

Legislative
Assembly
of Ontario



Assemblée
législative
de l'Ontario

STANDING COMMITTEE ON PUBLIC ACCOUNTS

SCIENCE AND TECHNOLOGY

(Section 3.07, 2003 Annual Report of the Provincial Auditor)

1st Session, 38th Parliament
53 Elizabeth II

Legislative
Assembly
of Ontario



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législative
de l'Ontario

The Honourable Alvin Curling, MPP,
Speaker of the Legislative Assembly.

Sir,

Your Standing Committee on Public Accounts has the honour to present its Report
and commends it to the House.

Norman Sterling, MPP,
Chair.

Queen's Park
November 2004

STANDING COMMITTEE ON PUBLIC ACCOUNTS

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PREAMBLE

The Provincial Auditor (the Auditor) reported on Science and Technology in Section 3.07 of his *2003 Annual Report*. The Standing Committee on Public Accounts held hearings on this audit report on February 17, 2004, with representation from the Ministry of Economic Development and Trade. (At the time of the audit, these services fell under the Ministry of Enterprise, Opportunity and Innovation.)

The Committee endorses the Auditor's 2003 report on Science and Technology and recommends the implementation of his recommendations by the Ministry of Economic Development and Trade. The Committee has prepared supplementary recommendations based on its findings during the hearings. This report is a record of those findings and the Committee's recommendations.

The Committee extends its appreciation to the officials from the Ministry for their attendance at the hearings. The Committee also acknowledges the assistance provided during the hearings by the Office of the Provincial Auditor, the Clerk of the Committee, and staff of the Legislative Library's Research and Information Services.

Ministry Response to Committee Report

The Standing Committee on Public Accounts requests that the Ministry of Economic Development and Trade provide the Committee Clerk with a written response within 120 calendar days of the tabling of this report with the Speaker of the Legislative Assembly, unless otherwise specified in a recommendation.

Committee Comment

The Committee wishes to commend the Ministry of Economic Development and Trade on their commitment to responding to the recommendations found in the Auditor's *2003 Annual Report* respecting its science and technology programs.

1. OVERVIEW

The former ministries of Energy, Science and Technology, and Enterprise, Opportunity and Innovation funded several major science and technology programs and spent \$1.3 billion between April 1, 1998 and March 31, 2003. The government announced total program commitments of \$4.3 billion over the same time period.¹

2. AUDIT OBJECTIVES AND SCOPE

The audit's objectives were to assess whether the Ministry had adequate procedures in place to:

- ensure compliance with Management Board of Cabinet directives, contractual agreements, and Ministry policies;
- ensure that resources were managed with due regard for economy and efficiency; and
- measure and report on the Ministry's effectiveness in fulfilling its mandate and identifying areas where corrective actions are required.

The audit was substantially completed by March 2003 and included an examination of six science and technology programs that accounted for 90% of the Ministry's science and technology expenditures.²

2.1 Access to Information

The Auditor's staff did not receive adequate access to all the information they requested from the Ministry, information that must be provided to them under s. 10 of the *Audit Act*. These limitations meant that they were prevented from concluding on their audit objectives and completing the audit in a timely manner. The Ministry was of the opinion that it provided the information in accordance with government protocols.³

Committee Hearings

Standard protocols were followed, according to Ministry staff. There was no intent to delay or withhold the information requested. Unintended delays were due to internal processes and the breadth of the requests. The Auditor was given assurances by the Ministry that it will do better in the future. Processes have been modified and streamlined to ensure future requests will be met more quickly and fully.⁴ This was also the first audit of science and technology programs. The situation was further complicated by the fact that programs had just been moved from one ministry to another.⁵

3. OVERALL AUDIT CONCLUSIONS

Because of the previously mentioned limitations on access to information, the Auditor cannot provide reasonable assurance that the audit identified all matters that should be brought to the attention of the Legislative Assembly. The review of the Ministry's science and technology spending of \$1.3 billion between April 1, 1998 and March 31, 2003 did, however, reveal a number of significant concerns. A major concern was the commitment to spending \$4.3 billion without an overall strategic plan to set parameters and consistent policies for existing programs or to guide the development of new programs to meet the objectives of promoting innovation, economic growth and job creation.⁶

4. COMPLIANCE WITH GOVERNMENT AND MINISTRY POLICIES

4.1 Governance and Accountability

Ontario Innovation Trust

The Ontario Innovation Trust (the Trust) was created in March 1999 to support the capital costs of research conducted in universities, colleges, hospitals, and research institutions. It was to match grants from the Canada Foundation for Innovation (CFI) and complement the Ontario Research and Development Challenge Fund, which funded research operating costs. A board was appointed to oversee the Trust. A subsidiary, the Innovation Institute of Ontario (IIO), was created in 2000 to administer grants to research institutions. The Ministry has committed more than \$1 billion to the Trust. As of March 31, 2003, \$750 million had been paid. The Trust had more than \$500 million on hand as of March 31, 2002.*

The Trust was created by an agreement between the former Minister of Energy, Science and Technology, and a private-sector corporation designated as the Trustee. Contrary to government directives on alternative service delivery, there was no submission to Cabinet and no business case to justify the Trust's creation. Contrary to the directive on transfer payment accountability, there was no agreement between the Ministry and the Trust defining provincial expectations or outlining how the Trust would be held accountable for its spending of public funds.

Although required, the Ministry receives virtually no information from the Trust. The required monitoring process is not in place to ensure compliance with the agreement. The Trust is not required to report to the Minister or through him/her to the Legislature. Its first annual report was not released until three years after its creation.

The Lieutenant Governor in Council appoints three of the Trust's seven board members, none of whom are Ministry staff. At the time of the audit, no one had been named to replace one government appointment that had expired in May 2001 and another that had expired in May 2002. (In addition to the members appointed by the Lieutenant Governor-in-Council, two are appointed by the Council of Ontario Universities and one each by the Ontario Hospital Association and the Association of Colleges of Applied Arts and Technology.⁷)

The Auditor concluded that neither the Legislature nor the Ministry has any control over the spending of taxpayers' funds by the Trust. He recommended that the Ministry 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

* As of 17 February 2004, the Trust had committed \$708 million to over 1,000 projects at 45 institutions across the province. See Ontario, Legislative Assembly, Standing Committee on Public Accounts, *Official Report of Debates (Hansard)*, 38th Parliament, 1st Session (17 February 2004): P-142.

initiating corrective action where required, and ensure that all government board appointments are up to date.⁸

Committee Hearings

The Auditor's report was credited with helping to address concerns arising from the arm's-length structure of the Trust, as well as the Trust agreement's limitations on the Ministry's capacity to work directly with it. Committee members were told that the Trust board had agreed to adopt the same processes as transfer payment agencies with respect to accountability issues. It has committed to tabling annual financial statements* and annual reports in the Legislature, appearing before legislative committees, and making records available to the Auditor. At the time of the hearings, the Ministry was working on an accountability framework to formalize these arrangements. The target date for completion was no later than July 2004. The framework will be set out in a memorandum of understanding (MOU) between the Trust board and the Ministry. (A month after the hearings, the Ministry wrote the Committee to say that an MOU with the OIT was expected to be "executed" by the end of May 2004 instead of July.⁹)

The Ministry was in the process of preparing the documentation for confirming three new government Order-in-Council board appointments.¹⁰

Trustee, Sponsor and Board

The Trust was established by an agreement with a financial institution, the Trustee. The original Trustee was the Royal Trust Corporation of Canada. There is provision in the agreement for that to change, but Ministry staff were unable to say which financial institution is now Trustee. The Trustee is the caretaker of the Trust's monies and distributes them at the direction of the board.

The government is the Trust's sponsor but is excluded from any involvement with it other than having the capacity to appoint three board members. The sponsor has no relationship with the Trustee.

At the time of the audit, there were two vacancies among the three government-appointed board members. During their presentation to the Committee, Ministry staff said that documents were being prepared for confirming three new government appointments. When asked how long the positions had been vacant, they replied that any one could have been vacant for as long as two or three years. The fact that terms were not extended or that people were not replaced did not result in any failure in the operation of the board. The Trust agreement states that individuals continue to have the duties and obligations of a member until a successor is appointed.¹¹

The government appointees to the board were thought to have deputy minister status. While there is no formal documentation of a reporting obligation, Ministry

* Ministry staff thought these statements would be for the Trust as opposed to each project. See Standing Committee on Public Accounts, *Official Report of Debates (Hansard)*, p. P-162.

staff assumed that these appointees would have a corporate responsibility to government.¹²

Choice of Structure and Accountability

Ministry staff declined to speculate on how the decision was made to structure the Trust in its existing form. They did allow that the choice was influenced by the CFI's arm's-length framework. (Unlike the Trust, the CFI was established under legislation.) Because one of the primary intents of the Trust was to match CFI funding for Ontario institutions, a similar operating structure would facilitate that process.¹³ The choice of structure was referred to as an accepted and appropriate way to fund R&D infrastructure. It also allowed for flexibility which might improve the availability of longer-term partnerships.¹⁴

There was no submission to Cabinet or business case presented because the government wished to move quickly to take advantage of CFI funding. That money is distributed across the country and involves periodic calls for proposals. If an institution is unable to attract funding from its provincial government, there is a risk of not receiving CFI funding.¹⁵

Ministry staff were unaware of a project involving a similar funding commitment being introduced without a submission to Cabinet. They did, however, qualify their response by stating it could have happened.¹⁶

Within the chosen structure, Ministry staff were able to confirm that the Trust was adhering to rigorous peer review processes when evaluating applications. (Many projects would have already been through the CFI peer review process.) Regular reports were published on the Trust's web site. An informal working relationship between the Trust and the Ministry had developed over time and kept the latter aware of Trust activities, particularly as they related to other Ministry-managed science and technology programs.¹⁷

With respect to the timing of the accountability mechanisms they had said would be put in place, Ministry staff reported that work had begun on a process two or three months before. It was their hope not to appear before the Committee again about the Trust after reference was made to the Committee's 2002 report, *Ontario Innovation Trust*.¹⁸ When asked if they would follow a different course of action given a similar situation in the future, Ministry staff replied that an array of options would be presented, one of which would be a trust.¹⁹

Flow of Funding

The Trust has a 10-year lifespan. The government's initial financial commitment was augmented by an announcement in a subsequent budget. In addition, the 2002 budget included a \$300 million enhancement to the Trust. (At the time of the hearings, the \$300 million had yet to be confirmed.) Interest earned by the Trust is also available for project funding.

The Trust manages approved projects through to completion; most are capital so expenditures can occur over several years. Ministry staff expected that all

commitments would be made well within the 10 years of the Trust. When asked if the initiative could become oversubscribed, they felt there was a possibility of that occurring by April 2005 in terms of applications relative to cash available.

In the case of an approved project that ‘derails’ during the life of the Trust, funding remains with or is returned to the Trust. The Trustee will distribute any money left in the Trust at the end of the 10 years among the Trust’s beneficiaries.²⁰

In response to a request from the Committee, the Ministry later reported on the schedule of payments made to the OIT.²¹

Date of Payment	Amount (\$)
March 31, 1999	10,000
April 30, 1999	249,990,000
May 26, 2000	500,000,000
Total	750,000,000

At the same time, the Committee learned that the Trust had earned \$90 million in interest (less expenses and administrative costs) as of December 31, 2003.²²

Committee Recommendations

The Ontario Innovation Trust’s (the Trust’s) purpose and intent are laudable and have the potential to be of great benefit to the province as a whole. While the Trust’s board of directors has responded positively to the accountability issues raised by the Auditor, the Committee has concerns with respect to the precedents its creation may have set.

The Committee therefore recommends that:

- 1. The Ministry of Economic Development and Trade must give due consideration to oversight, compliance and governance implications before creating other bodies like the Ontario Innovation Trust.**
- 2. The Ministry of Economic Development and Trade report on the accountability measures contained within its memorandum of understanding with the Ontario Innovation Trust.**

The Committee requests that the Ministry provide the Committee Clerk with a written response within 30 days of the tabling of this report in the Legislature.

Ontario Research and Development Challenge Fund

The Ontario Research and Development Challenge Fund (Challenge Fund) was established in 1997 as a 10-year program to promote research of interest to the private sector, and to encourage collaboration between that sector and research institutions. It was also designed to improve Ontario’s ability to attract and retain

researchers and help universities compete for federal funding. More than 100 projects had been approved as of March 2003, for a total Ministry commitment of \$435 million. Sponsoring research institutions and private-sector organizations had made additional commitments of \$437 million and \$510 million, respectively. A Challenge Fund board was created to provide independent advice and recommendations to the government on research and development proposals. The government was represented on the board by five ministries. A 1997 Cabinet submission established the former Ministry of Economic Development, Trade and Tourism as the ministry responsible for administering the Challenge Fund and being accountable to the Legislature. The ministries and the board signed an MOU in August 1999. It was to be formally reviewed every two years. The first MOU review had not been completed as of March 2003, even though significant changes had occurred in the Challenge Fund (e.g., delegation of some responsibilities to the Innovation Institute of Ontario - IIO).

The MOU permits the board's chair to appoint special advisory committees to assist in evaluating proposals. Non-medical and medical panels had been established by the time of the audit, but neither had terms of reference outlining their roles and responsibilities. In addition, the MOU does not establish performance targets or designate a lead ministry.

The Auditor recommended that the Ministry update the MOU 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.²³

Committee Hearings

The Auditor's concerns had provided strong direction on strengthening accountability processes for the Challenge Fund program. The government's almost \$480-million commitment had leveraged \$1.2 billion from research institutions and their business partners.

The IIO is under contract by the Ministry to support the administrative function of the Challenge Fund. It is working with the Challenge Fund board to update the MOU originally signed on March 2, 1998 by the five ministries involved in the establishment of the Challenge Fund - currently four ministries, due to the realignment of science and technology.

The framework for the new MOU was developed in December 2003 and was being refined in draft form. It will include designation of the MEDT as the lead in managing the program. It will clarify program objectives and define the respective roles and responsibilities of the parties to the MOU, the MEDT and the board. Work on the new MOU was expected to be complete by the end of 2003/04. Some of its provisions were already being implemented.²⁴

4.2 Project Selection

Ontario Research and Development Challenge Fund

The IIO has administered the Challenge Fund since November 2000. The IIO reviews and analyzes grant proposals to ensure complete documentation is submitted and that eligibility criteria are met. It also prepares project summaries for use by the board. With the board, the IIO determines which proposals require expert assessments. After a panel reviews proposals, the IIO summarizes its recommendations and forwards them to the board. The board's recommendations are forwarded to the five ministers for final approval.

The Auditor's staff reviewed the selection process and found that procedures were not in place to ensure that only eligible projects were selected and that the process was fair and transparent.

The Auditor recommended that the Ministry require the IIO 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.²⁵

Committee Hearings

The Ministry was working with the IIO to address the issues raised by the Auditor and expected to have this work implemented by the end of March 2004.²⁶

Ontario Research Performance Fund

The Ontario Research Performance Fund (Performance Fund) was introduced in 2000 to provide funding for institutions conducting Ontario government-sponsored research. It contributes to the overhead costs of eligible projects at 40% of direct costs. The rate is reduced when overhead support is received from other ministries. In 2001/02, 218 projects received funding. In its first two years, the Performance Fund was to spend \$30 million annually. If total overhead funding exceeded this amount, each recipient's funding was to be reduced to ensure total annual payments did not exceed \$30 million.

Institutions designated as eligible research institutions in a provincial tax bulletin are deemed eligible for funding. Those not listed can apply for an assessment of their status. The audit found that the Ministry did not have documentation to demonstrate the process used to approve the eligibility of 41 new recipients not listed in the bulletin. These recipients received \$8.7 million in 2001/02.

Eligibility is also contingent on a signed confirmation letter from the lead ministry that provided the initial research funding. The amount of the initial grant for direct

costs is used to calculate the overhead grant. Confirmation letters were not on file for a number of projects, meaning the Ministry did not always have sufficient documented evidence regarding the amounts used to calculate grants.

Grants reimburse overhead costs for the preceding year. Institutions must submit a performance report outlining the use of a grant in the year in which it is received. The Auditor's report noted that this reporting requirement did not meet its intended purpose.

There is no deadline for eligible recipients to submit funding requests. This means submissions can be received after all of the annual funding has been paid out and late submissions are paid in subsequent fiscal years. In 2000/01 and 2001/02, no adjustments were made to amounts paid to other recipients, resulting in overpayments or payments in excess of \$30 million in each year.

The Auditor recommended that the Ministry ensure that all new recipients meet program eligibility requirements; ensure that signed confirmation letters are on file verifying the amount of grants approved 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.²⁷

Committee Hearings

The now \$32-million annual fund was set up following a 1999 report, *Growing Ontario's Innovation System: The Strategic Role of University Research*. A key recommendation was that the government establish a research performance fund to resource universities for the indirect costs associated with increasing their research capacity.

According to Ministry staff, implementation of the recommendations regarding the administration of this program is complete, except for one activity which is still in the final stages of being amended. Recommendations already implemented include the retention of confirmation letters, clearer verification of grant amounts and deadlines for confirmation of information by participating ministries and institutions, with payments.

The Ministry was finalizing an administrative procedures manual so that it can document internal procedures and payment processing for the Performance Fund grants. This was expected to be complete by March 2004 together with a plain language text for general use.²⁸

Premier's Research Excellence Awards

The Premier's Research Excellence Awards (PREA) program was established in 1998 to attract and retain graduate students and researchers. Awards are made on a competitive basis and paid to principal researchers' institutions. A volunteer advisory board reviews all applications and makes recommendations to the Minister. Each recipient is eligible for up to \$100,000. An additional 50% from

either a research institution or a private-sector partner is required. Approximately \$45 million was awarded to 438 recipients, as of March 31, 2003.

Potential recipients must submit a standard application, letters of reference and letters guaranteeing the 50% matching private-sector contribution. Applications are distributed to pairs of board members for review. The entire board considers 10 applications recommended by each pair of members. (The Chair reviews them all.) Complex applications may also undergo an external peer review. Score sheets and ratings are forwarded to the Ministry which summarizes the score sheets and prepares a short list. This list is considered by the board which forwards its recommendations to the Minister for approval.

The audit found that the Ministry had not maintained sufficient documentation to support selection decisions. This meant it was not possible to verify whether the most deserving applicants were those recommended for awards.

The Ministry's Internal Audit Services Branch surveyed recipients following the first round of competition and found the selection process and program criteria were unclear. The Auditor's staff reviewed more recent competitions and found the evaluation criteria, scoring process and weighting for each criteria continued to be unclear. This means there is no assurance that the scoring criteria for all proposals are comparable. Other inconsistencies in the evaluation process included a different rating system for new researchers.

The Auditor recommended that the Ministry 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.²⁹

Committee Hearings

The Auditor's recommendations on administrative procedures regarding record-keeping and document retention during the award selection process were being acted upon. The Ministry was also revising program information to ensure that all potential applicants are fully informed about evaluation and selection criteria and procedures, and their transparency. Ministry staff had met with the PREA advisory board in January 2004 and would work closely with it to implement the program in accordance with the revised procedures.³⁰

Contained within the Auditor's report was the finding that the marks on the reviewers' individual score sheets for one round of competition did not match the Ministry's summary score sheet. The marks on the summary score sheet did not match the summary of scores on the short list of recipients recommended for funding.³¹ The Committee heard that PREA applicants come from a broad range of subject backgrounds. As applications made their way through early review processes, the sense of weighting may have changed as the merits of each initiative were discussed. The program officer for PREA had assured Ministry

staff present at the hearings that administration processes were much tighter now.³²

Committee Recommendation

The Committee recommends that:

3. The Ministry of Economic Development and Trade report to the Committee on its progress in improving the Premier's Research Excellence Awards' selection process procedures.

The Committee requests that the Ministry provide the Committee Clerk with a written response within 120 days of the tabling of this report in the Legislature.

Premier's Platinum Medal for Research Excellence

The Premier's Platinum Medal for Research Excellence (Premier's Platinum Medal) was created in 2001 to keep outstanding senior researchers in Ontario. It is intended for researchers at the mid-career level who have an international reputation and a significant body of research. The program is to cost \$10 million over six years. The award includes a medal, a citation and \$1 million to support the winner's research at an eligible research institution.

Responsibility for overseeing the program was assigned to the PREA advisory board. A 2001 Cabinet submission indicated the Ministry would amend its MOU with the board to outline terms of reference, the board's mandate and performance measures. No changes had been made to the MOU as of March 31, 2003.

Peers nominate potential recipients. A selection subcommittee is drawn from the PREA board, and the Ontario Science and Innovation Council. It conducts an initial assessment to create a short list of seven nominees which is forwarded to six international reviewers. The PREA board reviews the reviewers' assessments and then recommends two nominees to the Minister. The first two awards had been announced but no payments had been made at the time of the audit. A fair and transparent selection process is essential to this type of program. Among the problems with the process identified by the audit were: incomplete and missing score sheets, undated nomination packages, and inadequate documentation to support the selection of seven shortlisted candidates.

The Auditor recommended that the Ministry update the MOU 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.³³

Committee Hearings

The Ministry was updating its MOU with the PREA advisory board to reflect the board's responsibilities with respect to the Premier's Platinum Medal. It noted its commitment to having new administrative policies and procedures, including

rigorous observance of deadlines, transparency of nomination review and award selection, and an enhanced document retention schedule in place before the next round of the Premier's Platinum Medal.³⁴

4.3 Program Monitoring

Ontario Research and Development Challenge Fund Grants

The transfer payment accountability directive requires that program managers obtain and review information on the status of recipient eligibility and performance. They must also ensure that all required reports are received when due, and reviewed and analyzed on a timely basis. According to the accountability directive, the obligation to answer for results and for how responsibilities are discharged cannot be delegated to other parties.

The Challenge Fund requires research institutions to submit quarterly disbursement requests, annual progress reports, audited reports at various stages, and a final report when the project is complete. The required reports are submitted to the IIO, the Challenge Fund's administrator.

The audit reviewed this monitoring process and noted a number of inconsistencies. For example, the IIO was administering approximately 60 projects listed as active, but almost half had not received funding for more than six months. A sample of active projects found that only about 10% had submitted the required annual report on time. There was no overall policy regarding when audited reports are required. Only three of 15 completed projects had submitted their final reports on a timely basis. The other 12 were submitted late or remained outstanding.

The Auditor recommended that the Ministry 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 analyse all reports received to ensure that projects remain eligible, to determine whether milestones have been met, and to assess whether performance has been satisfactory.³⁵

Committee Hearings

The Ministry was working with the IIO to update policies and procedures for financial and program reporting, and for follow-up to take corrective action when necessary. For example, it has received and is following up on a quarterly report on those Challenge Fund projects that have not received funds in six months because of delays in project implementation. Mitigation measures were being put in place to address undue delays in project implementation.³⁶

Other initiatives being developed with the IIO include project detail reports which will capture titles, descriptions, reporting procedures, and the timeliness of the

receipt of reports. Administrative processes and procedures will be more tightly defined at the beginning of a project cycle.

The government's conversion from modified cash to accrual accounting will place different obligations on the Ministry as program manager with respect to financial flows to projects.* The new contractual arrangements that will result from the conversion will require more attention be paid to timing and deliverables so that project budgets can be managed within a more contained time frame.³⁷

Committee Recommendation

The Committee recommends that:

4. The Ministry of Economic Development and Trade report on its efforts and those of the Innovation Institute of Ontario to update policies and procedures respecting financial and program reporting for Ontario Research Development Challenge Fund grants.

The Committee requests that the Ministry provide the Committee Clerk with a written response within 120 days of the tabling of this report in the Legislature.

Ontario Centres of Excellence

The Ontario Centres of Excellence (OCE) program was established in 1987. It provides industry with access to leading-edge ideas, and helps transform those ideas into products and services. There are four Centres of Excellence: Materials and Manufacturing Ontario; Communications and Information Technology Ontario; Photonics Research Ontario; and the Centre for Research in Earth and Space Technology. Annual funding to the four centres is approximately \$33 million.

More than \$500 million has been provided to the OCE program since it was established. Management Board directives require the Ministry to implement an effective monitoring process. In the case of the OCE program, this means the Ministry must receive performance reports from each centre. It requires the submission of annual operating plans, audited financial statements, and reports from the president.

The audit's review of the monitoring process noted that while three of the four operating plans for 2002/03 had been submitted late, all were eventually submitted and included all of the major requirements. Audited financial

* "Under accrual accounting, the accounts record a transaction in the year in which the Province takes on a legal obligation to pay an outside party, or the outside party takes on an obligation to make a payment to the Province. This applies whether the transactions are actually finished by the end of that year. Instead of waiting until all the cash flows finish, the Province's accountants will now *estimate* what the flows will be after the end of the year. This is a normal part of accrual accounting." See Ontario, Ministry of Finance, *Financial Report 1994* (Toronto: The Ministry, October 1994), p. 4.

statements had been received from all four centres for 2001/02. While none of the centres had ever submitted a president's report, all had submitted annual reports that contained some elements of a president's report. At the time of the audit, March 2003, none of the centres had submitted an annual report for 2000/01.

The Auditor recommended that the Ministry 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.³⁸

Committee Hearings

In order to enhance the strategic alignment of programs to government economic and innovation policies, the Ministry has worked with the existing centres to restructure the OCE program's governance with the creation of a single organization - Ontario Centres of Excellence Inc. - through which the four current centres will be operated.

As the Ministry finalizes its new contract for the operations of the OCE program, it will incorporate the Auditor's recommendations to ensure that appropriate reporting, program monitoring and accountability measures are put in place and observed. The new contract was to be ready for execution by the end of March 2004. Once it is finalized, a report tracking system will be established, with staff reviewing and analyzing received reports.³⁹

Premier's Research Excellence Awards

Institutions whose researchers receive grants from the PREA program are required to submit annual financial and performance reports to the Ministry within six months after fiscal-year end. The Ministry is responsible for tracking performance measures and is required to consolidate the information into an annual report to the PREA board for review and transmission to the Minister.

By October 1, 2002, a third of the PREA recipients sampled had not submitted financial reports; more than half had not submitted performance reports for the previous fiscal year. Most of the reports received were submitted late. The Ministry did not ensure that all required reports were received on time nor was there evidence of adequate follow-up action.

The Ministry did not adequately review the financial reports submitted, and the accuracy of many was questionable. For several of the reports reviewed, the cumulative value of the province's contribution as reported by the recipients in successive periods exceeded the maximum provincial contribution under the funding agreement. The Ministry had not identified these discrepancies for follow-up.

Recipient institutions are responsible for tracking and reporting specific performance measures. The Ministry is responsible for consolidating performance information and for reporting annually on the program's results. In addition to not ensuring that all required performance reports are received, the Ministry had not consolidated the information that was submitted and had not reported to the PREA Board and the Minister as required.

The Auditor recommended that the Ministry 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.⁴⁰

Committee Hearings

A January 2004 PREA board meeting included discussions on how to respond to the Auditor's recommendations on monitoring the verification of funds and analyzing performance information. Ministry staff were developing revised procedures, based on input from the PREA board, for implementation by March 2004. They would also be reviewing program reporting requirements to ensure that funds are used in keeping with payment plans, that information is accurate, and that targets and milestones are being met. The Ministry was also developing a system to monitor and report on the program's accomplishments by March 2004.⁴¹

Monitoring Potential Conflicts of Interest

Management Board has issued two directives that address potential conflict-of-interest situations: one for current and former public servants (Conflict of Interest and Post-Service Directive for Public Servants and Public Officials) and another for individuals appointed by the government (Government Appointees).

The Minister relies on individuals from the research community to review funding proposals and sit on program boards and panels. Many advisory boards recommend to the Minister which research proposals should be funded. While board and panel members generally receive little or no remuneration, they may be involved in research proposals presented for funding or be shareholders in companies that are partnered with researchers submitting proposals. In addition, appointees may sit on several boards and panels. The Ministry has no procedures in place for monitoring potential conflicts of interest.

Members of boards and panels who have an interest in a research proposal are expected to withdraw from any discussion of that proposal. The Auditor's staff reviewed the board minutes of several programs and noted instances where members appropriately self-declared instances of potential conflict and withdrew from discussions on related proposals. They also noted instances where a conflict should have been declared, but there was no indication in the minutes that it had

been declared. The Ministry did not have sufficient information to determine whether all conflicts had been appropriately declared because board appointees and advisory panel members are not required to disclose potential or real conflicts of interest when they are appointed or if their circumstances later change.

The Auditor recommended that the Ministry 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.⁴²

Committee Hearings

The Ministry has endeavoured to address conflict-of-interest issues within all of its current programs, but acknowledged the Auditor's concern that this needed to be done with enhanced and systematic rigour.

Steps had been taken to strengthen this focus by establishing a working committee to review existing provisions and develop consistent policies that apply to the decision and advisory processes in all transfer payment programs. Updated guidelines were expected to be prepared in time to annex to the new MOU with the Challenge Fund board. In the meantime, increased attention was being paid to the management of conflict-of-interest issues during board meetings.⁴³

Board members were said to be rarely in a situation where they do not declare a conflict-of-interest. Boards are meticulous about declarations. Because there is usually a formal record of proceedings, Ministry staff thought the Auditor's staff may have observed instances that should have been minuted. They referred to the Challenge Fund board, saying it had adopted conflict of interest principles that a corporation would have in place.⁴⁴

Because of the small number of experts in certain areas, conflict in reviewing applications and allocating money was considered natural. Conflict was defined in terms that relate to institutional and research project interests, and personal investments or interests in industrial partners. Once it is clear that a proposal under review is one in which a board or review panel member may have an interest, the conflict is declared and the individual leaves, only to return after a decision has been made.

A large proportion of those involved in the decision-making process are from research-intensive universities. Close to 50 institutions have benefited from science and technology programs. Most projects are associated with half a dozen institutions, bodies from which board and review panel members are chosen.⁴⁵

Following the hearings, the Ministry advised the Committee that it expected to have a conflict-of-interest policy in place by the end of May 2004.⁴⁶

4.4 Project Benefits

Intellectual Property Rights

Intellectual property (IP) rights represent the legal ownership resulting from research and academic activities. The owner of IP can exclude others from using it, and can transfer or sell it. One of the Ministry's major objectives is to support job creation and economic growth, therefore grant recipients have a responsibility either to use IP in Ontario or license it for use here.

The Auditor's staff reviewed a number of programs to determine whether discoveries were benefiting the province. They found that there were no general guidelines for safeguarding the Ministry's interests regarding IP rights.

The Auditor recommended that the Ministry ensure compliance with program policies on IP 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.⁴⁷

Committee Hearings

The Ministry planned to develop consistent principles with respect to IP rights across all science and technology programs. A new working committee will review policies on IP rights and determine the best way to optimize Ministry objectives as it works with an array of research institutions that have their own evolving IP rights policies and procedures.

Criteria sensitive to the significant ongoing global debate about the role of IP policy in enabling early commercialization of research discoveries will be put in place to assess the programs' success in meeting these objectives. The approach taken in the development of IP policy options will be consistent with similar programs in competitor jurisdictions in Canada and North America. The target date for completion is the end of 2004.⁴⁸

IP ownership for initiatives funded by the Ontario government tends to be determined by the recipient institution. Policies range from the traditional approach where an institution owns the IP to situations where more of the IP is owned by the principal investigator.* The latter is an international trend that sees the principal investigator work with an institution on protecting the academic pathway of conference papers. At the same time, the IP is developed and applied with assistance from the business arm of the institution in question.⁴⁹

Much of the capital needed for investment in the front-end commercialization of projects may not be from Ontario, so there is potential for associated activities (e.g., R&D) to leave the province. Because the objective of government investment is to ensure that Ontario benefits from these projects, Ministry staff spoke of the need to examine ways of anchoring IP here. One such route would be

* Ministry staff told the Committee that an area they continue to examine is multi-institutional projects. See Standing Committee on Public Accounts, *Official Report of Debates (Hansard)*, p. P-165.

cluster development which tends to build local networks and attract the type of management expertise, capital and support that will facilitate initiatives staying within an area.⁵⁰

Committee Recommendation

The Committee appreciates that research institutions across the province have their own evolving policies and procedures regarding intellectual property rights. It does, however, feel there is a need for provincial participation in this evolution, considering the investment the government makes in research activities at universities, colleges, hospitals, and other research institutions.

The Committee therefore recommends that:

5. The Ministry of Economic Development and Trade report to the Committee on the establishment, mandate and recommendations of the working committee reviewing intellectual property rights across the research institutions it funds. In particular, the Ministry should report on efforts to anchor these rights in Ontario.

The Committee requests that the Ministry provide the Committee Clerk with a written response within 120 days of the tabling of this report in the Legislature.

Industry Support

The Auditor's staff reviewed the cash and in-kind contributions made by industry to Ministry-funded projects. They found that the Ministry did not ensure recipient compliance with program requirements for industry participation and that it had not established consistent policies for assessing in-kind contributions.

The Auditor recommended that the Ministry 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.⁵¹

Committee Hearings

The Ministry is refining its focus on private sector contributions for the Challenge Fund to more fully track and document the private sector partnership contributions to research programs. This will serve an accountability objective and will better document the role and involvement of the private sector in the research-based innovation and commercialization agenda.

As part of this process, it will develop policies to confirm contributions and ensure that there is independent valuation of in-kind contributions of a designated material value. Ministry staff expected this to be completed by the end of 2004.⁵²

Members were told that there were examples of approved projects having fallen apart because of misunderstandings about the availability of private sector funds and the nature of a private sector partnership. In these instances, remedial action had been taken to ensure that private sector arrangements were in place or a project was terminated.⁵³

5. PROGRAM FINANCIAL AND ADMINISTRATIVE CONTROLS

5.1 Program Administration

At the time of the audit, there were approximately 50 staff in the Science and Technology Division. Annual direct operating expenses were about \$7.8 million.

The Auditor's staff reviewed the Division's financial and administrative controls. They concluded that controls over the funding of transfer-payment recipients needed to be improved. Their findings included the discovery that almost 30% of the Challenge Fund projects approved since 1997 (and approved to receive \$128 million) were inactive and without contracts. Several programs had provided funds in excess of recipients' then current needs. Board members without the proper authority had hired an individual to work for the Challenge Fund. No information systems were in place to help Ministry staff manage transfer-payment programs.

The Auditor recommended that the Ministry 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.⁵⁴

Committee Hearings

The Ministry is enhancing financial and administrative controls in order to achieve program efficiencies. Over the past few years, the number and size of science and technology programs have increased significantly. Because of the large number of complex programs, and in the context of incorporating the Auditor's recommendations, the Ministry is developing a number of initiatives to improve program delivery and monitoring.

For example, it is reviewing program mandates and delivery mechanisms as well as the administrative processes for the Challenge Fund, the PREA, the Platinum Medal, the OCE program and the Performance Fund, among other science and technology programs. It is developing explicit and transparent procedures and policies, a suite of documents, in the areas of conflict of interest, IP and valuation processes for in-kind contributions. Finally, it is assessing the allocation of staffing and the introduction of enhanced technological solutions to allow for more effective program management.⁵⁵

5.2 Innovation Institute of Ontario

At the time it requested permission to single-source administration of the Challenge Fund to the Innovation Institute of Ontario (IIO), the Ministry did not perform a detailed analysis of alternative delivery options and did not want to issue a request for proposals (RFP).

Payments to the IIO are to be based on actual costs incurred and are to be negotiated every year. The audit found that neither the negotiations nor submissions of annual operating plans and budgets were timely. The Ministry did not receive audited financial statements from the IIO. The Auditor's staff reviewed unaudited statements for 2000/01 and 2001/02. They found that the salaries and benefits paid to the IIO for administering the Challenge Fund exceeded the salaries reported for the corporation as a whole in both fiscal years. It was also unclear how expenses were being managed between the IIO and the Trust.

The Auditor recommended that the Ministry 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.⁵⁶

Committee Hearings

The Ministry pledged to continue to refine its contractual and working relationship with the IIO.⁵⁷ Ministry staff were then questioned about the administration contract between the IIO and the government. Members learned that the contract was worth \$1.35 million in 2003/04. The amount varies from year to year depending on the arrangements negotiated, however, the contract has been managed by the same group since its inception.

Even though an RFP is normally required for a contract of that amount, the government chose to pursue alternative service delivery. Outsourcing was approved by Management Board of Cabinet through a process which ensured there was rigour exercised in the way the money was to be spent.⁵⁸

6. MEASURING AND REPORTING ON PROGRAM EFFECTIVENESS

6.1 Program Planning

The Science and Technology Division was found to lack a strategic plan with clearly stated goals to help it fulfill its contribution to the Ministry's mandate to foster competitive businesses and a prosperous economy. An overall strategic

plan would allow the Division to set parameters and consistent policies for existing programs and to guide the development of new programs.

The Auditor recommended that the Ministry 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.⁵⁹

Committee Hearings

The Ministry was working on the elaboration of a more detailed strategic plan for its science and technology programs that will define the relationship between R&D activities and the Ministry's overall economic development mandate. The new strategy will be set out and incorporated into the Ministry's strategic results-based planning process that was underway at the time of the hearings.⁶⁰

A handout prepared by the Ministry and distributed at the hearings cited March 2005 as the date by which the strategic plan would be submitted to the government for consideration. Policies applicable to science and technology programs would be finalized in advance.⁶¹ Ministry staff were asked how ongoing concerns would be handled in the interim. The Ministry was hoping to beat some of the deadlines it had spoken about. Members also heard that science and technology programs would be among the first the government planned to examine under a new results-based budgeting exercise.⁶²

Since the hearings, the Committee has learned that the Ministry planned to have a draft science and technology strategic plan ready for stakeholder review by the end of June 2004.⁶³

6.2 Effectiveness Reporting

The government's business planning process requires the Ministry to report to Management Board and publish a combined business plan and annual report. The Auditor's staff reviewed the Ministry's business planning process and found that it did not measure and report publicly on its achievement of promoting innovation, economic growth and job creation.

Programs with transfer payment commitments of \$10 million or more were reviewed by the Auditor's staff to determine if they had clearly stated performance measures. Annual reports were often found to be out of date and many programs just reported lists of grants, success stories or activity-based measures. The Ontario Centres of Excellence had developed the most comprehensive performance measures and reporting system. Even though their measures indicated a degree of success, the Auditor was concerned that the Ministry had not established targets or benchmarks against which to measure these results.

The Ontario Innovation Index was established in 2002 to measure Ontario's transition to a knowledge-based economy by comparing it with other jurisdictions and identifying areas in need of improvement. The audit reported that the indicators used do not isolate the impact of the Division's programs.

The Auditor recommended that the Ministry 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.⁶⁴

Committee Hearings

The Ministry is committed to measuring the contribution its programs make in promoting the growth of high-paying jobs and globally competitive clusters in Ontario. In that context, it is taking steps to improve its accountability for the use of public funds by not only reviewing performance measures as part of its overall review of science and technology programs but by defining and refining meaningful measures which allow for gauging the true impact of its initiatives and investments.⁶⁵

The handout prepared by the Ministry included reference to an inter-jurisdictional review of performance measures for science and technology programs. The review would be consistent with "current global trends and 'best-in-class' approaches to support innovation, economic growth and job creation."⁶⁶ Ministry staff were asked what jurisdictions were deemed worthy of a 'best-in-class' designation.

The state of Massachusetts, through government and associations, has been attentive to measurement and outcomes. The Ministry is looking at institutional and governmental developments with respect to measurement, performance indices and research support.

Research funding programs in the United Kingdom reflect a focus on performance measurement and results, as do other government activities. The focus and quality of research in a number of institutions have been shaped over the years by a results-based approach to program administration and management.⁶⁷

Committee Recommendation

The Committee recommends that:

6. The Ministry of Economic Development and Trade report to the Committee on the progress being made on its inter-jurisdictional review of performance measures for science and technology programs, and on developing Ontario performance measures.

The Committee requests that the Ministry provide the Committee Clerk with a written response within 120 days of the tabling of this report in the Legislature.

7. COMMITTEE RECOMMENDATIONS

The Committee requests that the Ministry of Economic Development and Trade provide the Committee Clerk with a written response to the following recommendations within 120 calendar days of the tabling of this report, unless otherwise specified in a recommendation.

1. The Ministry of Economic Development and Trade must give due consideration to oversight, compliance and governance implications before creating other bodies like the Ontario Innovation Trust.
2. The Ministry of Economic Development and Trade report on the accountability measures contained within its memorandum of understanding with the Ontario Innovation Trust. The Committee requests that the Ministry provide the Committee Clerk with a written response within 30 days of the tabling of this report.
3. The Ministry of Economic Development and Trade report to the Committee on its progress in improving the Premier's Research Excellence Awards' selection process procedures.
4. The Ministry of Economic Development and Trade report on its efforts and those of the Innovation Institute of Ontario to update policies and procedures respecting financial and program reporting for Ontario Research Development Challenge Fund grants.
5. The Ministry of Economic Development and Trade report to the Committee on the establishment, mandate and recommendations of the working committee reviewing intellectual property rights across the research institutions it funds. In particular, the Ministry should report on efforts to anchor these rights in Ontario.
6. The Ministry of Economic Development and Trade report to the Committee on the progress being made on its inter-jurisdictional review of performance measures for science and technology programs, and on developing Ontario performance measures.

NOTES

- ¹ Ontario, Office of the Provincial Auditor, *2003 Annual Report* (Toronto: The Office, 2003), pp. 163-164.
- ² *Ibid.*, p. 165.
- ³ *Ibid.*, pp. 165-166.
- ⁴ Ontario, Legislative Assembly, Standing Committee on Public Accounts, *Official Report of Debates (Hansard)*, 38th Parliament, 1st Session (17 February 2004): P-141.
- ⁵ *Ibid.*, p. P-164.
- ⁶ Office of the Provincial Auditor, *2003 Annual Report*, p. 166.
- ⁷ Standing Committee on Public Accounts, *Official Report of Debates*, p. P-151.
- ⁸ Office of the Provincial Auditor, *2003 Annual Report*, pp. 168-169.
- ⁹ Ontario, Ministry of Economic Development and Trade (MEDT), "Memorandum to Chair, Standing Committee on Public Accounts from Deputy Ministry, Ministry of Economic Development and Trade re Follow up to the Standing Committee on Public Accounts Hearing of February 17, 2004," 19 March 2004.
- ¹⁰ Standing Committee on Public Accounts, *Official Report of Debates*, p. P-142.
- ¹¹ *Ibid.*, pp. P-150 – P-151.
- ¹² *Ibid.*, p. P-157.
- ¹³ *Ibid.*, p. P-150.
- ¹⁴ *Ibid.*, p. P-153.
- ¹⁵ *Ibid.*, pp. P-150, P-156 and P-157.
- ¹⁶ *Ibid.*, p. P-150.
- ¹⁷ *Ibid.*, p. P-154.
- ¹⁸ *Ibid.*, p. P-158.
- ¹⁹ *Ibid.*, p. P-155.
- ²⁰ *Ibid.*, pp. P-148, P-150, P-158, and P-160.
- ²¹ MEDT, "Memorandum to Chair, Standing Committee on Public Accounts," 19 March 2004.
- ²² *Ibid.* Interest was earned on funds received from the Province through investments by a third-party administrator on the direction of the Trust board.
- ²³ Office of the Provincial Auditor, *2003 Annual Report*, pp. 170-171.
- ²⁴ Standing Committee on Public Accounts, *Official Report of Debates*, p. P-143.
- ²⁵ Office of the Provincial Auditor, *2003 Annual Report*, pp. 171-173.
- ²⁶ Standing Committee on Public Accounts, *Official Report of Debates*, p. P-143.
- ²⁷ Office of the Provincial Auditor, *2003 Annual Report*, pp. 173-175.
- ²⁸ Standing Committee on Public Accounts, *Official Report of Debates*, p. P-143.
- ²⁹ Office of the Provincial Auditor, *2003 Annual Report*, pp. 175-177.
- ³⁰ Standing Committee on Public Accounts, *Official Report of Debates*, p. P-143.
- ³¹ Office of the Provincial Auditor, *2003 Annual Report*, p. 167.
- ³² Standing Committee on Public Accounts, *Official Report of Debates*, p. P-149.
- ³³ Office of the Provincial Auditor, *2003 Annual Report*, pp. 177-179.
- ³⁴ Standing Committee on Public Accounts, *Official Report of Debates*, p. P-143.
- ³⁵ Office of the Provincial Auditor, *2003 Annual Report*, pp. 179-181.
- ³⁶ Standing Committee on Public Accounts, *Official Report of Debates*, p. P-143.
- ³⁷ *Ibid.*, pp. P-161 – P-162.
- ³⁸ Office of the Provincial Auditor, *2003 Annual Report*, pp. 181-183.
- ³⁹ Standing Committee on Public Accounts, *Official Report of Debates*, pp. P-143 – P-144.
- ⁴⁰ Office of the Provincial Auditor, *2003 Annual Report*, pp. 183-184.
- ⁴¹ Ontario, Ministry of Economic Development and Trade (MEDT), *Ontario Provincial Auditor Annual Report: Science and Technology Programs – Summary of Recommendations and Current Status of MEDT Actions*, Presented to the Standing Committee on Public Accounts (Toronto: The Ministry, 13 February 2004), p. 5.
- ⁴² Office of the Provincial Auditor, *2003 Annual Report*, pp. 184-186.
- ⁴³ Standing Committee on Public Accounts, *Official Report of Debates*, p. P-144.
- ⁴⁴ *Ibid.*, p. P-155.
- ⁴⁵ *Ibid.*, p. P-156.
- ⁴⁶ MEDT, "Memorandum to Chair, Standing Committee on Public Accounts," 19 March 2004.

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- ⁴⁷ Office of the Provincial Auditor, *2003 Annual Report*, pp. 186-187.
- ⁴⁸ Standing Committee on Public Accounts, *Official Report of Debates*, p. P-144.
- ⁴⁹ *Ibid.*, p. P-153.
- ⁵⁰ *Ibid.*, p. P-160.
- ⁵¹ Office of the Provincial Auditor, *2003 Annual Report*, pp. 187-189.
- ⁵² Standing Committee on Public Accounts, *Official Report of Debates*, p. P-144.
- ⁵³ *Ibid.*, p. P-160.
- ⁵⁴ Office of the Provincial Auditor, *2003 Annual Report*, pp. 189-191.
- ⁵⁵ Standing Committee on Public Accounts, *Official Report of Debates*, p. P-144.
- ⁵⁶ Office of the Provincial Auditor, *2003 Annual Report*, pp. 191-193.
- ⁵⁷ Standing Committee on Public Accounts, *Official Report of Debates*, p. P-144.
- ⁵⁸ *Ibid.*, pp. P-149, P-156 and P-159.
- ⁵⁹ Office of the Provincial Auditor, *2003 Annual Report*, pp. 193-194.
- ⁶⁰ Standing Committee on Public Accounts, *Official Report of Debates*, p. P-144.
- ⁶¹ MEDT, *Ontario Provincial Auditor Report: Science and Technology Programs*, p. 8.
- ⁶² Standing Committee on Public Accounts, *Official Report of Debates*, p. P-145.
- ⁶³ MEDT, "Memorandum to Chair, Standing Committee on Public Accounts," 19 March 2004.
- ⁶⁴ Office of the Provincial Auditor, *2003 Annual Report*, pp. 194-196.
- ⁶⁵ Standing Committee on Public Accounts, *Official Report of Debates*, pp. P-144 – P-145.
- ⁶⁶ MEDT, *Ontario Provincial Auditor Annual Report: Science and Technology Programs*, p. 8.
- ⁶⁷ Standing Committee on Public Accounts, *Official Report of Debates*, p. P-166.