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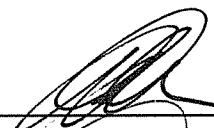


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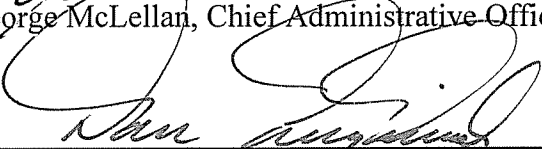
Halifax Regional Council
April 26th, 2005

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY:



 George McLellan, Chief Administrative Officer



 Dan English, Deputy Chief Administrative Officer

DATE: April 20th, 2005

SUBJECT: HRM Public Sector Partnership - Dartmouth Fiber Optic Network

ORIGIN

Staff

RECOMMENDATION

It is recommended that:

1. HRM Regional Council authorize the Mayor and Municipal Clerk to enter into a formal ownership / service agreement with Internetworking Atlantic and InNOVAcorp as per the key terms and conditions outlined in the body of this staff report.

2. HRM Regional Council authorize the expenditure of \$161,350 including net HST from capital account CID00748, for the purpose of building a Fiber Optic Network, with funding authorized per the Budget Implications section of this report.

BACKGROUND

HRM staff have been examining trends in municipal government toward municipally owned data networks using fiber optics. An opportunity has arisen for HRM to participate in a joint project with Nova Scotia Community College, InNOVAcorp, and Internetworking Atlantic Inc. to provide fiber optic network services linking City Hall, Duke Tower, Halifax Regional Police (HRP), Alderney Gate and Eric Spicer buildings, in addition to the new NSCC Campus and InNOVAcorp's Research Drive facilities in Dartmouth. This project will provide high speed data services to HRM and its public sector partners and will reduce current and future operating costs.

In 2002, HRM took the first step toward high speed networking using fiber optics to support internal operations. HRM obtained a four year Indefeasible Right of Use (IRU) for four strands of a new fiber optic network built by Dixon Networks (the "metro ring"), in consideration for waiving encroachment fees. These fibers provide data services from the Duke Tower data center to City Hall and HRP; the full network ring covers most of south end Halifax. Since 2002, the savings to HRM have been approximately \$26,000 in data line leasing charges annually.

In the fall of 2003, HRM was contacted by Canarie Inc., a non-profit agency funded by Industry Canada, to participate in a request for information (RFI) to extend the existing metro ring to Dartmouth. The Canarie RFI process did not conclude with an agreement among the stakeholders. The metro ring was subsequently purchased by Dalhousie University in fall 2004, and Dalhousie has agreed to provide HRM a twenty year IRU without charge on the existing four strands as a condition of sale.

HRM was subsequently contacted by InNOVAcorp to resurrect the Canarie project with a subset of the original partners who were seen as having the interest, funds and commitment to see the project through to completion. HRM has met with InNOVAcorp and NSCC to discuss the requirements of each party, identify routes and potential connection points, and the determination was that our collective requirements could be met with a smaller, more focussed network build. These agencies collectively engaged Internetworking Atlantic Inc., by virtue of their being the only complete response to the Canarie RFI, to conduct a detailed engineering study and propose a funding and operating model. The results of the engineering study detailing attachment points and preliminary routes were presented back to the staff during summer 2004.

DISCUSSION

HRM has invested in storage area network technology and backup systems which support SAP, HANSEN, Geographic Information Systems (GIS) and other corporate applications. As these applications become more widely used (particularly GIS) the requirement for high speed networks increases exponentially. Also, through consolidation of equipment there is the opportunity to reduce

leasing costs, as was the case when the high speed link was installed in City Hall. This fiber optic network will meet these needs.

A fiber link to the Eric Spicer Building would facilitate an on-line disaster recovery (DR) data centre, which furthers HRM's current efforts to improve redundancy and fault tolerance in our systems. In the event of a major system or building failure at the Duke Tower data center, the DR center would take over, effectively eliminating down time.

The introduction of CAD/RMS into the production system scheduled for spring 2005 will require a reliable and secure data connection. Fiber optic cable is impossible to tap into, providing the highest level of security possible. The CAD implementation is more bandwidth intensive than existing systems due to the mapping and graphical representations. This build would avoid the long term costs associated with increasing the bandwidth to Police Headquarters.

Fiber optic networks make possible other data and telecommunications services, such as packet radio, cellular, analog and digital voice traffic (including voice over IP), wireless connections, surveillance cameras, traffic light control and other applications. Investment in this technology will become a critical component of HRM's long term telecommunications strategy.

The proposed route for this network is attached as Appendix A. Finalization of the route will take into consideration the pole free zone, opportunities for undergrounding in existing and planned ducts, opportunities to underground during scheduled street openings and potential future connection points. It is not anticipated that street cuts will be required to build this network, as the majority of the cable will be aerial.

There is the potential for this network to enhance economic development in Downtown Dartmouth. Excess capacity is being built in to be resold to other users, reducing total cost of ownership. HRM has agreed not to actively market its capacity for a period of five years or until Internetworking Atlantic's portion is at capacity, the HRM strands may however be freely used to connect any agency HRM has a relationship with that requires data services. A high speed, low cost data network linking educational, government and private sector concerns could be viewed as the "third bridge" connecting Halifax and Dartmouth.

BUDGET IMPLICATIONS

HRM has adopted the risk averse approach of securing an ownership position in this project in consideration of an up front investment, versus a fee for service arrangement. This model allows HRM greater flexibility in future usage which may provide advantage to HRM. The proposed ownership / service agreement with Internetworking Atlantic is a shared ownership model of 49.5% HRM, 49.5% Internetworking Atlantic and 1% InNOVAcorp. HRM would maintain exclusive use of 72 strands of the 144 strand cable for HRM purposes. HRM's investment would be protected

through security agreements which specify in the case of bankruptcy or abandonment of the cable by another partner, ownership would automatically transfer to HRM. As well, it is proposed that HRM would have a first right of refusal in the case of a sale of Internetworking Atlantic at a price to be determined before execution of this agreement.

The total cost to construct this network is \$336,000, exclusive of taxes. HRM's capital cost is \$156,000, giving HRM 50% of the total capacity for 46.5% of the total project cost. HRM's liability for maintenance is set to a maximum of \$15,500 annually, based on the actual costs incurred for network operation.

HRM currently spends \$39,360 annually for data connections to Alderney Gate and Eric Spicer buildings from the Information Technology operating budget. When reductions in equipment leasing and cost avoidance are factored in, the investment has a very positive net present value.

Funding for this purchase is available in the Approved 2005/06 Capital Budget from Capital Account No. CID00748, Fiber Optic Network. The budget availability has been confirmed by Financial Services.

Budget Summary:	<u>Capital Account No. CID00748, Fiber Optic Network</u>	
	Cumulative Unspent Budget	\$200,000
	Less: Proposed Expenditure (taxes included)	\$161,350
		\$ 38,650

FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation. This project supports the Shared Services Business Plan objective of "Best Use of Technology" and forwards the Excellence in Governance scorecard outcomes of "*HRM is positioned to act on leverage opportunities*" and "*Efficiency in Integrated Service Delivery*".

REGIONAL PLANNING IMPLICATIONS

There are no known regional planning implications for this project.

ALTERNATIVES

1. HRM could build a network to provide the same functionality without a partner, at significantly greater cost to HRM, estimated at \$250,000. The timeline would be significantly impacted as attachment make-ready arrangements would have to be negotiated with pole owners. Without the participation of HRM as a key stakeholder in this project, NSCC and InNOVAcorp will likely withdraw from the project.
2. HRM could also continue to lease data services. This alternative would require further investment in technology for both Alderney Gate and Eric Spicer to duplicate services already available in the HRM data centre, due to the need for high speed access to these systems.

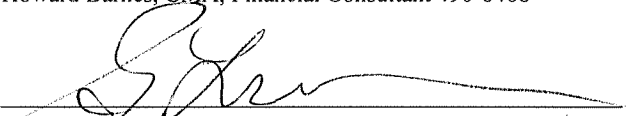
ATTACHMENTS

Appendix A

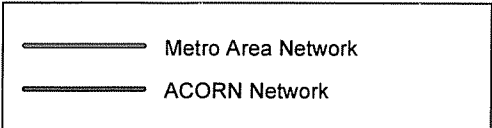
Additional copies of this report, and information on its status, can be obtained by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

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Title Metro Area Network Route Plan		100-029-026 Revisions		Internetworking Atlantic Inc. Internetworking - Telecommunications - Computer Engineering (902) 421 6021 info@internetworking-atlantic.com
		1	12/6/04	
DWG		JGW		Metro Area Fibre-Optic Network
VER		BCM		
REL		BCM		

