. The CFI has developed a succession planning and development initiative through which positions have been identified and classified as critical, vulnerable or scarce. The CFI also periodically re-assesses the skills and qualifications for at-risk positions to help ensure they continue to reflect changing labour market conditions. The CFI supports the development and implementation of training plans as part of career development activities and allows employees to participate in job rotations to further expand their skills and experiences.

Our observations and recommendations are categorized under each of the four audit objectives in the "Observations and Recommendations" section of this report.

Overall Management Response

Management agrees with the four recommendations included in this report. The issues and challenges identified were minor. In all four cases, the CFI had identified these prior to the performance audit and had implemented corrective measures to improve the CFI's processes and procedures.



Background

The Canada Foundation for Innovation (“the CFI”) is a not-for-profit independent organization created in 1997 by the Government of Canada under the Budget Implementation Act to fund research infrastructure. The infrastructure funded by the CFI includes equipment, laboratories, databases, and the buildings necessary to conduct research. The CFI obtains conditional grants from Industry Canada in accordance with a multi-year Funding Agreement. As of September 2009, the CFI had committed almost \$5.2 billion in support of 6,353 projects at 130 research institutions in 65 municipalities across Canada.

The CFI's mandate is to strengthen the capacity of Canadian universities, colleges, research hospitals, and non-profit research institutions to carry out world-class research and technology development that benefits Canadians. The CFI is committed to developing meaningful partnerships between eligible institutions and industry. The CFI's vision and mandate are supported by four strategic objectives, as defined in the CFI's Funding Agreement with Industry Canada:

1. Support economic growth and job creation, as well as health and environmental quality through innovation;
2. Increase Canada's capability to carry out important world-class scientific research and technology development;
3. Expand research and job opportunities for Canadians; and
4. Promote productive networks and collaboration among Canadian post-secondary educational institutions, research hospitals and the private sector.

To achieve these objectives, the CFI supports research by funding leading-edge infrastructure for research projects. The CFI supports all areas of research by funding institutions (and not individual researchers) for eligible projects. As part of the application review process, the CFI reviews the applications to ensure that the request for funding aligns with the institution's priorities as set out in the institution's Strategic Research Plan. The CFI's funding architecture is designed to deliver on the CFI's mandate by meeting the needs of the research community, its partners, and stakeholders. It is based on a three-way program delivery system, consisting of open competitions for transformative infrastructure projects, pre-determined allocation based programs to facilitate the recruitment and retention of leading researchers, and operating and maintenance funding. In addition to these three core programs, the CFI has also provided for strategic investments through the National Platforms Fund, Research Hospitals Fund, and Exceptional Opportunities Fund.

Applications for funding are received from institutions for specific research projects. Proposals for funding from an institution are accepted once a confirmation of eligibility of the institution has been conducted by the CFI. Eligible infrastructure is defined as a new capital asset that provides new and/or improved research capability, including research tools and/or research facilities. All requests for funding are subject to formal independent review and assessment by experts from Canada and abroad. The review process varies according to the size of the requested investment, the complexity of the proposal, and the fund under which the proposal is submitted. Assessments are based on the quality of research and need for infrastructure, contribution to strengthening the capacity for innovation, and the potential benefits of the research to Canada.

The CFI is located in the National Capital Region and, as of May 31, 2009, was staffed with sixty-three full time employees and two contracted personnel. Included within this personnel base are three Vice-Presidents who report to the President and CEO. The CFI is governed by a Board of Directors made up of fifteen members from a variety of backgrounds, seven of whom are appointed by the Government of Canada. One Director of the Board is a representative from one of the federal granting agencies.

Audit Approach and Objectives

A performance audit plan was developed using a risk-based approach through which key risks facing the achievement of the CFI's strategic objectives and expected results were identified. Risks were initially identified based on a review of a strategic risk assessment of the CFI conducted in conjunction with the development of the CFI's Performance, Evaluation, Risk and Audit Framework in 2007. These risks were updated during the planning phase of this audit in 2008 through interviews with management and key stakeholders and through documentation review. The risks were then linked to the core processes and practices in place within the CFI that are designed to mitigate these risks. This information was used to determine the specific audit objectives and related criteria to be assessed through the examination as illustrated below:

Audit Objective	Audit Criteria
<p>Audit Objective #1: Processes for approving and monitoring funded projects provide reasonable assurance that approved projects are consistent with the CFI's objectives, are approved in a transparent manner, and that project funding is used for the acquisition and implementation of capital infrastructure.</p>	Criteria 1.1: Processes to assess, evaluate, and approve applications for funding are effective in: promoting transparency of the process to relevant stakeholders; aligning funding decisions with the CFI's national objectives and projects of merit; and helping to ensure that approvals are free from bias and conflicts of interest.
	Criteria 1.2: Guidelines exist and are followed to help ensure that in-kind contributions and other partner funding are appropriately valued and secured by Institutions.
	Criteria 1.3: Mechanisms exist and are followed to help ensure that funding is used for the acquisition of capital infrastructure and in compliance with funding agreement terms and conditions.
	Criteria 1.4: A risk-based approach to the monitoring of and follow up on the progress of funded projects exists and is followed.
<p>Audit Objective #2: Stakeholder strategies effectively support the achievement of the CFI's national objectives with due regard to the CFI's reputation.</p>	Criteria 2.1: The benefits of stakeholder activities are monitored and lessons learned are identified and acted upon.
	Criteria 2.2: Partnership and collaboration opportunities are consistently identified and managed across the organization.
	Criteria 2.3: Formal and informal activities are conducted that guide the CFI's stakeholder relations and define and/or consider the benefits to be realized from these stakeholder relations.
<p>Audit Objective #3: Plans to help ensure sustained funding and support for the CFI's continued operations have been developed and implemented.</p>	Criteria 3.1: Communication plans and strategies have been developed and implemented to help secure sustained public and federal support for the CFI.
	Criteria 3.2: Expected outcomes (at the aggregate level) are monitored, communicated and reported on a regular and timely basis and support effective and timely management decision-making at both the project and organization-wide levels.
	Criteria 3.3: There is a process in place to determine whether funded projects were successful in contributing to expected outcomes for the CFI as a whole.

Audit Objective	Audit Criteria
<p>Audit Objective #4:</p> <p>Human resources management practices are in place to help ensure that required critical skill sets and talents are in place to meet the CFI's existing and future requirements in a cost-effective manner.</p>	<p>Criteria 4.1: Retention and succession planning are key elements of the CFI's planning process to help ensure human resource plans are in place and have been implemented to provide for the continuity of critical positions throughout the organization.</p>

The audit criteria were developed with reference to recognized models of control, Treasury Board Secretariat's *Core Management Controls: A Guide for Internal Auditors*, and audit criteria used by the Office of the Auditor General as listed in publicly available reports. The audit planning phase was completed between May and December 2008. The criteria are designed to enable the assessment of key practices, procedures and controls in place within the CFI to mitigate the key areas of risk to the achievement of its four national objectives as identified in the Performance Audit Plan dated January 2009. This plan was shared with Industry Canada prior to its implementation.

The criteria focused on assessing the efficiency and effectiveness of the CFI's management practices for each audit objective. Reliance is being placed on the Treasury Board Secretariat's Evaluation of Foundations, conducted by KPMG between September, 2006, and January, 2007 for the assessment of economy. Through this evaluation, the CFI was one of six case studies used to obtain insights into the appropriateness, effectiveness and costs of foundations. An analysis of the CFI's costs was conducted through this case study, which was used to assess its cost structures, trends and cost drivers and was compared to the cost structures of similar government programs. The report concluded that the operating and administration cost structures of the six case study foundations, including the CFI, were very lean and focused on structured and transparent processes for reviewing and selecting projects, and systems for project tracking and financial management. The evaluation further found that their operating and administration costs were driven by needs to efficiently manage project workloads and to provide timely support for governance and accountability requirements and that resource levels and costs appear to be closely matched to, or follow, the trends in the project workloads. This report found that the CFI had the lowest operating and administrative costs (3%) per dollar of average annual funding disbursed (\$270M) of all the foundations reviewed.

The scope of the audit covered CFI's management controls, processes, and practices related to the audit objectives identified in the table above, with a focus on the most current activities and practices in place within the CFI.

Our audit work included the conduct of:

- 19 interviews with representatives of CFI staff and management, and members of the Board;
- the review and analysis of the results of surveys of project leaders and principal users, department heads, vice-presidents of research, and international experts conducted in conjunction with the performance evaluation that was performed concurrently with the audit; and
- the examination and analysis of documentation of relevance to each of the audit objectives, which included the examination of:
 - a sample of 12 project files representing 11% of total funding provided by the CFI since its inception and 34% of total funding provided under the Leading Edge Fund (LEF), New Initiatives Fund (NIF), Research Hospitals Fund (RHF), and National Platforms Fund;
 - institutional Strategic Research Plans related to the above 12 projects;
 - contribution audits related to the above 12 projects;
 - financial and monitoring practices conducted by the CFI for a sample of five institutions;

- results of previous internal and external audits, reviews and evaluations; and
- documentation supporting management processes and practices.

Our work was limited to, and our recommendations are based on, the procedures conducted, and the findings and recommendations should be considered in the context of the procedures performed. We relied on information and representations of management and others for the completeness of background information provided.



Observations and Recommendations

Our observations from the audit fieldwork and related recommendations for improvement are categorized below under each of the four audit objectives as stated in the performance audit plan.

1) Approval and Monitoring of Projects

Under its funding agreement with Industry Canada, the Canada Foundation for Innovation is accountable for awarding grants to eligible recipients for eligible projects. It is responsible for ensuring that eligible recipients demonstrate a firm commitment to secure at least 60% of the total requested funding for eligible costs from other sources. In addition, the award process must consider the extent to which the project contributes to achieving the CFI's national objectives in a manner consistent with the Government of Canada's Science and Technology Strategy.

Through the performance audit, we examined the efficiency and effectiveness of practices and processes in place to determine whether approved projects were consistent with the CFI's objectives, were approved in a transparent manner, and that project funding was used for the acquisition and implementation of capital infrastructure. Our audit focused on examining the practices in place for approving and monitoring competition-based funds as they represent the majority of CFI funding and are inherently more risky as many relate to the construction of infrastructure.

a) Practices are in place to assess, evaluate, and approve applications for funding that: promote transparency of the process to relevant stakeholders; help to ensure that approvals are free from bias and conflict of interest; and help to align funding decisions to projects of merit and consistency with the CFI's national objectives. (Criterion 1.1)

The CFI provides funding for world-class innovative infrastructure projects through a combination of competition and allocation-based funding. Under each CFI fund, the CFI has put in place practices and processes to help to ensure a consistent, merit-based, and transparent review and approval of applications for funding.

For eligible institutions, the CFI Policy and Program Guide, along with various on-line forms and information associated with Calls for Proposals, provide applicants with program information, eligibility requirements, and the criteria against which applications will be evaluated. These documented procedures and tools are also used by CFI staff and application reviewers, thereby enabling a consistent communication of the application submission, approval and award process to all key parties. Ninety five percent (95%) of the vice-presidents of research and over sixty percent (60%) of both project leaders/principal users and department heads surveyed indicated that the clarity of the guidelines and evaluation criteria provided by the CFI to assist in assessing the merit of funding proposals (including in-kind guidelines) was clear or very clear.

Competition-Based Funds:

For each of the competition-based funding programs examined through the audit – Leading Edge Fund (LEF), New Initiatives Fund (NIF), Research Hospitals Fund (RHF), and National Platforms Fund (NPF) – the CFI utilized a three-stage review process. The CFI uses an Expert Review Committee, Multidisciplinary Assessment Committee (MAC), and Special Multidisciplinary Assessment Committee (S-MAC) to evaluate most competition-based applications. In all files examined, the committees were made up of national and international members with expertise in research and infrastructure who evaluated applications for funding against pre-determined criteria and made recommendations for funding approval consistent with documented guidelines and evaluation criteria. The use of a committee structure allows for a consensus on application assessments and project funding decisions and helps to ensure that project approvals are

free from bias and conflicts of interest. The CFI also requires that a conflict of interest and confidentiality declaration be signed by all individuals with responsibility for project approval, including committee and CFI Board members. Reducing opportunities for conflicts of interest and enhancing the transparency of the evaluation process is further supported by the CFI's disclosure of committee members on its website. In addition, 85% of the vice-presidents of research and 75% of the expert reviewers surveyed indicated that the funding approval process was considered good or very good with respect to freedom from conflicts of interest.

Each committee is provided with guidelines and other documentation describing the committee's roles and responsibilities and the method, criteria and ranking system to use when evaluating the various aspects of applications. The evaluation criteria align directly with the CFI's national objectives and include assessments of the quality of research and need for the infrastructure, contribution to strengthening capacity for innovation, and potential benefits to Canada. Our survey results support the clarity of the CFI's application assessment process, with 88% of expert reviewers stating that the guidelines are clear or very clear.

To help ensure the consistency of the application of CFI guidelines during the evaluation process, a Senior Programs Officer attends all committee meetings. Applications are evaluated first by Expert Reviewers, then by the MAC, who make funding recommendations to the S-MAC. Although the total CFI funding budget is publicly disclosed for each competition, during the proposal review process, none of the expert reviewers, the MAC members are provided with information on the total envelope of funding available for their individual committee. This helps to ensure that projects are recommended for approval to the S-MAC based on an assessment of the merit of the project, rather than on the total funding available to each committee. S-MAC recommendations for project approval are forwarded to the CFI Board for final approval. The transparency and equity of the application assessment process is supported by the survey results, through which 85% of vice-presidents of research and 80% of experts rated the CFI's funding approval process as good or very good with respect to transparency, and 75% and 72% respectively rated the equity of the process as good or very good.

The CFI requires that project applications be submitted using electronic forms, allowing for consistency in the format of applications. Assessing applications that are uniform in appearance allows committee members to focus on the content of the applications, and eases their review of required application information. In addition, the CFI requires all applications for funding to be supported by an Institutional Strategic Research Plan (SRP) that outlines how the institution intends to incorporate the infrastructure being applied for into their research activities going forward and describes the alignment of the application with the institution's research priorities. Based on our review of a sample of project files from the RHF, LEF/NIF, and National Platforms Fund, documentation supporting the assessment of each application against the evaluation criteria at each committee stage was on file and was consistent with documented guidelines and criteria.

A threshold is established by the CFI and applications above this threshold are considered to be material for which Project Leaders are asked to meet face to face with Expert Reviewers to obtain further clarification on aspects of the application. Over the past five years, this has represented approximately 20% of the total number of approved projects. The current \$7 million threshold was increased from \$4 million in 2002 to reflect the increased materiality of applications being submitted.

The CFI invites federal granting agencies to attend reviews for funding applications of more than \$10 million. Funding decision reports are shared with institutions as well as with the other funding agencies and include recommendations and comments from the various committees, along with the project's rating by criteria.

The CFI imposes funding caps on institutions to limit the amount of CFI support that an institution can request. However, funding caps are not applicable if institutions collaborate on a regional project. This encourages inter-institutional collaboration and also helps to reduce duplicate infrastructure in regions.

Allocation-Based Funds:

Under the Leadership Opportunity Fund (LOF), applications are reviewed by a minimum of one member of the College of Reviewers and a minimum of one expert reviewer. A recommendation on proposed research that is highly complex and spans diverse disciplines may be sought by the LOF Advisory Committee, which is composed of expert members from a wide range of research fields and sectors.

The Canada Research Chairs (CRC) Infrastructure Fund supports infrastructure in conjunction with the Canada Research Chairs Program. CRC nominations are approved by a Steering Committee which includes the presidents of the Natural Sciences and Engineering Research Council, the Social Sciences and Humanities Research Council, and the Canadian Institutes of Health Research, as well as the president of the CFI, and the Deputy Minister of Industry Canada. Related infrastructure requests are submitted to the CFI for review and approved by the CFI Board of Directors.

Observation #1: *In previous LEF/NIF competitions, the rationale for S-MAC decisions was not documented and communicated for each application.*

Based on our review of a sample of project files for the LEF/NIF competition, application funding decision reports that were sent to institutions did not include the rationale supporting the S-MAC decision. However, the reports did provide ratings by criteria and an indication regarding whether the application was recommended by the MAC and S-MAC, along with comments supporting the MAC decision. This creates the risk that institutions with applications that were approved by the MAC but not approved by the S-MAC may not understand the rationale for the funding decision and may challenge the integrity and transparency of the process. In the most recent 2009 LEF/ NIF competition, the CFI funding decision report has been changed to include the rationale for the S-MAC committee decisions. This practice will help to ensure that the CFI has a well-documented and supported rationale to provide to institutions regarding the funding decision.

Recommendation #1: Management should continue to document the rationale for S-MAC recommendations in funding decision reports for all future competitions.

Management Response: *Management agrees with the recommendation. Rationale for S-MAC recommendations in funding decision reports was documented in the results of the most recent LEF/NIF competition and will continue to be documented for all future competitions.*

Observation #2: *Some inconsistencies were identified between the information required and the information actually submitted by institutions, and the information reviewed by the CFI.*

Our file reviews identified some instances in which the information required by the CFI Policy and Program Guide and the information submitted by the institutions was inconsistent. In particular, the CFI Policy and Program Guide specifically requires institutions to submit detailed information for construction/renovation projects that is not reviewed in all cases. We also noted that the Policy and Program Guide requires institutions to submit an updated Strategic Research Plan on an annual basis; however, this is not a requirement that is enforced in practice, as the priorities contained in the Strategic Research Plans encompass several years and do not often change significantly from year to year. It is our understanding that the CFI is considering revising the guidelines within the Policy and Program Guide to request only critical information required to meet the needs of the CFI.

Recommendation #2: Management should move forward with their plans to review and revise the CFI Policy and Program Guide and other communication tools to help ensure that they are requesting consistent information from the institutions and are limiting this information to that which is necessary to support the application.

Management Response: Management agrees with the recommendation. The CFI Policy and Program Guide and other related documentation is reviewed and updated periodically. The CFI will ensure that only required information is requested from institutions.

b) Mechanisms are in place and are followed to help ensure that in-kind contributions are appropriately valued. (Criterion 1.2)

The CFI has well-documented procedures and guidelines for the valuation and documentation of in-kind contributions readily available on their website. The CFI requires institutions to certify that in-kind contributions are valued in accordance with the guidelines in the CFI Policy and Program Guide as part of the Award Conditions document. In addition, the CFI has published a report available on their website entitled “Sharing of Good Practices – Administration of CFI Awards” that highlights practices that could improve an organization’s management of in-kind contributions.

The CFI undertakes an in-kind contribution exposure analysis through the Contribution Audit Selection Tool (CAST) at the award finalization stage to determine if an independent appraisal of the in-kind contributions may be required during the life of the project, based on risk. In addition, the CFI uses a number of reporting and monitoring mechanisms to monitor the use and valuation of in-kind contributions throughout the project life cycle. Financial reports submitted by institutions are reviewed by a team of CFI individuals against pre-defined criteria. They will notify the appropriate Senior Programs Officer if the in-kind contribution information submitted requires follow up.

In addition, the CFI also uses monitoring visits and contribution audits to help identify and resolve issues with in-kind contributions. Based on our review of a sample of project and monitoring visit files, we observed diligent monitoring of the valuation and use of in-kind contributions in accordance with the CFI’s established policies and procedures.

c) Mechanisms are in place and are followed to help ensure that other partner funding is secured by institutions. (Criterion 1.2)

The CFI funds up to 40% of total project costs. The remaining 60% or more of funding is to be secured prior to the completion of the award finalization process. This is a key control in ensuring that no funding is provided by the CFI in advance of other partner funding being secured. Typically, the majority of partner funding is provided by the provinces, commonly representing 40% from CFI, 40% from the provinces, and 20% from other sources. Given that in the majority of cases, the provinces are critical to project funding, the CFI engages the provinces during the application assessment process. The provincial funding decisions may not necessarily align with those of the CFI and project funding decisions are not dependent on provincial support, as “excellence” is the key driver in the CFI’s application approval process. As part of the award finalization process, attestation is required from the University President or Delegate on the Award Conditions document that partner funding has been secured.

Our examination of a sample of project files noted that there were approved projects where other partner funding was obtained completely from resources outside of the province. Our review of a sample of project files further confirmed that applications for funding are supported by plans for obtaining other partner funding. In no instances was CFI funding provided in advance of other partner funding being secured by the institution.

Observation #3: The time frame between award approval and award finalization has at times exceeded the CFI's targeted timeframe.

The CFI recognizes that the time frame to finalize projects has at times exceeded the CFI's nine month target set for award finalization. Based on our discussions with management and our review of a sample of project files, one of the reasons for this delay has been the time lag for securing matching funds after CFI's award approval. It is acknowledged that other partner funding cannot reasonably be secured prior to the institution's notification of award approval from CFI, as this is a key factor in the institution's ability to leverage other funding. In addition, it is acknowledged that no CFI funding will flow to the institution prior to all the conditions of the award finalization process being met. However, delays in flowing funds to the institution ultimately delay the time frame for the benefits of CFI funding to be achieved, and significant delays may impact the reasonableness of original budgets and plans if significant changes in the internal or external environments should occur. CFI management has recognized the need to reduce the time frame between the award approval and award finalization process and has introduced a quarterly status report to help CFI management monitor the status of projects between the award approval and finalization stages. The CFI has also added resources to increase their capacity to monitor projects in the award finalization phase.

Recommendation #3: Management should continue its efforts to monitor and reduce the time frame required to finalize projects.

Management Response: Management agrees with the recommendation. The time frame required to finalize projects will continue to be monitored.

d) Mechanisms exist and are followed to help ensure that CFI funding is used for the acquisition of capital infrastructure and in compliance with award agreements. (Criterion 1.3)

The CFI Policy and Program Guide (the Guide) outlines the requirements for receiving funding from the CFI, including the eligibility of institutions, project costs, and in-kind contributions. The Guide is available for institutions to access on the CFI's website. Updates to the Guide are made periodically based on feedback from the institutions regarding the clarity and utility of the procedures and based on results of internal reviews and process improvement initiatives conducted by the CFI. Any changes to the Guide are communicated through regular VP Research Updates that are provided to the vice-presidents of research and to CFI liaisons and account administrators in the institutions. The CFI requires a number of regular reports to be submitted by the institutions to enable the CFI to track and monitor the institution's compliance with award agreements. Key reporting mechanisms include the following:

- **Financial Reports** - The CFI requires institutions to submit Interim and Final Financial Reports for each project as specified in the award agreement. The reports are submitted at specific intervals as defined at the finalization of award stage and in the award agreements. Each financial report submitted is reviewed by the CFI in order to identify any issues that may require follow-up.
- **Annual Project Progress Reports** – The CFI requires annual Project Progress Reports to be submitted by the institutions for each funded project for five years following the award finalization. These reports are used by the CFI to monitor the impact of the research infrastructure along with the overall operational project status and the ability of the institution to attract operational and maintenance funding.
- **Annual Institutional Progress Reports** - Each institution that is required to submit one or more annual Project Report(s) must also submit an annual Institutional Report Form. Annual Institutional Progress Reports describe the institution's progress relative to the objectives in its Strategic Research Plan, identify challenges that the institution has faced in the implementation, operations or maintenance of projects, and identify key communication activities.

The CFI will withhold payments to new and existing projects if the above reports are not submitted as a means of encouraging institutions to submit the information and allow CFI to monitor progress.

Based on our review of a sample of project files, we confirmed that required reporting was received from the institutions and was reviewed by the CFI in a timely manner. We further confirmed that any issues or concerns identified through the CFI's review of required project reporting were followed up by CFI staff and documented in the file. In addition to the reports highlighted above, the CFI also employs other monitoring activities that are highlighted in the risk-based approach to monitoring section below.

e) A risk-based approach to monitoring and follow-up on the progress of funded projects exists and is followed. (Criterion 1.4)

The CFI incorporates a number of risk-based activities to monitor projects. A preliminary risk assessment is performed upon award finalization and is used to determine the nature and extent of financial and operational monitoring activities required for each project. Project risk assessments are updated throughout the life cycle of the project to reflect any changes in risks. Key monitoring activities that are performed include financial reporting, meetings with the institution, contribution audits, specified audit procedures engagements, cost assessments by professionals, and monitoring visits. The frequency and type of monitoring activity required for each project will vary depending upon the project's risk assessment. A summary of the CFI's key monitoring practices is provided below:

- ***Financial Reports*** – The CFI requires institutions to submit Interim and Final Financial Reports for each project as specified in the award agreement. The reports are submitted at specific intervals as defined at the finalization of award stage and in the award agreements, based on the results of the project risk assessment. Each financial report submitted is reviewed by the CFI in order to identify any issues that may require follow-up.
- ***Contribution Audit and Other Cost Reviews*** – The Contribution Audit Selection Tool (CAST) is a risk assessment tool used to determine the nature and extent of any audit or review activities required for the project based on the level of risk assessed. Monitoring procedures required for higher risk projects include contribution audits, specified audit procedures engagements, and cost assessments by professionals. The assessment process requires a CAST to be completed for each project over \$500,000 every two years and on an as needed basis for projects under \$500,000. Contribution audits are required for all projects for which the CFI has contributed in excess of \$10 million and are also required for projects lower than \$10 million based on project risk as assessed through the CAST. To help ensure consistency and quality in the contribution audit process, the CFI has a documented Contribution Audit Guide that provides guidance on the scope, procedures, and reporting format required for contribution audits performed by external audit firms. The conduct of contribution audits, specified audit procedures engagements, and cost assessments are an important means by which the CFI helps to ensure that expenditures and partner contributions reported to the CFI are accurate and appropriate.
- ***Monitoring Visits*** - Monitoring visits are conducted at recipient institutions to assess the adequacy and effectiveness of policies, processes, and controls that are in place for the management of CFI-funded projects. This helps ensure that funds are being used for their intended purposes, and in accordance with the terms and conditions of award agreements as well as CFI policies and guidelines. Monitoring visits are conducted in accordance with well-documented procedures and guidance to help ensure consistency in the approach followed for each institution. Repeat monitoring visits are conducted on a three-year cycle with follow-up procedures conducted as necessary depending upon the findings of the monitoring visits.
- ***Operational Monitoring of Large Projects*** – For large projects, including projects under the RHF, key project milestones are identified upon award finalization. These milestones are used to set operational monitoring schedules that include the conduct of meetings with the institution by Senior Programs Officers at key milestones. These meetings help the CFI identify issues on a proactive basis as well as increase the CFI's understanding and awareness of project progress.

Based on our review of a sample of project files and a sample of monitoring visit files (both of which included contribution and other audit procedures), we confirm that the procedures and results of monitoring visits and audit activities are well-documented and consistently performed. In addition, issues

and areas of concern are followed up with the institution through the development and monitoring of action plans.

Based on our examination of a sample of the monitoring information reported, it appears that the frequency and extent of monitoring visits is reasonable. Results of our interviews have indicated that management regularly re-visits the frequency with which monitoring visits are conducted to determine if any modification in the monitoring strategy and approach are required. We encourage management to continue to conduct these types of reviews to help enable the proactive identification of areas for improvement to existing strategies based on actual monitoring experience.

Observation #4: Challenges have been encountered in the past with respect to the sustainability of operating funds for large infrastructure projects.

The CFI has provided funding for large infrastructure projects that have experienced issues in their governance and management structures. The CFI worked with other granting agencies to identify lessons learned from these projects and identify areas for improvement. The results of this review are being consolidated into a governance handbook that identifies expectations and best practices for the governance and management of these types of projects. In addition, the CFI has recently introduced a requirement for the review of the management structure of large infrastructure projects against specific criteria as a condition for the provision of funding.

Recommendation #4: Management should continue to work with the interagency working group to finalize and implement the governance handbook and other guidance to help manage risks related to the management and implementation of large infrastructure projects. Consideration should also be given to requiring formal reviews of large infrastructure projects at specified points in time based on project risk levels.

Management Response: Management agrees with the recommendation. Various tools are currently being developed to address this issue.

2) Stakeholder Strategies

The achievement of the CFI's four national objectives is, in part, dependent upon understanding the needs of the research community and key stakeholder groups, and the alignment of CFI funding and programming with these needs. We examined the practices and mechanisms employed by the CFI to determine if their stakeholder strategies effectively support the achievement of the CFI's objectives.

a) The CFI actively engages key stakeholders to inform the design and implementation of new funding programs and CFI initiatives, and monitors the benefits of its stakeholder activities. (Criteria 2.1 and 2.3)

Based on our discussions with management and our review of supporting documentation, a number of mechanisms were identified through which the CFI consults with key stakeholders. One key mechanism employed is the national consultation process held prior to each major competition. Through this process, senior management consults with research community stakeholders, including institutions, provincial and federal representatives, and private sector organizations to identify research funding needs across the country. The CFI uses this information as an input into the design of future funding programs, while continuing to align priorities with those of the federal government's national Science and Technology Strategy. The results of the consultations are summarized for discussion and consideration by the CFI management team and the Board of Directors.

The CFI's strength in engaging its major stakeholders in strategic planning was also recognized through the CFI's receipt of the 2006 Conference Board of Canada Spencer Stuart National Governance Award.

b) Partnership and stakeholder collaboration opportunities are consistently identified, managed, monitored, and acted upon across the organization. (Criteria 2.2 and 2.3)

A core element of the CFI's funding model is the requirement for at least 60% of the total cost of CFI funded projects to be provided from other sources, such as the provinces. This funding model helps to ensure the continuous involvement of other partners in supporting CFI funded projects. The CFI obtains and encourages partner and stakeholder input on areas of funding needs and priorities through a number of activities, including the following:

- **Outcome Measurement Studies (OMS)** - Outcome Measurement Studies are conducted in partnership with participating institutions to identify and report on the impacts and results of CFI funding. Observers from other key funding agencies and the provincial governments are invited to attend OMS site visits with the CFI to observe first hand the benefits of CFI funding.
- **Interagency Working Groups** - The CFI, along with Natural Sciences and Engineering Research Council, Social Sciences and Humanities Research Council, and the Canadian Institutes of Health Research, have been conducting regular working group meetings for a number of different levels, including the CEO and VP levels, over a number of years. These meetings are a means of enhancing their collaboration to increase the impact of their collective resources in response to federal budget priorities and help to reduce potential duplication of funding. It is our understanding that a sub interagency working group is also currently in the process of developing a common set of performance measures and indicators with the aim of reducing the reporting burden on institutions and obtaining a more comprehensive understanding of the benefits of funding.
- **Institutional Progress Reports** - Through these reports, institutions identify communications activities which are used by the CFI to select specific activities with which they can collaborate to demonstrate the benefits to Canada. The CFI also collaborates with institutions on strategic communication activities, whether or not they have been reported in the Institutional Progress Reports.

In addition to the above, each unit within the CFI has regular group meetings involving representatives from other business units to discuss their activities. This allows each unit to be informed of potential partnership and collaboration opportunities and be consistent in how they are addressed across the organization.

3) Communication Strategies

The CFI obtains conditional grants from Industry Canada in accordance with a multi-year Funding Agreement. The CFI's ability to secure additional funding through the federal government's annual budget process is influenced, in part, by the extent to which the CFI's objectives align with the priorities of the government and its ability to demonstrate the impact and benefits of its funding. We examined the practices and mechanisms employed by the CFI to obtain ongoing support for its initiatives among key stakeholders.

a) Communication plans and strategies have been developed and implemented to help secure sustained public and federal support for the CFI. These plans and strategies include measuring, monitoring and reporting on the achievement of expected outcomes and benefits of CFI funding. (Criteria 3.1, 3.2 and 3.3)

The CFI's External Relations and Communications group (ERC) has primary responsibility for the communication of the CFI's objectives and results, including the benefits of CFI funding. The ERC group develops an annual Work Plan that defines planned communication activities and events to guide the CFI's communication efforts. The ERC group meets regularly to discuss communication opportunities, plans and strategies and uses information gathered through a number of mechanisms to inform communication activities, including the following:

- **Evaluation and Outcomes Assessment (EOA) team** – The EOA team is a key component of the ERC group, having responsibility for gathering and analyzing performance information from institutions regarding the outcomes and impacts of CFI funding and conducting special studies and evaluations.
- **Annual Institutional Progress Reports** – These reports provide information on planned communication activities to be conducted by the institutions and are reviewed by the ERC team to identify areas where the CFI may wish to leverage planned institutional activities to further their message on the benefits of the CFI within the community.
- **Annual Project Progress Reports** - The CFI collects annual project reports from the institutions following the finalization of an award for each funded project. This information is used in the CFI's Annual Report on Results. Highlights of the Annual Report include identifying the specific contributions that CFI funding has brought through benefits to Canada (e.g. new jobs, new companies, new intellectual property), strengthening Canada's capacity for innovation, increasing levels of attraction, retention and training of new researchers from national and international organizations, and increasing the use of new infrastructure by visiting researchers and the promotion of networks, collaborations and multidisciplinary projects.
- **Outcome Measurement Studies (OMS)** – These studies capture both quantitative and qualitative data across an institution at a theme level rather than a specific project level, allowing for the assessment of overall performance results across the institution. The OMS is intended to assess the degree to which the CFI's investment in research infrastructure is a critical contributing factor in the realization of five outcomes (strategic research planning, research capacity, highly qualified personnel, research productivity, and innovation) and are a key means of demonstrating the CFI's achievement of its national objectives.

Information gathered through the above mechanisms, among others, is used to inform institutions, the research community, Parliamentarians, and the public at large on the contributions and benefits of CFI funding. The CFI proactively communicates with Parliamentarians through regular briefings. Reports are sent to the institutional vice-presidents of research through regularly scheduled updates that provide information on major activities underway within the CFI, including updates on the status of funding competitions. Performance information is also used to identify success stories and key statistics that are included in the CFI's InnovationNation brochures and in the Innovation Canada on-line magazine. A 2007 external review of the CFI's communication practices further identified that the CFI's ERC team is held in high regard by its stakeholders and was cited as being "best in class" by a number of interviewees in the review.

As mentioned above, the CFI's investment in creating a dedicated EOA team is a key success factor in its ability to measure, analyze and communicate performance results. The work of both the EOA team and the CFI as a whole is guided by the CFI's PERAF, which includes a formal plan for the ongoing collection and reporting of information on CFI's performance, including the identification of performance measures and indicators, data sources and data collection responsibilities, and expected users of the information.

It was noted that information from Project Progress Reports and Institutional Progress Reports is self reported by the institutions, and the quality of this information depends on the institutions' understanding of the information required and the integrity of their underlying data. It is noted that underlying performance information is validated by the CFI through their Outcome Measurement Studies and the CFI has not observed any significant differences in the information provided by the institutions with the results of the OMS visits. The CFI also takes care to inform readers of the limitations of any underlying data used in its communications. We encourage management to continue to monitor the consolidated and global results of performance information submitted by institutions to help identify inconsistencies in performance information being reported.

4) Human Resource Management Practices

The CFI has experienced a significant amount of turnover in the past four years, averaging between 10% and 20% of regular full time employees per year. Many of the positions experiencing high turnover are

ones that are considered key to the day to day delivery and monitoring of CFI funding, including Senior Programs Officers and Financial Monitoring Officers. We examined management practices in place to help ensure that the CFI has appropriate retention and succession planning practices in place to help meet the CFI's current and future operating needs.

a) Retention and succession planning are key elements of the CFI's planning process to help ensure human resource plans are in place and have been implemented to provide for the continuity of critical positions throughout the organization. (Criterion 4.1)

The CFI is implementing a Succession Planning and Development Initiative to help ensure that there are sufficient and qualified resources to meet the CFI's needs over time. It is our understanding that the Succession and Development Plan will be updated at least annually, and more frequently as considered necessary.

Management periodically re-assesses the skills and qualifications required for positions as necessary based on changing labour market conditions, organizational priorities, and other factors. This enabled the CFI to access a broader range of qualified candidates to help reduce the attraction and retention challenges being experienced at the Financial Monitoring Officer level.

Management also recognizes the value of providing training and career development opportunities to personnel at all levels as a means of retaining and building the skills sets of its employees. Development and training opportunities are identified in conjunction with career development discussions that are held on a formal basis through the annual employee performance evaluation process. Training activities are monitored throughout the year to help ensure that required training is being secured and completed in accordance with individual employee objectives and career plans. The CFI also supports job rotations as a means of expanding employee skill sets, corporate knowledge, and employee satisfaction.

The CFI is considered an employer of choice, having received a number of awards over the past five years in recognition of their strong human resource practices. Most recently, the CFI was named one of the Top 50 Best Small and Medium Employers in Canada in January 2009 by the Queen's School of Business.