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CITY OF VANCOUVER

ADMINISTRATIVE REPORT

Date:	November 9, 2006
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TO: Vancouver City Council

FROM: Director of Information Technology in Consultation with the General Manager of Engineering Services

SUBJECT: Second Extension of City Telecommunications Duct License Agreement with Urban Utility Corp.

RECOMMENDATION

THAT the General Manager of Engineering Services and the Director of Legal Services be authorized to negotiate, execute and deliver:

A. a modification of the existing duct licence (the "Duct Licence Agreement") with Urban Utility Corp. ("UUC") to permit an approximately 40 kilometre extension of UUC's optical fibre network in City-owned telecommunication ducts**;** and

B. a modification of the existing indefeasible right of use agreement with UUC to permit the City, as compensation for the extension of the licence pursuant to Recommendation A above, to use 48 optical fibres in the entire length of such extension of UUC's network, at an estimated cost to the City of a one-time installation fee of up to $70,000, the source of funds to be the Information Technology - 2005 Infrastructure Expansion and Replacement Program.

GENERAL MANAGER'S COMMENTS

The General Manager of Corporate Services RECOMMENDS approval.

COUNCIL POLICY

Execution of legal agreements by the Director of Legal Services and General Manager of Engineering Services with respect to access to City streets requires Council approval.

On July 30, 1996, when dealing with a report on Telecommunications Policies, Council approved a number of goals including one to ensure that the City maintains its authority to regulate equitable access by telecoms to City streets, secure valuable compensation for their use, minimize negative impacts associated with their use, and utilize them in a manner that furthers other telecommunications policy objectives.

PURPOSE

The purpose of this report is to ask Council to approve a modification to the duct licence agreement ("Duct Licence Agreement") with Urban Utility Corp., formerly Urban Networks Inc., ("UUC"). This modification will authorize UUC to extend its optical fibre network through additional City-owned ducts beyond those already approved by Council. As compensation for such extension, the City will benefit through its right to use 48 fibres of the extended network for its own telecommunications needs.

BACKGROUND

On January 22, 2002, City Council approved a recommendation that*:*

> "The General Manager of Engineering Services and Director of Legal Services be authorized to conclude negotiations, and execute and deliver a license agreement ("the License Agreement") with Urban Networks Inc. permitting it to install and operate a fibre optic network in certain City of Vancouver ducts incorporating the general terms and conditions outlined in this report and such other terms and conditions satisfactory to the General Manager of Engineering Services and the Director of Legal Services."

The City's agreement with UUC has two components:

- A Duct License Agreement that permits UUC to install and operate an optical fibre network within certain City underground ducts for a 20-year term, and
- An Indefeasible Right of Use (IRU) agreement that grants the City the right to use a specified number of these optical fibres for its own purposes for the same 20-year term, with UUC responsible for their maintenance and repair.

On February 24, 2004, City Council approved a 20 km extension (the "First Extension") to the network covered by the Duct Licence Agreement in exchange for the City's use of 48 optical fibres in the length of such extension at an estimated cost to the City of a one-time installation fee of $55,000.

Under the Duct Licence Agreement as modified by the First Extension, UUC has built an optical fibre network of approximately 40 kms in total. It spans the northern quadrants of the city, including some streets within the downtown core, extends east along Hastings to

Boundary Road, west along 10th Ave to the UBC Endowment Lands, and south to the Manitoba works yards.

The City has been able to take good advantage of this network through the IRU agreement. At present, the network provides high-speed telecommunications connectivity to:

- Approximately 50 City facilities, including data centres, Engineering works yards, recreation facilities, community centres, fire halls and libraries;
- 2 data centres at E-Comm and the Chess Street Fire Training Academy;
- 4 traffic cameras, and
- Traffic light controllers (in test) at the north and south ends of the Burrard Bridge.

The direct savings resulting from use of the UUC network instead of leasing from an other telecom are approximately $215,000/year.

Additional savings have been realized through the speed of the optical fibre network, which has permitted server consolidation in data centres.

DISCUSSION

UUC and the City have agreed in principle that there would be a mutual benefit to further extending the scope of the existing agreement. The City proposes to license UUC to expand their optical fibre network through a further approximately 40 kilometres of City duct, listed in the Appendix. The scope of UUC's optical fibre network will be expanded into the east-central, south-east and south-west sectors of the city.

The City is responsible for making the duct system ready for the laying of optical fibre – removing unused copper cable, clearing blockages and installing pull ropes. While this has sometimes proven to be a challenge due to the age of parts of the duct system (up to 100 years), staff are confident that the segments currently proposed will not be problematic.

As compensation for the licence to extend its network, UUC will provide the City with an average of 48 optical fibres throughout the additional licensed duct, extending the City's optical fibre network and providing both financial and operational benefits as follows:

- Existing leases for telecommunications services to approximately 16 sites can be cancelled, with immediate savings in City, Park Board and VPL operating budgets totalling approximately $80,000 per annum by 2008;
- Services to these 16 sites, and another 9 City sites currently using City copper cable plant, can be upgraded. Optical fibre offers telecommunications bandwidth (the ability to carry large volumes of information) that in practical terms is unlimited. This will:
    - Permit replacement of servers at 8 of these sites with shared equipment at the City's E-Comm and Chess Street data centres. Shared equipment is more easily managed, and maintenance, licensing and replacement costs on the site servers can be avoided;
    - Provide staff (and, directly or indirectly, the public) at these sites with access to information, communication and line-of-business systems at local, rather than remote, speeds;

    - Make practical the deployment of current generation Voice-over-Internet-Protocol (VOIP) telephone technology throughout the City organization (expected to be reported to Council early in 2007).
- Around 10 more cameras can be deployed at busy intersections and arterials to monitor traffic flows.
- Through the creation of redundant data paths, the new fibre will help to improve the robustness of the network so that it is better able to withstand either natural or man-made catastrophes.

The network has proved to be very reliable, and fibre outages have been rare. Since the inception of the agreement with UUC, the only outage resulting from fibre damage or failure was in September, 2006, as a result of construction-related drilling. The impact of that was mitigated by a fibre-sharing agreement with Vancouver Port Authority, approved by Council in March, 2004, which provided for redundancy of fibre routes between City Hall and E-Comm.

Should there be an outage, under the terms of the agreement UUC provides ongoing repair and maintenance at no cost to the City. On the occasion described above, UUC was immediately responsive, and has been on other occasions where a risk of damage was identified. This is a valuable benefit.

Under the proposed extension agreement, UUC will supply the optical fibre at no cost to the City. The City will pay UUC a one-time installation fee estimated at $70,000 based on the number of kilometres of fibre laid and the number of connections to City facilities. The market value of the optical fibre and installation services is estimated at $400,000.

Optical fibre can reasonably be expected to have a 20-year lifespan. On a conservative 10-year basis, potential telecommunications and server replacement savings from this extension to the agreement are projected at over $800,000, which is in addition to the savings resulting from the original Duct Licence Agreement and the First Extension of over $2,200,000, for a total of over $3,000,000.

The Duct Licence Agreement for the use of City-owned duct by UUC is non-exclusive, and UUC is required to install its cables in a way that will permit additional cables to be installed in the future.

It is difficult to place a value on the City owned duct infrastructure, or on the value to UUC of this extension agreement. The alternative available to UUC is to use Telus duct. Telus is required by the CRTC to make surplus ducts available at an annual rate of $0.95 per metre. Because of its structure and topology, City duct is probably less valuable than Telus duct for most commercial purposes. On the other hand, Telus (or any other Incumbent Local Exchange Carrier (ILEC)) can charge make-ready fees (in addition to the $0.95 per metre annual rate) and may not have surplus duct. At a rate of $0.95 / metre, the 40km extension proposed could command an annual rent of $38,000. As the City derives an immediate construction benefit estimated at $330,000 ($400,000 less $70,000 installation fee), gets network repair and maintenance included for the life of the contract, and expects to realize over $80,000 a year in cost savings, staff consider that the City is receiving valuable compensation for use of its duct.

ALTERNATIVES

As an alternative to extending the Licence Agreement with UUC, the City could install its own optical fibre backbone using either internal resources (the City's Engineering Services' Traffic and Electrical Operations branch) or sub-contracting part of the work. While outright ownership might be seen as desirable:

- The estimated $400,000 deployment cost of the backbone network (based on the assumption that the work can be done internally at a rate that is competitive with the market) is significantly higher than the $70,000 payment to UUC;
- The City would either have to assume responsibility for repair and maintenance, 7 days per week, 24 hours per day, which it is not currently staffed to do, or it would have to contract out this responsibility. This would be a significant ongoing cost;
- Unless the City overbuilt the network (at additional cost), there would be no spare capacity to provide optical fibre to businesses and telecommunications service providers in the city. UUC's network has such capacity, which it offers at commercial rates.

The UUC arrangement offers the benefits identified at a significantly lower cost.

FINANCIAL IMPLICATIONS

The $70,000 fee payable to UUC will be made from funding approved by Council on Nov 1, 2005 for telecommunications infrastructure, as part of the Information Technology Infrastructure - 2005 Expansion and Replacement Program.

CONCLUSION

Deploying optical fibre to City facilities offers significant financial and operational benefits and is clearly the telecommunications approach of choice. Extending the existing Duct Licence Agreement with UUC offers the City the most cost-effective way of realizing this goal.

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Appendix

New City-owned duct segments to be included in the Licence Agreement with UUC

Actual routes may vary slightly depending on duct condition and availability.
Duct lengths (total 39.2 km) are approximate.

1. West Broadway from Cypress St west to Yew St; Yew St south to 10th Ave (0.6 km)
2. Thurlow St from Pacific St north to Alberni St; Alberni St west to Chilco St; Thurlow St north to West Georgia St; West Georgia St east to Seymour St (2.4 km)
3. Hastings – Cordova Lane from Main St west to Seymour St (1.0 km)
4. 37th Ave west from Ontario St to Cartier St; Cartier St. south to 41st Ave.; 41st Ave west to Carnarvon St (5.5 km).
5. Prince Edward north from 20th Ave to 10th Ave; 10th Ave west to Main St; Main St from 10th Ave north to Prior St; Prior St west to Quebec St; Main St from Prior St north to Cordova St (3.9 km).
6. 41st Ave from Prince Edward east to Rupert St; Rupert St south from 41st Ave to 55th Ave (5.7 km), and spurs:
    1. Clarendon St from 41st Ave north to 34th Ave; 34th Ave east to Slocan St; Slocan St north to 22nd Ave; 22nd Ave east to Nootka St (2.8 km);
    2. Knight St from 41st Ave south to 55th Ave (1.5 km).
7. Yew St from 10th Ave south to 23rd Ave; 23rd Ave east to West Boulevard; West Boulevard south to 41st Ave (3.3 km).
8. Granville St south from 41st Ave to Park Dr; Park Dr east to Hudson St; Hudson St south to 73rd Ave; 73rd Ave east to Marine Dr (3.6 km).
9. East on Kingsway from Prince Edward to Knight St (1.9 km)
10. Victoria St south from Hastings St to 12th Ave; 12th Ave west to Prince Edward St (4.6 km)
11. Renfrew Street from Hastings St south to East Broadway St; East Broadway east to Nootka St (2.4 km)