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POLICE 911 TELECOMMUNICATION SERVICES

The e-Government Sub-Committee recommends:

1. the presentation by Bruce Dotzenroth, Manager, ITS Project Management, be received; and
2. the adoption of the recommendations contained in the following report, May 16, 2005, from the Commissioner of Finance:

1. RECOMMENDATIONS

It is recommended that:

1. The York Region 911 telecommunication services and equipment be on a dedicated infrastructure that is physically separated from the existing York Region telecommunication infrastructure.
2. Council approve a one time expenditure of $410,100 (plus taxes) for acquisition and implementation of the dedicated 911 telecommunication equipment and an annual expenditure of $25,000 (plus taxes) for maintenance for a dedicated 911 telecommunication service.
3. That an additional one time cost of $135,100 be reallocated from the 2005 IT Initiatives budget.

2. PURPOSE

The purpose of this report is to seek Council approval for the implementation of dedicated 911 telecommunication services, separate from the current combined York Regional Police, 911 and York Region telecommunications.

3. BACKGROUND

In July of 2004, Bell Canada was awarded the contract from the RFP P-04-51 – Supply, Implement and Maintain Telephone Systems for York Region and York Regional Police.

Across the Province of Ontario, Bell Canada provides a telephone network for a Public Emergency Reporting System (PERS) commonly known as 911. Emergency calls are routed to Regional Public Safety Answering Points (PSAPs). York Regional Police (YRP) operate one such PSAP from the Police Communications Centre at the York Region Administration Centre Police Headquarters. The local 911 telecommunications lines and equipment for this PSAP are provided and operated by the Region's Information Technology Services branch and Bell Canada. A queue of 911 calls is

maintained and statistics on 911 calls are gathered by the existing telecommunications equipment. Statistics must be submitted to the Federal Government on a regular basis.

The telecommunications architecture at the Administration Centre is based on York Region and York Regional Police sharing one large telephone switch (PBX) and other telecommunications equipment. At the Administrative Centre, the existing Nortel Meridian Option 81c PBX handles telephone calls to Regional staff, Regional call centres, York Regional Police officers, Police civilian staff, Police call centres and the York Regional Police Communications Centre for 911 emergency calls.

In addition to managing calls, the PBX uses a Nortel product, "Meridian MAX" (version 9), for collecting and reporting call statistics. MAX also maintains a queue for 911 calls. A red strobe light in the Police Communications Centre is activated by MAX when there is a 911 caller waiting in the queue. PBX backup for 911 calls to the Administration Centre site is provided by a Nortel Meridian Option 11 PBX at the Administration Centre. A shared Nortel Meridian Option 61 PBX at the alternate or disaster recovery 911 site located at South Services Centre (SSC) handles all 911 calls during an evacuation of the Administration Centre.

Nortel had announced that Meridian MAX is at the "end of life" (i.e. not supported) as of March 2004.

In November 2002, a project was started to move the telephone call statistics gathering and other MAX functions from the PBX, to a Nortel Symposium call centre server residing on the York Region network. The project successfully moved the York Region and York Regional Police non-emergency and call centres statistics processing to Symposium. The portion of the project that was unsuccessful was moving York Regional Police Communication Center MAX functions to Symposium.

York Regional Police continue to process their 911 call statistics and receive notification of 911 callers waiting in the queue, using the unsupported MAX product. As a result, there is a risk to York Region 911 service should the MAX equipment fail. York Regional Police rely on MAX to notify call takers that there is a 911 call waiting to be answered. There is growing risk to the York Region 911 service as the MAX equipment ages. Police staff have made attempts to acquire spare components for MAX but to date have been unsuccessful.

4. ANALYSIS AND OPTIONS

4.1 Present Environment

The Region, York Regional Police and 911 telephone calls, at the Administration Centre are handled by a shared PBX. However, the Region and York Regional Police maintain individual and unique data networks separated between two firewalls (security protection

equipment). The firewalls prevent the York Regional Police from accessing call queues and call statistics for 911 that resides on the Region network. Therefore the York Regional Police are continuing to use the unsupported MAX product for this functionality. At present the Region is at risk with unsupported MAX technology in the 911 infrastructure.

4.2 Move to a Supported Technology using Current Infrastructure

Bell Canada's supported replacement technology for MAX is a solution called Symposium that requires connection to and communication with both the voice and data networks to function properly.

All attempts to move York Regional Police 911 telecommunication to Symposium on York Region's voice and data network infrastructure have been unsuccessful because of many technical issues including firewalls.

4.3 Municipalities Best Practices

The surrounding Regions in the GTA currently have separate voice and data infrastructures for the Region and their respective Police. These Regions are also considering separating the Regional Police telecommunications from their 911 services. York Regional Police staff believes that the Region needs to move to a separate infrastructure.

The Converged Network report prepared by York Region staff recommends that the Region move to a separate Voice over Internet Protocol (VoIP) telephone infrastructure.

As part of moving to Municipal best practices, staff recommends that the Region separate 911 telephone services from the existing telecommunication infrastructure now.

Creating a dedicated telecommunication infrastructure for York Region 911 service will:

- Resolve the Region's current risk with unsupported technology in the 911 infrastructure
- Increase reliability and availability
- Improve 911 backup site functionality
- Simplify York Regional Police Communication workstation configurations
- Minimize the move, add and changes on the York Regional Police Communication telecommunications infrastructure
- Position both York Region and York Regional Police to move voice networks to two separate and secured converged VoIP data networks

The design solution recommended involves a new dedicated York Region 911 Nortel Meridian Option 61 PBX and Symposium servers at the Administration

Center/Headquarters using the existing Option 11 PBX as backup, supplemented with the existing disaster recovery or alternate Nortel Meridian Option 61 PBX at SSC.

Further design changes to the York Regional Police telecommunication infrastructure would be required once the Region moves to a converged network. A tentative design solution recommends York Regional Police taking ownership of the existing Nortel Meridian Option 81c PBX at the Administration Center/Headquarters for Police staff, disaster recovery Nortel Meridian Option 61 PBX at SSC for 911 and an Option 11 PBX as a backup for this disaster recovery site for 911.

	911	**911 - SSC**
Today	• Shared PBX (Region, non-emergency Police & 911) • Backup 911 PBX • MAX for queuing and statistics	• Shared PBX for Region & 911 disaster recovery
Recommended 911 Solution	• Dedicated 911 PBX (new) • Existing backup 911 PBX • Symposium for queuing and statistics (2 new servers)	• Same as above
Recommended configuration following implementation of Converged Network *	• Same as Recommended 911 Solution above	• Dedicated 911 PBX for disaster recovery (redeployed surplus Region equipment) • Backup 911 PBX for disaster recovery (redeployed surplus Region equipment) • Symposium (2 new servers)

* The existing Region PBX equipment would become available for this option when the Region moves to VoIP.

5. FINANCIAL IMPLICATIONS

York Region is responsible for 911 and York Regional Police are responsible for the operation of 911.

911	One Time Costs	Annual Costs	5 Year Costs
Existing	-	Minimal	Minimal
Lease	$120,000 (Professional Services)	$70,000 (Hardware & Software) $25,000 (Maintenance) $95,000	$651,228 *
Purchase	$120,000 (Professional Services) $290,100 (Hardware & Software) $410,100	$25,000 (Maintenance)	$510,100

* First year maintenance is free, buy out of the leased equipment is 28% of original costs and in 5 years equipment is worth 10% of original costs.

It is recommended that the Region incur a one time purchase of $410,100 (plus taxes) with an additional annual maintenance cost of $25,000 (plus taxes) for the acquisition of dedicated 911 telecommunication services and equipment. The 2005 IT Initiatives budget provides $275,000. The original budget provided for leased equipment, but the long-term useage anticipated for this equipment shows a business case which favours purchase. It is recommended that $135,000 be reallocated from projects within the 2005 IT Initiatives budget.

York Regional Police currently budget for all Police voice communication lines and will have an additional annual cost of $34,500 for telephone lines connected to the new 911 telecommunication infrastructure.

6. LOCAL MUNICIPAL IMPACT

There is no municipal impact resulting from the implementation of the recommendations contained in this report.

7. CONCLUSION

Implementing the recommendations will ensure supported technology, improved reliability and enhanced availability of the York Region 911 telecommunication infrastructure. The recommendations are aligned with the strategic directions of York Region and York Regional Police to converge voice and data onto existing data networks and create two separate and secured corporate networks.

The Communication and IT Services units of York Regional Police have reviewed this report.

The Senior Management Group has reviewed this report.