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Memo

To: Richard Francki

From: Helen Psathas

Date: February 15, 2011

Subject: Adopting Criteria for the Consideration of Cellular Antennae on Roofs

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Recommendation:

That the Committee adopt criteria and for staff to use in the consideration of current and future applications for roof top antennae.

Background:

The deregulation of the cellular phone business has resulted in a greater number of companies doing business in this sector. The Finance Dept of CSBO manages current license agreements with Rogers and Telus for roof top antennae located on the Ross Building, and with Bell, located on the Atkinson Residence roof.
More recently, staff has noticed an increase in the request for additional service installations. The purpose of this report is to highlight the existing installations, and propose the best manner in which to address increasingly frequent requests from telecommunications carriers, looking for more sites.

Discussion:

The fourth generation of cellular wireless standards, known as 4G, is quickly moving the industry from the current predominantly 3G cellular technology. The new standard offers greater capacity to mover more data, faster e.g. video streaming. It is a successor to 3G and 2G families of standards. Speed requirements for 4G service set the peak download speed at a higher level. 4G systems are expected to provide comprehensive and secure IP based mobile solutions to smart phones, laptop computer wireless modems, and other mobile devices. Facilities such as ultra-broadband Internet access, IP telephony, gaming services, and streamed multimedia, will be more readily provided to users.

Briefly, the component parts of roof antennae are comprised of “3 sectors in a site”; each sector represents 120 degrees of full circle. Typically in sector you may have 3, 6 or 9 continuous antennae, known as ‘diversity”; this provides broad coverage for wide usage

Each installation has:

- radio cabinet (old ones, like on Ross, are the size of a railway car; new ones are the size of a full sized freezer);
- battery back up (BBU);
- antennas (sometimes on poles, sometimes on edge or corner of building).

There are 'main sites' and 'repeater sites'; repeater sites are smaller sites, often at a busy intersection, poised to help ease the load on main site.

Each company has an approved band width. There is specific capacity associated with band width; each licensed serviced provider broadcasts over a specific frequency. Antennae do emit micro waves and it is industry practice to issue a warning to stay 3 meters away from the installation.

RF (radio frequency) designers usually design each installation. Should there be a future concern around the number of installations, it may be prudent to get independent advice on how big the threshold is. Most companies would provide details on their analysis of the site (structural elements, access, emissions, etc). They are all regulated as far as the manner in which they must conduct themselves.

Current interest is as follows:

Rogers:

Rogers currently has installations at Ross.

The License is for a 10 year period, expiring June 30, 2017. Annual fees are $40,200.

Rogers would like to explore the feasibility of placing three additional permanent sites on the campus.

1. SE Quadrant: The first option would be the Accolade East building, with the second option being the Seymour Schulich building and third option; the Bennett Centre / Student Services Parking Garage.

2. NE Quadrant: The first option would be the Vanier College building, with the second option being the McLaughlin College building, and the third option being the Winters Residence building.

3. W Quadrant: The first option would be the Bethune Residence building, with the second option being the Stong Residence building.

Bell:

Currently Bell has an 18 month license for a site on Atkinson Residence. They would like to move to the Ross rooftop. The fees for this license were set at $50,000 annually.

Public Mobile:

They are requesting as site on the Atkinson Residence rooftop, where Bell is currently located.
With respect to current and future applications, there are several variables to consider in the location of cellular antennae. This makes it difficult to identify buildings that we would "pre approve" as roof sites. However, criteria can be identified as a guide for the consideration of further applications.

Recommended Criteria:

1. Generally, ground installations should be denied.

2. Generally, where there is any issue of impaired sight lines, or an identified aesthetic issue represented by the installation, or where there may be any negative impact on current or future development, the installation should be denied.

3. Applicants must provide a full technical analysis of the roof capability to house the installation, especially given technology variables, i.e., does it work on the roof, can it be face mounted, can it be on a roof but set back from the edge, how far, etc.

4. Applicants' analysis should include consideration of emissions, particularly having regard for the installations already in place and a cumulative impact, if any; consideration should be given to the extent of combined emissions of micro waves and impact on health and safety, should there be one. Analysis is to be submitted with the installation request, or prior to the request being considered.

5. Licensees must be prepared to post emission levels, and to monitor and report on emission levels at the request of York University, at no cost to the University.

6. License agreements should carry the obligation for the licensee to assume all costs associated with the installation and maintenance of all component parts, and be responsible for all damage, if any, to the roof as a result of the installation.

7. Licensees must be prepared to move the installation, either temporarily or permanently, subject to the provision of notice that work on the roof or adjacent areas, including roof replacement, is required; any costs associated with the move and re installation will be borne by the licensee.

8. Licensees must be prepared to move or remove the installation should it be demonstrated that the installation interferes with a previously installed RF device or installation.

9. Licensees must be prepared to assume all liabilities, to carry insurance, to indemnify York University in case of interruption of service, and to provide documentary proof thereof.

10. Licensees must be prepared to certify that any work carried out by the Licensee will be in accordance with Ministry of Labour standards, provide WSIB certification, and will conform to applicable regulatory standards.

11. Fees must provide a net benefit to York University.