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Audit of Capital Assets Management

The Audit and Evaluation Branch

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Glossary / List of Acronyms

| | |
|--------|--|
| ACI | Asset Condition Index |
| ADM | Assistant Deputy Minister |
| ALM | Asset lifecycle management (also a module in the financial system) |
| AVOS | Automated Volunteer Observing Ships |
| CESD | Commissioner of the Environment and Sustainable Development |
| CSB | Corporate Services Branch |
| EC | Environment Canada |
| ESB | Environmental Stewardship Branch |
| FA | Fixed asset (also a module in the financial system) |
| FB | Finance Branch |
| FCI | Facility Condition Index |
| IIP | Integrated investment plan or Integrated investment planning |
| ISO | International Standards Organization |
| IT | Information technology |
| LCM | Life Cycle Management |
| Merlin | EC's current financial system |
| MSC | Meteorological Services of Canada |
| NCR | National Capital Commission |
| PILT | Payment in Lieu of Taxes |
| PMD | Property Management Division |
| SAP | EC's planned financial system |
| STB | Science and Technology Branch |
| SUD | System under development (a type of audit) |
| TB | Treasury Board |

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EXECUTIVE SUMMARY

This audit was included in the departmental 2012 Risk-Based Audit Plan as approved by the Deputy Minister, upon recommendation of the External Audit Advisory Committee. The purpose of the audit was to assess whether Environment Canada's capital assets are managed in such a way that supports effective and efficient delivery of the department's strategic outcomes and objectives over time.

The audit found good practices in the lifecycle management of centrally managed real property and the vehicle fleet; however, the governance framework for the management of other assets presents opportunities for improvement pertaining to roles and responsibilities.

The audit also concluded that while the operational performance of individual assets is generally good and decisions related to these assets are well informed, key information for departmental-wide decision making is inadequate in some areas and may pose a risk of sub-optimal capital investment decisions on the part of the department.

Furthermore, while some of these issues have been partially mitigated by various facets of the Integrated Investment Planning (IIP) process, improvement to the tool used to consolidate the investment demands would strengthen the process. In addition, the recent physical inventory count, and the partial implementation of an asset lifecycle management module, have helped the department progress further in specific areas.

To address the findings outlined in this report, we present the following three recommendations.

Recommendation 1:

Corporate Services Branch (CSB), in consultation with the branches that manage capital assets, should develop and implement a comprehensive framework, including policies, that formally defines the accountability for the lifecycle management of capital assets, including a better definition of roles and responsibilities for major lifecycle management functions.

Recommendation 2:

Corporate Services Branch (CSB), in consultation with the branches that manage capital assets, should better define the key information that is required to manage capital assets throughout their lifecycle, including the identification of key cost and performance information. Information systems should be enhanced to allow them to capture the required information and to produce the necessary key reports.

Recommendation 3:

Finance Branch (FB), in consultation with the branches involved in the Integrated Planning Process should improve the tools that support the IIP process to make it more efficient and incorporate additional information to ensure better informed investment decisions making.

Management Response

Management agrees with the recommendations. The detailed management response can be found under Section 3 of this report.

1 INTRODUCTION

This audit was included in the departmental Risk-Based Audit Plan as approved by the Deputy Minister in 2012 upon recommendation of the External Audit Advisory Committee.

1.1 Background

Environment Canada (EC) manages its diverse capital asset base through a wide variety of accountabilities, responsibilities and processes. According to the department's financial systems, the cost for these capital assets is over \$800M. The main custodians of EC's capital assets are the Corporate Services Branch (CSB), the Science and Technology Branch (STB), the Environmental Stewardship Branch (ESB) and the Meteorological Services of Canada Branch (MSC). Each of these branches plan, acquire, operate, maintain and dispose of capital assets with assistance from the enabling branches, such as the CSB and the Finance Branch (FB).

As a science-based department and the primary provider of weather and environmental services in Canada, EC's capital assets are crucial to its mandate and to the delivery of its mission-critical services. Departmental capital assets include scientific laboratory and field equipment; real property facilities; fleet and off-road specialty vehicles; and the extensive capital infrastructure used for monitoring meteorological, hydrological and climate networks.¹ Ownership and responsibility for most of the department's information technology assets were transferred to Shared Services Canada in 2012.

The Treasury Board policy on Investment Planning requires departments to submit a Capital Investment Plan each 3 years that meets the department's needs. For the past six years, EC has been using the Integrated Investment Planning (IIP) approach to do so. This annual multi-IIP process is led by the Investment Planning Secretariat in the Finance Branch and is being applied to all classes of capital assets. EC was one of the five government pilots for the Office of the Comptroller General launch of the Investment Planning Process and was recognized as being a leader in investment planning. The final output from the yearly IIP process is a three-year Integrated Investment Plan that is approved by the Deputy Minister.

The state of EC's capital assets, and its ability to report these assets have been brought into question by a number of earlier reports, including EC's Financial Statement Audit Readiness Assessment carried out by Ernst and Young in 2009 and in the chapter on the Management of Severe Weather Warnings Report by the Commissioner of the Environment and Sustainable Development (CESD) of December 2008. As a result of the findings in these reports over the past years, EC has made a number of requests to Treasury Board (TB) for additional capital allocations to address issues surrounding aging capital assets and infrastructure.

One management commitment arising from the CESD report was to "develop a fully-costed business case that incorporates a monitoring strategy and long-term capital plan within the Treasury Board's new integrated investment planning process." To support this initiative, the department began the implementation of the Asset Lifecycle

¹ EC's monitoring networks include networks for monitoring the weather, air quality, water quality and quantity, etc.

Management (ALM) module in its Merlin² financial system. The project to install and implement this module began in 2010. Considering the significant investment and potential risks associated with the implementation of this module, Internal Audit conducted a system under development (SUD) audit during the implementation of the project's lifecycle. Internal audit presented an interim report to the External Audit Advisory Committee in 2010. The report contained one recommendation pertaining to the approval of the project funding. Subsequently, the expected decision by the Government of Canada to convert all departmental financial systems to SAP impacted the project implementation before all of the department's capital assets were captured or ALM was fully implemented. While ALM is still operating, and used to manage those assets that were captured in the system, no additional asset classes have been entered since then, and further work on the implementation of the project has been halted completely. The SUD audit was therefore also not finalized. Given these circumstances and in order to properly close the ALM SUD audit, Internal Audit has identified the "Lessons Learned" from this SUD audit and included the results in Annex 4.

Going forward and in keeping with the government's direction for financial systems, EC is now moving to a SAP implementation. This financial system which is hosted in a "shared" service environment should be implemented in 2015. EC's intention is to develop and implement the asset module within the SAP environment to replace the current ALM module.

1.2 Objective and Scope

Objective

To assess whether EC 's capital assets are managed in such a way that supports effective and efficient delivery of the department's strategic outcomes and objectives over time.

Scope

This audit engagement had a very broad scope to assess the effectiveness of all of the major capital asset management lifecycle stages: acquisition, use, maintenance, and renewal or disposal. The table to the right shows the scoping decisions that were taken for this audit.

Audit fieldwork began in April 2013 and focused primarily on the management of assets considered for acquisition in the IIP process for 2011-2012 and any existing assets. Fieldwork ended in September 2013.

| Scoped item | In scope | Out of scope |
|--|----------|--------------|
| Asset Category | | |
| Science and Technology | | |
| MSC monitoring network equipment | ◆ | |
| Laboratory and field equipment | ◆ | |
| Real Property | | |
| Centrally managed portfolio of properties | ◆ | |
| Land | | ◆ |
| Regionally managed portfolio of properties | | ◆ |
| Transportation | | |
| On-road fleet | ◆ | |
| Off-road fleet | | ◆ |
| IT equipment and software | | |
| | | ◆ |
| Organizational | | |
| Meteorological Services of Canada | ◆ | |
| Science and Technology Branch | ◆ | |
| Corporate Services Branch | ◆ | |
| Environmental Services Branch | ◆ | |
| Finance (IIP only) | ◆ | |
| Other branches | | ◆ |

² Merlin is the name of the Oracle Financial System currently in use in EC

The audit was national in scope but focused on the four branches that are the main users of capital assets³:

The assessment included assets in three of the four existing asset classes,

- science and technology (considered in two groups, those assets supporting MSC's monitoring networks and those used in laboratories and field work);
- on-road transportation vehicles; and
- real property (buildings, works and infrastructure, including leasehold improvements).

We specifically excluded land holdings, off-road vehicles, furniture, fixtures and appliances from the audit as management of these assets was not considered to pose a high risk.

The fourth asset class, capital IT assets (both hardware and software) was excluded from the audit as the bulk of the hardware has been recently transferred to Shared Services Canada.

From a functional perspective, the audit specifically excluded the actual procurement of, and financial reporting for capital assets, as these functions are the subject of other planned assurance work.

The audit also included a follow-up on outstanding capital assets related to recommendations contained in the 2008 report of the CESD (Annex 3), and a review of the lessons that could be learned from an earlier SUD audit on the implementation of an Asset Lifecycle Management module (Annex 4). These two documents were used as background information in the conduct of this audit.

Annexes 1 and 2, describe the audit methodology, definitions and criteria used to assess the management of capital assets. The four key criteria arise from the TB Policy Framework for the Management of Assets and Acquired Services and the TB Policy on Management of Materiel.

1.3 Statement of Conformance

This audit conforms to the Internal Auditing Standards for the Government of Canada as supported by the results of the quality assurance and improvement program.

In our professional judgement, sufficient and appropriate audit procedures have been conducted and evidence gathered to support the accuracy of the conclusions reached and contained in this report. The conclusions were based on a comparison of the situations, as they existed at the end of the fieldwork (September 2013), against the audit criteria.

³ CSB, MSC, STB and to a lesser extent ESB

2 FINDINGS

2.1 Governance/Management Framework

The TB Policy on Management of Materiel requires Deputy Heads to ensure that a materiel management framework⁴ that clearly defines roles and responsibilities provides for adequate segregation of duties and ensures that procedures are in place.

The audit found that EC does not have a comprehensive Materiel Management Framework. The audit noted that while, in practice, it is clear that CSB is now the functional authority for the lifecycle management of capital assets, this has not always been the case. It is still not clearly defined in any departmental policy document.

While we found no overall framework for capital assets, we did observe that a fully developed framework exists for managing real property. Although this framework includes all the essential elements and is departmental in scope, it is currently fully implemented for those centrally managed real property assets only.

The establishment of roles and responsibilities for major activities that support the lifecycle management of capital assets is an important component of the framework. The audit noted that existing EC policies give little overall direction as to who is responsible for which function (e.g., planning, use, maintenance, monitoring and disposal). Roles that are not well articulated include the functional authority's role, the custodian's role, and the program manager's role.

Consequently, there has been confusion about who should be designing the tools, processes and procedures needed to manage capital assets. For example, when the department decided to implement ALM for the lifecycle management of assets, the lack of clearly defined accountabilities led, in part, to the inconsistent implementation of the system across the department.

The lack of clarity about who is responsible for assuring the accuracy of the capital asset inventory over time is another issue. At the time of the audit, we were unable to find any departmental policy, directive or guidance that establishes who is responsible for maintaining the physical count of capital assets or describes how or how often it will be carried out.

As a consequence, inefficiencies have arisen due to duplication of effort and conflicting practices. In addition, some of the critical functions necessary to manage capital assets such as the disposal of assets or development of key information have either not been carried out or carried out inconsistently.

2.2 Lifecycle Management Processes

Treasury Board describes lifecycle management as the effective and efficient management of assets from the identification of program's requirements through to the eventual disposal of the assets.

⁴ The management of capital assets is a subset of materiel management and the material management framework imposes requirements for the management of capital and non-capital assets.

Planning

One of the most important processes for the management of capital assets pertains to planning the initial acquisition. The actual procurement of the asset was not included in the scope of this audit. Nonetheless, the audit expected that effective systems, processes, procedures and controls would be in place to ensure that investment decisions are based on program priorities, that they include all anticipated costs throughout the asset's lifecycle and that investment decisions provide optimal value for the department.

As previously mentioned, EC undertakes a multi-year, department-wide integrated planning exercise for its capital asset investments each year known as the Integrated Investment Planning Process.

The audit found that the process requires that investment decisions and lifecycle maintenance of the existing capital asset base, be prioritized based on program priorities. The process is also used to prioritize the value received from new acquisitions, helping to ensure that optimal value is received. The process establishes the capital budget levels for all capital asset categories and ensures that resources for existing and new assets are allocated within existing departmental reference levels. At the time of the audit, the final output from the yearly IIP process was a three year Integrated Investment Plan approved by the Deputy Minister. The department has since converted to a five-year horizon to align with the five year Investment Plan that must be submitted to TBS.

Results of interviews further clarified that the program branches use the IIP process to do both top-down and bottom-up development of their capital acquisition plans while aligning these acquisitions to their objectives and priorities. In addition, branches are required to rank their demand using a number of criteria, one of which deals with the risk of not acquiring the assets.

The templates used to gather and consolidate requests for new acquisitions require managers to align their request to a departmental priority. However the template does not specify to which priority/outcome the request contributes and as a result it does not allow for a complete and informed challenge function, especially once the requests are consolidated at the department level. The investment planning process would be improved if the planning tool provided more information about the outcome and relative priority of each request for investment.

At the time of the audit, although Asset Category Leads were reviewing investment proposals, there was no independent review taking place. Explicitly integrating an independent peer review into the process would strengthen decision-making by incorporating a more meaningful challenge function. Since the audit, senior managers reported that the department has established an ADM Capital Steering Committee to provide strategic direction to the capital planning process, to review proposed investments to ensure they are aligned with departmental priorities and to ensure the capital plan includes the right mix of investments by asset category.

Additionally there is an annual capital planning workshop with the Asset Category Leads to review each line of the plan for relevance, risks and costs.

The audit team also noted that the current method of circulating the template and gathering the responses during the IIP process might not be the most efficient way to

capture this information. Interviews with managers indicated that version control was sometimes difficult during this process.

Senior executives also noted that a longer-term planning horizon would be useful as some of the assets have life spans of 40 years or more. They noted that having longer-term information available for decision-making would make it easier to plan for assets that take multiple years to acquire and replace.

Overall, the current planning process ensures that investment decisions are based on program priorities and that those decisions provide optimal value for the department. However, the improvement to the template used to consolidate investment requirements would further strengthen this process.

Use and Maintenance of Capital Assets

Throughout the lifecycle of an asset, overall operational performance and condition should be regularly and systematically assessed, including the asset's functionality, extent and nature of use, and physical and financial performance.

This audit addresses three of the four major capital asset groups that EC operates, uses and maintains to deliver on its mandate – real property, transportation assets (light-duty vehicles) and S&T assets which include those owned by MSC (primarily the atmospheric and hydrological assets) and S&T.

Overall, the audit found that key cost and performance information needed for operational decision making is generally available for the centrally managed real property and for the vehicle fleet. However such information is not as readily available for most science and technology assets and for the real property assets managed by the program areas. In addition, while the CESD audit recommended that the department develop the capacity to consider the full lifecycle cost of assets when making investment decisions, the department has not yet defined what full lifecycle cost means in the context of the various asset classes. Furthermore, in cases when cost information does exist, it is generally not readily available for analysis.

The audit concluded that the information generally available to manage capital assets during their operation is inadequate in some areas. This poses a risk that the department could make sub-optimal lifecycle management decisions about whether to repair or replace equipment, whether a particular asset type is as good as other assets in its class or whether new assets with additional capacity are required to meet expected demand. Insufficient information for decision making may also lead to higher levels of risk, as might occur when assets that support critical services fail leading to a loss in the continuity of those services.

The following provides a brief description of the assets in each asset group and findings regarding their operation and maintenance.

Real Property Assets

The department has unique real property holdings in the form of "special purpose space" such as laboratories and computer facilities. Approximately 65% of EC's real property sites are air, climate and water monitoring stations, which span all regions of the country. The department also manages and operates research institutes and wildlife

habitats. These assets are used to conduct environmental research, develop technologies, and protect critical wildlife.

We focused our audit on 17 of the most complex sites centrally managed by the Property Management Division (PMD) of the Corporate Services Branch. They represent about 70% of the total replacement value of all EC real property assets. These sites range in size from very large, at 56,212m² (Canadian Centre for Inland Waters) and 20,340m² (335 River Road Ottawa) to 149m² for a heritage farm house in Qualicum, B.C. Most of these sites have laboratory, warehouse, office and common use space.

The audit noted that all operating, maintenance and capital betterment costs are captured for each of these 17 buildings/sites. The only cost not captured directly is Payment in Lieu of Taxes (PILT). However, PMD maintains the record of PILT for all EC properties and therefore can easily determine the full cost for operating these sites.

The audit also noted that the performance information maintained by PMD for these sites included for instance reinvestment rates, site usage, vacancy rates, energy efficiency and Green House Gas intensity. PMD also uses the Facility Condition Index (FCI) to assess the condition of its buildings. The FCI rating provides evidence-based information to inform the annual reinvestment rates that will prevent the accumulation of deferred maintenance deficiencies. To ensure that the FCI truly reflects the condition of the facility, the Real Property Framework requires that PMD obtain independent building condition reports from third party specialists. The Real Property Framework recommends that these reports be completed every five years to ensure that investment decisions are on track and prioritized effectively. Results of the last independent building condition report completed in June 2013 were communicated to senior management.

Overall, the audit concluded that information regarding the performance and condition of centrally managed real properties was available. However, the audit team was unable to determine whether this was also the case for the remaining of the properties managed by program areas given that basic information to locate the manager for the individual property proved to be difficult. (Refer to roles and responsibilities under section 2.1

Transportation Assets

EC owned 737 light-duty vehicles at March 31, 2013. Light-duty vehicles include passenger cars, vans, and light trucks which are consistent with PWGSC's *Government Motor Vehicle Ordering Guide*.

EC's Green Fleet Management Policy clearly states that "*Program staff is to ensure that vehicles are in good operating condition*". This includes ensuring that vehicles are routinely maintained in accordance with the manufacturer's specifications and subjected to emissions testing where testing facilities exist.

The vehicle fuel and maintenance costs for light-duty vehicle are all captured on vehicle-specific credit cards. The maintenance and fuel data for each vehicle is compiled electronically from the vehicle-specific credit card to a host database called ARI. EC is the owner of the data captured in this system, and the National Fleet Manager can access fleet-wide and individual vehicle data. ARI can be used to extract data listings and associated performance information.

The Green Fleet Management Policy also establishes a list of performance indicators to measure EC's management objectives with respect to the vehicles and drivers. Particular attention is paid to environmental metrics such as fuel consumptions and use of alternative fuels.

Overall the audit concluded that EC captures the required information to properly manage its transportation assets. In addition, the recent vehicle consolidation undertaken by CSB has contributed to optimizing the management of the department's vehicle fleet.

Scientific and Technological Assets

There are more than 6,000 items in this capital asset category, which includes both S&T and MSC capital assets. The assets owned by the S&T Branch fall into two groups – the first is scientific equipment which produce data (laboratory and field analytical instruments) or directly support the production of data (e.g., samples and storage equipment, pumps chillers, etc. The second group does not produce data or directly support the production of data, but is still needed to undertake scientific work e.g. lathes, milling machines, A/V equipment , ice augers, GPS systems, and generators.

We focused our audit efforts on a sample of the former asset group and in particular on the high price data producing instruments. These included items such as specialized mass spectrometers, gas chromatographs and similar instruments which generally cost between \$100 and \$700K each. We visited laboratories in Ottawa and Burlington to determine how these instruments are operated, used and maintained.

The instruments we chose to review were all being operated by lab technologists and scientists at the time of our visits. The audit noted that the use and operation of these highly sophisticated, complex instruments typically were directed by a specific document which outlines all the steps and considerations necessary to ensure the validity and reliability of the analytic results.

The audit also noted that in practice, unlike real property assets such as buildings, these scientific instruments are maintained on a continuous basis and performance verification checks are done each time the instrument is used. These instruments continuously provide quality control data to the operator as to how well the instrument is doing what it is supposed to be doing. No performance information is maintained for this type of equipment other than the data continuously compiled by the scientist or technologist who is operating the equipment. We observed that the custodians of assets usually knew how well specific assets were performing and how much money was being spent to maintain them; we also observed that neither cost nor performance information for these assets was presented in the context of comparable information for other assets in the same class.

Results of interview with S&T officials further clarified that although no management information system exists to track the individual maintenance and repair cost of individual equipment items, the information is accessible and tracked at the Unit Head/Section Manager level. Furthermore, in some laboratories, the laboratory/site Management Committee reviews non-conformance reports related to instrumentation issues at least annually. If relevant, increased individual equipment costs are discussed at that time to determine appropriate actions.

Therefore, while generally performance and cost information is available to the technician for the purposes of operational and maintenance decision making, it is not readily available for the overall planning at a consolidated level.

Meteorological Services of Canada (MSC) Assets

MSC's primary capital assets are its atmospheric and hydrological networks. We focussed our audit efforts on the Canadian National Radar (Weather Network) and the Marine Networks.

The **Weather Network** consists of 30 radar sites – 28 owned by EC and 2 by the Department of National Defence. Of the 28 radar stations owned by EC, 27 are operated by the MSC's Weather and Environmental Monitoring Directorate. The 28th radar station is a research station operated and maintained by CSB and is located in King City, Ontario.

Results of documentation review demonstrated that MSC's maintenance function is carried out through both corrective actions and preventative maintenance protocols. All radar stations are continuously monitored electronically. Most fault conditions do not emerge as gradual performance degradations but occur suddenly. If there is a malfunction at a radar station it is immediately recognized electronically and the National Monitoring Desk becomes aware of the situation.

A preventative maintenance routine is performed by regional radar technicians in accordance with a list of maintenance protocols for bi-monthly inspections. All maintenance actions and inspection reports are monitored from the National Radar Information System website.

The key performance measure for the Weather Network is "System Up- Time" which provides senior management with trends in system availability over time by individual radar sites and for the network.

In terms of lifecycle costs, we expected to find the kind of information which would allow management to make optimal repair or replace decisions. The kind of cost information we were looking for included repair and maintenance costs for individual radar sites and for network cost trends across the network, the type of LCM information as recommended in the CESD December 2008 Report. We found that cost information is not yet available by individual radar site and were unable to find an Asset Condition Index which EC had undertaken to develop in response to the CESD recommendations. Although the Radar staff stated that lifecycle costs and some performance information exist, obtaining such information would require a data mining exercise.

In its response to the 2008 CESD audit, MSC committed to develop an Asset Condition Index. Initial work in that area has led to the identification of important deficiencies into the MSC's radar network. This resulted in funding commitments in Budgets 2011 and 2013 to improve the radar network. Furthermore, MSC expects to undertake a thorough lifecycle costing and performance exercise as part of its network modernization and renewal exercise to ensure lifecycle cost information reflects the components of an upgraded network.

Lifecycle cost information should be regularly compiled by radar site to assist management in making repair or replace decisions. Radar staff should be able to

demonstrate that investments in radar assets are prudent and that money is not being “wasted” on excessive asset renewal, or in continuing to maintain an asset when it is no longer prudent to do so.

The Marine Network consists of three sets of capital assets: Moored Buoys, Automated Volunteer Observing Ships (AVOS) and Drifter Buoy stations.

As of August, 2013 there were 48 moored buoys on station in the water and of these half are seasonal as they are taken out of the water in the fall. The buoys are inspected and maintained by a combination of MSC trained technicians and a contractor. The contractor is responsible for modifying, substituting or upgrading parts to meet the physical or electrical specifications required by EC’s Technical Authority. Furthermore, the contractor is required to provide training to EC staff. Detailed inspection checklists with work orders are maintained in the Asset Lifecycle Management Module.

As of August, 2013 there were 52 AVOS stations installed on either a Canadian Coast Guard ship or a commercial vessel. AVOS stations are inspected annually on a non-scheduled basis while ships are in port. Some repairs and inspections are carried out by MSC technicians while other repair work and training are provided by contract with the same manufacturer who holds the service and repair contract for the Moored Buoy Network. Under the terms of the contract, the contractor is responsible for the supply of parts, subsystems and systems. As is the case for the Moored Buoy Network, detailed inspection checklists with work orders are maintained in the Asset Lifecycle Management Module.

There were 27 Drifter Buoy stations active as of August 2013. This number varies as buoys are deployed and expire on a month by month basis. EC will know when the buoy expires as it will no longer be sending signals to the network. The average useful life of a drifter buoy is between one and two years. EC does not maintain these buoys once they are set to sea and rarely ever sees them again.

The audit concluded that overall the practices were generally sound.

Disposals

The TB policy on Management of Materiel states that the overriding disposal objective is to ensure that the disposal of surplus assets is concluded as effectively as possible after they become surplus to program requirements. When an asset is being replaced as a result of a lifecycle management decision, it is not only important to monitor the acquisition of the new asset, but to also follow-up on the disposal of the replaced asset.

The audit noted that while the IIP demand templates allow managers to identify assets being replaced, 77 out of 212 (36%) replacement requests did not provide this information. Furthermore, the audit team observed little or no follow-up after the fact to ensure that replaced assets were, in fact, disposed of. The audit also noted that the EC’s FA module contained a record of many assets that no longer exist in the department. Most EC personnel we spoke with acknowledge that the disposal process is a long standing challenge, as some replaced assets are not disposed of, and as the FA module is not always updated when an asset is disposed of. Our discussions with the EC staff that are currently performing the physical capital asset count also concurred with this.

Overall, the audit concluded that the procedure on proper disposal of surplus assets needs to be strengthened.

2.3 Asset Systems

The TB Policy on Management of Material requires departments to ensure that a materiel management information system is in place to facilitate the collection and generation of complete and accurate data on asset holdings (capital assets, inventories and materiel in use). The system should be integrated with departmental financial information systems and support timely and informed materiel management decision making.

Before a department can manage its capital assets throughout their lifecycle, it first needs to know what assets it has, where they are located and who their custodian is. The Fixed Asset (FA) module of EC's financial system is the only system-of-record for the existence of the asset. It records what assets exist, who the custodian of the assets is, and what the remaining value of the assets is for financial reporting. A physical count and reconciliation of the assets in the FA module has not been conducted for many years.

To resolve this issue, Finance Branch began work on a number of parallel initiatives in 2012. For the purposes of this audit the most important of these initiatives is the project launched in fall 2012, to complete a risk-based⁵ physical count of EC's capital assets. The exercise is not complete and the changes to the assets resulting from this initiative was therefore not known at the time of the audit; however, validation of asset existence will improve the completeness and the accuracy of the information recorded in the FA module.

The ALM module is the current system used to track/manage capital assets. It is meant to track information about the capital assets throughout their life in the department. For example, it is intended to establish where an asset is at any given point in time, to whom it has been assigned, how much it is being used, what it costs to operate and maintain, and how it is performing. The information in the ALM module should always reconcile with the information in the FA module.

The audit noted that the ALM module currently contains information for a sub-set of EC's capital assets only: five of the six weather monitoring networks (the radar network being the outlier), and a subset of IT assets (workstations and printers) used in the department.

Interviews with users of other asset classes (S&T) indicated that the module lacks the functionality to satisfy their needs. Taxonomy (i.e., the ability to categorize assets) was the major concern. The managers of the module noted that while the existing taxonomy may not have provided for the required breakdown of assets, the ALM module does

⁵ The Risk-based reference refers to the methodology that the team used to do the count. Where many assets exist in a single asset class (for example radar sites), and the existence of the assets could be verified electronically (again using the example of radar sites that continually report their existence), the team only visited a select number of sites to perform the physical count. The accuracy of the asset inventory resulting from these selected visits was then assumed for the remaining sites.

accommodate multiple taxonomies and that a separate taxonomy could have been implemented for use by STB.

In addition, the audit noted that the functional authorities for the vehicle fleet and for real property continue to use independent tools to manage the lifecycle of the assets under their stewardship because these tools provide additional functionality and are capable of providing clear indicators of costs and operational performance specific to the class of assets they manage.

The audit concluded that the ALM module, as currently implemented, does not capture cost information in a way that allows it to be analyzed and used; furthermore the information from these two standalone systems (for Real Property and Fleet) is not available from ALM. In addition, given the state of the information in the ALM module, we found that reconciliation with the FA module was not possible for most of the asset categories. However, as previously noted, EC is now moving to a SAP implementation with the intention of developing and implementing an ALM module with this new environment.

3 RECOMMENDATIONS

To address the issues identified in the audit findings above, we present the following recommendations.

Recommendation 1:

Corporate Services Branch (CSB), in consultation with the branches that manage capital assets, should develop and implement a comprehensive framework, including policies, that formally defines the accountability for the lifecycle management of capital assets, including a better definition of roles and responsibilities for major lifecycle management functions.

Management Response to Recommendation 1:

Agreed. The management of capital assets will be accomplished through the establishment of an Environment Canada Asset Management Framework for both capital and non-capital assets.

Recommendation 2:

Corporate Services Branch (CSB), in consultation with the branches that manage capital assets, should better define the key information that is required to manage capital assets throughout their lifecycle, including the identification of key cost and performance information. Information systems should be enhanced to allow them to capture the required information and to produce the necessary key reports.

Management Response to Recommendation 2:

Agreed. This action item will be fully accomplished once the department has migrated to the new SAP financial system and the Assets Management Module has been completed.

Recommendation 3:

Finance Branch (FB), in consultation with the branches involved in the Integrated Planning Process should improve the tools that support the IIP process to make it more

efficient and incorporate additional information to ensure better informed investment decisions making.

Management Response Recommendation 3:

Management agrees with the recommendation.

Finance Branch (FB) will continue to make improvements to the IIP process, including making the tools used to develop capital plans more efficient through the use of eCollab.

Additionally, FB will undertake to identify opportunities to improve the information available to capital investment decision-makers through its annual review of the capital planning process.

4 CONCLUSION

Overall, EC's capital assets are managed in such a way that supports the delivery of the department's strategic outcomes and objectives over time.

However, while some best practices were noted in the area of centrally managed real property and the vehicle fleet, the governance framework for the management of capital assets presents opportunities for improvement in the areas of accountability, roles and responsibilities.

The audit also concluded that key cost and performance information has not been adequately defined and captured for a number of capital asset classes, and as such the information for department-wide decision making is not complete. While some of these issues have been mitigated by various facets of the Integrated Investment Planning process and the partial implementation of the ALM module, improvements to key information necessary to efficiently managed capital assets are still required.

The audit team concluded that significant progress has been made in implementing the recommendations emanating from the CESD audit report on the Management of Severe Weather Warning completed in 2008. MSC has been populating the Asset Lifecycle Management (ALM) application since its implementation and the accuracy of the data and content is becoming increasingly relevant to lifecycle management decision making. Additionally, initial work is underway to develop more meaningful performance measurement metrics to further assist with decision making, however due to conflicting priorities, not all the required data is accessible, which is impacting MSC's reporting ability. As future progress is largely dependent on the implementation of SAP, the Audit and Evaluation Branch decided to stop tracking the implementation of the CESD recommendations on the understanding that these issues will be monitored through the follow-up to the recommendations included in this report, as well as the existing system under development audit of SAP.

ANNEX 1

AUDIT METHODOLOGY

The audit was carried out using a combination of interviews, questionnaires, testing and extensive document review.

The audit was largely carried out by a consultant with support by internal staff. It was conducted in the NCR but did include limited visits in the Ontario Region. Interviews in other regions were carried out by teleconference or e-mail.

As the audit covered a very broad scope, it was conducted at a high-level to identify areas of highest risk and the team drilled down deeper in those areas.

To make it clearer for the reader, we have defined the following terms for the purposes of this report. The definitions were based on TB definitions somewhat modified to fit the needs of this report:

Capital Assets: Capital assets have a value of more than \$10K, are not “consumed” during their normal use, and have an economic life that exceeds the fiscal year in which they are acquired. For the purpose of this report, capital assets include on-road transportation assets, science and technical assets, real property and betterments to real property, they specifically excludes land, furniture and IT equipment.

Framework: A framework is a foundational set of tools used for the management of a function. A framework’s purpose is to guide the effective implementation of a broad management direction within the organization in order to achieve coherent and uniform results. A framework includes:

- Appropriate accountability and decision making structures (organization);
- A policy and procedure suite that establishes and communicates the source of authority for the function, the roles and responsibilities,
- The processes and procedures for managing the function;
- The management and financial information necessary to support decision making and performance monitoring for the function.

A framework may include subordinate frameworks;

Lifecycle Management: The lifecycle of a capital asset includes all stages of the asset’s life, from planning for its acquisition, its actual acquisition, its installation and configuration, its maintenance, use and operations, and its replacement or disposal. Treasury Board describes lifecycle management as the effective and efficient management of assets from the identification of program’s requirements through to the eventual disposal of the assets.”

ANNEX 2 AUDIT CRITERIA

| Criteria | Audit Sub-Criteria | Met / Not met |
|---|---|-----------------------|
| 1. Governance, management control frameworks and decision making mechanisms should exist and be and operating efficiently and effectively | <ul style="list-style-type: none"> • Roles and responsibilities are well defined and communicated; • Procedures are in place to assure asset value to the organization and alignment with corporate priorities; and • Adequate segregation of duties exists | Met with minor issues |
| 2. Effective systems, processes, procedures and controls should be in place and should be operating efficiently and effectively to support effective lifecycle management decision making (planning, acquisition, operation, maintenance, retention and disposal) as appropriate for the nature of the capital assets being managed | <ul style="list-style-type: none"> • Investment decisions are based upon demonstrated program priorities and/or operational requirements and are subject to peer review • Where standards exist, we will assess the adequacy of the capital investment budget against those standards • Information for investment decisions includes all anticipated costs throughout the asset's lifecycle; • Investment decisions made through IPP are implemented and tracked • The procedures for receiving, assigning and disposing of assets are followed • Capital assets are inventoried in compliance with procedures • Investment and disposal decisions provide optimal value for the department | Met with minor issues |
| 3. Overall operational performance and condition of capital assets should be regularly and systematically assessed (including the asset's functionality, extent and nature of use, and physical and financial performance) as appropriate for the nature of the capital assets being monitored | <ul style="list-style-type: none"> • Testing and/or monitoring are performed to assess the on-going functionality and condition of capital assets • Management assesses the value of capital assets against the organization's project priorities • An effective mechanism for measurement of the operational performance of capital assets is in place and operating efficiently | Partially met |

| | | |
|---|---|----------------------|
| | <p>and effectively</p> <ul style="list-style-type: none"> • Performance indicators for describing the effectiveness and efficiency of the capital asset management processes are adequate and employed for decision making in the area of capital asset use, maintenance and replacement | |
| <p>4. Accurate and reliable information, that is appropriate for the nature of the capital assets being monitored, is available for, and is used in, performance monitoring and reporting</p> | <ul style="list-style-type: none"> • Complete, accurate and timely information necessary to manage capital asset throughout their lifecycle is available • The asset lifecycle management information is used for decision making, performance monitoring and reporting on the existence and condition of capital assets. | <p>Partially met</p> |

ANNEX 3

CAPITAL ASSETS RELATED RECOMMENDATIONS OF THE 2008 REPORT OF THE CESD

2.36 Recommendation. Environment Canada should document and implement the policies, systems, and procedures necessary to support its commitment to full lifecycle management of its monitoring network assets.

The Department's response: Environment Canada agrees with this recommendation and has already taken concrete steps toward this goal. The surface weather, radar, and upper air networks were ISO (International Standards Organization) 9001 certified in 2007, which means that systems and processes are in place to ensure effective management of the networks, as verified by regular and successful internal and external audits. Our ISO certification also requires that performance measures be collected and analyzed to improve effective planning for the maintenance of these assets. The result is a dynamic risk-based lifecycle management approach that ensures the health of the networks while respecting resource realities.

Environment Canada will continue to improve its procedures through the Department's new integrated investment planning (IIP) process. The condition of the current assets will first be assessed through the development of an Asset Condition Index (ACI), to be completed before fiscal year 2009–10. Performance measures generated through our ISO processes will provide the basis for ongoing assessment of network and component performance, and will guide ongoing lifecycle investment planning through the IIP process.

2.42 Recommendation. Environment Canada should prepare a fully costed long-term strategy supported by a capital plan for its monitoring networks. The strategy and plan should be consistent with lifecycle management and linked to the Department's approved strategies, priorities, and integrated investment planning.

The Department's response: Environment Canada agrees with this recommendation. The Department is developing a fully costed business case that will incorporate a monitoring strategy and long-term capital plan within the Treasury Board's new integrated investment planning (IIP) process that will support Environment Canada's mandate in severe weather and climate monitoring. As outlined in the response to the previous recommendation (paragraph 2.36), the Asset Condition Index (ACI) and ongoing performance measures collected through International Standards Organization (ISO) processes will be fully integrated with and inform this process. Environment Canada will work to identify the ongoing resources to support this strategy in fall/winter 2008–09. From an asset-integrity perspective, investments will be prioritized taking into consideration the condition (as identified by the ACI) and the performance of the asset.

ANNEX 4

SYSTEMS-UNDER-DEVELOPMENT AUDIT OF THE ASSET LIFECYCLE MANAGEMENT SYSTEM – LESSONS LEARNED

Environment Canada has long lacked a tool to monitor and track capital assets throughout their full lifecycle. The department's financial system (Merlin) did contain a Fixed Asset module which was meant to deal with the existence of capital assets and their depreciation for accounting purposes, but the completeness and accuracy of the data in that system was unknown.

In December of 2008 the Commissioner of the Environment and Sustainable Development (CESD) devoted a chapter in his report to the Management of Severe Weather Warnings. In that chapter he noted the lack of a lifecycle management system had contributed to the "rust out" of the radar network capital assets. In 2009, the department completed an audit readiness assessment for its financial system that identified the lack of a lifecycle management system for capital assets as a weakness.

Resulting largely from these two assurance projects, the department embarked on a project to implement an available module in its Merlin financial system for performing Asset Lifecycle Management (ALM) functions. This process was carried out jointly by Finance Branch and the Chief Information Officer's Branch (which is now part of Corporate Services Branch). This project was the subject of a system's-under-development audit.

This development project ended without having met all of its stated objectives. In particular, the uptake of the system by the program areas that manage capital assets was uneven. This chapter deals with the lessons that were learned during the development project.

4.1 Following a good process does not guarantee good results

This project was managed using the Prince2 methodology. Each of the required deliverables for a project of this size and complexity were developed during the project. Most of the problems that occurred during this project were identified as risks during the project in the on-going status reporting but the mitigation strategies were either not adequate to address them or they were not carried out. For example uneven engagement of stakeholders was identified as a high risk for the project almost immediately but it remained a problem throughout the project.

4.2 Project champions need to foster strong stakeholder involvement

For a project to be a success, the stakeholders will see their needs reflected in the likely results. In this project, the "pilot" stakeholder (MSC) was also the largest stakeholder in the department. MSC's needs for a lifecycle management system were urgent if they were to respond to the concerns raised by the CESD and if they were to be able to manage the condition of their capital assets more effectively. As a result, they were very motivated to participate in this project and this led to a situation where many of the implementation decisions were tailored to meet their requirements. Other stakeholders

had less immediate needs for the system and their participation was, as a result, less even.

While mitigating controls for this risk were proposed during project status reports, they do not seem to have been successful. We feel that when risks are identified and remain un-acted upon, the project champion has to quickly take firm control of the situation, escalate the problem as necessary, and ensure that the appropriate level of participation is provided by all stakeholders.

4.3 Project management must be sustained throughout the entire life of a project

During the implementation, discussions around an eventual move from Merlin to SAP became apparent. These discussions seemed to undermine the project. Rather than clarifying a course of action regarding ALM, the project seemed to lose direction and activity simply petered out. We felt that when external factors, arise, such as the decision to implement SAP, they need to be evaluated quickly, decisions need to be taken and then the decisions need to be communicated clearly and widely throughout the stakeholder community. Furthermore, we feel that the upcoming implementation of SAP presents an excellent opportunity for re-engagement with those stakeholders whose requirements were not well represented in the original ALM implementation.