

Item No. 8.2



Council Report: C 203/2017

Subject: TELUS Small Cell Technology - Ward 3

Reference:

Date to Council: 11/20/2017
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CAO Office
Report Date: 11/6/2017
Clerk's File #: S/12989

To: Mayor and Members of City Council

Recommendation:

THAT the Small Cell Technology report **BE RECEIVED** for information; and

THAT Administration **BE DIRECTED** to prepare and negotiate an agreement with TELUS Communications Company, in accordance with all applicable municipal policies, requirements and regulations and the general parameters contained within this report, and in content satisfactory to the Chief Administrative Officer (CAO) and Chief Information Officer, in legal content satisfactory to the City Solicitor, in financial content satisfactory to the CFO/City Treasurer; and

THAT the CAO and City Clerk **BE AUTHORIZED** to sign this Agreement and any other agreements that may be required to execute the described initiative.

Executive Summary:

N/A

Background:

In June 2017, Administration met with representatives from TELUS Communications Company (TELUS) to discuss partnering with the City of Windsor to enhance its coverage and network capacity in the downtown core. TELUS is currently piloting small cell technology trials in communities within a number of Canadian cities (Montreal, Toronto, Winnipeg) and engaged the City to explore the possibility of utilizing its existing infrastructure, such as streetlights, to install small cell antennas.

In order to provide other telecommunication service providers with the same opportunity, Administration conducted an Expression of Interest (EOI) in July to gauge interest in the provision of small cell technology. On August 19th, the EOI was made public and provided to contacts at telecommunication companies, locally and across

Canada. Eighteen proponents picked up the specifications for the EOI, two of which (TELUS & Cogeco Inc.) submitted applications. As per the evaluation of the two submitted EOIs, TELUS was the only applicant that submitted a completed package with all requested information.

Small cell technology can be used to provide in-building and outdoor wireless service. Telecommunication service providers use this technology to extend their service coverage and/or increase network capacity. Small cell antennas have evolved dramatically in the last 5 years to become much smaller and require zero ground space to host the technology. *Appendix A* provides a picture of the types of small cell antennas that can be installed.

Small cell antennas provide a small radio footprint, which can range from 10 meters within urban and in-building locations to 2 km for a rural location, and will be an integral part of future LTE networks and Smart City platforms.

Discussion:

TELUS Proposal

TELUS has provided administration with a sample Small Cell Lease Agreement which they have used in other jurisdictions within Canada. In the agreement, TELUS agrees to pay the City fees associated with the permits that TELUS requires in connection to the work to install the small cell antennas and the fees and charges with respect for hydro consumption of the equipment. In addition to the fees, TELUS will not place, attach or install equipment without first obtaining prior written approval from the City Engineer and will provide a detailed description of the equipment, plans showing the location, description of the scope of work involved and any other details requested from the City Engineer. Upon completion of the small cell antenna installation, TELUS will repair and restore any damage to the site caused by the work to the condition in which it existed prior. Over the course of the term, TELUS agrees to maintain the equipment in a safe condition and good state of repair at all times.

TELUS has requested a 10 year term for the project with an option to automatically renew for 2 further and consecutive 5 years each under the same terms and conditions.

TELUS has indicated that the company has remaining 2017 budget to support an in-kind remuneration for the use of municipal assets. This remaining budget cannot be accrued for 2018 and as such a decision would need to be made by November 30th 2017 regarding entering the Small Cell Lease Agreement

Municipal Impact

TELUS indicates a range of approximately 50m-200m for each small cell antenna, therefore not all streetlights will require a small cell antenna. In addition, the deployment of the small cell antennas does not preclude other telecommunication companies from enhancing the network by deploying their own technology in the future, should there be interest. TELUS would like to deploy this technology in the downtown core area, as identified in *Appendix B*. This would provide a test zone for the City to pilot Smart City technology, which would prove useful should the City ever wish to implement a City-wide small cell system to allow for Smart City projects.

Currently, the City does not charge a monthly rental fee for co-location on streetlights. The City does however charge a one-time permit fee (\$212) and an annual inspection fee (\$53 per location) for third-party installation of banners or cameras on streetlights, to cover associated administrative costs. Additionally an area fee is calculated based on the City's Encroachment Policy and depends on number of units used. Based on the formula provided, this fee would be (\$0.38) per streetlight

A separate agreement between TELUS and EnWin may be required in order to determine hydro consumption rates on street lights or a per pole fee for attachment to utility poles.

The estimate below is for use of 300 Street lights within the downtown core to install the Small Cell antennas over the first term of the agreement. The exact number of street lights required is dependent on TELUS identifying specific locations that maximize the consistency and strength of the signals. In lieu of paying annual fees, TELUS is requesting the ability to provide remuneration to the City through in-kind support. In this scenario, TELUS would still be responsible for the one time permit fee (\$212), but would provide in-kind support worth at least the value of the annual inspection and area fees. As indicated earlier in the report the area fee is a negotiable rate and TELUS has indicated that they would maintain the equipment in a safe condition and good state of repair over the course of the lease agreement.

Year	Fee Type	Estimated Annual Revenue
1	One Time Permit Fee = \$212	\$212
Annual Rate	\$53 annual inspection fee X 300 Street lights = \$15,900	\$16,014
Years 1-10	Area Fee \$0.38 X 300 Street lights = \$114	
Estimated Total Revenue (Annual Revenue x 10 years + One Time Permit Fee)		\$160,226

In-Kind Remuneration Opportunities identified

In-building cellular antenna coverage solutions within the new city hall

- TELUS has indicated, in the EOI submitted to the city, that it is willing to provide in-building cellular antenna coverage solutions within the new city hall. According to the City's Chief Information Officer this has an estimated cash value between \$150,000 & \$200,000 for fit-up of the new city hall. TELUS has not been contracted to complete this work and has outlined that this is a chargeable

service. It is noted that Telus has previously wired the Aquatics Centre and the WFCU Centre as well as other smaller venues free of charge as there are benefits to their users for doing so; therefore, administration is of the opinion that additional in kind remuneration should be provided. TELUS will be touring the new city hall the third week of November to assess the potential project and identify the work involved to complete the fit-up.

Provision of public wi-fi access

- Administration has suggested that another in-kind remuneration TELUS could provide is public WiFi access in the area of deployment. Integrating Wi-Fi radios into small cells provides additional coverage for small cells and service extension to non-cellular devices. Currently the Downtown BIA offers free Wifi Hot Spots and can be accessed along Ouellette Avenue from Riverside Drive to just south of Wyandotte Street, on Pelissier Street from Chatham Street to Maiden Lane, on Chatham Street from Ferry Street to Goyeau Street and on University Avenue West from Victoria Avenue to Ouellette Avenue.
- Outlined in the Downtown BIA Budget report, the DWBIA currently pays \$10,500 for this service annually.
- The Downtown BIA could continue to provide this service as a compliment to a municipal WiFi network or the DWBIA could see an expense reduction by negotiating a partnership with the city aimed at contributing towards the expanded service.
- According to the Chief Information Officer, a rough estimate of upfront costs would be in the \$200K-\$300k range for the City to deploy and install WIFI access points to cover this area.
- This cost may be reduced to \$100k-\$200k for TELUS to include these as part of the small cell deployment. Ongoing costs for Internet bandwidth would total, roughly \$12,000 per year for the amount of bandwidth needed to service this area.

Both opportunities are examples of the in-kind remuneration that could be negotiated as part of the agreement with TELUS.

City and Resident Benefits of Small Cell Technology

In addition to direct in-kind remuneration, the City will benefit greatly from the potential increase in jobs and prosperity that small cell technology brings. The community benefit to approving this type of technology far exceeds the revenue the city may generate from permit and inspection fees. This is because the next generation of wireless network infrastructure will be built using small cell networks and not the traditional towers previously utilized by telecommunication companies. The connectivity and computing capacity unleashed by future high-speed wireless networks will bring the power of Smart City solutions to the City of Windsor.

For example, small cell technology creates a platform for Smart Cities and can improve public transit when built into a smart city grid. With increased wireless connectivity, the City of Windsor can reduce rider wait times while also optimizing bus inventory. Giving transit operators minute-by-minute information on the number of users who are currently

using the system, or who intends to use the system at a specific time, helping increase system utilization, and allow for dynamic bus routing.

Furthermore, using small cell technology can enhance real-time information about empty on-street parking spaces identified by a small cell sensor. These sensors will notify vehicles of empty spots allowing the driver or vehicle to go directly to an open space. According to the International Parking Institute, combining smart metering systems (recently approved by council), small cell technology sensors could increase parking revenue by 27% while also helping reduce congestion and idling.

Lastly, small cell technology is creating smart city innovations for public safety. In San Francisco, wireless sensors connected through small cell technology generate detailed, real-time, location-based information when a firearm is discharged. The sensors can triangulate the location, and that information is sent to authorities to speed up deployment of personnel to the location. According to the Smart Cities Council, this has helped reduce gun crime by up to 50% in neighbourhoods where the technology has been deployed.

These small cell antennas are critical for delivering the speed and capacity for the next generation of wireless and for supporting the increased number of devices that will be connected to the network in the future. The community benefit to approving this type of technology far exceeds the revenue the city may generate from permit and inspection fees.

The Smart City concept is real, and is starting to take shape in a number of municipalities in the U.S. and abroad. To reach its full potential, and unlock the full benefits of Smart Cities, communities now need to support small cell deployments to build the platform for next generation communication infrastructure. Cities and towns which are first to facilitate the wireless infrastructure evolution will see the greatest benefit, while slow adopters may become less competitive.

A summary of additional benefits is provided in the chart below.

Benefit	Value	Occurrence
Improvement to downtown WiFi technology	<ul style="list-style-type: none"> Builds on to an already existing network provided by the DWBIA and enhances the connectivity to improve resident, tourist and business satisfaction. 	Ongoing
Additional Grant opportunities	<ul style="list-style-type: none"> Deployment of this technology increases Windsor's value proposition when applying to grants, specifically for: Smart Communities Challenge – Up to \$10M Autonomous Vehicle Integration Network – Up to \$2.5M Enhances the City's \$250k investment to the Southwestern Integrated Fibre 	Ongoing

	Technology (SWIFT) Network	
Use as a Business Attraction Tool	<ul style="list-style-type: none"> According to Windsor Essex Economic Development Commission, access to high-speed, reliable internet is the 2nd most important factor that site selectors look for when choosing a relocation site for businesses. 	Ongoing
Infrastructure investment that aligns to common trends	<ul style="list-style-type: none"> The City of Windsor will be able to share TELUS's technology to create a Smart City to better manage city assets and to monitor and enable a better quality of life for citizens. 	Ongoing

Additional Consultations

Administration has contacted the Ontario Municipal Real Estate Association for further information and as of the completion of this report has not received comments.

Risk Analysis:

There are no significant or critical risks associated with the recommendation. The sample lease agreement provided by TELUS would indemnify the City from any actions connected to the installation of the equipment.

An agreement with TELUS would not preclude the City from entering into agreements of a similar nature with other telecommunication companies. There is, however, a moderate risk that should the City chose not to facilitate investment in small cell technology, opportunities for other investments may be lost or put the city behind in technology trends when compared to other North American jurisdictions.

Financial Matters:

In lieu of the City receiving the estimated annual revenue approximated above (\$160,014), TELUS is requesting consideration of remuneration to the municipality through in-kind support equal to or greater than the amount the municipality would charge in inspection and area fees.

TELUS would be responsible for the one-time permit fee of \$212 as indicated in the draft agreement provided by TELUS.

This would result in a cost-neutral outcome for the municipality as the municipality could off-set any costs through the acceptance of an in-kind remuneration equal to the value of revenue through the first term of the agreement.

Consultations:

Andrew Drouillard, Executive Initiatives Coordinator, Office of the CAO

Adam Pilon, Right-of-Way Supervisor

Frank Scarfone, Manager, Real Estate Services

Harry Turnbull, Chief Information Officer

Conclusion:

Given the large investment that telecom operators plan to make in the coming 5 years, and that the 5G trials have already started in Canada, the city should position themselves to take advantage of this private sector investment and all of the other benefits that accompany it, including improving citizens' lives, creating jobs and increasing economic competitiveness, by approving the recommendation noted above.

Planning Act Matters:

N/A

Approvals:

Name	Title
France Isabelle Tunks	Deputy City Engineer
Mark Winterton	City Engineer
Wira Vendrasco	(Acting) City Solicitor
Don Nantais	Financial Planning Administrator
Joe Mancina	City Treasurer/CFO
Onorio Colucci	Chief Administrative Officer

Notifications:

Name	Address	Email

Appendices:

Appendix A – Example Small Cell Technology

Appendix B – Proposed Deployment Area

APPENDIX A – Small Cell Examples



APPENDIX B Proposed Deployment Area



Blue Dots Indicate Street Lights

