



REPORT

Intelligent City Advisory Committee

To: Mayor J.Coté and Members of Council **Date:** February 2, 2015
In the Committee-of-the-Whole

From: Alvin Chok **Doc#:** 652516
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On Behalf of the
Intelligent City Advisory Committee

Subject: Fibre Optic Network Business Plan and Next Steps

RECOMMENDATION

THAT Council accepts this report on the Fibre Optic Network Business Plan and next steps.

PURPOSE

The purpose of this report is to provide Council with an update on the City's Intelligent City initiative, Fibre Optic Network Business Plan and next steps towards developing an open access fibre optic and broadband network in New Westminster.

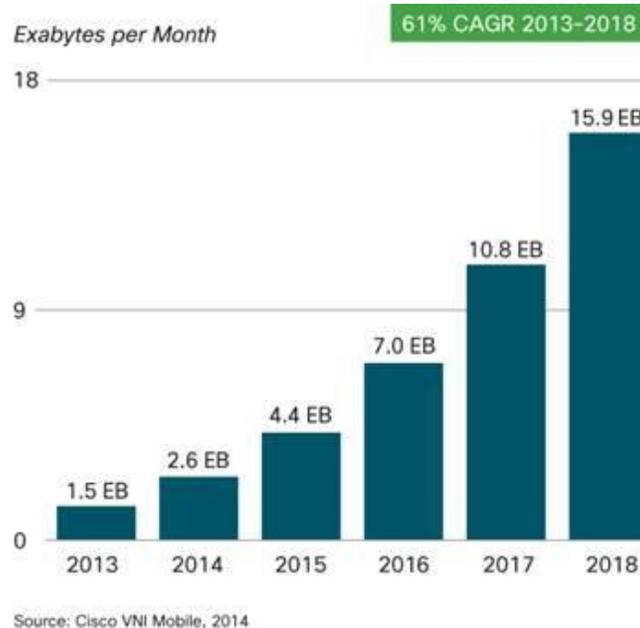
BACKGROUND

In June 2012, Council approved the Intelligent City Task Force report which recommended pursuit of the Intelligent City vision for New Westminster, which stated "By 2020, New Westminster will be the leading candidate for new, creativity centric companies in Greater Vancouver". The Intelligent City Advisory

Committee (“the Committee”) was established in early 2013 with broad representation from the community and local stakeholders. In 2014, after a series of workshops and consultations, the Intelligent City Strategic Plan was developed and approved by Council. A foundational component of the plan is the implementation of an affordable fibre optic network. Subsequently, a Fibre Optic Network Business Plan was developed that contains the scope, benefits, financial costs, revenues, return-on-investment and feasibility of this project.

DISCUSSION

As e-commerce, creative and knowledge based sectors continue to grow, the demand for internet bandwidth does as well. Globally, the demand for internet bandwidth is increasing rapidly and is projected to grow from a monthly average demand of 4.4 exabytes in 2015 to an average of 15.9 exabytes per month by 2018 (an approximate increase in demand of 360% over 3 years). An Exabyte is approximately one billion gigabytes (GB), the equivalent to 36,000 years of HD quality video.



Cities and countries around the world are recognizing the growing need, and the issue gained international exposure earlier this month when U.S. President Barack

Obama began aggressively promoting the need for community digital infrastructure as a necessity for 21st century businesses. Addressing Cedar Falls, Iowa's first gigabit city, the President stated, "today, high-speed broadband is not a luxury, it's a necessity. This isn't just about making it easier to stream Netflix or scroll through your Facebook newsfeed... This is about helping local businesses grow and prosper and compete in a global economy. It's about giving the entrepreneur, the small businessperson on Main Street a chance to compete with the folks out in Silicon Valley, or across the globe. It's about helping a student access the online courses and employment opportunities that can help her pursue her dreams." (www.whitehouse.gov, 2015)

The Intelligent City Advisory Committee's recognition of this global trend and understanding of the social and economic implications led to the retention of a fibre and broadband network consultant ("the Consultant") in 2013. To begin the process, the Committee presented him with three fibre infrastructure options for investigation. These options were: 1) Fibre-to-the-Premises and Fibre-to-the-Home (FttP & FttH); 2) Fibre-to-the-Home only (FttH); and, 3) Fibre-to-the-Premises only (FttP).

After critical analysis of each option and following in-depth discussions with committee members of the benefits and disadvantages of each, the Committee directed further exploration of the Fibre-to-the-Premises only (FttP) option for New Westminster. This particular fibre and broadband network option was chosen as it would provide the greatest return on investment financially, socially and economically when implemented in full and allows for a phased approach to build it out. With this direction, the Consultant revised the fibre optic and broadband network business plan to reflect the FttP-only model. A three level sensitivity analysis describing the worst case, best case and most-likely case scenarios was conducted as part of this work. In December 2014, the Intelligent City Advisory Committee endorsed the Fibre Optic Network Business Plan, and recommended that it be presented to Council for approval.

The FttP-only model is predicated on the City owning and leasing open-access dark fibre to telecommunication carriers and internet service providers (ISPs)

interested in servicing businesses, schools and high density residential buildings in New Westminster. A key benefit of this model is that it would enable smaller internet service providers (ISPs) to enter the local market in addition to larger, well-established ISPs, in order to offer competitively priced, higher quality internet service.

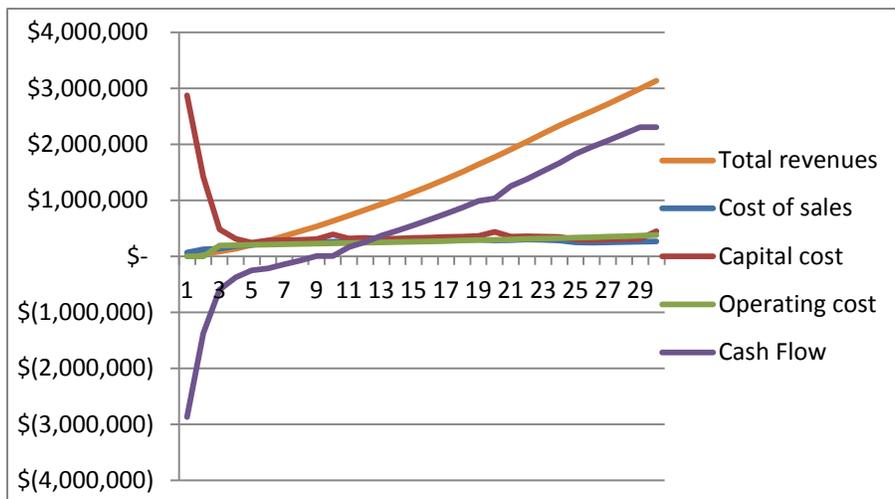
The open-access dark fibre infrastructure model proposed in the Fibre Optic Network Business Plan will provide affordable fibre and broadband access to telecommunications and ISPs while simultaneously encouraging competitive pricing for the end user. In short, the open-access model would facilitate availability of fibre and broadband in the City for schools, public institutions, both existing and new businesses, as well as for residents of new high rise construction located adjacent to commercial areas without placing the City in direct competition with private sector Telco's and ISPs.

An open-access fibre and broadband network is anticipated to bring many benefits to New Westminster, including:

- Competitively priced high-speed broadband connectivity;
- Increased employment and investment by creative, knowledge and tech based industries that require ready access to fibre and broadband;
- Opportunities for collaboration with telecommunication providers, Internet Service Providers and value-added service vendors that would facilitate increased connectivity options in the City;
- Opportunities for digital inclusion initiatives that ensure citizens have access to the benefits the modern digital economy provides;
- The creation of a non-tax revenue source for the City;
- Opportunities for local education institutions to expand their technology and digital media offerings and increase collaboration with local businesses with the aim of developing New Westminster's knowledge workforce;
- Enhancement of New Westminster's image as an attractive place to invest and grow for entrepreneurs and new businesses alike.

FINANCIAL ANALYSIS

Based on current market data and using the fibre optic hardware lifespan of 30 years, \$5.5 million is required to finance the City of New Westminster’s FttP-only network, which would result in a net return for the City of \$16.8 million over a 30 year period. Positive cash-flow would be achieved by year 9 and the City’s \$5.5 million investment would be repaid in full within 23 years. If the City financed a portion of the capital cost from reserves or through the establishment of partnerships with local health and/or education institutions requiring access to fibre and broadband, pay back of the City’s original capital investment would be achieved sooner (see following graph). The City will also continue to explore available funding from senior governments for this initiative to off-set city investment required.



NEXT STEPS

To successfully implement and operationalize the City of New Westminster Fibre Optic Network plan, the following steps are proposed for initiation or completion in 2015-2016:

- 1) Define the guidelines of operation for the open-access fibre.

- 2) Establish a Fibre Optic Network business unit and governance structure within the City of New Westminster Electrical Utility.
- 3) Establish an official rate structure for dark fibre leases to Telco's and ISPs.
- 4) Explore key partnerships for shared financing and/or to offset initial costs. Continue to explore funding opportunities from senior governments.
- 5) Secure long-term financing or line-of-credit as necessary.
- 6) Meet with Telco's and ISPs to inform of the City's plans and establish fiber access agreements.
- 7) Construct the fibre optic network backbone and a co-location centre.
- 8) Secure connectivity to Harbour Centre's internet exchange in downtown Vancouver.
- 9) Establish contracts with qualified suppliers for on-going support and maintenance of the fibre network.
- 10) Deploy fibre along strategic high density areas and commercial corridors of the City.
- 11) Liaise/collaborate with Telco's, ISPs and vendors for marketing and sales.
- 12) Establish annual work plans and project milestones.
- 13) Report regularly to the Intelligent City Advisory Committee and Council on the project's status and milestones achieved.

INTERDEPARTMENTAL LIAISON

This report has been developed by staff with collaboration from Information Technology, Finance Services, Electrical Utility and Economic Development.

OPTIONS

- 1) That Council accepts this report on the Fibre Optic Network Business Plan and next steps.
- 2) The Council provides further direction to staff.

RECOMMENDATIONS

Staff recommends Option 1.

CONCLUSION

Implementing a fibre optic network is critical to the City's Intelligent City initiative. The Fibre Optic Network business plan clearly shows that the Fibre-to-the-Premises (FttP) business model is economically viable and financially sustainable over the long term. Further, the Fibre Optic Network would become a core asset in the City's digital infrastructure, which would greatly facilitate the attraction of knowledge and creative-based industries, provide social benefits through increased digital inclusion for residents, promote business growth and employment into the future and secure New Westminster's competitive edge in the new digital economy.

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Approved for presentation to Council,

Councillor Bill Harper
Co-Chair, Intelligent City Advisory
Committee

Lisa Spitale,
Chief Administrative Officer

Appendix A
Map of Focus Area for First Phase of Fibre Deployment

