

Cell Phone Tower

Criteria to Assess Concurrence or Non-concurrence of City Policy C471B (D. Iveson/D. Loken/K. Diotte/K. Leibovici)

Recommendation:

That the January 25, 2012, Sustainable Development report 2012SCP004 be received for information.

Report Summary

The report summarizes potential changes to the City's telecommunications tower policy and responds to a previous Executive Committee motion to explain how decisions of concurrence or non-concurrence are made.

Previous Council/Committee Action

At the November 2, 2011, Executive Committee meeting, Councillors D. Iveson, D. Loken, K. Diotte and K. Leibovici made the following inquiry:

Given the recent requests for placement of cell phone towers in residential locations, can Administration provide the following information:

1. Recommendations for updates to City Policy C471B "Policy for Siting Telecommunications Facilities" particularly with regards to improved public consultation, ability to restrict placement in residential areas; identification of land use incompatibility issues and requirement to mitigate visual impacts.
2. Recently other municipalities have updated their policies on

siting telecommunication towers especially in Calgary, Toronto, Montreal and Vancouver. What elements of their policy updates can be incorporated in Edmonton, i.e., addressed mail notification to tenants and homeowners regarding cell phone tower applications? Can you also provide information regarding pilot projects and/or new protocols that other municipalities are undertaking with the Tele-communication companies?

3. A response to the May 19, 2010, Executive Committee motion, made by Councillor B. Henderson, regarding "what criteria the City uses to make a decision about concurrence or non-concurrence and what governance mechanisms are used to make that decision."
4. Any updates regarding recent Federal government and Federation of Canadian Municipalities' response to the Townsend report and an update regarding any Alberta Urban Municipalities Association activity on this issue.
5. Explanation of Industry and Health Canada jurisdiction.

As this is a very contentious issue, a response as quickly as possible would be appreciated. An early release of the report be scheduled to allow for public input.

Report

Industry Canada has the sole authority to approve or deny the placement of telecommunications facilities. The City of Edmonton submits its opinion on

whether the location of a new telecommunications facility is appropriate from a land use perspective; however, the City does not have the decision-making authority to approve cell phone towers. Policy C471B, "Policy for Siting Telecommunications Facilities" sets the criteria that Administration uses when making a recommendation to Industry Canada regarding proposed telecommunication facility sites. It was last updated and approved by resolution on May 9, 2006. Since the City updated Policy C471B, Industry Canada has made changes to Client Procedures Circular CPC-2-0-03, Issue 4 "Radiocommunication and Broadcasting Antenna Systems," released in June 2007, and effective January 1, 2008.

Industry Canada's changes, which were being contemplated at the same time as the City was updating Policy C471B, increased the minimum requirements that telecommunications companies must meet when consulting with municipalities and the public regarding the location of new telecommunications facilities.

Industry Canada's policy includes statements mandating that carriers consider site sharing (co-location) and also contains a list of types of installations where municipal and public consultation is not required. The update also provides standards for a dispute resolution process that is overseen by Industry Canada.

1. Updates to Policy C471B

Industry Canada's updates to Client Procedures Circular CPC-2-0-03, "Radiocommunication and Broadcasting

Antenna Systems," reinforce the City of Edmonton's requirements and guidelines contained in the City's Policy C471B. The update to Industry Canada's Client Procedures Circular includes an emphasis on co-location and the requirement that proponents consult with municipalities and follow local policies regarding public consultation (within limits) in situations that are not exempt from consultation as prescribed by Industry Canada.

Possible changes to the City's Policy C471B could include updating Section 2.01, "Federal Requirements," to reflect the stronger mandates for the public consultation process, the required co-location investigations, and specific details on the types of installations where public consultation is not required (now clearly outlined in Industry Canada's "Exclusions" list as specified in Section 6 of the Client Procedures Circular CPC-2-0-03).

The City's role and jurisdiction in the siting of telecommunications facilities (e.g., focusing on land use impacts), as compared with Industry Canada and Health Canada, could be emphasized under Section 2.02, "Municipal Authority and Intent."

Industry Canada has indicated that the number of towers and the density of towers (i.e., spacing between towers) within residential areas is dependent on service demand. Service demand has increased tremendously with the widespread use of mobile and now smart phones.

Demand has increased even further in residential areas because residents

frequently choose to do away with land lines in favour of mobile phones. Carriers do favour commercial areas within the interior of residential neighbourhoods; however, this is not always possible. Consequently, the placement of towers near residential areas is often unavoidable to meet the increasing demand.

The City's policy, like other municipalities, addresses potential land use incompatibility of telecommunications facilities in residential areas by first encouraging new telecommunications facilities be placed on existing telecommunication structures, followed by placement in non-residential locations. In accordance with subsection 4.03 of Policy C471B, low density residential areas are considered "Discouraged Locations." The City's policy includes guidelines that encourage carriers to make facilities less visible and use designs, colours, massing and lighting that is sensitive to the local environment. This is also consistent with other municipalities' protocols.

Changes to Policy C471B would require stakeholder consultation in accordance to the City's Public Involvement Policy, C513. Telecommunication carriers, the Edmonton Federation of Community Leagues, Industry Canada and other stakeholders would need to be included in the consultation process. Any changes to the policy should be consistent with municipal authority.

2. Updates of other Municipal Policies/Protocols

Calgary and Toronto have recently updated their telecommunication tower policies. Calgary's policy has detailed requirements for reviewing co-location proposals, clearly states that concurrence or non-concurrence statements are based on "specific physical criteria," and includes detailed guidelines for setbacks of towers from residential development.

Toronto's policy encourages co-location through a requirement that towers be constructed so that they can support at minimum, additional equipment for two other carriers. Like Calgary, Toronto's policy includes guidelines for setbacks of towers from residential development.

Toronto revised its 2008 policy in response to reaction from Industry Canada. Notification distances were reduced to be consistent with the intent of Industry Canada's Client Procedures Circular, CPC-2-0-03 "Radiocommunication and Broadcasting Antenna Systems."

Montreal is in the process of updating its protocol and introduced a resolution at the Federation of Canadian Municipalities 2011 Conference. The resolution calls for improvements from Industry Canada relating to dispute resolution procedures and alternative solutions to siting and design that would address local needs (see #4, below).

The City of Vancouver has an information bulletin that telecommunication proponents are required to follow as a supplement to its Zoning Bylaw requirements for permits for telecommunications antennas. It focuses on design and placement of

antennas on buildings and attempts to limit freestanding towers to industrial areas. While it does not completely restrict the placement of towers in residential areas, under 3.2(g) it states that “Freestanding towers for antennas may not be approvable in or near residential and commercial areas, and will require a full Development Application in all circumstances.” The majority of Vancouver’s antennas are located on top of high rise and mid-rise buildings.

Edmonton’s Policy C471B requires notification be provided to property owners within a horizontal distance of six times the proposed tower height from the proposed tower location [(9.02(a))]. The Policy allows Administration to also require additional methods of notification in particular situations, such as requiring hand delivery to properties in areas where there is a high proportion of rental accommodation. Calgary requires that notices be sent to all affected residential properties thereby not distinguishing between owners and renters. Similarly, Toronto requires that all property owners and tenants be notified.

The City’s requirements for other land use applications (e.g., rezoning or development permits) do not include individual notices to tenant-occupied dwellings, but instead require newspaper notifications.

A summary of selected guidelines in other municipalities as compared with Edmonton’s policy is contained in Attachment 1.

Pilot projects/new technologies

Technological advances have created the possibility for smaller-scale antenna structures. The City of Calgary has investigated these technologies but identified drawbacks to each. These are summarized in Attachment 2.

3. Criteria for City of Edmonton concurrence or non-concurrence on proposed locations for telecommunications facilities

The City of Edmonton bases its recommendation on the location of telecommunications facilities (expressed as concurrence or non-concurrence with the proposed location) on how well a proposed facility complies with City Policy C471B, as stated under subsection 9.02(f). This includes “whether or not adequate public consultation has been conducted by the carrier” and “probable land use impacts.”

Possible changes to Policy C471B could include deleting the clause that concurrence or non-concurrence is “based on probable land use impacts” and instead specifying that it is based on the degree to which the carrier has met – or has attempted to meet - the land use guidelines contained within Policy C471B. This includes the degree to which the proponent has adhered to guidelines that relate to location, design and visual impact and environment (see Attachment 1, which includes a summary of the City’s guidelines for location and design, as compared to other municipalities).

4. Updates on Federal government and Federation of Canadian Municipalities' response to the Townsend Report

The Federation of Canadian Municipalities strongly endorsed the 34 recommendations of the Townsend Report ("Report on the National Antenna Tower Policy Review," by Dr. David A. Townsend, December 2004). These recommendations led to improvements to Industry Canada's Client Procedures Circular CPC-2-0-03 "Radiocommunication and Broadcasting Antenna Systems," released in June 2007 (effective January 1, 2008).

A recent resolution made by the City of Montreal at the 2011 Annual Federation of Canadian Municipalities Conference in Halifax, seeks further improvements to the dispute resolution process and prescribes increased cooperation of carriers in finding alternative tower location solutions.

The City of Calgary has recently adopted an "Industry Canada Advocacy Strategy on Municipal Issues Related to Cell Towers" (City Manager's Office report to the Intergovernmental Affairs Committee, November 3, 2011, regular meeting of Council, November 14, 2011). The City of Calgary, as with the Federation of Canadian Municipalities, will lobby Industry Canada to change its Client Procedures Circular CPC-2-0-03 to implement the recommendations of the Townsend Report, and to provide more flexibility in the ability of municipal protocols to require consultation in situations that Industry Canada normally exempts from consultation requirements.

As part of its strategy, the City of Calgary also is planning to develop a communications document to inform citizens on the roles and responsibilities of governments pertaining to cell towers.

5. Explanation of Industry and Health Canada jurisdiction.

Industry Canada

Industry Canada remains the authority in the decision to approve the location of telecommunications towers and other equipment, as per Section 5 of the federal *Radiocommunication Act*. This authority is clearly stated in the City of Edmonton's Policy 471B, under Section 2.01 Federal Requirements. The updated Industry Canada Client Procedures Circular CPC-2-0-03 "Radiocommunication and Broadcasting Antenna Systems" states that "proponents must follow the land-use consultation process for the siting of antenna systems, established by the land-use authority." However, Industry Canada can override a municipal authority's consultation process where it is viewed as unreasonable.

Health Canada

Health Canada sets standards for the safe exposure of Canadians to radiofrequency fields. Safety Code 6 was set in 1999 and sets standards based on how much heating the human body can safely handle when exposed to the sun.

Industry Canada requires that radio apparatus be operated in a manner which complies with Health Canada's Limits of Human Exposure to Radiofrequency Electromagnetic Fields

in the Frequency Range from 3 kHz to 300 GHz, Safety Code 6 (SC6), 1999” (Industry Canada, “Guidelines for the Protection of the General Public in Compliance with Safety Code 6,” Issue 1, October 2005). Despite the established Safety Code 6 standard, most antennas radiate radiofrequency fields that are hundreds to thousands of times below the established limit (“Wireless Communications and Health – An Overview,” Industry Canada, October 2005).

Policy

This report relates to the following sections of *The Way We Grow*, Edmonton’s Municipal Development Plan:

9.7 Telecommunication towers:

- 9.7.1.1 Collaborate with Federal regulators and industry operators as they plan for telecommunication towers.
- 9.7.1.2 In consultation with regulators and industry operators, telecommunication towers will be integrated into neighbourhoods through design and site considerations.

Corporate Outcomes

This report relates to the following goal of *The Way Ahead*, Edmonton’s Strategic Plan 2009-2018:

- Edmonton has sustainable infrastructure that fosters and supports civic and community needs.

Public Consultation

Other municipalities with recent telecommunications policies were contacted in the preparation of this information report.

Attachments

1. Telecommunications Facilities: Selected Policies in Other Municipalities
2. New Telecommunication Technologies

Others Reviewing this Report

- D. H. Edey, General Manager, Corporate Services

Telecommunications Facilities: Selected Policies in Other Municipalities

Subject	Examples of other Municipalities	City of Edmonton
Co-Location Feasibility Study/Review Other Carrier Interest	<p>Toronto</p> <p>4(B)Co-Location</p> <p>(c) “Site Selection/Justification Report prepared by a certified engineer or land use planner. The report should identify all telecommunication towers within a radius of 500 metres of the proposed location. It should also include details with respect to the coverage and capacity of the existing telecommunication towers in the surrounding area and provide detailed documentary evidence as to why co-location...is not a viable alternative...”</p> <p>Calgary</p> <p>8.3 Evidence of Co-location Review</p> <p>If co-location not possible for “technical reasons”, statement “signed by an appropriate technical expert” is required.</p> <p>If co-location not possible due to “lack of interested participants or other considerations” statement to be signed by “an appropriate authority for the proponent</p>	<p>4.01 Co-location</p> <p>4.02 Where technically feasible, carriers are required to investigate opportunities to “co-locate” their facilities.</p> <p>8.01 <u>Co-location and Site Investigation</u></p> <p>a) Other carrier interest – the carrier shall contact in writing all other carriers...and advise them of its requirements and the potential siting area, and seek an expression of interest in co-location opportunities in that area.”</p> <p>f) <u>Co-location statement</u> “If co-location is not possible for technical reasons, a statement signed and stamped by an appropriate registered Engineer, with expertise in the technical issue at hand, is requested.”</p>
Residential Areas Discouraged/ Setbacks ...continued	<p>Calgary:</p> <p>7.6 Residential Development Setback Guidelines</p> <p>Apply to all forms of residential development. Setbacks typically are a minimum of 45 metres (15 m tower) up to 3X proposed Tower Height.</p> <p>Toronto:</p> <p>4(A) Site Selection</p> <p>(c) Preferred towers be located “outside of Neighbourhoods, Apartment Neighbourhoods or Centres, preferably in areas zoned to permit industrial uses or utilities.”</p> <p>...continued</p>	<p>4,.03 “Discouraged Locations”</p> <p>4.03(a) “Low Density residential areas..”</p> <p>No specific setback guideline to residential areas.</p> <p>9.01.01 (a) Freestanding Structures</p> <p>Notification distance for towers 15 m or greater in height to “existing low density residential development” of six times the proposed tower height” discourages tall towers in residential areas</p>

Subject	Examples of other Municipalities	City of Edmonton
<p>...continued</p> <p>Residential Areas Discouraged/ Setbacks</p>	<p>...continued</p> <p>4(D) Design and Landscaping (d) Proponents encouraged to provide minimum setback “equivalent to the height of the telecommunication tower ...whenever possible”</p> <p>Vancouver:</p> <p>3.2(g) Freestanding towers for antennas may not be approvable in or near residential and commercial areas...”</p> <p>“Freestanding towers are generally limited to Industrial areas, or other less controversial locations.”</p> <p><u>Note:</u> Vancouver has largely been able to keep antennas on the top of mid and high-rise buildings. Outside the downtown core, mid-rise buildings along the major corridors have generally been sufficient for coverage.</p>	
<p>Design Criteria</p> <p>...continued</p>	<p>Calgary</p> <p>7.0 Design Characteristics</p> <p>7.1 Disguised and Camouflaged Structures --to encourage unobtrusive, inconspicuous appearance</p> <p>7.2 Preferred Built Forms -roof top installations -monopole and tri-pole-streetlight and parking lot light poles where free-standing towers required</p> <p>7.3 Screening Features: -landscaping, fences, architectural features ...”encouraged to assist these structures to blend in with their surrounding environment”</p> <p>7.4 Signage -only for businesses on site, & assist in screening/camouflage</p> <p>...continued</p>	<p>“5. Design and Visual Impact</p> <p>a) <u>Screening</u> of facilities by using existing vegetation, landscaping, fencing, or other means in order to blend with the built and natural environments.</p> <p>b) <u>Design and colour</u> sensitive to the style of architecture in the neighbourhood.</p> <p>c) <u>Massing</u>. Situate as near as possible to similarly-scaled structures.</p> <p>d) <u>Lighting and Colour</u>. Locate towers and minimize tower height where possible to avoid Transport Canada and/or NAV Canada requirements for painting and lighting. Lighting should be shielded from neighbouring properties.</p> <p>...continued</p>

...continued

Subject	Examples of other Municipalities	City of Edmonton
<p>...continued</p> <p>Design Criteria</p>	<p>Calgary (continued)</p> <p>7.4 Signage -only for businesses on site, & assist in screening/camouflage</p> <p>7.5 Lighting -discouraged unless specifically required under Transport Canada requirements</p> <p>7.6 Residential Development Setback Guidelines generally 3X proposed tower height.</p> <p>Toronto</p> <p>4(D) Design and Landscaping</p> <p>(a) Outside of residential areas, tower will be built to accommodate minimum of two additional users whenever possible”</p> <p>(b) & (f) Architectural style and design to blend in with neighbourhood</p> <p>(c) Monopoles must be used within 120 m of residential neighbourhood</p> <p>(d) Setback guidelines apply (see above), minimum of height of the tower</p> <p>(e) Parking - maximum one parking space to serve tower only</p> <p>(g) Lighting – prohibited unless required by NAV Canada</p> <p>(h) Signs & use: towers only for antennas, signs only for information of tower/facility</p> <p>(i) Equipment shelter setback 3 m from roof edge, max. height 4 m</p> <p>(j) On buildings, towers max. 5 m height encouraged. Setback 5 m from roof edge</p>	<p>...continued</p> <p>e) <u>Visibility</u>. Where located in proximity to bird migration routes (see 7 below), guy wires should be made more visible (e.g. through sleeves) to prevent birds from colliding into them, particularly in bird migration routes.</p> <p>f) <u>Structure</u>. Stealth and/or monopole structure should be used to better integrate form with existing built environment. Where co-location on a single structure is desired, opportunities to design equipment within a single stealth structure may be investigated.</p> <p>g) <u>Access</u> to facilities should be possible without unduly interfering with traffic flow or without unduly creating safety hazards.”</p>

Subject	Examples of other Municipalities	City of Edmonton
<p>Notification Requirements – include tenants as well as home-owners?</p>	<p>Toronto and Calgary include requirements that notices are to be sent to both owners and tenants</p> <p>Toronto 11(B)(d) “Notice to be provided to all property owners and tenants within 120 metres of a proposed Tower or three times height of tower (whichever is greater), and within 25 metres of a proposed antenna...”.</p> <p>Calgary 9.4 Notification to Affected Residential Properties</p> <p>Where required, “notification ...shall be sent by the proponent to all affected residential properties within a 300 metre radius of the proposed telecommunication antenna structure...”</p>	<p>Edmonton's policy takes into account tenants through “Other Means of Notification”</p> <p>9.01 Public Notification Required</p> <p>Notification for Towers and antennae as defined in Subsection 9.01.01 (Freestanding Structures) and 9.01.02 (Building-mounted Structures) is triggered only:</p> <p>“where the proposed tower location is setback a horizontal distance of less than six times the proposed tower height from existing ground-oriented low density residential development where the area consists predominantly of single detached, semi-detached, duplex, mobile/manufactured home or row housing forms.”</p> <p>9.02(a)(i) Notification Notification applies to “all owners of property” [ground-oriented low density residential development, in accordance with Section 9.01] “located within a horizontal distance of six times the proposed tower height of the proposed tower location.”</p> <p>9.02(c) Other Means of Notification Other forms of notification may be required</p> <p>e.g. “..based on local conditions such as a high proportion of rental accommodation”, notice may include a sign, notice in local newspaper, or “hand delivery to specific buildings.”</p>

Subject	Examples of other Municipalities	City of Edmonton
Criteria for Concurrence/ Non-Concurrence with proposed Site	<p>Calgary 2.0 City's Authority Regarding Telecommunication Antenna Structures</p> <p>Review of applications "based on specific physical criteria...such things as proposed location... height, colour, type, number of antennae...screening...design and material, potential for co-location of other proponents and compliance with The City of Calgary Telecommunication Antenna Structures Siting Protocols."</p> <p>Toronto 13. Confirmation of Local Land-Use Authority Consultation (b) Letter of concurrence/non-concurrence is "based on whether consultation process was completed in accordance with the City's policy and the City's technical requirements"</p>	<p>9.02 Public Consultation Process</p> <p>(f) Statement of Concurrence or Non-Concurrence to Industry Canada The City of Edmonton will forward a covering letter to Industry Canada "...advising whether or not adequate public consultation has been conducted...and a statement...as to whether or not the City of Edmonton concurs with the proposed tower or facility location based on the probable land use impacts."</p>

Source: City of Calgary "Telecommunication Antenna Structures Siting Protocols" (May, 2011).
City of Edmonton "Policy for Siting Telecommunications Facilities" Policy C471B May 9, 2006
City of Toronto "Telecommunication Tower and Antenna Protocol" (March 3, 4 and 5, 2008, Amended January 27 and 28, 2009)
City of Vancouver "Antennas (Non-Residential Installations) Review Process and Design Issues Planning By-law Administration Bulletin, June 9, 2010

New Telecommunication Technologies

The following technologies were recently reviewed by the City of Calgary. Source: Attachment 4, Report “Municipal Issues Related to Cell Towers” (City Manager’s Office Report to the Intergovernmental Affairs Committee, 2011 November 3, Regular Meeting of Council, November 14, 2011)

- Femtocells are small base stations, supporting between two to four active mobile phones in a residential setting or 8-16 active mobile phones in a commercial setting. As Femtocells use the same frequency bands as conventional cellular networks, they have been found to interfere with conventional cellular networks. They must generate radio frequency signals with a high degree of precision, and for this to occur over a long period of time has been found to be a major technical challenge. Due to these technical requirements, Femtoells are not a viable alternative to cell towers.
- lightCubes, where antenna units are placed on the sides of buildings, light poles, and other areas. lightCubes direct cell phone signals “more directly using far less power, while handling as much as 30 per cent more capacity than current cell phone towers.” One advantage is that they can be placed almost any where, e.g. sides of buildings or light poles. They can be arranged in grids for increased signal strength. Trials are currently being conducted by give carriers in the United States, Europe and China. Bell Labs hopes to release lightCubes commercially within 18 months. A drawback is that typically, multiple cubes are required, depending on level of transmission required and consequently, their overall size increases. Even though height is not as high as typical cell towers, due to the stacking requirement, they may not be able to replace conventional towers. Calgary is monitoring the outcome of the cube trials.
- Distributed Antenna Systems (DAS) Technology involves a network of antenna nodes connected to a common source, providing wireless service within a geographic area or structure. Transmitted power is split among several antenna elements. They are currently used where alternate technologies are not feasible due to terrain, or cell tower placement is not possible. They have a high degree of technical and regulatory complexity and are consequently not the preferred technology by telecommunication companies.
- Ericsson Tubes are structures that fully encapsulate house base stations and antennas in a single tower. Their advantage is that they can be built in a variety of sizes and colours and therefore may be able to be adapted to fit more naturally in to the landscape. Calgary indicates that it is often asked by the public for these structures, however, due to their large size, they are not seen to accomplish the goal of reducing the visual impact of cell towers.