



Report to Council

Department: Development Services
Division: Economic Development
Date: September 21, 2020
Prepared by: Nelson Silveira, Economic Development Officer
Report Number: Economic Development-2020-17
Subject: Town of Essex Local Broadband Assessment
Number of Pages: 14

Recommendation(s)

That Economic Development-2020-17 entitled Town of Essex Local Broadband Assessment prepared by Nelson Silveira, Economic Development Officer dated September 21, 2020 be received.

Purpose

The purpose of this report is to provide Council with a high level overview of the current status of local broadband and the challenges and opportunities involved in deploying new internet infrastructure throughout the Town.

Background and Discussion

The Town's varying pockets of population density and large geographic area provide unique challenges in providing high-quality broadband internet services for all residents. In particular, many rural and remote areas do not have services comparable in speed, capacity, quality or price to what is offered in our urban centres. The majority of residents in our urban centres of

Colchester, Essex Centre, Harrow and McGregor have broadband internet varying from 25 megabits per second (Mbps) download, 5 Mbps upload speed to 50 Mbps download, 10 Mbps upload speed. This is not the case in rural areas of the municipality with some households rarely achieving a level of 5 Mbps download, 1 Mbps upload speeds.

Comparison of Internet Access Technologies

Type	Speed	Common Usage	Trend
Digital Subscriber Line (DSL)	1.5-25 Mbps	Lower speeds in rural areas due to copper loops	Speeds increasing in urban areas, but not being matched in rural settings
Fibre Optic	25- 1,000 Mbps	Used to offer bundles of TV and high speed internet	Most deployment in urban areas and new development (speed varies depending on location)
Coaxial Cable	5-250 Mbps	Used to offer bundles of TV and high speed internet	Speeds typically increasing through service areas
Fixed Wireless	<1-50 Mbps	Used in rural areas via tower to carry signal	Although high speeds are possible, most residential offerings are less than 15 Mbps.
Mobile Wireless	<1-100 Mbps	Used either with smartphones and tablets, or for home access in some areas	Speed varies greatly by location, and depends on number of users: highest speeds in urban areas
Satellite	<1-10 Mbps	Used mainly in areas that do not have reliable alternative options	Speeds increasing due to new satellite technology (up to 25 Mbps), but still lag behind more advanced options

(Speeds indicated in this chart are reflective of highest service speeds by broadband technology options. These speeds are not achieved by all users in the Town of Essex using the broadband options indicated in this chart)

All of the above broadband technology options are currently offered and utilized in the Town of Essex. Telephone and cable lines, where they exist, are commonly used to deliver internet services in urban areas. In rural areas where there is no existing “wired” infrastructure, wireless broadband technology such as a fixed wireless or satellite service is common. For newer construction and areas with larger customer densities, Internet Service Providers (ISPs) are installing, or have plans to install, fibre-optic service, which is currently the latest and fastest broadband technology, with service speeds increasing regularly.

To close the remote/rural and urban digital divide and in order to meet this objective, existing internet-related infrastructure across the Town of Essex requires upgrades and new infrastructure is required to be built in some areas. This will require time and financial resources and a collective effort from all levels of government, the internet industry, stakeholders, and partners.

Internet Service Provider Outreach

Administration engaged local Internet Service Providers (ISPs) from July 22-24 to gather more information about existing infrastructure, plans for expansion and to identify the barriers and challenges affecting the availability of broadband services in rural pockets of the municipality.

The goal of these discussions were to:

- Develop an understanding of broadband speed requirements
- Learn about the barriers to providing broadband to rural customers
- Identify potential stakeholder partnerships
- Identify some of the possible technical solutions that could address the needs of the rural population
- Identify potential roles that the municipality could play to contribute to an increase in access to high performing broadband internet services in the Town of Essex.

There are numerous ISPs operating in the Windsor-Essex region including larger, established providers, as well as smaller and more recently-established companies. Administration, along with the Mayor and Deputy Mayor, met with the following ISPs:

- Cogeco Inc.
- Bell Canada
- MNSi Telecom (Not currently operating in Town of Essex)
- WaveDirect Telecommunications
- Gosfield North Communications (Not currently operating in Town of Essex)

Some ISPs specialize in certain geographic areas or with a particular broadband technology. Often, the level of service and number of available ISPs is correlated with the location of the customer. For example, in our urban population centres, ISPs such as Bell or Cogeco, provide a reliable fibre to the home or coaxial cable to the home internet service. In rural areas, ISPs such as WaveDirect are providing customers with a fixed wireless solution via tower with some customers relying on ISPs such as Xplornet to provide a satellite internet service.

Overall, the current connectivity conditions is a problem that is not unique to only the Town of Essex, these conditions are experienced across the region. Rural municipalities throughout the province face similar problems in the effort to provide reliable internet service to their residents. The current state of broadband in the Town of Essex can be summarized as follows:

Urban Areas

- Reliable speeds, with multiple internet service options.
- New broadband technologies are expanding, with competitive prices.
- New residential developments are well served.
- Major institutions (government offices, schools, etc.) are able to have their needs met.
- Some connectivity issues where population densities are lower.

- Services generally meet the current Canadian Radio-television and Telecommunications Commission (CRTC) baseline target of 50 Mbps download, 10 Mbps upload.

Rural Areas

- Lower speeds, limited internet service options including fewer broadband technologies and limited internet service providers.
- Generally higher prices.
- Prevalence of wireless broadband technology and related issues of reliability due to line of sight obstructions.
- Available service generally does not meet the current CRTC baseline target.
- Services diminish the further the distance from an urban centre.

In urban areas such as Essex Centre, ISPs have plans to continue deploying the latest fibre-optic broadband technologies. Use of these technologies include ongoing projects to build fibre to the home to the majority of households. Many Essex Centre residents, businesses and institutions benefit from these improvements and can access the level of broadband service they require. Although there is a fibre-optic backbone running through Essex Centre, homes serviced in our other urban centres are provided by a coaxial cable service. This is still a reliable source of internet service, however, it is not the sought-after modern fibre to the home service and will require upgrades at some point in the future.

Service limitations continue to be a challenge within the Town's rural areas. This situation is problematic as technological advances will increasingly require superior internet connections to access services and participate in modern society. Affordability will remain a challenge for households, as well as for businesses that must pay the capital cost to extend suitable services to their building.

Highlights

During consultation with ISPs, we asked what role and actions the Town could undertake to assist with advocating for closing the digital divide and how we could move forward to successfully address underserved rural areas of the municipality. Although many ideas and opinions were shared, areas of consensus and agreement emerged. The following summarizes the key messages and input received throughout the process:

Issue	Opportunity
1. Certain areas in the municipality have different challenges and priorities.	Town could provide support and collaborate with ISPs on proposed projects that would benefit local residents.
2. Information-sharing amongst all stakeholders, including information from and to ISPs on service availability, known gaps and future development in the Town of Essex	Town could facilitate regular communication between ISPs, residents and businesses.
3. Our downtowns, employment areas, and rural population need access to adequate broadband services.	The Town and ISPs could prioritize efforts to improve connectivity in underserved areas, as opposed to further investment in areas that are already served and meet the CRTC target.
4. Rural businesses including agriculture, are incorporating advanced technology and require broadband services that meet the CRTC target.	Town could leverage existing assets (municipal property, roads, and facilities) to support the deployment of broadband infrastructure by ISPs.

<p>5. There is a lack of advocacy to upper levels of government for Essex specific broadband infrastructure funding. Other rural areas are receiving funding and Essex needs to speak up to support investment by local ISPs.</p>	<p>Town could advocate to the federal and provincial governments to recognize broadband as an essential service and to ensure there is a competitive market and affordable services for all income levels and households regardless if you live an urban or rural area.</p>
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Funding Options for Local ISPs

Market forces have driven the investment and deployment of broadband internet services throughout a large portion of the region. However, rural communities are often left underserved because less density means less customers, which does not fit the business models of large ISPs. As a result, larger ISPs would benefit from incentives to expand the latest broadband technology into rural areas. It is assumed that without government subsidies for the expansion of broadband service in low density areas, ISPs would have no motive to invest in the infrastructure required to meet CRTC baseline targets.

Funding from all levels of government will continue to play a role in future expansion projects to close the digital divide. Eligible ISPs are actively submitting applications to fund internet infrastructure expansion projects in our region through the following programs:

1. CRTC Rural/Remote Broadband Fund:

The \$750 million fund distributed over 5 years is intended to benefit all Canadians that live in areas that are underserved (i.e., that do not have Universal Service Objective level broadband Internet access and mobile wireless service), particularly those in rural and remote areas. The application period closed June 1, 2020 and local ISPs have applied for projects that would expand service in the rural areas of the Town of Essex.

2. Universal Broadband Fund:

The \$1.7 billion fund will be designed to meet the unique needs of rural and remote communities. The program is set to launch in the coming months. Federal government is currently seeking feedback to help inform the design and development of the Universal Broadband Fund program to bring reliable high-speed Internet access to even the most challenging to reach homes and communities in Canada.

3. Improving Connectivity for Ontario (ICON) Program:

The \$150 million fund distributed over four years is intended to promote industry partnerships that leverage investments across sectors and encourage innovative solutions to meet the connectivity needs of communities. Stage 1 applications for the first intake are due on August 21, 2020. The ICON program will support projects through a maximum provincial share of 25%.

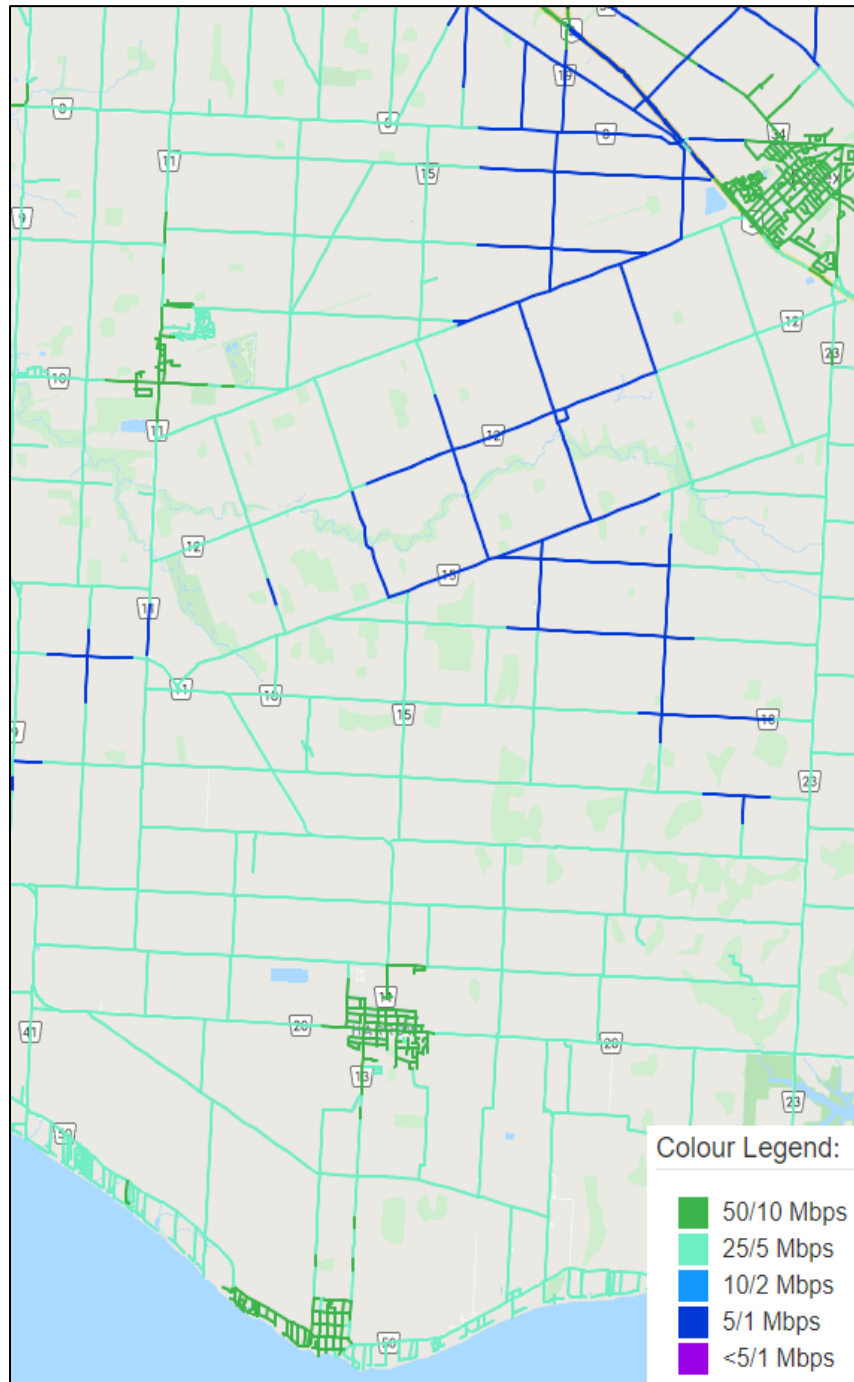
4. Southwestern Integrated Fibre Technology (SWIFT):

The \$219 million fund will be distributed over the next few years and comes from the provincial and federal government, as well as from municipal partners and private sector investors across Southwestern Ontario. The program is intended to bring high-speed internet to rural homes by providing funding to ISPs with shovel ready projects in the region. The County of Essex announced a \$12.8 million contribution to the program on June 17, 2020. Deadline to submit applications to be considered for funding was on August 7, 2020. Approved projects should be completed by no later than the end of this year.

National Broadband Map:

This map shows the current status of broadband connections in the Town of Essex. ISPs applying for any of the previously indicated funding must apply for projects in areas that do not have 50/10 Mbps service. This map can be accessed by using the following link:

<https://www.ic.gc.ca/app/sitt/bbmap/hm.html?lang=eng>.



Next Steps

In support of the expansion of broadband internet infrastructure, and in co-operation with other levels of government, stakeholders, and ISPs, the Town should implement the following:

Action	Description
1. Engagement with Local Internet Service Providers	<p>Administration will continue to engage local ISPs on broadband expansion projects. This includes exploration of partnerships and projects that leverage municipal assets such as: municipally-owned buildings and towers, and rights-of-way. Sharing information and communicating regularly is essential for conveying needs and developing effective and efficient solutions. This will include:</p> <ul style="list-style-type: none">A. Holding regular meetings with ISPs to communicate growth areas, capital infrastructure planning, and service needs.B. Maintaining ongoing communication with ISPs, businesses and residents to understand broadband needs and service gaps.C. Increased communication on road reconstruction projects and new developments allowing opportunities for the efficient placement of broadband conduit.
2. Support Future Funding Applications	<p>It is recommended that Council support the deployment of broadband infrastructure within the Town of Essex. Whether that includes advocating for funding offered by upper levels of government or as a continued supporter of ISP applications under these funding programs.</p> <ul style="list-style-type: none">A. Expedite the delivery of letters of support to ISPs who are seeking funding from upper levels of government for broadband expansion projects in the Town of Essex.B. Invite ISPs to present to Council on proposed broadband expansion projects in the Town of Essex to keep Council and Administration informed on projects that impact us locally.

<p>3. Develop Community Performance Testing System</p>	<p>The Canadian Internet Registration Authority has developed a Smart Community Performance Testing system that collects data to assist measuring the demographic, sociographic, and speed results of local broadband. Implementation of this project will take several months of community feedback in order to better understand the level of connection speeds our residents are experiencing. Working with the Manger, Communications, and Administration will develop a social media campaign for residents to test internet speeds. That data will be collected and put into a live map in order to gauge underserved areas and review changes of speeds as new infrastructure becomes installed throughout the community.</p> <ul style="list-style-type: none"> • Communities get their own custom-branded municipal testing portal accessed via a unique branded domain name. • Portals allow residents to run tests and present the speed in the Town of Essex using heat maps organized by established neighborhoods, wards, or other available criteria that we set. • Allows the Town to compare results across the municipality to pin-point priority areas. • Many municipalities in Ontario utilize this service and the typical cost for an average sized city or community would be less than \$250 monthly.
<p>3. Engage Provincial and Federal Levels of Government</p>	<p>Key messaging will be developed to advocate at relevant meetings (Association of Municipalities Ontario and/or Rural Ontario Municipal Association) about the importance of broadband infrastructure for the success and prosperity of Essex residents and businesses. Topics will include the value of funding programs that support and spur infrastructure upgrades where known service gaps exist, and supporting investment in technologies that can provide cost-effective broadband solutions for rural areas.</p>
<p>4. Create and Maintain a Broadband Information Database</p>	<p>To enable consistent monitoring of the connectivity conditions in the Town of Essex and to build knowledge that may be useful to the</p>

	<p>municipality, ISPs, local businesses, and other stakeholders. This will include:</p> <ul style="list-style-type: none"> A. Mapping of local area municipal assets where the co-location of broadband infrastructure would be available/encouraged. B. Compile a list of ISPs within the Town of Essex and their service boundaries (using the National Broadband Map https://www.ic.gc.ca/app/sitt/bbmap/hm.html?lang=eng), to inform residents and business owners of the full range of providers in their area. C. Compile and maintain a list of known programs and initiatives in support of broadband expansion. D. Continue to monitor and test internet speeds across the municipality using the Smart Community Performance Testing System.
<p>5. Progressive Planning Policies</p>	<p>As part of the upcoming review of the Town of Essex Official Plan and the Development Standards Manual, Administration will investigate the feasibility of implementing policies that support broadband infrastructure as part of new development applications.</p>

Conclusion

Whether located in one of our urban centres or throughout our rural areas, having access to fast, affordable and reliable internet is needed in order to fully participate in modern society. ISPs continue to make investments in broadband across the region, however, the majority of these investments are in dense population areas with access to a larger customer base. As a result, local governments need to continue collaboration efforts to support broadband expansion in rural areas wherever possible and push for our share of SWIFT and Universal Broadband funding. It is important to note, that even with the current funding available for ISPs, this may not close the digital divide anytime in the near future. For example, SWIFT funding alone will only target roughly 22% of premises in Southwestern Ontario.

The Town has the opportunity to assist ISPs as they look to expand broadband service within our municipal boundaries. Creating opportunities to collaborate and support broadband initiatives throughout the municipality may assist to improve and grow the local internet landscape. An approach that includes advocacy for better internet service in our rural areas, community internet testing, collaborating with ISPs and increasing information sharing between both all stakeholders will put us in a better position to close the digital divide.

Financial Impact

In order to pursue community internet speed testing through the Canadian Internet Registration Authority (CIRA), an estimated fee of \$250.00 per month is required and will be incorporated into existing operating budgets moving forward.

Link to Strategic Priorities

- Manage, invest and plan for sustainable municipal infrastructure which meets current and future needs of the municipality and its citizens.
- Create a safe, friendly and inclusive community which encourages healthy, active living for people of all ages and abilities.
- Provide a fiscal stewardship and value for tax dollars to ensure long-term financial health to the municipality.
- Manage responsible and viable growth while preserving and enhancing the unique rural and small town character of the community.
- Improve the experiences of individuals, as both citizens and customers, in their interactions with the Town of Essex.
- Improve the Town's capacity to meet the ongoing and future service needs of its citizens while ensuring the corporation is resilient in the face of unanticipated changes or disruptions.

Report Approval Details

Document Title:	Town of Essex Local Broadband Assessment - Economic Development-2020-17.docx
Attachments:	
Final Approval Date:	Sep 16, 2020

This report and all of its attachments were approved and signed as outlined below:



Lori Chadwick, Director, Development Services - Sep 15, 2020 - 5:00 PM



Chris Nepszy, Chief Administrative Officer - Sep 16, 2020 - 9:12 AM