

Supports Item No. 2
CS&B Committee Agenda
May 21, 2009



ADMINISTRATIVE REPORT

Report Date: April 8, 2009
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Meeting Date: May 21, 2009

TO: Standing Committee on City Services and Budgets

FROM: General Manager of Business Planning & Services

SUBJECT: Information Technology Infrastructure - 2009 Expansion and Replacement Program

RECOMMENDATION

- A. *THAT Council approve the 2009 Information Technology Infrastructure Expansion and Replacement Program, as described in this report, at a cost of \$5,300,000; source of funding to be the Information Technology Long Term Financing Plan.*
- B. *THAT Council approve an increase to the Information Technology Operating Budget, without offset and subject to annual Budget Review, of \$101,000 beginning in 2010, \$108,000 in 2011 and \$159,000 in 2012 and thereafter for additional annual operating costs.*

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.

Since 1997, Council has approved eight major and two minor "Information Technology Infrastructure Expansion and Replacement" programs, the last of which was approved on April 29, 2008.

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 existing service levels or meet new business demand 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, and telephones;
- "Back-end" systems - data storage, application and database servers , 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 and transfer from 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.

DISCUSSION

The 2009 program presented in this report consists of 4 sub-programs:

	Sub-Program	Description	Capital Cost (000's)
1	Server Replacements	Replace obsolete servers at the City and Vancouver Public Library	\$745
2	Storage and Backup expansion and renewal	Accommodate growth in managed data	\$1,146
3	Security Enhancements	Upgrade systems and infrastructure to enhance security of City data and computer systems	\$832
4	Data Centres expansion and upgrade	Expand one of the City's data centres and upgrade another and upgrade VPL data closets	\$2,577
	TOTAL		\$5,300

A brief description of each of these programs follows:

1. Server Replacements (\$745,000):

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, 40 need replacing annually, with associated costs including data centre upgrades that are almost exclusively hardware-related. \$418,000 of this funding will be allocated for City server replacements, \$72,000 for VPL server replacements, and \$255,000 to replace GIS (Geographic Information System) servers.

As part of this program, the City is expanding its use of server virtualization technology which allows multiple servers to run on one physical server. This technology provides efficiencies in the management of servers, and reduces server power and cooling requirements which helps the City meet its sustainability goals.

2. Storage and Backup expansion and renewal (\$1,146,000):

One of the City's Storage Area Networks (SANs) has reached end of life and needs to be replaced. \$419,000 will be used to replace this SAN and to increase storage space by 10TB (10 billion characters) to meet the growing demand for storage.

The VPD's primary SAN has reached end of life and needs to be replaced. \$462,000 will be used to replace this SAN and provide additional storage for growth. There will be operating costs of \$27,000 required starting in 2012 for hardware support of this SAN.

The City's backup system software and some of the backup hardware has reached end of life. \$265,000 will be used to upgrade the software, replace the backup hardware, and to add additional capacity of 22TB to accommodate the growth of managed data.

3. Security Enhancements (\$832,000):

The City continually reviews its computer systems to ensure they are secure and that the City's data is secure. Security reviews and audits have identified several areas where City computer systems security should be enhanced to meet known and evolving security risks.

Four projects have been launched to improve security. \$400,000 will be used for a project to enhance the City's Internet connection speed and reliability, improve protection from Internet attacks, and enhance the ability to monitor and log security events. There will be operating costs of \$67,000 required in 2010, \$74,000 in 2011 and \$87,000 for 2012 and subsequent years for hardware support and Internet connection costs associated with this project.

\$140,000 will be used for a project to improve security of public and internal web applications.

\$214,000 will be used to enhance the security of data storage for the VPD. There will be operating costs of \$34,000 required in 2010 and subsequent years for software support costs associated with this project.

\$78,000 will be used to enhance the ability for VPD staff to access data securely from remote locations. There will be operating costs of \$11,000 required in 2012 and subsequent years for software support costs associated with this project.

4. Data Centres (\$2,577,000):

The City maintains three data centres. The main data centre is at E-Comm and the City's core computer systems are located there. To provide for redundancy and business continuity in the event that the E-Comm data centre suffered a failure, the City maintains two secondary data centres.

The City's primary data centre at E-Comm will be reaching capacity in 2011. The City is in the process of negotiating to lease two 440 square foot rooms from E-Comm to provide 880 square feet of space for data centre expansion. \$2,300,000 will be used to put in the backup power systems, fire suppression systems, and cooling systems required for both rooms, and fully provision one of the rooms with server racks. The second room will be prepared to accommodate future expansion, but not fully provisioned with racks for servers until the space is required.

The air conditioning system in the City's secondary data centre at City Hall is at end of life. \$213,000 will be used to replace the air conditioning system and purchase additional server racks for expansion.

Many of the Vancouver Public Library branch library data closets do not meet current standards for wiring and security. \$64,000 will be used to upgrade the data closets at eight VPL branches. The data closets at the remaining VPL branches will be upgraded in 2010 as part of the 2010 IT Infrastructure Plan.

FINANCIAL IMPLICATIONS

Funding for this program is provided by an annual transfer from the Operating Budget to the Information Technology Long Term Financing Plan (Capital Fund) and allocated to specific projects by Council in periodic program reports.

Funding for the initiatives described in this report totals \$5.3 million. Operating budgets will need to be increased as follows to accommodate this program.

	Sub-Program	Capital Costs (000's)	Additional Operating Costs (000's)				
			2010	2011	2012	2013	2014
1	Server Replacements	\$745	\$0	\$0	\$0	\$0	\$0
2	Storage and Backup expansion and renewal	\$1,146	\$0	\$0	\$27	\$27	\$27
3	Security Enhancements	\$832	\$101	\$108	\$132	\$132	\$132
4	Data Centres expansion and upgrade	\$2,577	\$0	\$0	\$0	\$0	\$0
	TOTAL	\$5,300	\$101	\$108	\$159	\$159	\$159

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 by taking a proactive approach to technology replacement. 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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