



Transportation Capital Program and Property Management

Department of Highways and
Public Works

February 2007



Office of the Auditor General of Canada
Bureau du vérificateur général du Canada

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Auditor General of Canada
Vérificatrice générale du Canada

To the Honourable Speaker of the Yukon Legislative Assembly:

I have the honour to transmit herewith my report on the Transportation Capital Program and Property Management—Department of Highways and Public Works to the Yukon Legislative Assembly in accordance with the provisions of section 35 of the *Yukon Act*.

Yours sincerely,

A handwritten signature in cursive script that reads "Sheila Fraser".

Sheila Fraser, FCA
Auditor General of Canada

Ottawa, 2 February 2007

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Transportation Capital Program and Property Management

Department of Highways and Public Works

Main Points

What we examined

The Government of Yukon's Department of Highways and Public Works is responsible for ensuring that transportation infrastructure in the territory is safe and efficient. It is also responsible for planning and acquiring building space and providing other property management services that meet the needs of its client departments at a reasonable cost. We examined how the Department plans and implements transportation infrastructure projects, plans for and acquires space, develops and manages building projects, and maintains buildings. We looked at a sample of completed and ongoing projects.

Why it's important

Highways and bridges are especially important in the sparsely populated Yukon, where communities are separated by long distances. In the 2005–06 fiscal year, the Department spent about \$60 million to develop, construct, and maintain the territory's transportation infrastructure—4,849 kilometres of highways and roads, 129 bridges, 13 airports, and 16 airstrips. With about \$52 million spent by government departments and agencies, the Department's Property Management Agency managed the development, leasing, operation, and maintenance of about 480 government-owned buildings and 52 leased buildings.

Both real property management and the development and maintenance of safe transportation infrastructure call for long-term planning to ensure that they are delivered as economically and efficiently as possible. Sound management practices and information to support decision making, strategic management, and risk management are also essential.

What we found

- The Department has identified the need for major reinvestment in highways and bridges to halt deterioration and bring their condition up to its standards. It does not have a rigorous approach to long-term planning and funding for maintenance and rehabilitation of these assets.
- Many of the transportation infrastructure and building projects we looked at (such as bridge rehabilitation, highway reconstruction,

airport runway resurfacing, construction of airport terminal buildings and community centres, and school replacement and expansion) went over their original targets for total spending. Most of the projects were not completed on schedule. In some cases, the problems were beyond the Department's control. However, the Department did not adequately manage the risk of such occurrences. Nor did it conduct the required review of completed projects to evaluate whether it had followed appropriate procedures, observed economy and efficiency, and met the objectives for the project.

- The Department has no long-range master plan for space to ensure that it can identify and meet accommodation needs and that the government does not pay more than it should for space. It does not carry out effective long-range planning for building space to maximize the use of existing space and recommend the best option—build, buy, or lease—for acquiring additional space. The Department lacks a complete inventory showing the space that government departments occupy along with what they need and what the government's standard for space allocation allows. The Department notes that some departments are overcrowded while others have more space than they need. At the time of our audit, the Department had engaged a consultant to develop a Yukon-wide, five-year master space plan.
- A high percentage of office space is leased. A vast majority of recent leases were entered into on a sole-source basis, mostly by renewing the existing lease—which can often be the costliest solution in the long term. Decisions to lease were often not properly supported or documented.
- Some government-owned buildings are seriously deteriorating due to aging and lack of adequate maintenance. Building inspections have not been carried out consistently and have not used any established standards. As a result, the Department has no up-to-date information on the condition of buildings. At the end of our audit, it was in the process of developing standards and procedures for facility audits.

The Department of Highways and Public Works has responded. The Department of Highways and Public Works has agreed with our recommendations. Its detailed responses follow the recommendations throughout the report.

Introduction

Ensuring safe and efficient public highways and buildings

1. The Government of Yukon's Department of Highways and Public Works is responsible for ensuring that transportation infrastructure in the territory is safe and efficient. It is also responsible for providing a wide range of property management services that meet the needs of its client departments at a reasonable cost.

2. The Department is headed by a deputy minister, who is supported by three assistant deputy ministers responsible for corporate services, transportation, and property management. Two directors responsible for human resources and supply services also report to the deputy minister (Exhibit 1).

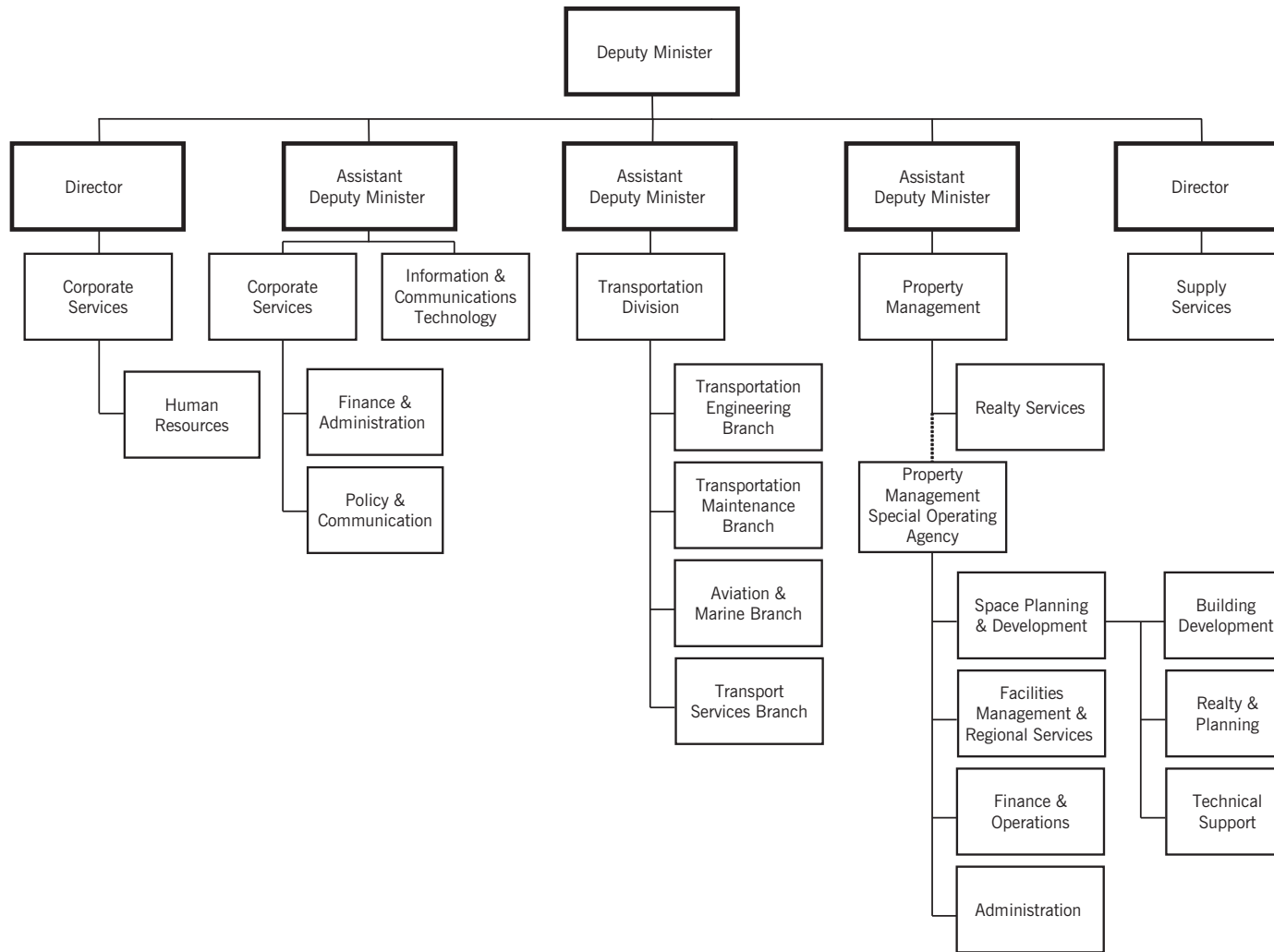
3. **Transportation.** The Department's Transportation Division oversees the planning of the Yukon transportation system. It designs, constructs, maintains, and regulates the territory's transportation infrastructure—4,849 kilometres of highways and roads (Exhibit 2), 129 bridges, 13 airports, 16 airstrips, and 2 ferries. The Transportation Engineering Branch, with about 35 staff, works with other governments and various branches of the Department to reconstruct highways, improve transportation infrastructure, and ensure the safety of bridges.

4. The Government of Yukon receives contributions from other governments to fund most of its transportation infrastructure projects. For example, under the Shakwak Agreement between the United States and Canada, the United States government funds the reconstruction of Haines Road and the northern section of the Alaska Highway. Under the Canada/Yukon Strategic Highway Infrastructure Program and the Canada Strategic Infrastructure Fund, the federal government provides funding on a cost-sharing basis to several highway and bridge improvement projects in the territory.

5. **Property management.** The Department's Property Management Agency has been operating as a **special operating agency** since April 1996. It has about 210 employees, with 170 working in facilities management and regional services, 24 working in building development, realty, planning, and technical support activities, and the remaining 16 working in Finance and Operations and in Administration.

Special operating agency—An operational organization with a degree of autonomy within existing departmental structures. As a departmental program, the agency is subject to government legislation, directives, and policy. The purpose of establishing a special operating agency is to enable its managers to achieve higher levels of performance by giving them flexibility to manage their resources in the most productive manner, according to common businesslike criteria.

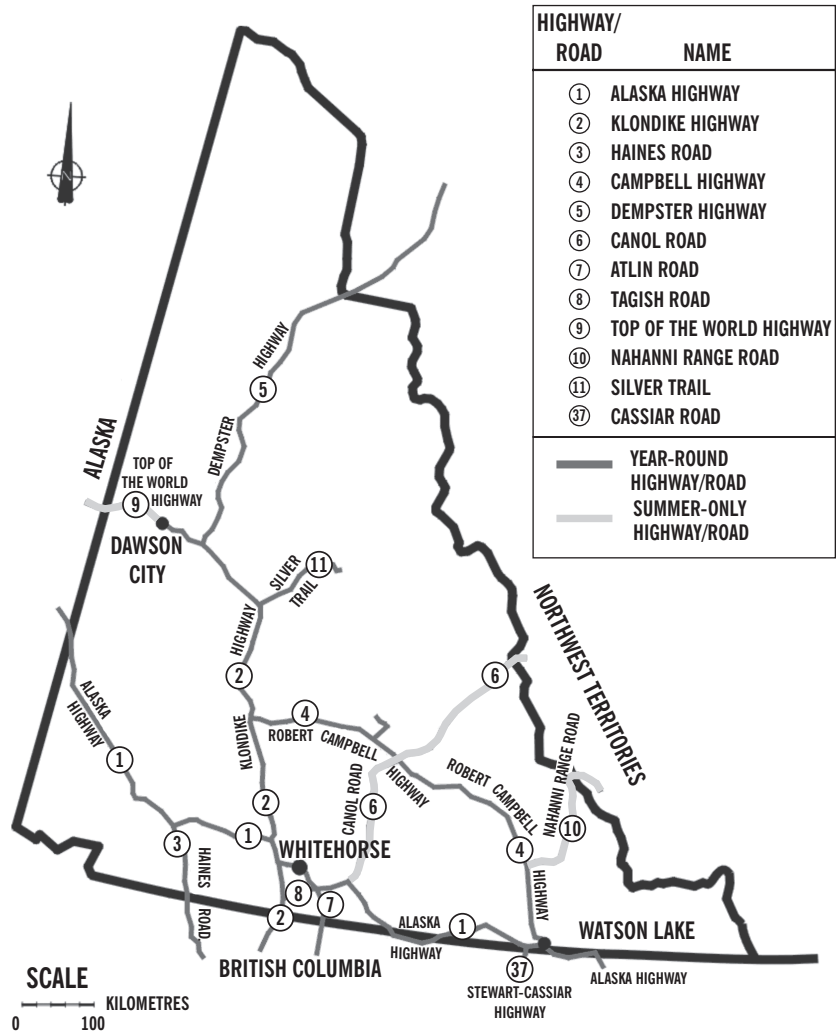
Exhibit 1 Department of Highways and Public Works organization and programs



Note: Dark outlined boxes represent positions reporting directly to the Deputy Minister. Other boxes represent programs and activities.

Source: Department of Highways and Public Works

Exhibit 2 Yukon highways and roads



Source: Department of Highways and Public Works

6. The Department works on behalf of program departments to manage the development, leasing, operation, and maintenance of about 480 government-owned buildings (with a current replacement value of about \$1 billion) and 52 leased buildings (about \$9 million in annual rental payments). Government-owned buildings and leased buildings provide about 3.3 million and 410,000 square feet of space respectively (comprised of office, warehouse, and special purpose space).

7. In the 2005–06 fiscal year, the Department spent about \$145.2 million—\$68.8 million in **capital expenses** (about

Capital expense—Money spent to acquire or improve capital assets such as buildings, bridges, and roads. Acquisition includes the design, development, construction, or purchase of capital assets. Improvement includes any alteration or renovation that significantly increases the performance, value, or capability of a capital asset or extends its useful or economic life.

\$37.2 million funded by, or recovered from, other parties), and \$76.4 million in operating and maintenance expenses (about \$3.7 million funded by, or recovered from, other parties). Of this total amount, the Transportation Division spent roughly \$60.3 million in capital expenses to develop, construct, and maintain the territory's transportation infrastructure.

8. The property management program accounted for about \$4.6 million in capital expenses and \$16.5 million in operating and maintenance expenses to cover the costs of capital construction and maintenance, building development overhead, operation and maintenance of facilities, and leasing of space. The Department's Property Management Agency also received about \$14.1 million in facilities management fees and rental payments from other departments and agencies. In addition, program departments spent a total of about \$17 million in capital expenses to fund their building construction and maintenance needs.

9. In total, the Government of Yukon spent about \$52 million in 2005–06 developing, operating, and maintaining building properties, representing about seven percent of all government spending.

Directives govern activities

10. In 1994, the Government of Yukon's Management Board (the finance committee of the Executive Council) issued a directive on project planning and implementation. In April 1998, the Management Board approved the removal of this directive from the Management Board Directive Manual and its inclusion in the General Administration Manual. The directive applies to projects that are estimated to cost \$50,000 or more to acquire a fixed asset. It specifies the principles for project planning, implementation, control, and review as well as the responsibility and accountability of the sponsoring department (with the budget authority for a project) and the performing department (which carries out the work on a project). The Department's activities are also governed by other government directives, such as those on contracting, office space planning, and capital building maintenance.

Focus of the audit

11. We examined how the Department plans and implements transportation infrastructure projects, plans for and acquires space, develops and manages building projects, and maintains buildings. The audit focused on the following areas:

- the Department's risk management practices at the strategic and operational levels, with an emphasis on capital planning, project delivery, and property management;
- planning and implementation of transportation infrastructure projects; and
- planning and acquisition of space, maintenance of buildings, and management of facilities.

12. We looked at a sample of completed and ongoing projects, which included two building projects where we examined the Department's involvement only to the point when it declined responsibility for the projects.

13. More details on the audit objective, scope, approach, and criteria are in **About the Audit** at the end of this report.

Observations and Recommendations

Risk management

The Department needs to improve its risk management practices

14. Risk management refers to the practices an organization uses to manage the uncertainty of future events and the potential impact of the identified risks. We identified numerous risks that can affect the ability of the Department of Highways and Public Works to achieve its objectives (Exhibit 3). We found that the Department does not adequately identify and assess key risks that can affect the achievement of its objectives. Nor does it establish or document appropriate procedures for mitigating risks.

15. Officials engaged in developing and managing transportation infrastructure and building projects as well as leasing space have considerable experience in their areas of expertise. Many of their actions in following government directives, policies, and established procedures reduce the risks to the Department. However, the Department does not adequately document the nature of the risks and the action taken to manage them. For example, we did not find a documented profile of the risks associated with construction projects, buildings, leases, specific clients, and landlords. Such information is essential to manage the real property portfolio.

16. A department's ability to manage risk, through **integrated risk management**, increases its ability to achieve its objectives, better manage its programs, and achieve better value for money.

Integrated risk management—A continuous, proactive, and systematic process to understand, manage, and communicate risk from an organization-wide perspective.

Exhibit 3 Examples of risks that can affect the Department of Highways and Public Works in achieving its program objectives

Accidental hazards: All types of hazards, with the exception of those resulting from pre-meditated activities.

Act of nature: An event resulting from natural causes, which could not have been prevented by reasonable care or foresight.

Client-related risk: The risk that actions (or inactions) taken by clients or user groups may negatively affect the achievement of objectives. For example, a client department may change its requirements for the amount and type of space and its fit-up specifications. The change may result in delays and increased costs.

Employee risk: The risk that arises from the actions (or inactions) of employees, whether intentional or unintentional. This category encompasses the risks associated with insufficient human resource capacity and/or competence.

Environmental risk: The risk that capital projects may have a negative impact on the environment and that measures to mitigate the environmental impact may not be fully complied with.

Financial risk: The risk arising from insufficient funding for operational and/or strategic priorities.

Fraud/corruption: The risk of loss or damage to assets due to an intentional misrepresentation (by an employee or the public) with an intention to deceive for personal gain.

Hostile actions from others: Malicious or premeditated actions against the organization, including action from the public.

Landlord-related risk: The risk that actions (or inactions) taken by the landlord or lessor of a building may negatively affect the achievement of objectives. At the end of a lease, a landlord of an occupied building may not be willing to renegotiate at favourable terms or may not want to modify buildings to meet the government's project schedule. This may result in increased costs and delays and less-than-satisfactory accommodation.

Legal risk: The violation of laws, regulations, and treaties/agreements and any legal liability that may result from these violations. For example, potential legal risks may arise in the tendering process, including changing the bid process midstream or accepting an unsolicited proposal from a bidder.

Partner or supplier/contractor risk: The risk that actions (or inactions) taken by partners or suppliers/contractors may negatively affect the achievement of objectives. For example, a heated construction market may have an adverse impact on cost estimates. A contractor may not be able to finish the construction of a capital project because of unforeseen construction or financial problems. This may result in cost overruns, delays, and potential liability for the government.

Political risk: The risk that a change of government, political priorities, or policy direction may negatively affect the achievement of established objectives. Unwarranted political involvement may work against the judgment and decision making of department officials.

Process risk: Inadequate or failed processes or management practices, including non-compliance with policies and procedures.

Public opinion risk: The risk that public opinion may impede the organization's ability to achieve its objectives.

Technology risk: The risk arising from inadequate infrastructure (technology or otherwise), including system failure.

17. Key elements of integrated risk management include developing a corporate risk profile and integrating risk management into decision-making structures and processes. Developing a corporate risk profile involves

- formally and explicitly identifying the risks associated with achieving objectives at all levels and in all operations of a department;
- assessing the potential outcomes for the department should a particular event or situation not occur as planned;

- determining how the department will respond to identified risks—accept, manage, or ignore the risk;
- defining how much risk the department will accept (risk tolerance) given what it is trying to achieve; and
- ensuring that all managers and staff in the department understand the department’s risk tolerance so they can act accordingly.

18. The Department’s Property Management Agency recently did a strategic review of its operations and identified a number of external threats and internal weaknesses—for example, poor information management systems and lack of understanding of its environment by its own department and clients. This strategic review is a good start. However, senior management must ensure that risks are prioritized and appropriate risk management strategies are in place to respond to identified risks. As well, managers need to consider risk as part of their decision-making process and ensure that risk management action is ongoing, including planning, training, control, monitoring, and documentation.

19. Recommendation. The Department of Highways and Public Works should develop a departmental risk profile that identifies and assesses the key risks of the Department and the measures it will use to mitigate these risks. This information should be communicated to managers and staff so they understand what is expected of them to manage risks.

The Department should provide staff with the necessary training in risk management.

The Department should incorporate risk management into its day-to-day work so that it can measure the risk over time.

Department of Highways and Public Works’ response. Agreed. A formal risk management checklist/plan based on project complexity and budget will be developed and in place for 2008–09 or sooner, if possible. The completed checklist will be analyzed by the Risk Management Unit and a risk assessment report produced quantifying risks for proposed projects.

The Department is working to engage federal Treasury Board trainers to provide risk management training to relevant staff. A Business Process Redesign Project, including risk management associated with real property asset management practices, is scheduled for completion in February 2008. Standard industry documents for building consultant services and construction contracts will clarify the roles, responsibilities, and obligations of each party and assist in mitigating associated project risks.

Transportation capital program

The condition of transportation infrastructure is a concern

Pavement condition index—A numerical index between 0 and 100 indicating the condition of the pavement of a roadway section, with 100 representing an excellent condition. It is widely used in the transportation engineering sector.

20. The Department of Highways and Public Works is responsible for ensuring safe and efficient highways, bridges, and airports in the territory. These assets are especially important in the sparsely populated Yukon, where communities are separated by long distances. We identified concerns about the condition of these assets.

21. **Highways.** According to a 2005 report prepared by the Department, the highway pavement in the Yukon, averaging 20 years of age, needs a major reinvestment to halt deterioration. The report identified about 68 kilometres on the Alaska Highway and 48 kilometres on the north Klondike Highway that have deteriorated to a **pavement condition index** of less than 55. According to the Department's adopted methodology, this means that the highways require extensive and expensive repairs. The overall index of the pavement condition of the Yukon Highway network is 56.3, compared with the acceptable limit of 63 set by the Department. The report estimated that an investment of \$3 million annually over the next six years is needed just to maintain the present pavement condition of the highways. The report also estimated that a five-year catch-up funding plan would require annual investments of \$10 million between 2006 and 2010.

22. In 2000, the Management Board approved a pavement rehabilitation strategy, with an annual investment of \$2 million. At that time, it was estimated that this annual investment would prevent the highways from deteriorating any further but would not improve their overall condition. Due to recent increases in construction costs and the aging state of the pavement, the annual investment at this level may not prevent further deterioration.

Bridge sufficiency rating—A measure of the overall condition of a bridge. The rating scale ranges from 0 to 100, with a lower rating indicating that a bridge would have higher priority for replacement, rehabilitation, or maintenance. A value of 100 represents that a bridge is in excellent condition.

23. **Bridges.** The Department manages and maintains 129 bridges (70 on primary highways and 59 on secondary highways and roads), with a replacement value of more than \$300 million. All maintained bridges are inspected at least once every two years. The Department uses a numerical **bridge sufficiency rating** to assess the condition of each bridge, based on the amount of distress found during inspection. According to the Department's methodology, bridges with a rating of less than 50 are considered unacceptable; immediate attention is required to bring them up to minimum standards.

24. About one third of the Yukon bridges were constructed more than 40 years ago and many of them are deteriorating. According to a report on bridge condition completed by the Department in 2003 (a



Many bridges in the Yukon require major rehabilitation to bring them up to minimum standards.

Airside pavement—Pavement of areas accessible to aircraft, including runways and taxiways.

report for 2004 was not finalized), 29 of the 129 bridges (9 on primary highways and 20 on secondary highways) were found to be unacceptable, requiring immediate rehabilitation to bring them up to minimum standards. Many bridges need major rehabilitation. For example, 61 bridges require seismic retrofit, strengthening, and deck replacement. Left unchecked, further deterioration of these bridges could lead to safety problems. For example, at the time of our audit, an urgent repair had to be carried out to fix a large hole on the deck of the bridge over the Upper Liard River. An effective program for bridge rehabilitation with adequate funding is needed.

25. Airports. In 2005, the Department assessed the **airside pavement** of three major airports and the gravel-surfaced runways at 11 community airports and airstrips. It found that the heavily used areas of the airside pavement at the airports in Whitehorse and Watson Lake and the airside pavement at the airport in Dawson City were in good condition, but some lesser-used areas needed rehabilitation.

26. Recommendation. The Department of Highways and Public Works should establish effective capital maintenance and replacement programs for highways and bridges to ensure that the integrity of transportation assets is maintained. The Department should ensure that highways and bridges meet established standards.

Department of Highways and Public Works' response. Agreed. Currently, transportation infrastructure planning activities identify rehabilitation and maintenance requirements and estimated costs. Asset management systems produce annual reports for roadway surfaces and bridges. All of the reports identify the need for large expenditures to keep assets at the standards established. For the 2008–09 budget process, risk assessments will be incorporated into each project description to support decision making.

The Department faces challenges in capital planning

27. With the significant demand for reconstruction, capital maintenance, and rehabilitation of highways and bridges, a rigorous approach to long-term planning and funding for maintenance and rehabilitation of these assets is essential.

28. While the Department prepares a five-year capital plan, the focus is on the current year's budget. As the plan proceeds through the capital planning process, projects may be deleted and others added.

In 2006, the Department implemented a new capital budgeting system that will focus on three to five-year capital plans and priorities.

29. Another concern is that while proposed projects are usually identified in the fall, the Department cannot proceed with a new project until the Legislative Assembly has approved the budget, usually in February or March. This does not allow much time for the Department to plan and implement the project as tenders for construction should ideally be done in early spring to take advantage of the short construction season in the territory. In addition, most projects are subject to an environmental assessment, which requires several weeks or months to complete.

Improvements are needed in planning and implementing transportation infrastructure projects

Target total cost—The expenditure limit established for the entire project.

30. Since the 2004–05 fiscal year, the Department has undertaken over 100 transportation infrastructure projects. They include resurfacing airport runways, rehabilitating bridges, and reconstructing highways. We expected that the Department would apply sound project management practices and adhere to the directive in project planning and implementation to ensure that projects are completed according to specified requirements, on schedule, and within the **target total cost**. We identified a number of shortcomings.



Workers replace the Teslin River bridge deck.

31. We looked at 12 completed and ongoing projects and one project that was suspended (Exhibit 4). We found that the original target total cost was exceeded in 8 cases. Cost estimates prior to construction tendering were often significantly lower than bid prices received. In 7 cases, the Department had to seek Management Board approval to increase the target total cost. In one case (Teslin River bridge deck replacement), the increased cost resulted in a shortfall of funds to complete other work (Exhibit 5).

32. Management Board approval for the implementation is required for projects with a total cost exceeding \$1 million. We noted one case (Old Crow Airport runway and electrical upgrade) where the Department did not seek approval of the implementation phase in accordance with the directive when an agreement that provided federal funding for the project was signed in 2004. In February 2005, the Management Board granted this approval, retroactive to 1 April 2004. The Department did not incur any expenditure on the project before obtaining this approval.

Exhibit 4 Transportation infrastructure projects: Summary analysis

Project	Original target total cost \$	Pre-tender construction cost estimates \$	Lowest bid received (% over/under cost estimates) \$	Revised target total cost \$	Management Board approval to increase target total cost	Original expected completion date	Substantial completion date	Total costs incurred as of September 2006 \$	Comments
Teslin River Bridge Rehabilitation	3,445,000	2,784,000	3,839,993 (38% over)	4,656,000	Yes	15-Oct-04	15-Nov-05	4,479,757	The projects were funded under the Canada/Yukon Strategic Highway Infrastructure Program on a cost-share basis.
Teslin River Bridge Phase 2—Pier 5	793,000	821,750	1,112,008 (35% over)	1,155,000	Yes	30-June-05	10-Nov-05	1,192,526	
Takhini River Bridge Rehabilitation	1,245,000	2,073,043	1,797,750 (13% under)	1,897,750	Yes	15-Sep-05	1-Sep-06	1,846,208	
Old Crow Airport Runway and Electrical Upgrade	2,956,000	1,650,000	2,781,750 (69% over)	3,656,000	Yes	31-Mar-06	Ongoing	3,152,697	Funding of up to \$2,955,676 was provided from the federal Airports Capital Assistance Program. Funding of \$700,000 was transferred from another project.
Klondike Highway, km 705-710, Dawson/Callison Construction	2,750,000	2,100,000	2,246,680 (7% over)	3,150,000 (scope change to include street lights)	Yes	31-Aug-04 (grading only)	14-Oct-04 (grading only)	3,340,835	Funding of \$400,000 was transferred from another project. Completion was targeted for July 2005 and achieved in April 2006.
Alaska Highway, km 1616.2-1627.2 Champagne to Haines Junction Reconstruction	7,536,000	5,112,410	4,942,500 (3% under)	–	–	31-Aug-05	13-Oct-05	5,570,773	The projects are funded under the Canada Strategic Infrastructure Fund on a cost-share basis.
Big Creek Bridge and Little Rancheria Bridge Deck Replacements	1,572,000	1,130,760	1,234,000 (9% over)	–	–	30-June-05	13-Sep-05	1,598,288	
Teslin River Bridge Deck Replacement	6,500,000	6,930,000	8,135,000 (17% over)	8,635,000	Yes	30-Sep-07	Ongoing	2,273,335	
Atlin Road, km 1-6 Reconstruction	2,300,000	2,200,000	2,287,940 (4% over)	–	–	30-Sep-06	Ongoing	999,591	The project was not justified according to the government directive, but Management Board granted exemption.
Beaver Creek Airport Runway Resurfacing	120,000	183,740	178,300 (3% under)	216,000	–	31-July-05	20-Aug-05	202,572	Funds were transferred internally to cover cost increases.
Alaska Highway, km 1707-1717.4 Construction	10,000,000	15,100,000	18,761,966 (24% over)	–	–	30-June-06	15-Mar-06	18,091,054	The projects are funded by the US government under the Shaktak Agreement between Canada and the United States.
Donjek River Bridge Replacement	25,000,000	28,251,300	34,936,500 (24% over)	34,937,000	Yes	30-Sep-07	Ongoing	24,171,024	
Yukon River Bridge at Dawson Preliminary Design	3,380,000	–	–	1,799,000	–	–	–	1,611,817	The Government of Yukon decided to delay construction due to a heated construction market.

Source: Department of Highways and Public Works

Exhibit 5 Replacement of the Teslin River bridge deck—impact of low cost estimates

Pursuant to an agreement made under the Canada Strategic Infrastructure Fund (CSIF), the governments of Yukon and Canada share the costs for the reconstruction of the Alaska Highway between Champagne and Haines Junction and the rehabilitation of seven bridges between Watson Lake and Whitehorse, at a total estimated cost of \$31,260,000. The federal contribution from Transport Canada is \$15,000,000.

The original target total cost for replacing the Teslin River bridge deck was established at \$6,500,000. The Department of Highways and Public Works hired a consultant to prepare the pre-tender construction cost estimates, which came to \$6,930,000. However, the lowest bid received was \$8,135,000. As a result, the Department had to seek Management Board approval to increase the target total cost to \$8,635,000. Because of the unexpected increase in the cost of replacing the Teslin River bridge deck, there would be a shortfall of funds to complete all seven bridges. The Department recommended that work to replace the bridge deck work at Lewes River be delayed to free up the funds for the Teslin River bridge.

At the time of our audit, Transport Canada advised the Department that reallocating funds of this magnitude would require federal Treasury Board approval. Transport Canada also advised that removal of a project or projects may be problematic as it has not happened elsewhere with other CSIF projects. The Government of Yukon may be required to absorb the funding shortfall.

Source: Department of Highways and Public Works

33. The Department generally followed the government's contracting directive in awarding professional service and construction contracts. However, we found that work began before professional service contracts were signed in many cases.

34. Eight projects we reviewed required an environmental assessment to comply with requirements under the *Canadian Environmental Assessment Act*, the *Environmental Assessment Act* (Yukon), or the *Yukon Environmental and Socio-economic Assessment Act*. These projects also required a land use permit, a licence under the *Waters Act* (Yukon) or an authorization under the *Navigable Waters Protection Act* and the *Fisheries Act*. In addition, three of these projects had to comply with the *Migratory Birds Convention Act, 1994*. In seven projects, mitigation measures were required. There is evidence that measures were taken, including carrying out environmental management plans and inspections. However, it was difficult to determine from our review of these seven project files if the Department had complied with all environmental assessment requirements and conditions as well as other regulatory requirements.

35. The directive on project planning and implementation requires the Department to identify appropriate review and control points during the implementation phase to ensure that the overall project will be completed on schedule and within the target total cost. However, this was often not done in a rigorous manner. In the sample of projects

we looked at, nine were not completed on schedule. Delays in completed projects ranged up to 13 months, although some of these delays were the result of unforeseen circumstances.

36. The directive also requires the Department to review completed projects to evaluate whether appropriate procedures were applied, economy and efficiency were observed, and objectives were achieved. The Department is also required to evaluate the performance of those responsible for managing the projects and to develop recommendations for planning and controlling similar projects. However, these reviews and evaluations were not done in any of the projects we looked at. The results from such reviews would help the Department to avoid repeating the same mistakes in future projects.

37. Recommendation. The Department of Highways and Public Works should adhere to the government directive for planning and implementing transportation infrastructure projects to ensure that projects are completed according to specified requirements, on schedule, and within the target total cost.

In implementing transportation infrastructure projects, the Department should

- ensure that professional service contracts are signed before work begins;
- ensure that proper documentation is on file, such as a checklist, to identify that all environmental and regulatory requirements are met and acted upon to mitigate environmental impacts of a project; and
- conduct the required review of completed projects to evaluate whether it has followed appropriate procedures, observed economy and efficiency, and met the objectives for the projects.

Department of Highways and Public Works' response. Agreed. The practice has been that a letter or other notification is sent to the successful proponent, indicating award of the project. The proponent begins work at its risk until the contract is signed. Every effort will be made to ensure that the actual contracts are signed expeditiously by the parties after the award letter or notification has been issued.

Over the next year, enhancements to the Department's Capital Budgeting System will identify projects requiring approvals under the Yukon Environmental and Socio-economic Assessment Act and other regulatory requirements. In addition, tools are being examined to improve

information sharing, communications, and access to technical data, thereby enhancing the project implementation process.

The Shakwak, Canadian Strategic Infrastructure Fund, and Strategic Highway Infrastructure Program projects are already subject to post-implementation audits as part of the federal requirements and have met with satisfaction. Other projects will be evaluated as resources allow.

Property management

There is no long-term strategic approach to provide accommodation

38. Planning and allocation of government office space is governed by a Management Board directive, entitled Office Space Committee, issued in November 1995. The directive requires the Department of Highways and Public Works to carry out effective accommodation planning for government departments—by developing and implementing long-range plans to maximize the use of existing buildings and recommending the acquisition of additional facilities (by lease, purchase, or construction) to meet future accommodation needs. However, we found that there is no long-term strategic approach to identify and meet accommodation needs and no long-range master plan for acquiring and allocating space. In addition, this directive has been subject to different interpretation and application and is not being followed consistently.

39. Space planning is largely done on an ad hoc basis. The Department indicated that in recent years some departments have been occupying facilities that do not meet their needs or fit their program requirements. Some facilities are overcrowded while others have poor layouts, and some departments have more space than they need. Currently, the Department does not have a complete inventory that shows the space that government departments occupy, along with what they need and what the government's standard for space allocation allows. We are concerned that the Government of Yukon may risk paying too much for its accommodation or not meeting its accommodation needs if space planning is not carried out properly and is not used as a basis for acquiring and allocating space.

40. The directive requires each department to prepare a five-year accommodation needs plan and submit it to the Department. On the basis of these plans, the Department develops an annual accommodation needs plan for the entire government. The responsibility for deciding on accommodation needs is shared by the Department, program departments, and the Office Space Committee (also known as the Deputy Ministers Space Committee). While the committee plays an oversight role, it is not carrying out its

responsibility to review the annual accommodation needs plan and recommend it to the Management Board according to the directive. There is no current annual accommodation needs plan.

41. At the time of our audit, the Department was working with program departments to improve the process to prioritize capital building development projects. According to the Department, for the 2006–07 fiscal year, the priorities for these building projects were based on recommendations of the Deputy Ministers Space Committee and this will be the case again for 2007–08. The Department has engaged a consultant to develop a Yukon-wide, five-year master space plan to lay out a long-term approach to providing accommodation based on standards applicable to all departments. The work will also include a review of the directive, which the Department considers in need of a comprehensive update. The master space plan is expected to be completed in September 2007. Meanwhile, the Department advised us that a number of accommodation requests have been put on hold pending the completion of the master space plan.

42. The Department recognizes that storage space requirements need to be addressed and has submitted multi-year capital building development projects to address these issues. The Records Centre and Micrographics Unit at 10 Burns Road, the Supply Services Warehouse on Quartz Road, and the Yukon Archives located at the Yukon College campus are reaching maximum capacity. The Department has hired consultants to carry out a needs analysis for all Government of Yukon storage facilities in Whitehorse. An effective strategy to address storage space requirements is needed.

43. Recommendation. The Department of Highways and Public Works should complete a master space plan to lay out a long-term approach to providing accommodation based on standards applicable to all departments.

The Department should develop and implement long-range plans for building space to maximize the use of existing space and to recommend whether to build, buy, or lease as the best option for acquiring additional space.

Department of Highways and Public Works' response. Agreed. A Yukon-wide, master space plan is under way and targeted for completion in September 2007, based on consultant capacity. This initiative will address current issues and long-term space needs for all government departments. This plan will recommend whether to build, buy, or lease as the best option for acquiring space and will be presented to the Management Board for

approval. Once approved, the ongoing maintenance of this plan will be the Department's responsibility.

Up-to-date procedures are needed to guide building development work

44. A key activity of the Department is to manage, on behalf of government departments and agencies, an accountable process for exploring options, planning, and developing facilities to meet their accommodation needs. It strives to manage the outcomes of projects in terms of quality, cost, and timeliness.

45. The Department maintains a procedures manual for building development projects. The manual, written in 1990, was based on a 1990 Management Board directive entitled Building Development Projects, which has been replaced. As a result, the guidelines do not reflect the current directive on project planning and implementation, and project managers do not follow them consistently. The Department is aware that the manual needs to be updated to reflect current best practices and has included this as a major component of its Business Process Redesign Project that began in March 2006.

Significant weaknesses exist in planning and implementing building development projects

46. Building development projects have increased in the last few years. We looked at 10 completed and ongoing projects (Exhibit 6). We expected that the Department of Highways and Public Works would apply sound project management practices and adhere to the directive for planning and implementing building development projects. However, we found weaknesses in managing building development projects.

47. The Department funds the resources needed to manage building development projects. Program departments fund the direct costs of those projects and assign the funds to the Department to do the work. The Department assigns a project manager to each project. At the time of our audit, there were 11 project managers and officers in the Department's building development unit.

48. According to the directive on project planning and implementation, the sponsoring program department is responsible for carrying out all phases of a project. Accountability may be transferred to the Department. Any work not done by the staff of the sponsoring department must first be offered to the Department. The sponsoring department is deemed to have discharged its responsibility for the work or any part of the work provided that the assignment of work is clearly

Exhibit 6 Building development projects: Summary analysis

Project	Original target total cost \$	Pre-tender construction cost estimates \$	Lowest bid received (% over/under cost estimates) \$	Revised target total cost \$	Management Board approval to increase target total cost	Original expected completion date	Construction substantial completion date	Total costs incurred as of September 2006* \$	Comments
Tantalus School Replacement	9,400,000	8,395,538	9,348,000 (11% over)	11,400,000	Yes	July-06	Ongoing	6,265,397	The current planned completion date is February 2007.
Mayo Recreation Complex	5,900,372	5,077,900	5,897,691 (16% over)	7,168,952	Yes	30-July-06	Ongoing	4,752,412	The current planned completion date is December 2006.
New Airport Terminal Building in Old Crow	2,046,815	2,054,149	2,469,000 (20% over)	3,106,990	Yes	7-Dec-05	11-Oct-05	2,659,572	Deficiencies were corrected in June 2006.
Ross River Community Centre	1,430,000	1,251,460	1,648,200 (32% over)	2,080,000	Yes	Nov-04	15-Sep-05	2,127,990	The project started in October 2003.
Porter Creek Secondary School Cafeteria and Classroom Expansion	3,000,000	3,500,000	3,634,763 (4% over)	4,400,000	Yes	15-Aug-06	24-Aug-06	3,847,203	Minor deficiencies remain.
Whitehorse Correctional Centre Renovations	870,000	747,041	775,000 (4% over)	970,000	Yes	30-Sep-04	31-May-05	938,430	Disputes with the consultant were recently settled through mediation.
Watson Lake Weigh Station	415,000	325,000	419,901 (29% over)	515,000	Not required	31-Aug-04	30-Oct-04	520,498	Deficiencies related to the heating system are still outstanding.
Tombstone Territorial Park Visitor Centre and Staff Accommodation	1,811,228	Not completed yet	Not tendered yet	–	–	Nov-06	–	57,688	The costs relate to Phase 1 costs to build the Visitor Centre only. The project is currently in the design phase. The current planned date to complete the project is October 2007.
Watson Lake Multi-level Health Care Facility	See comments								The Department's involvement in the project ceased prior to approval of the scope and target total cost.
Dawson City Multi-level Health Care Facility	See comments								

* As per Property Management Agency records. Program departments may have incurred additional costs.

Source: Department of Highways and Public Works

defined and accepted in an assignment specification—a set of documents that specifies the requirements, milestones dates, and target total cost. In rare cases where the Department declines the assignment, the program department may engage other parties to carry out the work. Details on the assignment specification are found in a work request and other documents, such as a requirements specification.

49. The directive requires a strategy to complete a project according to the requirements, milestone dates, and target total cost. According to the directive, the implementation strategy should

- specify how the products are provided and conform to the requirements;
- schedule work activities to produce the specified products by timing the activities in relation to the milestone dates and assigning responsibility for each activity;
- provide an estimate of the cost of each component of the project;
- define the roles, responsibilities, authorities, and reporting mechanisms for the project; and
- identify appropriate review and control points during the implementation phase to help ensure that the project will be completed on schedule and within the target total cost.

The procedures manual for the building development projects provides guidelines to prepare a project plan for this purpose; however, as mentioned (paragraph 45), the manual needs to be updated.

50. In the 10 projects that we looked at, we did not find any documented project plans that clearly set out a strategy and course of action for completing a project, including proposed quality control and quality assurance processes, work schedule, cost plan, and project team organization. We observed that cost estimates prepared by consultants prior to construction tendering were often significantly lower than the bid prices received; in six cases, the Department or program department had to seek Management Board approval to increase the target total cost. In five cases, we observed changes in scope and design imposed by client departments during project delivery, resulting in both cost increases and delays. In some cases, the problems were beyond the Department's control.

51. In one case (construction of a new airport terminal building in Old Crow), the Management Board had concerns about the accuracy of cost estimates and building design. In addition, the tender was issued late in the year due to several delays in the project approval process, thus increasing the cost due to the short building season (Exhibit 7).

Exhibit 7 New airport terminal building project in Old Crow—concerns about cost estimates and building design

The original airport terminal building in Old Crow was constructed in 1978. In 1999, the replacement of the building was identified as a priority. However, the proposed project was shelved twice—in 2001 and 2002—after the design and construction cost estimates were prepared. In June 2003, the design architect noted that since the start of the original project in 1999, the construction estimates had increased by about 60 percent.

On 31 March 2004, the Management Board granted approval to implement the project (including removal of the existing building and other ground works) at a target total cost of \$2,046,815, with a completion date of 15 August 2006. The Board also directed the Department of Highways and Public Works to provide information on the foundation design and construction methodology.

In June 2004, the Management Board directed that the construction of the building be tendered with a pile foundation design. In July 2004, the Management Board approved a different foundation design for the building (rather than a pile foundation) and approved a revised target total cost of \$2,453,231. The tender closed on 21 September 2004; the lowest bid was \$2,469,000, about 20 percent higher than the pre-tender construction estimate of \$2,054,149. The Department indicated that delay in tendering resulted in a \$200,000 premium for winter work and increased cost for labour and materials. The Department also indicated that the complex building design as requested by the community was not conducive to the use of local labour.

On 29 September 2004, the Management Board approved a revised target total cost of \$3,106,990. The Board expressed concerns that the cost estimates were inaccurate and the design did not maximize skills available within the community.

Source: Department of Highways and Public Works

52. The directive requires the Department to identify appropriate review and control points during the implementation phase to ensure that the project will be completed on schedule and within the target total cost. However, six projects in the sample we looked at experienced delays in completion ranging up to 10 months.

53. We identified a number of problems in managing building development projects. For example, it is essential that project managers are involved fully in the project so that they can assume overall responsibility for all aspects of a project. This helps to minimize the risk of handoff situations, optimize good management practices, and ensure that all aspects of the design standards are dealt with effectively. This was not always the case. In some projects, there was a

lack of continuity due to a change in the project manager because of staff turnover. In addition, the Department noted that the increase in the number of building development projects, coupled with a shortage of qualified project managers, resulted in significant workload problems.

54. The roles and responsibilities for project management staff and the client department were not clearly defined for the multi-level care facilities projects in Watson Lake and Dawson City. In September 2003, the Department received a work request from the Department of Health and Social Services to initiate a needs assessment, feasibility study, and functional program for a care facility in Watson Lake, and a review and update of a care facility in Dawson City. While the Department was supposed to manage the projects, the project manager was excluded from meetings between the design consultant and the client department. The Department indicated that the roles, responsibilities, authority, and accountability of all parties in the process were not clearly defined. It was essentially participating after the fact, receiving information following meetings between the design consultant and the client department. In December 2004, the Department recommended that it decline the assignment for these two projects. In June 2005, the Minister of Highways and Public Works, on behalf of the Department, declined responsibility for the projects.

55. We noted one case (Mayo Recreation Complex construction project) where a total of about \$195,000 was spent on the project prior to obtaining Management Board approval for the implementation phase of the project, contrary to the government directive.

56. We also noted several cases where the Department proceeded with a project without the required environmental assessment and approval. Project managers told us that they did not receive adequate training and guidance in this area. According to reports commissioned by the Department, the potential environmental impacts may not be significant in the projects that we looked at. However, the Department must ensure that it conducts environmental assessments as required by legislation.

57. While the Department generally followed the government's contracting directive in awarding professional service and construction contracts, we identified many cases where professional service contracts were signed after the work had begun.

58. We found that the Department did not conduct the required review of completed projects to evaluate whether it had followed

appropriate procedures, observed economy and efficiency, and met the objectives for the projects. Nor did it evaluate the performance of those responsible for managing the projects and develop recommendations for planning and controlling similar projects. Given the problems in the projects that we looked at, we believe a review of completed projects is essential. The Department states that this review is not being carried out due to shortage of project management staff and pressure to get new projects out to tender.

59. Recommendation. The Department of Highways and Public Works should adhere to the government directive for planning and implementing building development projects to ensure that projects are completed according to specified requirements, on schedule, and within the target total cost.

The Department should ensure that its procedures manual reflects current practices, and it should provide appropriate training and guidance to staff.

In implementing building development projects, the Department should

- prepare a project plan or project brief that includes a statement of objectives and clearly defines roles, responsibilities, accountability, implementation approach, detailed budgets, and controls;
- establish appropriate review and control points to ensure that the project will be completed on schedule and within the target total cost;
- ensure compliance with environmental assessment requirements;
- ensure that professional service contracts are signed before work begins; and
- conduct the required review of completed projects to evaluate whether it has followed appropriate procedures, observed economy and efficiency, and met the objectives for the project.

Department of Highways and Public Works' response. *Agreed. By 2008–09 budget year, the Department will adopt the Project Management Institute's industry best practices and standards, start to collect robust data, and forecast resources required to maintain the property assets in appropriate condition. Processes will be documented, and a new Building Project Delivery Management Procedures Manual will be written. The Department will also produce documents as recommended by the Project Management Institute, including a project charter that will set out the scope of work, budget, schedule, risk assessment, priorities, roles, and responsibilities.*

Within its span of control, the Department will review and establish appropriate project control points to ensure completion on schedule and within the target total cost, with the understanding that given certain risk factors, estimates for the cost of construction could change throughout the planning, programming, design, and construction phases. The Department must be engaged starting with the initiation of any project in order to improve the quality of the estimating function.

Project schedules will be developed to ensure adequate time to comply with environmental assessment requirements.

The practice has been that a letter or other notification is sent to the successful proponent, indicating award of the project. The proponent begins work at its risk until the contract is signed. Every effort will be made to ensure that the actual contracts are signed expeditiously by the parties after the award letter or notification has been issued.

The Department will develop a new post-project review procedure and begin the required review of completed projects on a priority basis as resources permit.

The Department needs to improve its practices for acquiring space

60. Lack of adequate cost-benefit analysis. The Department is responsible for managing the government's overall investment in government-owned and leased office and warehouse space. However, we did not find an overall strategy for acquiring office space.

61. About 92 percent of the office space occupied by government departments is in Whitehorse. There, 17 government-owned buildings and 31 leased buildings provide 226,679 and 336,104 square feet of office space respectively, for a total of 562,783 square feet. It is apparent that the tendency is to lease space rather than construct government-owned buildings.

62. For numerous leases, departments have occupied the space for many years. In the sample of 10 projects we reviewed (Exhibit 8), there are 6 where the Department has been leasing the space for more than 15 years. We did not find an adequate cost-benefit analysis to support acquiring space through leases, and we are concerned that leases may not always be the most economical option in the long term. Short-term leases are generally more costly than long-term leases, and long-term leases may cost the government more than constructing or purchasing a building.

Exhibit 8 Lease sample: Summary analysis

Location	Year occupancy began	Current lease term	Current lease start date	Sole-source	Type of lease	Annual base rent \$	Rental rate per square foot (office) \$
Prospector Building, 301 Jarvis Street	1989	10 years (with a 5-year renewal option)	Dec 2000	Yes	Net	264,750	17.65
Keith Plumbing Building, 10 Burns Road	1978	10 years	Jan 2003	Yes	Net	703,859	14.50
9010 Quartz Road	2003	10 years (with a 5-year renewal option)	July 2003	Tendered in 2002	Gross	927,343	35.12*
Lynn Building, 308 Steele Street	1983	3 years	April 2004	Yes	Net	369,600 (including storage)	19.00
3 rd Floor Shoppers Plaza, 211 Main Street	1987	3 years	April 2004	Yes	Net	119,844	18.00
Old Court House, Dawson City	1995	2 years	Sep 2005	Yes	Net	68,538	7.62
New Cambodia Building, 404 Hanson Street	2005	3 years	Oct 2005	Yes	Gross + security & custodial	46,000	25.00
Professional Building, 2 nd Avenue	1991	3 years	Mar 2006	Yes	Net	106,624	16.00
Financial Plaza, 204 Lambert Street	1988	3 years	May 2006	Yes	Net	112,475	18.98
Berska Building, 307 Black Street	1996	2 years and 1.5 months	July 2004	Yes	Gross	301,769	23.67

*The original rate was \$31.14 per square foot. The current rate covers additional space constructed on the second floor of the building.

Source: Department of Highways and Public Works

Sole-source—A non-competitive procurement accomplished after soliciting and negotiating with only one source.

Net lease—A lease whereby, in addition to the base rent stipulated, the lessee pays all or part of the expenses of operating and maintaining the property. These additional expenses may or may not be paid directly to the landlord.

Gross lease—A lease that stipulates that the owner pays all expenses, including taxes, insurance, and operating and maintenance expenses, and the tenant pays only the stipulated rent.

63. In the case of the 10-year lease (with a 5-year renewal option) at 9010 Quartz Road in Whitehorse, the Department prepared an analysis of options in 2002. However, we did not find a detailed analysis of the construction option and life-cycle costs before the lease was entered into in 2003. An analysis that the Government of Yukon prepared in 2004 showed that the net present value of the lease payments over the 10-year term was about \$4 million, which would almost equal the appraised value of the leased property or the cost estimated in the 2002 option analysis to construct a new government-owned building.

64. Sole-source leases. The Department is required to conform to government policy to ensure that leasing activities are carried out in a fair, fiscally responsible, accountable, open, and competitive manner. However, we found that the Department had entered into nearly all of the recent leases on a **sole-source** basis—most of them to extend the occupancy of the same property.

Sole-source—A non-competitive procurement accomplished after soliciting and negotiating with only one source.

65. With some exceptions, the government contracting directive requires a contracting authority to invite bids or proposals prior to entering into a contract. A request for bids or proposals is not required when the contract is to extend the existing occupancy of substantially the same property leased by the contracting authority or in special cases authorized by the responsible Minister. In our view, the Department's frequent use of this provision does not ensure that the Government of Yukon is achieving value for money.

66. Under the government contracting directive, no contract can be entered into without the Management Board's approval if the contract contains a stated initial term exceeding three years or a provision for renewal so that the aggregate of the initial term and the renewal may exceed three years. While there is no written policy, the government's approach is to limit lease periods to a maximum of three years in most cases.

67. We found that expiring leases were not always flagged well in advance to ensure that all appropriate investment options can be analyzed when considering the replacement or renewal of the lease. In most cases, the Department requested information from the landlord only to enter into a new lease agreement to extend the occupancy of the leased property.

68. For example, the Department has rented space at the Professional Building in Whitehorse since 1 October 1991. A three-year lease (with no renewal option) expired on 31 May 2005.

In December 2004, the Department initiated discussions with the landlord to renew the lease, including improvements to the building and concerns about heating and ventilation deficiencies. Numerous proposals were exchanged between the landlord and the Department for 15 months without an agreement being reached. Finally, the Department renewed the lease for three years commencing 1 March 2006, with an increase in rental rate but no capital improvements to the building.

69. In another instance (Old Court House in Dawson City), the Department renewed the lease for two years in September 2005 despite a significant increase in rental costs, partly due to the Government of Yukon assuming responsibility for custodial and snow removal services that were previously paid by the federal government. In addition, no improvements were made to address long-standing air quality and health concerns in this federal building. Earlier, in May 2004, the Department indicated that upgrades to heating and ventilation systems would have to be done for the Government of Yukon to stay in this facility. We did not find a master space plan for the Dawson City area. Nor did we find any evidence that other options had been pursued and that there had been requests for public tender for the space required. The Department stated that due to the condition of this facility and the limited amount of rental space available in Dawson City, it had initiated a capital project to address the space issue in this area.

70. Decisions are not always supported and documented. The Department has not established internal policies and procedures to guide its officials in acquiring space and in documenting decisions. Options such as purchase, construction, or lease-purchase are not always explored. We are concerned that the lack of documented analysis of options could favour continuing the renewal of short-term leases as the only option, which could be the costliest option in the long term.

71. The rationale for decisions is not always properly documented. For example, in one case (Berska Building in Whitehorse), we noted that the existing lease has a five-year renewal option. However, the Department has agreed to renew the lease for three years. We did not find any analysis to support the decision to renew the lease for a shorter term.

72. Recommendation. The Department of Highways and Public Works should establish policies and procedures to guide its staff in acquiring space.

The Department should ensure that leasing activities are carried out in a fair, fiscally responsible, accountable, open, and competitive manner.

The Department should also ensure that decisions to acquire space are properly documented and supported by adequate cost-benefit and option analyses.

Department of Highways and Public Works' response. Agreed. The master space plan targeted for completion in September 2007 will develop an overall strategy for the Government of Yukon's approach to accommodation needs. This plan will review and establish new policies and procedures, including the requirement to properly document decisions to acquire space, by completing a business case analysis. Any Management Board submissions related to space acquisition will include this options analysis.

Government-owned buildings are not being maintained effectively

73. Lack of up-to-date information. Information on the current condition of buildings is essential for capital planning and building maintenance. A Management Board directive, entitled Capital Building Maintenance, requires the Department to identify capital building maintenance projects through regular and/or annual inspections. However, there is no up-to-date information on the condition of all government-owned buildings.

74. In September 2004, the Department identified, as a priority, the need for a new system for reporting on the condition of buildings under the custody and control of the Department. It directed its staff to gather the necessary information for input into the system. However, the exercise produced only limited information on building conditions because building inspections were not carried out consistently and the Department did not have any established standards for such inspections. The Department estimates that it will take five years to gather all the information on government-owned buildings, and that about 20 percent of the inventory will be audited annually.

75. Regular building inspections based on established standards and carried out by appropriately trained staff are necessary to compile the information needed to plan and implement an effective maintenance program. The Department recognizes that it is critical to be able to track the condition of buildings and any related action taken in carrying out its mandate. At the time of our audit, the Department had established the Business Process Redesign Project and was developing facility audit standards and procedures, with the objective of assessing building conditions to develop a long-term capital maintenance plan.

The Department notes that this is a long-term project and collecting all the data necessary to establish the condition of the buildings will take some time to complete.

76. A key function of the Department is to maintain buildings. The Department has custody and control of about 214 government-owned “commercial” and “devolved” buildings (paragraph 79) that are used for office, warehouse, or special purposes. Other departments have custody and control of about 266 “special purpose” buildings, such as schools and hospitals that are owned by the territorial government and built with other departments’ program funds for program-specific purposes. According to the capital building maintenance directive, the department having custody and control of a building is responsible for funding all capital maintenance and repairs to the building. Under facilities management agreements, the Department of Highways and Public Works provides, on a fee-for-service basis, operations (for example, custodial, security, and facilities management) and maintenance services (with a \$1,000 threshold) for all building systems (structural, mechanical, and electrical).

77. Maintenance deficiencies. Under the capital building maintenance directive, the Department is required to prepare a recommended and prioritized list of capital building maintenance needs annually. After receiving this list, each program department is required, in consultation with the Department, to prepare a final and prioritized list of building maintenance projects that will be included in their capital plan submission.

78. The Department has been providing this list to program departments annually and has recently worked with program departments to improve the process for establishing priorities for maintenance of buildings. Although the proposed projects are not necessarily based on robust information about the condition of the buildings, the Department noted that information is made available that could improve the condition of the assets and reduce the reactive nature of the current maintenance program. The Department has little control over the timing and funding of capital building maintenance projects because program departments that fund them may have different priorities.

79. While new building construction expenditures have increased significantly in the past several years, the funding for maintenance has not kept pace. With devolution of responsibilities from the federal to the territorial level, the federal government has transferred a number of special-purpose buildings to the Yukon, thus increasing the demand

for building maintenance. Although managers believe that the majority of government-owned buildings are in good condition, some are seriously deteriorating due to aging and lack of adequate maintenance. For example, there is an urgent need to replace the roof at the Christ the King Elementary School in Whitehorse. The roofs of two old nursing stations in Faro and Mayo are also in poor condition. There is a risk that property assets will continue to deteriorate due to the lack of adequate maintenance.

80. We noted that building maintenance is often done on a reactive basis to repair breakdowns, leaving preventive maintenance as a lower priority. It is important that the Department work cooperatively with program departments to ensure that all government-owned buildings are in good condition and adequately maintained to minimize the risk of building failures and unexpected repair costs. At the time of our audit, the Department had initiated a Business Process Redesign Project to improve the Department's processes and data systems and to institute a real property asset management framework.

81. Recommendation. The Department of Highways and Public Works should have regular building inspections and facility audits, based on established standards and carried out by appropriately trained technical staff, to compile the information needed to develop a long-term building maintenance plan.

The Department should work cooperatively with program departments to ensure that all buildings occupied by departments are in good condition and adequately maintained to minimize problems and unexpected repair costs.

Department of Highways and Public Works' response. Agreed. The Department will establish guidelines and standards for building inspections/facility audits of government-owned buildings. Once piloted and proven, building inspections/facility audits for all government-owned buildings will take up to five years to complete. Collecting data to justify operations and maintenance funding levels will be an ongoing process. In 2007–08, the Department plans to procure a new computerized property management system to store and analyze the collected data.

The Department's Property Management Agency has not worked well as a special operating agency

82. As mentioned earlier, the Department's Property Management Agency was created in 1996 as a special operating agency. The Property Management Agency has a mandate to focus on customer service, **bottom-line results**, and the achievement of public policy

Bottom-line results—Results achieved by managing the delivery of property management services in an entrepreneurial and business-like manner to ensure that the government's resources are used to maximize productivity and effectiveness.

objectives. However, a 2004 review completed by Government Audit Services found that the Agency had not adequately established an appropriate structure or financial framework to make it work effectively as a special operating agency.

83. In addition to appropriations, the Property Management Agency receives a significant amount of revenue through facilities management agreements. However, these agreements do not provide much flexibility or choice for the program departments to choose the kind of services required at the most affordable price. Further, some program departments that occupy special-purpose space need to budget and pay for accommodation costs (see paragraph 76), but certain departments that only occupy government-owned or leased office space do not. This results in inequality and a lack of comparability among departments.

84. In May 2005, the Management Board directed the Department to return to the Board in a timely manner with a plan to revert to a branch model for property management. In May 2006, the Department prepared a submission, including an options analysis, to seek Management Board approval to convert the Property Management Agency to a division within the Department, putting all real property assets, responsibilities, accountability, and resources in one place. However, the Management Board did not consider the submission at that time.

85. The conversion of the Property Management Agency to a branch or division of the Department may have significant implications—in particular, funding and human resources. In our view, sound management systems and practices need to be put in place whether the Property Management Agency operates as is or as a branch or division of the Department.

Performance measurement and reporting

Good measurement and reporting of performance are needed

86. To ensure it is accountable to the legislature, the Department of Highways and Public Works must provide members of the Legislative Assembly, government, and other decision makers with complete, accurate, timely, and balanced performance information resulting from the Department's activities (for example, the impact that these activities had on the Yukon population).

87. There is no requirement for departmental performance reporting in the Yukon territory. While the Department has clear objectives, it has developed few meaningful indicators to measure performance.

There is also little public information on the condition of the transportation infrastructure and whether it is improving.

88. Within 120 days following the end of each fiscal year, the Department's Property Management Agency is required to prepare a report for the Minister of Highways and Public Works detailing results for the year, to be tabled in the Legislative Assembly. The 2004–05 report was issued on 5 December 2005. While the Property Management Agency has established business objectives, the report provided information on only two performance measures: facilities management unit costs and work request volumes and turnaround. The Department needs to develop more meaningful performance indicators and focus on results achieved, such as improvement in building conditions and completion of projects on schedule and within the target total cost. It also needs to establish concrete targets. The Department notes that it has established the Business Process Redesign Project to address the practices and competencies required to establish a robust real property management framework, including benchmarking, adopting industry standards, and developing performance indicators.

89. Recommendation. The Department of Highways and Public Works should improve its performance measurement and reporting to the Legislative Assembly by clearly specifying goals and objectives, establishing meaningful performance indicators with a focus on results, and linking reported achievements to stated goals and objectives. This should include reporting on the condition of the transportation infrastructure and government-owned buildings.

Department of Highways and Public Works' response. Agreed. The Department will benchmark and establish the performance measurements based on industry best practices for buildings. New reporting on the status of transportation infrastructure will begin as part of the 2006–07 year-end reporting to the Minister.

Conclusion

90. The Department of Highways and Public Works has a responsibility to ensure safe and efficient public highways, bridges, airports, and buildings in the Yukon territory. We found that the Department did not adequately incorporate formal principles of risk management, consistently apply sound project management practices, and always adhere to the government directive for project planning

and implementation to ensure that projects are completed on schedule and within the target total cost.

91. We have significant concerns about the overall condition of transportation infrastructure assets, and some government-owned buildings are seriously deteriorating due to aging and lack of adequate maintenance.

92. The Department did not always ensure economy and efficiency in planning and implementing transportation infrastructure and building development projects. Many of the projects we examined went over their original targets for total spending. Most of the projects experienced delays in completion. In some cases, the problems were beyond the Department's control.

93. The Department has no long-term strategic approach to identify and meet government accommodation needs and no long-range master space plan, although it has begun work on both. The Government of Yukon risks paying too much for its space or not meeting its accommodation needs if accommodation is not planned in a more businesslike manner.

94. A high percentage of office space is leased without adequate cost-benefit analysis. Nearly all recent leases were entered into on a sole-source basis, mostly by renewing the existing lease. Accommodation options, such as constructing or purchasing a building, are not always explored. We are concerned that short-term leases are not always the most economical solution in the long term and that long-term leases may cost the Government of Yukon more than constructing or purchasing a building.

About the Audit

Objective

The objective of our audit was to assess whether the Department of Highways and Public Works has adequately applied principles of risk management and exercised due regard to economy and efficiency in capital planning, project delivery, and property management.

Scope and approach

The audit focused on the following areas:

- the Department's risk management practices at the operational and strategic levels, with an emphasis on capital planning, project delivery, and property management;
- planning and implementation of transportation infrastructure projects; and
- planning and acquisition of space, maintenance of buildings, and management of facilities.

Our audit included interviews with officials of the Department and selected program departments, and the examination of internal and external reports, the risk management framework, strategic plans, accountability documents, systems, controls, and management practices. We reviewed a sample of project files, including recently completed transportation infrastructure and building projects and leases.

The scope did not include the activities of the Department's Transportation Maintenance Branch or the Transport Services Branch (the latter deals with carrier compliance and the national safety code). The scope also excluded other departmental programs, such as information and communications technology and supply services (except for activities, if any, that relate to capital project delivery and property management).

Some quantitative information in this report is based on data drawn from the Department's reports. We are satisfied with the reasonableness of the data, given its use in our report. However, the data has not been audited unless otherwise indicated in the report.

Criteria

Our audit was based on the following criteria:

- The Department has identified and assessed risks flowing from its mandate to plan and implement transportation infrastructure projects and manage real property, and it has established appropriate risk mitigation procedures.
- The Department has applied sound project management practices and adhered to the government directive for project planning and implementation:
 - The need for the project should be well-defined.
 - Feasibility and options that could potentially fulfill defined requirements should be identified and analyzed.

- The selected option for developing and implementing the project should be translated into a project that clearly states objectives and scope, and contains work packages, schedule, budgets, organization, and controls.
- There should be separate planning and implementation phases funded by separate budgets.
- Roles, responsibilities, authorities, and accountabilities of all parties in the process should be clearly defined and communicated.
- Contracting should conform to established policies, be based on requirements arising from the project definition, incorporate authorized changes, and be in keeping with well-established principles, including project organization, budgeting, scheduling, control, monitoring, and reporting.
- There should be compliance with environmental assessment requirements and conditions.
- There should be mandatory review points to ensure that projects remain within scope, budget, and schedule.
- Appropriate project accounting and financial controls should be in place.
- Monitoring and reporting mechanisms should be established.
- The Department has appropriate tools available to anticipate future needs, analyze a range of available options, and support its decisions (these tools include strategic plans and models, policies and guidance, and management information and processes related to the planning and acquisition of space and facilities management).
- In taking action to meet the needs of client departments, the Department uses the tools appropriately and consistently and follows relevant government services policies, Management Board directives, and established standards.
- The Department has identified performance indicators to measure how it achieves its mandate and objectives. It also has complete, accurate, timely, and balanced information for decision making and accountability reporting.

Audit work completed

Audit work for this report was substantially completed on 29 September 2006.

Audit team

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