



CITY OF VANCOUVER

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ADMINISTRATIVE REPORT

Report Date: April 8, 2008
Author: Kevin Bowers
Phone No.: 604.873.7964
RTS No.: 07250
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TO: Vancouver City Council

FROM: General Manager of Business Planning and Services

SUBJECT: Information Technology Infrastructure - 2008 Expansion and Replacement Program

RECOMMENDATION

THAT Council approve the 2008 Information Technology Infrastructure Expansion and Replacement Program, as described in this report, at a cost of \$4,046,000; source of funding to be the Information Technology Long Term Financing Plan.

CITY MANAGER'S COMMENTS

The City's delivery of its services is increasingly dependent on its information systems and supporting information technology infrastructure. This funding request supports an ongoing program established in 1997 to ensure that this infrastructure is adequately managed to meet the City's business requirements. The scope of this program includes the managed replacement of information technology, both hardware and supporting software, used by all City departments and associated boards, including the Park Board, Vancouver Police Department (VPD) and Vancouver Public Library (VPL). The recommendations in this report have been approved by the Technical Advisory Committee (TAC) and Business Advisory Committee (BAC) which represent all City staff and major Boards.

The City Manager therefore RECOMMENDS approval of the foregoing.

COUNCIL POLICY

It has been Council policy since 1994 that information technology infrastructure be actively managed on a long term basis that reflects a life-cycle replacement strategy to ensure that the business needs of the City in providing public service can be met. Funding for this program is provided as part of the annual Operating Budget and is allocated to specific projects by Council in periodic program reports.

Since 1997, Council has approved seven major and two minor "Information Technology Infrastructure Expansion and Replacement" programs, the last of which was approved in April 17, 2007.

PURPOSE

This report seeks approval for the life-cycle replacement of obsolete information technology infrastructure and for several expansions of existing infrastructure needed to maintain or improve service levels in a number of areas throughout the City organization.

BACKGROUND

The City's information assets and communications resources are managed and made accessible through a complex IT infrastructure that consists broadly of:

- "Front-end" devices - desktop and laptop computers, handheld devices like Personal Digital Assistants (PDAs), and telephones;
- "Back-end" systems - data storage, application servers and telephone switches, and
- A communications network that connects the two and permits information retrieval by, and communication between, both staff and public.

These infrastructure components have limited lives, typically of 3-5 years, after which they become either physically or functionally obsolete.

In 1997, Council created the Information Technology Long Term Financing Plan to ensure that this basic infrastructure could be maintained and replaced on a life-cycle basis. This plan is funded from an annual allocation in the Operating Budget.

Typically, through advances in technology, obsolete equipment is replaced with equipment that has a higher capacity and increased functionality - hence the description "expansion and replacement". This process also serves to accommodate the increasing demands that the City, like other comparable organizations, places on its IT infrastructure.

This year's program does not include funding for replacement of front-end devices. The 2007 information technology infrastructure expansion and replacement program funded the replacement of desktop and laptop computers through 2008, and on April 1st, 2008 Council awarded the contract for this replacement program (RTS 07212).

DISCUSSION

The 2008 program presented in this report consists of 7 sub-programs:

	Sub-Program	Description	Capital Cost (000's)	Operating Cost (000's)
1	Server Replacements	Replace obsolete servers at the City and VPL	\$740	
2	Storage and Backup expansion and renewal	Accommodate growth in managed data	\$1,010	
3	Network Infrastructure renewal	Replace obsolete network equipment and enhance security	\$1,271	
4	Fibre Network expansion	Expand the City's fibre network to more remote City worksites	\$150	\$(62)
5	Website Renewal Project - phase 2	Reorganize website content and improve search tools	\$275	
6	Application renewal	Upgrade applications to meet current programming standards	\$400	
7	VPL Office upgrade	Upgrade VPL computers with current version of Microsoft Office	\$200	
	TOTAL		\$4,046	\$(62)

A brief description of each of these programs, identifying the business drivers and presenting an overview of the proposed technology implementation and the anticipated benefits, follows:

1. Server Replacements (\$740,000):

The City manages around 250 servers, about 150 of which fall into the category of infrastructure servers. With a lifecycle that is not standardised but is between 3 and 5 years, depending on function, 30 - 40 need replacing annually, with associated costs including data centre upgrades that are almost exclusively hardware-related. \$170,000 of this funding will be allocated for City server replacements, \$50,000 for VPL server replacements, and \$520,000 to replace SAP servers.

The City (including VPL and VPD) is implementing server virtualization technology which allows multiple servers to run on one physical server. In addition to saving costs this technology reduces server power and cooling requirements which helps the City meet its sustainability goals.

2. Storage and Backup expansion and renewal (\$1,010,000):

Three of the City's seven Storage Area Networks (SANs) have reached end of life and need to be replaced. \$553,000 will be used to replace these SANs and to increase storage space by 50% to meet the growing demand of storage.

Part of the City's backup system has reached end of life and need to be replaced. \$457,000 will be used to replace this equipment and to add additional capacity to accommodate the growth of managed data.

3. Network Infrastructure renewal (\$1,271,000):

Much of the network hardware used to connect City computers and systems (switches, routers, and firewalls) has reached end of life and some of the network cabling does not meet current data standards. \$720,000 will be used for replacing this network hardware and upgrading cabling.

Some of the VPD's network hardware is due for replacement. This presents an opportunity for the VPD to adopt the City's network hardware standards. Moving the VPD to the same network hardware platform used in the City will avoid inter-vendor connectivity issues, enhance network security, and offer the potential for greater purchase discounts. \$451,000 will be used to replace VPD network hardware and provide training to staff.

The renewal of the City and VPD networks and the move to a common network hardware platform will provide a sound foundation for the implementation of the new VOIP phone system that will run on these networks. In a November 2006 report to Council on the VOIP project, it identified \$1M to be provided from the Information Technology Long Term Financing Plan. \$500,000 of this funding was allocated in the November 2007 VOIP report to Council and the remaining \$500,000 is included as part of the total funding requested in this report for Network Infrastructure renewal.

The VPL needs to provide remote access to their network for their staff. To achieve this they need to implement a VPN (Virtual Private Network) system to allow secure access. \$50,000 will be used for implementing this system.

The VPL provides wireless Internet access to VPL patrons in all their branches. The system includes a security feature that will disconnect patron's laptops if they pose a security risk. The current system does not provide clients with information on why they have been disconnected. This leads to frustration for the patrons and many questions for staff. The VPL will enhance the system so it will provide an automated message telling the patron why their access has been cut off and what they can do to correct the problem. \$50,000 will be used for implementing this enhancement.

4. Fibre Network expansion (\$150,000):

This will fund the further expansion of the City's fibre network to an additional 26 City worksites including 9 Park Board locations, 8 Fire Halls, 8 library branches, and one Vancouver Police site. This will provide higher speed connections to these sites and will result in an annual savings of \$62,000 in telecommunication lease costs.

5. Website Renewal Project - Phase 2 (\$275,000):

In the 2007 IT Infrastructure program Council approved the first phase of the website renewal project which focused on updating key pieces of information on the site, and also implementing web publishing tools and procedures, as well as training, in order to improve the quality of information on the site, and the quality of future information on the website.

This second phase will build on this work with further enhancements to the website including re-organizing content and implementing new search tools in order to reduce search times and improve information retrieval for the staff and public. The goal is to provide an enhanced website that will work in concert with the Access Vancouver 311 and Electronic Records Document Management System (VanDocs) programs.

6. Application renewal (\$400,000):

This sub-program has three components:

i) Application development tools and standards (\$150,000)

As application development practices evolve, new standards and approaches emerge that can be applied to the City environment, improving upon our development activities in system integration, data sharing, and re-usability of software code. This funding would be used to develop and implement these standards and upgrade our application development tools to current versions.

ii) Electronic forms architecture project (\$100,000)

Forms are integral to the operation of the City. As the City continues to move from paper forms to electronic forms for both staff and public use, issues like security, ease of form development, and integration with the corporate document management system (VanDocs), become increasingly important. This funding would be used to review requirements, research and acquire new form development tools, and enhance the security of the most critical web forms by rewriting them using the new tools.

iii) Rewrite corporate web applications (\$150,000)

Many of the City's key web applications are written in development languages that are no longer supported (Visual Basic) or becoming obsolete (ColdFusion). Some examples are Quickfind, Report Tracking System (RTS), ePayments, FitCity, Employee Booking systems). This funding would be used to rewrite these applications using current standard development tools.

7. VPL Office upgrade (\$200,000):

The VPL is currently using an older version of Microsoft Office that will not be supported by Microsoft after June of 2009. This funding will allow the VPL to upgrade their Microsoft Office licenses to current versions. In addition to allowing for continued support, this upgrade will facilitate document sharing between the VPL and the City.

FINANCIAL IMPLICATIONS

Funding for the initiatives described in this report totals \$4.046 million. Funding for this program is available in the Information Technology Long Term Financing Plan. There will be a reduction in operating costs of \$62,000 associated with this program starting in 2009 through the reduction of telecommunication lease costs.

CONCLUSION

The City is increasingly dependent on its electronically-stored information and associated delivery systems. These systems demand a technology infrastructure that extends to all parts of the organization, is fast, dependable and robust. The City must also protect itself and the public it represents against loss of data and interruptions in service, both of which risks can be mitigated. Finally, it has a duty to make reasonable efforts to ensure that in the event of a disaster, it is equipped with the information and communication resources that would be needed to quickly adopt the leadership and supportiveness that its public would expect of it.

The recommendations of this report attempt to address these goals.

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