

Science and Technology

Follow-up to VFM Section 3.07, *2003 Annual Report*

Background

The goals of the Ministry of Economic Development and Trade (formerly named the Ministry of Enterprise, Opportunity and Innovation) are to promote innovation, economic growth, and job creation. To help achieve these goals, the Ministry funded several major science and technology programs and spent \$1.3 billion between April 1, 1998 and March 31, 2003, with total announced program commitments of \$4.3 billion.

During our audit, we did not receive adequate access to all the information we requested from the Ministry—information that the Ministry must provide to us under section 10 of the *Auditor General Act* (at the time of the audit, the *Audit Act*). Such limitations on our access to information prevented us from being able to conclude on our audit objectives and complete this audit in a timely manner. The Ministry was of the opinion that it provided the information in accordance with government protocols. However, we continually expressed the view that we were not provided with all the information needed to satisfactorily complete our audit work. Notwithstanding the limitation on our access to information, we still noted a number of significant concerns, as follows:

- The Ministry had paid the Ontario Innovation Trust \$750 million to support the capital cost of

research in Ontario, but the Ministry was receiving virtually no information from the Trust and did not have the required monitoring processes in place to hold the Trust accountable for its expenditure of public funds.

- The Innovation Institute of Ontario (IIO)—a non-profit corporation that administers the Ontario Research and Development Challenge Fund—often destroyed research-proposal assessments without the required written consent from the Ministry.
- We found that the marks on the Ministry’s summary of the Premier’s Research Excellence Awards competition did not agree with the reviewers’ original score-sheet marks. Such findings limit the Ministry’s ability to demonstrate the fairness of the selection process.
- A review of the minutes from advisory board meetings where research proposals were recommended for funding revealed occasions on which a conflict of interest should have been declared, but there was no indication in the minutes that a conflict had been declared.
- Although the Ministry had spent hundreds of millions of dollars on science and technology research, it had made little effort to ensure that intellectual property rights arising from funded research ultimately benefited the province.
- In July 2000, the Ministry single-sourced the administration of the Ontario Research and Development Challenge Fund to the IIO.

According to ministry documents, the Ministry did not issue a request for proposals (RFP) because once an RFP is out, anyone who is eligible must be treated fairly in the process, and problems could arise if a bidder was not dealt with fairly. This contradicts the basic principles of government fairness with respect to procurement of goods and services.

We made a number of recommendations for improvement and received commitments from the Ministry that it would take action to address our concerns.

Current Status of Recommendations

According to information received from the Ministry of Economic Development and Trade, progress has been made on all of the recommendations we made in our *2003 Annual Report*, with substantial progress having been made on several. The current status of action taken on each of our recommendations is as follows.

COMPLIANCE WITH GOVERNMENT AND MINISTRY POLICIES

Governance and Accountability—Ontario Innovation Trust

Recommendation

To ensure the effective oversight of the Ontario Innovation Trust's spending of potentially more than \$1 billion in public funds, the Ministry should:

- *negotiate an agreement with the Trust to establish proper governance and accountability arrangements;*
- *implement procedures for routinely obtaining and reviewing information on the status of recipient eligibility and ongoing results;*

- *implement procedures for identifying areas of non-compliance and initiating corrective action where required; and*
- *ensure that all government Board appointments are up to date.*

Current Status

In 2004, the province reversed a 2002 commitment to contribute an additional \$300 million to the Ontario Innovation Trust, resulting in total trust funding being limited to \$750 million. Consequently, the Trust decided to proceed with committed eligible project disbursements but would only approve new projects to the extent they could be funded from existing resources. As of July 2004, the Ministry assumed responsibility for directly funding any new research infrastructure programs, previously funded by the Trust.

The Ministry of Economic Development and Trade reached an agreement with the Ontario Innovation Trust effective April 1, 2004 that clarified the roles, responsibilities, and relationship between the Ministry and the Trust. The agreement also set out accountability principles and operating procedures, including provisions for financial reporting to the Ministry. Consequently, at the time of our follow-up the Ministry was receiving and reviewing detailed operating and financial information from the Trust.

The agreement with the Ontario Innovation Trust also commits the Trust to ensuring that recipients are bound to achieve specific measurable results. At the time of our follow-up, recipients were required to report periodically on both the financial status of the project and the results achieved. The Ministry has also devised a process with the Trust to identify and address non-compliance matters, including provisions for the audit and recovery of funds in the event of non-compliance.

The Trust's Board consists of seven directors, three of whom are to be appointed by the province. At the time of our follow-up, the Ministry reported to us that the only government appointment to the Trust's Board was the Assistant Deputy Minister of

its Research and Commercialization Division. This appointment expired in April 2005, and the Ministry was working on a new appointment at the time of our follow-up. The Ministry reported that it had raised the matter of the other two vacancies with the Public Appointments Secretariat. On July 21, 2005, three government representatives were appointed to the Trust's Board.

Governance and Accountability—Ontario Research and Development Challenge Fund

Recommendation

To ensure that the required accountability mechanisms are in place for the management of the Ontario Research and Development Challenge Fund (Challenge Fund), the Ministry should:

- *update the Memorandum of Understanding between the Challenge Fund and the ministries to outline the responsibilities of the Challenge Fund Board and special advisory committees and to reflect current program objectives and suitable performance measures; and*
- *ensure that primary and direct oversight responsibility for the Challenge Fund rests with a lead ministry.*

Current Status

A new Memorandum of Understanding (MOU) for the Ontario Research and Development Challenge Fund (Challenge Fund) took effect on April 1, 2004. The MOU recognizes the Ministry of Economic Development and Trade as the lead ministry for the program. The MOU also spells out the Fund's mandate and objectives and outlines the responsibilities of the Challenge Fund's Board and its advisory committees. In addition, the MOU requires that the Ministry establish performance measures in respect of the Fund, assess performance in relation to these measures, and monitor and report on the performance of the Fund in relation to these measures.

At the time of our follow-up, the Challenge Fund was in the process of winding down and was to be replaced by the Ontario Research Fund. The remaining Challenge Fund projects were to run to completion, with the last project scheduled to finish in December 2009. The new Ontario Research Fund consolidates operating, capital, and overhead funding into one comprehensive program that is to be managed by the Ministry. An MOU between the Ministry and the Ontario Research Fund's Advisory Board is to be closely modelled after the Challenge Fund's MOU.

Project Selection—Ontario Research and Development Challenge Fund

Recommendation

To ensure that the Ontario Research and Development Challenge Fund selection process is timely, fair, and transparent and that adequate procedures are in place to assess project eligibility, the Ministry should:

- *require the Innovation Institute of Ontario to retain all relevant documentation;*
- *implement procedures for periodically verifying eligibility and ensuring that any exceptions to program eligibility criteria are well supported;*
- *ensure that all applicable ministers are apprised of the Board's recommendations or, if appropriate, obtain a delegation of authority for the Minister of Enterprise, Opportunity and Innovation to approve projects for funding on behalf of all ministers who are party to the agreement; and*
- *ensure that applications for research funding are reviewed within the specified time frame and that recommendations are made to the required ministers on a timely basis.*

Current Status

The Ministry has instructed the Innovation Institute of Ontario (IIO) to retain all relevant documents as required by the service contract with the Ministry and as consistent with the government's retention schedule. The Ministry signed an

amending agreement to its contract with the IIO to provide for the verification of ongoing project eligibility and other IIO responsibilities. The Ministry now receives monthly reports from the IIO to verify eligibility and to monitor program progress on an ongoing basis.

A new Memorandum of Understanding assigned responsibility to the Ministry of Economic Development and Trade for approving projects for funding on behalf of and in consultation with the ministries of Agriculture and Food; Training, Colleges and Universities; and Finance. However, as of October 2003, no more research project competitions would be held for the Challenge Fund, as the program is being replaced by the Ontario Research Fund.

Project Selection—Ontario Research Performance Fund

Recommendation

To help ensure that recipients of Ontario Research Performance Fund grants meet eligibility criteria and are paid the proper amounts, the Ministry should:

- *ensure that all new recipients meet program eligibility requirements;*
- *ensure that signed confirmation letters are on file verifying the amount of grants provided by other ministries to eligible recipients;*
- *implement procedures for verifying that grant amounts are calculated accurately; and*
- *establish a deadline for submissions and for finalizing annual payments under the program.*

Current Status

The Ministry stated that, in July 2004, the Ontario Research Performance Fund became a component of the new Ontario Research Fund. With that change, a procedure was put in place to ensure that lead ministries funding research are accountable for ensuring recipient eligibility, retention of confirmation letters, and verification of grant amount calculations. Submission deadlines and payment

procedures are included in the new administrative procedures manual.

Project Selection—Premier’s Research Excellence Awards

Recommendation

To provide assurance that a fair and transparent selection process is followed and that due diligence is demonstrated when assessing proposals for the Premier’s Research Excellence Awards, the Ministry should ensure that:

- *all selection documents—including proposals, individual score sheets, summary score sheets, and written recommendations—are kept on file for a specified retention period;*
- *all individual and summary score sheets are reviewed for accuracy; and*
- *the selection process and evaluation criteria are explicitly stated to potential applicants and applied consistently.*

Current Status

The Ministry stated that all documentation is now retained, including all individual and summary score sheets. The Premier’s Research Excellence Awards Advisory Board met in January 2004 and agreed to ensure greater consistency in the reviewers’ scoring by adopting several measures, including a two-tiered due-diligence process whereby ministry staff review and consolidate Advisory Board results for presentation to the awards’ Board. In addition, the Ministry included program guidelines and eligibility criteria on its website to clarify, for potential applicants, the selection process and evaluation criteria.

Project Selection—Premier’s Platinum Medal for Research Excellence

Recommendation

To ensure that a fair and transparent selection process is in place for selecting recipients of the Premier’s

Platinum Medal for Research Excellence, the Ministry should:

- *update the Memorandum of Understanding with the Advisory Board to reflect the Board's responsibility for the program; and*
- *retain all documentation necessary to adequately support the eligibility and selection of each recipient of the Premier's Platinum Medal for Research Excellence.*

Current Status

In spring 2004, the Memorandum of Understanding with the Advisory Board for selecting Platinum Medal winners was finalized, along with a procedures manual for administering the program. However, in fall 2004, a realignment of the Ministry's science and technology programs was approved, and no funding was included for further Premier's Platinum Medal for Research Excellence awards.

Program Monitoring

Monitoring the Ontario Research and Development Challenge Fund Grants

Recommendation

To ensure that Ontario Research and Development Challenge Fund (Challenge Fund) grants are used for the purposes intended and that project performance is reported on and monitored, the Ministry should:

- *review for continued eligibility all projects that have not received payments from the Challenge Fund in the previous six months, and implement an ongoing process for identifying and following up on such projects;*
- *establish an overall policy regarding when audited reports are required, implement clear guidelines on the form and content of these reports, and ensure that quarterly, annual, audited, and final project reports are received when due; and*
- *on a timely basis review and analyze all reports received to ensure that projects remain eligible, to determine whether milestones have been met, and*

to assess whether performance has been satisfactory.

Current Status

Although the Challenge Fund is in the process of winding down, as at March 31, 2005, 71 projects were still in progress with contracts totalling more than \$360 million. To monitor project progress on an ongoing basis, at the time of our follow-up the Ministry was receiving monthly reports from the Innovation Institute of Ontario identifying Challenge Fund projects that had not requested funding in the previous six months, along with other projects not meeting compliance requirements. Actions planned and taken to attain compliance with reporting requirements are also included in the report on a project-by-project basis. The Ministry also established policies, procedures, and formats for Challenge Fund project reporting as part of its new program administration process.

Monitoring the Ontario Centres of Excellence

Recommendation

To help ensure that an adequate monitoring process is in place to demonstrate that the Ontario Centres of Excellence use public resources prudently and in compliance with defined performance expectations, the Ministry should:

- *implement a process for tracking the receipt of all required monitoring reports and follow up on any outstanding reports in a timely manner; and*
- *adequately review all reports received and reconcile the annual reports' information with that contained in the audited financial statements to ensure that reported information is accurate and complete.*

Current Status

A new governance structure for the Centres of Excellence was put in place effective April 1, 2004. As a result, the Centres of Excellence are to report to the Ministry through a non-profit corporation, Ontario Centres of Excellence Inc., under contract

to manage the Centres for the Ministry. The contract sets out performance measures and requirements for accountability and governance. Staff have been assigned responsibility to monitor the receipt of reports, review and analyze these reports, and follow up on any outstanding issues.

Monitoring the Premier's Research Excellence Awards

Recommendation

To help ensure that the Premier's Research Excellence Awards program meets its objectives of attracting, developing, and keeping talented graduate students and researchers in Ontario and that funds are spent appropriately, the Ministry should:

- ensure that all required financial and performance reports are received on a timely basis;
- verify that funds are being spent for the purposes intended, that the information submitted is accurate, and that project targets and milestones are being met; and
- analyze and consolidate the performance information reported by recipient institutions to assess the program's accomplishments and report this information annually to the program's board and to the Minister as required.

Current Status

At the time of our follow-up, the Ministry was replacing the Premier's Research Excellence Awards (PREA) program with a successor program called the Research Talent Development Program. The Ministry stated that it has put in place revised procedures to ensure that funds are used for the intended purpose, and that appropriate performance and financial information was received and reviewed for consolidation and reporting to the PREA board and the Ministry. The Ministry also stated that these procedures would be carried over to the successor program.

Monitoring Potential Conflicts of Interest

Recommendation

To ensure compliance with the government's post-service and conflict-of-interest requirements and to ensure that its science and technology activities are conducted in an open, fair, and transparent manner, the Ministry should:

- develop consistent conflict-of-interest policies that apply to all science and technology grant programs;
- develop standardized procedures for adequately monitoring potential conflicts of interest; and
- inform the responsible Minister of all conflicts of interest as required.

Current Status

The Ministry informed us that, after consultation with representatives from its science and technology programs, it has implemented conflict-of-interest policies and procedures for its transfer-payment programs. The guidelines are included in its agreements with the boards of the Ontario Innovation Trust, the Ontario Research and Development Challenge Fund, and the Premier's Research Excellence Awards. The Ministry also stated that accompanying procedures require conflict-of-interest matters to be promptly brought to the attention of the Minister. The Ministry stated that a conflict-of-interest policy would be applied consistently to all new ministry funding programs.

Project Benefits

Intellectual Property Rights

Recommendation

To help meet its overall objectives of supporting job creation and economic growth that benefits the people of Ontario, the Ministry should:

- ensure compliance with program policies on intellectual property rights;
- review existing policies and develop consistency among programs regarding the ownership of intellectual property; and

- *formally assess the various programs' success in meeting their objectives.*

Current Status

In December 2004, the Minister established the Commercialization Advisory Council, among whose key tasks is reviewing intellectual property barriers to commercialization. The Ministry stated that it expects the Council's work to result in a consistent policy for science and technology programs and that it would establish criteria for assessing the programs' success in meeting their objectives. Preliminary findings of the Committee were expected by mid-2005.

Industry Support

Recommendation

To better ensure that the required private-sector contributions are actually made, the Ministry should:

- *verify that the required commitment confirmation letters are received before funding research projects;*
- *consistently apply the criteria for proportionate program funding and document justification for any exceptions; and*
- *develop policies for the independent valuation of in-kind contributions.*

Current Status

The Ministry informed us that the Challenge Fund has not accepted any new project proposals since October 2003 and that the fund was being replaced by the new Ontario Research Fund, a program that will be administered by the Ministry. The Ministry stated that the Innovation Institute of Ontario, which administers the Fund, has verified receipt of commitment confirmation letters from any new private-sector partners joining an existing project and has maintained the information on a project management database to verify ongoing eligibility.

At the time of our follow-up, the Ministry was working with representatives of both government and the academic community to determine appro-

appropriate levels of private-sector contributions for new programs. The Ministry also informed us that a consistent policy for the valuation of in-kind contributions was being developed and was expected to be completed by mid-2005 and to be put in place for all of its research and technology programs.

PROGRAM FINANCIAL AND ADMINISTRATIVE CONTROLS

Program Administration

Recommendation

To improve the Division's financial and administrative controls, help achieve due regard for economy, and improve staff efficiency, the Ministry should:

- *assess the continued merit of any approved research projects that are inactive and, where necessary, terminate funding commitments to inactive projects;*
- *review prepaid funding, so that payments are made to cover only current needs;*
- *clarify the roles and responsibilities of advisory board members and others involved in administering science and technology programs; and*
- *develop an information system to provide the Ministry's staff with the information needed for effectively overseeing its transfer-payment programs.*

Current Status

The Ministry now receives and reviews monthly reports from the Innovation Institute of Ontario, the administrator of the Challenge Fund. This report details the status of all Fund projects. Two research projects have been terminated, primarily due to failures on the part of the private-sector partners to fulfill commitments to the projects.

Prepaid funding had been provided to the Ontario Innovation Trust and the Ontario Research Performance Fund. The Ontario Research Fund assumed the responsibilities of the Ontario Research Performance Fund in July 2004. At the time of our follow-up, the Trust was also winding

down, as no new funding had been received by the Trust since May 2000.

Updates of the memoranda of understanding between the Ministry and the boards of the Ontario Innovation Trust and the Challenge Fund included a clarification of the roles of board members as well as of subsidiaries of the Trust.

The Innovation Institute has implemented an electronic grants management information system for the Challenge Fund and the Ontario Innovation Trust. The Ministry has also developed a project-tracking database for its new Ontario Research Fund.

Innovation Institute of Ontario—Administration

Recommendation

To ensure that the fees paid to the Innovation Institute of Ontario (IIO) for administering the Ontario Research and Development Challenge Fund (Challenge Fund) are reasonable, the Ministry should:

- *assess whether the expected benefits of outsourcing have been achieved;*
- *insist on receiving a budget and operating plans from the IIO before each fiscal year begins, instead of after the year has been completed;*
- *ensure that it receives audited financial statements from the IIO for use in assessing the appropriateness of fees charged for administering the Challenge Fund; and*
- *ensure that the detailed breakdown of the budget submissions correlates with the expense categories used in the financial statements and follow up on any discrepancies.*

Current Status

The Ministry informed us that it had recently completed a review of its science and technology programs when developing its Science and Technology Strategy. This resulted in a new transfer-payment program—the Ontario Research Fund—that replaces the Ontario Innovation Trust, the Ontario

Research and Development Challenge Fund, and the Ontario Research Performance Fund. While outsourcing the delivery of new programs was an option considered, the Ministry will administer this particular new program internally.

The Ministry informed us that it had received from the Innovation Institute of Ontario (IIO) budgets and operating plans for the 2003/04 and 2004/05 fiscal years prior to fiscal-year commencement. The Ministry also received the audited financial statements for the most recent fiscal year ending March 31, 2004. To enable comparison with the audited financial statements, the Ministry had been provided with a detailed breakdown of all budget line items for the 2004/05 fiscal year. The Ministry informed us that it had reviewed the budget submission and followed up with the IIO on any discrepancies.

MEASURING AND REPORTING ON PROGRAM EFFECTIVENESS

Program Planning

Recommendation

To formalize its co-ordination responsibilities and provide clear direction for program development and delivery, the Ministry should:

- *review all research programs and prepare a detailed strategic plan that sets specific goals and objectives for research in the province; and*
- *outline policies—such as conflict-of-interest rules, project selection criteria, and monitoring guidelines—that all programs must follow regardless of the delivery mechanism.*

Current Status

The Ministry informed us that the government approved a broad strategic plan for all its science and technology programs in fall 2004. This plan formed the basis for discussions with stakeholders in the last quarter of 2004 in seven regions of the province. The discussions focused on the issues

raised by stakeholders with respect to the design and implementation of the new Ontario Research Fund and Ontario Commercialization Program.

At the time of our follow-up, the Ministry was expecting to complete the development of policies for conflict of interest, selection criteria, and monitoring guidelines by September 2005. The Ministry was intending to apply these policies consistently across programs and included relevant requirements in all memoranda of understanding with program boards.

Effectiveness Reporting

Recommendation

To provide better accountability to the public and the Legislature for its use of public funds, the Ministry should:

- *develop performance measures, targets, and benchmarks that reflect its accomplishments and contributions to the overall goals of promoting innovation, economic growth, and job creation;*
- *perform the necessary assessments to measure whether its initiatives are effective in achieving overall ministry goals; and*
- *report on the actual achievement of these measures, explaining any significant deviations from established targets and benchmarks.*

Current Status

The Ministry informed us that, in March 2005, it completed a review of publicly available indicators and performance measures from five provinces and states, five countries, and five reports spanning multiple jurisdictions. The Ministry found broad performance measures widely used but little in the way of program-specific performance measures that reflect outcomes from research.

The Ministry has proposed several broad performance measures to Cabinet Office and has drafted several program-specific performance measures. Broad measures involved gross domestic expenditures on research as a proportion of

gross domestic product, business expenditures on research as a proportion of all expenditures on research, and numbers of research personnel. Specific program measures include amounts invested in support of innovation by third parties to match ministry program funding and numbers of people acquiring enhanced skills through ministry support.

The Ministry stated that it expects to further develop internal performance measures in the 2005/06 fiscal year in its annual report to the Management Board of Cabinet.