

**EVALUATION OF PARKS CANADA'S ASSET
MANAGEMENT PROGRAM**

July 2009

**Office of Internal Audit and Evaluation
Parks Canada**

**Report submitted to the Parks Canada Evaluation Committee
at the meeting of March 11, 2009**

Her Majesty the Queen in Right of Canada, represented by
the Chief Executive Officer of Parks Canada, 2009

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Executive Summary and Management Responses

Management of assets, both contemporary and cultural, is central to the delivery of three of the five program activities in the Agency as well as for internal service delivery. The protection of cultural assets is an end in itself, while contemporary assets are a means to achieve the Agency's mandate and program objectives. If assets are not well managed, there could be serious impacts on the achievement of the Agency's mandate and program results, and potentially significant health and safety and legal risks and risks to reputation.

The asset management program involves a large portion of the Agency's resources (i.e., an estimated 800 FTEs and \$161M or 27% of the Agency's total 2007/08 expenditures of \$585.5M). The existing asset inventory comprises approximately 22,000 assets of all types and approximately 16,000 high-value assets (i.e., assets valued at \$10K or more). Types of assets managed by the Agency include buildings, bridges and dams, fortifications, grounds, roads and highways, marine structures, utilities, equipment and fleet. The replacement value of the Agency's assets is variously estimated at between approximately \$7B and \$11B.

Given the materiality of asset investment and the importance of assets for the delivery of the Agency's program activities and strategic objective, the program was identified as a high priority for an evaluation. The key issues we addressed were whether the program is a **relevant** response to the Agency's asset management challenges (i.e., the relevance of having assets and an asset management program was **not** in question), and **performance** of the program against investment and asset condition targets set out in national plans and policies and in relation to commonly accepted asset investment benchmarks. The evaluation did not assess how assets contribute to other program goals (e.g., visitor experience goals) although this is the ultimate purpose of many assets.

A key challenge is how to manage limited resources for investment in asset management to achieve the overall goals of the Agency. The Agency's yearly investments in asset maintenance and capital renewal are far short of commonly recommended asset investment benchmarks (i.e., an annual target of investing 4% of the current replacement value of the asset portfolio in maintenance and increasing functionality and capacity). The issue has persisted for many years and will continue into the foreseeable future. Depending on the investment standard chosen, current and future levels of investment are likely to result in deferred maintenance and capital renewal in hundreds of millions or perhaps billions of dollars which could increase the likelihood of the serious impacts noted above.

To address this challenge the Agency committed, in its 2000 and 2005 Long-Term Capital Plans (LTCPs), to increase its professional asset management capacity, expand its asset management framework, increase investment levels, focus on high-risk areas, document and improve its compliance with inspection and due diligence regimes, limit acquisition of new assets, ensure that investments result in improved asset condition and reduce the number of assets facing threats or posing hazards. We concluded that the Agency has had mixed success in implementing these strategies.

Since 2005, the Agency has made some progress in expanding the asset management framework, inventorying high-risk assets and documenting and applying appropriate inspection and due

diligence requirements related to asset management. The number and professional qualifications of asset managers in the field have improved in the last two to three years. Spending on major asset repair and recapitalization has increased from the baseline identified in the 2005 LTCP.

Despite the progress, we concluded that the Agency is only in the beginning stages of developing a mature asset management program. There is a lack of information on the full life-cycle costs of assets and facilities (i.e., operations, maintenance and capital costs). The Agency's asset management system has missing information in mandatory fields for many assets. The information that is available is often erroneous, hard to interpret or out of date. As a result, it is impossible to address basic questions such as the exact size of the inventory and why it is changing over time and the significance of the observed changes. We concluded that the Agency is still mastering the operational aspects of asset management and does not have a national level strategic focus to assets as tools for achieving the Agency's goals.

The Agency's overall asset investment approach directs 70% or more of its asset management expenditures each year into the major repair and asset recapitalization component of the program. We concluded that the Agency lacks a national asset management planning approach (i.e., as opposed to a long-term capital planning approach which is only part of asset management planning), lacks national information on the intended objectives of projects listed in LTCPs (i.e., renewal of existing assets, acquiring new functionality or capacity or disposing of assets) and lacks information on whether projects succeed in reaching these objectives. It has little evidence that directing the majority of investment to this component of asset management is the most relevant response to the Agency asset management challenges (e.g., relative to investing more on information quality and/or preventative maintenance of existing assets to reduce long-term costs).

There is wide spread agreement in the field that most of the existing assets managed by the Agency are relevant, although some major assets have been identified as less critical to the mandate. There is a well-defined process for identifying assets or groups of assets within the existing base that will be subject to major repair or recapitalization based on consideration of several relevant criteria. The process relies on the informed judgement of managers. It does not directly address the whole spectrum of decision-making with respect to asset operations and maintenance and renewal. There is a risk that application of the principles and guidance for investment will be inconsistent across the Agency. More formal approaches to standardize assessments of relevance and importance of assets and/or facilities, and mitigate some of this risk, are available and would help manage this risk.

We evaluated the performance of the program against thirteen national targets related to investment or asset condition. We found that with the exception of its target to invest \$439M in major asset repair and recapitalization between April 2005 and March 2010, either the targets are not being met or would not likely be met or that the Agency lacks the information and/or systems to measure performance. We concluded that the major issue was not so much that targets were not met, but that performance against the range of targets has not been systematically monitored and managed. Most of the national monitoring that has occurred focused on the use of one component of asset funding (i.e., Budget 2005 funds) and tracked progress against targets based on planned rather than actual expenditures. The six key issues identified in the course of the

evaluation, associated recommendations, and management responses and action plans are shown below.

OVERALL MANAGEMENT RESPONSE

The Agency concurs with the fundamental findings of this evaluation and welcomes the recommendations as a means of improving its asset management capacity and preparing for the new Government Wide Investment Planning regime

While Budget Plan 2005 provided Parks Canada with \$209 million over five years and \$75 million ongoing, only \$89 million was provided over the first three years. This funding was immediately directed to urgent health and safety projects and to cultural assets in need of imminent repair rather than capacity building. In late 2005, the Agency through its Human Resources Committee and Finance Committee approved a new Asset Management framework in order to address the injection of new capital funding from Treasury Board and the delivery of its Long Term Capital Plan. Funding for this new framework was over 5-years to allow the Agency to focus first on priority projects, critical policies and staffing while re-defining its relationship with PWGSC. This internal evaluation was planned as a first step to developing appropriate asset management capacity, tools, policies and processes for the long term.

As evidenced in this report, the Agency has recently made some notable progress in expanding the asset management framework: inventorying high-risk assets; documenting inventory; applying appropriate inspection and due diligence requirements; developing directives and standards related to asset management. The level of professionalism within the organization has increased significantly as demonstrated by the increased number of professional designations held by asset managers in the field. Improving asset information was recognized as an important issue and a project to implement a new national Real Property Management System is currently underway.

As per the CEO's direction, effective April 1st, 2009, a Director General, Infrastructure and Real Property will assume the national leadership in the delivery of the Accelerated Infrastructure Program from Budget 2009 and will provide overall direction to the Director of Real Property for the deployment of the following action plans. The Director General will report directly to the CEO.

ISSUE 1: INCOMPLETE AND UNCOORDINATED ASSET POLICY, DIRECTIVE, CRITERIA FRAMEWORK

Consistent with the commitments in the 2005 LTCP there is a growing policy and directive framework to guide asset management decision-making. The current framework is not always coordinated at national office and elements of it are not widely distributed in the Agency. The framework is heavily focused on investments in major repairs and recapitalization of assets.

Recommendation 1: The CAO should review the existing framework and identify any gaps and develop a plan and schedule to address the gaps (e.g., see recommendations 3, 4, 7 and 9 for examples of how the framework might be improved).

RESPONSE	PLAN	TARGET DATE
<p>AGREE – This evaluation has identified many of the gaps and provides suggestion on how to close them. The Director General, Infrastructure and Real Property will provide direction to the Director of Real Property on a list of priorities that need to be addressed.</p> <p>The 2005 Asset Management framework is already being fully deployed. A new Asset Management directive with a set of clear accountabilities has been approved and disseminated.</p> <p>The Agency has committed to a new governance structure for Real Property and is adding \$2M for capacity building in Asset Management at national office level.</p>	<p>Following commitments made at the Asset Management summit in April 2008, a strategic group of managers from each functional directorates and operational Director Generals' office were formed to provide strategic direction to the Real Property branch. This group, who meets monthly, will play a key role in addressing most of these recommendations. The Asset Management Strategic Advisory Group supplemented by a consultant will review the existing framework, identify any gaps and develop an action plan to address these gaps along with the resources to implement the plan.</p>	<p>March 2011</p>

Recommendation 2: The CAO should create an Intranet site containing copies of, or links to, the Agency and TB asset policies and standards, delegation of authorities, project management guidance, relevant asset management processes (e.g., for doing condition ratings or determining replacement values) similar to what currently exists for the financial management policies and guidance in the Agency.

RESPONSE	PLAN	TARGET DATE
<p>AGREE – The intranet site was created on December 16th, 2008 and is be updated on a regular basis to ensure it contains relevant and useful information.</p>	<p>The Intranet site is located under Asset Management from the “Our Work” – Real Property Management section. Further, the Intranet will also be used to promulgate any changes and modifications made to Parks Canada’s Asset Management Framework.</p>	<p>Done</p>

ISSUE 2: LACK OF COMPLETE DATA ON LIFE CYCLE COSTS OF ASSETS

Good expenditure information is only available for true capital costs for asset projects (i.e., not necessarily facilities or individual assets). National data on maintenance expenditures is largely drawn from business units’ self-reports of planned expenditures. Little or no effort is devoted to understanding the operational costs of assets at a national or regional level. The goods and services component of asset operations and maintenance expenditures are already captured in the financial system (i.e., at the level of general ledger codes) but this information is not used consistently across the Agency. The salary costs of asset operations and maintenance are already calculated or estimated at the business unit level for purposes of long-term capital planning but again the way this is done varies considerably across business units.

Recommendation 3: The CAO in conjunction with DGs Eastern and Western /Northern Canada should define which expenditures currently captured in the financial system reflect asset operations and maintenance (i.e., goods and service expenditures are currently captured as general ledger codes).

RESPONSE	PLAN	TARGET DATE
AGREE – The Chief Financial Officer will develop the Agency protocol to capture expenditures in the financial system for asset operations and maintenance.	The Director General, Infrastructure and Real Property will work with the Deputy Chief Financial Officer to address this recommendation. There is a need for the Agency to review all definitions relevant to asset management, such as maintenance, operations, capital, replacement value, etc. Once completed and validated, these definitions will assist in determining which expenditures (including salary) will be captured in the financial system.	April 1 st , 2010

Recommendation 4: The CAO in conjunction with DGs Eastern and Western /Northern Canada should develop a reasonable and consistent national approach to allocating salary costs to asset operations and maintenance based on approaches already in use at the business unit level.

RESPONSE	PLAN	TARGET DATE
AGREE – The Agency will review its current practices allocate salary expenditures to assets operating and maintenance, and inherently to capital projects. The Chief Financial Officer will develop a reasonable and consistent national approach to allocating salary costs to asset operations and maintenance based on approaches already in use at the business unit level.	The Director General, Infrastructure and Real Property will work with the Deputy Chief Financial Officer to review current practices and recommend to the Chief Financial Officer the most effective and reasonable method for allocating salary costs.	April 1 st , 2010

Recommendation 5: The CAO should modify the structure of the Asset Expenditure Reports so that they include information on the program activity to which the expenditure is directed (already captured at input) and the intended purpose of the expenditure (see also recommendation 13).

RESPONSE	PLAN	TARGET DATE
AGREE - The Chief Financial Officer will modify the structure of the Asset Expenditure Reports so that they include information on the program activity to which the expenditure is directed (already captured at input) and the intended purpose of the expenditure.	The Director General, Infrastructure and Real Property will work with the Deputy Chief Financial Officer to develop the best option to include pertinent information related to the Program Activity directed by the expenditure.	April 1 st , 2010

Recommendation 6: The DGs Eastern and Western/Northern Canada should inform business unit managers of the importance of coding expenditure data correctly so that they link to the Asset Expenditure Reports. They should monitor information in the reports and hold managers accountable for ensuring it is accurately completed.

RESPONSE	PLAN	TARGET DATE
AGREE – The operational DGs will continue to stress the importance of coding, through training and discussions with business unit managers. Furthermore, coding will be reviewed and where necessary challenged at the project approval stage to ensure accurate coding and data integrity. Project progress will continue to be monitored periodically through quarterly variance reporting and project progress reports. Where necessary business unit managers will be held accountable through the Agency's performance management system		On-going

ISSUE 3: INADEQUATE ASSET INVENTORY AND MANAGEMENT DATA

The AMS includes assets that are not consistent with the expressed purpose of the system. Many relevant assets in the system lack critical information, have erroneous information, have information that is hard to interpret, or out of date. Updated information is not routinely entered into the AMS. While the Agency is in the process of acquiring a new system there is little assurance that the system itself will resolve the problem of developing a culture and management structures that ensure the availability of sustainable good quality information over time.

Recommendation 7: The CAO based on consultations with the operational and functional DGs should confirm the core assets and asset information (e.g., condition, replacement value, link to a facility where relevant, indications of costs of corrective measures, indications of asset or facility importance) to be included in an asset management system and outline a process and timelines for updating the inventory and information consistent with the identified requirements (see also recommendations 10 and 16).

RESPONSE	PLAN	TARGET DATES
<p>AGREE – The Director General, Infrastructure and Real Property will confirm the core assets and fields of data that are mandatory in the current asset management system (AMS).</p> <p>Operational DGs will ensure that the inventory and asset management information are updated in accordance with agreed timelines</p> <p>Improving asset information was recognized as an important issue and Finance Committee has approved a project to acquire and implement a new national Real Property Management System.</p>	<p>To address process issues, a National Asset Management Working Group with representation from national office functional DGs, operational DGs and field units that has been examining business processes will reconvene with additional support from a consultant.</p> <p>The Working Group will produce a list of core assets and fields in AMS that are mandatory for review by the Strategic Asset Management Advisory group, and approval by the Director General, Infrastructure and Real Property.</p> <p>Since the AMS system asset inventory is reliant on the STAR system, CFO will ensure that changes to the data in the STAR system are completed in a timely manner as requested by asset management staff.</p>	<p>► June 2010</p>

Recommendation 8: The CAO in conjunction with DGs Eastern and Western /Northern Canada should monitor progress by business units in updating information against the timeline and report annually to finance committee on progress (see also recommendation 18).

RESPONSE	PLAN	TARGET DATES
<p>AGREE - The Director General, Infrastructure and Real Property will monitor progress by business units in updating information against the timelines and report annually to Senior Management on progress.</p>	<p>National Office Asset Management section will provide information as required to the Director General, Infrastructure and Real Property in order to monitor and report on progress. The annual report to Finance Committee will coincide with the Agency's annual report on Capital Planning funding envelope requirements in June.</p>	<p>June 2010</p>

Estimates of the **replacement value of existing assets** in business unit LTCPs do not agree with other sources of the same information and are not adjusted consistently over time.

Recommendation 9: CAO should provide direction for reporting on acceptable sources of valid replacement value information in LTCPs (e.g., the AMS, in-house system, an Asset Data Integrity Report) and a consistent national approach for adjusting these estimates over time.

RESPONSE	PLAN	TARGET DATES
AGREE – The Director General, Infrastructure and Real Property will develop a nationally consistent approach to estimating Current Replacement Value and maintaining this value over time.	The methodology used in the Recapitalization Management Process will be reviewed and updated to form the core of the nationally consistent process for establishing CRV. An industry recognized tool will form a key part in this updating process.	May 2010.

The Agency's current approach to rating the condition of assets does not directly address the Treasury Board guidance, or common practice in many jurisdictions, that condition ratings should link directly to an understanding of the cost of corrective measures.

Recommendation 10: The CAO should develop a methodology to link technical assessments of assets/facilities condition with an understanding of the costs of corrective actions (e.g., a FCI or some other measure of costs of correction action) and provide a target date and plan for implementing the measure (see also recommendation 17).

RESPONSE	PLAN	TARGET DATES
AGREE – The Director General, Infrastructure and Real Property will develop a methodology to link technical assessments of assets/facilities condition with an understanding of the costs of corrective actions by adoption of an appropriate metric.	The National Asset Management Working Group will examine business processes and examine the issues associated with the implementation of a metric in Parks Canada Agency.	An Agency facility metric model will be developed by Dec 2010.

ISSUE 4: INADEQUATE ASSET MANAGEMENT PLANNING

The Agency does not do asset management planning by defining conservation and service objectives and linking these to an analysis of the current asset base leading to strategic asset acquisition, renewal, operation/maintenance and disposal plans. Instead it focuses on identifying and prioritizing major repair and capital projects that it will or would like to undertake. These projects do not link to information on asset conditions, life cycles and historic and projected future costs of operations, maintenance, and capital renewal and to service and capacity objectives for assets over time.

Recommendation 11: The CAO should develop an asset management plan (as opposed to a Long-Term Capital Plan) for the Agency. An Asset Management Plan specifies the current condition and life cycle information of the asset inventory, costs of operations, maintenance and past capital investments, and future requirements based on an analysis of needs and future requirements. It would have acquisition, operations/maintenance, capital renewal and disposal components. Consideration should be given to having business units prepare asset management plans of which Long-Term Capital Plans are one component.

RESPONSE	PLAN	TARGET DATES
<p>AGREE – The Director General, Infrastructure and Real Property will develop a template for an Asset Management Plan, which specifies the current condition and life cycle information of the asset inventory, future costs of operations, maintenance and capital investments based on an analysis of needs and future requirements.</p>	<p>The development of the Asset Management Plan is the driver of sound asset management planning. The AMP will serve to meet the objectives of the assets and classes of assets within its activity.</p> <p>The Portfolio Management Plan will serve to integrate classes of assets and activities within the program and the range of corporate strategies and priorities.</p> <p>These two documents will also serve to identify data requirements, data definitions, and data sources, accounting and reporting procedures. Senior Management approval will be sought once the templates are completed.</p> <p>See tasks 2-7 of the Transformation Plan with respect to the Asset Management Plan and tasks 9-13 for the Portfolio Management Plan. See also tasks 30 and 31.</p>	<p>Asset Management Plan template and portfolio management plan template developed by March 2010.</p>

Valuation of assets in the public sector is almost universally linked to the concept of current replacement value of assets, which provides a standard for asset investment and input into determining asset condition. Although there is some dispute about the applicability of this concept to cultural assets managed by the Agency we do not foresee abandoning it given its wide spread use and acceptance. A key issue is what percentages of CRV provide reasonable benchmarks for asset investment planning.

Recommendation 12: The CAO in conjunction with the DGs Eastern and Western/Northern Canada should establish the appropriate percentages of CRV for the asset portfolio or for particular categories of assets, to guide investment in asset operations, maintenance and capital renewal. They should ensure that process and systems are in place that captures these expenditures in the financial system (see also recommendations 3 to 6).

RESPONSE	PLAN	TARGET DATES
<p>AGREE – The Director General, Infrastructure and Real Property will establish appropriate percentages of CRV for the asset portfolio or for particular categories of assets to guide maintenance and capital investments. Process and systems will be put in place to ensure that these expenditures are captured in the financial system.</p>	<p>The Director General, Infrastructure and Real Property via working groups will develop a consistent and appropriate percentage of CRV for all asset classes to be approved by Finance Committee. However, it is doubtful that a percentage of CRV can be established for operating expenditures given the mix of assets. The Director of Real Property will also review processes and systems to ensure that expenditures are captured in the financial system.</p>	<p>Completion April 2010</p>

The intended purpose of investments in major repairs and asset recapitalization (i.e., to stabilize and improve the condition of an existing asset and/or extend its useful life, to add service capacity through modifying an existing asset/facility, or to add new service capacity through acquiring additional assets) is not made clear in planning.

Recommendation 13: The CAO should modify the business unit Long-Term Capital Plan template to require that the purposes of the intended investment be shown (e.g., renewal of existing assets, new functionality or capacity, disposal of assets) allowing these projects to be linked to an overall asset management plan.

RESPONSE	PLAN	TARGET DATES
AGREE - The Director General, Infrastructure and Real Property will modify the business unit Long-Term Capital Plan template to require that the purposes of the intended investment be shown.	The Director General, Infrastructure and Real Property will proceed with this recommendation following the development of the Asset and Portfolio Management Plan. It may very well be that the LTCP may be prepared at National Office for the purpose of meeting Treasury Board's new policy suite requirements, but that the Asset Management Plan of the Field Unit and the Portfolio Management Plan of Eastern and Western Canada would be sufficiently comprehensive.	April 2010

The **types of assets targeted** in Agency asset policy and the LTCP are not always consistent with the types of assets that are the focus of business unit LTCPs (i.e., business unit plans include IT assets, costumes, land purchases).

Recommendation 14: The CAO should clearly define and communicate what types of assets should be included in business unit LTCPs and therefore what types of asset expenditures will be counted toward meeting investment targets. DGs Eastern and Western/Northern Canada should follow-up to ensure that LTCPs only include projects that are relevant to the purposes of the plan.

RESPONSE	PLAN	TARGET DATES
AGREE – The Director General, Infrastructure and Real Property will clearly define and communicate what types of assets will be included in business unit LTCPs and therefore what types of asset expenditures will be counted toward meeting investment targets. Operational DGs will follow-up to ensure that LTCPs only include projects that are relevant to the purposes of the plan.	The Director Strategic Plans in concert with Director General, Infrastructure and Real Property will modify the business unit long-term capital-planning template for the 2010/2011 fiscal year. The types of assets and the types of asset expenditures will be clarified.	Clarification will be developed prior to issuing the 2010/2011 business call letter

ISSUE 5: RISKS OF IRRELEVANT ASSET INVESTMENTS

The Agency's asset management framework and investments are predominately focused on capital renewal rather than operations or maintenance. Asset investment standards suggest that an equal portion of the CRV of assets should be directed to the maintenance and capital renewal of assets.

Recommendation 15: The CAO in conjunction with the DGs Eastern and Western/Northern Canada should review information on asset conditions and life cycle, and asset priorities to determine if the current allocation of resources between asset operations, maintenance and capital investment represents the best investment balance for achieving the Agency's long-term objectives (see also recommendation 10).

RESPONSE	PLAN	TARGET DATES
AGREE – This is a long-term objective but will require addressing many of the other gaps identified in this evaluation before this can be conducted in a useful way. The allocation of resources between asset operations, maintenance and capital investment will continue to rely on the management acumen of those in the business units until such time as sufficient information and systems exist to allow objective monitoring at a national level.	The Director General, Infrastructure and Real Property will be leading this longer-term objective. It is anticipated that the initial analysis showing expenditures by operations, maintenance and capital will be presented to management in March 2012.	March 2012

Decisions related to investments in major repair or renewal of assets/facilities are guided by a widely distributed general criteria for prioritizing investment opportunities, embodied in the standard request for project approval form, and in many cases subject to approval outside local business units. Nevertheless there are risks particularly given the bottom up nature of the planning process that investment priorities for the full spectrum of asset operations (i.e., acquisition, operations, maintenance, renewal and disposal), will vary widely across the Agency and not reflect a national approach to identifying priority investments (e.g., which cultural assets are supported and which are not).

Recommendation 16: The CAO in conjunction with DGs Eastern and Western/Northern Canada should develop additional tools and guidance (e.g., an API or some other measure) to ensure consistent prioritization of decisions to investment in asset operations, maintenance, renewal, acquisition or disposition and set a timetable for implementation in the Agency.

RESPONSE	PLAN	TARGET DATES
AGREE – The Agency will continue to benchmark best practices. The principal change objective for the foreseeable future is to fully implement the Investment and Portfolio Management Plans to assist with this planning. A metric appropriate to Parks Canada will be developed to assist with prioritizing investments.	The Director General, Infrastructure and Real Property will develop appropriate metric(s) to support the Portfolio Management Plan.	March 2012

ISSUE 6: FAILURE TO MEET PERFORMANCE TARGETS, AND INADEQUATE MEASUREMENT AND REPORTING AGAINST TARGETS

The Agency has developed **many targets** for asset related investment and asset conditions, most of which it does not meet or has not developed systems and processes for reporting against.

Recommendation 17a: The CAO in conjunction with the DGs Eastern and Western/Northern Canada should conduct an immediate review of all its current targets for assets (i.e., 13 targets as per Table 2) and confirm which targets are still relevant and useful for the Agency. For those targets that remain relevant, the systems and process for monitoring and reporting on performance should be identified and target dates established for when the information will be available.

Particular focus should be on developing information and targets related to reach and outcomes rather than inputs (e.g., asset conditions as expressed by target FCI ratios, risk

reduction, compliance rates with inspection and code compliance regimes, results of investment on asset condition).

RESPONSE	PLAN	TARGET DATES
AGREE – The Director General, Infrastructure and Real Property, in conjunction with the DGs Eastern and Western/Northern Canada, will conduct an immediate review of all its current targets for assets to refine and recommend relevant and useful targets for approval by the CEO.	Through the Strategic Asset Management Advisory Group, the Director General, Infrastructure and Real Property will proceed with a complete review of all reported targets in Table 2 of this evaluation report. The proposed targets will be presented to DG/CEO committee for review and discussion.	Approved suite of targets for the 2010/2011 planning cycle (i.e., March 2010).

One of the Agency's targets has been to ensure that business units invest a minimal level of resources in major asset repair and renewal. If minimal investments targets by business unit are still considered relevant as per recommendation 17 then:

Recommendation 17b: The CAO should develop and communicate direction on what sources of funds count to meeting minimal investment targets and what are the precise targets for all relevant business units. Policy or guidance should be developed and communicated on if, and under what circumstances, business units can opt out of minimal investment target.

RESPONSE	PLAN	TARGET DATES
AGREE - The 65% of 1997 capital investment target applies to the Management Unit A Base and does not include supplemental funds. The Director General, Infrastructure and Real Property in conjunction with the DGs Eastern and Western/Northern Canada will develop guidance on if, and under what circumstances, business units can request an exemption from the 65% investment target.	The Director General, Infrastructure and Real Property in consultation with the Business Process Working Group will develop a guidance document.	March 2010

There has been no **overall monitoring of performance** against the complete array of targets set out in the Agency's asset policies, its Corporate Plan and its national and business unit LTCPs.

Recommendation 18: The CAO and DGs Eastern and Western/Northern Canada jointly prepare and report annually a complete picture of asset conditions, life-cycle information, actual and planned expenditures for operations, maintenance and capital, and results from previous investments and intentions for future investments. Reporting should also include information on the actual consequences of the asset investment decisions relevant to the potential harms identified by the Agency (i.e., loss of irretrievable cultural assets, decreased visitor satisfaction, potential health and safety or legal risks).

RESPONSE	PLAN	TARGET DATES
AGREE – The Director General, Infrastructure and Real Property jointly with the Operational DGs will prepare and report annually a complete picture of asset conditions and all other pertinent information related to asset investment decisions.	This report will be done at Finance Committee every June, in combination with the other reporting requirements under the LTCP.	June 2010 F.C. and every June thereafter.

1. INTRODUCTION AND PURPOSE

Parks Canada's mandate is to:

“Protect and present nationally significant examples of Canada's natural and cultural heritage, and foster public understanding, appreciation and enjoyment in ways that ensure the ecological and commemorative integrity of these places for present and future generations”

It is responsible for three major heritage systems:

- 42 National Parks of Canada
- 158 National Historic Sites of Canada (administered by the Agency)
- 3 National Marine Conservation Areas of Canada

In carrying out its mandate, Parks Canada is responsible for the protection and presentation of a variety of **cultural assets** (i.e., built assets such as historic canals, fortifications, marine works and monuments, as well as archaeological sites, and historic and archaeological objects/collections). The Agency also acquires, operates, maintains, and disposes of a large number of **contemporary assets** to further its mandate including visitor reception centres, day use areas, campgrounds, roads and highways, locks and dams, water and waste-water facilities, works compounds and administrative buildings. The protection of cultural assets is an end in itself, while contemporary assets are a means to achieve the Agency's mandate and program objectives.

Assets relate to all five programs in the Agency's Program Activity Architecture (PAA) as well as internal service delivery. Most assets are associated with either the **heritage resources conservation program** (e.g., many cultural resources), **the visitor experience program** (e.g., visitor centers, campgrounds, day-use areas, trails, access roads, supporting utilities), or **the townsite and throughway infrastructure program** (e.g., equipment and fleet for provision of services in townsites and on highways, and infrastructure such as water treatment facilities and the numbered highways themselves). Assets associated with **internal service delivery** include works compounds, administrative buildings, vehicles, and equipment not directly associated with a specific program.

Funding for the asset management program includes the existing A-Base resources, a portion of revenue from user-fees, as well as new funding received in Budget 2005, to support asset “recapitalization and maintenance” (i.e., \$11M in 2005-2006 and rising to \$75M per year by 2009/10 and each year thereafter). In addition, the Agency has received special purpose funding to support expenditures on particular assets or initiatives (e.g., funds to support twinning the TransCanada Highway in Banff National Park). Asset related expenditures in 2007-2008 were estimated to be \$161M or 27% of the Agency's total 2007/08 expenditures of \$585.5M.¹ Inadequate management of assets could threaten delivery of the Agency's mandate and program

¹ Estimated asset expenditures include costs of asset inspections, preventative maintenance, major repairs and recapitalization of assets, but not costs of operating assets. Total Agency expenditures do not include employee benefits costs (\$48.5M in 2007/08), which are not easily allocated between employees doing asset versus non-asset functions.

objectives (e.g., permanent loss of cultural assets of national significance, reduced visitor satisfaction), and pose public and staff safety, and legal risks.

Given the materiality of asset investment and its importance to the delivery of the Agency's program activities, the asset management program was identified as a high priority for evaluation work in both the 2007/08 and 2008/09 Internal Audit and Evaluation Plans (see http://www.pc.gc.ca/docs/pc/rpts/rve-par/32/index_e.asp, for copies of the plans).

2. EVALUATION ISSUES AND SCOPE

For purposes of the evaluation we defined the **asset management program** as the governing structures, policies, directives and plans for asset management in the Agency and the associated resources (i.e., people, budgets, expenditures, assets) and activities used to manage assets collectively and locally. There are both general objectives for the asset management program in the Agency as well as specific national and local targets.

The first issue we address in the evaluation is the **relevance** of the implementation of the program for meeting the Agency's asset management challenges and objectives (i.e., are the right assets being acquired and maintained and are irrelevant assets being identified and disposed of; is funding directed at the right priorities). The need for assets to deliver on the Agency's mandate and program objectives and consequently the relevance of a program for managing assets was not in question. The second issue we address is the **performance** of the program against objectives and targets set out in various national plans and policies and in relation to commonly accepted investment benchmarks. Many of the Agency's specific targets with respect to the asset management program are financial (e.g., investment levels, long term sustainability). In addition, there are general objectives and specific targets related to asset conditions. We focused in particular on the commitments in the Agency's most recent long-term capital plan (LTCP) covering the period 2005/06 to 2010/11 and the most recent Corporate Plan. We did not evaluate the contribution of assets to other programs in the Agency's program activity architecture (e.g., the role of assets in supporting visitor experience or conservation goals) although many assets ultimate purpose is to support these goals.

The evaluation examines asset management at the level of the Agency as a whole and not at the level of individual business units. We use the term **business unit** to include all units with assessment management responsibilities including field units, service centres, enterprise units, and in some cases national office directorates or branches. The first part of the report provides a description of resources devoted to the asset management program and its key activities as background and context for the evaluation. The second part of the report addresses the questions of relevance and performance.

METHODOLOGY

The evaluation is based on a review of:

- ▶ Published literature on asset management, Treasury Board and Parks Canada policies, standards, guidelines, plans, and a variety of Agency decks and other documents related to asset management. The Agency's 2000/01 – 2004/05 and the 2005/06 –2010/11 Long Term Capital Plans represent critical sources for the evaluation. For ease of reference these are

referred to the 2000 LTCP and 2005 LTCP throughout the report (see Appendix A for Documents Reviewed). We also reviewed business unit LTCPs prepared on an annual basis that show details on planned investments over the upcoming five-year period.

- ▶ Information in the national financial and asset management systems and spreadsheets
- ▶ Meetings, interviews and consultations with senior management in national office and with managers and analysts in the Real Property and Finance Branches of National Office
- ▶ Field visits and interviews with:
 - a. The Directors General Eastern Canada and Western/Northern Canada, their asset advisors and staff,
 - b. Superintendents and/or asset managers and staff in the Banff, Manitoba, Ontario East, West Quebec and Mainland Nova Scotia Field Units. Although we did not visit the field unit, we did meet and interview the asset manager for the Kootenay/Yoho/Lake Louise Field Unit who also has some asset responsibilities in Mount Revelstoke/Glacier Field Unit (see Appendix B for list of key people consulted throughout the evaluation).

The Parks Canada Agency evaluation staff supported by a contracted expert in asset management carried out the evaluation. The information gathered was used to develop a logic model for asset management in the Agency showing the links between resources, activities, outputs, reach and outcomes. The evaluation work was carried out between February 2007 and October 2008, with visits to the field occurring between November 2007 and March 2008. The observations and recommendations are those of the Office of Internal Audit and Evaluation

3. ASSET PROGRAM LOGIC MODEL

Table 1 illustrates the basic logic model for the asset management program in Parks Canada. Broadly, asset management consists of

- 1) Securing people, funds, and using existing assets (i.e., resources) to,
- 2) Plan for, acquire, operate, monitor, maintain, re-capitalize, or dispose of assets (i.e., activities) in order to,
- 3) Further government and Parks Canada program objectives (i.e., results).

GOALS, OBJECTIVES AND TARGETS

National principles, goals, objectives, criteria and targets for **asset investment** are found in a variety of Agency documents (e.g., the Agency's Corporate Plans, Long-Term Capital Plans, *Parks Canada Asset Management Policy*, *Capital Planning Directive*, *Parks Canada Cultural Resource Management Policy* and *Parks Canada Visitor Experience Asset Investment Criteria*). Although the particular wording and emphasis differs across the documents, they are largely consistent with each other and with the Government of Canada's *Policy Framework for the Management of Assets and Acquired Services* and its *Policy on Management of Real Property*. In general, the Agency's framework emphasizes four key themes (see Appendix C for detailed analysis). Investments should be:

Table 1 Asset Management Program Logic Model

How		Who	What		
Resources		Reach	Results/Outcomes		
Inputs	Activities/Outputs	Engagement/Participation	Short Term	Medium Term	Long Term
Parks Canada staff	Developing policies, standards, guidelines	Internal Staff	Policies, standards, guidelines conform to acceptable standards		Cultural assets are protected and contribute to mandate delivery
Asset Budgets	Identifying information requirements and acquiring and operating associated information system(s)		Users are aware and use them, and find them helpful and relevant to their work		Contemporary assets advance Agency objectives of resource conservation, public appreciation and understanding, and enhanced visitor experience
Existing Assets	Developing national performance measures and targets		Asset systems are consistent with the operational needs of the organization, sustainable, and provides valid and reliable information, useful for decision-making		
	Analyzing risks and performance, developing plans, allocating resources			Assets comply with health and safety, environmental, and heritage protection legislation, regulations and policies	
	Acquiring	Assets subject to maintenance, repair, recapitalization or disposal			
	Operating			Assets are accessible, and enable inclusive non-discriminatory services, support quality service while protecting privacy and security.	
	Monitoring				
	Maintaining/Repairing	Partners in asset development and operations			
	Recapitalizing				
	Disposing	Users of assets (e.g., visitors, people passing through a park who use a highway)			
	Maintaining Data and Reporting on Performance			Assets are managed in a financially responsible manner that maximizes long-term economic advantage and provides best value to the Agency	

- ▶ Consistent with the mandate (e.g., protect the heritage value of cultural assets) and strategic directions of the Agency (i.e., as set out in the Corporate Plan), and promote the integrated delivery of the mandate (i.e., an investment that advances both conservation and visitor experience objectives is better than one that addresses only one of these objectives).
- ▶ Consistent with legislation, guidelines and standards (e.g., should conform to environmental assessment requirements, labour and building codes, as well as provide for non-discriminatory access where applicable).
- ▶ Reduce risk to the Agency and ensure long-term sustainability (i.e., should be based on sound risk analysis, consider other non-asset solutions, involve or encourage partners, be based on average rather than peak demands, and be financially sustainable over the life of the asset).
- ▶ Improve asset condition (i.e., investments should demonstratively improve the overall condition rating of an asset from poor to fair, or from fair to good).

The Agency also committed in the 2005 LTCP to enhancing its asset maintenance and inspection program. Since 2005, the Agency has approved new *Potable Water Standards and Guidelines* (November 2006), a *Green Building Directive* (May 2007), an *Interim Directive for Dam Inspection* (January 2008), and a *Directive for Design, Construction, and Inspection of Vehicular and Pedestrian Bridges* (January 2008).

We noted that different groups within national office developed components of the policy and directive framework for asset management and that some of it has not been widely communicated.² There was some feedback from our interviews with managers in the field that the policies are not always seen as coordinated and that different groups prioritize different aspects of asset management (e.g., visitor related assets, historic/cultural assets, high-risk assets such as dams and bridges).

Specific targets for the asset management program or for types of assets are found in the Agency's 2005 LTCP, subsequent annual business planning cycles, and in the Agency's Corporate Plans. These are summarized in Table 2.

Targets from the 2005 LTCP and from the annual business planning cycle largely, but not exclusively, focus on inputs to the asset management program such as the total amount of investment in major asset repair and recapitalization over a given period. Targets in the Corporate Plans focus on maintaining and/or improving the condition of either specific heritage assets under the heritage resource conservation program, or the assets associated with the townsite and throughway infrastructure program.³ Some of these Corporate Plan targets concern

² The Asset Management Policy was approved by Finance Committee of the Executive Board (September 2007) but was not widely circulated pending review by the Chief Administrative Officer. Most of the asset personnel in the field that we talked to have not seen the policy and instead use the *Parks Canada Capital Planning Directive* (June 2005) as their major asset guidance document

³ Targets included in the table are from the 2008/09 Corporate Plan or the Agency Performance Report for March 31, 2008. Corporate Plans and reports include additional targets for assets such as historic objects and archaeological collections which we treated as outside the scope of the evaluation (see section on cultural resources) as well as targets which can be seen as related to the operation of assets e.g., number of days highways will be closed due to asset condition, the quality of sewage and effluent released by wastewater

more than asset (e.g., #8) and include a wider definition of assets than used for the evaluation (e.g., # 9). Listed targets include those for program activities as a whole as well as some for sub-activities.

Table 2: Summary of Asset Management Program Related Targets

Type	Source	Target
Investment	2005 LTCP	<ol style="list-style-type: none"> 1. Increase the overall level of capital investment in assets to \$122.8M by 2009/10 and maintain that level of investment thereafter (i.e., \$439.4M in the first five years of the plan). 2. Ensure specific levels of capital investment in each of the Agency's program activities (by source of funds) 3. Ensure that all revenues from increases in user-fees were directed to capital investments in visitor service related assets.
	Annual Business Planning	<ol style="list-style-type: none"> 4. Specific business units would invest 65% of their 1997 capital allocation in assets each year in order to ensure a minimal level of investment by each business unit with asset responsibilities 5. 10% of the asset investments within a business unit are directed toward heritage presentation assets.
Condition	2005 LTCP	<ol style="list-style-type: none"> 6. Reduce the percentage of assets requiring investment because of critical health and safety needs from 30% in 2000 to 15% by March 2011. 7. Reduce the percentage of cultural assets requiring investment due to significant threats of loss of historical fabric from 50% in 2000 to 10% by March 2011.
	Corporate Plan	<ol style="list-style-type: none"> 8. 70% of the condition of cultural resources and management practices elements of commemorative integrity of Parks Canada administered national historic sites rated as poor are improved within 5 years (Program Level) 9. Maintain the condition of cultural resources administered by Parks Canada in TBD national parks by March 2014 (Sub-activity national park conservation) 10. Townsites meet their targets for the protection of priority heritage assets owned by Parks Canada (Sub-activity national park conservation) 11. Improve by 60% the condition of historic buildings and structures administered by Parks Canada in poor condition by March 2013 (Sub-activity National Historic Site Conservation) 12. The condition of 75% of townsite and waterway contemporary assets is maintained; the condition of 25% of the assets rated as poor or fair is improved by March 2013 (Program Level) 13. Maintain highways in a condition that minimizes risk to users (Sub-activity through highways management)

RESOURCES (INPUTS)

This section elaborates on the key inputs to the asset management program shown in Table 1: human resources, budgets and expenditures and existing assets. The basic information comes from the Agency's PeopleSoft System for human resources, and the Asset Information System (AMS) for the inventory of existing assets and their condition and replacement values and the SAP financial system (called STAR in the Agency) for an inventory of high value assets and expenditures related to assets and asset management. The first section below outlines some of the key issues with the AMS and SAP systems prior to reviewing existing information on asset expenditures and inventory.

treatment plans in townsites, maintaining water levels in canals to meet legal and other obligations. We did not evaluate performance against these operational standards.

ASSET INFORMATION SYSTEMS

The basic data in the current asset information systems were developed from major asset reviews carried out in 1999 and again in 2000 when the Agency updated its inventory of assets, records of condition ratings and replacement values. These data still serve as the basis for much of Parks Canada's national level internal analysis and its public reporting on assets.

In 2000, asset data were captured in the Asset Information Management System (AIMS). This system involved each business unit collecting and maintaining information in separate databases that were periodically assembled at national office into an integrated database. Summaries of the information were published in the 2000 LTCP (i.e., number of assets by category, condition ratings and replacement values by category). We obtained a copy of an MS Excel spreadsheet listing assets in 2000, which supports most but not all of the asset information reported in the 2000 LTCP. This was a key source for comparing historic asset data with contemporary data. Since 2000, the asset ID numbering system has changed and it is not possible to easily link assets identified in the spreadsheet with assets contained in current systems. We were not able to obtain spreadsheets and analysis of source data supporting the information reported in the 2005 LTCP.

As of 2008 there are two main systems for capturing information about assets:

- ▶ The Asset Management System (AMS), an ORACLE web-based database that replaced the AIMS system, and
- ▶ The Agency's SAP financial system

AMS: The AMS contains a large number of fields for recording asset data including a unique asset ID number, a description of each asset, the asset's link to the Agency's PAA, replacement value and year replacement value was calculated, as well as several condition ratings of each asset. The AMS has a tool to track work orders related to individual assets, which was intended to capture data on maintenance and repair costs. Business units can access the AMS to update or modify their data and produce standard reports related to their assets (see section on maintaining data below for more information on this process). The Asset Management System Training Guide (April 2005) identifies thirteen mandatory fields to be completed for an asset four of which only apply to fleet assets.

In Western Canada, an Asset Data Integrity Project has been underway since 2002 to validate and update the basic data in the AMS. Under a regional lead, a team visits each business unit to verify the existence of assets and update as necessary core information on condition and current replacement values. Reportedly, about 80% of the asset base in all field units in Western Canada was reviewed between 2002 and 2006 with two field units starting a second five-year cycle in summer 2007. The focus has been on easily accessible assets in the front country (i.e., the majority of assets) and less so on assets in the backcountry. We noted in the course of our evaluation work that the data in AMS available for viewing by business units in the West (i.e., Manitoba and west) is not always updated to reflect the results of the Asset Data Integrity Project. A similar systematic on-going review of the data has not been undertaken in Eastern Canada, although some business units have updated data.

The AMS system suffers from a number of data quality problems. Some business units report they do not use the system, preferring their own local systems. Users do not necessarily update

their information on a regular basis. Some data in the system is erroneous due to migration of incorrect data into the system that has never been fixed or data input errors. For example, some asset replacement values appear as whole numbers rather than thousands of dollars as intended leading to significantly inflated values. The problem is compounded by a lack of input controls for some data fields. We found, for example, thirty-four variations of the basic input to identify an asset as a classified or recognized Federal Heritage Building. Logical inconsistencies in the data for an asset are not automatically flagged and reviewed.

SAP: The asset inventory in the financial information system (i.e., SAP) is primarily intended for use in preparing the Agency's annual financial statements. As such, it is focused on historic costs, depreciation schedules for different types of assets, and current book value of assets with a historic cost greater than \$10K (i.e., high-value assets). The database was originally populated with data drawn from the old AIMS in 2000/01. Periodic reviews of the information in 2002, 2006 and most recently in 2008/09, including annual audit work by the Office of the Auditor General, have resulted in changes to include existing assets not recorded in the original inventory, deletion of assets recorded twice and changes to the asset category to which assets are assigned. Because of the on-going review of the data, its importance for the financial statements, and the annual attention paid to it as part of the OAG audit of the financial statements, the quality of these data is better than in the AMS.

Linking Assets in the AMS and SAP: The asset management and financial systems do not contain, nor are they intended to contain, identical lists of assets or the same information on assets they have in common. Common assets in the two systems should include eleven core categories of assets ranging from bridges to utilities that have a historic cost of \$10K or more. The AMS also includes many low-value assets in these categories, as well as certain cultural assets not found in SAP.

Common assets in the two systems are identified through a unique asset ID number. High value assets and changes in some basic information related to existing assets are supposed to be entered into the SAP system prior to showing them in the AMS. Data in the SAP are then periodically extracted in national office and input into the AMS to ensure that the high-value assets are all captured in the AMS consistent with the financial system. There is no reverse process in national office where electronic data in the AMS is extracted and used to populate fields in SAP. Since the two databases are "live" (i.e., entries and changes are made on a daily basis), asset counts and other pertinent information varies depending when information is extracted.

Maintaining and Updating Data in AMS and SAP: In general managers in the field are responsible for entering and updating inventory related data in AMS and entering expenditure data in SAP. For certain changes to AMS data, managers identify required changes or updates but need to provide the information to National Office Finance Branch who is responsible for making the changes. This occurs for example when splitting an existing asset into several assets, adding missing assets, or reclassifying assets between categories given potentially complex impacts on prior and future years depreciation of assets. The process of reviewing, uploading, and verifying changes may take several months to more than a year depending on the time of the year when changes are requested, and the number and complexity of the changes required. Once

in SAP, the changes in the asset are transferred to AMS through the process described above. Additional management information related to the asset is then entered into the AMS (e.g., condition ratings, replacement values). The length of time involved in the process can delay having up to date information in the AMS.

Information Used for the Evaluation: The majority of the information relevant to asset planning and management is captured in the AMS. For purposes of the evaluation we extracted data from the AMS at four points in time (i.e., August and November 2007, and January and August 2008). There are differences between asset counts and other values at each point in time but overall the results were consistent. Most data used in the evaluation report are from the January or August 2008 extractions. We did find that the overall current replacement value of the Agency assets in the AMS was consistently and significantly inflated (i.e., more than 10 times the realistic value) due to importing or inputting incorrect information as noted above. For this variable therefore, we obtained corrected data for some business units either directly from the unit or from the office responsible for the Asset Data Integrity Project in Western Canada.

HUMAN RESOURCES

As of June 2007, an estimated 1,455 employees (28% of the Agency's work force) were involved in asset operations and maintenance (see Appendix D for the estimation procedure). This estimate does not include executive level employees. Most of these employees (93%) are employed in business units outside of national office. Most occupy either indeterminate (43%) or seasonal positions (45%). The majority (52%) are classified in maintenance and operations, with smaller groups working on the canals and waterways (18%) or in skilled trades (17%), asset support technicians or technical service officers or coordinators (6%), and management (3%) or engineers (less than 1%).

The Real Property Branch in National Office, based on an analysis of organizational charts, has estimated that of these employees only about 800 are directly engaged in asset management, maintenance or project work. The remainder are involved in asset operations (e.g., lock master, bus driver, etc.). They have also suggested, based on benchmarking against six other federal departments, that an additional 300 to 400 FTEs in asset management staff would be required by 2013 (Source: Parks Canada Agency Funding Document) to have comparable asset management capacity. A study commissioned by the Branch (Corporate Research Group, March 2008) provided several additional estimates of the number of additional FTEs required for asset management. These estimates are based on increasing asset management budgets to meet industry investment standards and/or to deal with a backlog of deferred investment. The estimates ranged from adding about 80 FTEs to adding about 1,300 FTEs by 2016/17.⁴

In addition to its own employee capacity, the Agency acquires technical and project management asset capacity from Public Works and Government Services (PWGSC). These services include general project advice, project management for large value contracts, and specialized expertise in the area of heritage conservation from the Heritage Conservation Network within PWGSC (i.e.,

⁴ This is largely based on comparisons of FTEs per billion dollars of the CRV of assets, or FTEs per million dollars of asset budget in the Ontario and Alberta provincial parks systems. Required FTEs varies depending on whether and to what extent the CRV of assets and/or budgets for investing in assets are assumed to grow in the future.

strategic advice, project coordination, pre-design investigations and research, heritage recording, documents management and design). These arrangements are formalized in a master MOU with PWGSC and in various regional or local Special Service Agreements (SSA). We were unable to determine the current dollar value of asset management services contracted from PWGSC, although it was reported to be about \$5.8M in 2005.

In the 2005 LTCP, the Agency committed to placing less reliance on PWGSC and increasing its internal asset management capacity. In the course of the evaluation, we noted universal agreement that the professional capacity and training of the Agency's asset management advisors and staff has increased over the last two to three years (e.g., creation of asset advisor positions for the DGs Eastern and Western/Northern Canada, requiring professional engineering or architectural training for many asset manager/advisor positions, many new staff). Views on the relationship with and the services provided by PWGSC were more mixed ranging from complaints about the speed and quality of project management services, and issues related to clarifying PWGSC's accountability for timeliness and delivery of projects on time and on budget, to comments on the importance of retaining the specialized and dedicated heritage conservation expertise within PWGSC. Parks Canada senior management has held meetings with PWGSC officials to address outstanding issues.

Virtually all the unit and asset managers we interviewed indicated that their current resources were the minimum required to keep up with the demands for asset maintenance, repair and recapitalization. All managers we spoke to indicated that they required more resources to manage asset data and upkeep. Although many managers would welcome more permanent resources to assist in asset operations, maintenance and project management, this is not always their top priority. Many are looking for more and better service from PWGSC, and more flexibility and support to hire temporary staff to deal with changing demands throughout the year.

Organizational Structures and Accountability The roles, responsibilities and accountabilities for aspects of the asset management program are shown in Appendix E.

Parks Canada policy delegates major responsibility and accountability for asset management (i.e., acquiring, operating, maintaining, recapitalizing and disposing of assets) to the Directors General Eastern and Western/Northern Canada, and through them to business unit managers who are generally field unit superintendents. The policy is widely understood in the Agency and mostly supported by Agency management although there are a few exceptions.

Under Parks Canada's *Capital Planning Directive*, field unit superintendents had authority to approve capital investment projects in assets under \$2M. The Directors General, Eastern or Western and Northern Canada had to approve projects in excess of \$2M and less than \$5M. Those in excess of \$5M had to be approved by Finance Committee of the Executive Board. Projects above that threshold required Treasury Board approval. Recently, the Agency increased its internal delegation of finance approval to the Directors General to \$10M (Finance Committee Minutes, May 29, 2008). Projects over this limit are first reviewed by Finance Committee and then approved by TB.

Asset organizations at the business unit level consist of an asset manager often, but not always, supported by a small team of technical services officers and coordinators. In some business units we visited, basic asset operations such as cleaning and janitorial staff report to the asset manager as do skilled trade and maintenance staff. In others, cleaners and maintenance staff report to site superintendents or line managers and not to the asset manager. In addition, fleet is managed separately from other assets in some units (e.g., by a finance group).

Asset management functions in the literature are often divided between those involving day-to-day management of assets and those involving overall property and portfolio management (Vanier, 2000). Day-to-day management of facilities includes activities such as upkeep, layout, space utilization, cleaning, health, safety, fire protection and security. Property management is a step up and involves performance assessments of assets, budgeting, accounting, reporting, contracting, and project management. Portfolio managers are engaged in overall long-term planning (i.e., beyond five years), acquisition and disposal, major projects, and setting asset standards. Seen from this perspective, asset responsibilities and accountabilities are often shared by several people at the business unit level including unit managers, asset managers/advisors, functional managers and financial staff. It is not always clear who is responsible for particular products (e.g., LTCPs) and to what extent operational responsibilities (i.e., maintenance, project management) impact on the ability of asset managers/advisors in the field to engage in real long-term needs assessment, planning and portfolio performance monitoring and evaluation.

The Directors General Eastern and Western/Northern Canada are each supported in their asset responsibilities by asset advisors again with small teams of technical experts. The creation of the asset advisor positions and regional level capacity is relatively recent (i.e., subsequent to the 2005 LTCP). Asset advisors to the DGs, provide overall strategic information and advice but are also interested in, or doing, project management for larger projects. The Directors General also rely on their financial managers for advice on and monitoring of investment decisions. As noted, the DGs must approve capital projects of between \$2M and \$10M. They receive and allocate the new asset funding received in Budget 2005 and ensure that it is invested according to the parameters set out in the 2005 LTCP and in subsequent decisions by Finance Committee. They are responsible for reviewing and approving business unit LTCPs.

Asset responsibilities and accountabilities at a national level are also shared between several functions including real property management, strategic planning, and finance. All these functions report to the Chief Administrative Officer (CAO) of the Agency who is ultimately responsible and accountable for coordinating the national activities of these different groups.

The development and management of the asset policies, directives and standards, related to investment, inspection, maintenance and monitoring is largely the responsibility of the Director of Real Property (i.e., with the exception of accounting policies). The Director of Real Property is also responsible for developing the national LTCP and identifying national asset information requirements and standards, and acquiring and managing the national asset information system. A small team (i.e., 3 FTEs at the time of the evaluation) supports the Director with an additional two vacant positions. Notably, the Director is not directly involved in specific asset related decisions (i.e., to invest in or dispose of an asset).

The Director, Strategic Planning and Reporting in national office, is responsible for developing the requirements for annual business unit plans and issuing the call letter. Part of this responsibility is specifying the contents of the business unit long-term capital plans (i.e., what information is required and in what format) based on consultations with other stakeholders in asset management, notably the DGs Eastern and Western/Northern Canada. The business plans, and the attached LTCPs, are approved either at the level of the DGs Eastern and Western/Northern Canada or at presentations to Executive Board for a selection of plans each year. The Director is also responsible for developing the Agency's overall performance framework, including asset related targets, in the Corporate Plan, again based on extensive consultations. These are approved at the Executive Board.

The Executive Director Finance is responsible for the development of the financial/accounting policies with respect to assets, defining what assets are captured in the SAP system and either doing, or monitoring, some of the transactions related to assets in the system.

In addition, some aspects of the overall management framework (e.g., *Parks Canada Cultural Resource Management Policy* and *Parks Canada Visitor Experience Asset Investment Criteria*) are the responsibility of other groups in national office accountable to either the DG National Historic Sites Directorate or the DG External Relations and Visitor Experience Directorate.

The Finance Committee of the Executive Board of the Agency (i.e., composed of the Chief Administrative Officer, the five Directors General in the Agency and the Executive Director Finance) is responsible for approving and monitoring the asset policies, standards, strategies, and the national LTCP, and for allocating and monitoring the use of asset funding as set out in the *Capital Planning Process Directive*. The committee, for example, approves and monitors the allocation of Budget 2005 asset funding to the Agency's program activities as proposed by the DGs Eastern and Western Canada. The committee also reviews and approves asset projects in excess of \$10M. In practice, few capital projects reach the financial threshold for consideration by the committee.

In summary, the Chief Administrative Officer provides the coordination and national direction with respect to asset policy and planning. The Executive Board approves Corporate Plans targets and some business unit Annual Plans. Finance committee approves most asset specific policies and directives, the national LTCP and targets, allocates Budget 2005 resources and provides some monitoring of the use of these resources. Thus, as is typical of many programs in the Agency, no one person or group is responsible for the entire asset management program.

ASSET EXPENDITURES

Definitions and Framework Table 3 presents a framework for understanding asset expenditures and how various definitions fit into the framework. An asset is defined in *Treasury Board Accounting Standard 3.1-Capital Assets* as any asset used in the production or supply of goods and services or program outputs, having a useful life beyond one fiscal year and intended for use on a continuous basis and not for resale in the normal course of operations. In addition, capital assets should have a per item cost of greater than \$10K.

Table 3 Asset Expenditures Framework and Definitions of Maintenance and Capital Expenditures

Primary Objective	Operations of Existing Assets • Provide service • Operate and use asset		Sustaining Existing Assets • Maintain level of service • Protect & preserve asset		Functional Improvement • Enhance service level • Modernize/reconfigure		Capacity Management • Expend level of service • Provide new asset	
Secondary Objective	Utilization	Utilities	Maintenance and Repair	Renewal and Backlog	Upgrade	Alterations and Repair	Addition	New and Replace
Accounting Definitions	Operating Expenditures		Maintenance/Repair Expenditures		Capital Expenditures			
LTCP Definitions			Maintenance, Repair, Inspection		Capital Expenditures (repairs over \$10K)			

Source: Modified from Wooldridge, S.C. (February 2002). Balancing Capital and Condition: An Emerging Approach to Facility Investment Strategy

Generally accepted accounting definitions of asset expenditures (see for example, Parks Canada's *Asset Accounting Policy and Procedures*) are as follows:

Operating expenditures relate to an asset's normal performance of functions for which it is used (e.g., taxes, insurance, utilities, janitorial services, rodent and pest control, waste management, and replacement of items that normally wear out). These costs vary considerably depending on the nature and service conditions of assets.

Maintenance and repair expenditures relate to sustaining assets (i.e., upkeep of property, equipment and structures) in order to realize their original anticipated useful life. Maintenance of an asset typically refers to preventative work, while repair is aimed at restoring damaged or worn-out assets to a normal operating condition. The expenditures can range from small preventative interventions to large-scale repairs or replacement of parts of an asset regardless of the cost of the intervention.

Capital expenditures relate to the acquisition of new assets or to the replacement, betterment or improvement of existing assets (i.e., re-capitalization) designed to produce an enduring increase to the utility, performance, value, or capability of an asset and/or to significantly extend its useful or economic life. As per Treasury Board accounting standards, Parks Canada treats expenditures greater than \$10K that meet the above criteria as capital expenditures. Not all expenditures on assets over \$10K meet these criteria and therefore not all such expenditures are capital expenditures (i.e., some are maintenance expenditures).

Parks Canada defines inspection/maintenance and capital differently for purposes of preparing business unit LTCPs (see for example, *Principles and Filters for Asset Investment in the 2008/09 Business Plan Guide*). Maintenance (i.e., also referred to as operations and maintenance) includes the costs of inspections, which is defined as all work necessary to meet legal requirements, ensure health and safety of the assets and work to determine the condition of the asset, as well as preventative maintenance and small repairs (i.e., those under \$10K). It excludes major repairs.

Capital expenditures are defined as including refurbishment, partial reconstruction, stabilization or extra-ordinary repairs, as well as replacement of an asset or component with another having the same function. In addition, feasibility studies related to assets, and evaluation and mitigation of contaminated sites are treated as capital expenditures. Various other types of expenditures for plans, ceremonies, publications, operations, marketing and those related to minor equipment (i.e., less than \$10K) are excluded from the definition of capital expenditures.⁵ Major repairs (i.e., above \$10K) are included here. In short, for LTCP purposes the major repair component of maintenance in the accounting definition is treated as a capital expenditure.

To avoid confusion we use the terms “**true capital expenditures**” throughout the report to refer to the accounting definition of capital expenditures and “**LTCP expenditures**” to refer to capital expenditures as defined for purposes of preparing LTCPs.

In our interviews we sought to clarify the extent to which the technical distinctions between the three types of asset expenditures were clearly understood. We found that most managers in the field have a general understanding of the accounting distinctions but that in practice the distinctions are often not critical as they are more concerned with the size, complexity and overall costs of the project, rather than whether it is a major repair or a true capital expenditure. In addition, decisions about whether a particular investment is a major repair or a true capital project often require some judgement. The Agency’s *Accounting Policy and Procedures* provide some examples of how to distinguish true capital expenditures from major repairs but in practice it is mostly financial managers coding expenditures who use this information rather than asset managers when they plan and implement projects on the ground.

Estimates of Asset Expenditures The Agency tracks some goods and services expenditures on aspects of **operational costs** (i.e., utilities, grounds keeping and replacement of items that normally wear out) in its financial system. It cannot easily identify the salary costs of asset operations. It does not routinely summarize and report on available operational cost information for assets. We did not pursue this information in the course of the evaluation.

The Finance Branch in National Office reports **actual maintenance expenditures** ranging from \$9.2M to \$9.6M for the yearly financial statements. In contrast, business units in their LTCPs report **planned maintenance expenditures** (see Appendix F for unit level data from the 2007/08 and 2008/09 LTCPs) in the range of \$40M to \$42M per year. An important difference between the actual expenditures reported by Finance Branch and the planned expenditures reported in business unit LTCPs is that the former figure does not include salary costs of employees doing the inspection and maintenance work while the latter figure does include these costs.

⁵ These definitions can be distinguished from the concepts of capital budgets and capital votes. A capital budget corresponds to how the Agency treats capital investment for purposes of long-term capital planning (i.e., the budgeted amount for major repair and recapitalization). Capital budgets in the Agency are not segregated in the financial system but are part of the general goods and services funds allocated to a business unit. A business unit manager allocates funds within their general operating fund to support their approved LTCP. Capital votes existed up until 1997 as separate appropriations by Parliament, distinct from goods and services appropriations, to Departments and Agencies. Capital votes meant there was a clear segmentation between capital and other funds in financial systems (although funds could be transferred between votes). The Agency has used business unit allocations based on the last capital vote in 1997 as the basis for one of its investment targets.

We asked the field units that we visited how they arrived at their planned maintenance expenditures. The methods vary by field unit but generally include some or all of the salaries for staff in maintenance and skilled trades positions and asset management functions, estimates of expenditures for work on code compliance from previous years, and/or assigned maintenance budgets for coming years. In some cases, the estimates seem to include operating expenses as defined in the framework in Table 3 (i.e., costs of power or water, costs of cleaning, grounds care), which would serve to inflate the estimates. In other cases, it was reported that actual maintenance expenditures routinely exceed the planned expenditure in the LTCP, suggesting the estimate is too low.

We have used the field unit planned expenditures on maintenance as the more reasonable figure in our analysis but note there is no way to verify if actual maintenance expenditures correspond to planned expenditures short of reviewing detailed financial transactions for each business unit.

Actual LTCP expenditures are in theory captured in Asset Expenditure Reports (AER) produced by the Agency's financial system.⁶ All expenditures related to projects in LTCPs should be linked to this report when expenditure data are input into the system. In practice, some business units do not code expenditures as required so that they link to the AER. The true capital portion of asset expenditures is identified independently of the AER through use of an internal order code in the system (i.e., IO 3 codes). In comparing the data on true capital expenditures with the data from the AER, we found that the AER may under or over report total true capital spending sometimes by a considerable margin. For this reason, we estimated total actual LTCP expenditures as the sum of all true capital expenditures in the system and the non-true capital expenditures from the AERs. This combined data may still under report LTCP expenditures given that not all the relevant non-true capital expenditures are captured in the AER. The combined data shows total LTCP expenditures to be \$75M in 2005/06 and increasing to \$121M in 2007/08 (i.e., not including land purchases but including spending on special purpose projects such as highway twinning).⁷

The total of self-reported maintenance expenditures and system generated LTCP expenditures for 2007/08 was \$161M or 27% of the Agency's total expenditures of \$585.5M for the year.

ASSET INVENTORY, REPLACEMENT VALUE AND CONDITION RATINGS

Inventory by Category What constitutes an asset for purpose of inventory and planning depends on the particular policy and information system context in the Agency. The Agency's *Asset Management Policy* and *Asset Accounting Policy* define assets differently (e.g., the former excludes information technology assets, assets owned by third parties, historic object and artefact collections, archaeological sites and objects, land and water while the latter include large computers and servers, software, land and leasehold improvements with a historic cost of greater than \$10K). The current SAP inventory is consistent with the Accounting Policy Definition of Assets. The current AMS inventory is **not** consistent with either definition of assets or with the

⁶ There are two AERs one based on funds from Agency's new parks and sites account and the other for all other asset related expenditures. We used both in our analysis.

⁷ True capital expenditures were \$56.8M in 2005/06 rising to \$97.8M in 2007/08 representing about 75% to 80% of the total LTCP expenditures.

intended purpose of the AMS.⁸ It was however, the basis of the inventory descriptions in the 2000 and 2005 Agency LTCPs. Table 4 shows asset counts by the common asset categories reported in 2000 and the counts in 2008 from the AMS and SAP systems.⁹

Table 4 Number of Assets by Asset Categories and Systems (2000 and 2008)

Category	2000 LTCP	2008 Asset Listed in	
		AMS	SAP
1. Bridges (road, trail bridges and structural culverts)	372	557	455
2. Buildings (residential, office and administration, public use, operational and general use, other)	5,336	6,155	4,772
3. Equipment (office furniture and fixtures, scientific and laboratory, woodwork, metal, trade and special industry)	1,686	1,961	473
4. Fleet, Heavy Equipment & Boat (construction equipment, boats, passenger, light, medium and heavy duty trucks)	2,483	3,522	2,569
5. Fortification	260	271	231
6. Grounds (parking, campgrounds, trails, day use, golf courses, signs, monuments & plaques)	4,020	4,335	3,130
7. Highways (national and provincially numbered highways and associated bridges)	126	138	28
8. Marine (Dams, locks, wharves, walls, breakwaters, navigation channels, heritage vessels)	1,004	1,151	1,007
9. Presentation (audiovisual and on site educational displays)	1,023	1,083	834
10. Roads (rural, urban, access, non-public roads)	752	798	730
11. Utilities (potable water systems, wastewater systems, electric power systems, solid waste systems, radio communication systems, underground storage tanks)	837	1,086	804
Sub Total Core Asset Categories	17,899	21,057	15,033
12. Historic Objects and Reproductions	142	4	
13. In Situ Archaeological Resources	534	77	
14. Archaeological Collections	80	122	
Sub Total Other Assets Count in Previous LTCPs	756	203	0
15. Informatics (large computers and servers, software)			116
16. Land		18	568
17. Leasehold Improvements			8
18. No Category (includes two with blank and 427 with no category)		312	
19. Planned Asset/Under Construction		524	474
20. Studies		5	
Sub Total Other Assets Not In Previous LTCPs	0	859	1,166
Grand Total	18,655	22,119	16,199

Sources:

AIMS 2000 data based on MS-Excel spreadsheet replicating the data reported in the 2000 Agency LTCP.

AMS 2008 data were based on AMS data file constructed from business unit web-based reports available in August 2008 and data gathered for five units on revised replacement values. The Fleet, Heavy Equipment & Boat category includes only those assets that were flagged as "in use".

SAP 2008 data provided by the National Office Finance Branch. They are the raw counts used to prepare the Agency's 2007-2008 financial statements and are subject to adjustments prior to preparing the statements.

⁸ Real Property Branch reported the AMS was designed to include built assets and fleet and has proposed that some assets types (i.e., historic and archaeological objects, collections as well a few sub-types of equipment and presentation assets) be dropped from the system. Based on the AMS data we constructed there are 1,975 of these assets in the system (i.e., mostly subtypes of equipment) with an estimated RV of \$67M.

⁹ The spreadsheet we obtained of year 2000 assets includes one more asset than reported in the 2000 LTCP. We have used the spreadsheet numbers for our analysis and reporting.

The AMS and SAP systems do not, and are not intended to, contain the same asset inventories. High-value assets in the first eleven categories shown in Table 4 should be common to both the AMS and SAP systems. For the inventories extracted in November 2007, 99% of the assets in SAP in these categories matched to assets in the AMS (i.e., all but 151 assets of which 144 were equipment). The inventory overlap for these categories might be even greater given incorrect or missing SAP asset ID numbers in the AMS. Based on this finding, we estimated that high-value assets represent approximately 71% of the AMS inventory.

The current AMS asset inventory is larger than the year 2000 inventory used in subsequent national level analysis, long term planning and funding requests to central agencies. The growth in the inventory is due to several factors including adding existing assets to the system since 2000, changing the way an asset is represented in the system (e.g., a highway or trail can be counted as one asset for its whole length or split into several parts and counted as separate assets), acquisition or divestiture of assets, and reclassification of assets between categories. It is also possible that some assets still in the AMS inventory have been disposed of but are not recorded as such. Therefore, the inventory represents an approximate order of magnitude estimate of the real asset holdings of the Agency.

Replacement Value (RV) by Category Many basic asset investment benchmarks depend on the concept of current replacement value (CRV) of assets. In Parks Canada, the current replacement value of contemporary assets is defined as the estimated cost to replace or reconstruct an existing component or asset with a contemporary equivalent according to applicable codes and standards. For built heritage assets, it is the cost to reconstruct or replace the existing asset or its components with a replica that conforms to the shape, material and appearance of a specific period (Parks Canada Re-capitalization Management Process Operations Manual, March 1994). CRV can be used in analyzing investment requirements and expenditure patterns for an asset/facility or for a portfolio of assets.

There is some controversy about the meaningfulness of the concept of replacement value for some of the Agency's assets, particularly cultural assets. Unlike a contemporary building for example, it may be difficult to accurately determine the cost of replacing a cultural asset. More fundamentally, a cultural asset is in some sense irreplaceable. Even an exact replicate of a historic structure is not the original structure and does not have the same historic/cultural importance as the original asset. The Agency does not seek to recapitalize cultural assets (i.e., improve them, extend their capacity or to acquire replacements when the asset reaches the end of its life cycle) but rather to maintain and preserve them over very long time frames. While this does not necessarily imply that the concept of CRV is meaningless for cultural assets, it does suggest that uses of the concept for estimating required both maintenance and capital investments may be somewhat different for these assets compared to standard contemporary assets such as buildings.

The Agency has recorded replacement values for many of its assets dating back to at least the early 1990s. Many of these values are not current (i.e., estimated in the last few years) so we use the term **replacement value (RV)** rather than **current replacement value (CRV)** throughout the report to refer to the data on asset values taken from the Agency's information system (see Appendix G for a graph of dates for recorded replacement values in the AMS). Current

replacement value is still used when referring to the definitions, benchmarks, and formulas in the Agency or references to external documents and the asset literature.

At the level of the Agency as a whole, replacement values of \$6.9B and \$7.1B were reported in 1999/00 and 2000/01 respectively. The later value was reported in the 2000 LTCPs and corresponds with the year 2000 data in Table 4. In the absence of more recent data, Parks Canada has continued to use the \$7.1B figure as the RV of its assets in various documents up to the present. In the course of the evaluation we also identified three other RV estimates for the Agency's assets based on documents and data currently used in the Agency.

The Real Property Management Branch in National Office used the aggregate RV from 1999/00 to estimate revised values for the Agency's asset portfolio based on a yearly construction price inflation averaging 6.5% between 1999 and 2013,¹⁰ and including an additional 5% of the RV for assets not included in the original count and new assets acquired since the original count. With these adjustments, the RV as of March 2000 was \$7.35B. Inflating the value every year meant that it reached \$10.5B in March 2008 and would increase to \$16.08B by March 2013, more than doubling the RV of assets over 13 years. On average the RV increased \$56M per month!

Business units are also required to report the RV of the assets in the unit each year as part of the LTCP cycle. Aggregating these unit level estimates gave a RV of \$7.8B for the Agency's assets in 2007/08. There is a methodology in the Agency's Asset Operations Manual (1994) for calculating the CRV of assets, but in practice there is no assurance that the method has been applied consistently across the Agency and no consistency in how units report RVs for planning purposes.¹¹

Both national office and field staff expressed significant reservations about the validity of the RV data in the AMS (i.e., the values are generally viewed as out of date and too low). In fact, when we first extracted data from the AMS the total RV of the Agency's assets was shown as \$119B due to data errors! As noted, we obtained adjusted RV data from for several business units and arrived at an aggregate RV of \$8.3B for the assets.

In summary, we identified four estimates of the RV of the Agency's assets for 2007/08:

- ▶ \$7.1B recorded in 2000 but still used in internal plans, analysis and reporting
- ▶ \$7.8B aggregated from business unit LTCPs in 2007/08 and 2008/09
- ▶ \$8.3B from the adjusted AMS data we developed for the evaluation, and

¹⁰ Based on Statistics Canada's non-residential construction price index averaged across several geographic locations. This index calculates inflation related to buildings and therefore may not provide an accurate guide to inflation for other assets categories in Parks Canada's portfolio. The model also includes assumptions about future levels of construction inflation and includes the 5% contingency for missed assets in each year, a factor that may not be necessary. The model was built on inflation data available by calendar year. We transformed the data into monthly increases in RV in order to produce RV estimates by fiscal year.

¹¹ It is not clear how business units arrive at their reported replacement values as these often differ from data either in the AMS or from data collected by the Asset Data Integrity Project in Western Canada. In at least one case, when a unit was asked for the basis of their report they could provide no explanation of where it came from. In a few cases units are relying on in-house data systems to identify replacement values. In addition, some units report a constant CRV for the five-year planning period and others increase it over the period to reflect inflation, prior capital expenditures or other factors.

- ▶ \$10.5B from the Real Property Branch's adjustments to the 2000-recorded value based on inflation and new or missed assets.

Appendix H summarizes the various estimates of RV by business unit including those from the 2000 LTCP while yearly estimates from Real Property Branch are shown in Appendix M. We did not determine the "real" CRV of the Agency's assets from these various estimates but noted that obtaining periodic CRVs from systematic review of assets and then inflating this value over some years, before reassessing assets on the ground, is typical of how most organizations determine CRV (Cable and Davis 2005). For this reason we think that the Real Property Branch estimate of RV is closer to the real value than the other estimates that do not take systematic account of inflation and/or missed assets in the system, although the Real Property Branch estimates also have some limitations (see footnote 8).

For purposes of describing assets, RV and condition ratings by categories, types or programs we have relied on the AMS data constructed for the evaluation since the Real Property Branch estimates were not applied to individual assets. We return to some of these aggregate RVs for the Agency in the performance section of the report.

Table 5 shows the RV of the Agency's assets for ten of the eleven core asset categories shown in Table 4. We did not include the category "fleet, heavy equipment and boat" in most of our analysis since many assets in this category were missing replacement values. In 2000, the category accounted for \$94M in RV or just over one percent of the RV for the portfolio.

Table 5 Number of Assets With RVs and RV By Asset Category

Asset Category (\$ Millions)	Recorded In				% Increase From 2000 Inventory	
	2000		2008		Count	RV
	Count	RV	Count	RV		
1. Bridges (road, trail bridges and structural culverts)	356	171	472	209	33%	22%
2. Buildings (residential, office and administration, public use, operational and general use, other)	5,108	1,177	5,667	1,437	11%	22%
3. Equipment (office furniture and fixtures, scientific and laboratory, woodwork, metal, trade and special industry)	1,567	32	1,727	66	10%	106%
4. Fortification	247	438	267	620	8%	42%
5. Grounds (parking, campgrounds, trails, day use, golf courses, signs, monuments & plaques)	3,636	913	4,013	1,071	10%	17%
6. Highways (national and provincial numbered highways and associated bridges)	124	1,012	136	974	10%	-4%
7. Marine (Dams, locks, wharves, walls, breakwaters, navigation channels, heritage vessels)	974	1,758	1,118	2,172	15%	24%
8. Presentation (audiovisual and on-site educational displays)	904	100	902	114	0%	14%
9. Roads (rural, urban, access, non-public roads)	722	1,133	750	1,266	4%	12%
10. Utilities (potable water systems, wastewater systems, electric power systems, solid waste systems, radio communication systems, underground storage tanks)	794	308	948	379	19%	23%
Sub Total	14,432	7,040	16,000	8,309	11%	18%
11. Fleet, Heavy Equipment & Boat (construction equipment, boats, passenger, light, medium and heavy duty trucks)	2,142	94				
Total	16,666	7,135	16,000	8,309		

Notes: Counts are based on assets with non-zero replacement values. Planned assets, those with no category, or an indicator of disposal have been excluded from the calculations although some of these have recorded replacement values. **Sources:** 2000 data were based on the MS-Excel spreadsheet replicating the data reported in the 2000 Agency LTCP. 2008 data were based on the AMS data file constructed from business unit web-based reports available to the units in August 2008 and data gathered for five units on revised replacement values.

RVs for individual assets in 2008 ranged from a low of \$300 to a high of \$116.6M for a highway in Western Canada. Overall the number of inventoried assets with replacement values increased by 11% since 2000 and the estimated replacement value of the assets increased by 18%.

Dividing the 2008 inventory of assets with RVs into those above or below \$10K in RV yielded 12,498 assets with replacement values over \$10K, accounting for all but \$10.1M of the \$8.3B in estimated replacement value.¹²

Geographic Distribution of RVs The estimated RV of the Agency's assets is not distributed equally between regions or business units. Sixty-six percent of the RV of the Agency's assets is found in Eastern Canada (i.e., using RVs reported in business unit LTCPs Appendix H). Five-business units account for approximately 50% of the RV of the Agency's assets (i.e., one or two in the West and three or four in the East depending on which RVs are used). Fourteen business units, out of 34 units reporting RVs for their assets in LTCPs, account for just over 80% of the Agency's total RV.¹³

Condition Ratings by Category

Condition ratings of assets provide critical information for decision-making related to risk management, operation, maintenance and re-capitalization or divestiture of assets. Condition ratings should translate into a detailed report of the corrective needs and current deficiencies associated with an asset as well as related costs (*TBS Guidelines on Real Property Management*). Condition ratings of assets may become increasingly important in the future for government public reporting (see Public Sector Accounting Board's Draft Statement of Recommended Practice, July 2008, *Assessment of Tangible Capital Assets*).

Parks Canada's approach to condition rating, in use at least since the early 1990s, was developed in cooperation with PWGSC (see *Re-capitalization Management Process: Operations Manual and Trainers Tool Kit*, June 1994). In theory, each asset is rated on the dimensions shown in Table 6. These dimension ratings are combined, usually by taking the poorest rating across the dimensions, to arrive at an overall asset condition rating.

In this system, each asset falls into one of four categories ranging from A=good or normal condition or operational capacity and low-risk, to D=Closure, high-risk, major deterioration, or non-operational state. The categories are in turn linked to time frames for major repair/re-capitalization of the asset, where good condition typically means that no major work is required in the next five years, fair means that work is required within three to five years, and poor means that work will be required within one to two years. A rating of closure implies that the major/repair re-capitalization costs are likely to be equal to or in excess of the asset's replacement value. In the 2000 LTCP, it was noted that proper asset life cycle management and cost efficient practice would require maintaining all the assets in good condition.

Table 6 Types of Asset Condition Ratings Used by Parks Canada

¹² A similar analysis of the 2000 data showed essentially the same pattern i.e., 11,651 assets, or 76% of the inventory had a replacement value over \$10K and these assets accounted for \$7.03B of the aggregate CRV.

¹³ The percentage of LTCP and maintenance expenditures represented by particular business units varies slightly depending on whether the self-reported RVs from the 2007/08 business unit LTCPs or the RVs from the modified AMS data assembled for the evaluation are used as the basis of the calculations.

Dimension	Description
Health and Safety	The stability and performance of an asset or its components, as well as their condition and any potential threat they pose to the safety and health of the user or employee (i.e., extent of exposure to hazard and non-disabling or disabling injuries).
Risk to Asset	The consequence to the rest of the asset or adjacent assets if the condition of an asset or its components is not addressed (i.e., extent of loss of stability or performance)
Level of Service	The ability of the asset or its components to perform the role for which it was designated and to the level or quantity of use for which it was intended (i.e., extent of restrictions on normal functions and operations)
Urgency	The urgency of the asset's condition rating for one or more of the other three criteria
Overall Asset Condition	Based on the combined H&S, RTA and LOS ratings.

Source: Parks Canada Re-capitalization Management Process: Operations Manual (1994)

Table 7 shows the condition profile of the Agency's assets based on overall asset condition ratings expressed as a percentage of RV in each condition. Note that as with RV, condition ratings of assets are not necessarily current. Appendix G shows a graph of dates for recorded condition ratings in the AMS. Counts in Table 7 are based on assets with both replacement values and conditions ratings.

Table 7 Asset Condition Profile as a Percentage of RVs by Asset Category

Asset Category (\$ Millions)	Recorded In 2000							Recorded In 2008						
	Count	RV	% Of RV in				Count	RV	% Of RV in					
			Good	Fair	Poor	Close			Good	Fair	Poor	Close		
Bridges	356	171	38	46	14	2	431	204	31	48	18	4		
Buildings	5,108	1,177	30	44	23	3	5,393	1,377	25	47	25	2		
Equipment	1,567	32	42	37	20	1	674	23	54	33	13	0		
Fortification	247	438	28	53	17	2	261	620	19	57	23	1		
Grounds, Monuments and Plaques	3,636	913	39	39	20	2	3,632	939	33	48	17	2		
Highways	124	1,012	29	40	31	0	124	918	32	47	21	0		
Marine	974	1,758	32	38	27	4	1,059	2,025	26	42	29	3		
Presentation	904	100	27	46	25	2	693	99	30	48	20	2		
Roads	722	1,133	18	32	48	2	722	1,216	17	31	51	2		
Utilities	794	308	17	46	33	4	839	302	32	34	26	8		
Sub Total	14,432	7,057	29	39	29	3	13,828	7,723	26	44	28	2		
Fleet	2,142	94	28	65	7	0								
Grand Total	16,608	7,151	29	40	29	2	13,828	7,723	26	44	28	2		

Notes: Counts are the number of assets with both a condition rating and a RV.

Sources: 2000 data were based on the MS-Excel spreadsheet replicating the data reported in the 2000 Agency LTCP.

2008 data were based on the AMS data file constructed from business unit web-based reports available to the units in August 2008 and data gathered for five units on revised replacement values.

At the portfolio level, the percentage of the recorded RV of the Agency's assets associated with overall good condition ratings has dropped since 2000 and the percentage of asset replacement value associated with fair condition has increased. However, as noted previously, replacement values are not necessarily current and it is not possible to match assets recorded in 2000 and in 2008 to compare the profile of the same asset group over time. Therefore, comparisons of 2000 and 2008 profiles, including some positive changes at the category level, should be treated cautiously and might reflect either real improvement or deterioration of a fixed group of assets, and/or addition or deletion of new assets.

Removing assets with replacement values of less than \$10K, or the types of assets that Real Property Branch has suggested be deleted from the AMS (see footnote 3), does not change the overall asset condition profile shown in Table 8.

The Agency's approach to condition ratings represents a technical condition assessment that should link to the technical service life of the asset (Vanier 2000). Another, widely recognized approach to reporting asset condition is the facility condition index (FCI). The FCI is simply the ratio of deferred maintenance (i.e., maintenance not performed when it should have been or was scheduled to be, and which therefore is put off or delayed for a future period) over the CRV of the assets for the period. The ratio can range from 0 to 1 with zero indicating no deferred maintenance and one indicating that deferred maintenance is equal to the CRV of an asset or assets. The FCI is a financial measure of asset condition rather than a technical condition assessment although it is possible to use technical assessments to arrive at an estimate of deferred maintenance and thereby link technical and financial measures of condition. Cable and Davis (2005) reported that the FCI was the most widely used asset indicator among surveyed US federal government departments and agencies.

Many organizations set target values for the FCI at the asset portfolio level and have developed standards using the ratio as an index of asset condition. For example, the Council of Ontario Universities and the Ontario Association of Physical Plant Administrators define a FCI ratio of less than .05 as indicative of good condition assets. A current ratio of between .05 and .10 is indicative of fair condition assets and above .10 represents assets in poor condition. In the United States, the National Parks Service has an FCI target of .14 for all regular assets, .10 for buildings, and .05 for priority buildings. The National Nuclear Security Administration had targeted improving the FCI for its mission critical facilities and infrastructure from less than .10 in 2004 to less than .05 by 2013.

Linking asset condition to FCI ratios also implies that an organization can "carry" a certain amount of deferred maintenance and still have its assets within a target range. For example, with a RV of \$8.3B the Agency could have deferred maintenance in any one year of \$415M and still have an overall good condition asset profile. However, since deferred maintenance is cumulative, the \$415M would have to be cleared the next year along with new maintenance requirements otherwise the deferred maintenance continues to increase each year.

The FCI provides additional information on asset conditions beyond Parks Canada's current approach to rating condition of assets. It provides a more sensitive measurement scale compared to the current system (i.e., the FCI can take any value between 0 and 1 compared to the current approach that provides only four condition options), it is directly linked to an asset or assets investment requirements (i.e., consistent with TBS Guidelines), and it can serve as a basis for comparing conditions and performance between organizations and against standards and targets. Parks Canada has discussed using the FCI but has not yet agreed to adopt the measure. We examine possible FCI ratios for the Agency's asset portfolio and what these imply about asset condition in the performance section of the report below.

Assets vs. Facilities The preceding analysis is based on assets as recorded in the AMS. In practice, individual assets often function as components of integrated groups or facilities. For

example, a campground facility may appear in the AMS as separate components consisting of grounds, washrooms, water and/or electrical utilities to service the sites, and an access road. Highways may appear with the road itself as one or more assets with additional associated structural culverts, bridges and maintenance equipment all inventoried as separate assets. In some cases, individual assets may support more than one facility or type of facility (e.g., utilities or roads that support both contemporary buildings and a designated national historic site). In theory, groups of assets can be aggregated and the replacement values and condition of the facility calculated based on a straight averaging of the component results or a weighted averaging of the component results (i.e., the latter is often done by engineers in assessing the standard subcomponents of a building such as the building shell, its roof, windows and doors, heating and electrical systems, etc.).

The AMS has fields for recording facility ID, numbers and descriptions. As of January 2008, there were 14,082 assets with an associated facility ID (i.e., 75% of all assets in the system) representing 1,426 unique facilities. Business units are responsible for classifying assets into facilities. The basis of this classification is not always clear and standard reports from the AMS available to business units do not include reports based on facilities. For these reasons we did not conduct a separate analysis of facilities. However, it is worth emphasizing that the number of actual facilities managed by the Agency is certainly a small percentage of the number of individual inventoried assets.¹⁴ Secondly, for some management purposes asset information and performance measurement at the facilities level is likely as important as asset specific information (e.g., the cost of operating and maintaining a campground facility rather than costs of each subcomponent).

Cultural vs. Contemporary Assets The 2000 and 2005 Agency LTCPs segmented the asset inventory in various ways to distinguish cultural assets from other types of assets (e.g., from contemporary and presentation assets in 2000). Although some description was provided of the different asset segments, it was not sufficient to allow us to independently replicate the segmentations.

The 2000 and 2005 LTCPs included the 756 historic objects and reproductions, in-situ archaeological resources and archaeological collections shown in Table 4 as part of Agency's cultural resources. It is known that the inventories in the AMS are incomplete (i.e., other inventory systems in the Agency show 1,554 commemorative plaques and cairns, 212,425 individual historic objects, and in excess of 30 million archaeological resources including both objects and situ-archaeological resources). Real Property Branch has suggested removing these assets from the AMS and we have **not** included them in our analysis of cultural resources.

The remaining cultural assets that should be in the AMS are those in the core assets categories in Table 4 that have been designated as a cultural resource under Parks Canada *Cultural Resources Management Policy* (1994), referred to as having a CRM designation and/or those assets with a significant heritage value as designated under *Treasury Board Policy on Management of Real Property*, referred to as Federal Heritage Building Review Office or FHBRO designation.

¹⁴ In Banff, for example, 85% of the 693 non-fleet assets in the AMS are assigned to one of 36 facility IDs. Actual coding of expenditures in the field unit is to one of 22 internal orders that closely follow the facilities identified in the AMS.

A CRM designation applies to any resource having a historic value including landscapes, archaeological and historic objects and records but also any man-made structure including the core assets types shown above. All resources administered by Parks Canada are to be evaluated for their historic value and designated as either level one (i.e., having national historic significance), level two (i.e., having historic value but not at a national level), or as having no historic value.

According to *Treasury Board Policy on Management of Real Property*, all federal buildings 40 years of age or older must be evaluated in order to protect those which have significant heritage value. Based on consideration of historical association, architectural significance and the building's contribution to its current environment, a building may be designated as "classified", or "recognized" with the former designation implying a higher level of importance. In principle, all FHRBO designated buildings administered by Parks Canada would also have a CRM designation.

Table 8 summarizes information on overall counts of assets with a CRM and/or FHRBO designations for the 2000 and 2008 data. FHRBO designations were not available for 2000.

Table 8 Number of Cultural Resources and RV by Asset Category

Asset Category (\$ Millions)	Recorded In 2000		Recorded In 2008		
	Count with CRM Designation	RV N=1,532	Count With CRM Designation	Count With FHBRO Designation	RV N=2,004
Bridges	22	38	24		38
Buildings	721	401	694	352	440
Equipment			3		.2
Fortification	215	393	228	42	585
Grounds, Monuments and Plaques	524	84	451	8	96
Highways			0		
Marine	160	782	159		654
Presentation	25	9	53	2	21
Roads			11		8
Utilities			10		5
No Category			85		.03
Planned Asset			260	2	8
Sub Total	1,667	1,707	1,978	406	1,856
Total Unique Assets	1,667		2,004		

Notes: Counts are the number of assets with the designation. The "N=" in the RV column is the number of assets associated with a category and having a RV. **Sources:** **2000 data** were based on the MS-Excel spreadsheet replicating the data reported in the 2000 Agency LTCP. **2008 Data** were based on AMS data file constructed from business unit web-based reports available to the units in August 2008 and data gathered for five units on revised replacement values.

In the 2008 data, all but 26 of the FHBRO designated assets had a CRM designation so that the total number of unique cultural assets identified in the AMS was 2,004. The number of FHBRO designated buildings owned by Parks Canada in the AMS does not match the number recorded independently by the Federal Heritage Building Review Office (i.e., 512 as of March 2007¹⁵). Whether these additional buildings are currently inventoried in the system and not flagged as designated, have incorrect flags, or are miscoded in data entry, is not known. There is no readily

¹⁵ Five buildings recommended for designation between April 2004 and March 2007 but not yet approved by the Minister are included in this count.

available independent source of assets with a CRM designation, so it is not possible to validate the accuracy of the CRM inventory.

The 1,667 cultural assets in 2000 represented 11% of the Agency's core assets (i.e., not including fleet) and 24% of the replacement value of the asset portfolio. In 2008, the 2,004 cultural assets also represented 11% of the core non-fleet assets and 22% of the replacement value of the asset portfolio.

Table 9 shows the condition profile of the cultural assets including those with no category and planned assets in 2008.

Table 9 Cultural Asset Condition Profile as a Percentage of RV by Asset Category

Asset Category (\$ Millions)	Recorded In 2000						Recorded In 2008					
	Count	RV	% Of RV in				Count	RV	% Of RV in			
			Good	Fair	Poor	Close			Good	Fair	Poor	Close
Bridges	22	38	27	64	5	4	24	38	24	62	5	9
Buildings	640	401	31	37	30	2	704	433	26	53	19	3
Equipment							2	.3	100	0	0	0
Fortification	203	393	29	54	16	1	223	584	20	58	22	1
Grounds, Monuments and Plaques	401	83	40	53	7	0	341	91	46	41	13	0
Highways												
Marine	153	782	22	35	36	7	157	654	18	35	40	6
Presentation		9	47	47	2	4	51	21	60	32	5	3
Roads							11	7.7	27	51	22	0
Utilities							10	5.2	11	80	0	8
No Category							2	.02	7	0	93	0
Planned Asset							25	3.5	4	25	71	0
Total	1,419	1,705	27	41	28	4	1,550	1,838	22%	48%	26%	4%

Notes: Counts are the number of assets with both a RV and a condition rating

Sources: 2000 data is based on the MS-Excel spreadsheet replicating the data reported in the 2000 Agency LTCP.

2008 data is based on the AMS data file constructed from business unit web-based reports available to the units in August 2008 and data gathered for five units on revised replacement values.

As with the results shown in Table 6 for the whole asset portfolio, the condition profile of cultural assets is somewhat poorer in 2008 compared to 2000. Comparisons of the overall profile of cultural assets to all other assets also show a poorer profile of cultural assets (i.e., the overall profile of all other assets in 2008 was 27% good, 42% fair, 29% poor, and 2% closed compared to the totals for 2008 in Table 9). Again, comparisons over time and between the cultural assets and other assets should be treated cautiously because of the known incompleteness of the inventory, out of date values and the changes in the inventory over time.

Assets by Program Activity In 2000, assets in the inventory were linked to product service packages (PSPs) in the asset system. PSPs represented what are essentially sub-activities in the current Program Activity Architecture (PAA) structure used by all government departments and agencies for planning and reporting. We mapped these PSP codes to the existing programs of the Agency in order to compare asset data over time. In the current system, unlike the data in 2000, an asset can be assigned on a percentage basis to more than one program activity or sub-activity (i.e., an asset can support both the visitor service program and internal service delivery if a visitor centre and administrative offices are located in the same facility). Table 10 shows the results for asset counts and asset replacement values.

Table 10 Number and Replacement Value of Assets By Program Activity

Program Activity (\$ Millions)	Recorded In 2000			Recorded In 2008		
	Counts	RV N=16,392	% Of RV	Counts	RV N=15,988.2	% Of RV
Heritage Places Establishment	20	8	0.1	10	.4	0.01
Heritage Resources Conservation	4310	1,936	27	4,122	2,981	40
Public Appreciation and Understanding	1780	381	5	983	114	2
Visitor Experience	7061	2,889	41	7,827	2,735	37
Townsite Management	0	209	3	392	211	3
Highway Management	0	1,173	16	409	810	11
Internal Service Delivery	3382	517	7	3,126	510	7
No Activity Identified	1197					
Sub Total	17,750	7,114		16,869	7,361	

Notes: Counts are the number of assets associated with a program. The "N=" is the number of assets associated with a program and having a RV.
Sources: **2000 data** were based on the MS-Excel spreadsheet replicating the data reported in the 2000 Agency LTCP.
2008 Data were based on the AMS data file constructed from business unit web-based reports available to the units in August 2008 and data gathered for five units on revised replacement values.

The table suggests that the percentage of the replacement value of the assets associated with each program activity has shifted over time so that a much higher percentage is now associated with the heritage resource conservation program and somewhat less with public appreciation and understanding, visitor experience and highway management.

Table 11 shows the condition profile of assets by program activity for the two time periods.

Table 11 Asset Condition as a Percentage of RV by Program Activity

Program Activity (\$ Millions)	Recorded In 2000						Recorded In 2008					
	Count	RV	% Of RV in				Count	RV	% Of RV in			
			Good	Fair	Poor	Close			Good	Fair	Poor	Close
Heritage Places Establishment	20	4	68	13	20	0	4	0.4	100	0	0	0
Heritage Resources Conservation	3,399	1,934	33	43	21	3	3,432	2,831	26	46	25	3
Public Appreciation and Understanding	1,520	380	23	56	19	3	634	106	49	36	13	1
Visitor Experience	6,655	2,887	30	35	32	3	6,867	2,568	26	43	29	2
Townsite Management	890	1,382	23	41	36	0	366	205	43	20	33	4
Highway Management	3,050	516	31	40	27	2	404	807	37	30	33	0
Internal Service Delivery	1,040	33	9	81	10	0	2,099	503	20	41	38	1
Total	16,574	7,135	29	40	29	2	13,806	7,020	28	42	28	2

Notes: Counts are the number of assets with both a RV and a condition rating

Sources: **2000 data** were based on the MS-Excel spreadsheet replicating the data reported in the 2000 Agency LTCP.

2008 data were based on the AMS data file constructed from business unit web-based reports available to the units in August 2008 and data gathered for five units on revised replacement values.

Again it appears that the condition profile of assets associated with each of the Agency's program activities has shifted over time. It is important to note that the number of assets associated with a program has dropped significantly since 2000 (i.e., 92% of the core assets in 2000 were associated with a program whereas only 66% of the core assets in 2008 were associated with a program). It is not clear to what extent changes in the number of assets associated with particular program, and by extension the RVs and condition ratings, reflect missing data verses reconfiguration of the program activities. We know for example that the Agency changed the definition of the public appreciation and understanding and visitor experience programs in 2007/08 to move all activities and services associated with on-site visitors to the visitor experience program (e.g., personal and non-personal interpretation sub activities previously associated with public appreciation and understanding are now linked to

visitor experience). Given this change we would expect that fewer and fewer assets would be associated with the Public Appreciation and Understanding Program over time.

We also heard other concerns about how assets are associated with programs. For example, current practice is to associate roads other than highways with the visitor experience program. This may not be appropriate in all cases. With the restructuring of the Agency's PAA, some aspects of the historic canals are associated with the conservation program, some with visitor experience program and some with the throughway and townsite management program. Currently, canal assets (including dams and water level control assets) are largely linked with the conservation program. The Agency has not undertaken a comprehensive review of how its assets are associated with its revised PAA and whether the current data is appropriate. For all these reasons, the nature and significance of the changes over time in the asset profile associated with particular program activities are ambiguous.

High-Risk Assets In its 2000 LTCP, the Agency identified significant risk to health and safety (i.e., high exposure to health hazards and/or risk personal injury) as its top investment criteria. In the 2005 LTCP, it set a specific target to reduce the percentage of assets requiring investment because of health and safety concerns (discussed in more detail in the performance section of the report).

Recently, the concern with health and safety has focused particularly on bridges and dams in response to widely reported failures in other jurisdictions. A special effort was made to compile an up-to-date inventory of existing bridges and dams (November 2007). This inventory contains 494 bridges (i.e., 41% highway bridges, 29% road bridges, and 30% trail bridges)¹⁶, and 302 dams. The AMS includes more bridges and dams than the recent inventory.¹⁷ Bridges in the AMS data shown in Table 4 are distributed between the bridge and highway asset categories. Dams are all part of the marine category.

Of the 302 dams in the recent inventory, 63% were rated in good or fair condition (based on number of assets, not percentage of RV associated with condition ratings). Only three lacked condition ratings. For bridges, 20% lacked condition ratings and 57% were in good or fair condition (again reflecting number of assets by condition). These condition ratings are somewhat poorer than those recorded in the AMS based on a somewhat different inventory (i.e., 70% dams good or fair and 65% bridges good or fair).

The recent inventory also provides additional data on the date of last inspection, information on who performed the inspection, other kinds of condition ratings for bridges, and other notes and observations. Thus, it serves as part of the Agency's due diligence requirements for documenting high-risk assets and as a baseline for future planning. The recent inventory has not been used to update the information in the AMS. It was also reported that the Agency will undertake to update the inventory again based on the recent definition of bridges based on its

¹⁶ In contrast, the minutes of the January 2008 Finance Committee where Bridge and Dams Inspection Standards Directives were approved, reference Agency responsibility for over 1,000 bridges, including 415 vehicular and 331 Class A pedestrian bridges and over 254 Class B pedestrian bridges.

¹⁷ And in the case of bridges a very different profile of bridge subtypes compared to the recent inventory.

January 2008 Directive for Design, Construction, and Inspection of Vehicular and Pedestrian Bridges.

Summary of Asset Inventory, RV and Condition Ratings

In summary, what constitutes an asset varies across different policies, directives and plans and between asset systems. There are clearly many problems with the completeness and quality of the data in the existing AMS inventory. Known updates to asset information (e.g., dams and bridge data, business unit internal systems with updated RVs, results of the Asset Data Integrity Project) are not routinely used to improve the information in the AMS. The problems are widely acknowledged in the Agency.¹⁸ Therefore, the Agency has at best an approximate understanding of what assets it owns, their condition and replacement values.

Based on the imperfect data available for the evaluation, it appears that the inventory is growing over time. The reasons for the growth include adding existing assets to the systems, changing the way an asset is represented in the systems and/or acquisition/disposal/and reclassification of assets. It is also probable that some assets still in the AMS inventory have been disposed of but are not recorded as such.

We found at least four estimates of the RV of the Agency's assets in use in 2007/08. It is likely that the estimate based on adjusting for inflation and missed assets (i.e., \$10.5B as of March 2008) is closer to the real value than others (i.e., from \$7B to just over \$8B). However, there is no way to determine the precise contemporary RV of the Agency's assets given existing replacement values. Based on the asset inventory we constructed for the evaluation, the RV of the Agency's assets was \$8.3B. This represented an 18% increase in the RV between 2000 and 2008. Virtually all of the estimated replacement value is accounted for by 70% to 75% of the inventory with current replacement values over \$10K.

The percentage of the inventory identified as cultural assets in the system (i.e., defined as assets with CRM and/or FHBRO designations), has remained more or less the same over time, as has the percentage of the overall replacement value represented by cultural assets. The number and replacement value of assets associated with program activities has changed markedly over time.

Condition ratings of assets provide critical information for decision-making related to risk management, operation, maintenance and re-capitalization or divestiture of assets and are likely to become increasingly important in government public reporting based on the Public Sector Accounting Board's draft statement of recommended practice with respect to tangible capital assets. Conditions profile of the Agency's inventory of assets has become slightly poorer over time, with cultural assets having a slightly poorer profile than other assets in the inventory both in 2000 and in 2008. The meaning and significance of these changes is uncertain given the basic problems with the inventory.

¹⁸ Problems with asset data quality are not specific to the Agency but appear to be wide spread in government based on reports from the United States (see for example Louise Sabol, *Bridging the Data Gap in Federal Asset Management*, October 2006, http://www.dcstrategies.net/pdf/DCS-FFC_BridgingDataGap%20in%20AssetMgmt.pdf)

Finally, we noted that the Agency's approach to condition rating of assets is based on technical assessments of condition rather than financial assessment of condition as measured by the facility condition index (i.e., the FCI). The FCI provides additional information including a more sensitive measurement scale (i.e., ratios can range along a continuum from 0 to 1), a direct link to the cost of repair/maintenance, and a basis for comparing asset conditions to other organizations. There have been internal discussions in the Agency of the meaning and applicability of the concept for the Agency's assets but no decision on whether to adopt and implement the index.

ACTIVITIES, OUTPUTS AND REACH

Key asset activities include planning and prioritization of asset investments, monitoring progress, acquiring, operating, maintaining, renewing and/or disposing of assets and maintaining good asset information.

Asset Management Planning and Long-Term Capital Planning The Agency does **not** produce asset management plans. By this we mean it does not produce plans matching an analysis of existing assets (supply, condition, costs) to projected asset demands based on corporate and business priorities and service delivery strategies and then translating these into specific strategic acquisition, renewal, operations and maintenance and disposal plans. Instead the Agency's asset planning largely consists of producing business unit LTCPs each year as part of the annual cycle of overall business unit planning and an Agency LTCP every five years. LTCPs focus on describing major repair and capital projects to be undertaken over a five-year period. As discussed below in the section on relevance, other planning processes particularly management planning may also impacted on asset planning.

Business unit LTCPs are an important output of the asset management process as the mechanism for translating the Agency's overall investment objectives into concrete on-the-ground projects. They also serve as a key input into the analysis and reporting by the DGs Eastern and Western/Northern Canada to the Finance Committee of the Executive Board.

There have been four cycles of business unit LTCPs in the time period covered by the Agency's 2005 LTCP (i.e., plans starting in 2005/06 and continuing each year through the most recent plans starting in 2008/09). All units have produced LTCPs each year although not all units complete all elements of the template.

The LTCP is a spreadsheet template where each funded project is listed with a description, the park or historic site where the asset(s) is/are located, its link to one or more program activities, the source of funds for the projects, the names of the assets involved, whether the asset(s) have a CRM designation, prior years investment, planned investments by year for each of the five years covered by the plan, anticipated future year investment and the total estimated cost of the project. A separate listing and detail is provided for projects for which no funding source is currently available.

The LTCPs include a summary table showing the RV of the unit's assets, its 65% investment target, planned investment as a percentage of these values and a line for reporting the aggregate maintenance and inspection expenditures for each year of the plan. Plans are usually prepared by

December of the year preceding the start of the plan, and approved as part of the unit's overall annual business plan in the January to March period.

Although an attempt was made in the first two planning cycles to link projects in plans with specific asset numbers, this was dropped in 2007/08. Listed projects now include those where a specific asset can be inferred from the projects title and others that are about classes of assets (e.g., renew signs) or costs for services (e.g., cost of a service agreement with PWGSC). At one time, plans also included the health and safety condition rating of the asset(s) related to the project. This has also been dropped. Sources of funding referenced in plans include more than the basic distinctions between A-base, Budget 2005 and revenue used in the 2005 Agency LTCP; and therefore, require some interpretation in order to link them to the overall plan. The RV of assets in the unit and in some cases the 65% investment target shown in individual plans are often not consistent with other sources of the same information. Finally, we noted that LTCPs do not distinguish the major objectives of the listed asset projects (i.e., objectives in the sense of the investment framework shown in Table 3 such as major repair, functional improvement, addition of capacity, replacement or disposal of an existing asset). We review some of these issues in latter sections of the report.¹⁹

Monitoring of the plans and seeking approval for changes in the original 2005 LTCP targets is the responsibility of the DGs Eastern and Western/Northern Canada. They report to and receive approval from the Finance Committee of the Executive Board. In practice, reporting has largely consisted of showing summaries of planned expenditures aggregated from business unit LTCPs for the upcoming five-year period for A-base (including revenue), Budget 2005 and special purpose funds. There has been no attempt to report systematically on actual expenditures against plans (i.e., the July 2008 presentation does include expenditure data for some projects supported by Budget 2005 funds but this is incomplete and is not linked to plans).

Presentation and approval of changes in investment targets has focused on the Budget 2005 funds (e.g., seeking approval to advance funds for the 2010/15 period for use in the 2005/10 period; changing the profile of spending Budget 2005 funds by program activity for the 2005/10 period). There is no attempt to show how these changes in Budget 2005 investment plans affect the original overall investment plans in the 2005 LTCP.

The approval process has also served to allocate Budget 2005 funds to program activities for the 2010/15 period. This provides some certainty to business units so that they can engage in long-term planning and project implementation (although not all of these funds have been allocated to projects particularly in the East). In effect, business unit LTCPs, in as much as they define future projects and spending intentions lead to a future Agency wide LTCP (i.e., a bottom up approach to Agency wide long-term capital planning). There is no analysis showing if, and how, these plans are coordinated with or lead to achieving the asset objectives in the Agency's Corporate

¹⁹ Visual inspection of the project descriptions in plans shows a wide variety of types of activities related to operations (i.e., assessment or planning related to assets) maintenance/repair and true capital expenditures. The list implies a broad definition of assets (i.e., includes expenditures on servers/websites, costumes, land) rather than the narrow definition found in the Parks Canada Policy on Asset Management. Project descriptions are sometimes vague (i.e., upgrading or recapitalizing utilities or facilities, expenditures on a Special Service Agreement with PWGSC) without specifying which assets will be targeted by the expenditures.

Plan (i.e., how planned future spending links to maintaining or improving the condition of cultural resources in the resource conservation program or the condition of assets associated with the townsite and throughway program).

In short, the Agency has established overall targets for the asset program (i.e., Corporate Plan condition targets) but these are not linked to an analysis of current inventories, conditions and costs of the targeted assets and are not translated into strategic acquisition, renewal, operations and maintenance, and disposal plans. The Agency does have a well-defined process for producing business unit level LTCPs that prioritizes investment projects and could with some modification be used to distinguish acquisition, renewal and disposal projects. However, there is no analysis or monitoring to show that the bottom up nature of this process results in projects consistent with the Agency's corporate targets for asset conditions in either the short or long-term. Monitoring of the plans has largely focused on planned use of one funding source (Budget 2005 funds).

Acquisitions and Disposals One simple measure of the extent of asset activity is the number of assets acquired and disposed of over time. Unfortunately, there is no straightforward and reliable way to determine this relatively simple statistic given the Agency's current information systems.

The AMS does include a date for year of acquisition. But this data should be treated cautiously. Thirty-nine percent of the assets representing 30% of the RV of the portfolio were missing the date for year of acquisition in the database we constructed for the evaluation. In addition, it is possible that in some cases date of acquisition is a report of the date on which an asset was inventoried and some relevant assets are currently captured in the AMS.

Based on the limited data we had available in August 2008, we found 1,296 assets (not including the fleet, heavy equipment and boat category) were acquired since 2000. These were mostly buildings (26%), equipment (21%), plaques, general grounds, day use grounds, parking areas, trails (17%), utilities (14%), and roads and presentation assets (16%) with a collective RV of \$295M. Our January 2008 extraction of fleet data showed 1,168 vehicles with an acquisition date subsequent to 2000 with the majority being light trucks, passenger vehicles and miscellaneous equipment. This totalled to approximately 2,400 assets over seven years or on average 352 assets per year with approximately half of these on average being fleet related assets.

The AMS also has a field to show if an asset is closed (i.e., the equivalent of disposed). As of January 2008, 273 non-fleet, and 141 fleet assets (i.e., 414 in total) were shown as closed. Again, more than half of the closed non-fleet assets were buildings (149), followed by assets in the grounds monuments and plaques category (45) and equipment (30). The RV of the closed non-fleet assets was approximately \$60M.

We also attempted to document asset acquisitions and disposals in the SAP inventory of high-value assets. The number of inventoried assets has increased over time (i.e., 15,295 in March 2002 to 16,199 in March 2008 or by 904 assets, see Appendix I for details). This is a net result of adding 1,657 assets with new asset identification numbers and subtracting 931 assets whose identification numbers were removed since 2002. Unfortunately, adding and subtracting asset

identification numbers occurs both with real acquisitions and disposals but also when assets are transferred between asset categories. We were not able to identify a practical way to separate these types of transactions without detailed tracing of electronic and paper records for each asset.²⁰

In summary, it is clear the inventory is growing. But it is impossible to determine how much of this change is due to adding existing assets to the inventory, real acquisitions and disposals and changes to the classification of assets in the system. It is likely that the vast majority of acquisitions and disposals involve contemporary assets particularly in the categories of buildings, fleet, plaques, general grounds, day-use grounds, parking areas, trails, and utilities and to a lesser extent, roads and presentation assets.

Inspection and Maintenance Another core activity of the asset management program is inspection and maintenance. Inspection ensures that assets continue to comply with various legal codes and standards (i.e., fire code, dam and road safety standards, water quality standards, etc.). Maintenance is a more general term and can include inspection and work to keep an asset in normal operating condition outside of strict code compliance requirements.

The AMS has a capacity to plan and monitor code compliance and preventative maintenance work. It contains a list of national maintenance standards and requirements developed by PWGSC after a review of relevant codes and legislation and last updated in 2006 (i.e., currently 249 standards). These standards concern equipment found in buildings, and are mainly related to the protection of staff under the Canadian Labour Code. Each business unit with relevant equipment (i.e., 142 units such as national parks, national historic sites, service centers, townsites, etc) is supposed to complete an inventory, for inclusion in the AMS, linking the equipment to assets and/or facilities. Table 12 shows six categories of equipment for which code compliance standards exist and the AMS inventory counts for each category.

Table 12 Categories of Equipment Related to Buildings Requiring Code Compliance Inspection and Counts of Inventoried Equipment in the AMS

Categories	Examples	Count
Architectural	Chimneys and stacks, exterior stairs and railings, ladders, overhead powered doors.	4,773
Conveying Systems	Elevators, escalators, wheelchair lifts, freight platform lifts	85
Electrical	Generators, grounding systems, switches	3,827
Fire Prevention	Smoke detectors, emergency exit doors and signs, fire alarm systems, fire doors, fire extinguisher systems and portable units, fire hydrants, fire protection equipment, sprinklers, and water tanks	11,488
Mechanical	Air Compressors, boilers, ductwork, filters, incinerators, louvers and screens, storm drainage	3,904
Special Equipment	PCB storage sites, fuel and chemical storage tanks, self contained breathing apparatus, voice communication systems	872
Total		24,949

Source: Spreadsheet produced by Real Property Branch from AMS (October 2008)

²⁰ The financial system does provide a sum of the dollar value of asset betterments and write downs related to asset disposal or accelerated depreciation but as noted we could not find a practical way to link these data to particular assets.

The AMS also offers the capacity to include Parks Canada guidelines or business unit specific preventive maintenance standards (i.e., 191 as of October 2008 including for example Parks Canada's potable water standards. The AMS currently shows 1,197 pieces of equipment linked to Parks Canada and business unit standards. The system does not currently include Parks Canada's recently developed bridge and dam inspection standards and the soon to be developed wastewater directive standards. These kinds of asset related standards arise from due diligence requirements and not from code compliance concerns. The AMS was developed primarily with the intention of capturing code compliance related to equipment in buildings although reporting on inspections related to assets is possible.

Several units do not have code compliance equipment inventories in the AMS (i.e., five out of 142 where an inventory would be expected). Comparisons of the counts of equipment requiring code compliance inspections in the AMS with counts produced from spreadsheets developed for four business units in the mountain park block found that in three cases the AMS has a substantially larger inventory than the spreadsheets, and in one case the spreadsheet contains substantially more equipment than the AMS. It is not clear which counts are more accurate. For these four business units more than 30,000 inspections are required each year, suggesting that for the Agency as a whole the number would be much higher.

A business unit can use the AMS to create work orders to track inspection and maintenance. Since equipment is linked to assets, once an asset or facility is identified in a work order the system automatically identifies the associated equipment and tells users the kind and frequency of inspection required. Inspection frequencies can range from weekly to once every 12 years. The inspections are conducted by skilled trades people in the field unit (i.e., plumbers, electricians or carpenters), by general works personnel, or staff working at the location, or contracted out. Once the requirement and frequency are identified the user can schedule the work in the system (i.e., which week during the year) and can follow-up to show if the planned work was cancelled, completed, deferred, or partially completed. Use of work orders also allows the unit to track costs of inspection and maintenance work. The system can produce a report showing labour, equipment and goods and services costs associated with different types of inspection and maintenance functions and totalled for the year.

A review of the system information for 2007/08 (Real Property Branch, July 2008) found that 63% of the 142 units with code related equipment inventories were using work orders in the system, 60% were actually planning the work, and 49% were reporting on the work. The review did not assess the extent to which work orders, planning or reporting was done for the complete inventories, only whether it was done for at least some of the assets.

In summary, we found a general consensus among managers we interviewed on the importance of having good information on inspection and code compliance/due diligence requirements. For the Agency as a whole, the required number of code compliance inspections likely numbers in the tens of thousands annually with additional due diligence requirements and internal inspection standards as well. The AMS has the capacity to track and record this information and includes documented national code compliance requirements. However, the interest in having the information has not translated into all units maintaining complete equipment inventories in the system or using the national system to create work orders for inspection and maintenance,

schedule the work and report on results of inspection and maintenance activities. This is not to say that the work is not done. In some cases, in-house paper or electronic systems are used in place of, or to supplement, the AMS. However, at a national level, the information is incomplete and poses a risk that lack of compliance may lead to health and safety, legal or reputational risks for the Agency.

Maintaining Data In our interviews with managers in the field, we found consensus on the importance of having an asset inventory and recording some basic information such as the RV and condition of the assets. As noted, all managers also support having good information on legal and statutory requirements for inspections and maintenance. However, for most managers, both in the field and in the Real Property Group in national office, updating the current asset information is not a priority. At the field level, managers we spoke to were familiar with the assets they manage on a day-to-day basis and do not rely on system information. A few field units have never used, or have given up using, the AMS altogether and rely on in-house systems or databases. We were told that business units have been directed to maintain up to date information in the AMS but this has not been followed-up to ensure compliance. A common theme in our interviews was the need for additional personnel to populate and keep up-to-date any asset management system.

The Agency recognized in the 2005 LTCP that it required improved information on assets to effectively direct efforts to the highest priorities, ensure vigilance in monitoring and oversight, and to make strategic decisions leading to the renewal of the asset base. Finance Committee of the Executive Board (November 2006) approved in principle a plan to acquire a new more comprehensive system to replace the existing AMS. The new system will be a commercial of the self system implying it will have a track record of successful implementation in other organizations and vendor based support and training compared to the current system which was built within the Agency. The system is intended to have both inventory and work order components and capture the kinds of inspection and due diligence requirements reviewed above as well as investment requirements, capital project planning and reporting, and energy monitoring. The cost of acquiring the system over the period April 2007 to March 2010 was estimated at \$3.5M including software, maintenance, data conversion, and training, with \$345K ongoing annual costs.

As of August 2008, the Agency was awaiting PWGSC approval to issue a Request for Proposals to acquire a new system. Assuming the new system is acquired by January 2009, it is expected that it will take until approximately April 2011 to fully test and implement the system in all business units with reasonably good core data. In the meantime, the Real Property Branch reports that it has begun work to identify existing business unit asset inventories and has begun mapping asset business processes.

In summary, managers at the business unit level are ultimately responsible for assuring that asset information in the national systems is up-to-date. In some cases the information can be entered directly in the systems while in others it must pass through national office before being entered in the system. Managers agree that basic asset and code compliance inventory is important but have not made keeping this information up-to-date a priority. Direction to maintain and update information in the existing system has been given but compliance has not been monitored and

enforced. The Agency has recognized the importance of good information and that it needs to improve its information base. Addressing this problem has largely focused on acquiring a new real property management system. This will be the Agency's third asset related information system since 2000. Each system has provided, or should provide, improvements over the previous one.²¹ There is a risk that simply acquiring a new system, one with much more capacity for managing multiple aspects of asset operations, maintenance and renewal, will not address some of the fundamental problem of committing to and ensuring the long term completeness and quality of the core asset information.

Reach of LTCP Expenditures

LTCP expenditures include both major repair and true capital expenditures. This is the major expenditure stream in the asset management program (i.e., approximately 75% of the estimated expenditures in 2007/08). Activities associated with this component of the program include developing project proposals and plans, assigning work to internal staff, contracting with PWGSC or others if required, implementing the project, monitoring or supervising the work and ensuring that the final product conforms to codes, standards and design specifications.

A basic measure of the reach of the asset management program would be the number of assets or facilities that are subject to major repair or recapitalization each year. However, as noted previously, LTCPs do not link projects to individual assets or facilities and therefore cannot be used to determine the overall reach of the program (i.e., the number of listed projects in the 2007/08 plans varied from 847 in the first year of the plan to 508 in the final year). The Agency's financial system does not link capital expenditures to the inventory of high-value assets in the system.

Another indicator of the reach of the LTCP expenditure component of the asset management program would be the number of partners that are engaged in supporting asset repair, renewal or acquisition. Again, the Agency does not have comprehensive statistics on this aspect of reach. A few projects in business unit LTCPs list partners or another specific organization as the source of funds for the project. We were uncertain as to the completeness and validity of this information, although it appears likely that the total number of partners involved in asset related projects is small.

Summary of Asset Management Activities, Outputs and Reach

The Agency does not do asset management planning in the sense of linking service delivery and conservation objectives to an analysis of existing assets leading to defined acquisition, renewal, operation and maintenance and disposal plans. Instead it focuses on planning major repair and renewal projects (LTCPs) as well as projects that business units would like to undertake but do not have the funding for. The LTCPs do not provide complete information on the intended purpose of the asset investments (i.e., acquisition, renewal or functional improvements, disposal)

²¹ The original AIMS created at the time of major asset reviews in 1999 and 2000 housed the data in business unit distributed databases which made it difficult to produce efficient national roll-ups of asset data. The move to the AMS was an improvement in that it created a national web-based single data warehouse but data was not systematically maintained and updated so that in some respects the data is less complete now than it was in 2000. The proposed system would provide even more capacity to link directly to the financial system and to include planning data as well as inventory and operations and inspection/maintenance data.

and do not link investments with information on the condition of assets or asset life cycles. There is no process to ensure this bottom up project planning will achieve overall corporate objectives. There is little monitoring of the plans against actual expenditures. Most of the focus has been on monitoring and adjusting future plans for the Budget 2005 fund component of total LTCP expenditures.

The Agency lacks good information on basic measures of most asset management program activities including:

- ▶ The overall number of assets acquired and disposed of in a given period,
- ▶ The extent of inspection and maintenance activities, and
- ▶ The reach of the LTCP expenditure component of the program in terms of either the number of assets or facilities that are subject to interventions, or the number of partners engaged to support major repair, recapitalization or acquisition projects.

The Agency has recognized that it requires improved asset information and has launched a process to acquire a new information system. Acquisition of the new system is not anticipated for several months and will require more than two years of work before good core data are available for the majority of business units. In the meantime, the Real Property Branch reports that it has begun work to identify existing business unit asset inventories and has begun mapping asset business processes. Given the history of the Agency acquiring and abandoning asset information systems, there is a risk that the new system will face similar challenges in ensuring that information is maintained over the long term.

MATURITY OF THE ASSET MANAGEMENT PROGRAM

There are a number of models in the literature for evaluating the maturity of asset management function's inputs, activities and outputs (e.g., governance, roles and responsibilities, policies, information systems, planning, acquisition and disposal, and performance measurement and management).²² We did not formally evaluate the Agency's asset management program against these criteria but did note that in several respects the Agency is at the early stages of a mature asset management program, despite a long history of managing assets. In particular, the Agency is still developing its understanding, and making readily available at a national level, information on the extent and nature of its asset inventory, the condition of assets, changes in condition over time, inspection and maintenance regimes and activities, total life cycle costs of assets and facilities (i.e., operations, maintenance and capital costs), and the objectives and outcomes of asset investments (i.e., as defined in Table 3). In addition to its internal use for asset management, it is likely that the Agency will face increasing pressure overtime to publicly report on this kind of information. As a consequence of not having this information, we concluded that the Agency's overall national asset management focus was on operational aspects of asset management (i.e., getting funds to business units to respond to urgent needs and for "holding things together"). It simply does not have the information to know if local decisions result in using assets as a strategic tool for driving achievement of the mandate and program goals.

²² See for example The Office of Government Commerce in the UK, *Property Asset Management Maturity Matrix* (http://www.ogc.gov.uk/documents/maturity_matrix.pdf).

4. EVALUATION RESULTS

ENSURING ASSETS ARE RELEVANT

The evaluation did not question the relevance of assets to deliver on the Agency's mandate and program activity results or therefore the relevance of an asset management program per se. Instead, we focused on two questions related to the relevance of the current program for addressing the Agency's asset management challenges and objectives. First, we asked whether the Agency's decision-making processes for asset investment support relevant investments for achieving government and program objectives/results (i.e., are the right assets being acquired/maintained, and are irrelevant assets being identified and disposed)? Second, whether the balance of investment between repair/capitalization and maintenance/basic asset management capacity is the most relevant response to the Agency's fundamental needs and issues? Our focus was on the asset program as whole rather than on particular assets or assets within a particular business unit. Before addressing these two aspects of the asset program's relevance, we reviewed management's views on the relevance of the asset base.

Views on the Relevance of Existing Assets and Investments There is implicit or explicit recognition in the Agency that not all current assets are relevant to the overall strategic objective and program activity goals. This is reflected for example in efforts, some successful and others not, to devolve governance and administration in some townsites in national parks to forms of municipal government including transfers of major assets to the new municipal entity. Similarly, attempts have been made over the years to transfer responsibilities for major highways to other organizations since operation of this kind of infrastructure is not a core aspect of the Agency's mandate.²³ Although the Agency might not deem these assets to be high priorities in terms of mandate delivery, it should be recognized that there are major constraints on its ability to divest itself of these non-critical assets. The same situation can arise as well with certain national park establishment agreements where commitments were made to create a variety of infrastructure that in the current context may not be viewed as relevant or economically sustainable.

At the local level, many managers we spoke to can identify an asset or facility that they consider irrelevant to the Agency's current or future needs. However, they view the vast majority of their assets as relevant and necessary. Managers for example may be responsible for many cultural assets that are important to the Agency's mandate (e.g., the Eastern Ontario Field Unit) and have little flexibility to dispose of assets. In many cases then, the issue is not whether assets are relevant but rather whether the choices managers make to invest in specific assets are the most relevant for advancing the Agency's mandate and goals.

In this regard, one of the most pervasive themes in our interviews with managers on the ground was the sense that many assets require urgent attention and are high priorities for some kind of repair or recapitalization work. Given this, the vast majority of expenditures on assets are, in their view, justified and the risk of irrelevant investment is low. The processes managers use to make these choices is reviewed in some detail in the next section.

²³ It is also worth noting that the Agency was never funded to manage some of these assets so that maintaining and repairing/ recapitalizing these assets takes funds away from other asset work that may be more central to the Agency's mandate.

Finally, we hear from some managers that in cases where divestiture of an asset is possible and desirable, that the costs for doing this are not adequately appreciated and supported in the asset planning process, and that this can be a barrier to disposing of irrelevant assets (e.g., the priority is on asset acquisition and repair/recapitalization rather than costs associated with demolition and site clean up).

Decision-Making Processes to Ensure Relevance The Agency's policy and directive framework for asset management implies a hierarchy of decision-making with respect to asset investment starting first with the question of whether there is a non-asset solution to a need or demand. If there is no non-asset solution, then an asset solution that addresses more than one aspect of the mandate is the preferred option. Additional principles for investment can be seen as secondary to these considerations (i.e., once an asset is shown to be necessary and relevant to program objectives, then provision should be made in planning to ensure that its use and operation comply with appropriate legislation, guidelines and standards, and plans and that it can be sustained over its full life cycle).

One factor that influences some asset decisions in some locations is the national park and national historic site management planning process. Each national park and national historic site is required, by legislation, to prepare a long-term plan for the site, covering a ten to fifteen year horizon. The plans are tabled in Parliament. Stakeholder consultations are a required aspect of the planning process. Plans must be reviewed every five years and updated when required. Management plans differ in the extent to which they deal with asset related questions. Some business units, Central Ontario is a good example, that are heavily asset dependent have management plans that focus extensively on asset management. Others plans provide broad outlines of future directions for the unit where the impacts on assets or facilities are indirect or very general.

We asked managers in our interviews to what extent decisions about particular assets or facilities were constrained by the time frames and review requirements associated with management planning (i.e., did a manager have some flexibility to acquire, investment in or dispose of assets if it was not first identified in the management plan for the site). In general, management plans were not seen as a major constraint to investing in or disposing of assets, although many assets or facilities (e.g., campgrounds) have specific stakeholders who may resist efforts to close a facility.

The major decision-making tool for asset investment is the request for project approval (RPA) form or a variant of it. The form was designed to reflect the considerations and criteria in the Agency's *Capital Planning Directive*. For each proposed project, a statement of the objectives, deliverables and a work schedule is outlined. There is further discussion of the implications of the project for health and safety, financial and legal liabilities, and investment urgency, as well as the relations to and impacts on program objectives, alternatives to the proposed assets considered, and consequences of delays. If the proposed project is less than \$2M and no funding from outside the business unit is required to carry out the work, the decision to approve a project proposal rests with the business unit manager. In fact, all the managers we spoke to in the field characterised their process as consensual involving the whole management team for the unit to decide which projects to approve locally and which projects to propose for funding outside the unit.

In practice, many investment decisions are made outside business units. Managers must seek regional approval of projects valued at \$2M to \$10M. More importantly they must apply for funds provided in Budget 2005 to support projects in their unit. Again, this involves preparing an RPA, which are reviewed by one or more committees who make recommendations for approval by the DG Eastern or Western/Northern Canada. In the East, there is one committee of financial, asset and senior managers who review the proposals and make recommendations. In the West the process is somewhat more elaborate as sub-committees review proposals supporting particular program activities. The committees forward recommendations to an overall committee that then makes recommendations to the DG for approval. In the Mountain Parks²⁴, there is an additional layer of committee structure including one for cultural resources and one for visitor experience, that also considers projects within the block based on RPAs, and who make recommendations for approval to the Executive Director of the Mountain Parks.

In addition to Budget 2005 funds, a review of funding sources cited in business unit LTCPs suggests, particularly in the West, a variety of other special purpose funds received by the Agency are used for particular asset investments (e.g., ecological integrity funding for national parks received in Budgets 2003 and 2005, funds from the Federal Contaminated Sites Accelerated Action Plan, or from the Federal House in Order Strategy or from other government departments such as Natural Resources Canada to make energy improvements in buildings). Each of these funding allocations likely involves review of project proposals outside the local business unit.

Adding these sources of funds together with funds from Budget 2005, suggests that approximately three quarters of the overall planned spending in 2008/09 was reviewed and approved outside the business units, with a higher proportion in the West compared to the East.

We were also told that some decisions are essentially made at a regional level. For example, a finance committee decision to invest in renewal of signs resulted in the Office of the DG East essentially programming work across the region into individual business units LTCPs.²⁵

Local managers, therefore, approve a portion of their asset investments based on criteria found in the *Capital Planning Directive*, and propose projects for approval outside the business unit based on these same considerations. Managers, in general, support these processes and find them useful. There is some desire, particularly with Budget 2005 funds, to see them allocated over a longer time frame to allow for more certainty about future resources.²⁶ The process is designed to allow managers some freedom within the general framework developed by the Agency to

²⁴ The block includes Banff; Kootney/Yoho/Lake Louise; Jasper; Mount Revelstoke/Glacier, Waterton Field Units, the Hot Springs Enterprise Unit and Highways Service Centre.

²⁵ Other processes in the Agency might also help focus on asset requirements in the long term. For example, the Agency has started a guided assessment process for business units to evaluate their understanding of visitors and potential visitors' needs and requirements and identify required changes in the visitor service offer. Based on the results of assessments at 27 sites in 2007/08 the major asset related changes identified have been relatively small focusing on improved signage and more and/or better condition washrooms. In the longer term, this process may support more significant rethinking of visitor related asset requirements.

²⁶ At the time of the evaluation a significant portion of the Budget 2005 funds for 2010/11 and beyond had still not been allocated to projects in business units in the East. Most Budget 2005 funds through 2015 have been allocated in the West.

respond to local requirements and to make local business unit managers ultimately responsible and accountable for managing the assets in their unit.

The major risk in this approach is that, despite the widespread use of the RPA form, and some regional or national approval of projects or LTCPs, that managers will be inconsistent in their application of the principles and guidance available in the Agency's policies and directives. For example, managers routinely decided to invest in some cultural assets and not others given their evaluation of the importance of the asset for delivery of Agency and business unit goals. Whether this process is done consistently is not clear despite the kinds of coordinating mechanisms reviewed above. In effect, the Agency lacks the necessary information to assure that LTTPC expenditures contribute to a single strategic approach to asset management.

Formal Processes for Determining Relevance of Assets As the preceding discussion makes clear, relevance is not a straightforward judgement of whether an asset or facility serves current goals or objectives. It involves a complex set of considerations of current and future program needs in relation to the mandate and changing environmental conditions (e.g., changing demographics of users), evaluation of non-asset solutions and the substitutability of assets, actual and future utilization rates, stakeholder relations and economic development and health and safety concerns, code compliance issues, and the function of the asset within the complete local service offer. There are formal processes to assist organizations in making these judgements (e.g., Cable and Davis 2005).

An example is the asset priority index (API) used by the National Parks Service in the United States that ranks assets on a scale of 0 to 100 with higher scores meaning the asset is more critical in supporting the mission and strategic goals of the organization. The index has two components or criteria: mission dependency and asset substitutability.

Mission dependency is given more weight in the evaluation (i.e., 80%). Factors considered include the asset's importance for the overall organizational mission or subcomponents of the mission such as resource protection, or recreational use (i.e., including statistics on use), geographic location of the asset in relation to local strategic goals or plans, ability to accommodate future changes in program direction, impacts on interaction with stakeholders, short and long-term program support functions and importance to the operations of a site.

Asset substitutability (20% of the evaluation) is the degree to which a comparable substitute asset exists to fulfill the functional requirements or purpose of the asset being evaluated. Assets with noteworthy historic significance, those whose alternatives would come only at substantial cost, and assets that fulfill a function that could not be easily fulfilled by any other asset have low substitutability and would score high on this portion of the API.

Many of these criteria overlap with the asset investment principles and criteria found in the various Parks Canada asset plans, policies and directives. The difference is largely one of the extent of formal systematic assessment based on a common rating system, versus the current approach in Parks Canada which relies on managers applying informed judgement based on broad principles largely within the context of their own business units. There have been internal

discussions in the Agency about implementing an API assessment, but no decision has been made about whether this is a useful and relevant indicator for the Agency's assets.

As with other kinds of performance information, importance or relevance might best be viewed at the level of facility goals and objectives rather than at the level of each of the roughly 22,000 assets in the current inventory. A rating of the priority or relevance of the structures comprising a historic site for example needs to also consider the contemporary infrastructure that supports the facility in determining overall investment priorities.

In our interviews with managers across the country, we found mixed support for the idea of implementing the API approach in the Agency. Many managers recognize the potential value of the tool but were concerned with the practicalities of implementing it (i.e., they are concerned with how much time would be required to agree on a standard approach and work out a common consensus on what assets were in fact priorities). Some managers commented that the current planning and prioritization processes in the Agency serve much the same function, and would produce similar results as the API process without the attendant work of formally rating all assets.

Balancing Maintenance Vs Capital Investment

Another aspect of relevance concerns the overall balance of the spending on maintenance and LTCP projects. In 2007/08, for example, the Agency allocated 75% of the investment in assets to LTCP expenditures and 25% to inspection and preventative maintenance²⁷. As will be reviewed in more detail below, common asset investment benchmarks suggest investing equal percentages of the CRV of assets or facilities in maintenance and capital expenditures. It is also commonly observed that failure to perform routine maintenance within the normal period, results in deferred maintenance and higher repair costs. Deferred repair in turn can ultimately lead to higher costs to recapitalize or replace assets. Vanier (2000) for example, references the "law of fives" in which deferred maintenance results in repairs equalling five times the original maintenance costs and deferred repairs can lead to renewal costs up to five times the cost of the repair. Therefore, focusing more investment on higher cost repairs and recapitalization and less on inspection and preventative maintenance may serve to increase the long-term asset management costs of the Agency. A few of the managers we interviewed both in national office and in business units raised this point.

Management in the Agency is aware that lack of normal maintenance and repair can lead to higher long-term costs (see 2000 and 2005 LTCPs) and has used this information to justify, in part, its requirements for additional funding to manage assets. However, consistent with their focus on "capital" investment, the plans are largely silent on how much investment is required or is planned for operations and maintenance. During the course of the evaluation, we could not identify any analysis or rationale by the Agency for devoting the majority of investment to major repair and recapitalization of assets (i.e., although there is some analysis based on aging infrastructure that many assets require this kind of work, this is not the same as an analysis of the relative impacts of the balance of investment between maintenance and capital).

²⁷ Additional resources were committed in the 2005 LTCP (i.e., \$12.5M over five years) to build asset management capacity in the Agency, which has led to hiring more asset managers/advisors and contracting specialists to help implement repair and recapitalization projects on the ground.

In fact, it is evident that much of the Agency's asset management framework, planning processes and accounting are focused on asset repairs and recapitalization (i.e., much of the management framework concerns principles and criteria to guide these investments, the national planning processes focuses on securing and allocating funds to carry out these projects, and the financial system largely produces data and reports that are about expenditures on these projects). Until relatively recently, there was little in the management framework regarding asset inspection and maintenance regimes, and as yet no guidance on tracking and managing operational costs of assets.

In short, the Agency's overall asset investment strategy and most of its existing framework, processes and systems focus on major repairs or recapitalization of, or acquiring new, assets. Our major observation is not that this investment focus is wrong, but rather that the Agency has not done the analysis to show that this is the most cost effective approach to asset investment in the long-term.

Summary Ensuring Relevance

It is generally acknowledged that not all existing assets, including some major assets, are relevant to the mandate (e.g., highways, townsite assets). However, most managers on the ground do not think there are many assets that are not relevant to the program.

Investment decisions related to major repairs and recapitalization of assets are based on consideration of the criteria found in the Agency's *Capital Planning Directive*. The process is widely reported to involve consensus input from all the functions represented at the business unit management tables, and in most cases is supported by review and decision-making outside the business unit. It relies on the informed judgement of managers who are required to consider a wide variety of factors. There is a risk that application of the principles and guidance might be inconsistent across the Agency. More formal approaches to rating relevance and importance of assets and/or facilities for mitigating this risk are available.

The majority of the Agency's asset investments, and much of its asset management framework and processes, are focused on major repairs, recapitalization and acquisition of assets. Fewer resources are devoted to ensuring good management information and regular inspections and preventative maintenance. This may or may not be the most relevant approach for ensuring that the Agency asset management program is efficient and effective in the long-term. At this point the Agency lacks the information and analysis to support either approach.

PERFORMANCE AGAINST TARGETS

As noted, the Agency's specific performance targets in the 2005 LTCP relate to program inputs (i.e., the overall level of capital investment nationally, locally, by program activity, etc) and to certain types of condition ratings of, or threats to, assets in general or to specific types of assets.

FINANCIAL TARGETS AND PERFORMANCE

Table 13 reproduces the framework for asset expenditures shown in Table 3 and situates the Agency's investment targets and general accepted asset investment within the framework.

Table 13 Asset Expenditure Framework and Investment Targets and Benchmarks

Primary Objective	Asset Operations		Sustaining Assets		Asset Functional Improvement		Asset Capacity Improvement	
	Operating Expenditures		Maintenance/Repair Expenditures		Capital Expenditures			
Secondary Objective	Utilization	Utilities	Maintenance and Repair	Renewal and Backlog	Upgrade	Alterations and Repair	Addition	New and Replace
Agency Targets			Approximately \$40M per year	<ul style="list-style-type: none"> ▶ LTCP investment of \$439M between April 2005 and March 2010 (i.e., \$122.8M per year by 2009/10). ▶ Specific portions of \$439M investment allocated to each program activity ▶ \$91M in revenue from increased user fees to be invested in visitor related assets between April 2005 and March 2010 (2005 LTCP) ▶ Selected business units to investment 65% of their 1997 Capital allocation in LTCP capital expenditures each year starting by 2007/08 ▶ 10% of asset investment to be targeted for Heritage Presentation Assets 				
Investment Benchmark	1% of CRV of Asset Base per year		2% of CRV of Asset Base per year	2% of CRV of asset base per year		Targeted FCI Values		

Source: Framework is modified from Wooldridge, S.C. (February 2002). Balancing Capital and Condition: An Emerging Approach to Facility Investment Strategy. Targets are drawn from the 2005 Agency LTCP and the Guide for Business Planning

AGENCY INVESTMENT TARGETS

Maintenance, Repair and Inspection The Agency did not set a target for investments in maintenance, repair, and inspections in its 2005 LTCP. Subsequently business unit LTCPs have reported planned expenditures in the range of \$40M to \$42M per year for the Agency as a whole (see Appendix F). As noted however, the current financial system does not have an efficient way to identify what these planned expenditures were or to track actual expenditures against the plans, particularly the salary component of the expenditures. No attempt has been made at either a regional or national level to assess the variance between planned and actual maintenance expenditures. We conclude therefore, that the Agency lacks the information to determine whether it is meeting its planned investment levels set out in business unit LTCPs.

Overall Investment in Repair and Recapitalization

Original 2005 LTCP Target The 2005 LTCP capital investment target was to increase the total amount of investment in the core asset types from an estimated \$34M²⁸ in 2005/06 to \$122.8M by March 2010. In total, \$439.1M was to be invested over five years. Expenditures on land were excluded from the target. In addition, the target was based on the Agency’s core funding for assets. Investments supported by short-term, project-specific, time-limited funding (e.g., funds supporting the celebration of the 400th Anniversary of Quebec and for twinning the TransCanada Highway in the mountain parks) were not included as part of this core funding.

²⁸ There is some confusion over the origin of the \$34M baseline. Main estimates for 2004/05 the year prior to the 2005 LTCP reported true capital expenditures of \$40.4M. Subtracting the amount of Rust Out funding received that year would still have left \$36.4M in internally supported true capital expenditures. Our calculation of LTCP expenditures for 2004/05 which includes major repair and other IO-2 asset expenditures showed \$65M in total expenditures after taking out land purchases but not other specific purpose project funding.

The targeted investment level was set in relation to the generally accepted benchmark, discussed below, that organizations should invest 2% of the CRV of assets in capital expenditures. In the Agency's case, this would have required \$143M investment per year based on a RV of \$7.1B. Although the 2005 LTCP makes reference to a planned \$140M for the asset investment program, only \$122.8M of this (1.7% of the RV) was to be directed to major repairs and recapitalization and then only ten years after the RV was out of date. For this reason, we treated the investment target as a commitment to an absolute level of investment rather than as a commitment to achieve a particular investment standard.

Table 14 shows the three sources of funding that could contribute to the investment target and the expected amount of funds available in each year of the 2005 LTCP.

Table 14 2005 LTCP Expenditure Targets by Year and Source of Funds

Source of Funds (\$ Thousands)	2005/06	2006/07	2007/08	2008/09	2009/10	Total
Existing	34,100	34,100	34,100	34,100	34,100	170,500
Revenue	9,000	15,000	17,000	25,000	25,000	91,000
Sub Total	43,100	49,100	51,100	59,100	59,100	261,500
Budget 2005	9,350	21,250	36,550	46,750	63,750	177,650
Total	52,450	70,350	87,650	105,850	122,850	439,150

Source: 2005 Agency LTCP

The Agency expected existing funding to remain stable, and that new revenue and Budget 2005 funds would cover increasingly significant portions of the total investment (i.e., revenue is 17% of the investment in year one and 22% in year five, while Budget 2005 is 18% in year one and 52% in year five given that the amount of funds from Budget 2005 increased over time).

Subsequent Agency policies and documents were not always clear on these principles and targets, including some confusion in the 2005 LTCP itself²⁹, and therefore managers were confused about what precisely the Agency was trying to achieve in terms of overall investment. In particular, there was confusion about whether this investment target included the amounts spent on maintenance and inspection. We confirmed in our interviews with senior managers that it did **not** include maintenance expenditures.

Business Unit Planned Spending in Relation to Target and RV of Assets

Business unit LTCPs serve as the tool to translate the Agency's overall investment targets by source of funds into specific projects. The Agency's interest in tracking and reporting on source of funds for

²⁹ The plan included two targets for overall **investment in the asset management program** \$140M (page 7) and \$134M (page 17). The first target was based on the assumption that current A-base funding was \$40M and did not reduce the amount available for asset management program for allocations devoted to supporting increased corporate service requirements and supporting the Agency's Engaging Canadians objectives (i.e., \$19M in total over five years). The second target assumed a current A-base investment of \$34.1M and adjusted for funds allocated outside the asset management program. A total of \$12.5M of the remaining funds were directed to building asset management capacity, leaving \$439.1M available for direct **investment in major repairs and recapitalization** over five years. The table that shows this in the plan also included a calculation error so that yearly investment target at the end of the five-year period was \$122.8M instead of the \$126.6M shown in the plan.

asset investment is largely driven by accountability concerns (i.e., being able to demonstrate how funds accorded the Agency in 2005 were invested, or that revenue based expenditure was consistent with planned results) rather than a need to link sources of funds to results.

Table 15 summarizes data on business unit planned spending for the two most recent cycles (i.e., we did not have complete data on the first two planning cycles).

Table 15 Business Unit Planned Expenditures by Source of Funds

Source of Funds (\$ Thousands)	2007/08	2008/09	2009/10	2010/11	Average
Existing	38,825	33,173	35,038	29,702	34,184
Revenue	12,765	17,434	14,714	15,104	15,004
Sub Total	51,590	50,607	49,752	44,806	49,189
Budget 2005	37,259	63,946	64,901	52,268	54,594
Total	88,849	114,553	114,653	97,074	103,782

Source: 2007/08 and 2008/09 Business Unit LTCPs
Note: Planned expenditures in 2007/08 were slightly more than actual expenditures for the year shown in Table 14.

Comparing Table 15 to Table 14 shows that at the planning level, average spending based on existing funds is closely aligned with the expectations in the 2005 LTCP. Programming of Budget 2005 funds exceed the expectations in the 2005 LTCP particularly in 2008/09, and revenue as a source of funds is not keeping pace with the expectation in the 2005 LTCP.

Increased Budget 2005 spending during the planning period reflects the fact that Finance Committee approved (June 2007) advancing \$35M of Budget 2005 funds from 2010/15 into the remainder of the period covered by the 2005 LTCP. This coupled with the fact that total business unit planned spending for 2007/08 and 2008/09 exceeded the targets in the 2005 LTCP suggested that the Agency's total planned spending for the period covered by the 2005 LTCP might have increased over the original target. The possibility is not identified or discussed in the Agency's documents so we have conducted the evaluation of performance against the original targets.

Table 16 shows the average planned expenditure by source of funds separated into the Eastern and Western/Northern Canada.

Table 16 Four Year Average Planned Expenditure by Source of Funds and by Region

(\$ Thousands)	East West	
	East	West
Existing	14,262	19,923
Revenue	32	14,972
Sub total	14,294	34,895
Budget 2005	27,147	27,447
Total	41,441	62,342

Source: 2008/09 Business Unit LTCPs

On average, 60% of the planned investment over the four years shown in the table will be in the West although assets in Western/Northern Canada account for only 44% of the estimated RV of the Agency's asset portfolio (i.e., using RVs reported in business unit LTCPs Appendix H). In

contrast, about 60% of the reported maintenance expenditures take place in the East compared to the West (see Appendix F for details).

Average expenditures based on “existing” funds tend to be higher in the West.³⁰ Virtually all of the revenue-supported investment occurs in Western Canada and in the Mountain Parks in particular. This is reviewed in more detail below. Budget 2005 as a source of funds is virtually identical in the East and West/North, reflecting the fact that an equal portion of these funds was allocated for distribution to the DG for each region. Budget 2005-supported projects appear in every business unit LTCP.

Business unit 2007/08 LTCP expenditures tend to be reasonably highly correlated with the RV of the units’ assets for that year ($r=.59$). The correlation is even higher ($r=.73$) between the three-year average LTCP expenditure and the 2007/08 RV of assets. Finally, self-reported maintenance expenditures in business unit LTCPs are also highly correlated with the adjusted business unit RVs assembled for the evaluation ($r=.71$). In short, although not a perfect correlation, the trend, consistent with expectations, is clearly for units with higher asset RVs to plan to invest more in both asset maintenance and LTCP projects.

In summary, the Agency’s intent was to increase its core investment in major repairs and asset recapitalization of various types of built assets, equipment, and presentation or fleet assets. Core investment resources were either existing funds, new funds from Budget 2005 or new funds anticipated from increased revenues. There was considerable confusion concerning this target and the target may have been implicitly changed in subsequent planning cycles and as a result of Finance Committee decisions although this was not made clear.

The target is translated into on the ground action through individual business unit planned LTCP expenditures. As expected, both planned “LTCP” and maintenance expenditures tend to be proportional to the RV of business unit assets. Regionally, the absolute amount of planned investment is higher in the West than in the East, representing a higher portion of the RV of the assets, based on higher than average expenditures of existing funds and virtually all of the revenue-supported investment occurring in that region. In contrast, self-reported planned maintenance expenditures are higher in the East.

Performance Against Overall Investment Target Table 17 shows the Agency’s overall LTCP expenditure targets, total actual or planned expenditures and adjustments to remove special purpose expenditures for the original planning period (i.e., Appendix J shows LTCP expenditures by business unit and year). The 2005 LTCP targets for 2010/11 and beyond are based on the assumed steady-state expenditures in the plan. Actual expenditures could not be disaggregated by source of funds, as this information is not recorded in the system.

³⁰ A-base expenditures in the West include reference to a variety of sources of funds outside of appropriations including funds provided to the Agency through the Federal Contaminated Sites Accelerated Action Plan, from the Federal House in Order strategy to reduce green house gas emissions, as well funds provided by unnamed partners. These funds do not make up a significant portion of the A-base in most years. There is some dispute among managers we consulted on whether these funds should be counted as A-base expenditures.

Table 17 Actual and Planned LTCP Expenditures By Year

(\$ Thousands)	Actual			Planned				
	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Targeted Expenditures (see Table 13)	52,450	70,350	87,650	105,850	122,850	122,850	122,850	122,850
Total LTCP Expenditures	78,354	115,160	122,532	133,785	119,653	98,027	99,092	103,722
Twining Highway	-9,214	-28,152	-20,778	-19,200	-5,000			
Quebec 400 th	-985	-2,931	-15,492					
Land Acquisition	-3,273	-1,730	-1,645					
LTCP Expenditures	64,883	82,347	84,617	114,585	114,653	98,027	99,092	103,722
LTCP Expenditures Minus Target	12,433	11,997	-3,033	8,735	-8,197	-24,823	-23,758	-19,128

Sources: Targets from the 2005 LTCP; Actual Expenditures and Amounts for non-eligible expenditures are from the Agency's financial system; Planned Expenditures are from the 2008/09 cycle of business unit LTCPs. Total LTCP expenditures include unallocated Budget 2005 funds in Eastern Canada.

The table shows that the Agency's LTCP expenditures were close to or exceeded the target for the first three years of the plan (although at least for 2007/08 actual expenditures did not meet the planned expenditures in the business unit LTCPs as shown in Table 15). Planned expenditures in 2008/09 will also exceed the target for that year.

The total actual and planned LTCP expenditures for 2005/06 through 2009/10, if realized, would be \$461M, exceeding the overall targeted spending of \$439.1M. In the longer term, planned expenditures fall short of the yearly total of \$122.8M targeted in the 2005 LTCP. In the most recent business unit planning cycle, total LTCP expenditures peak in 2008/09. In the last three years of the planning period, LTCP expenditures average about \$100M per year or about \$68M less than targeted in the 2005 LTCP for the three years combined.

Since the source of funds for actual expenditures is not recorded in the financial system a detailed analysis of which sources contributed to exceeding the overall investment target or are implicated in not meeting the sustained yearly investment target was not possible. Based on the incomplete planning data for the period, the overall investment target was likely met by spending more of the Budget 2005 funds than anticipated (i.e., funds were advanced from future periods), and perhaps more spending of existing funds. Together, these sources more than compensated for the smaller than anticipated investment based on revenue from user fees. In the long-term, advancing Budget 2005 funds and lower amounts of revenue likely serve to reduce the Agency's capacity to attain the yearly-sustained investment target of roughly \$123M per year.

LTCP Expenditures by Program Activities The 2005 LTCP identified how each funding source would be invested in the Agency's program activities. This allocation strategy was developed based on an analysis of unfunded projects conducted by the offices of the DGs Eastern and Western/Northern Canada in consultation with national office branches. The goal was to ensure adequate resources were directed to unfunded investment needs, while also ensuring that available resources were distributed between program activities (i.e., that no one program activity monopolized all the available resources).

It is not clear that this was the most relevant approach to determining investment requirements by program activity since it did not consider existing asset conditions and life cycles associated

with each program or the impacts of funded projects on the condition, life spans and overall objectives for the programs.

The original targeted spending for each funding source by program activity is shown in Table 18 along with re-profiled spending for Budget 2005 funds approved by Finance Committee (June 2007).

Table 18 Targeted LTCP Expenditures by Program Activities and Source of Funds

Program Activity (\$ Millions)	2005 LTCP Allocations				June 2007 FC
	Existing	Budget 2005	Revenue	Total	Revised Budget 2005 Allocation 2005/2010
Heritage Places Establishment	3.4			3.4	
Heritage Resources Conservation	40	51.6		91.6	47.1
Public Appreciation and Understanding	16	23.1		39.1	22.7
Visitor Experience	51	51.6	91	193.6	49.4
Townsite	10	1.8		11.8	11.6
Throughway Infrastructure	8	46.3		54.3	77.7
Internal Service Delivery	42	3.6		45.6	5.2
Total	170.4	178.0	91.0	439.4	213.7

Sources: 2005 Agency LTCP for original targets. June 2007 Presentation to Finance Committee for Revised Budget 2005 Fund Targets

The revised profile increased the amount of Budget 2005 available for the period covered by the 2005 LTCP (i.e., borrowing \$35M of Budget 2005 funds from the 2010/15 period) and slightly decreased the overall funding from this source for the resource conservation, public appreciation and understanding and visitor experience program activities while providing more funding for townsites, highways and internal services. It is not clear how this affected the overall planned spending by program activities for the period (i.e., did non-Budget 2005 targets change, and if so in what ways).

We attempted to construct a record of both business unit planned and actual spending by program activity but were not successful. We were not able to obtain the complete record of business unit LTCPs and in the early years those we did compile included significant amounts of unallocated Budget 2005 funds not assigned to a program activity. Allocation of planned spending to program activities was further complicated by projects linked to two or more programs requiring some assumptions about how much of the total project budget was related to each activity. Actual expenditures by program activity existed for the true capital portion of LTCP expenditures but the remaining portions of the expenditures (i.e., IO-2 codes) were not assigned to program activities in the Asset Expenditure Reports. We concluded therefore that the Agency lacks readily available information to assess whether actual spending is consistent with the original, spending targets based on all sources of funds by program activity. There is detailed information available from the Offices of DGs Eastern and Western/Northern Canada on actual spending of the Budget 2005 funds by program activity.

LTCP Expenditures Based on Revenue from Increased Fees The 2005 LTCP projected that \$58.9M in visitor-related revenue in 2004/05 (the baseline year) would increase to \$83.3M by 2008/09 as a result of increased user fees, for a total of \$91M in new funds for investment in

visitor-related assets between April 2005 and March 2010. At the end of the period there would be \$24.5M each year in new revenue for investment in these assets.³¹ The direction, that new revenue from user fee increases would be invested in visitor related assets, was subsequently reflected in the Agency's (February 2006) *Users Fees and Revenue Management Policy*.

We know from the Agency's financial records that revenue from the fees used to predict the \$91M in new funds has actually increased faster than the predictions of the model (i.e., the model predicted \$41.2M in new revenue over the first three years of the LTCP while the Agency has realized \$47.1M in new revenue over the baseline during the period). However, it was only the portion of this revenue due to increased fees, as opposed to changing patterns of consumption, which was to be directed to visitor-related assets (i.e., up to a limit of \$25M per year). The Agency lacks a national mechanism to make this distinction. We also know that, with the exception of the Mountain Parks, the number of visits to most Parks Canada national parks and national historic sites has been declining in recent years suggesting that many locations would not have any increased revenue after taking account of declining consumption of the services.

We have already seen in Tables 16 and 17 that planned revenue supported asset investments do not keep pace with the revenue investment targets in the 2005 LTCP, and second that the vast majority of revenue-supported projects occur in the mountain parks.

The mountain parks typically account for approximately 55% and 60% of all visitor related fee revenue generated in the Agency. Since at least 2005/06, the Mountain Parks have been identifying and pooling a portion of each units' revenue from entry fees (i.e., separated into fee increase and visit increase streams) and from camping fees. The pooled revenue is then allocated to investments in visitor experience related assets, as well as covering some operational and maintenance related expenditures for visitor services, programs or assets. To access funds in the pool, managers create project proposals (i.e., the RPA) and submit these to the Visitor Experience Advisory Board (VEAB) consisting of senior managers in the block, who review and recommend projects for approval by the Executive Director of the Mountain Parks.

Table 19 shows total revenue collected or anticipated due to entry fee increases and from camping and amounts allocated or planned to be allocated between April 2005 and March 2010.

Table 19 Revenues from User Fees and Allocations to Visitor Experience Assets in the Mountain Parks

(\$ Thousands)	2005/06	2006/07	2007/08	2008/09	2009/10	Total First Five Years
Revenue from increased PUF fees and camping	7,230	11,880	12,512	16,864	18,360	66,846
Allocations to visitor experience assets	3,128	15,660	11,905	15,225	16,347	62,265

Source: Office of the Director General Western and Northern Canada

³¹ The estimated revenue from increased fees was calculated by inflating revenues from specific types of user fees by approved future fee increases, based on data for the Agency as a whole available in 2003/04. In reviewing the model, we noted that the assumptions about baseline revenue in 2004/05 were inconsistent with actual revenues from user fees. Adjusting the model for the actual baseline data meant that it predicted \$83.5M in new revenue from user fee increases over the five years and a steady revenue stream of \$22.8M per year by the end of the period.

Based on these data, the Mountain Park Block is likely to collect 73% of the new revenue anticipated in the 2005 LTCP (i.e., \$66.8M out of \$91M). It is reported they have or will have invested 93% of that revenue back into visitor-related assets. The DGs Office Western/Northern Canada who provided the data, reported that portions of this investment were directed to visitor service assets in townsites and roads (i.e., about a third of the investment). We did not verify if all the investment was directed to assets associated with the visitor experience program activity as envisioned in the 2005 LTCP.

Minimal Level of LTCP Expenditures By Business Units As one element of its strategy to reach its overall LTCP expenditure target, the Agency sought to ensure that selected business units contributed to maintaining a minimal level of capital investment each year. The target, starting in 2003/04, was that each unit would invest at least 50% of the capital budget it received in 1997 into asset recapitalization, and that by 2007/08 this would increase to 65% of the original budget.

The capital budget allocated to various units in 1997 was \$42.6M. Allocations were made to field units, but also to service centres, and to national office and the office of the DG East. In theory, investing 65% of this allocation would result in a minimal investment of \$27.7M each year. In practice, only certain units were expected to make capital investments and meet the targets. Based on the original capital allocation obtained from National Office Finance Branch and discussions with the Offices of the DGs Eastern Canada and Western/Northern Canada, we found that 33 of the 41 business units that received a capital allocation in 1997 were expected to comply with the 65% target for a total minimal investment of \$24.4M per year.³² The original allocations and resulting targets are shown in Appendix K, along with the performance of business units against their targets.

Based on our LTCP expenditure data, we found that eight business units did not meet the target to invest 65% of their 97 capital allocations in LTCP expenditures for 2007/08. Taking the average LTCP expenditures over the period 2005/06 through 2007/08 we also found that eight units (i.e., not all the same units) did not spend on average 65% of their capital allocation on LTCP expenditures. It is worth noting that this result is based on expenditures on assets from all sources of funds (i.e., including Budget 2005 funds). A strict interpretation of the target would require units to meet the target from the existing A-base rather than all sources of funds.

We also noted that most of the units that did not meet the target had planned expenditures in 2007/08 that exceeded their 65% targets. It is not clear whether the difference between the actual expenditures we identified in the financial system and the planned expenditures is due to problems in coding expenditures, or whether the planned expenditures did not take place. The gap between actual and targeted expenditures amounts to about \$2.4M to \$2.5M a year over these business units.

Based on summaries and reports provided by the Offices of DGs Eastern and Western/Northern Canada it is clear that management was aware that some units were not meeting the target and

³² DGs Eastern and Western Canada decided which units were expected to meet the targets outside of national office. We could not locate a record of decision that national office units who received a 1997 capital allocation would not be expected to meet the target.

did not intend to meet the target given a variety of other financial pressures in the units. The target itself was intended to avoid exactly this situation where units' diverted funds intended for capital investment to meet other operational pressures. In reporting to Finance Committee, it was routinely noted that the targets were being met based on totalling the targeted amounts regionally and reporting planned spending against the aggregate regional target. The fact that some units did not and would not meet the target was not clearly identified although the information was available in business unit LTCPs.

In summary, the issue is not so much that targets were not met, but rather the manner in which this was monitored and followed-up in the Agency. It seems clear that allowing some units to essentially opt out of the target was contrary to its fundamental intent.

LTCP Expenditures in Heritage Presentation Assets The Agency's Business Planning Guide has included for several years the target that a minimum of 10% of each business unit's asset investments must be targeted to heritage presentation assets. The guide did not provide a definition of heritage presentation assets and the template for the LTCPs did not include a section to identify which projects were targeted at heritage presentation assets. It was suggested that heritage presentation assets referred to assets associated with non-personal interpretive programs such as exhibits, displays, panels and audio-visual equipment. True capital expenditures for this sub-activity were recorded as \$2.7M in 2005/06, increasing to \$4.7M in 2006/07 before decreasing to \$2.4M in 2007/08. It is not clear how compliance with the target would influence future true capital expenditures (i.e., LTCP expenditures could involve repairs rather than true capital). We therefore concluded that the Agency lacks the necessary tools to monitor progress against this target.

PERFORMANCE AGAINST ASSET INVESTMENT BENCHMARKS

The Parks Canada Real Property Branch in National Office (June 2007) compared reported asset operating costs of a sample of other federal departments and found these typically represented 1% of the replacement value of assets. A subsequent study, (Corporate Research Group, March 2008) commissioned by the Branch, supported this standard (i.e., 1.17% was suggested). As we had no data on operational costs of assets, performance against this benchmark was not evaluated.

The literature on asset management and TBS guidance suggest that organizations should be annually investing approximately 2% to 4% of the CRV of its asset portfolio in maintenance and an additional 2% in capital investment. Parks Canada's *Principles and Filters for Asset Investment* (Annex 2 to the Business Plan Guide 2008/09-2012/13) includes these targets as reasonable investment levels. TBS guidelines recognize that actual investment levels might not meet these guidelines, depending on competing organizational or government priorities.

Relevant Investment Standards For Parks Canada The investment standards are based on current replacement value, a recommended percentage of which becomes the benchmark investment level or standard. There was some question raised in the course of the evaluation about the relevance of the concept of current replacement value particularly for the Agency's cultural assets. Although we recognized that replacement value has a different meaning for these assets than for contemporary assets, we nevertheless concluded, based on our review of the

literature and the widespread use of the concept that the advantages of using it as a basic measure of asset value for all assets far out weight any disadvantages.

A more critical question is whether the specific standard of investing 4% of the CRV is a reasonable investment target for the Agency's asset base. In the course of the evaluation, a few business unit managers indicated that this level of investment was not required to adequately maintain and renew their particular asset bases. Similarly, a recent study of the operation of the Trent Severn Waterway, by an independent panel created by the government, recommended a combined investment of 1.5% of RV for both maintenance and capital expenditures (for the canal), largely on the grounds that the 4% guideline set by Treasury Board was inconsistent with the panel's experience of actual investment levels in the public and private sector.

In contrast, the study by the Corporate Research Group (March 2008) suggested that the combined 4% investment target for maintenance and capital was too low for Parks Canada given its mix of different kinds of assets and asset life spans. For maintenance they recommended 2.33% of the CRV and for capital they recommended an average investment of 2.85% of CRV for the portfolio as a whole with separate percentages for different types of assets (i.e., recommended investment percentages by category of assets ranged from 1.19% to 5.06% of CRV). These estimates attempt to take into account factors such as the remote locations of many assets resulting in potentially higher transportation, material and labour costs; different investment requirements resulting from assets with very different life spans, and the reputed higher costs for work on heritage verses contemporary assets³³).

We did not attempt to determine which of these various standards best represent the "real" investment requirements of the Agency's asset base. In theory, good historic information on asset related expenditures and the true costs of deferred investments over time would provide an empirical basis for customizing investment standards to the Agency's specific asset base. In the absence of this information, we used the 2% benchmarks as the basis of our analysis of the adequacy of current investment, the level of deferred investment, the condition of assets based on deferred maintenance, and future investment requirements.

Procedures and Issues for Assessing Investments Against the Benchmarks This analysis depends on the RV of assets and knowledge of past, present and future maintenance or capital expenditures. We have identified a number of problems with these data already (i.e., different estimates of RV, only data on planned maintenance expenditures are available, LTCP expenditure data do not likely capture all relevant expenditures from all business units). These factors limit the accuracy of the analysis. We used the data that existed to develop several scenarios of current and future deferred investments to provide order of magnitude estimates of the potential liabilities.

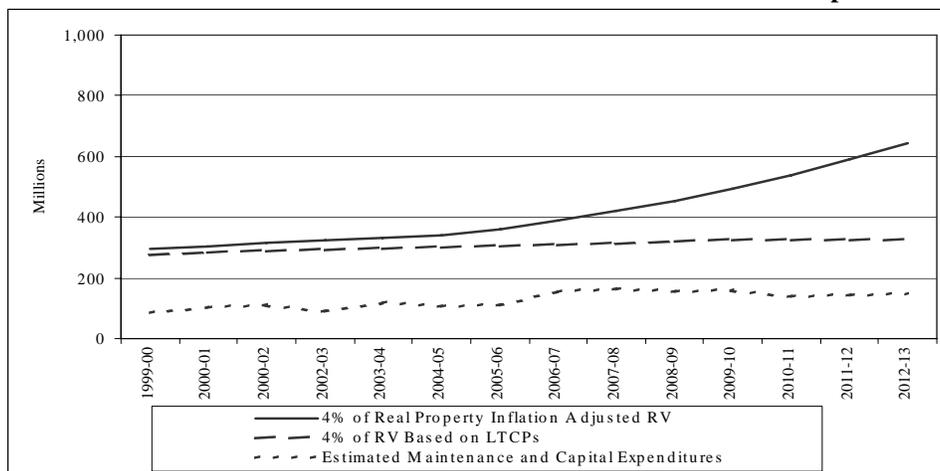
Maintenance and capital expenditures were defined for purposes of the analysis consistent with the LTCP definitions used in the Agency (i.e., major repair costs are treated as part of capital expenditures). It is not clear in the literature if the benchmarks were developed with these

³³ The idea that there are additional costs for work on heritage assets is very wide spread and commonly accepted although we did not identify a source in the literature that quantified this premium.

definitions in mind or whether they reflect a strict accounting view of maintenance and capital investment. We also included all capital expenditures regardless of source of funding since the investment standards do not require this type of distinction (i.e., funds from Quebec 400 or highway twinning count as part of the investment against standards, although they do not count in meeting the Agency’s internal targets).

Maintenance and Capital Investment as a Percentage of RV The amount of investment required to reach the 4% benchmark investment level (i.e., 2% for maintenance and 2% for capital) depends on the RV of the asset portfolio. Figure 1 shows the required investment by year based on two series of RV estimates: those based on the Real Property Branch inflation adjustment approach and those based on the RVs reported in LTCPs.³⁴

Figure 1 Benchmark Investment Levels for Two Levels of RV and Estimated Expenditures



In 2007/08 for example, the estimated RV of the Agency’s assets in business unit LTCPs was \$7.8B and the Real Property Branch estimated RV was \$10.5B. These implied required investments of \$312M and \$420M respectively per year. It is obvious that the Agency’s investment levels of roughly \$40M in maintenance and \$100 to \$120M for capital projects in recent years are far short of these targets. Maintenance investment represents a quarter to a half of one percent of the RV and capital expenditures represent about .6 to 1.5% of the RV depending on the year and the assumed RV of the Agency’s assets (see Appendix L for details of calculations). Agency management is well aware that maintenance and capital investment does not approach the benchmark targets.

Extent of Deferred Maintenance and Capital Expenditures

³⁴ It is interesting to note that by the 1.5% investment standard suggested by the panel reviewing the Trent-Severn Waterway the Agency would have required \$157.5M in maintenance and capital expenditures in 2007/08 (e.g., based on a CRV of \$10.5B), which was slightly less than the actual estimated combined maintenance and LTCP expenditures of \$161M. In short, the investment was sufficient to meet the target although not necessarily directed at the right places and not addressing any accumulated backlog of investment. In contrast, the roughly 5.18% combined maintenance and capital investment recommended in the report prepared by the Corporate Research Group (March 2008) would have required an investment of approximately \$544M in 2007/08. Estimated actual expenditures represented approximately 30% of this standard.

A more important statistic than in-year maintenance and capital expenditures as a percentage of RV is the pattern of investment over time and the cumulative effects of under investment on the condition of the asset portfolio at any given period. That is, what are current and anticipated levels of deferred maintenance and capital investment?

Deferred maintenance for purposes of the evaluation is defined as preventative maintenance and minor repair not performed when it should have been or was scheduled to be, and which therefore, is put off or delayed for a future period. Similarly, deferred capital investment is any major repair or recapitalization designed to improve the functionality of existing assets (e.g., enhance service levels, modernize or reconfigure an existing facility) or to acquire new capacity (e.g., new assets, entirely replace an existing asset) and which are not undertaken when planned and are therefore put off or delayed for a future period. Both deferred maintenance and deferred capital expenditures are cumulative. Failure to address the deferred expenditures from a previous year in the following year results in the deferred amount being carried forward to subsequent years, along with any new deferred investments.

Deferred Maintenance: Calculation of **future deferred maintenance** (i.e., from 2008/09 on) is straightforward given planned maintenance expenditures from business unit LTCPs. We used two estimates of RV: those from the business unit LTCPs and those produced by Real Property Branch based on construction inflation and missing assets.

Current deferred maintenance is more difficult to determine. We used two approaches to estimate this value both of which involve a number of assumptions. The first approach is similar to how future deferred maintenance is estimated. That is, maintenance expenditures for a given period are simply subtracted from 2% target levels each year and the residual amounts are summed to give the current level of deferred maintenance. This involves what is essentially an arbitrary starting point in the past from which to calculate the current accumulated deferral, assumptions about past maintenance expenditures since no detailed data exists about actual maintenance expenditures, and assumptions about the RV of assets for each year in the past included in the calculations.

For purposes of the evaluation, we chose 1999/00 as the start of the period for calculating deferral. We assumed that the 2008/09 maintenance expenditures from LTCPs reflected yearly spending back to 1999/00. Finally, we used two estimates of the yearly RV of assets. The first was based on the RV of \$7.8B for 2007/08 reported in business unit LTCPs and deflated yearly back to the RV of \$6.9B reported in 1999/00. The second was the yearly RVs from 1999/00 onward already calculated by Real Property Branch. Details of the calculations are shown in Appendix M. Table 20 shows the results of these estimates.

Table 20 Models of Current and Future Deferred Maintenance Investment

Assumptions (\$ Millions)	Deferred Maintenance		
	Current	Future Through March 2013	Total Current and Future

Model 1: RV based on LTCPs. Historic yearly maintenance expenditures between 1999/00 and 2007/08 are assumed to equal level reported in 2007/08 LTCPs.	967	600	1,570
Model 2: RV based on estimates provided by Real Property Branch. Same assumption about historic yearly maintenance expenditures as model 1.	1,174	1,153	2,327

Current deferred maintenance was estimated at roughly \$1B in both models and was projected to increase to between \$1.5B and \$2.3B by March 2013. Since it is widely agreed that the RVs reported in the LTCPs are too low, it is probable that the future deficit will be closer to \$2B than \$1.5B.³⁵

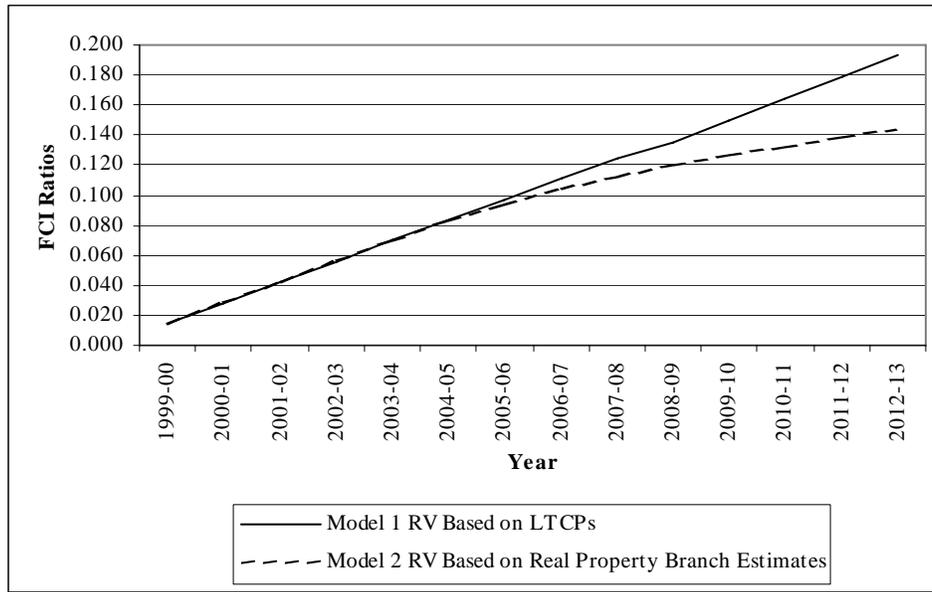
The second approach, suggested by our consultant, was to use the Agency's current asset condition ratings as a proxy indicator of the FCI. Assets with the same condition rating are assumed to have the same average FCI ratio. Since we know the RV associated with each condition (i.e., Table 7), the level of deferred maintenance associated with each condition could be calculated and summed to produce the overall deferred maintenance for the portfolio. This approach avoids the problem of an arbitrary starting point to begin cumulating deferral (i.e., cumulative deferral levels are already built into the current condition ratings) but involves several other complex assumptions. The assumptions and some models are shown in Appendix M with one scenario based on the \$10.5B in RV leading to an estimated current deferred maintenance of \$1.1B very similar to model 2 in Table 20.

In summary, given the Agency's available data any estimate of current deferred maintenance must involve several assumptions (i.e., the value of past maintenance expenditures; the RV of the Agency's assets; the link between the Agency's condition ratings and FCI ratios) and/or some arbitrary decisions (i.e., when to start cumulating deferred maintenance in the past). It is evident that changing the assumptions and methods can produce very different estimates (i.e., ranging from just under \$1.5 to over \$2.3B in these scenarios). We are therefore hesitant to provide a definitive conclusion on the real amount of current and future deferred maintenance. Clearly, however, given historic and planned investment levels and the widely accepted investment benchmark of 2% of the CRV, the amount of deferred investment is likely to be in the hundreds of millions or possibly a billion dollars and will increase in the future.

Implications of Deferred Maintenance For Condition of Assets: These estimates of current and future deferred maintenance, along with estimates of current and future RVs can be used to calculate FCI ratios for the portfolio. These in turn can be compared to FCI standards defining different asset conditions (i.e., a ratio of .05 or less is considered good condition, .051 to .10 fair condition and above .10 poor condition). Figure 2 shows the yearly FCI ratios that result from the two models of current and future deferred maintenance in Table 20.

Figure 2: FCI ratios for Two Models of Current and Deferred Maintenance

³⁵ In our modeling we did not adjust in year deferred maintenance amounts for inflation (i.e., a dollar of deferred maintenance in year one is not adjusted for inflation in subsequent years). This means that the estimates we produced are conservative. The same point applies to estimates of deferred capital. Inflation would add between \$45M and about \$200M to our estimates of deferred maintenance.



In both models the deferred maintenance starts accumulating in 1999/00 where it represents roughly 1.5% of the RV of the portfolio and surpasses 10% of the RV in 2006/07. By March 2013 it has increased to 19% of the RV in model 1 and to 14% of the RV in model 2.³⁶ Therefore, by this standard the Agency’s asset portfolio is currently in poor condition and is likely to remain so into the future.

In practice, organizations set target FCI ratios for their asset portfolios, or for particular kinds of assets, that fall outside of the range of values defined as good or fair condition to reflect their real capacity to invest in assets (e.g., the US National Parks Service). This provides for public transparency concerning realistic levels of performance given available resources.

Deferred Capital Investment: We used the same procedure shown in Table 20 to estimate the current and future levels of deferred capital expenditures.³⁷ The results are shown in Table 21 (i.e., details are found in Appendix M).

Table 21 Models of Current and Future Deferred Capital Investment

³⁶ It may seem paradoxical that model 2, based on the same level of maintenance expenditures as model 1 but a higher CRV for the Agency’s assets, results in an FCI showing the assets in slightly better condition by the end of the period. This arises essentially because the cumulative deferred maintenance in model 2 is not increasing as fast as the CRV of the assets compared to model 1 where the CRV increases relatively little over the time frame of the model. The FCI as an index of condition is sensitive to changes in both maintenance expenditures and the CRV of assets. Increasing the overall condition profile of the assets can be achieved by increasing maintenance expenditures and/or by controlling growth in the CRV of assets (e.g., having a disposal strategy and targets).

³⁷ Deferred capital is not viewed as an index of the condition of assets so we did not use current condition ratings to identified current deferred capital investment.

RV (\$ Millions)		Deferred Capital (i.e., major repairs/recapitalization)		
1999/00	2007/08	Current	Future Through March 2013	Total Current And Future
6,900	7,800	664	278	942
7,500	10,500	871	831	1,702

Deferred capital investment is less than deferred maintenance since the Agency routinely invests more in capital expenditures than maintenance. The current deficit is roughly \$700M to \$900M increasing to \$1B to \$1.7B by March 2013 given current planned spending.

We noted that the Agency identifies **unfunded** true capital and major repair projects as part of the business unit long-term capital planning process. The 2000 LTCP reported the total unfunded project costs as \$445M, which increased to \$750M in the 2005 LTCP. The total cost of these projects is sometimes treated as an index of deferred capital investment. However, this total is **not** equivalent to the idea of deferred capital based on the 2% investment standard. Table 22 shows how unfunded capital projects are viewed in the context of the current approach to deferred capital.

Table 22 RVs, Investment Benchmarks and Expenditures For Funded and Unfunded Projects

(\$ Millions)	Actual		Planned				Total
	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	
RV (Base on Real Property Branch Estimate)	10,500	11,350	12,380	13,500	14,730	16,080	
2% Capital Investment Target	210	227	248	270	295	322	1,571
Actual or Planned Capital Investment	120	115	115	98	99	104	651
Investment as % of RV	1.14%	1.01%	0.93%	0.73%	0.67%	0.65%	
Total Unfunded Projects	126	135	204	197	176	119	957
Desired Investment Level (i.e., total of funded and unfunded projects)	2.34%	2.20%	2.58%	2.19%	1.87%	1.39%	1,608

Source: Unfunded project costs are taken from spreadsheets provided by Offices of DGs Eastern and Western/Northern Canada. Year 2007/08 is from the 2007/08 planning cycle. All other values are from the 2009/10 planning cycle.

Unfunded projects are not by definition deferred from some prior period and so are not necessarily indicative of deferred investment. If carried out these projects would serve to increase the overall LTCP investment of the Agency to slightly in excess of the amount of investment required to meet the 2% investment target for the period (i.e., the total of funded and unfunded projects is \$1.6B or approximately \$37M more than required by the target). This would leave untouched the majority of deferred capital investment from previous years.

TARGETS RELATED TO CONDITION OF ASSETS

Improving Condition of Assets The Agency's principles and objectives for asset investment state that investments will, or must, lead to demonstrable improvement in asset condition (i.e., poor to fair and fair to good). We know, from Table 7, that the condition profile of the asset portfolio in 2008 appears to be worse than the condition portfolio recorded in 2000. We were unable to determine to what extent this is a result of adding and deleting assets or changes in the condition of the same assets over time. We also know, from our discussions with managers in

the field that some asset repair or recapitalization work is not intended to improve the condition of an asset but rather to stabilize and maintain its current condition. We were not able to distinguish at a national level what portion of asset investments are directed at stabilization verses improving asset condition or whether they succeed in that objective, although in many cases the information may be available locally.

As shown in Table 2, the Agency has a number of targets in the Corporate Planning process related to condition of assets for cultural/heritage resources and townsite, highway and waterway infrastructure. To assess performance against these targets the Agency requires a relevant baseline inventory of assets for each target and associated condition ratings of the assets over time. The Agency concluded in the 2007/08 Performance Report that it lacked sufficient information on these variables to be able to report on performance against the targets shown in the Report. The problem also applies to other sub activity asset targets not included in the Corporate Plan or Performance Report such as the commitment to maintain the condition of cultural resources administered by Parks Canada in TBD national parks by March 2014, or to improve by 60% the condition of historic buildings and structures administered by Parks Canada in poor condition by March 2013. In some of these cases, there is work being done to establish the appropriate inventories and to specify more precisely how and what will be measured in order to report on performance. The Corporate Plans and Performance Reports do not commit to specific dates for when the Agency will have the information required to report on performance. In some cases, for example, the commitment to the condition of cultural resources administered by Parks Canada in “to-be-determined” national parks, it appears likely it will take several years to be in a position to report comprehensively on performance.

The target to improve 70% of the poor condition ratings of cultural resources and management practices of Parks Canada administered national historic sites within 5 years is a different case. The target relates to the concept of commemorative integrity of the national historic site, which is composed of three elements: resource condition, effectiveness of communication of the reasons for designation of the site, and effectiveness of management practices for preserving the site. Only the first element directly concerns the condition of assets that make up the site. The target however is not specific to resource condition and could in theory be met with no improvements to resource condition. In practice, Annual Performance Reports of the Agency show that resource condition is the element of CI that is least likely to be rated as poor (15 times between April 2001 and March 2008 compared to 41 times for effectiveness of communication and 23 times for management practices). Reassessments of elements rated poor based on managers’ self-reports, or more recently independent assessment by a team, have shown that in all cases where resource condition was identified as poor it has subsequently improved.

In summary, the Agency is unable to use its current inventory of assets and condition ratings in the AMS to identify the relevant assets and condition baselines for several of its Corporate Plan targets. Because of this, it is unable to report on performance in almost all cases. It is also unable to distinguish at a national level which asset repair and recapitalization investments are intended to lead to improved asset conditions and to determine if these projects succeed in this objective.

Reducing the Percentage of Assets Requiring Investment Due to Health and Safety Concerns

The 2005 LTCP committed to reducing the percentage of assets requiring investment because of critical health and safety needs from 30% in 2000 to 15% by March 2011. Health and safety ratings are one kind of

condition rating collected by the Agency. It refers to the stability and performance of an asset or its components, and the extent of exposure to hazard and non-disabling or disabling injuries posed by an asset. Ratings of poor or closure on this dimension imply that an asset has a high probability of exposure to hazards or accidents that could lead to non-disabling (poor condition) or disabling (closure) injuries.

In evaluating this commitment we found some ambiguity in the exact nature of the target. It appears that the intent was to reduce the percentage of unfunded projects that were thought to be necessary to address health and safety concerns rather than a target about the portion of assets in the inventory with poorer health and safety condition ratings. We could not locate a record of exactly how the target was set or a baseline list of unfunded projects used in setting the target.

The current LTCP process for business units does not identify the health and safety condition of the assets that are subject to the interventions for either funded or unfunded projects. The Agency has not reported internally on performance against this target since the approval of the 2005 LTCP. Therefore, we concluded it was not possible to evaluate performance against the target directly.

We do know, as shown in Table 23, that the health and safety condition profile of the Agency’s asset portfolio appears to have deteriorated somewhat between 2000 and 2008.

Table 23 Health and Safety Ratings of Asset Portfolio

	2000 N=16,666, RV=\$7.13B					2008 N=16,334, RV=\$8.3B				
	% Of RV					% Of RV				
	A	B	C	D	No Rating	A	B	C	D	No Rating
Health and Safety Condition (i.e., potential exposure to hazard, non-disabling or disabling injuries posed to users or employees).	42	37	15	2	4	35	39	15	1	10

N=the number of assets with a health and safety condition rating.

Sources: 2000 data were based on the MS-Excel spreadsheet replicating the data reported in the 2000 Agency LTCP.

2008 data were based on the AMS data file constructed from business unit web-based reports available to the units in August 2008 and data gathered for five units on revised replacement values.

The percentage of assets without a health and safety condition rating in the AMS has increased significantly since 2000. This limits our ability to compare the condition of the asset base on this dimension over time. Again, we concluded that the Agency lacks the information and systems to demonstrate progress against the target in the 2005 LTCP.

Reducing the Percentage of Cultural Assets Facing Significant Threat of Loss of Historic Fabric

The 2005 LTCP committed to reducing the percentage of cultural assets requiring investment due to

significant threats of loss of historical fabric from 50% in 2000 to 10% by March 2011. Again, we found that the nature of the target was ambiguous. No record was available on how it was set, the baseline data were not retained and no effort had been made to track performance against the target.

As already shown in Table 9, the condition profile of the inventoried cultural resources in the Agency is weaker in 2008 compared to 2000, although it is impossible to say why this is the case. We also know that the amount of investment targeted toward the conserve heritage resources PA (i.e., where the majority of cultural resources are found) has been reduced from the original target in the 2005 LTCP (see Table 18).

In business unit LTCPs, the units are asked to indicate if a project, either funded or unfunded, involves a designated cultural resource (i.e., under the *Cultural Resource Management Policy*). As with the AMS, we found many variations of how business units provide this information so that it is not always clear whether or not the project involves a cultural resource. We found that 4% to 5% of planned LTCP investment between April 2008 and March 2010 was to be allocated to cultural resources and 10% to 16% of the costs of unfunded projects involved cultural resources.

Although suggestive, these data do not directly address the question of whether the Agency has met or will meet the specific target regarding the extent of threat to cultural resources set out in the 2005 LTCP.

OTHER PERFORMANCE MEASURES

The asset management literature includes a number of possible performance indicators (e.g., *Measuring and Improving Infrastructure Performance, 1995*; *Metrics/Measures of Performance in Physical Asset Management Handbook 2002*; *Key Performance Indicators for Federal Facilities Portfolios, 2005*) covering a variety of aspects of asset performance and asset targets including those related to asset operations, utilization rates, revenue generation, users' satisfaction with facilities (i.e., employees and/or clients), and contribution to the mission or mandate of the organization. We found that some relevant data for these indicators exists in the Agency for some kinds of assets, in some parts of the country (e.g., campground occupancy rates, number of vehicles using a highway), but there is no overall consistent national data that would permit development of a complete range of asset performance indicators.

Visitors' overall rating of satisfaction with facilities and services at the sites that they have visited has recently been assessed at some places.³⁸ In general, these results point to a continued high level of user satisfaction with some of Parks Canada's assets, despite the problems with asset condition and investment levels noted previously. In contrast, management reports that the

³⁸ In the 2007 summer season, for example, visitor surveys were administered at 19 sites throughout the Parks Canada system. Over these sites, 95% of the respondents rated their satisfaction with facilities as a 4 or 5 on a five-point satisfaction scale. Similar ratings were obtained for ratings of satisfaction with visitor centers. Slightly poorer ratings were found for satisfaction with the condition of washrooms (i.e., 89% scoring 4 or 5 on the scale). Sites are not selected randomly for administration of visitor surveys each year therefore the results from these sites cannot be generalized to the Agency as a whole.

most frequent complaint from visitors is with the condition of facilities, particularly contemporary facilities such as campgrounds.

The Agency has claimed there are increasing risks that deteriorating asset conditions and insufficient funding threatens the delivery of the mandate and program results (e.g., permanent loss of cultural assets of national significance, reduced visitor satisfaction), public and staff safety, as well as posing legal risks. The Agency has never completed an analysis to show whether and to what extent these negative consequences are being realized in practice.

OVERALL SUMMARY OF PERFORMANCE AGAINST TARGETS AND BENCHMARKS

The Agency set a number of national targets for asset management in its 2005 LTCP, subsequent business planning cycles and in its Corporate Plans. Table 24 summarizes the Agency's targets and our conclusions.

There were eight targets related to asset investments for the Agency as a whole or directed at specific business units. We concluded that one target (i.e., an overall investment of \$439M in asset repair and recapitalization over five years) was likely to be met. Three targets were not likely to be met for a variety of reasons including potential external factors outside the control of the Agency, changing targets in ways that made it more difficult to track performance, and potential problems with the available expenditure data that gave the appearance that the target was not met. In three cases the Agency simply had not put in place mechanisms to track performance against the target and so we concluded there was no information for assessing performance.

There are several targets related to condition of assets in either the Corporate Plan or the 2005 LTCP. In all cases we concluded there was either a lack of clarity about the nature of the specific target and/or a lack of information and systems to report on progress against the targets. There is no clear indication of when the Agency will be able to report on the majority of the asset related targets in the Plans.

With respect to investment relative to the external asset investment benchmarks, the Agency has not adopted these as a formal target although the 2005 LTCP gave the appearance of doing so. The Agency does use the benchmarks in its planning and monitoring of asset investments and is well aware that it does not meet these standards. Not meeting these standards over time implies potentially high levels of deferred maintenance and capital investment. Calculations of current and future levels of deferred maintenance and capital investment rely on a number of assumptions, all of which may be open to challenge (i.e., including what is a reasonable investment standard for the Agency), as well as less than perfect data that limits the accuracy of any analysis.

Finally, we noted that the Agency does not have readily available comprehensive information to develop a more complete suite of asset performance indicators. Reasonable data for one such indicator, visitor satisfaction with facilities does exist and shows continued high levels of satisfaction although anecdotal information based on visitor complaints suggests the opposite. The Agency needs to develop a more thorough and evidenced based case on the nature and extent of adverse consequences it has claimed are associated with deteriorating asset conditions and insufficient funding.

Table 24 Summary of Agency Asset Management Program Targets and Performance

	Targets	Focus	Conclusion
Investment Targets	Invest \$439M in major repairs and recapitalization of assets between April 2005 and March 2010.	National	Target Likely To Be Met: given actual and planned LTCP expenditures and despite confusion on the precise target and what LTCP expenditures counted toward achievement of the target.
	Achieve a steady state investment of \$122.8M in major repairs and recapitalization by 2009/2010.	National	Target Will Not Be Met: given planned business unit LTCP expenditures
	Invest specific percentages of the overall \$439M investment by program activity.	National	Insufficient Information: Sub-components of the target were changed but it was not made clear if, and how, this would affect the overall targeted expenditures by program activity. We lacked sufficient information on business unit planned and actual expenditures to determine if the overall spending targets from all sources of funds by program activity would be met.
	Invest \$91M in revenue from increased user fees in visitor related assets (program activity 4) between April 2005 and March 2010.	National	Target Will Not Be Met: possibly because of decreased visits in many locations.
	Selected business units to annually invest 65% of their 1997 capital allocation in LTCP expenditures by 2007/08	Business Unit	Target Not Met: given actual LTCP expenditure data. It is not clear whether the problem is due to lack of investment or problems with the expenditure data.
	Selected business units direct 10% of their annual LTCP expenditures to heritage presentation assets.	Business Unit	No Information: The Agency has not put in place mechanisms to track either planned or actual LTCP expenditures directed to heritage presentation assets.
	Invest \$40M to \$42M a year in asset maintenance	Both business unit and national	Insufficient Information: The target reflects planned expenditures from business unit LTCPs. All the components of maintenance expenditures cannot be readily identified in the Agency financial system so it is not possible to assess if planned expenditures are realized in practice.
	Invest 2% of the CRV of Assets in each of maintenance and capital renewal of assets	Both business unit and national	No target: There are questions about the relevance of the 4% combined asset investment benchmark for the Agency's asset base. The 4% combined benchmark is incorporated into the Agency's LTCP template and investment against the standard is monitored. It is known that the benchmarks levels of investment are not met, and this implies potentially hundreds of millions or billions of dollars in deferred maintenance and capital renewal over time.
Asset Condition Targets	Asset investments should demonstratively improve the overall condition rating of an asset from poor to fair, or from fair to good. The condition of certain heritage assets as well as contemporary townsite and throughway assets should be maintained or improved as specified in Agency Corporate Plans.	Both business unit and national	Insufficient Information: The portion of LTCP expenditures directed to asset condition improvement is not identified and the success of projects in achieving this objective is not tracked. The Agency lacks baseline inventories and condition ratings for targeted assets in the Corporate Plan and publicly reports it has insufficient information to evaluate whether and to what extent condition of these assets is being maintained or improved.
	Reduce the percentage of assets requiring investment because of critical health and safety needs from 30% in 2000 to 15% by March 2011.	National	Insufficient Information: The baseline data for these targets is not available. The nature of the targets (i.e., whether they concern unfunded projects or assets in the AMS) is not clear. They have never been monitored and reported on in the Agency. At the level of the assets in the AMS, relevant condition ratings appear to be deteriorating.
	Reduce the percentage of cultural assets requiring investment due to significant threats of loss of historical fabric from 50% in 2000 to 10% by March 2011.		

5. CONCLUSIONS, ISSUES AND RECOMMENDATIONS

Management of assets, both contemporary and cultural, is central to the delivery of the Agency's programs and services, and in the case of cultural assets represents an end in itself. If assets are not well managed, it could have serious consequences for achievement for the Agency's mandate and program results and potentially pose significant health and safety and legal risks.

Asset management involves a large portion of the Agency resources (i.e., an estimated 800 FTEs and \$161M or 27% of the Agency's total 2007/08 expenditures of \$585.5M). Types of assets managed by the Agency include buildings, bridges and dams, fortifications, grounds, roads and highways, marine structures, utilities, equipment and fleet. The asset inventory itself is large comprising approximately 22,000 inventoried assets of all types and approximately 16,000 high-value assets (i.e., those with a historic cost over \$10K). Although the inventory is large, most of the recorded replacement value of the asset portfolio is associated with approximately 11,000 to 12,500 assets with replacement values over \$10K. Major assets themselves can be grouped into a much smaller number of facilities (i.e., perhaps about 1500 with some residual assets not assigned to a facility). Given the materiality of assets in the Agency and their importance for delivering on the Agency's mandate and program activity results, the asset management program was identified as a high priority for evaluation in the 2007/08 and 2008/09 Agency Evaluation Plans.

The evaluation addressed two key issues. First, we assessed whether the Agency's asset management program was a **relevant** response for meeting its asset management challenges and objectives. The need for assets and a program to manage them was **not** in question. Second, we evaluated the **performance** of the program against objectives and targets set out in various national plans and policies and in relation to commonly accepted asset investment benchmarks. Prior to addressing these issues we developed a description of the resources and key activities/outputs of the asset management program and noted some strengths and weakness of these program elements.

Throughout the evaluation we noted many good practices and improvements in the program since the 2005 LTCP was developed. There is consensus that the number and qualifications of asset managers has improved over the last two to three years, there is the basis of a good long-term capital planning process, there is renewed attention to asset inspection and maintenance requirements and some good national and local practices for capturing this information, there is more attention to defining and documenting certain types of high risk assets, there is a reasonable framework for prioritizing major repair and recapitalization projects, and investments in these types of projects have increased significantly since 2005. There is some local documentation that investments achieve their intended results.

Despite these improvements, we concluded that in general the Agency as a whole lacks a mature strategic approach to asset management. By this we mean that at a national level it lacks an up to date inventory of its core assets, an ability to understand what is happening with these assets over time, an understanding of if, and how, assets and asset investments serve typical asset investment objectives and contribute to the long term strategic objective and program goals of the Agency.

It cannot realistically model the impacts of different investment choices and make informed decisions based on this information.

In total we identified six specific issues which if addressed would contribute to improving the strategic focus of the asset management program. Each of these issues is summarized below along with one or more associated recommendations.

Issue 1. INCOMPLETE AND UNCOORDINATED ASSET POLICY, DIRECTIVE, AND CRITERIA FRAMEWORK

1. The CAO should review the existing framework and identify any gaps and develop a plan and schedule to address the gaps (e.g., see recommendations 3, 4 7 and 9 for examples of how the framework might be improved).
2. The CAO should create an Intranet site containing copies of, or links to, the Agency and TB asset policies and standards, delegation of authorities, project management guidance, relevant asset management processes (e.g., for doing condition ratings or determining replacement values) similar to what currently exists for the financial management policies and guidance in the Agency.

Issue 2. LACK OF COMPLETE DATA ON LIFE CYCLE COSTS OF ASSETS

3. The CAO in conjunction with DGs Eastern and Western /Northern Canada should define which expenditures currently captured in the financial system reflect asset operations and maintenance (i.e., goods and service expenditures are currently captured).
4. The CAO in conjunction with DGs Eastern and Western /Northern Canada should develop a reasonable and consistent national approach to allocating salary costs to asset operations and maintenance based on approaches already in use at the business unit level.
5. The CAO should modify the structure of the Asset Expenditure Reports so that they include information on the program activity to which the expenditure is directed (already captured at input) and the intended purpose of the expenditure (see also recommendation 13).
6. The DGs Eastern and Western/Northern Canada should inform business unit managers of the importance of coding expenditure data correctly so that they link to the Asset Expenditure Reports. They should monitor information in the reports and hold managers accountable for ensuring it is accurately completed.

Issue 3. INADEQUATE ASSET INVENTORY AND MANAGEMENT DATA

7. The CAO based on consultations with the operational and functional DGs should confirm the core assets and asset information (e.g., condition, replacement value, link to a facility where relevant, indications of costs of corrective measures, indications of asset or facility importance) to be included in an asset management system and outline a process and timelines for updating the inventory and information consistent with the identified requirements (see also recommendations 10 and 16).
8. The CAO in conjunction with DGs Eastern and Western /Northern Canada should monitor business units' progress in updating the information and report annually to finance committee on progress (see also recommendation 18).
9. CAO should provide direction for reporting on acceptable sources of valid replacement value information in LTCPs (e.g., the AMS, in-house system, an Asset Data Integrity Report) and a consistent national approach for adjusting these estimates over time.

10. The CAO should develop a methodology to link technical assessments of assets/facilities condition with an understanding of the costs of corrective actions (e.g., a FCI or some other measure of costs of correction action) and provide a target date and plan for implementing the measure (see also recommendation 17).

Issue 4. INADEQUATE ASSET MANAGEMENT PLANNING

11. The CAO should develop an asset management plan (as opposed to a Long-Term Capital Plan) for the Agency. An Asset Management Plan specifies the current condition and life cycle information of the asset inventory, costs of operations, maintenance and past capital investments, and future requirements based on an analysis of needs and future requirements. It would have acquisition, operations/maintenance, capital renewal and disposal components. Consideration should be given to having business units prepare asset management plans of which Long-Term Capital Plans are one component.
12. The CAO in conjunction with the DGs Eastern and Western/Northern Canada should establish the appropriate percentages of CRV for the asset portfolio or for particular categories of assets, to guide future investment planning in asset operations, maintenance and capital renewal. They should ensure that process and systems are in place that captures these expenditures in the financial system (see also recommendations 3 to 6).
13. The CAO should modify the business unit Long-Term Capital Plan template to require that the purposes of the intended investment be shown (e.g., renewal of existing assets, new functionality or capacity, disposal of assets) allowing these projects to be linked to an overall asset management plan.
14. The CAO should clearly define and communicate what types of assets should be included in business unit LTCPs and therefore what types of asset expenditures will be counted toward meeting investment targets. DGs Eastern and Western/Northern Canada should follow-up to ensure that LTCPs only include projects that are relevant to the purposes of the plans.

Issue 5. RISKS OF IRRELEVANT ASSET INVESTMENTS

15. The CAO in conjunction with the DGs Eastern and Western/Northern Canada should review and report to finance committee information on asset conditions and life cycle, and asset priorities to determine if the current allocation of resources between asset operations, maintenance and capital investment represents the best investment balance for achieving the Agency's long-term objectives (see also recommendation 10).
16. The CAO in conjunction with DGs Eastern and Western/Northern Canada should develop additional tools and guidance (e.g., an API or some other measure) to ensure consistent prioritization of decisions to investment in asset operations, maintenance, renewal, acquisition or disposition and set a timetable for implementation in the Agency.

Issue 6. FAILURE TO MEET PERFORMANCE TARGETS, AND INADEQUATE MEASUREMENT AND REPORTING AGAINST TARGETS

17. a) The CAO in conjunction with the operational and functional DGs should conduct an immediate review of all its current targets for assets (i.e., 13 targets) and confirm which targets are still relevant and useful for the Agency. For those targets that remain relevant, the systems and process for monitoring and reporting on performance should be identified and target dates established for when the information will be available.

17. b) If minimal investments targets by business unit are considered relevant, the CAO should develop and communicate direction on what sources of funds count to meeting minimal investment targets and what are the precise targets for all relevant business units. Policy or guidance should be developed and communicated on if, and under what circumstances, business units can opt out of the minimal investment target.
18. The CAO and DGs Eastern and Western/Northern Canada jointly prepare and report annually on a complete picture of asset conditions, life-cycle information, actual and planned expenditures for operations, maintenance and capital, and results from previous investments and intentions for future investments. Reporting should also include information on the actual consequences of the asset investment decisions relevant to the potential harms identified by the Agency (i.e., loss of irretrievable cultural assets, decreased visitor satisfaction, potential health and safety or legal risks).

APPENDIX A: DOCUMENTS REVIEWED**Parks Canada Documents**

- Parks Canada Re-capitalization Management Process Operations Manual (March 1994)
- Parks Canada Agency Definition of Capital Expenditures (December 1999)
- Parks Canada Agency 2000-01 to 2004-05 Long-Term Capital Plan
- Parks Canada Agency 2005/06 to 2010/11 Long-Term Capital Plan (October 2005)
- Parks Canada Capital Planning Directive (June 2005)
- Asset Management Framework (November 2005)
- Asset Management System (AMS) Training Guide (January 2005)
- Parks Canada Asset Management Policy (September 2006)
- Parks Canada User Fees and Revenue Management Policy (February 2006)
- Parks Canada Asset Accounting Policy and Procedures (March 2007)
- Parks Canada Visitor Experience Asset Investment Criteria (December 2007)

- Asset Management Function, Human Resources Committee Presentation, November 23rd, 2005
- Asset Management Function, Finance Committee Presentation, December 8th, 2005
- Asset Management System, Finance Committee Presentation, November 2nd, 2006
- PCA Bridge Inspection Standards Policy, Finance Committee Presentation, Nov. 30th 2006
- Asset Funding, Deck Prepared by Real Property Branch, June 2007
- Asset Investment Overview, Finance Committee Presentation, June, 2007
- Asset Funding, Deck Prepared by Real Property Branch, September 2007
- PCA Long-Term Capital Planning: Direction Setting, Finance Committee, July 2008

- Potable Water Standards and Guidelines, November 2006
- Green Building Directive, May 2007
- Interim Directive for Dam Inspection, January 2008
- Directive for Design, Construction, and Inspection of Vehicular and Pedestrian Bridges, January 2008.
- Various Field Unit Management Plans and LTCPs, Asset Management Organizational Charts and Job Descriptions

Reports Prepared for Parks Canada

- Audit of the National Asset Review Report (March 1999) Price Waterhouse Coopers
- Review and Assessment of Parks Canada's Dam Safety Program (March 2005) Mobec Engineering
- Parks Canada Agency Asset Reinvestment Benchmarking (March 2008) Corporate Research Group Ltd.

Treasury Board Policies and Guidelines

- Policy Framework for the Management of Assets and Acquired Services (November 2006)
- Policy on Management of Real Property
- Policy on Long-term Capital Plans
- Guide to the Management of Real Property
- Treasury Board Accounting Standards 3.1 – Capital Assets

Other Documents

- *Measuring and Improving Infrastructure Performance* (1995) National Academy Press, Washington, D.C.
- *Budgeting for Facilities Maintenance and Repair Activities: Report Number 131* (1996) The National Academy of Sciences
- *Asset Management Handbook* (1996) Australian National Audit Office
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APPENDIX B: LIST OF PEOPLE CONSULTED

The list does not include all the personnel in the Agency consulted throughout the evaluation work (i.e., whole management or asset management teams we meet with in some business units and asset managers or advisors we spoke to on the phone to clarify particular points).

Paul-André Hallé Contracted Asset Expert, Network: Mcr Inc	Jim Reeves Strategic Asset Management Advisor Western/Northern Canada	David Robinson Manager, Infrastructure Eastern Canada
Alan Latourelle Chief Executive Officer Parks Canada Agency	Dave McDonough Manager Corporate Services, Western/Northern Canada	Linda Frank Superintendent Mainland Nova Scotia Field Unit
Jacques Haché Director, Real Property Branch	Sandy Cummings Asset Management Engineer Highway Service Centre	Mark Garnett Asset Manager Mainland Nova Scotia Field Unit
Guy Groulx Chief, Asset Management Services Real Property Branch	Jullian Roulet Superintendent Banff Field Unit	Norma Welch Manager, Finance & Admin. Mainland Nova Scotia Field Unit
Clair Girard Engineering Advisor Real Property Branch	John Rose Asset Manager Banff Field Unit	Carole Loiselle Superintendent Western Quebec Field Unit
Michel D'Amour Manager, Financial Planning Finance Branch	Davina Brown, Asset Manager, Jasper, Kootenay, Yoho/ Mount Revelstoke Glacier Field Units	Chantal Couture Asset Manager Western Quebec Field Unit
Paul Lizé Manager, Accounting Operations Finance Branch	Dawn Bronson Superintendent Manitoba Field Unit	Gord Giffen Acting Superintendent, Eastern Ontario Field Unit
Madelaine Gordon Financial Analyst, SAP team Canadian Heritage	Desmond Raymond Asset Operations Manager Manitoba & Riding Mountain Field Units	Bill Pratt Asset Manager/Construction Engineer, Eastern Ontario Field Unit
Tin Ng Senior HR Research Advisor Human Resources National Office	Brendan McDonald Director General Eastern Canada	
Bill Fisher Director General Western and Northern Canada	Mart Johanson Former Executive Director Service Centres	
Terry McGuire Director, Highway Service Centre	Dan Jollimore Manager, Business Management Eastern Canada	

APPENDIX C: PARKS CANADA’S PRINCIPLES AND CRITERIA FOR ASSET INVESTMENT

	Principles Guiding Asset Investments (2005 LTCP)	Criteria For Prioritizing Asset Investments (2005 LTCP)	Parks Canada Asset Management Policy	Parks Canada’s Capital Planning Directive
Consistent with Mandate and Directions	<p>Program Management Capital investments will be directed towards the attainment of the Agency mandate and specifically the: Planned results and performance expectations contained in the Corporate Plan, Vision and action items articulated in the Management Plans, and Outcomes described in the Sustainable Business Plan.</p> <p>Capital investment Should exhibit cultural and environmental leadership e.g.: following green design and operating principles; using sustainable and environmentally sound energy sources; reuse of building materials, etc. Should reduce any existing negative environmental impact and, in the case of contemporary assets, wherever possible, reduce the existing footprint.</p> <ul style="list-style-type: none"> ▶ Will promote, where applicable, public appreciation and understanding of the agency’s natural and cultural heritage values. ▶ Will consider the visitor experience and be based on thorough social science research that documents visitor needs and expectations. Analysis of other innovative non-asset dependent service alternatives will be included. 	<p>Projects are prioritized on the basis of: Urgency to mitigate an immediate threat to commemorative integrity and threat of loss of cultural resources; prevent or mitigate significant damage to ecosystems;</p> <ul style="list-style-type: none"> ▶ Ecological and Commemorative Integrity objectives; ▶ Visitor experience and heritage presentation aspects of the Agency mandate 	<p>Ensure ecological integrity and environmental quality by reducing the impact of assets on all ecosystem components and processes (e.g., meeting the principles and targets identified in the Corporate Plan Sustainable Development Strategy and Environmental Management System)</p> <ul style="list-style-type: none"> ▶ Ensure visitor experience and education opportunities that respond to the preferences, need and expectation of visitors through the provision of well-maintained, high quality assets and facilities (i.e., assess needs and expectations for visitor facilities and educational assets, how current facilities respond to current and anticipated future requirements, adapt, remove, replace existing facilities to meet requirements) 	<p>Capital Investment must be directed towards the attainment of the Agency mandate and specifically the: Planned results and performance expectations contained in the Corporate Plan, Vision and action items articulated in the Management Plans, and Outcomes described in the Sustainable Business Plan.</p> <p>Where appropriate, capital investments should exhibit cultural and environmental leadership e.g.: following green design and operating principles; using sustainable and environmentally sound energy sources; reuse of building materials, etc.</p> <p>Project proposals are prioritized based on Impact of investment in assets that relate to the achievement of planned results in more than one Program Activity Impact of deferral on Ecological and Commemorative Integrity Impact of deferral on visitor experience and heritage presentation aspects of the Agency mandate Capital investment</p> <ul style="list-style-type: none"> ▶ Must promote, where applicable, public appreciation and understanding of the Agency’s natural and cultural heritage values. ▶ Must consider the visitor experience and be based on thorough social science research that recognizes visitor needs and expectations including analysis of other innovative non-asset dependent service alternatives.

	<p>In cultural assets will be undertaken in a manner that does not degrade or cause the loss of such assets and their cultural value and will comply with the Standards and Guidelines for the Conservation of Historic Places in Canada.</p> <p>Where deemed appropriate through analysis and planning, adaptive uses for cultural assets will be considered and then guided by capital planning principles set out here.</p>		<p>Preserve commemorative integrity at national historic sites (e.g., resource condition, effective communication; and, respect for heritage values in decisions and actions affecting the site).</p> <p>Ensure cultural resource management (e.g., application of Cultural Resource Management Policy, use of The Standards and Guidelines for the Conservation of Historic Places in Canada to guide decision-making)</p>	<p>Asset investments involving cultural assets will be undertaken in a manner that does not degrade or cause the loss of such assets and their cultural value. Where deemed appropriate through analysis and planning, new uses for cultural assets will be considered and then guided by capital planning principles set out here.</p>
Integrated	<p>Stewardship, Public Appreciation & Environmental Leadership</p> <p>Capital planning will be based on an integrated approach, which takes into account key Parks Canada objectives with regard to Ecological Integrity, Commemorative Integrity and Visitor Experience.</p>	<p>Projects are prioritized relate to:</p> <p>The achievement of planned results in more than one Program Activity</p>		<p>Capital planning must be based on an integrated approach, which takes into account key Parks Canada objectives with regard to Ecological and Commemorative Integrity and Visitor Experience.</p>
Consistent with Legislation, Guidelines and Standards	<p>Asset investment will follow all Parks Canada guidelines and standards as well as all applicable legislation and regulations such as environmental assessment, the Labour Code, building codes, Standards and Guidelines for the Conservation of Historic Places in Canada, etc.</p>	<p>Risk Assessment: relate to Compliance with legal obligations, public commitments or federal-provincial agreements; and, Significant risks to health & safety (high exposure to health hazards and/or personal injury);</p>	<p>Ensure employee and public health and safety, in accordance with the provisions outlined in the Canada Labour Code - Part II;</p> <p>Develop, where appropriate, inspection and maintenance procedures and standards that:</p> <p>Comply with applicable federal legislation and regulations;</p> <p>Give reasonable consideration to relevant provincial and/or territorial legislation and regulations;</p> <p>Are based on technical and engineering methods;</p> <p>Give reasonable consideration to relevant industry standards, other recognized standards, and available professional expert opinion;</p> <p>Conduct regular inspections, in accordance with such procedures and standards, to rate asset conditions and identify perils to employee and public health and safety and other perils;</p>	<p>Asset investment will follow all Parks Canada guidelines and standards as well as all applicable legislation and regulations such as environmental assessment, the Labour Code, building codes etc.</p> <p>Capital investment should reduce any existing negative environmental impact and, in the case of contemporary assets, wherever possible, reduce the existing footprint.</p>

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Reduce Risk and Insure Long Term Sustainability</p>	<p>The Agency must have the capacity to manage the capital programs. Capital investments will ensure full operational and financial sustainability over the proposed life of the investment; and, be subject to a clear and comprehensive cost benefit analysis and seek to minimize public subsidy of private benefits. The program of rationalization of service offers and assets will continue in a manner that minimizes the net increase to the Agency’s asset inventory (recognizing the addition of new parks and sites will add to the overall inventory). Capital investment decisions will be designed to meet average rather than peak demands.</p>	<p>Avoid the financial consequences of deferral. Achievement of financial sustainability e.g. increased costs, loss of revenue, potential to generate additional revenue</p>	<p>Develop new assets only when required to meet the corporate plan and when they are integral to approved field unit business and management plans as well as community plans; Dispose, divest or decommission contemporary assets that are no longer required Apply integrated risk management practices to identify perils and determine the mitigating measures to reduce the probability and/or impact of an undesirable outcome to a level acceptable to the Agency;</p>	<p>The Agency must have the capacity to manage the capital program. Capital investments must ensure full operational and financial sustainability over the proposed life of the investment; and, be subject to a clear and comprehensive cost benefit analysis; and seek to eliminate or minimize public subsidy of private benefits. Parks Canada may leverage its capital investments through project partnerships, joint projects and cost shared asset development. Where and when it does so, the financial and fiduciary responsibilities of the parties must be fully and clearly stated. Capital investments will be made in a strategic fashion and in a manner that minimizes net increase in the Agency asset inventory – the program of rationalization of service offers and assets is to continue. Capital investment decisions will be designed to meet average, rather than peak demands. Project approval is to be based on considerations of health and safety risks, financial and legal liability and investment urgency. Consideration will also be given to financial impact of deferral e.g. increased costs, loss of revenue, potential to generate additional revenue; impact of deferral on potential or existing partnerships and/or opportunities to engage stakeholders</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Partnership</p>	<p>Parks Canada may leverage its capital investments through project partnerships, joint projects and cost shared asset development. Where and when it does so, the financial and fiduciary responsibilities of the parties will be fully and clearly stated.</p>	<p>Leveraging partners and/or opportunities to engage stakeholders.</p>	<p>Apply professional and technical expertise to asset management through the appropriate mix of internal capacity, Public Works and Government Services Canada and contracted services;</p>	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Improve Asset Condition</p>	<p>Asset investment will lead to demonstrable improvement in asset condition.</p>			<p>Asset investment must lead to improvement in the overall condition rating of the Agency’s asset portfolio. Demonstrable improvement in asset condition: poor to fair, fair to good.</p>

APPENDIX D: EMPLOYEES IN ASSET MANAGEMENT, MAINTENANCE AND OPERATIONS

The number of indeterminate, term, and seasonal employees doing asset management, maintenance or operations as of June 26, 2007 was estimated using the following procedure:

1. The identification started with a database assembled for the National Classification Review (NCR). The NCR identified the roles and responsibilities of employees and grouped them consistently across the Agency into approximately 200 generic work descriptions organized by functional areas and sub areas. Assets, Canals and Townsites is one of the functional areas and is divided into six sub areas
 - ▶ Assets:
 - ▶ Canals/ Waterways
 - ▶ Engineering
 - ▶ Maintenance & Operations
 - ▶ Management
 - ▶ Skilled Trades
2. A total of 1,811 positions were found in the Asset, Canals and Townsites database. For 465 of these positions there was a record of the occupational group and level (i.e., about 26% of the positions) in the NCR database. The relevant occupational groups were:
 - EG Engineering and Scientific Support
 - EL Electronics
 - EN Engineering and Land Survey Group
 - GL General Labour and Trades
 - GS General Services
 - GT General Technical
 - HP Heating, Power & Stationary Plant Operations
 - PM Program Administration
 - SC Ships' CrewsOnly some levels of these occupational groups are found in the NCR database.
3. The positions in the NCR database were matched to positions in PeopleSoft. This showed the number of these positions currently staffed and provided the current position classification of all the positions in the NCR database. In all but a few cases, these positions were classified in the relevant occupational groups listed in step 2 (i.e., a few of the positions in the NCR database were classified as AS, AR or CR in PeopleSoft).
4. The PeopleSoft database was then searched for other staffed positions in the relevant occupational groups. This resulting list was then reviewed to see if the position titles were consistent with the types of positions found in NCR database. This procedure led to identifying a small number of additional staffed positions associated with asset management.
5. In total, 1455 employees were identified as doing asset operations and/or maintenance related work (i.e., 28% of the 5,167 employees in the Agency at the time). This asset operations and maintenance group does not include executive level employees, those currently on leave or secondment, and students. The results are summarized below.

Sub Functions for Asset, Canals and Townsite Functional Area	# Of employees	Percent of Total
Maintenance & Operations (i.e., maintenance worker/coordinator, driver/operator road maintenance, cleaner, boat operator, bus driver)	753	52
Canals/ Waterways (i.e., bridge/lock masters, dam keeper, lock/bridge operator, maintenance worker)	264	18
Skilled Trades (carpenter, electrician, historical restoration craftsman, painter, plumber, mechanic, welder (GLs))	245	17
Assets (i.e., asset support technicians, and technical service officer or coordinator)	93	6
Management	41	3
Engineering	9	.6
Positions not Matched to sub functions (Technicians, general labourers, general services/technical, program administration)	50	3
Total	1,455	

Of the 1,455 employees,

- ▶ 42% (614) were indeterminate, 45% (661) seasonal and 12% (179) term
- ▶ 93% are employed in field units, 7% in service centres (i.e., mainly the highway service centre in Western Canada) and just 3 FTEs in National Office.

APPENDIX E: ROLES, RESPONSIBILITIES AND ACCOUNTABILITIES

Responsibility for asset management and capital spending is assigned to various management positions in the National Office and in the field.

Position	Responsibility For
Chief Executive Officer	The overall corporate plan, which provides guidance and direction to the organization that the asset base supports
Finance Committee	Allocating and monitoring the use of asset funding as set out in the <i>Capital Planning Process Directive</i> . Finance Committee is also responsible for approving national direction on asset management policies, standards and strategies
Chief Administrative Officer, through the Director, Real Property,	Leading the development of the national policies, standards and guidelines to direct, and the national tools to support asset management. The Director, Real Property is also responsible for developing environmental management policies in relation to assets, formulating national asset management strategies, preparing plans and reports, and initiating the evaluation and audit of the entire asset management program including the Agency Long-Term Capital Plan
Director General External Relations and Visitor Experience	Identifying national asset design and development requirements to meet visitor experience requirements consistent with Agency policy and priorities
Directors General, Eastern and Western/Northern Canada	Managing the allocation of Budget 2005 funds in their respective regions, which includes approving projects using this source of funds and monitoring expenditures and implementation for reporting to finance committee.
Executive Director, Service Centres	Providing professional and technical support to the field units in the management of their respective assets as well as support to the development of national policy, standards and guidelines
Field Unit Superintendents	The development of management and business planning in relation to capital assets including the acquisition, maintenance, re-capitalization and disposal of the assets in accordance with Agency policy and priorities. This includes the development and implementation of an annual, five-year long-term capital plan; and the maintenance of their Asset Management System.

Source: 2005/06-2010/11 LTCP

DGs East and West/North		Field Units	National Office
Asset Support	Strategic		
Service	Advice/Guidance	<ul style="list-style-type: none"> • Planning • Acquisition • Operations • Maintenance (including due diligence in compliance/inspection) • Re-capitalization • Disposal 	<ul style="list-style-type: none"> • National Policy, standards and guidelines • Advice to Executive Board • Coordination (PWGSC, Central Agencies, Other Government Departments) • Long-Term Capital Plan for Agency • National Information System Development and Support
<ul style="list-style-type: none"> • Technical service • Professional Investigation, Options, • Design Support 	<ul style="list-style-type: none"> • Investment Analysis • Strategic/Special Advice • Capital Planning Oversight • Technical and Professional Guidance 		

Source: Asset Management Function Presentation to Human Resource Committee November 23, 2005

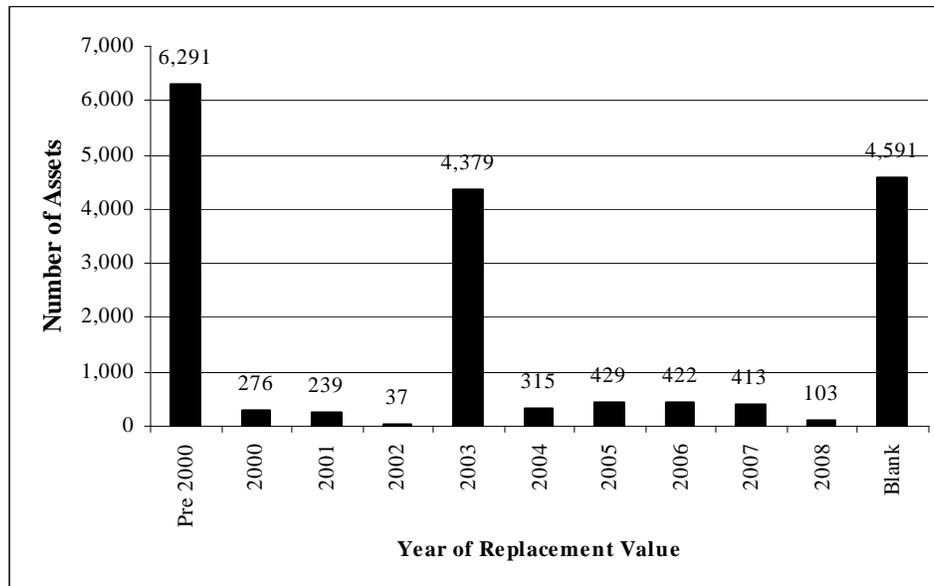
APPENDIX F: ASSET INSPECTION, MAINTENANCE & REPAIR EXPENDITURES

Business Unit (\$ In Thousands)	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Newfoundland East	1,206	1,206	1,206	1,206	1,206	1,206
Nfld. West & Labrador	920	920	920	920	920	920
Cape Breton Islands	3,600	3,690	3,783	3,877	3,974	4,074
Mainland Nova Scotia	1,302	1,302	1,302	1,302	1,302	1,302
Southern New Brunswick	600	615	630	646	662	678
Northern New Brunswick	727	730	730	730	730	730
Prince Edward Island	1,789	1,826	1,862	1,899	1,937	1,937
Mingan	914	914	914	914	914	914
Gaspésie	1,626	1,626	1,626	1,626	1,626	1,626
Ville De Québec	600	600	600	600	600	600
La Mauricie	1,241	1,272	1,304	1,337	1,370	1,405
Ouest De Québec	1,300	1,300	1,300	1,300	1,300	1,300
Saguenay	444	412	377	377	377	377
Ontario East	3,625	3,625	3,625	3,625	3,625	3,625
Central Ontario	3,600	3,600	3,600	3,600	3,600	3,600
Southwest Ontario	800	800	800	800	800	800
Ontario North	360	331	329	337	346	340
Sub Total East	24,656	24,770	24,908	25,097	25,289	25,434
Manitoba	75	75	75	90	90	90
Riding Mountain	1,100	1,200	1,200	1,200	1,300	1,300
Northern Prairies	1,095	1,095	1,095	1,095	1,095	1,095
Saskatchewan South	539	636	653	687	645	639
Banff	1,575	1,606	1,638	1,671	1,704	1,739
Jasper	2,200	2,200	2,200	2,200	2,200	2,200
Kootenay /Yoho/Lake Louise	1,905	2,000	2,000	2,000	2,000	2,000
Mt Revelstoke / Glacier	390	390	390	390	390	390
Waterton / Bar U	932	932	932	932	932	932
Coastal B.C.	600	811	831	852	874	895
Gwaii Haanas	335	335	335	335	335	335
Southern NWT	1,050	1,050	1,050	1,050	1,050	1,050
Yukon	998	993	1,008	1,023	1,038	1,054
Nunavut	234	234	288	303	318	318
Western Arctic	80	80	80	80	80	80
Western Asset Mgmt Service Centre	2,000	2,000	2,000	2,000	2,000	2,000
Hot Springs	600	600	600	600	600	600
Sub Total West	15,707	16,237	16,375	16,508	16,651	16,717
Total	40,363	41,007	41,283	41,605	41,941	42,150

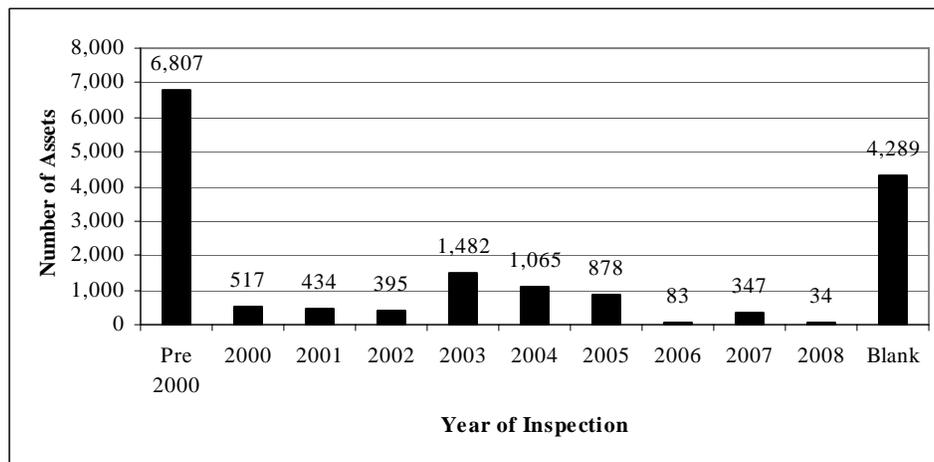
Source: 2007/08 and 2008/09 LTCPs. Data for Mingan and Gaspésie are taken from a summary of planned maintenance expenditures from the Office of the DG Eastern Canada. Some values for 2007/08 and for 2012/13 are projected from the succeeding or previous years.

APPENDIX G: DATES OF RECORDED REPLACEMENT VALUES AND CONDITION RATINGS

Number of Assets by Dates of Recorded Replacement Values in the AMS



Number of Assets by Dates of Last Inspection for Condition Ratings



Graphs do not include historical and archaeological objects or collections, planned assets or assets with no category type, land, studies etc. Assets with date values that were prior to 1900 or after 2008 were also excluded. A few business units have no data for these variables and are included in the blank column.

APPENDIX H: ESTIMATES OF CURRENT REPLACEMENT VALUES BY BUSINESS UNIT

(\$ In Thousands)	2000 Dataset	Values Reported in Business Unit LTCPs						Asset Data Integrity Reports	2009 Corrected AMS	Difference LTCP 2008 and AMS 2008	Difference LTCP 2008 and Asset Integrity
		2007/08	2008/09	2009/10	2010/11	2011/12	2012/13				
Newfoundland East	129,039	129,300	132,500	135,800	139,200	141,900	145,447		124,979	7,522	
Nfld. West & Labrador	192,411	100,000	200,156	205,160	210,289	215,546	220,935		190,212	9,944	
Cape Breton Islands	368,299	329,322	329,322	329,322	329,322	329,322	329,322		363,736	-34,414	
Mainland Nova Scotia	222,472	227,533	227,533	227,533	227,533	227,533	227,533		221,535	5,999	
Southern New Brunswick	67,910	107,000	107,000	107,000	107,000	107,000	107,000		111,231	-4,231	
Northern New Brunswick	70,977	71,000	73,700	75,500	77,400	79,300	81,282		90,683	-16,983	
Prince Edward Island	86,636	79,898	87,100	87,925	88,615	89,260	96,400		84,572	2,529	
Mingan	13,645	24,425	24,425	24,425	24,425	24,425	24,425		21,014	3,411	
Gaspésie	63,533	95,732	95,732	95,732	95,732	95,732	95,732		67,552	28,180	
Ville De Québec	312,680	307,186	307,186	307,186	307,186	307,186	307,186		313,934	-6,748	
La Mauricie	150,242	152,991	156,816	160,736	164,755	168,874	173,096		140,515	16,301	
Ouest De Québec	950,695	813,000	813,000	813,000	813,000	813,000	813,000		823,676	-10,676	
Saguenay	7,287	17,700	18,054	21,494	21,880	22,273	23,084		14,417	3,637	
Ontario East	524,037	730,000	730,000	730,000	730,000	730,000	730,000		723,064	6,936	
Central Ontario	530,660	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000		1,055,695	-55,695	
Southwest Ontario	84,151	140,000	140,000	140,000	140,000	140,000	140,000		135,768	4,232	
Ontario North	73,889	40,000	40,000	40,000	40,000	40,000	40,000		67,738	-27,738	
Québec Service Centre	883								203		
Atlantic Service Centre	1,432								1,430		
Ontario Service Centre	5,804								3,824		
Total East	3,856,682	4,365,087	4,482,524	4,500,813	4,516,337	4,531,351	4,554,442		4,555,776	-1,336	
Manitoba	77,943	88,749	88,749	88,749	88,749	88,749	88,749	96,311	94,634	-5,885	-7,562
Riding Mountain	136,903	170,712	170,712	170,712	170,712	170,712	170,712	176,821	176,592	-5,880	-6,109
Northern Prairies	248,600	187,662	186,477	186,477	186,477	186,477	186,477	271,906	302,034	-115,557	-85,429
Saskatchewan South	35,840	46,500	48,000	50,750	52,000	53,100	55,800	46,321	48,261	-261	1,679
Banff	281,996	310,795	310,795	310,795	310,795	310,795	310,795	304,962	304,369	6,426	5,833
Jasper	568,002	316,449	316,449	318,000	320,000	320,000	320,000	314,298	450,702	-134,253	2,151
Kootenay /Yoho/Lake Louise	257,521	308,330	308,330	308,330	308,330	308,330	308,330	300,714	381,070	-72,740	7,616
Mt Revelstoke / Glacier	77,185	94,000	94,000	94,000	94,000	94,000	94,000	82,042	92,108	1,892	11,958
Waterton / Bar U	100,276	91,090	182,180	182,180	182,180	182,180	182,180	107,146	242,372	-60,192	75,034
Coastal B.C.	167,215	214,960	214,960	214,960	214,960	214,960	214,960	200,919	199,589	15,371	14,041
Gwaii Haanas	7,819	9,573	9,738	9,921	10,016	10,121	10,216	9,631	7,734	2,004	107
Southern NWT	105,272	77,818	77,818	77,818	77,818	77,818	77,818	119,119	79,377	-1,559	-41,301
Yukon	121,868	96,900	101,806	104,351	106,959	109,633	112,374	90,826	274,607	-172,801	10,980
Nunavut	7,241	16,804	19,399	19,914	20,324	20,740	20,871	9,979	9,130	10,270	9,420
Western Arctic	3,971	4,209	2,188	2,538	2,888	3,238	3,288	3,993	3,743	-1,555	-1,805
Western Asset Mgmt Service Centre	1,051,858	1,297,205	1,297,205	1,297,205	1,297,205	1,297,205	1,297,205	1,531,458	1,045,709	251,496	-234,253
Hot Springs	43,845	119,430	119,430	119,430	119,430	119,430	121,030	40,955	40,905	78,525	78,475
Western Canada SC	1,987								414	-414	0
Total West	3,295,342	3,451,186	3,548,236	3,556,130	3,562,843	3,567,488	3,574,805	3,707,401	3,753,350	-205,114	-159,165
National Office	1,403										
Grand Total	7,153,427	7,816,273	8,030,760	8,056,943	8,079,180	8,098,839	8,129,247	3,707,401	8,309,126	-278,366	

APPENDIX I: NUMBER OF HIGH-VALUE ASSETS BY ASSET CATEGORIES AND YEAR

Category	As of March						
	2008	2007	2006	2005	2004	2003	2002
Bridges (highway, road, trail bridges and structural culverts)	455	451	422	425	425	420	415
Buildings (residential, office and administration, public use, operational and general use, other)	4,772	4,593	4,580	4,621	4,633	4,638	4,641
Equipment (office furniture and fixtures, scientific and laboratory, woodwork, metal, trade and special industry)	473	435	387	406	379	353	345
Fleet, Heavy Equipment & Boat (construction equipment, boats, passenger, light, medium and heavy duty trucks)	2,569	2,591	2,469	2,456	2,450	2,382	2,391
Fortification	231	231	223	221	221	221	221
Grounds (parking, campgrounds, trails, day use, golf courses, signs, monuments & plaques)	3,130	3,087	3,033	3,037	3,038	3,026	3,023
Highways (national and provincially numbered highways)	28	28	27	27	27	27	27
Marine (Dams, locks, wharves, walls, breakwaters, navigation channels, heritage vessels)	1,007	992	986	988	982	984	982
Presentation (audiovisual and on site educational displays)	834	811	775	763	746	742	728
Roads (rural, urban, access, non-public roads)	730	727	716	721	720	715	715
Utilities (potable water systems, wastewater systems, electric power systems, solid waste systems, radio communication systems, underground storage tanks)	804	778	747	732	723	711	709
Informatics (large computers and servers, software)	116	116	117	115	128	117	105
Land	568	561	567	569	557	566	564
Leasehold Improvements	8	6	6	6	6	4	4
Under Construction	474	462	415	447	436	342	425
TOTAL	16,199	15,869	15,470	15,534	15,471	15,248	15,295

Source: Finance Branch National Office

APPENDIX J: LTCP EXPENDITURES BY BUSINESS UNIT AND YEAR

Expenditures are the sum of true capital expenditures and the non-true capital expenditures from the Asset Expenditure Reports (AER) minus amounts spent on land, for Quebec 400th Anniversary, and highway twinning.

(\$ In Thousands)	Expenditures			3-year Average
	2005/06	2006/07	2007/08	
Newfoundland East	1,606	1,664	763	1,344
Nfld. West & Labrador	1,140	503	787	810
Cape Breton Islands	2,321	5,420	4,396	4,046
Mainland Nova Scotia	2,090	382	315	929
Southern New Brunswick	1,287	1,562	2,359	1,736
Northern New Brunswick	87	97	121	101
Prince Edward Island	6,228	3,999	9,116	6,448
Mingan	476	242	213	310
Gaspésie	344	296	375	339
Ville De Québec	2,717	5,117	5,228	4,354
La Mauricie	413	299	474	395
Ouest De Québec	3,826	4,065	4,012	3,968
Saguenay	322	735	807	621
Ontario East	3,374	7,298	5,184	5,285
Central Ontario	2,576	4,025	5,319	3,973
Southwest Ontario	6,248	3,031	681	3,320
Ontario North	391	238	230	286
Atlantic / Halifax Service Centre	18	17	0	12
Centre De Services De Québec	53	251	47	117
Ontario Service Centre	106	428	240	258
DG Eastern Canada	0	0	10	3
Total East	35,621	39,671	40,676	38,656
Manitoba	2,000	855	1,065	1,306
Riding Mountain	431	2,475	930	1,279
Northern Prairies	1,996	2,317	4,986	3,099
Saskatchewan South	2,285	828	811	1,308
Banff	2,871	5,959	3,700	4,177
Jasper	2,215	2,907	4,360	3,161
Kootenay / Yoho/LL	2,751	4,995	5,050	4,265
Mt Revelstoke / Glacier	845	927	1,907	1,226
Waterton / Bar U	1,010	3,070	8,128	4,069
Coastal B.C.	4,582	1,006	1,318	2,302
Gwaii Haanas	127	566	509	401
Southern NWT	645	883	510	679
Yukon	907	934	1,272	1,038
Nunavut	386	41	189	205
Western Arctic	0	0	0	0
Western Asset Mgmt Service Centre	5,487	13,046	8,921	9,151
DG Western/Northern Canada	13	1	0	5
Hot Springs	711	1,748	269	910
Western Service Centre	0	15	16	10
Mountain Block Dist	0	26	0	9
Total West/North	29,262	42,598	43,940	38,600
National Office	0	78	0	26
Grand Total	64,883	82,347	84,617	77,282

APPENDIX K: 1997 CAPITAL ALLOCATION AND TARGETS

(\$ In Thousands)	1997 Allocation	65% Target	Targets in LTCP Where Different	2007/08 Expenditures As % of Target	3 Year Average As % of Target
Newfoundland East	1,127	732	916	104%	184%
Nfld. West & Labrador	1,352	879		90%	92%
Cape Breton Islands	2,705	1,758		250%	230%
Mainland Nova Scotia	1,804	1,172	1,148	27%	79%
Southern New Brunswick	1,147	746		316%	233%
Northern New Brunswick	901	586	621	21%	17%
Prince Edward Island	901	586		1556%	1100%
Mingan	273	178	35	120%	175%
Gaspésie	1,016	661		57%	51%
Ville De Québec	523	340	539	1539%	1282%
La Mauricie	694	451		105%	88%
Ouest De Québec	2,820	1,833	1,186	219%	216%
Saguenay					
Ontario East	2,144	1,394		372%	379%
Central Ontario	2,595	1,687		315%	236%
Southwest Ontario	901	586	1,706	116%	567%
Ontario North	676	439	900	52%	65%
Atlantic / Halifax Service Centre	206				
Centre De Services De Québec	1,548				
Ontario Service Centre	720				
DG East ern Canada	490				
Total East	24,544	14,027		290%	276%
Manitoba	672	437		244%	299%
Riding Mountain	1,109	721		129%	177%
Northern Prairies	1,615	1,050		475%	295%
Saskatchewan South	1,134	737		110%	178%
Banff	1,918	1,247		297%	335%
Jasper	1,642	1,067		409%	296%
Kootenay / Yoho/LL	1,513	983		514%	434%
Mt Revelstoke / Glacier	585	380		501%	322%
Waterton / Bar U	715	464		1750%	876%
Coastal B.C.	1,234	802		164%	287%
Gwaii Haanas	92	60		849%	668%
Southern NWT	853	554		92%	123%
Yukon	1,252	814		156%	128%
Nunavut	221	143		132%	143%
Western Arctic	358	233		0%	0%
Western Asset Mgmt Service Centre	386	251		3553%	3645%
DG Western/Northern Canada					
Hot Springs					
Western Service Centre	696	452		4%	2%
Total West/North	15,993	10,396			
National Office	2,141				
Grand Total	42,678	24,423			

APPENDIX L: MAINTENANCE AND CAPITAL EXPENDITURES AS A PERCENTAGE OF RV

(\$ Thousands)	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
LTCP Expenditure Type								
Maintenance			40,363	41,007	41,283	41,605	41,941	42,150
Capital	70,060	112,433	120,346	114,590	114,650	98,030	99,090	103,720
Model 1								
RV			7,816,273	8,030,760	8,056,943	8,079,180	8,098,839	8,129,247
Maintenance as % of RV			0.52%	0.51%	0.51%	0.51%	0.52%	0.52%
Capital as % of RV			1.54%	1.67%	1.49%	1.21%	1.22%	1.28%
Model 2								
RV	9,050,000	9,700,000	10,500,000	11,350,000	12,380,000	13,500,000	14,730,000	16,080,000
Maintenance as % RV			0.38%	0.36%	0.33%	0.31%	0.28%	0.26%
Capital as %RV	0.77%	1.16%	1.15%	1.01%	0.93%	0.73%	0.67%	0.65%

Notes: LTCP expenditures include true capital and major repair expenditures including those for the Quebec 400 anniversary and for highway twinning. They do not include amounts spent on land purchases. Model 1 is based on RV of assets from business unit LTCPs. Model 2 is based on RV of assets proposed by Real Property Branch based on construction inflation

APPENDIX M: ESTIMATES OF CURRENT AND FUTURE DEFERRED MAINTENANCE AND CAPITAL EXPENDITURES

Expenditures (\$ Millions)	LTCP Expenditures										2008/09 LTCPs				
	1998-99	1999-00	2000-01	2000-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Maintenance		40.36	40.36	40.36	40.36	40.36	40.36	40.36	40.36	40.36	41.01	41.28	41.61	41.94	42.15
Capital		45	60	68	50	77	63	70	113	120	114.59	114.65	98.03	99.09	103.72
Total		85.7	100.5	108.0	90.5	117.1	103.3	110.4	152.9	160.7	155.6	155.9	139.6	141.0	145.9
Capital as % of Total		53%	60%	63%	55%	66%	61%	63%	74%	75%	74%	74%	70%	70%	71%

Maintenance expenditures between 2007/08 and 2012/13 are taken from Appendix F above and reflected values reported or interpolated from business unit LTCPs. Values prior to that year are assumed to be equivalent to 2007/08 planned spending. Actual capital is true capital expenditures plus IO-2 expenditures from the AERs minus land purchases. Planned capital is from the 2008/09 LTCP cycle.

Model 1: Deferred Maintenance And Capital Based On RVs Reported In Business Unit LTCPs

(\$ Millions)	1999/00	2000/01	2000/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	Total Current and Future Deferral
Estimates RV	6,900	7,100	7,200	7,300	7,400	7,500	7,600	7,700	7,816	8,031	8,057	8,079	8,099	8,129	
2% of RV	138	142	144	146	148	150	152	154	156	161	161	162	162	163	
In year Deferred Maintenance	98	102	104	106	108	110	112	114	116	120	120	120	120	120	
Cumulative Maintenance	98	199	303	409	516	626	737	851	967	120	239	359	479	600	1,567
In Year Deferred Capital	93	82	76	96	71	87	82	41	36	46	46	64	63	59	
Cumulative Capital	93	174	251	347	418	505	587	628	664	46	93	156	219	278	942

RV for the assets is taken from business unit LTCPs for 2007/08 through 2012/13 as per Appendix G. Prior years are reduced by a constant rate to the \$6.9B figure previously reported by the Agency as the RV for its assets.

Model 2: Deferred Maintenance And Capital Based On Real Property Branch Construction Inflation Adjusted RVs

(\$ Millions)	1999/00	2000/01	2000/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	Total Current and Future Deferral
Estimates RV	7,350	7,580	7,850	8,050	8,250	8,530	9,050	9,700	10,500	11,350	12,380	13,500	14,730	16,080	
2% of RV	147	152	157	161	165	171	181	194	210	227	248	270	295	322	
In year Deferred Maintenance	107	111	117	121	125	130	141	154	170	186	206	228	253	279	
Cumulative Maintenance	107	218	335	455	580	710	851	1,004	1,174	186	392	621	873	1,153	2,327
In Year Deferred Capital	102	91	89	111	88	108	111	81	90	112	133	172	196	218	
Cumulative Capital	102	193	282	393	482	589	700	782	871	112	245	417	613	831	1,702

Real Property Branch estimated the CRV for the assets for all years.

Models of Deferred Maintenance Based on Current Condition Ratings

In order to arrive at an estimate of deferred maintenance based on current condition ratings of the Agency's assets it has to be assumed that:

- The percentages RV associated with a given condition rating in the current data applied to all existing assets and missing assets and to an asset portfolio with a different RV.
- The current condition ratings represent an average FCI for each asset in that condition

The table below shows one scenario in which current condition ratings as equivalent to FCI values of good, fair and poor assets. Assets in good condition have an average FCI of .025 mid-way between the range of 0 to .05 considered good. A fair condition rating equals a FCI of .075. A poor condition rating is assumed to be an FCI of .2 mid-way between the start of the poor condition range and what the US National Parks Service would classify as a critical condition asset at .3. A closed asset is given an FCI of .5. This model yielded a current deferred maintenance of just over \$1B consistent with the two models shown in Table 20.

	Recorded Condition Ratings				Total
	Good	Fair	Poor	Fair	
Portion of RV in each condition (as per Table 6)	0.26	0.44	0.28	0.02	
Dollar value of RV in each condition category	2,730	4,620	2,940	210	10,500
FCI ratio (i.e., portion of RV assumed to be deferred maintenance)	0.025	0.075	0.20	.5	
Dollar Value of Differed Maintenance	68.25	346.5	588	105	1,108