

Investing in Broadband Access through Ontario's Public Libraries

Introduction

OLA and FOPL share the vision where every Ontarian is able to benefit from local access to broadband, as well as the confidence to use it, to access economic, educational, social, health and civic resources that will help them achieve prosperity, advancement, and overall well-being.

This overview of the existing impact of digital services available through public libraries in Ontario. As the Ontario government moves forward with the implementation of its broadband action plan, expanded funding for broadband will provide several key benefits to our residents, our communities, and our public libraries.

FOPL and OLA greatly appreciate the opportunity to contribute to the Ministry's policy and decision-making process and to the potential new funding.

Goal

While broadband is often discussed in terms of laying the pipes to gain access to the digital world, the real goal is to ensure that:

- Available content is of high quality;
- Every Ontarian has equitable access to the digital opportunities for learning, working, and accessing public services like government and health;
- Over time, broadband expands throughout the community from specific centres like libraries to the home and workplace;
- Connectivity is upgraded to keep pace with community needs.

Libraries are uniquely positioned to support these services as an anchor in every Ontario community. Public libraries enjoy significant community trust, and are already equipped with trained staff with a customer service ethic, have existing digital technology and peripherals, and provide regular hours.

There is a need for new funding to kick-start the next generation of broadband capacity in Ontario's public libraries. Working with local public libraries is key to ensure that local broadband issues can be addressed and resolved in partnership with targeted provincial investment.

Through this document, and in future discussions, we hope to provide clarity around the broadband situation in Ontario's libraries and highlight the opportunity for the provincial government to make a strategic investment for expanded broadband access in local public libraries.

Cautions and Planning Considerations

The following considerations should be kept in mind when developing any initiative to support upgrades to broadband capabilities in Ontario's public libraries:

- At the start of 2020, all public libraries already in their current budget year and most plans and strategies are settled for the current fiscal year. Major initiatives require some time to successfully plan and implement.
- Any program will need to ensure that public libraries (with their unique operational status) and Library Boards are *eligible for funding* as well as acknowledging the local partnerships with consortia, municipalities, schools, colleges, universities, local providers and co-operatives that help deliver speed, efficiencies and cost-effectiveness. Single-year funding may prove problematic for some libraries and potentially limit the success of wider adoption. Most libraries have formal and informal technology plans that span 3 to 5 years. In many cases a broadband funding initiative fits well with these plans (a sample from Rideau Lakes is attached).
- Working through the Ontario Library Service agencies (SOLS and OLS-North) would build on their proven track record in supporting these kinds of initiatives with planning, collaborative purchasing, consulting, reporting, hotline support and training.
- Sustainability is always a question our public library executive and management teams ask. In the case of broadband investments, they will want to be confident that ongoing operations are sustainable in terms of ongoing operations after implementing fiber upgrades. This may be best addressed by working with not-for-profit broadband providers who already have experience with libraries, such as SWIFT and ORION.
- Providing clear guidance from the funding Ministry (while respecting reporting burden reduction goals) about the goal and timeline expectations.

Background

Ontario's Public Libraries are a success story of digital innovation. More than half of the usage of public libraries now occurs digitally, with supports for borrowing, search, e-learning, e-books, audiobooks, research articles, communication, and more.

Yet significant and growing challenges remain. On the one hand, libraries continue to offer a substantial number of public access services, but are continually challenged in their ability to continue enhancing and upgrading the services they offer to meet community expectations. Libraries face budget challenges, building issues like space availability, adequate power and cabling, and access to broadband connectivity. In spite of these obstacles, the content, services, and resources of the network-based environment are evolving rapidly in Ontario's public library systems. Today, these services are increasingly expensive and more bandwidth-intensive. Thus, librarians find themselves with strained resources, but the need to continually implement and update increasingly complex and demanding network-based services.

The Ministry of Heritage, Sport, Tourism, and Culture Industries supports public library digital initiatives and innovation in a number of ways, including the Public Library Operating Grant (PLOG), connectivity subsidies, as well as special program grants in the past, such as the Ontario Library Capacity Fund (OLCF).

Local Impact for Ontario Residents

Over the past decade, public libraries have made great strides made in measuring and studying the impacts of digital public library services and collections for our communities. It has become essential as we manage hybrid approaches to digital, physical and in-person interactions. Here are some highlights of our results that show a strong focus on reporting and assessing performance and being accountable for our public funding.

The Bridge Technology Services Assessment

First, led by Toronto Public Library, the firm of Nordicity was hired to develop a collaborative research approach to determine the impact of public library digital services. The participant group of 50 public libraries is reflective of the types of libraries in Ontario including 37 Public Libraries, 9 First Nation Libraries, and 4 Francophone Libraries. It is a great mix of small, medium and large-sized libraries (both Northern and Southern). Over 25 thousand library users participated in addition to staff. Below are some selected outcomes from the research conducted in 2019-2020.

Highlights of BRIDGE Research Primary Outcomes

Digital Inclusion

- **53%** report that public libraries are their only access point to the technology service(s) that they used

Digital Literacy

- **34%** of the respondents reported being introduced to new technologies using technology services offered by the libraries.
- **92%** of them will continue to use that technology

Access to Government Services

- **33%** accessed government services or resources online. **Patrons 55 and older** and **low-income** group are more likely to benefit.
- **40%** got government forms; **37%** of them learned about government programs or services.

Entrepreneurship and Business Development

- **20%** undertook small business-related activities

Workforce Development

- **59%** did educational activities. Younger patrons (24+), immigrants, and visible minorities were more likely benefit.
- **34%** developed employable skills. Young patrons (25 -34), and First Nations are more likely to benefit.

Job Search Skills and Success

- Among those who said they used the technology service(s) to develop skills related to finding a job, **62%** identifying as First Nations had a high level of success in finding a job.

Building Public Library Broadband Capacity

Given the current context of public library broadband deployment, capacity barriers, services offered, and increasing demands of Internet-based applications, it is important to consider how libraries should plan, build, and implement robust networks that meet today's broadband demands—but also grow to meet the demands of applications yet to come.

There are a number of factors that can impact a library's bandwidth. These include:

- **The technology infrastructure and architecture currently in place in the library.** Bandwidth is only part of the issue that determines the actual user experience. For example, routers, hubs, workstations, video memory and capabilities, RAM, and a host of other factors can have a dramatic impact on the overall service quality and user experience. It may be the case that current bandwidth subscription is not what is creating a speed bottleneck, but rather other factors—or all these factors in combination.
- **Network load.** It is not uncommon in some libraries to have staff and public access workstations share the same connection. Increasingly, wireless access is overlaid on this network as are many other services (ILS, VoIP, and streaming content). This in turn can create a range of congestion points. Knowing a network's load is critical.

- **Traffic routing and management.** There are a number of tools that can substantially increase the user experience without increasing actual bandwidth. These include packet shaping, packet prioritization, and compression approaches that can greatly enhance speed.
- **Services and resources.** A first critical step is for libraries to ascertain the services and resources that they make or wish to make available to their users and staff. This helps the library review its current networked services and resources, and also allows for the identification of future services and resources. But perhaps more important, this allows the library to review its networked services portfolio and begin assessing the relationship between services and bandwidth needs.
- **Determining service priority and desired quality of service levels.** Not all services are of equal importance in terms of their quality of service. For example, libraries may consider that ILS and staff e-mail traffic is a higher priority than user access to social networking sites. It is essential that libraries review all of their network services and make priority determinations. In technical terms, prioritization often happens through port number or protocols. But the idea is to determine which network traffic matters more or less.

It is important to note that some services may require a higher priority simply because of their technology. For example, a key issue with VoIP is latency—that is the time it takes for packets to travel to their destination (and back if the transmission is two way). The more latency (or delay) in certain transmissions such as Internet-based phone calls, the more ineffective the service. Thus certain services may automatically require a higher prioritization.

“Back office” services such as backups and software updates must be included. These can run during off library hours, but they do also require bandwidth considerations.

Also, what library staff and management consider high priority may differ from what users consider high priority. Thus, there is a need to review the quality of service issues holistically.

- **Estimated bandwidth calculation.** Though it is not possible to calculate bandwidth needs for each service due to the wide range of services that make use of the same protocols, one can estimate the bandwidth requirements for some services. Based on network traffic monitoring and estimated load measures (e.g., 10 e-mail accounts, 100 e-mails per user per day, and roughly 30,000 e-mails per month), libraries can calculate some rough measures of bandwidth need—but these can and do vary, and thus precise measures are difficult to ascertain.

The above planning considerations are not definitive and serve as a beginning point for libraries to consider their bandwidth needs. Moreover, libraries should not view their networks as static. There is a real need for local strategic planning and control as one-size will not fit all communities.

Regional cooperatives and non-profits (such as SOLS and OLS-North, SWIFT, ORION, etc.) can be a huge source of support for library IT planning. Cooperatives offer many services, including:

- Helping local libraries to plan for broadband deployment;
- Planning for network growth and development of new services;
- Planning for the capacity that each library will need and implementing that capacity before a library's network is overwhelmed;
- Reaching out to member libraries to facilitate planning and services and to ensure that they will have enough available bandwidth;
- Monitoring and tracking peak use at member libraries and for the network as a whole to determine when increased bandwidth is needed;
- Implementing high level configuration to the network so that all libraries receive adequate broadband and the network itself can handle the total load;
- Forecasting new shared services that can reside on the network such as digitations of local documents or video conferencing;
- Managing all services of the network;
- Providing consulting, hotline support, trouble-shooting, and training.

The planning considerations presented above, though simplified, may be challenging for many libraries that do not have the technical expertise to engage in successful capacity-planning efforts. And yet these planning efforts are critical to library networked services.

Increasingly, it is through networks that information flows in and out of the library. Indeed, there is almost no service in a library now that does not rely on network transmission, whether it's circulation systems, e-mail, and interlibrary loan, or public access services such as wireless access, workstations, licensed databases, e-learning, or digital libraries. Without sufficiently planned and managed access to broadband – and the bandwidth required - a host of library services will at best slow to access and use or at worst impossible to access and use.

Appendix A:

Valuing Northern Libraries Toolkit

<http://home.olsn.ca/resources/valuing-northern-libraries-toolkit>

Ontario Library Service – North (OLS – North) contracted NORDIK Institute to create a measurement tool to illustrate the value of libraries in rural, Northern, First Nation, and francophone communities. A steering committee consisting of the CEOs of the six pilot communities participated in identifying the measurement topics, the design and testing of the tool.

This tool is designed to measure the value of public libraries and their role as community hubs, building capacity for healthy, resilient people and places, especially in rural, Northern, First Nation and francophone communities. The toolkit provides a step-by-step process to assess libraries' social return on investment (SROI) within a holistic, cross-sectoral framework. The Social Return on Investment (SROI) is a term describing the social impact of a business or non-profit's operations in dollar terms, relative to the investment required to create that impact and exclusive of its financial return to investors.

Based on a review of relevant literature, focus groups, consultation with steering committee members and site visits, NORDIK designed a measurement toolkit to encompass the many diverse and unique roles that public libraries play in the North as community hubs.

This framework identifies seven areas where libraries contribute to building individual, organizational, and community level capacity.

- Cultural Integrity & Regional Identity
- Social Inclusion
- Cognitive & Literacy Development
- Health & Wellness
- Engaged Citizens & Safer Communities
- Entertainment & Enjoyment
- Economic Development

An indicator is a quantifiable measure used to monitor progress or impact in a given area or sector. In collaboration with the pilot sites, three indicators were chosen that best reflect how libraries' operations and expenditures contribute to each respective area. The same number of indicators is measured in each of the seven sectors for the purpose of demonstrating the equivalent value of each sector in the overall economic benefit and calculation of its Social Return on Investment.

While many of the services and activities of the libraries could arguably demonstrate benefits in multiple sectors assessed by the measurement tool, this study has relied on the preferences of the pilot sites to identify the placement of indicators most appropriate to each of the seven

sectors. The indicators have been selected based on data that is collected by all libraries, or alternatively, can be easily collected during the 'typical week' usage survey.

Each library builds a unique mix of resources—collections, programming, services, etc. in response to community needs, enabling diverse people to improve their quality of life and to participate in the life of the community in meaningful ways. In many instances, libraries demonstrate leadership by promoting services that are otherwise non-existent, under developed or under serviced. The library value toolkit can be used in all of Ontario's small and rural communities to demonstrate how the library contributes to individual, organizational, and community capacity.

SROI Indicator Template (the library value calculation spreadsheet)

The SROI Indicator Template will require some of the data submitted for the 2017 Annual Survey of Public Libraries, the Typical Week Survey, plus other commonly collected information.

Download the template and sample reports:

1. [The SROI Indicator Template](#)
2. [Community Report Template](#)
3. [Sample Community Report](#)
4. [Sample Completed Indicator Template](#)

Sample:

“Rainy River PL was one of six pilot sites for the Valuing Northern Libraries Toolkit project of OLS-North. Based on the Toolkit indicators, and using our 2017 data, preliminary results for the Social Return on Investment for all programs and services delivered by our library is as follows:

1. Raw Economic Benefit, \$882,913.02.
2. Total Economic Benefit, adjusted by the cost differential between Toronto and our region (as calculated by the annual Nutritious Food Basket report of Ontario Public Health Units): \$1,196,434.01.
3. Benefit per Resident of our catchment area, \$602.43.
4. Benefit per Household in our catchment area, \$808.95.
5. Economic Impact of One Library Public Service Hour, \$251.59.
6. Total Social Return in Investment, based on local operating funding from our appointing council: 3,474%.”

Summary of Selected Valuing Northern Libraries Reports

Summary of Selected Valuing Northern Libraries Studies

Library	Funding	Per-resident economic benefit	Per-household economic benefit	Economic impact per open hour	EROI & SROI	EROI & SROI	EROI & SROI
					Total	Per dollar	percentage
Dryden PL	\$301,347	\$1,590.00	\$726.78	\$931.80	\$5,631,828	\$18.68	1868%
Kenora PL	\$614,634	\$972.00	\$1,988	\$2,331	\$14,665,861	\$23.86	2386%
Powassan & District Union PL	\$151,930	\$361.09	\$694.05	\$344.45	\$2,494,398	\$16.42	1642%
Rainy River PL	\$35,002	\$505.36	\$678.60	\$276.23	\$1,003,440	\$17.16	3474%
Temiskaming Shores PL	\$392,262	\$400.00	\$858	\$436	\$4,680,190	\$11.93	2867%
Wikwemikong FN PL	\$15,000	\$259.45	\$714.08	\$80.05	\$844,753	\$56.32	5632%
Fort Frances PL	\$484,216	\$969.00	\$2,269.00	\$1,303		\$17.16	632%

(Detailed statistics are available in the published community reports linked in Appendices)

<http://fopl.ca/news/valuing-northern-libraries-summary-report/>

[Valuing Northern Libraries Summary](#)

[Fort Frances – Social and Economic Return on Investment Report](#)

[Rainy River FINAL Community Report MSD Revision Jan 2019](#)

[2019 Rainy River SROI](#)

[Wikwemikong FINAL Community Report](#)

[Powassan FINAL Community Report](#)

[Dryden Community Report](#)

[Temiskaming Shores FINAL Community Report](#)

[Kenora FINAL Community Report](#)

Appendix B:

Economic Return on Investment Studies in Canadian Public Libraries

The following is a list of Canadian (and Ontario) public libraries who have conducted an economic impact study applying cost-benefit analysis (CBA) model first used by Toronto Public Library in 2013. CBA is a commonly used approach to estimate the economic impact of public institutions. Please read “[Understanding Economic Impact and Public Libraries](#)” for a more detailed explanation of how CBA is applied to public libraries. This CBA model is open and available for public use. [Ottawa Public Library’s spreadsheet of calculations and data is open for others to use to calculate their own economic impact.](#)

This list is maintained by [Brightsail Research](#) partner [Kimberly Silk](#).

Library	Year Published	2011 Census Population	# Branches (at time of study)	Return on 1\$ Invested
Toronto Public Library	2013	2,615,060	98	\$5.63
Halton Hills Public Library	2014	59,008	2	\$3.96
Milton Public Library	2014	84,362	2	\$5.67
Pickering Public Library	2014	88,721	3	\$5.85
Stratford Public Library	2015	30,886	1	\$5.63
Sault Ste.-Marie Public Library	2015	75,000	3	\$2.36
Kawartha Lakes Public Library	2015	73,214	15	\$7.05
London Public Library	2015	366,151	16	\$6.68

Vancouver Island Regional Library	2016	430,000	38	\$5.36
Ottawa Public Library	2016	883,391	33	\$5.17
Newmarket Public Library	2016	79,978	1	\$7.85
Edmonton Public Library	2016	812,200	22	\$3.11
Burlington Public Library	2017	175,780	7	\$5.64
Hamilton Public Library	2017	519,950	22	\$5.59
Vaughan Public Library	2017	288,300	9	\$5.57

The narrow Economic ROI for public libraries is clear but is dwarfed by their Social ROI Impacts. Important Ontario Social ROI Reports here: <http://fopl.ca/news/important-ontario-social-roi-reports/>

Appendix C (separate attachment)

Sample Public Library Technology Plan: 2014-2017 Rideau Lakes Public Library

Appendix D (separate attachment)

Meaningful Access: The Bridge Project

Jan 31, 2020

OLA Super Conference Session Presentation

Presenters:

Jorge Rivera, Project Lead (MLS) | Bridge Project, Planning Department, Toronto Public Library

Kristian Roberts, Partner, Nordicity