Transport Canada

IM/IT Strategic Plan 2003-2006

TP 14108 E

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Executive Summary

> *Today a transportation system is more than simply asphalt, concrete and steel. It also includes data, ideas and knowledge; it requires technology, skills and connectivity. Innovation, skills, and knowledge will be applied to the challenges of bringing people together on one of the world's largest land masses and producing goods competitively and delivering them efficiently.*
>
> The Honourable David M. Collenette
> 2000-2001 Report on Plans and Priorities

With the rapid evolution of information and communication technologies, the advent of globalization, and a shift to a knowledge-based economy, information management (IM) and information technology (IT) are critical to helping the federal government and its departments achieve its delivery of programs and services to citizens, communities of interest, and businesses.

IM/IT has become a tool vital to the delivery of virtually every service. New and improved technology is rapidly deployed and quickly adopted everywhere, leading to ever-increasing expectations with respect to capability and capacity. Employees use IM/IT every day in delivering departmental services and share these increased expectations with the stakeholders that they serve.

This presents a major challenge for people working to deploy and support IM/IT. The rate and the nature of change today often stretch the departments's scarce resources to the limit. Of necessity, the department must find ways to set priorities so effectiveness can be maximized and, at the same time, look for ways to provide its services more efficiently.

The new technical environment also presents the department with great opportunities. The department through its internally focused and externally focused IM/IT and GOL investments, has embarked upon an era of electronic service delivery using technology to transform the way it does business. Every internal and external function stands to benefit, as IM/IT enables the department to streamline and integrate its work processes. The result will be better service, greater government accessibility, and better administration , good for stakeholders and employees alike.

The intent of this Plan is to position IM/IT in the larger context of the department's plans, priorities and directions; to guide both the preparation of more detailed plans and ongoing decision-making; and to identify areas of opportunity where collaborative effort must be focused.

Transport Canada's IM/IT capability must enable internal employees and a diverse external stakeholder set to conduct business transactions electronically in a timely, efficient and, where needed, secure and private manner with the goal of facilitating access, sharing and exchange of information. The Transport Canada IM/IT Strategic

Plan lays the foundation for a business driven IM/IT investment program, ensuring that all investments across all business lines contribute toward corporate success, maximize business benefits and minimize risk.

The Transport Canada IM/IT Strategic Plan will evolve to meet the Department's requirements and will be driven by Transport Canada's business direction and priorities. Three overarching themes will help guide the direction and focus for Transport Canada's IM/IT for 2003 – 2006: Information Management, Information Technology, and IM/IT Governance.

 The Transport Canada IM/IT strategy and direction is founded on achieving the proposed IM/IT vision for the Department through the pursuit of five long-term IM/IT goals.
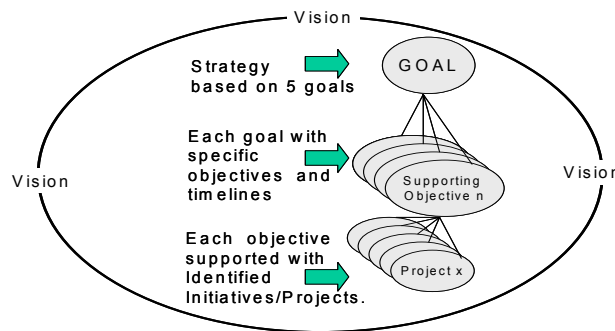
Transport Canada's IM/IT Vision: Transport Canada will have the IM/IT systems, policies and technologies required to do business electronically with clients and employees in a smooth, secure and affordable manner, which enhances business efficiency and client and employee satisfaction.

Transport Canada's **long term IM/IT goals** are focused on: (1) Accessing, Managing and Storing Information (2) IT Infrastructure Renewal; (3) Business enabling IM/IT services; (4) Governance; and (5) People. These goals are expressed as broad statements of an end state or desired environment.

A set of IM/IT objectives is associated with each of these goals. The objectives define major actions to be undertaken in order to achieve a specific goal. The projects / initiatives represent the specific concrete actions that the department in collaboration with other governmental and non-governmental organizations, will take to implement the objectives.

The IM/IT priorities, needs and opportunities of TC Service Lines suggest the following "top seven" common department-wide IM/IT priorities:

- Information integration – including the consolidation of existing information systems;

- Business Information Intelligence - including tools for information access, analysis, and reporting of financial and non-financial information;

- Document and Information Management – includes tools addressing all document / information life cycle stages;

- Security - Electronic Signature, Authentication, Privacy, and Encryption of documents, information and electronic communications;

- Internal Service Improvement - specialty information systems, such as Geographic Information Systems (GIS) and Wireless / Mobile worker applications;

- Government Online – initiatives which provide electronic information, transactional and collaborative capabilities to external stakeholders; and

- Communications – an evolved infrastructure providing speed of access for mobile / remote usage.

The budget outlook (exclusive of salary and wages, on-going maintenance/support, GOL and internal business transformation resources needed for implementing Transport Canada's IM/IT priorities, in line with its IM/IT goals and strategic objectives), between 2003 and 2006 is estimated to be :

- Approximately $5.5M for fiscal year 2003-04
- Approximately $11.7M for fiscal year 2004-05; and
- Approximately $9.7M for fiscal year 2005-06.

These figures represent a best estimate given information to date. Additional information on planned business initiatives is required in order to further refine these estimates. Annexes A and B provide additional information on how these figures were derived.

The Transport Canada IM/IT Strategic Plan will be a "living document" that will be updated as part of a continuous process of strategic business evolution within Transport Canada. It will evolve in synch with the Transport Canada Business Plan and Government of Canada / Departmental priorities. The Transport Canada IM/IT environment will need to continuously evolve to match changing business needs and to exploit technology based opportunities for performance improvement, all within an affordable planning / implementation regime.

The Department's CIO Office in full partnership with the various departmental management and IM/IT committees will provide leadership for the Transport Canada IM/IT Strategic Plan and its initiatives. Implementation will require the full and active participation of all business and service lines. It will mean taking a creative approach to making the best technology choices to support business requirements, ensuring the best

support for the tools and systems that are provided, and making the most effective use of staff and technical resources.

In managing internal processes, work will ensure that IM/IT investments are well coordinated, and that implementation of projects / initiatives are managed effectively in accordance with the principles of the Treasury Board's Enhanced Management Framework. A departmental IM/IT framework will help guide IM/IT standards and policies and define the architecture comprising departmental hardware, software, information, applications, IM/IT security, privacy and management.

This IM/IT Strategic Plan focuses on shared and standard IM/IT applications, infrastructure, systems and services. The Plan's emphasis is on areas of common interest and of greatest benefit to the organization overall. This IM/IT Strategic Plan seeks to articulate common cause and to set a path for greater collaboration.

1.0   Introduction

1.1   Transport Canada IM/IT Needs

With the rapid evolution of information and communication technologies, the advent of globalization, and a shift to a knowledge-based economy, information management (IM) and information technology (IT) are critical to helping the federal government and its departments achieve its service delivery of programs and services to citizens, communities of interest, and businesses.

IM (paper and electronic based information) is the foundation of effective Departmental decision-making. It is the content that is necessary to support the business lines of the Department, and it must be managed within the federal IM legislative framework. IM includes organization, rules for sharing or protecting, standards for use, changing, integrating and disposing information.

IT is the underlying technology of the Department and represents the costs and investments needed for accomplishing today's program management and delivery. It comprises hardware, software, organization / architectures and the environment which enables and supports all aspects of the information lifecycle. The effectiveness of the technology infrastructure is evaluated by its compatibility with existing technology, its ability to reduce operational risk through the provision of a stable and flexible platform, and the extra capabilities that it enables, such as on-line information systems.

Transport Canada is dealing with a number of complex business forces that are reshaping the Department. Transport Canada has transferred most of the operator functions and is now focused on a regulatory and policy development role. This major business change is taking place through a period of rapid technological change and also the rise of the information age and the knowledge economy.

The Government of Canada has also seized the opportunity to benefit from technological change and business transformation by the adoption of secure electronic service delivery (ESD) for service improvement. Externally focused ESD (Government On-Line) is positioned to better serve external clients, while internally focused ESD (internal service improvement) is positioned to better meet internal departmental needs.

Effective secure electronic service delivery capabilities require access to and the availability of accurate, relevant, timely and well-managed information delivered through fast, secure and reliable Internet based business applications and information technology based services. These capabilities will require skilled end users of sophisticated information services and systems, backed by well-trained IM/IT professionals and supported by the best affordable IM/IT based systems and services.

1.2 Purpose of the IM/IT Strategic Plan

The main purpose of this IM/IT Strategic Plan is to guide the development of IM/IT within Transport Canada to contribute to effective program delivery to meet a broad set of evolving client needs. These clients are diverse, from external stakeholders who help shape policies, to businesses and citizens transacting with Transport Canada, and to Transport Canada employees working together, with external clients, with other government Departments and with other levels of governments in order to assure the best transportation systems for Canada and Canadians.

Transport Canada's IM/IT capability must enable this diverse client and stakeholder set to conduct business transactions with Transport Canada in a timely, efficient and, where needed, secure and private manner with the goal of facilitating the access, sharing and exchange of information. The Transport Canada IM/IT Strategic Plan lays the foundation for a business driven IM/IT investment program, ensuring that all investments across all business lines contribute toward corporate success, maximize business benefits and minimize risk.

In doing so, the IM/IT Strategic Plan presents the Department's:

- IM/IT Strategic Direction, including IM/IT vision, goals, objectives;
- Current IM/IT Status, including Strengths and Challenges;
- IM/IT Priorities and Initiatives, including long term IM/IT investment plan; and
- The IM/IT Implementation Framework to "make it happen".

1.3 Alignment with other Plans

This IM/IT Strategic Plan is complementary to, and aligned with the Government on Line (GOL) Strategic Plan, the Web Presence Strategy and the TC Business Plan. The national Service Line Plan activity will serve to evolve this IM/IT Strategic Plan.

2.0   IM/IT Role & Direction

2.1   TC Business Context for IM/IT

Transport Canada's business is ensuring, through effective transportation regulation and policy instruments, that Canadians have an effective and sustainable transportation system that is safe, efficient and environmentally responsible.

1. *Vision* - the best transportation for Canada and Canadians.

2. *Mission* - to develop and administer policies, regulations and programs for a safe, efficient and environmentally responsible transportation system.

3. *Strategic Objectives*
    a. Ensure high standards for a safe and secure transportation system
    b. Contribute to Canada's economic growth and social development
    c. Protect the physical environment

4. *Priorities*
    a. Maintain and enhance the safety regime
    b. Foster competitiveness in a global economy
    c. Support infrastructure development
    d. Advance sustainable transportation
    e. Facilitate transition to the knowledge economy
    f. Complete the divestiture programs

IM/IT exists to support service delivery and business needs. Development, implementation, and application support must be done in close cooperation with lines of business. Because business requirements drive IM/IT activity, the department needs to:

- Find and capitalize on opportunities by coordinating plans and initiatives across the organization through improved governance, communication and planning processes
- Balance large department-wide and smaller initiatives
- Integrate IM/IT into the business planning process

The IM/IT Strategic Plan will evolve to meet the Department's requirements and will be driven by TC's business direction and priorities and levels of investment. Any strategies developed to respond to the major challenges facing Canada's transportation sector in the future will be a major influence on the department's IM/IT direction.

2.2 IM/IT Strategic Direction to 2005

2.2.1 Key Business Drivers for IM/IT

> *Today a transportation system is more than simply asphalt, concrete and steel. It also includes data, ideas and knowledge; it requires technology, skills and connectivity. Innovation, skills, and knowledge will be applied to the challenges of bringing people together on one of the world's largest land masses and producing goods competitively and delivering them efficiently.*
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The following key drivers help shape TC's IM/IT Vision:

TC's line functions and priorities - what departmental clients, stakeholders and employers do and their rising requirements and expectations;

- policy development (analysis, interaction, consultation, etc..)
- inspection / enforcement
- development of regulations and communications / implementation
- licensing
- program management
- internal management

The evolving technology environment and opportunities - growing and changing opportunities to do things differently / better with a range of rapidly evolving technologies such as wireless portable devices and innovative transportation technologies (e.g. ITS);

Government's GOL priorities and opportunities - government priority to deliver services that enable on-line client interaction and service delivery;

The need to control escalating costs - limited resources mean effective decisions, and a long term strategy is essential to manage cost pressures and IM/IT investments; and

The need to provide consistent service delivery across the country - as a highly decentralized, regionally-based organization, there is a need for consistent service delivery across country and a strong linkage between IM/IT and business.

2.2.2 IM/IT Themes

Three overarching themes will help guide the direction and focus for Transport Canada's
IM/IT for 2003 - 2006:

(1) Information Management - The department will have a broadly accepted model for
managing information, which ensures that information is:
- readily accessible to appropriate users;
- secure;
- well organized around accepted standards; and
- capable of being integrated to support advice and decision-making

This model will be supported by technologies which:
- organize information around common standards and enable rapid retrieval (e.g.
  RDIMS, auto-classification);
- support common government and department-wide tools (e.g. Directory);
- enable information integration(e.g. Data Warehousing, Business Intelligence); and
- provide users with easy access (e.g. Employee Portal).

(2) Information Technology - The Department's technology will evolve to meet the
business needs of a department in a period of change in both business activities and
technological capabilities including:
- evolving the TC wide area network (TCI) to support integrated capabilities such
  as video, voice, images, data, and wireless ;
- ability to scale by building on past investments;
- applications and application services which are consistent, secure and integrated
  with legacy systems; and
- planned replacement strategies (lifecycle management) which are in place to
  refresh technology and ensure best value. (e.g. desktop and server infrastructure)

(3) IM/IT Management - The Departmental IM/IT activities will be governed by a
clearly understood and accepted management model which spells out:
- planning, decision-making and reporting processes and the role of specific
  organizations in these processes;(e.g. TMX, DISC, TIMSD, Regional IM/IT,
  groups, HQ and regional management committees etc..); and
- policies and standards for both technology and services and how these will be
  monitored and measured.

The governance model will:
- enable collective discussion, direction and priority-setting at the departmental
  level;
- identify accountabilities and how they will be implemented; and
- ensure that overall resourcing as well as resource allocation is appropriate to meet
  needs.

2.2.3 Expected Outcomes of IM/IT Focus Themes

These themes support a movement towards a **future desired state** having the following essential characteristics:

1. Transport Canada will have undergone major business transformation (e.g. streamlining of common processes across business groups and common departmental "clusters") to use IM/IT capabilities as powerful business process enablers in a transformed organization that has capitalized on the opportunities of Government On Line (GOL) and secure electronic service delivery (ESD).

2. IM/IT will be a business tool designed to advance and support the business strategy and priorities of Transport Canada in helping to deliver the best transportation for Canada and Canadians and to enable responsive and innovative services by the department.

3. Citizens and stakeholders will be a major focus of IM/IT investments. IM/IT investments will be based on improvements to business effectiveness supported by strong business cases which link to the Department's IM/IT strategy, business priorities, risks, cost savings and internal enhancements. A strong focus will be on ensuring that TC employees have the tools necessary to serve the public and its stakeholders.

4. Knowledge and information will be a strategic business asset that will be easily accessed and shared, in support of improved decision making and program / service delivery.

5. A departmental framework encompassing IM/IT tools, processes, services and responsibilities will guide the implementation of the Transport Canada IM/IT Strategic Plan.

2.2.4 Snapshots of the 2006 Time Frame

The future desired state will be dependant on IM/IT capabilities to enable the delivery of powerful and efficient electronically delivered business services that will create benefits to clients, stakeholders and employees. Most business processes will be more highly automated; self service will be the norm, and duplication will be reduced in favour of a better common infrastructure and shared knowledge, information and data.

Inspection 2006

Once at an inspection site, the Transport Canada inspector uses a cell phone to connect a handheld computing device to the Transport Canada Network. Once securely connected, the inspector accesses the most current Inspection Manual, all the required inspection forms, can view all supporting documentation, check technical data as well as track

follow up actions by the client or inspectors up to that point in time. The Transport Canada inspector fills out the forms on line as the inspection progresses, simultaneously updating the master client file in the Transport Canada data warehouse, and completing the inspection quickly. Before leaving the inspection site, the Transport Canada inspector prints out an inspection report for the client on a portable printer. The entire task is completed quickly, with all information easily available on line, all forms and reports completed on line, the central client file is updated and documentation is processed on the spot.

Licensing 2006

A small aircraft pilot has just completed basic pilot training and wants to obtain his pilot's license. The student pilot accesses the Transport Canada portal Web site, finds the customer segment for pilots, drills down for licensing, and finds the process clearly explained. The student pilot follows the process, filling out the on-line forms and using the embedded help function to clarify his questions as he fills out the form. The student pilot uploads all required supporting documents electronically from his computer as per the instructions on the Web site. The student pilot enters his credit card number for payment. The Transport Canada web site automatically confirms with the bank that the credit card is valid and that payment has been processed. Once the bank clears the payment, the Transport Canada Web site automatically generates an e-mail with a receipt of submission and a case number for the applicant to track their license submission. A few days later, from a mobile device in an aircraft, the student pilot logs back into the TC portal Web site and, using the tracking number, checks on the status of their application for licensing. The student pilot finds that the medical certification has not yet been received. The student pilot e-mails his physician to enquire and finds that it had just been sent electronically using the departmentally approved Public Key Infrastructure (PKI) through the Civil Aviation Medical Information System (CAMIS) to TC. Within two days, Transport Canada has processed the student pilot's application, and the student receives an automatically generated email notification of license approval, a temporary license as an email enclosure and the FEDEX tracking number of the package that contains the official license certificate, all viewable from his mobile device. The student pilot logs onto the FEDEX Web site to check the delivery status of the package and notes that it will be delivered within 24 hours. The FEDEX shipment arrives and the pilot is up and away.

Transportation of Dangerous Goods 2006

A company wants to transport some highly inflammable material. It goes to the Transport Canada multi-modal portal and uses the portal's advanced search capabilities and easily locates the applicable policies, regulations, safety guidelines, safety procedures, best practices and forms on-line and in Plain Language. It can even find a list of approved suppliers of the right type of container by searching up-to-date information on safety related products and where to obtain them. All of the information is easily located, read and understood. There are embedded instructions in all on-line

forms with links to relevant legislation and regulations. As a result, the company quickly finds the applicable regulations, quickly understands the material, has quickly located a source of supply for the container it needs to transport hazardous material, and the required forms are easy to complete on-line. Approval and all associated documentation is processed on-line.

Engaging Stakeholders in Policy Development 2006

Work has started on a new policy proposal that will make important safety related changes to marine cargo handling. The draft policy proposal and a survey questionnaire related to the proposal are posted in a discussion group area on the Marine Portal, and an email advisory is transmitted to a group of key stakeholders letting them know about this policy proposal and survey, requesting their comments. Each logs on when they can, provides comment and impact assessment on the policy proposal, completes the survey and becomes aware of the perspectives of other stakeholders in this matter. The Marine Safety discussion group moderator follows the developing comments, adds a useful clarification to a point that everyone was confused about, and asks for agreement. Stakeholders provide additional input, and a good solution emerges. The survey results are collected in a survey database and the results analyzed for trends and patterns. The policy proposal is updated to reflect the stakeholder input and moves forward through the ratification process for formal Transport Canada approval. As a result, new policies can be developed much faster with key stakeholders and the public is engaged in dynamic policy development. Transport Canada is seen as responsive, operating with greater speed and involving a broader set of stakeholders in policy formulation.

E-Learning 2006

A Transport Canada supervisor informs an employee who is working out of the office, of several new changes to policy and regulations in aviation safety. The employee securely logs on to the On Line Training site from a remote location using PKI and locates the training materials regarding these changes. The employee completes 75 % of the material. The training application remembers where the employee stopped, and sets a bookmark at that point for the employee the next time the employee logs in. Later that day, the employee uses the secure PKI remote access feature from a different remote location and completes the remaining material. The employee needs help with a difficult question, clicks a button for personalized assistance, and an interactive session is established in a pop up window with an instructor who answers the employee's questions. The employee receives a personalized test evaluation, noting strengths and weaknesses, with learning recommendations including references to material on related subjects. Training on line has allowed the employee to access "just-in-time training" at their convenience

2.3   IM/IT - Vision, Goals, Objectives

The Transport Canada IM/IT strategy and direction is founded on achieving the proposed IM/IT vision for the Department through the pursuit of five long-term IM/IT goals. Each goal is expressed as a broad statement of an end state or desired environment. The goals are intended to be long term and stable and support business priorities. These goals are each linked to the 3 themes identified in the previous section.

A set of objectives is associated with each of these goals. The objectives define major actions to be undertaken in order to achieve a specific goal. The projects / initiatives (outlined in Annex A and B) represent the specific concrete actions that the department in collaboration with other governmental and non-governmental organizations, will take to implement the objectives.
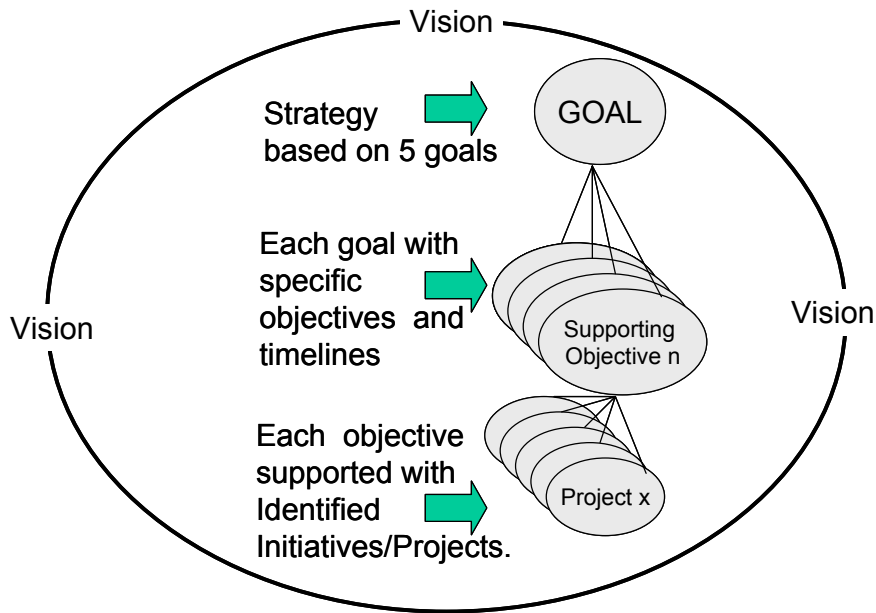
2.3.1   IM/IT Vision Statement

The following IM/IT Vision proposes a departmental direction for 2005 that positions IM/IT as key business enabler.

> *The IM/IT Vision for Transport Canada in 2006:*
>
> **Transport Canada will have the IM/IT systems, policies and technologies required to do business electronically with clients and employees in a smooth, affordable and secure manner, which enhances business efficiency and client and employee satisfaction.**

2.3.2 Long Term IM/IT Goals

To advance the Department's IM/IT Vision, the following **five long-term goals** will be pursued.

Theme 1 - Information Management

Goal 1 - Accessing, Managing and Storing Information: An information and knowledge sharing environment that recognizes knowledge as a strategic resource, and using sound information management principles.

The achievement of Goal 1 will see the progressive and continuous development of an information and knowledge sharing environment that recognises knowledge as a strategic resource, and that uses sound information management principles. This will occur through business and IM/IT partnership and shared responsibility.

Theme 2 - Information Technology

Goal 2 - IT Infrastructure Renewal: An adequate, secure, reliable and interoperable IT infrastructure that enables electronic transactions and ensures information exchange among clients, employees and stakeholders, including individual Canadians.

The achievement of Goal 2 will result in an adequate, secure, reliable and interoperable IM/IT infrastructure that enables electronic transactions and ensures information exchange among clients, employees and stakeholders, including individual Canadians

Theme 3 – IM/IT Management

Goal 3 - Business Enabling IM/IT Services: Clients, employees and stakeholders connected to Transport Canada's services and information resources. This goal includes transforming program delivery through enabling technologies.

Goal 4 - Governance: A departmental-wide IM/IT governance, accountability and investment management framework. This includes the direct linking of business and GOL planning with IM/IT planning and the adoption of a set of corporate practices and processes to ensure that IM/IT investments are focused on corporate priorities.

Goal 5 – People: Increase IM/IT awareness throughout the department and invest in our people by supporting and maintaining IM/IT skills to meet mission objectives.

The achievement of Goals 3,4 and 5 will provide a strong alignment between GOL, IM/IT and business transformation activities. It will ensure that the department capitalizes on IM/IT as an enabler and catalyst for service improvement.

2.3.3 IM/IT Objectives

In line with each of the five Departmental IM/IT goals, the following sets out specific IM/IT objectives to be achieved for the planning horizon of 2003-2006.

Annex A and B include further details on the proposed IM/IT projects / initiatives and their associated costs.

Goal	Description	IM/IT Strategic Objectives 2003 - 2006
1	**Accessing, Managing and Storing Information**	1.1 Develop a corporate non-technology focussed knowledge sharing and management policy framework and implement in each business line. This will build on the work completed on the TC IM Policy. 1.2 Establish a common departmental information sharing environment based on common technologies, common applications and common database structures to support information and knowledge sharing.
2	**IT Infrastructure Renewal**	2.1 Establish a common application and database development environment across the department that facilitates sharing, re-use and repeatability of process. 2.2 Establish and maintain a modern office productivity and communication environment on an enterprise basis that is common to all business lines and aligned with best commercial practices 2.3 Establish and maintain a mixed thin/fat client application architecture arrangement based on service line preferences and service level agreements 2.4 Establish and maintain a modern integrated network infrastructure that provides for connectivity, regardless of location or time, for all departmental employees and accommodates the transfer of any information , internal and external to the department. 2.5 Establish and maintain a secure electronic information environment for the conduct of all departmental business regardless of format 2.6 Establish and maintain security threat assessments. 2.7 Protect personal privacy in all departmental electronic information systems in keeping with all required laws, statutes and policies. 2.8 Implement a department wide process to collect, analyze and rapidly disseminate security incident information and early warnings. 2.9 Establish and maintain an ever-greening program for replacing departmental IM/IT components on an enterprise basis, such that no technology is ever more than 36 months old. 2.10 Evolve IM/IT business processes and enable them with automated tools for capacity, asset, configuration and service management.
3	**Business Enabling IM/IT Services**	3.1 Establish and promote departmental safety and awareness services on-line via an easy to navigate single point of contact web portal. 3.2 Establish and support the conduct of transport inspections and audits via an easy to navigate, single point of contact, web portal. 3.3 Establish and support the issuing and renewing of departmental documents via an easy to navigate, single point of contact, web portal. 3.4 Establish and support the development and evolution of transport regulations and standards via an easy to navigate, single point of contact, web portal. 3.5 Establish and support program delivery across all transport modals via an easy to navigate, single point of contact, web portal. 3.6 Establish and support internal administrative efficiencies via the appropriate use of Intranet and Internet web technology.

		3.7 Establish and support payment on line via the appropriate use of Intranet, extranet and Internet web technologies. 3.8 Provide specialized tools for inspectors, mobile workers 3.9 Provide specialized safety management tools
4	**Governance**	4.1 Maintain and evolve the Transport Canada IM/IT Framework that supports and assists sound IM/IT governance and investment management and ensures viability of the department's long term IM/IT posture. 4.2 Evolve performance management framework and apply to all IM/IT service elements (e.g. departmental applications). 4.3 Establish Total Cost of Ownership schemas for all elements of the departments' IM/IT infrastructure.
5	**People**	5.1 Establish and maintain an enterprise based IM/IT training schema. 5.2 Establish and maintain a TIMSD training schema that provides for 40% of the CS group across the department maintaining one or more recognized commercial IM/IT qualifications appropriate to the department's infrastructure. The needs of the business lines must be recognized. 5.3 Establish on-line and computer based IM/IT training with commercial and federal government providers to support CS and other business lines in the department in maintaining and improving individual IM/ IT skills, regardless of location or time. 5.4 Reduce dependency on consultants by hiring more fulltime employees.

The series of approved and funded IM/IT projects, each linked to a strategic goal and a specific objective in the IM/IT Strategic Plan, will constitute the Transport Canada IM/IT Investment Plan.

Annex A and B include further details on the proposed IM/IT projects / initiatives and their associated costs .

3.0   IM/IT Current Status

3.1   Historical Accomplishments

Transport Canada has achieved significant progress over the last eight years in working toward an integrated IM/IT environment. While significant progress has been made, many of Transport Canada's IM/IT investments are nearing or at end-of-life (e.g. departmental servers, communications infrastructure, office automation software etc…) and planning for replacement capabilities is under way. The table shown below **reflects many of the major successes** that have contributed to business efficiencies and that have helped reduce the costs of operating the IM/IT environment.

Aspect	1994	2003
HR Systems	9	1 HR System (TIPS)
Financial Systems Material and assets systems	25 + 8 +	1 Financial and Materiel System (IDFS)
E-Mail Systems	3 +	1 E-Mail System
Scheduling Software	3 +	1 Scheduling System
Office Automation Tools	3 +	1 Office Automation Suite of Tools
Desktop PCs	15,000 +	5,000
Security Software	3 +	1 Security Infrastructure (PKI +)
System Management Tools	4 +	1 Systems Management Model
Document Management Systems	4 +	1 Document Management System (RDIMS)
Application Management Tools	4 +	1 Set of Application Management Tools
PC Operating Systems	4	1 PC Operating System
Local Area Networks	200 + connected LANs with diverse technologies	1 Logical LAN with 200 interconnected LANs using common technologies
Wide Area Networks	7	1 (TCI)
Cabling Systems	3 +	1 (based on industry standards)
Servers in Client Areas	Distributed	Servers Consolidated Nationally
Storage Management Systems	3 + Distributed	1 Centralized Storage
Server Backups	4+ Solutions	Automated Backups

From an IM/IT capabilities perspective, Transport Canada is at a turning point and faces a new set of challenges related to the use of the Internet, GOL, ESD, fast paced technological change, thin client (wireless devices, handheld computers etc.), business interest in technological opportunities to exploit new IM/IT capabilities and demand for many new bandwidth intensive applications and services at the desktop.

3.2   Current Capabilities - Strengths and Challenges

STRENGTHS	CHALLENGES
Goal 1 - Accessing, Managing and Storing Information	**Goal 1 - Accessing, Managing and Storing Information**
Current intranet and Internet presence.	Data modeling activities are not integrated.
Common repository for documents (RDIMS).	The department is data rich and information poor. There is limited departmental knowledge sharing and management strategy.
Knowledge mapping and management pilots.	
Virtual Library providing internal and external access to e-publications / journals etc.	Proper classification of information, including the security and privacy implications.
E-Directory combining disparate internal directory services.	Implications of long term archival of information.
	Integration of data from disparate systems.
Data Warehousing pilots.	Integration of financial and operational data.
Business intelligence tools.	Support of electronic signatures.
Data Modeling activities underway.	Enhanced WEB search and WEB site content management.
Goal 2 - IT Infrastructure Renewal	Personalizing information based of employee's role in the organization.
Common network (intranet) employing industry standard protocols within a single common firewall and including secure remote access capabilities.	**Goal 2 - IT Infrastructure Renewal**
Common desktop tools (email, with shared calendars, office automation, and WEB browser and utilities).	Speed of access for mobile / remote workforce.
	Standardization of handheld devices for mobile workers.
Wireless /mobile and handheld technology pilots.	Support tools for handheld devices.
	Security for handheld devices.
Goal 3 - Business Enabling IM/IT Services	Compatibility of technologies within and external to TC.
Improved administrative services via WEB based applications (e.g. HR On-Line)	Renewal of the telecommunication network infrastructure – The department's current telecommunication network infrastructure needs capacity increase to handle increased demands of GOL and ESD, wireless connectivity and multimedia applications and services.
Improved operational services via WEB based applications	
Improved service delivery to external stakeholders via GOL initiatives.	Technology commodity items acquisition and

GOL Inspection / Regulatory Partnership Initiative focusing on multi-modal solutions.

Goal 4 – IM/IT Management

Key business strengths include the safety, security and effectiveness of the Canadian Transportation System, Transport Canada's client focused organization, well established stakeholder relationships, and proven regulatory processes.

The Transport Canada IM/IT Framework providing an IM/IT "blueprint" for the department as to technical direction and standards, services, policies and responsibilities.

A GOL Strategic Plan in place along with a number of GOL completed and work-in progress initiatives. This provides an excellent reference framework against which to measure IM/IT project linkage and impact.

A draft IM Policy.

Goal 5 – People

High quality personnel.

Increased partnership on initiatives within and across business lines.

Increased risk taking.

Increased understanding on the need for common standards, technologies, solutions.

disposal – There is no departmental endorsed "ever-greening" set of standards, procurement program and schedule for IM/IT assets.

Corporate IM/IT Asset Management .

Physical capacity to house servers.

Goal 3 - Business Enabling IM/IT Services

Business transformation - Mapping and streamlining business processes across organizational boundaries will be key to achieving integrated electronic service delivery.

Simplification of user interfaces to applications.

Identification of opportunity areas where electronic service delivery investments (internal and GOL) would provide the biggest payoff.

Goal 4 – IM/IT Management

There is currently no formal linkage between business and IM/IT planning or strategy at the enterprise level.

Departmental IM/IT investments are scattered.

Diversity in application development – Business lines acquire or develop IM/IT solutions, but in many cases, they do so without reference to the IM/IT Framework or the Applications Management Framework. This creates diversity of solutions and technologies/ approaches which is costly, and inhibits information exchange .

IM/IT Framework adoption – The IM/IT Framework needs to be widely understood, adopted and utilized by business lines to influence IM/IT investment decisions.

Government On Line (GOL) - Implementation of the GOL strategy will require enterprise level investment activities in IM/IT infrastructure as well as major training and skills upgrading for employees.

Goal 5 - People

IM/IT responsiveness to technological change – The department is not able to keep pace even with the "main stream" rate of change of IM/IT technologies. Expectations at various levels of the organization must be set to balance cost, capabilities and industry adoption.

Departmental IM/IT Human Resources – There is an urgent need to develop and maintain an IM/IT HR strategy; skill updating of both IM/IT staff and end users; generalized IM/IT training for all managers and executives in TC; and greater numbers of IM/IT staff.

	Stronger partnership on initiatives within and across business lines. Publishing content on the WEB has resource implications. Ability to provide consistent response to e-mail, phone and hard copy enquiries.

3.3   Influencing IM/IT Factors

> *Computers are ever present, everywhere and simple to use, but they will become less and less apparent as they are embedded into devices and processes (such as the computer that runs the microwave, or the 30+ processors that are part of the modern automobile, or the hundreds if not thousands that are found in the modern jet aircraft).*

The more pervasive information technology factors expected to influence the department's IM/IT strategy and implementation plans are:

1. ***The Internet***, encompassing secure electronic service delivery and ubiquitous computing

2. ***Short IM/IT product life cycles***: products evolving quicker than they can be assimilated and their value amortized.

3. ***Wireless device evolution***: cell phones, personal digital assistants (PDA), handheld computers, and other smart devices will all use Internet connectivity and thin client application technologies (Thin Client is a computing architecture in which everything (applications, data storage, etc) runs on the server);

4. ***Convergence***: the fusion of media and services, including computers, telephones, video, satellite, fibre optics, the Internet into more powerful and complex technologies and services;

5. ***Databases, data warehouses, data marts, business intelligence, and workflow applications***; managing and using exploding volumes of data in more automated business processes;

6. ***Web based applications***, linking business rules and data in thin client applications.

7. ***Security and Privacy*** Security and privacy will continue to be major concerns to deal with an increasingly sophisticated threat environment and new legislated responsibilities toward privacy. The department's drive to provide On-Line services will expose it to sophisticated threats to its services and information assets. This threat has to be anticipated, planned for and mitigated through both technical and non-technical initiatives. Special attention has to be paid to privacy requirements in system design, implementation and life cycle management, due to heightened concerns regarding the protection of personal privacy.

4.0   IM/IT Priorities/Initiatives/Action Plan

4.1   Summary of Key IM/IT Priorities by TC Service Lines

This section includes the information gleaned as a result of departmental service line workshops. Each service line summary includes the key business priorities in the context of IM/IT as identified through workshops a categorization of the information needs by IM/IT opportunity. Section 4.2 summarizes the common IM/IT opportunities which were identified across all service lines.

4.1.1   Policy

Priorities (IM/IT context)

- Organizing, classifying and protecting information
- Speed of access from home office very important
- Archiving and ease of access and specific window/category for policy;
- Ability to access any records from any location would increase efficiency
- Seamless integration of data (increased confidence in accuracy of corporate information)
- Continue to evolve GIS capability and satellite technology for data collection
- E-consultations being used by industry in ITS and would be advantageous within TC
- Wireless access within boardrooms, other offices within the building

Information Needs	IM/IT Opportunity
Collecting	Direct data collection through technologies such as satellite.
Organizing	RDIMS and IM enhancements. A Policy-specific view to information.
Reporting/analyzing	Improve the search capability, data integration
Sharing	Remote, mobile computing-ability to access and attach documents. Collaborative approach for email and documents
Protection	Improve RDIMS to deal with secure documents. Provide additional screening at Firewall in order to block "spam" – type information
Awareness	Develop a policy area on intranet

4.1.2   Programs and Divestitures

Priorities (IM/IT context)

- Enhanced document management capability with electronic work flow, digital signatures;
- Enhanced remote access for remote and mobile workers
- Integrated GIS capability for Real Property
- Personalization of access to information to improve efficiency
- Public / stakeholder outreach capability – multi-media, electronic communications, pictures / video
- Access to post-project related data without asking divested entities for it. From an internal perspective, would like to "mine" through current databases in order to draw conclusions
- Automation of Presentation and Briefing Note process would increase productivity

Information Needs	IM/IT Opportunity
Collecting	Hand-held devices for data collection on environmental assessments, inspections, etc. Automated access into external sources of data to extract and compile performance related information.
Organizing	Categorization and knowledge map enabling faster access and more relevancy to the information. Improved indexing based on categorization.
Reporting/analyzing	Integrated, layered GIS capability Access capability for performance management.
Sharing	More bandwith in remote areas and ability to manage protected documents in RDIMS. Ability to automate workflows associated with document based processes.
Protection	Security to ensure sharing of information external to TC is protected.
Awareness	Multi-media communications capabilities that target stakeholder groups.

4.1.3   Civil Aviation

Priorities (IM/IT context)

- Single sign-on capability would alleviate frustration (especially mobile workers)
- Business Resumption/Continuity Planning requirements
- Data capture of and real time access to accurate information
- Meaningful results must be achieved using proper data analysis tools
- Properly applied technologies would yield better quality decisions and realize higher productivity

Information Needs	IM/IT Opportunity
Collecting	Real time access to accurate information. Information on internal assets.
Organizing	Revision control – regulations. Standardized data taxonomy.
Reporting/analyzing	Integrated data, single, common database, trend analysis, currently not giving meaningful results. Additional IM tools required.
Sharing	With Industry representatives. Collaborative and workflow tools..
Protection	Improved SRA and single sign-on capabilities. Digital signatures .
Awareness	Increased use of videoconferencing and PC multi-media for training and communications .

4.1.4 Aircraft Services

Priorities (IM/IT context)

- Wireless capability for workers on hangar floor
- Improved teleworking capabilities
- Single Sign On capability is needed
- Improvements to search engine. Current tool is not working effectively
- Awareness of website where aircraft for sale are advertised
- Electronic procurement of aircraft spares and equipment inventory would be desirable

Information Needs	IM/IT Opportunity
Collecting	Better filtering on "garbage" e-information before it enters TC.
Organizing	Structured indexing (RDIMS). E-mail pull rather that push. Improved search capability internal to TC.
Reporting/analyzing	Integrated financial and operational data, single, common database, trend analysis. Business intelligence.
Sharing	Thin client could benefit AMDS.
Protection	Single sign-on and easier PKI/SRA capabilities. Would like to be able to move from one device to another for sign-on purposes. E-signatures. Integrated building access
Awareness	Need good training capability. Use of WEB based and multi-media tools .

4.1.5   Dangerous Goods

Priorities (IM/IT context)

- Addressing Telework capabilities especially for Quebec and Ontario Regions
- Integration of databases
- Speed of doing work
- Inspection system and data collection
- Changing paper-based filing system to electronic in order to be effective offsite

Information Needs	IM/IT Opportunity
Collecting	GIS and digital picture capability to position inspector in the field.
Organizing	Revision control - regulations
Reporting/analyzing	Integrated data, single, common database, trend analysis. Client Relationship Management capabilities that ties caller to DB information, to emergency phone lists etc...
Sharing	TDG Bookshelf products. Multi-media capabilities such as video would enhance decision making process. Accessing corporate data from the filed using handhelds.
Protection	Securing information disseminated to handhelds such as Blackberries. Privacy .
Awareness	Alerts in TDG Newsletters. Multi-media bulletins to targeted public

4.1.6   Road Safety

Priorities (IM/IT context)

- Restructure RDIMS and implement IM Process
- Common data for collisions regardless of the source
- Improved downloading capability from Blainville to Ottawa
- Develop software to enable building integrated database for research and analysis
- Ability to link collision data to health data
- Need remote computing capability
- Knowledge management requirement and knowledge mapping of SME's is only now underway
- A consultative online system similar to that in the US would reduce number of ATIP requests that have to be addressed

Information Needs	IM/IT Opportunity
Collecting	Improved downloads from lab, black box, inspections
Organizing	Improvements in RDIMS to store and access regulations. Improved IM and search tools.

Reporting/analyzing	Integration of databases. Common database management software. Computer / CAD simulation.
Sharing	Make information available electronically to public (Portal). Collaboration tools. Knowledge Management.
Protection	Security and privacy infrastructure
Awareness	"public docket" available on-line would most likely reduce ATIPS. Guidelines on classification of information.

4.1.7   Marine Safety

Priorities (IM/IT context)

- Small vessel inspection system
- Standardization of database products
- Electronic signatures and authorization
- Improved training for field staff and regular users
- Improved search and analysis capability to do trend analysis
- Board Decisions are consultative and need to be automated
- Data mining is important
- Improvements to bookshelf product is needed
- Improved teleworking capabilities
- Single sign on for all Marine applications
- Providing intuitive applications that improve consistent application of the regulations and aids inspectors during the inspection process

Information Needs	IM/IT Opportunity
Collecting	EForms on the internet
Organizing	Structured indexing (RDIMS). Common look and feel of applications on various access devices (PDA, laptop) . Use of common distribution lists.
Reporting/analyzing	Integrated data, single, common database, trend analysis. BI and data mining capabilities. GIS.
Sharing	Interoperability with other government departments, national and international partners. Specifically about ship information. Wokflow and "smart forms". Knowledge Management.
Protection	Improved security architecture . Single sign-on capability. Digital signatures.
Awareness	The ability to provide clients / employees with subscription services online (ability to send automated alerts to all employees and be able to do targeted consultations with clients).Need good training capability – especially in technology for the inspector community.

4.1.8   Rail Safety

Priorities (IM/IT context)

- Secure remote access and speed of access
- Integrating data bases
- Collecting data in the field and integrating it with national Rail systems
- Automate paper process where feasible
- Tools to better manage information

Information Needs	IM/IT Opportunity
Collecting	Hand-held devices for data collection on inspections, etc. Technology must be rugged and integrated with national systems.
Organizing	Categorization of information based on Rail Safety Integrated Gateway model that has been approved by Rail Safety senior management. An application which will integrate information collected from the operational areas in Rail Safety in headquarters and the regions as well as a data warehousing capability to link various other data sources. (such as TSB data, industry and other stakeholder data, policy information, etc…)
Reporting/analyzing	Capability to drilldown on data . Access capability for risk and performance management.
Sharing	More bandwith in remote areas. Ability to exchange information internal and external to TC.
Protection	Security to ensure sharing of information external to TC is protected.
Awareness	Multi-media communications capabilities.

4.1.9   Security

Priorities (IM/IT context)

- Secure remote access and speed of access
- Integrating data bases
- Collecting data in the field and integrating it with other systems
- Tools to better manage information
- Need to blend financial and operational information in a personalized view which is intuitive and allows for better decisions.

Information Needs	IM/IT Opportunity
Collecting	Hand-held devices for data collection on inspections, etc. Technology must be rugged and integrated with national systems. Information is also collected from external TC systems.
Organizing	An application integration capability to link various application capabilities. A data warehousing

	capability to link various data sources. Personalization to tailor information to client needs.
Reporting/analyzing	Capability to drilldown on data – both operational and financial. Access capability for performance management. Could benefit from GIS capabilities in certain areas (airport drawings) to supplement intelligence
Sharing	More bandwith in remote areas. Ability to exchange information internal and external to TC. Electronic collaboration with stakeholders.
Protection	Security for mobile devices. Security to ensure sharing of information external to TC is protected. Secure messaging could be beneficial
Awareness	Multi-media communications and training capabilities. Web based consultations with stakeholders.

4.1.10   Safety Programs, Strategies & Coordination (SPSC)

Priorities (IM/IT context)

- Integrating databases (both internal and external to the Department). Referential integrity / data integration tools
- Tools to better manage information and analyze information (e.g. business intelligence tools, common search tools, etc.)
- Secure remote access and speed of access
- Improvements to current capability:
- GIS infrastructure (champion within Department doesn't exist)
- Video-conferencing
- Web-Mail
- Document publishing

Information Needs	IM/IT Opportunity
Collecting	Versatility in architecture to enable the receipt, storage and delivery of information from external sources (OGD, provinces, industry) (GTIS). Technology must be rugged, flexible and integrated with national systems.
Organizing	Categorization of information based on data model. An application integration capability to link various applications / systems / data sources.. . Adherence to data standards, communication with reporting community.
Reporting/analyzing	Business intelligence tools. Capability to

	drilldown on data. Access capability for performance measurement. Executive dashboard-type reporting. Emphasis on web rather than client.
Sharing /Access	More bandwith (travel status, tele-working) . Ability to exchange information internal and external to TC. Common area of access for report queries (e.g. data warehouse)
Protection	Security to ensure sharing of information external to TC is protected as necessary.
Awareness	Multi-media communications capabilities.

4.1.11 Communications

Priorities (IM/IT context)

- Provide ability to work with secure documents in RDIMS;
- Immediate communications from anywhere, including wireless communications and high-speed access from out of the office;
- Would like to develop an information portal "TC Info"
- Need to have the ability to do targeted communications and profiling of recipients.
- Video communications and real-time communication is important.
- Need alternate ways to consistently deliver the same message.

Information Needs	IM/IT Opportunity
Collecting	Easier way to sift through information. Proactive notification of old WEB links, and internal WEB site outages.
Organizing	Secure RDIMS. Smart distribution lists that know what mechanism to use to send information to recipients.
Reporting/analyzing	Fast, comprehensive search capability
Sharing	Information portal, increased bandwith, mobile computing, electronic collaboration.
Protection	Security architecture, electronic signatures, secure messaging.
Awareness	Information portal , e-learning, video steaming , alternate methods to send alerts to all employees

4.1.12 Executive Services

Priorities (in IM/IT context)

- Require a consistent project performance tracking system.
- Integrated databases and shared information
- Encryption, authentication and privacy
- Knowledge management
- Business Intelligence

Information needs	IM/IT Opportunity
Collecting	Paper, multi-sourced, scanned
Organizing	Indexing, XML tagging, use of RDIMS for above Protected A , archiving and retrieval, application integration. Better version control.
Reporting/analyzing	Common standards for financial analysis/auditing, BI requirement for Audits, ability to track, monitor and report on performance management information
Sharing	Integrated data base, external access to TC ATIP info via a common portal. Improved remote access.
Protection	Encryption, digital signatures, e-commerce. Need for secure transactions across departments and 3rd parties
Awareness	Application of Protected A, B,C … to information. E-learning and content management

4.1.13 Finance

Priorities (IM/IT context)

- Integration with service areas. Integrated financial and non-financial information for the purpose of performance management;
- Training – building capacity, awareness and competency around financial systems, policy, etc. Training should be available 7/24. E-learning capability could be used to train financial analysts. Video streaming to desk-top would be useful.
- Need remote access to RDIMS and integration with BIRM;
- Develop business intelligence capability
- Interoperability with external organizations extremely important and the way of the future (eg Travel Modernization), self-service, electronic supply chain, Government of Canada marketplace (Receiver General Buy Button).
- Cost recovery (cost accounting and report generation)
- E-procurement for internal and external clients.

Information Needs	IM/IT Opportunity
Collecting	Structured data from BIRM, and other repositories such as RDIMS.
Organizing	Indexing, XML tagging to support e-procurement and other external self-service capabilities. RDIMS archiving and retrieval. Linking of financial and non-financial information.
Reporting/analyzing	Business Intelligence
Sharing	Integrated data base, external partners (Need common formats). Electronic workflows to exchanger e-information. Need improved remote access capability which extends to PDAs .
Protection	Encryption, digital signatures, e-commerce.
Awareness	7/24 video to desktop

4.1.14 Human Resources

Priorities (IM/IT context)

- Improved client service, especially for internal staffing actions.
- Staffing and recruiting. Need to align processes and provide automated support with easy, fast access to necessary data.
- Development of employee portal (MY Transport Canada)
- Ability to support organizational design function with electronic access to job descriptions
- Development of personal learning plans with eLearning, automated support
- Teleworking is important but currently access speed is poor.
- A CRM component of compensation is a priority item
- Deputy-level reporting would eliminate the need for year end rollup

Information Needs	IM/IT Opportunity
Collecting	On-line recruiting – resume scanning, internet access
Organizing	Linking information from various sources (e.g. service to compensation), personalization of information presented to managers
Reporting/analyzing	Performance management information, (dashboard), electronic job descriptions, evaluation/assessment tools, information analysis tools, Learning Management System, linking financial and operational information (BI/Datawarehousing)
Sharing	Employee self service/portal, elearning system, workflow capabilities
Protection	Security and privacy infrastructure
Awareness	CRM to improve relationship and resources required to service clients. Use of multi-media technologies.

4.2   Common Department-wide IM/IT Priorities

The IM/IT priorities, needs and opportunities of TC Service Lines suggest the following "top seven" common department-wide IM/IT priorities:

- Information integration – including the consolidation of existing information systems;

- Business Information Intelligence - including tools for information access, analysis, and reporting of financial and non-financial information;

- Document and Information Management – includes tools addressing all document / information life cycle stages;

- Security - Electronic Signature, Authentication, Privacy, and Encryption of documents, information and electronic communications;

- Internal Service Improvement - specialty information systems, such as Geographic Information Systems (GIS) and Wireless / Mobile worker applications;

- Government Online – initiatives which provide electronic information, transactional and collaborative capabilities to external stakeholders; and

- Communications – an evolved infrastructure providing speed of access for mobile / remote useage.

4.3   Target IM/IT Capabilities 2003-2006

In view of the Department's Service Line IM/IT Priorities and Opportunities, the following table highlights the target sets of IM/IT capabilities needed to support, on a department-wide basis, the priorities of TC Service Line Areas.

Annex A and B include further details on the proposed IM/IT projects / initiatives and their associated costs .

Goal	Description	Target IM/IT Capabilities 2003 - 2006
1	**Accessing, Managing and Storing Information**	• Evolved information / knowledge management architecture, including data dictionary and data models • Virtual Library • E-Directory • Workflow tools • Enhanced document management tools • Data repositories

		• Data warehousing
		• Personalization of information based on an employee's role in the organization.
2	**IT Infrastructure Renewal**	• Current desktop office automation tools
		• Evolved application architecture including thin and fat client applications
		• Evolved technology and security architectures
		• Integrated network infrastructure
		• Secure transaction processing environment and secure electronic service delivery
		• Managed threat assessment program
		• Security architecture that enables privacy protection
		• Early warning and alert notification system
		• Managed "technology ever-greening" program based on departmental standards
		• Managed IM/IT architecture and services
3	**Business enabling IM/IT services**	• Service line portal sites
		• Safety related applications and supporting databases
		• Electronic information, on line for inspectors and the inspected to support inspection and audit activity.
		• Inspection and Reporting solutions to enhance multi-modal inspection and audit.
		• Applications to issue and renew documents, licenses and permits on line for all modes of transportation.
		• A clear language regulations database for improved usability and readability of regulations and standards for clients and stakeholders through the GoC / TC portal.
		• A series of service delivery applications that will be delivered through the GoC / TC portal.
		• Improved internal administrative services with on line course registration, electronic forms, training on line, enhanced search capabilities and web site content management.
		• Electronic bid reception and tendering, on line credit card payment capabilities and a major upgrade to the database infrastructure.
4	**IM/IT Management**	• Information Management Policy
		• Privacy policy
		• IM/IT standards applied across TC
		• Application management standards applied across TC, ensuring consistency in application development, maintenance and support tools, processes and responsibilities
		• Departmental IM/IT strategic plan
		• Departmental IM/IT investment program

		• Integrated planning process including GOL, IM/IT and business transformation planning. • Service level agreements for departmental applications • Total Cost of Ownership schemas for all department IM/IT infrastructure components
5	**People**	• Enterprise based IM/IT training schema. • On-line and computer based IM/IT training for maintaining and improving individual IM/IT skills

5.0   Implementation – Making it Happen

The projects and initiatives highlighted in Annexes A and B focus for the most part on shared and standard IM/IT applications, infrastructure, systems and services. The Plan's emphasis is on areas of common interest and of greatest benefit to the organization overall. Projects / initiatives in the areas of voice and video integration, contact centre, business line applications, inspection tools and IM tools are identified given their potential to address the business priorities identified earlier in this document.

Further discussion is required to determine the level of investment required in these areas.

5.1   IM/IT Program / Project Management

Integrate at every opportunity

Technology must be integrated at every opportunity. Integrated technology enables business-driven initiatives and improved services by supporting shared data, applications, security, infrastructure, and standards. Improved information access and sharing, and greater efficiency are desired outcomes of strong integration. Integration is a means to achieve reasonable economies of scale, by thinking wholistically while acting locally. The collective interest must not be compromised; deviations from standards that put others at risk must be managed . This means:

- Supporting deviations from standards with sound business cases, and accepting associated costs/risks
- Consciously considering opportunities for integration when planning
- Providing additional training and resources as required
- Increasing information security
- Eliminating solutions based on closed technology standards

Invest strategically

Through strategic IM/IT investment, the department can reduce the cost and time to deliver and manage IM/IT solutions, reduce maintenance and support costs, and improve quality. Alternatives must be investigated (e.g. re-use, adaptation, strategic partnering, outsourcing, buy, build), and the implications for others considered. Investing strategically also means:

- Supporting investment decisions with sound business cases
- Facilitating, promoting, and encouraging reuse

Working together

The department must work collaboratively to take full advantage of its multiple skills and capabilities. This will ensure effective delivery and management of IM/IT solutions, and effective use and deployment of IM/IT resources, while respecting service delivery requirements. Sharing expertise can help maximize the advantages of new technologies across the department, and reduce the time it takes to deliver IM/IT solutions.

Implementation of This Plan

This Plan does not seek to prescribe solutions, but to provide structure and direction for effective and collaborative planning and implementation. Implementation of this Plan will involve a variety of solutions - a mix of approaches linked by a collective commitment to common goals. As the department moves forward, working within an IM/IT governance structure, it will establish criteria by which priorities will be set, and undertake ongoing monitoring of progress. Consistent with this Plan and organizational business requirements, Director Generals will be active participants in the development of implementation details, projects, and time lines, under the functional authority of the Chief Information Officer and the direction of TMX.

The Plan as "Living Document"

The Transport Canada IM/IT Strategic Plan will be a "living document" that will be updated as part of a continuous process of strategic business evolution within Transport Canada. It will evolve in close cooperation with the Transport Canada Business Plan (National Service Line Plans) and the GOL Strategic Plan.

The IM/IT projects will be shaped by a number of important instruments:

1. Transport Canada policies;
2. Performance management;
3. Treasury Board Secretariat's *Enhanced Management Framework for the Management of IT Projects* will provide the project management methodology;
4. The Transport Canada IM/IT Framework will guide the development of IM/IT projects, all of which must be compatible with the departmental IM/IT architecture and standards framework; and
5. Application development projects will follow the Transport Canada Application Management Framework methodology.

5.2   Leadership & Governance

The Department's CIO Office in full partnership with the various departmental management and IM/IT committees will provide leadership for the IM/IT Strategic Plan and its initiatives. Implementation will require the full and active participation of all business and service lines.

Compliance with the IM/IT Strategic Plan and the shaping instruments will help to ensure that approved projects contribute to the Transport Canada IM/IT environment, that they deliver the required IM/IT capabilities and that duplication and overlap are minimized. The Transport Canada IM/IT environment will continuously evolve to match changing business needs and to exploit technology based opportunities for performance improvement.

In managing internal processes, work will ensure that IM/IT investments are well coordinated, and that implementation of projects / initiatives are managed effectively in accordance with the principles of the Treasury Board's Enhanced Management Framework. A departmental IM/IT framework will help guide IM/IT standards and policies and to define the architecture of departmental IM/ IT systems.

5.3   IM/IT Framework – Guiding Principles

The following IM/IT Framework principles will guide the realization of Transport Canada's IM/IT Strategy, target objectives (capabilities), and projects. As a business delivery enabler, Transport Canada's IM/IT capability must provide for the following:

Interoperability – interconnectivity, spanning Transport Canada and embracing its partners in the public and private sectors.

Foundation for Integrated Information and Business Processes - the foundation for an integrated information environment that will facilitate the integration of business processes.

Responsiveness - the capability to respond and react to events, rather that to just process work.

Accessibility - authorized and managed access to Transport Canada's information and services from any place, at any time.

Security - an integrated security environment that protects the integrity and confidentiality of client and government information to the level required.

Well-Managed IM/IT Services - services and infrastructure that are both manageable and measurable using performance measures and benchmarks with appropriate accountabilities.

Innovation and Cost Effectiveness - promote innovation that represents the best investment for business.

Reliability - a high degree of reliability through cost effective use of redundant technology and tested business resumption plans.

Effective Planning Processes - effective and integrated business and IM/IT planning processes aimed at establishing IM/IT capabilities that will facilitate or enable changes in business processes.

Flexibility - accommodate business driven change in architectural elements as required while minimizing any impact on business services, processes and information management.

5.4   Critical Success Factors

The following factors are seen as critical for the successful implementation of the Transport Canada IM/IT Strategic Plan:

1. Full recognition and support for a minimum IM/IT investment funding envelope to address IM/IT initiatives and operational costs during the period FY 2003-2006 to implement the corporate IM/IT strategy.
2. Senior management commitment in each business line to the corporate IM/IT Strategic Plan and its implementation.
3. A transparent process to identify all IM/IT investments with full life cycle costing, including provision of adequate resources to address the IM/IT infrastructure impact.
4. An agreed upon listing of initiatives against each goal and supporting objective, with a clear understanding of funding, project management resources and leadership responsibility for every initiative.
5. A clear identification of IM/IT projects that are, or are not, an integral component of the IM/IT Strategic Plan.
6. A clear understanding of which services will be optimized or re-engineered for secure electronic service delivery, and how they will individually and collectively contribute to the GOL and IM/IT visions and targets.
7. Maintaining a manageable project portfolio by only tracking projects above an agreed upon amount.

Other critical success factors – **measures of success** for the IM/IT Strategic Plan – will include:

-   Alignment of IM/IT with business needs and values – in the opinion of users;
-   Integrated and department-wide orientation to IM/IT with common guidance and oversight;
-   Focused approach to IM/IT versus scattering or re-active efforts;
-   IM/IT seen as fundamental resource and enabler to achieving Transport Canada's business management and program delivery.

6.0 Annex A - Investment Plan

6.1 IM/IT Investment Plan

The following presents investment outlook views for the 2003-2006 planning horizon.

6.1.1 Investment Outlook by IM/IT Project / Initiative

The following highlights the investment outlook by main IM/IT Project / Initiative. Annex B provides a short description for each of these specific projects and initiatives.

Shaded items were identified in the Corporate Services 2003/2004 Service Line Plan .

Table – Investment Outlook by IM/IT Project / Initiative

	2003/04 - $000s	2004/05 - $000s	2005/06 - $000s	TOTAL
E-Directory	200	200	200	**600**
E-Directory Maint.	110	110	110	**330**
Thin Client	1,719	315	352	**2,386**
E-Forms	500	500	100	**1,100**
RDIMS Upgrade	0	2,068	0	**2,068**
RDIMS Protected B Encryption	0	600	0	**600**
Systems Mgmt (Tivoli)	389	75	75	**539**
Data Warehousing Support	565	565	565	**1,695**
Contact Centre	?	?	?	**?**
TCI	808	2,107	2,031	**4,946**
Server Relocation	550	550	2,000	**3,100**
NCR Storage Area Network Maint.	100	110	120	**330**
Blackberry Infrast. Support	100	110	120	**330**
Content Mgmt Maint.	125	132	138	**395**
Virtual Library Maint.	156	156	156	**468**
Infrastructure Renewal	0	4,000	4,000	**8,000**
Managed Print Services (*)	(-100)	(-300)	(-410)	**(-810)**
Voice & Video Integration	0	?	?	**?**
Business Applications (**)	?	?	?	**?**
Inspection Tools	?	?	?	**?**
Information Mgmt Tools	?	?	?	**?**
Internal Employee	200	300	?	**500 +**

Portal				
Application Develop. Tools	50	100	100	**250**
TOTAL INTERNAL ESD	**5,472 +**	**11,698 +**	**9,657 +**	**26,827 +**
GOL Key Services	4,000	4,000	4,000	12,000
TOTAL EXTERNAL ESD	**4,000**	**4,000**	**4,000**	**12,000**

ESD = Electronic Service Delivery

(*) = At NCR Level – Reduction on what will be spent in this Tower C printing

(**) = Driven by business requirements. These costs and associated projects will be determined upon review of National Service Line Plans in support of priority business requirements.

Program managers are accountable for project delivery. IM/IT units will play a partnership / support role in the delivery .

6.1.2   Investment Outlook by Goal

The following presents program outlook views for the 2003-2006 planning horizon by goal (aligned with target sets of IM/IT Capabilities). Annex B includes further details on the proposed IM/IT projects / initiatives and their associated costs .

Table – IM/IT Investment Outlook by Goal

Goal	Description	2003/04 - $000s	2004/05 - $000s	2005/06 - $000s	TOTAL
1	Accessing, Managing and Storing Information				
2	IT Infrastructure Renewal				
3	Business enabling IM/IT services				
4	IM/IT Management				
5	People				
	TOTAL				

Further consultation with departmental business lines will be required in order to complete this table view.

6.1.3   Investment Outlook by Service Line

The following summarizes the investment outlook for IM/IT projects and initiatives by Service Line. Annex B includes further details on the proposed IM/IT projects / initiatives and their associated costs .

Table – Investment Outlook by Service Line Area

#	Business / Service Line Area	2003/04 - $000s	2004/05 - $000s	2005/06 - $000s	TOTAL
1	Policy				
2	Programs & Divestiture				
3	Civil Aviation				
4	Aircraft Services				
5	Dangerous Goods				
6	Road Safety				
7	Marine Safety				
8	Rail Safety				
9	Security				
10	SPSC				
11	Communications				
12	Executive Services				
13	Finance				
14	Human Resources				
15	IM/IT				
	TOTAL				

Further consultation with departmental business lines will be required in order to complete this table view.

7.0   Annex B – Description of IM/IT Projects / Initiatives

The strategic management of information and information technology (IM/IT) is an integral part of all departmental activities, and there is a growing requirement to increase the department's capacity to provide electronic information and services to employees, stakeholders and the public. There is also a requirement to develop new technological capabilities in order to better serve the department's day-to-day and emerging business and operational IM/IT requirements.

The following IM/IT projects / initiatives have either been identified through the departmental National Service Line Planning process or are envisionned as a result of national consultations with business line representatives. They are both internally and externally focused. Investments in these areas will improve the creation, storing , securing, accessing , sharing and disposal of information, required in support of program and service delivery.

E-Directory

The TC Directory empowers Transport Canada managers and users to manage their own personal directory information and quickly acquire Transport Canada services through the Web environment. In addition, the TC Directory consolidates existing directories, and automatically manages system and application accounts.

As part of a Phase 1 implementation, the cuurent key features of the TC Directory are in place :

- Empowering employees and managers to manage their own personal information and facilitate the acquisition of the Transport Canada services they need to perform their jobs;
- Decreasing the heavy paper burden associated with the acquisition and implementation of services within the department using the self-service model;
- Facilitating the Entry and Departure process for employees and consultants from the department and ensuring that the appropriate privileges are granted / revoked;
- Creating a single logical definitive source of information about people and services for the department;
- Replacing existing applications the Web Directory System, the Access Control System, and the Update500;
- Managing user accounts to populate the Transport Canada E-Mail Global address book, the Operating System directory, Automated Label Processing System, the Tower C Kiosks and the Government of Canada Directories;
- Interfacing with the Tower C Building Security Pass System and Transport Canada Personnel System (TIPS).

Subsequent change and enhancements of the TC Directory continues to build on the strengths and architecture of the TC Directory Phase 1. As more and more Transport employees and managers become aware of the powerful capabilities of the TC Directory new requirements have been identified (i.e. signing authorities for Finance and Personnel) which are critical to the safety and security of Transport Canada facilities and networks as well as to the effective management of Transport Canada assets.

The requested funds would allow the modification of the TC Directory with enhancements to deliver the additional functionality as required based on the identified user needs.

E-Directory Maintenance

The TC Directory received funding (capital) from Government On Line (GOL) but no funding (OOC) for subsequent years of the project for the ongoing maintenance and support of the TC Directory.

The requested funds will allow the continued maintenance , support and operation of the TC Directory application.

Thin Client

Thin Client, also known as server based computing, is a computing architecture in which the applications run on a consolidated server. Where, in the traditional personal computing network environment, information such as documents, database information, print jobs, and even applications pass between the users' workstations and the network servers, with Thin Client, the only information that travels between the users' workstations and the server are screen updates, mouse movements, and keystrokes.This provides for greater performance on remote dial and slower link communications lines.Thin Client technoloigy is currently used in support of IDFS, RDIMS and FTAE-CDE service delivery. Other applictions such as NAPA, and NACIS have been tested and could benefit from the use of Thin Client technology

The requested funds will further implementation of Thin Client technology in a phased approach in order to address performance and cost management issues.

E-Forms

The current electronic forms environmnet is obsolote and poses challaneges withregards to new form develolpment and Gol commitments . This project has as objectives to :

* Replace the current version of software supporting electronic forms with the latest electronic forms software.
* Convert the existing electronic forms in both the internal and external department Web sites.

- Update the TC forms catalogue in both the internal and external department Web sites.
- Secure E-Form transactions including digital signature and on-line processing for the public.

The overall benefits of this project include:

- Improves E-Forms service delivery to TC clients and the public.
- Capability for online processing of E-forms.
- Seamless integration of created E-Forms with RDMIS.
- Ability to electronically sign an E-Form and securely transmit the E-Form using PKI encryption.
- Multiple medium support for E-Forms distribution and E-Forms receipt (i.e. paper, e-mail, Web, CD-Rom).
- Provides an E-Form environment that can be built upon for TC's future requirements which include: workflow, one time data capture, database connectivity, and a Business Process Management tool.

RDIMS Upgrade

RDIMS (Records, Document and Information Management System) is an automated solution for managing information objects (i.e. text, spreadsheets, images, e-mail messages, etc.) throughout the Information Life Cycle. Resources are required to implement enhanced functionality .

The requested funds would allow the modification of RDIMS with enhancements to deliver additional functionality as required based on the identified user needs.

RDIMS Protected B Encryption

In the past, the business rules regarding the use of RDIMS at Transport Canada state that documents classified *Protected 'B'* and above are not to be stored in the RDIMS repository. As a result of a recently completed RDIMS Security Review, a decision was made by senior management allowing Protected B information to be saved in RDIMS. This decision implies that RDIMS will need to be modified in accordance with the functional specifications for saving *Protected 'B'* information in RDIMS.

The requested funds would allow the modification of RDIMS with enhancements to deliver the required Protected "B" functionality.

Systems Management (Tivoli)

Through a Request For Proposal (RFP) Transport Canada selected Tivoli Service Desk (TSD) as the new corporate System Management tool in the fall of 1999. The implementation project for this tool began in February 2000. In December 2000, (before

the implementation was complete), the TSD suite of products was purchased from IBM by Peregrine Systems. Shortly after the purchase, Peregrine announced that the TSD product would only be supported until December 2002. At the time of the announcement Peregrine offered the TSD clients the option of acquiring the equivalent number of Peregrine ServiceCentre (PSC) licenses if they would commit to switching products. To protect the Crown's investment Transport Canada accepted this offer and continued with the implementation of TSD with plans to transition to ServiceCentre at a future date.

$102K in funding for FY2002-2003 had originally been intended to add functionality to the existing TSD product, but with the requirement to transition to another product these funds have been reallocated to the transition activity. In addition to the money put aside approximately $390K more will be required in 2003/04 to complete the transition and $ 75K in both 2004/04 and 2005/06 in order tro maintain the solution.

Data Warehousing Support

The need for Data Warehousing and Business Intelligence has never been greater. The gap between the amount of information available and our ability to analyze and understand the information is widening.

Vast stores of valuable data have already been accumulated by Transport Canada. The trend is accelerating as web based applications extend beyond traditional business relationships beyond organizational boundaries to capture unprecedented quantities of data. The key to realizing business value from this asset is in mastering the steady flow of actionable information about all key business areas and making this available in a timely manner to decision makers from administration staff to inspectors to Transport Canada executives and beyond to external industry stakeholders, other government organizations and the general public.

Enterprise-wide standardization is fundamental to operational and decision support systems; the benefits of being able to share data to improve efficiency.

Data Warehousing and Business Intelligence (BI) offers a unique opportunity to bridge the application "stovepipes". With its ability to bring together data from different sources and present that data in a meaningful for to ordinary users, Data Warehousing and BI can provide management and workers with a single vision of the enterprise, unrestricted by technical or organizational constraints.

The Data Warehousing strategy has been completed and presented to the Departmental Informatics Steering Committee (DISC). The strategy identified applications have been developed in a stovepipe approach and that there is very little sharing of data within the department. This results in inaccessible, inconsistent, out of date data, redundant and fragmented. The real impact on the department is sub-optimal decisions, sub-optimal business performance, redundant data collection and analysis (high cost of analysis), and inconsistent interpretation of data (misaligned business priorities). Data Warehousing is a process that cleanses and integrates data from existing production / legacy systems and

makes it available to the department. This data is typically Key Performance Indicators, operational and strategic data.

The requested funds will allow the establishment of a Data Warehousing organization:

1.   To manage the Business Intelligence Software (installation, testing, implementation, monitoring and tuning);
2.   To support the continued growth of the Data Warehousing environment;
3.   To support Group Data Warehousing initiatives in conjunction with the Transport Canada Groups;
4.   To ensure the collection and maintenance of the Data Warehousing MetaData (information about the information within the Data Warehouse);
5.   To build corporate wide Data Warehousing Data Architecture through the use of modeling techniques;
6.   To ensure that Data Warehousing are developed based on standard methodologies;
7.   To act as the custodian of the Corporate Data Warehouse;
8.   To ensure that data is cleansed and the Data Warehouse becomes a definitive source for information;
9.   To provide a center of expertise in Data Warehousing and Business Intelligence to guide the department in their Data Warehousing initiatives;
10.   To support Data Warehousing Data Administration across the department;
11.   To provide Data Warehousing Standards and Guidelines for Data Warehousing development activities;
12.   To provide Data Warehousing Functional Authority across the department;
13.   To provide Data Warehousing Technical Project Management expertise and guidance to Data Warehousing projects;
14.   To provide Data Warehousing Business Intelligence expertise and guidance to Data Warehousing projects;
15.   To provide Data Warehousing Business Intelligence expertise and guidance to operational / legacy systems that have general, adhoc and multidimensional reporting requirements;
16.   To provide Data Warehousing Extract Transform and Load (Data Cleansing) expertise and guidance to Data Warehousing projects;
17.   To provide Data Warehousing Data Architecture expertise and guidance to Data Warehousing projects;
18.   To provide Data Warehousing Project Management at the corporate level across and within Transport Canada Groups' Data Warehousing projects to ensure: consistency of approach; content; method; and allocation of scarce resources;
19.   To manage the Data Warehousing cleansing activities.

This organization will ensure that:

- Information can be shared;

- Each subsequent iterative Data Warehousing application builds on the last so that as the Data Warehouse evolves it will cost less and less to build the next Business Intelligence application;
- Data is consistent and correct;
- Redundancy is eliminated and;
- Information is available to whoever needs it, when they need it, in the format that they need;
- There is a feedback mechanism to source systems to ensure that the source systems data quality will improve.

Contact Centre / Call Support Centre

Transport Canada's Government On-line Project Office under the Tier 2 Plan approved a feasibility study to assess the current investments in call centre approaches within TC, capture requirements and assess the maturity of technology - all in support of establishing a "single point of contact" Call Center access for both Transport Canada's internal (employee) and external (public) clients.

At the present time, there are a number of Call Centers primarily located in the National Capital region and a number of Help Desks throughout Canada supporting Transport Canada. The vision of having a single point of contact or single access point may in fact include several call centers in different regions. In this case, alignment of processes, technologies and service delivery standards is fundamental to efficient, effective and successful call center operations.

National standardization of policies and procedures across all elements of Call Center functionality, including reporting practices, service levels, hardware and software standards, universal technology specifications, language requirements, organized and universally accessible help desk tools, and centralized diagnostic and software deployment tools is essential to establishing and maintaining client satisfaction levels.

The feasibility study provided the department with a roadmap toward a revitalized Call Support Center environment aimed at providing improved client satisfaction through improved operational efficiencies and standards. It also provided alternative options, strategy and high level implementation plan for the provision of "single point of contact" Call Center access for both Transport Canada's internal and external clients.

Class "D" cost estimates associated with implementation of the recommendation are being finalized.

TCI

It has been over three years since the departmental network requirements were reviewed in the context of Transport Canada's changing business needs.

Current funding requirements include $475K committed previously via the Mid-year Review for capacity upgrades, to meet network commitments for fiscal year 2002/2003. This funding is required on an ongoing basis to meet financial commitments. The remaining funding request is based on the recommendations identified in the TCI Next Generation Report. These initiatives will supply TCI service enhancements to all parts of the TCI, as well as ongoing maintenance, monitoring and optimization for the next 3 years, including the following service solutions listed below:

- Network Performance Improvements – adjust base capacity for remote TCI site access and update infrastructure (hardware and software) to allow Transport Canada to take advantages of the benefits of Quality of Service (QoS) tools;
- Application Performance Improvements – implement management tools, allowing more effective management of applications and data over the TCI infrastructure. [A fast network can only compensate for a slow application to a limited degree; understanding where the application performance bottlenecks lie is the first step towards improving the client's experience.];
- Security Services Improvements – implement additional security services to improve control and use of TCI services; and
- New Access and Backbone Service Offerings – implement new value-added and/or cost-effective service offerings (e.g. Multi-Protocol Label Switching, remote satellite, mobile satellite, terrestrial wireless, etc.)
- These solutions recognize emerging and evolving technology, industry directions, and new and revised service offerings.

Server Relocation

Space, power and cooling within the 14th floor NCR Tower C Network Server Centre (NSC) has been at or near maximum utilization for over one year. In response to the situation, a portion of TC's server infrastructure was relocated to the MacDonald Cartier Data Centre (50 servers, expandable to 200 total servers).The resources requested would complete the move of all servers.

The benefits include :

- Meeting the short term requirements to maintain operational integrity of the department's electronic infrastructure.
- No capital expenditures are required.
- A much shorter turn-around time for availability than the construction of a new facility.
- Opportunity to revisit offsite business resumption, made easier based on having high-speed connectivity between Tower C and the MCDC.
- Opportunity for full relocation of the NSC.

NCR Storage Area Network (SAN) Maintenance

The Technology and Information Management Services Directorate (TIMSD) has implemented local area network (LAN) Service Level Agreements (SLAs) with all of its clients. These SLAs cover all service delivery aspects of the IM/IT infrastructure, including storage and backup management. The SLAs state that responsibility for safeguarding client data belongs to TIMSD. The current automated storage management system has been implemented to ensure that the department's obligations are met.

In 1999 Transport Canada procured an enterprise storage management solution. TIMSD implemented a centralized automated tape storage system that has reduced the requirement for online disk storage, improved data integrity through its lifecycle and provided a disaster recovery capability.

Storage capacity requirements have grown dramatically in the past four years. Transport Canada's total data holding was 700 GB in 1999. That number has more than quadrupled to 3200 GB today. Data holdings will continue to increase. End user files on e-mail servers have necessitated additional physical disk capacities. Implementation of Government-wide initiatives such as Government On-Line and the Records and Document Information Management System (RDIMS) has seen data grow more rapidly than forecasts projected. Enhancements in the past two years have increased storage capacity and improved performance and management of the SAN.

SAN technology is state of the art and complex. Industry partners in computer hardware, software, architecture and engineering must work together in order to maintain such systems. A maintenance contract ensures 7 x 24 support on all aspects of the system. The contractor ensures the coordination of all suppliers to address any SAN problems. Software support also guarantees ongoing access to new software releases, patches and fixes.

Ongoing maintenance represents the least risk to the department in terms of data loss and business resumption planning and is the most cost-effective option to the Crown.

Blackberry Infrastrature Support

Over the past years, Transport Canada has procured Blackberry personal digital assistants (PDAs) for managers requiring immediate access to their electronic mail while out of the office or on travel status. Purchase of the PDA also necessitates the purchase of a service contract from a network service provider.

Transport Canada has approximately 144 Blackberry users today, 23 of whom also subscribe to the US Roaming service. Blackberries are used primarily by TC senior managers and have typically been acquired on a person-by-person basis. Because services must be purchased on a yearly cycle, there are scores of service contract renewal dates across the department. The Technology and Information Management Services Directorate (TIMSD) has endeavoured to simplify the administration of these contracts

by centralizing procurement and contracting service renewals on behalf of the department.

Current service costs are $576 per user for basic e-mail per year and $360 per user for US Roaming per year.

Note:

The next generation of Blackberries (available today but not yet in use at TC) will offer increased functionality such as integrated cell phones and Internet browsing capabilities. These new features may result in changes to the current costing model (from fixed per month to per use) to allow for more granular option packages. These new devices may allow users to consolidate numerous devices into one however, a richer suite of functionality and pay per use service contracts may result in higher overall costs and necessitate additional ongoing funding from the department.

Consolidated procurement of ongoing services ensures a seamless service for managers (presently, all devices have different start and end dates for services) and relieves the administrative burden of managing individual contracts. It also ensures that IT/IM standards are followed, interoperability of hardware, an enterprise view of departmental expenditures and negotiation of service contracts based on volumes, which provide the best value to the Crown.

The requested funds would allow corporate management of the Blackberry Service contracts for all Transport Canada users.

Content Management Maintenance

During late FY2001_02 TIMSD acquired, with the use of GOL funding, a web site content management solution for use with both its Internet and Intranet web sites. While the actual software license acquisition cost and, initial maintenance and support was funded out of that fiscal year, option year one funding for the software product license maintenance and support (which takes effect on April 1, 2003) is required for FY2003_04 and beyond.

While on-going O&M funding requirements were clearly identified in the original PAD, no allocation of such funds was ever provided to TIMSD. Since this project has been executed and TIMSD does not have the capacity to absorb these on-going costs, funds are being requested to obtain the required funding to acquire option year one of the license maintenance and support for the software product.

Virtual Library Maintenance

Phase I of the Virtual Library was completed by June 21st 2002 and was subsequently launched. In Phase 2 the plan is to roll out training across the country to all TC interested employees. There is also a plan to build the External Virtual Library for the Canadian public in cooperation with other transportation agencies in Canada.

The Library spent 50K in fiscal year 1999-2000 for Internet Research Services. 100K was spent this fiscal year to upgrade all the licenses to include all employees across the country. Currently some of the Groups buy and license electronic products for their own use. These products are available on the Virtual Library page, where appropriate, to all TC employees. In the future, as new or better electronic products become available, they could be added to the Virtual Library web site. Groups could continue to pay or cost share with the Library if they are the prime user of the product. The library will maintain links, upgrades, usage statistics, selection and review of these services and CDROMs as well as handling payment and licensing activities.

An important part of the Virtual Library is the CD-ROM Solution pilot which ran from April 22, 2002, to June 14, 2002, and included both NCR and regional pilot users. The pilot was quite successful and is currently moving to production at this time by initially converting 200 CD ROM titles to the consolidated solution. These will be shared on the TCI though the Intranet for use by all TC employees. These CD ROM titles would be taken from existing production CD-ROM servers in Transport Canada. As a result of the consolidation, existing CD-ROM servers could be decommissioned. However there are some resulting ongoing costs associated with this solution.

The Headquarters Library, in partnership with the TC Regional and Program libraries, other TC information holdings and information stakeholders, manage the department's integration, delivery and distribution of external information since the move to electronic library services or the Virtual Library was launched. This Virtual Library is a web based site which allows information self-service by providing desktop access to library resources such as electronic journals, networked CDROMs, digitized collections, online databases, research portals and access to other library collections.

The requested funds would allow for the continued operation of the Virtual Library.

Infrastructure Renewal

Following a TMX decision in June 2000 that the IM/IT organization must "strengthen its functional management role" and "ensure that the department's significant investment in information technology remains prudent", Technology and Information Management Services Directorate (TIMSD), on behalf of all TC Regions, sought and received approval for a long-term strategic and cost effective approach to managing departmental IM/IT infrastructure requirements (i.e. server and network component replacements and upgrades).

In developing the approach, TIMSD addressed three key TC IM/IT requirements:

- Increasing server performance/capacity demands in support of the evolving TC office environment and TC application growth requirements.
- Server consolidation so that processing capability could be provided more cost effectively while maintaining or enhancing service levels.

- A hardware support/replacement approach that would control rapidly escalating support costs for the aging TC technical infrastructure, while at the same time ensure the delivery of required service levels to TC clients on an ongoing basis by maximizing the availability/reliability of TC servers.

In consultation with IM/IT groups in all regions, TIMSD researched industry best practices in relation to the TC IM/IT environment and developed a national life cycle replacement strategy as the basis for future server replacements. This involved the automatic replacement of servers on a 3-year life cycle basis, thus ensuring technology currency while taking maximum advantage of hardware warranty periods to minimise support costs. The plans were reviewed and fully supported by the Regional Directors, Finance and Administration. The approach was approved and implemented for 2001/2 and 2002/3, will continue for 2003/4, and has provided a basic foundation in terms of technology currency and capacity for major projects such as GOL (eg: Marine Portal), Records Documents and Information Management System (RDIMS) and Window/Office 2000 all of which are now either completed or in advanced stages.

The automatic replacement of a portion of the infrastructure on an annual basis (as components reach the end of their life cycle from an economic and technology perspective) is inherent in the approach and must therefore be funded on an ongoing basis.

Managed Print Services

The print migration pilot was successfully implemented in January 2002 and in response to the overwhelming feedback received from the user satisfaction survey, it was decided to continue with the multi functional devices until March 31st, 2003. During the pilot, an assessment was conducted to measure projected costs versus cost savings to be gained by using the multi functional devices. The findings indicated that the multi functional devices do indeed save money over traditional printing / photocopying.

Voice & Video Integration

Technology has evolved to allow the integration of teplhone services and video services on a personal computer. This integration facilitates the consolidation of information from different sources / medium and delivery through an employee's computer. Answering a phone and participating in a videoconference or e-learning event through an employee's computer has cost and time saving potential

Further discussion is required to determine the level of investment required in these areas.

Business Applications

Business application development accounts for a substancial IM/IT investment (software, hardware, professional services, training, maintenance, support) . The development activities are business driven and costs are determined based on requirements.

Further discussion is required to determine the level of investment required in these areas.

Inspection Tools

Tools for inspectors (software, hardware, solutions) are business driven and costs are determined based onrequirements. The mobile nature of the work performed in support of inspections will drive incorporation of mobile computing devices and secure wireless capabilities into the existing TC IM/IT environment and will pose challenges with regards to support .

Further discussion is required to determine the level of investment required in these areas.

Information Management Tools

Tools ar required by employees that would allow improved management of all aspects of information – from creation and access to classification and storage.

Further discussion is required to determine the level of investment required in these areas.

Internal Employee Portal

An employee portal will allow the integration of information from varioujs internal and external sources in a way that is personalized based on TC employee needs.

Further discussion is required to determine the level of investment required in these areas.

Application Development Tools

Common application development tools are required to ensure consistentcy in the way applications are designed and developed throughout the department.

Further discussion is required to determine the level of investment required in these areas.

GOL Key Services

The departments' re-focused GOL direction will drive investments in externally based on-line services. These investments will be assessed, prioritized and funded based on agreed upon criteria which will link to departmental priorities and Governmentof Canada commitments.

Further discussion is required to determine the level of investment required in these areas.