

11.

FINANCE - TREASURY MANAGEMENT SYSTEM

BACKGROUND

11.1 One of the Department of Finance's goals, as described in their Business Plan 2000-01, was

"To achieve effective money management that maximizes return on investments and minimizes debt servicing costs, within acceptable risk tolerances."

11.2 This function is commonly referred to as treasury management and is one of the responsibilities of the Investments, Pensions and Treasury Services (IPTS) Branch of the Department of Finance.

11.3 In carrying out this responsibility, the IPTS Branch processes billions of dollars per year in transactions. IPTS responsibilities are listed below.

- Daily cash management, which involves consolidating all of the Province's bank transactions in a single account and then investing any surplus in short-term investments or borrowing in short-term debt to cover any cash deficits.
- Management of the investments in the trust funds of the Nova Scotia Teachers' Pension Fund and the Public Service Superannuation Fund, as well as numerous smaller Trust funds.
- Management of the long-term debt of the Province, including the preparation and issuing of debentures and the management and control of the Sinking Funds.
- At March 31, 2001 the Province's balances were \$13.2 billion in consolidated fund gross debt and \$3.1 billion in sinking fund investments.
- In the fiscal year ending March 31, 2001, the Branch processed approximately 6,700 transactions totalling approximately \$58 billion.

11.4 In 1998, the Branch issued a Request for Proposals for a treasury management system and in 1999 acquired the "Millennium" software package. The purpose of this software is to assist Branch staff in the management of the cash, investments and debt that comes within their control.

RESULTS IN BRIEF

11.5 The following are the principal observations from this audit.

- Good procurement practices were followed in the acquisition of the treasury management system, and Millennium was the lowest priced of those systems proposed in response to the Request for Proposals.
- Millennium generally meets the requirements outlined in the Request for Proposals. The only exceptions were that there is no direct interface with the Province's central

financial management system and a small number of particular types of transaction are not accurately processed by Millennium and require some manual processing.

- No post-implementation review for the acquisition of Millennium has been conducted.
- Controls over daily cash management are adequate to ensure the safeguarding of Provincial assets.
- Controls over long-term investments are adequate to ensure the safeguarding of Provincial assets.
- Controls over long-term debt management are adequate to ensure the safeguarding of Provincial assets. However, the Debt Management Committee met only once during the period of our audit. Control would be enhanced if meetings were more frequent. We understand that meetings have been more frequent during the current year.
- Controls over the general computer environment of Millennium are adequate. One exception is the lack of business continuity and contingency plans. In particular, the lack of an agreement between the Branch's management and the management of the Resources CSU IT Section on recovery procedures in the event of a major disaster could lead to delays in the resumption of operations.
- Our tests of system process controls indicate that reasonable controls to ensure completeness, accuracy, authorization and an adequate management trail are in place. Improvements could be made by implementing a direct interface with SAP. We found no errors in our testing, but any manual transcription of data is inherently error prone.

AUDIT SCOPE

11.6 The objectives of this assignment were to:

- assess, under Section 8 of the Auditor General Act, whether or not the controls in place over the treasury management function are adequate to safeguard and control public property;
- form an opinion on the general information technology environment of the Treasury Management functions, including the adequacy of business continuity and contingency planning;
- form an opinion on the adequacy of the system process controls over the functioning of Millennium; and
- form an opinion on the economy and efficiency of the process used to acquire and implement Millennium.

11.7 Audit criteria developed for this assignment were discussed with senior management of the IPTS Branch prior to the start of the audit.

11.8 In addition to controlling treasury-related assets and liabilities of the Province, the IPTS Branch administers assets in various trust funds, most notably the Public Service Superannuation Fund (PSSF) and the Nova Scotia Teachers' Pension Fund (TPF). All assets and liabilities controlled by the IPTS Branch, including the various minor trust funds, were subjected to examination.

11.9 Our approach to the audit of the Branch was to divide its functions into three areas and examine separately the systems and controls for each. The functional areas were:

- the daily management of cash, bank accounts and short-term instruments, both liabilities and assets (Daily Cash Management);
- all funds managed or supervised on behalf of the PSSF and the TPF as well as sinking funds and other core government assets (Long-term Investment Management); and
- all government long-term liability instruments (Long-term Debt Management).

11.10 Millennium is used in each of the above three functional areas. Its integration into the control structure of each was considered in the applicable audit section. The general computer controls and the process controls were considered separately. We also examined the acquisition process for Millennium.

11.11 Our audit approach included interviews with staff of the Branch and detailed examination of contracts, files, reports and other documentation. The systems and controls were reviewed and tested for the period from April 1, 2000 to March 31, 2001. The Millennium project was examined from the commencement of the project in February 1998 to November 2001. Future plans for implementation of additional functionality and other additional work on the software were also reviewed.

PRINCIPAL FINDINGS

Acquisition of the Millennium System

11.12 Management indicated that by 1998, the IPTS Branch of the Department of Finance was maintaining records of over \$6 billion in assets and over \$10 billion in debt on various spreadsheets and databases. Management felt that an automated system would be more efficient, accurate and cost effective. A Request for Proposals was issued in January 1998 soliciting proposals for "*....a software system which has been specifically designed to handle the unique operations and activities of modern treasury functions.*" From the proposals received, four were short-listed and extensively examined, including being asked to provide a one-day demonstration. From this process, the committee, formed to evaluate the responses, made a recommendation to the Deputy Minister of Finance on January 21, 1999 that Millennium be purchased. This was approved and Millennium was implemented, beginning operations in November 1999.

11.13 In general, the procedures carried out by the Branch in the acquisition of the Millennium treasury management system were appropriate. In particular, the examination of the short list of proponents was very thorough.

11.14 While the implementation was successful in most major areas, two major and a number of minor items remain outstanding. The system, as of the date of writing this Report, still does not have a direct interface with the Province's central financial management system. Also, certain types of transactions are not accurately processed by Millennium leading to the continued use of a

manually updated spreadsheet to budget for cash requirements from interest payments and maturing debt. As these were significant factors in the proposal to implement an automated system, they should be addressed as soon as possible.

11.15 Similarly, no post-implementation review has been conducted. Without such a review, management cannot evaluate the success or failure of a project and thus cannot properly plan for future systems projects and related requirements. The system has been in use for three years, and there are no plans as yet for a formal review of its operations.

11.16 We recommend that a post-implementation review be conducted to establish a sound basis for appropriate future planning for Millennium.

Daily Cash Management

11.17 The government has numerous bank accounts at various locations throughout the Province to allow departmental branch offices to deposit public money they have collected, on a timely basis. By arrangement with the banks, the funds in these locations are transferred at the end of each day to central bank accounts. Through those same central accounts, the cheques and other payments by government are processed, as are cash transfers or receipts from other levels of government and from investment transactions. Every day, the Cash Management Services Division of the IPTS Branch consolidates the surpluses or overdrafts of these accounts into one central account showing the net cash position for that day. If the net cash position is a surplus, funds are invested; if an overdraft, funds are borrowed. This trading takes place in the short-term money market.

11.18 To effectively function in the money market, traders must be authorized to buy and sell with other traders without specific approval for each deal. An opportunity to buy or sell may only be open for a few minutes and any formal pre-approval process would significantly inhibit the operational efficiency of the traders. Consequently, control and accountability is maintained by a series of post-trade reviews and checks.

11.19 We examined the functioning of the daily cash management process and concluded that controls are adequate to ensure the safeguarding of Provincial assets. Examples of the more significant key controls are identified below.

- Transfers of deposits to the central accounts are automatically undertaken by the banks.
- Regular reconciliations are performed by the various departments and the Branch to ensure the accuracy of the transfers.
- The money market trading process is well supervised.
- Investment policies formulated by the Credit Sub-committee of the Debt Management Committee place limits on investments. The actual portfolio is compared to these limits on a daily basis.
- Transactions are reviewed by senior management and all actual transfers of funds or instruments are controlled by an external custodian. This external custodian provides reports of transactions and only performs the transaction upon receipt of matching instructions from both the government's trader and the counterparty's trader.
- There is appropriate segregation of duties within the Branch.

Long-term Investments

11.20 The Branch is responsible for managing the investments of the Public Service Superannuation Fund, the Nova Scotia Teachers' Pension Fund and the sinking funds for the Province's various debt issues. As cash is received from various sources, it is transferred by the daily cash management process to the designated custodian for each fund.

11.21 We examined the functioning of the long-term investment process and concluded that controls are adequate to ensure the safeguarding of Provincial assets. Examples of the more significant key controls are identified below.

- Funds are transferred directly to the government's central bank accounts, and are reconciled as described in the daily cash management process.
- One internal and nineteen external managers are responsible for the investing of the funds to maximize the return on investment, in accordance with the established investment policies.
- Monthly reports, comparing the performance of all managers against industry benchmarks, are prepared and reviewed by management of the Branch.
- Market conditions are monitored and changes in asset mix are made to ensure compliance with the government's investment policies. The investment policies are also regularly reviewed by senior management to ensure continuing appropriateness.

Long-term Debt

11.22 Every year, the Province issues new long-term debt to roll over maturing instruments, as well as cover any cash deficits that may arise.

11.23 We examined the functioning of the long-term debt management process and concluded that controls are adequate to ensure the safeguarding of Provincial assets. Examples of the more significant key controls are identified below.

- Every year, an estimate of the total borrowing requirement is published as a part of the budget process. This takes into account maturing long-term debt, cash flow, the government's projected results and other planned operations. This planning supports the Branch's efforts to issue debt at optimal times.
- Debt issue always involves extensive consideration of numerous factors, and we found that these were well documented.
- A Debt Management Committee, chaired by the Deputy Minister of Finance, and consisting of senior Branch management is in place and monitors compliance with the debt management policies. During the period of our audit, this Committee met only once. More frequent meetings of this committee would be appropriate. During the current fiscal year, the committee has met more often.
- All debt issues meet legal requirements including Executive Council approval.

General Computer Controls

11.24 The Investments, Pensions and Treasury Services Branch does not maintain its own information technology (IT) infrastructure. That service is provided by the Resources Corporate

Services Unit (CSU), IT Services Division in accordance with government policy concerning the provision of IT services. Our examination looked at the controls in place over the infrastructure relating to Millennium. This software and its related databases are maintained on a dedicated network server at the Department of Finance and are accessed over the Department's Local Area Network (LAN).

11.25 Access to Millennium is controlled first by the network access control system of the Department of Finance's LAN, by limiting access to the directory where the Millennium software files reside. Subsequent control is by Millennium's own access control system. We reviewed this access control system and found the controls to be adequate.

11.26 The network file server on which Millennium resides is located in an appropriate location, with good physical security, appropriate fire prevention systems, and appropriate backup power sources.

11.27 The system databases are backed up daily and stored off-site. Monthly, a set of data is stored in an off-site archive location. This backup system is appropriate to allow easy recovery from minor processing problems. In the event of a major disaster, it would allow recovery once a processing location and hardware had been established.

11.28 The Branch does not have written business continuity and contingency plans. While Millennium and its related databases can run on any personal computer, and as an adequate backup process is in place, the technical process of restoring the operations after an interruption ought to be straight forward. However, a written, formal plan is still desirable. Such a plan can ensure that no aspect of business resumption is overlooked.

11.29 One aspect of business resumption that has not been addressed is the lack of a formal agreement between the Branch's management and the management of the Resources CSU IT Section on recovery procedures in the event of a major disaster. As mentioned above, the technical process of restoring the operations ought to be straight forward, however the failure to establish a priority for the restoration of operations could result in significant delays. In the event of a major disaster, the IT Section will have many conflicting demands on its services. Treasury Management may not be the government service that would have the highest priority for the restoration of its computer services, and management of the Branch has stated that they could operate for a time without a computer system. Those factors notwithstanding, the priority should be determined and an agreement reached with Resources CSU IT Section concerning restoration of services in the event of a service interruption.

System Process Controls

11.30 Millennium is primarily transaction capture software. Its function is to accurately record trades and transactions and to summarize these transactions into various reports.

11.31 The results of our tests indicate that controls over completeness, accuracy, authorizations and the management trail are reasonable. Examples of the more significant key controls are identified below.

- A trade that is entered is independently verified and then approved by senior management.
- Millennium calculates the appropriate values from trade information to verify the accuracy of the trade details.

- Once verified and approved, a trade can only be altered by the System Manager.
- A hard copy (paper) record of the trade is sent to the custodian who verifies the trade data against the counterparty's data.
- A signed, hard copy of the trade is retained and filed.
- Trades and transactions are reconciled to external confirmations at least monthly.
- Logical access controls (e.g., passwords) effect an appropriate segregation of duties within Millennium.

11.32 The process controls could be improved if the data from the transactions was automatically summarized for input to SAP. While no transcription errors were found across the examination period, any data manually transcribed is subject to the possibility of error.

CONCLUDING REMARKS

11.33 Millennium was acquired in an appropriate manner and has been generally well implemented. A post-implementation review should be performed to provide management appropriate information to facilitate an evaluation of the system to support future planning.

11.34 Management of daily cash , long-term investments and long-term debt is all generally well controlled. Better record retention has improved controls.

11.35 A formal business continuity and contingency plan should be developed. In particular, an agreement with the Resources CSU IT management, regarding the relative priority of restoration of Millennium operations in the event of a disaster situation, should be developed.

11.36 System process controls in Millennium provide for the completeness, accuracy and authorization of transactions, as well as adequate management trails. However, controls could be improved in the transfer of data to SAP which currently is done manually.
