

NO: R011

COUNCIL DATE: January 16, 2017

REGULAR COUNCIL

TO: Mayor & Council **DATE: January 10, 2017**

FROM: General Manager, Finance & Technology **FILE: 5450-30**
General Manager, Engineering

SUBJECT: TELUS Infrastructure Upgrades

RECOMMENDATION

The Finance & Technology Department and the Engineering Department recommend that Council receive this report as information.

BACKGROUND

Cities around the world are recognizing the growing need for access to faster and cheaper internet access (broadband) so they can succeed in the digital economy. In our digitally connected world, keeping pace with the increasing need for accessible, affordable high-speed broadband has become vital to the economic health and well-being of communities. Addressing these growing needs is a fundamental driver of the City's forthcoming Smart Surrey Broadband Strategy.

Demand for high-speed broadband and wireless services has increased dramatically in recent years with the wide-spread adoption of smartphones, mobile workforce management and other new technologies. This increased demand has challenged the telecommunications industry to provide sufficient infrastructure to address coverage 'dead zones' and capacity issues. Surrey, with its vast land base, has inconsistent and insufficient coverage in many areas, more so than any other municipality in BC. Increasing wireless coverage to address the City's shortfall requires increased investment from telecommunications carriers to provide reliable wireless coverage throughout all areas of the City.

TELUS has approached the City with plans to deploy its 'Fibre-to-the-Premise' (FTTP) optic network citywide. TELUS' vision is to offer high-speed fibre and wireless connectivity throughout as much of the City as possible, providing homes and businesses with some of the fastest speeds available anywhere in the world. Realizing this vision however requires TELUS to invest in infrastructure in Surrey, as well as formalize a partnership with the City to facilitate the upgrades within City road allowances while ensuring that permitting processes and resources required by such a large scale infrastructure upgrade, support the scope and pace of the planned construction.

DISCUSSION

In addition to the FTTP initiative, TELUS has requested permission to install, operate and maintain 'small cell' telecommunications infrastructure on City-owned street light poles

(illustrated in Appendix “I”). The installation of small cells will significantly broaden the capacity for wireless coverage in underserved areas. The use of small cell technology in this manner is an innovative, alternative method to traditional cell towers.

TELUS’ small cells are some of the smallest and lowest-powered wireless equipment currently available. Each small cell is roughly one square foot in size, with no ground space required (mounted on existing infrastructure), and has approximately a 100-200 metre range in one direction.

TELUS is planning to install over 500 small cells across the City over a three year period (2017-2019). Prior to installation, TELUS must enter into a Small Cell License Agreement with the City for a non-exclusive right to use City-owned street light poles. As part of the first phase of this initiative, Council has approved the City entering into a Small Cell License Agreement with TM Mobile Inc. (“TELUS”), for the South Surrey and Cloverdale areas.

Benefits to Increased Wireless Coverage

- Increased coverage carries significant safety benefits for the community as wireless service is heavily relied upon for 911 calls (60-70% of 911 calls originate from cell phones).
- Wireless service expansion creates opportunities for other carriers to use TELUS’ wireless network based on network sharing arrangements; expansion will therefore result in better wireless coverage and capacity not only for TELUS customers, but for customers of other carriers as well.
- Fibre infrastructure and improved wireless coverage are a catalyst for attracting economic investment in the City as businesses increasingly demand it, to meet their business needs.
- Currently “dead zones” pose a significant challenge to City staff who want to process work in the field to maximize efficiency. Engineering, Parks Operations, and Bylaw staff, will be better enabled to use mobile technology in the field, which will streamline work management in real-time, and ultimately improve customer service.

Health and Safety

TELUS’ wireless installations are fully compliant with applicable health and safety standards and will continue to remain so into the future.

Industry Canada is the regulatory authority for telecommunications in Canada which requires that carriers must comply with Health Canada’s guidelines for safe human exposure to radiofrequency (RF) electromagnetic energy. Small cell units emit minimal RF energy with a per unit exposure rate equivalent to the combined energy of two emergency responder radios or five cell phones at maximum power output. This rate is many times below the maximum level that Health Canada has found to be safe.

Health Canada sets these standards at a federal level through the Safety Code 6 (SC6) guidelines. Innovation, Science & Economic Development Canada, “ISED” (formerly Industry Canada), has adopted SC6 and has included it as a term in TELUS’ spectrum license. If TELUS does not comply with SC6, TELUS would be at risk of losing their spectrum license.

SUSTAINABILITY CONSIDERATIONS

The TELUS deployment of small cell equipment on City-owned street light poles supports the objectives of the City's Sustainability Charter. Specifically, deployment of small cell equipment supports the following Desired Outcome:

- Telecommunications DO 21: The City has excellent communications infrastructure that provides affordable and effective connectivity across the community.

The initiative also supports the following Strategic Directions:

- Telecommunications SD 16: Advance improved high speed wireless services;
- Telecommunications SD15: Enable faster deployment of fibre-optic telecommunications infrastructure, including concurrently with City utility excavations.

CONCLUSION

The TELUS infrastructure upgrades support the Smart Surrey Broadband Strategy for building a world-class connected City. Use of City-owned street light poles to broaden wireless coverage is an innovative solution to serving underserved areas in the City where no other existing infrastructure is available. The deployment of fibre is foundational for the City to keep pace with increasing broadband demands, and is essential to ensuring economic prosperity and a high-quality of life for those who live and work in Surrey.

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Appendix "I" – Small Cell Sample Images



Photo simulation image of what the small cell attachment is expected to look like.



Photo simulation image of what the small cell attachment is expected to look like.