



Final Report - Internet Version
Follow-up Report:
Audit of the Safety of PWGSC Bridges
Project 2000-612

2001-06-27



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Executive Summary

Authority for the Project

This follow-up report was part of the 2000/2001 Audit and Review plan as approved by Public Works and Government Services Canada's (PWGSC's) Audit and Review Committee (ARC).

Objectives

The overall objective of this follow-up report is to provide reasonable assurance that appropriate steps are being taken by Real Property Services Branch (RPSB) to implement the recommendations contained in the Audit of the Safety of PWGSC Bridges (1999-612).

Scope

The focus of the audit was on the extent of completion by RPSB of its actions responding to the recommendations of the 1999 audit. The audit was carried out in the National Centres of Expertise (NCOE), Office Accommodation & Real Estate Services (OARES) and Architectural & Engineering Services (AES). Selected individuals in Atlantic, Ontario, Western and Pacific Regions with responsibilities for one or more bridges in their respective regions were also contacted. This project was conducted under the guidelines of the previous Treasury Board Review and Internal Audit Policy which was in effect up to March 31, 2001.

Background

RPSB is responsible for managing a portfolio of office and other real property assets including a diverse array of real property holdings across the country. These include non-office facilities, wharves, dams, locks, the British Columbia portion of the Alaska Highway, as well as numerous bridges. The bridges include inter-provincial bridges, those over major navigable waterways, and 24 structures along the Alaska Highway. As custodian, the Minister of PWGSC is responsible for meeting regulatory obligations and exercising due diligence in ensuring the safety of these bridges.

During the period June to September 1999, the Audit and Review Branch conducted the Audit of the Safety of PWGSC Bridges. The audit concluded that RPSB was currently in compliance with its existing regulatory framework, however, there were some discrepancies with current industry practices. Furthermore, inconsistent bridge inspection and evaluation practices were directly attributable to weaknesses in the management control framework. The audit was approved and the audit's four recommendations were accepted by the ARC at its meeting of December 3, 1999. In response to the audit recommendations, RPSB committed itself to a range of action in order to

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address the audit findings. All actions were to have been completed by the end of September 2000.

Key Findings

At the time that this follow-up audit was carried out, the four 1999 audit recommendations had not been fully implemented.

Shortly after the audit recommendations were accepted by the ARC the efforts commenced to address the identified management control weaknesses. The action items were not, however, completed within the planned timeframes such that, at the time of this follow-up audit, they remain outstanding. OARES realigned responsibilities within the Owner/Investor Directorate late in the fall of 2000 so that one individual now has responsibility for all the Land Transportation and Marine Assets. This individual has been tasked with ensuring that all of RPSB's commitments stemming from the 1999 audit are completed in a timely manner.

Recommendation #1: *A policy on the standard to be followed in inspecting, evaluating, and maintaining bridges within the PWGSC portfolio that is generally consistent with provincial standards should be approved and promulgated.*

RPSB Planned Action: *In order to be consistent with the provincial standards for inspecting, evaluating and maintaining the bridges, RPS will review, update and finalize its existing draft policy and promulgate it to the regions (Completion Date: 00-03-31). RPS will review and finalize its draft operational manual and promulgate it to the regions (Completion Date: 00-09-30).*

Current Status: *Work has progressed on both a new policy and an operational manual however neither had been finalized and promulgated as of February, 2001. The draft policy is expected to be on the agenda at the March, 2001 RPS Management Committee meeting and it is anticipated that the operational manual will be available for distribution in both official languages by the end of May, 2001.*

Recommendation #2: *Responsibilities are to be clarified so that there is a clear understanding amongst all personnel involved as to their respective responsibilities.*

RPSB Planned Action: *RPS will develop and implement a national memorandum of agreement between internal stakeholders to clearly define responsibilities (Completion Date: 00-03-31).*

Current Status: *Work has progressed on the development of a national Memorandum of Agreement (MOA) however it has not yet been finalized. Furthermore, it is not clear that the proposed MOA will ensure that a clear understanding will exist amongst all personnel involved as to their respective responsibilities. The draft MOA was designed to address NCOE responsibilities building upon the responsibilities as outlined in the draft policy. Responsibility for operating the bridges on a day-to-day basis has been delegated to the Executive Director (ED)*

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and Regional Directors General (RDG). They in turn have delegated responsibility in a manner consistent with the 1996 RPS Business Management Model that is broader than what is outlined in the draft MOA. However, this follow-up audit noted that the responsibilities of the ED and the RDGs are not addressed in the current draft MOA.

Recommendation #3: *Planning should take a longer term focus and the inspection process should better support it.*

RPS Planned Action: *RPS updates on a three year cycle, its Land and Marine Asset Investment Plans (which includes the bridges) with a 10 year horizon. The updates include the inspection results. Planning beyond 10 years is not consistent with our mandate which is to divest of the inventory of bridges. This is not to say that RPS will not take the longer term into account as a prudent custodian, but will do so in balance with the broader divestiture mandate. RPS updates, on a three year cycle, its divestiture strategy which includes these assets. Annually, RPS updates the forecast of divestiture initiatives as part of the ARLU process.*

Current Status: *All Regions have multi year O&M and capital budgets for the bridges however not all Regions have included the impact of increased inspection requirements.* The NCOE OARES recognizes that the new policy will have an impact on O&M requirements because of the increased inspection frequency. Staff in all regions indicated that it is their full intent to comply with the new policy of increased inspection, however only in NCA and Ontario Region was evidence found that the O&M budget for 2001-2002 and future years had clearly allocated funds for inspections at a frequency prescribed by the policy. Though major refits may supersede the requirement for an inspection for a period, planning for subsequent years should still reflect inspection requirements.

Recommendation #4: *It is recommended that the ADM, RPS ensure that there is ongoing monitoring and periodic reporting to senior management on the status of the bridges and the practices followed.*

RPS Planned Action: *RPS will address this recommendation within the MOA developed in response to recommendation #2 (Completion Date: 00-03-31).*

Current Status: *The draft MOA which has yet to be finalized, does not explicitly provide a mechanism that will ensure that senior management are advised on an ongoing basis on the status of the bridges and the practices followed.* The language in the MOA is imprecise as to whom information will be reported. Management responsible for the bridges, up to and including the Regional Directors General and the Assistant Deputy Minister. Real Property Services are accountable for ensuring that regulatory due diligence is followed to ensure the structural integrity of the assets in the inventory. There needs to be a mechanism in place to ensure that they have sufficient information to make an informed assessment on the extent to which due diligence is being followed.

1 Introduction

1.1 Authority for the Project

This follow-up report was part of the 2000/2001 Audit and Review plan as approved by Public Works and Government Services Canada's (PWGSC's) Audit and Review Committee (ARC).

1.2 Objectives

The overall objective of this follow-up report is to provide reasonable assurance that appropriate steps are being taken by Real Property Services Branch (RPSB) to implement the recommendations contained in the Audit of the Safety of PWGSC Bridges (1999-612).

1.3 Scope

Audit activities focused on the activities of the National Centres of Expertise (NCOE), Office Accommodation and Real Estate Services (OARES) and Architecture and Engineering Services (AES). Management and staff within the Owner/Investor Directorate and the Highway and Bridge Engineering group were interviewed and documentation demonstrating the actions taken by management since the 1999 audit were reviewed. Selected staff in all other Regions with responsibility for PWGSC bridges (Atlantic, Ontario, Western and Pacific Regions) were also contacted by telephone. This project was conducted under the guidelines of the previous Treasury Board Review and Internal Audit Policy which was in effect up to March 31, 2001.

1.4 Background

RPSB is responsible for managing a portfolio of office and other real property assets including a diverse array of Real Property holdings across the country. These include non-office facilities, wharves, dams, locks, the British Columbia portion of the Alaska Highway, as well as numerous bridges. The bridges include inter-provincial bridges, those over major navigable waterways, and 24 structures along the Alaska Highway. As custodian, the Minister of PWGSC is responsible for meeting regulatory obligations and exercising due diligence in ensuring the safety of these bridges.

During the period June to September 1999, the Audit and Review Branch conducted the Audit of the Safety of PWGSC Bridges. The audit found that the existing regulatory framework applicable to PWGSC was quite general and was less prescriptive than what was being used by other North American jurisdictions. The audit concluded that RPSB was currently in compliance with its existing regulatory framework, however, there were some discrepancies with current industry practices. Furthermore, inconsistent bridge inspection and evaluation practices were directly attributable to weaknesses in the management control framework.

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Several recommendations were made that were designed to strengthen the management control framework for the safety of PWGSC bridges. The audit was approved and the recommendations accepted by the ARC at its meeting of December 3, 1999. In response to the audit recommendations, RPSB committed itself to a range of action to promulgate policy and procedures and to clarify responsibilities. All actions were to have been completed by the end of September 2000.

2 Issues Examined

The extent of completion by RPSB of its follow-up actions on the four recommendations of the 1999 audit were confirmed.

3 Findings

At the time that this follow-up audit was carried out, the four 1999 Audit recommendations had not been fully implemented.

Efforts commenced shortly after the Audit recommendations were accepted by ARC to address the identified management control weaknesses. The action items were not, however, completed within the planned timeframes such that at the time of this follow-up audit, they remained outstanding. OARES realigned responsibilities within the Owner/Investor Directorate late in the fall of 2000 such that one individual now has responsibility for all the Land Transportation and Marine Assets. This individual has been tasked with ensuring that all of RPSB's commitments stemming from the 1999 audit are completed in a timely manner.

3.1 Policy to be Approved and Promulgated

Recommendation #1: *A policy on the standard to be followed in inspecting, evaluating, and maintaining bridges within the PWGSC portfolio that is generally consistent with provincial standards should be approved and promulgated.*

RPSB Planned Action: *In order to be consistent with the provincial standards for inspecting, evaluating and maintaining the bridges, RPS will review, update and finalize its existing draft policy and promulgate it to the regions. (Completion Date: 00-03-31) RPS will review and finalize its draft operational manual and promulgate it to the regions. (Completion Date: 00-09-30)*

Work has progressed on both a new policy and an operational manual however neither had been finalized and promulgated as of February, 2001.

An RPS policy on Bridge Inspection and Evaluation was approved at the January, 2001 AES Management Committee meeting. It is scheduled to be on the agenda in early March, 2001 of the Real Property Services Management Committee meeting.

The draft policy, now moving through the approval process is consistent, with the audit recommendation. It calls for inspections to be carried out in accordance with PWGSC's Bridge Inspection Manual (BIM). A comprehensive detailed inspection by a qualified bridge engineer is to be carried out at intervals not exceeding two years for structural components above water and at intervals not exceeding four years for underwater components. This is consistent with provincial standards.

The BIM has not yet been finalized or promulgated. It is anticipated that this manual will be available for distribution in both official languages by the end of May, 2001.

3.2 Clarification of Responsibilities

Recommendation #2: *Responsibilities are to be clarified so that there is a clear understanding amongst all personnel involved as to their respective responsibilities.*

RPSB Planned Action: *RPS will develop and implement a national memorandum of agreement between internal stakeholders to clearly define responsibilities. (Completion Date: 00-03-31)*

Work has progressed on the development of a national Memorandum of Agreement (MOA) however it has not yet been finalized. Furthermore, it is not clear that the proposed MOA will ensure that a clear understanding will exist amongst all personnel involved as to their respective responsibilities.

The draft MOA was designed to address N-COE responsibilities building upon the responsibilities as outlined in the draft policy. Under the draft policy:

- AES Regional Directors and Managers are responsible for implementation of the Policy and the operational requirements in the Regions;
- the AES Director General, Director of Civil Engineering and the Highway and Bridge Manager are responsible for national implementation and monitoring of the Policy; providing functional guidance and expertise to the NCA, Regions and to industries; and ensuring consistent application of the policy on a national level.
- the OARES, as Owner/Investor or custodian of the asset, is responsible for procuring the funding and authority for the timely execution of the Policy; and ensuring the assets are being managed so that health and safety is a priority.

Currently these assets are being managed on a day-to-day basis in a manner consistent with the 1996 RPS Business Management Model (BMM) which delegates responsibility for managing assets in a safe and healthy manner to the Executive Director and the Regional Directors General. Each in turn has further delegated responsibility to other levels within their respective organizations. In NCA and most Regions, AES resources working through a Client Service Unit oversee the bridges on behalf of the Owner/Investor. In one Region, Asset & Facilities

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Management Services (AFMS) with technical direction from AES, manage the bridges and take responsibility for the overall budget presented to the Owner/Investor.

The responsibilities currently undertaken by the Client Service Units and AFMS are not reflected in the MOA. Only in the case of the bridges on the Alaska Highway which Western Region's AES manages on behalf of the Owner/Investor in Pacific Region, does AES have full responsibility for the bridges and makes the recommendation on the required Operating & Maintenance (O&M) and capital budget directly to OARES. Several of the Regions who commented on the draft MOA felt that the Regional Directors General and the Executive Director should also be signatories to the agreement.

3.3 Longer Term Focus of Planning

Recommendation #3: *It is recommended that the ADM, RPS ensure that planning take a longer term focus and that the inspection process better support it.*

RPS Planned Action: *RPS updates on a three year cycle, its Land and Marine Asset Investment Plans (which includes the bridges) with a 10 year horizon. The updates include the inspection results. Planning beyond 10 years is not consistent with our mandate which is to divest of the inventory of bridges. This is not to say that RPS will not take the longer term into account as a prudent custodian, but will do so in balance with the broader divestiture mandate. RPS updates, on a three year cycle, its divestiture strategy which includes these assets. Annually, RPS updates the forecast of divestiture initiatives as part of the ARLU process.*

All Regions have multi year O&M and capital budgets for the bridges, however not all Regions have reflected the impact of increased inspection requirements.

The NCOE OARES recognizes that the new policy for Bridge Inspection and Evaluation will have an impact on O&M requirements because of the increased inspection frequency. Detailed inspections of structural components above the water level will be required at least every two years and every four years for underwater components. Under the old draft policy, the requirement was an inspection at least every five years. Moving bridges (Burlington Lift Bridge and one of three bridges making up the LaSalle Causeway) are inspected annually.

Staff in all regions have indicated their full intent to comply with the new policy of increased inspection. Only in NCA and Ontario Region was evidence found that the O&M budget for 2001-2002 and future years had clearly allocated funds for inspections at a frequency prescribed by the policy. Though major refits (such as those at the Van Horne Bridge, St. Andrews Lock and Dam and those planned for some Alaska Highway bridges) may supersede the requirement for an inspection for a period, planning for subsequent years should still reflect inspection requirements.

3.4 Ongoing Monitoring and Reporting

Recommendation #4: *It is recommended that the ADM, RPS ensure that there is ongoing monitoring and periodic reporting to senior management on the status of the bridges and the practices followed.*

RPS Planned Action: *RPS will address this recommendation within the MOA developed in response to recommendation 2. (Completion Date: 00-03-31)*

The draft MOA which has yet to be finalized, does not explicitly provide a mechanism that will ensure that Senior Management are advised on an ongoing basis on the status of the bridges and the practices followed.

The draft Policy on Bridge Inspection and Evaluation requires that "a summary report shall be prepared each year listing all bridges inspected during that year, including the type and extent of inspection. Copies of summary reports must be submitted to the Owner/Investor, Manager of the National Highway and Bridge Engineering Office and the Regional Office." Furthermore, "a current bridge inventory system of all bridges under custodianship of PWGSC, shall be maintained by the National Highway and Bridge Engineering Office and the Owner/Investor." The draft MOA calls for AES to provide OARES with a copy of the executive summary of its health and safety inspections, which includes recommendations to address deficiencies, as they are completed.

The language in both the draft Policy and the draft MOA is imprecise as to whom information will be reported. There is a joint responsibility for ensuring that the bridges are operated in a safe and healthy manner involving National and Regional COEs and Client Service Units. Management responsible for these activities up to and including the *Regional Directors General* and the Assistant Deputy Minister, Real Property Services are accountable for ensuring that regulatory due diligence is followed to ensure the structural integrity of assets in the inventory. Under the draft policy and draft MOA, it is not clear that this senior management level ultimately accountable for these assets will be advised on a regular basis. There needs to be a mechanism in place to ensure that they have sufficient information to make an informed assessment on the extent to which due diligence is being followed.

It was noted in the 1999 Audit report that the task of managing the bridges as an asset and reporting on the status and inspection practices would be facilitated considerably with an enhanced infrastructure. Preliminary discussions have started within the *Highways and Bridge Engineering* group on the creation of an electronic Bridge Management System. An example of a useful source of this type of information is the BMP module of the Project & Business Management System (PBMS) which has been utilized by NCA to provide a succinct summary of the condition of the bridges it is responsible for, when the last inspection was conducted, outstanding health and safety issues and the planned repair strategy.